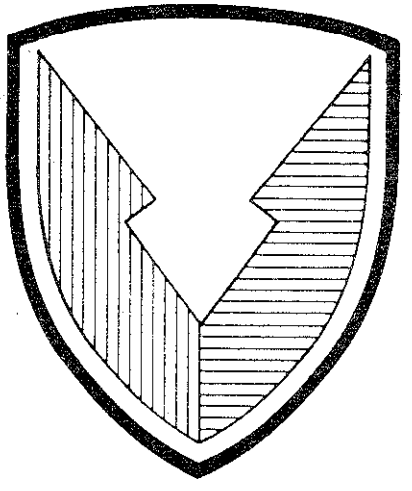
U.S. Army
Materiel Command

ANNUAL HISTORICAL REVIEW FY90



1992

Historical Office
Headquarters, U.S. Army Materiel Command

U.S. ARMY MATERIEL COMMAND

ANNUAL HISTORICAL REVIEW

FISCAL YEAR 1990

(RCS-CSHIS-6[R3])

Prepared By

Historical Office
Headquarters, U.S. Army Materiel Command

1992

Approved for public release. Distribution is unlimited.

William B. McGrath

WILLIAM B. McGRATH
Major General, USA
Chief of Staff

Preface

This Annual Historical Review (AHR) of the Headquarters, U.S. Army Materiel Command (HQ AMC) covers fiscal year 1990, the twenty-eighth year in the life of AMC. It was prepared by HQ AMC's Historical Office based primarily on submissions from staff elements. The AHR, prepared according to Army Regulation 870-5, is indebted to those in the Command who provided information pertaining to their staff elements. This volume could not have been completed if not for their reports and the efforts of Historical Office personnel.

The Annual Historical Review serves as a chronicle of the Headquarters, U.S. Army Materiel Command, making the past a means of managing the present and projecting the future. The soldiers and civilians of AMC, in the headquarters and in the field, support the soldier through the development, acquisition, fielding and sustaining of such items as the Patriot missile system, and the provision of ammunition to all the services. AMC personnel also provide security assistance to allied and friendly nations around the world. The extraordinary and dedicated efforts of AMC personnel were exemplified in their support of Operations Just Cause and Desert Shield. This AHR includes a chapter on General William G. T. Tuttle, Jr.'s stewardship of the command in his first full year as Commanding General. Also included are sections on AMC's missions and functions and its evolution.

The preparation of this AHR was a team effort. Members of the HQ AMC Historical Office prepared this volume under the guidance of the AMC Command Historian, who planned and coordinated the entire project. Based on the submissions from staff elements, Dr. Herbert Leventhal, Senior Historian, wrote the majority of chapter sections. Mrs. Kathleen Lockwood, Historian, also wrote several sections and revised the command management chapter written by Dr. Leventhal. All sections were reviewed by the submitting offices for purposes of Operations Security (OPSEC) and are releasable to the general public. Diane Donovan, Editorial Assistant, edited the sections, compiled them into chapters, completed the final editing and prepared the volume for publication.

DR. ROBERT G. DARIUS
Command Historian

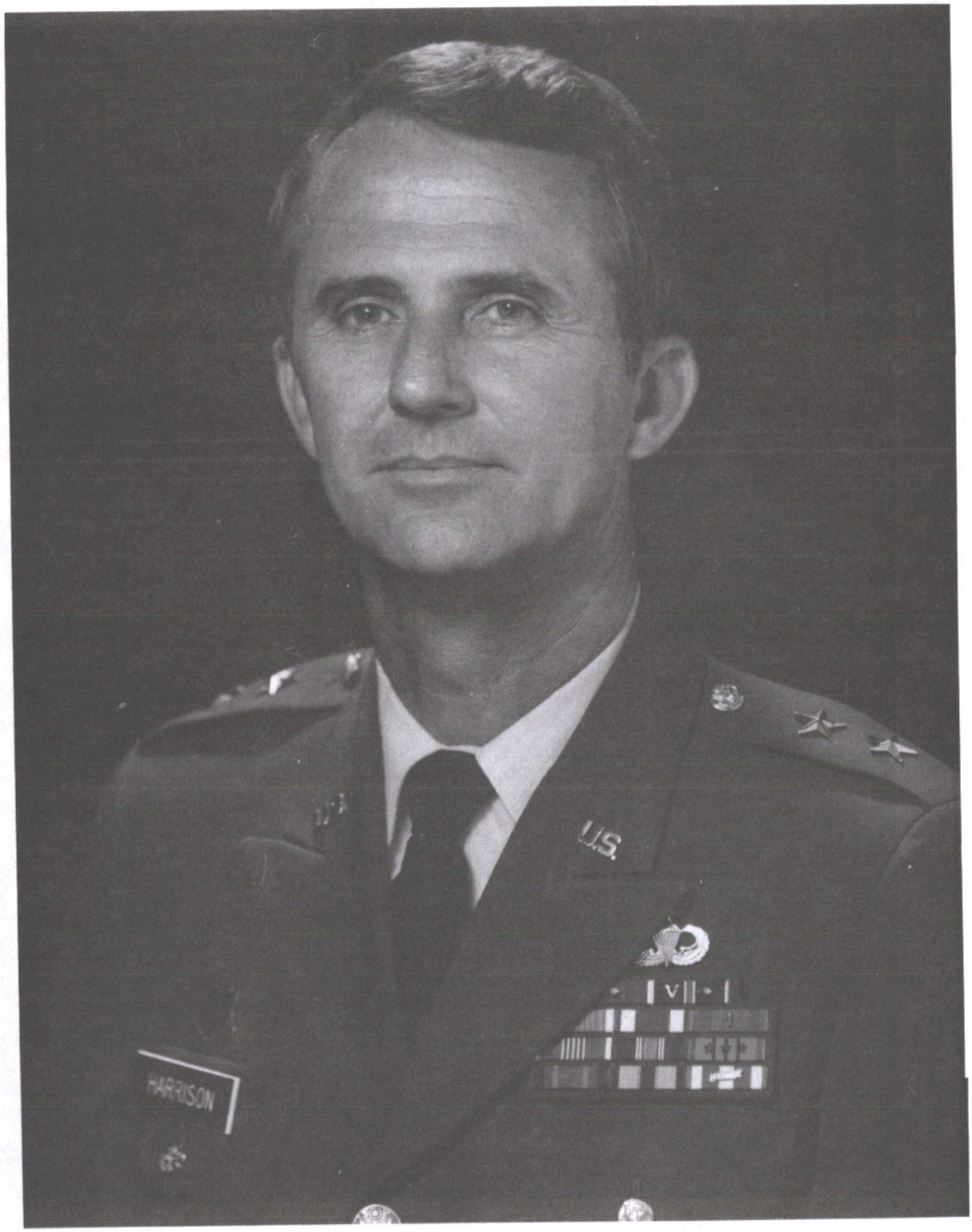
General William G. T. Tuttle, Jr.
Commanding General

Lieutenant General August M. Cianciolo
DCG for Research, Development and Acquisition
From 1 October 1989 to 2 July 1990

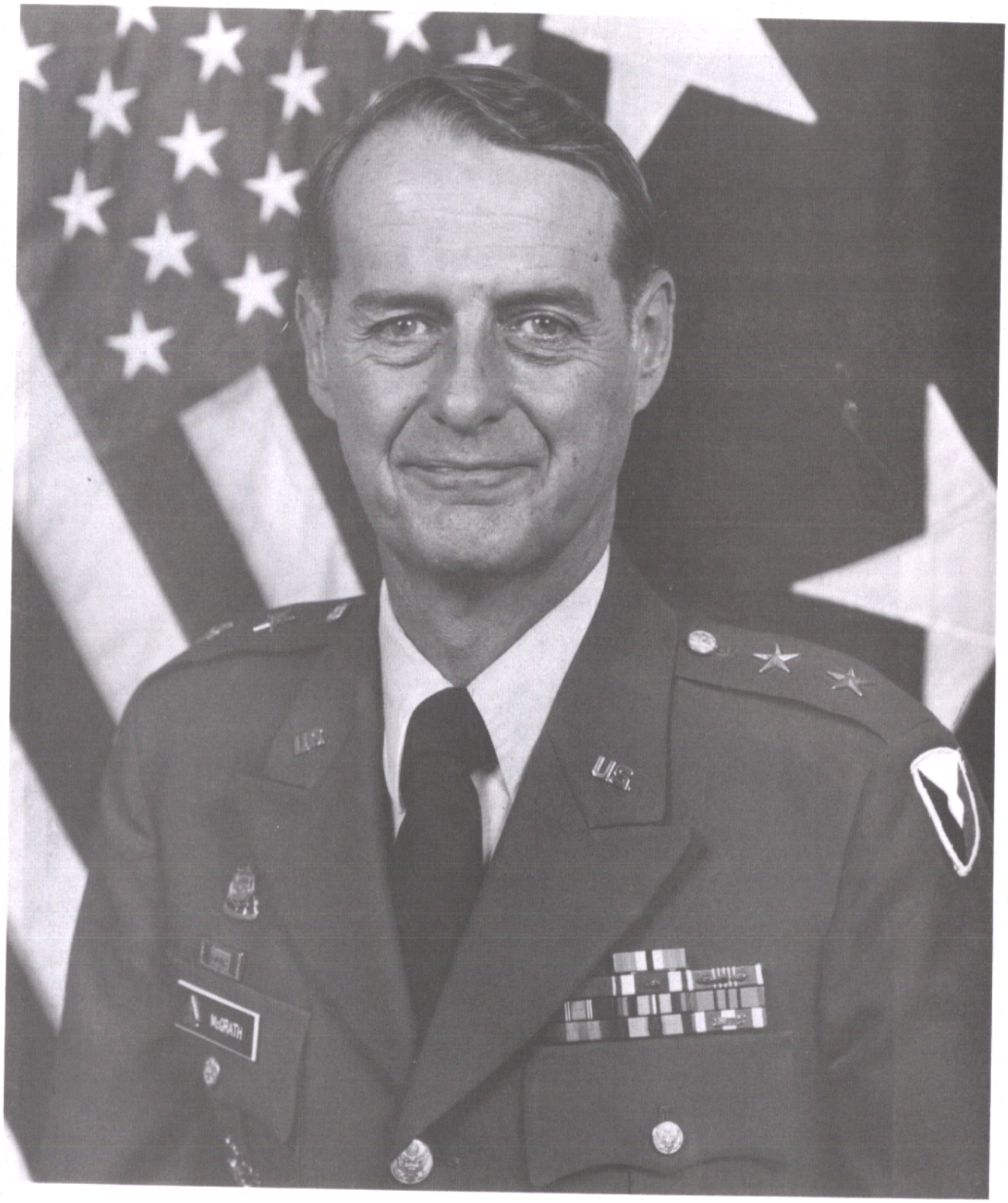
Lieutenant General Billy M. Thomas
DCG for Research, Development and Acquisition
From 11 July 1990

Lieutenant General Fred Hissong, Jr.
DCG for Materiel Readiness
To 31 March 1990

Lieutenant General Marvin D. Brailsford
DCG for Materiel Readiness
From 11 June 1990



Major General Jerry C. Harrison
Chief of Staff
To 15 December 1989

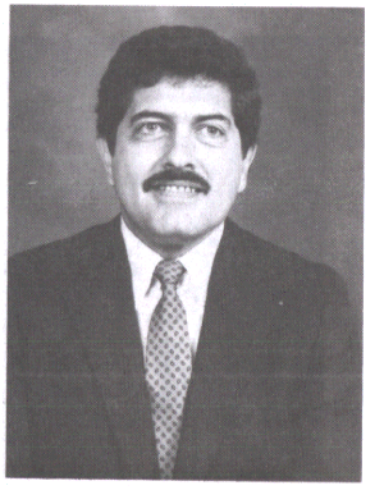


Major General William B. McGrath
Chief of Staff
From 16 December 1989

Dr. Richard Chait
Chief Scientist

CSM John W. Gillis
Command Sergeant Major
To 25 June 1990

CSM Michael B. Pierce
Command Sergeant Major
From 9 August 1990



Mr. Stanley J. Alster
Special Assistant for
Total Quality Management

MG Thomas B. Arwood
DCS for Readiness

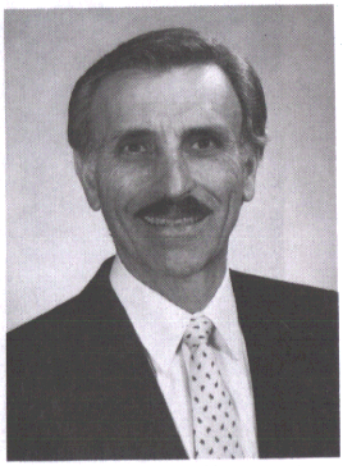
COL John R. Bramblett
Chief, Project Mgmt Office
(Office became part of
SARDA January 1990)

COL Joseph Briggs
DCS for Engineering, Housing,
and Installation Logistics
From August 1990

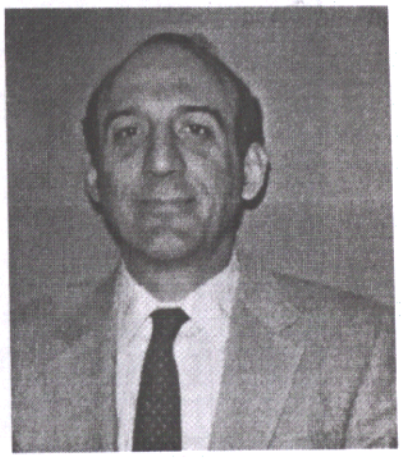
BG John G. Coburn
DCS for Procurement
From November 1989

Mr. Paul Donovan
Deputy, U.S. Army Security
Assistance Command

Mr. Robert K. Dubois
Deputy Executive Director, TMDE

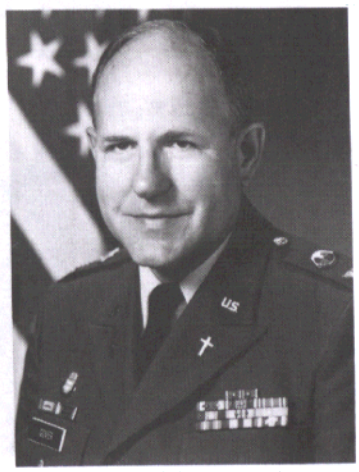


Mr. Bryant R. Dunetz
Deputy Asst for International
Cooperative Programs
To November 1989

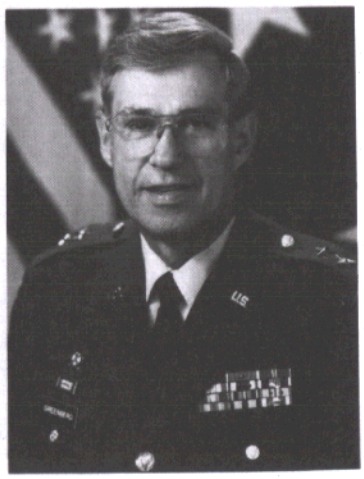


Mr. Michael F. Fisette
Deputy Asst for International
Cooperative Programs
From January 1990

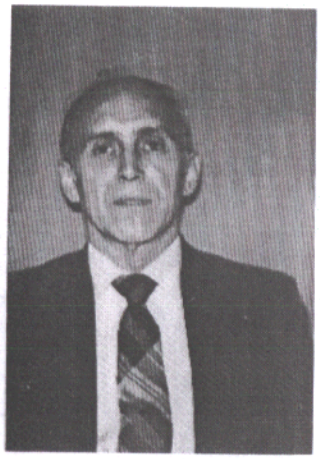
BG Waldo D. Freeman, Jr.
PM, Saudi Arabian National
Guard Modernization



COL Donald W. Gover
Chaplain

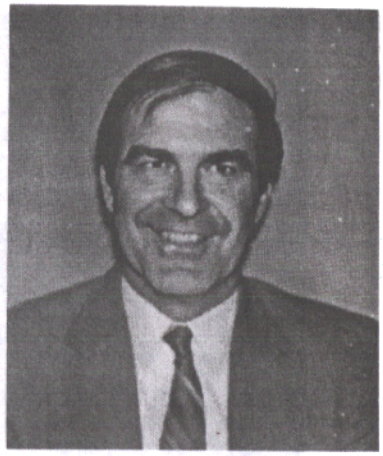


MG Paul L. Greenberg
DCS for Ammunition
To June 1990



Mr. Darold L. Griffin
Principal Assistant
Deputy for RDA

COL Lewis R. Heffner
Commandant, Headquarters
Installation Support Activity
To August 1990



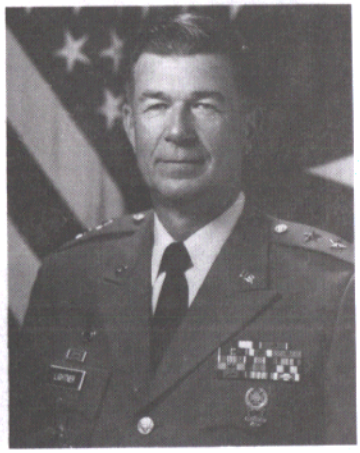
Mr. Richard E. Heinbach
Assistant Deputy for
Materiel Readiness

Mr. James C. Hill
Director, Logistics Mgmt

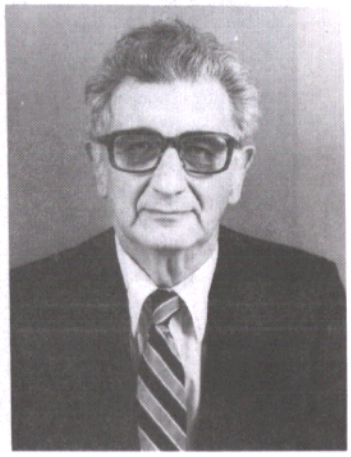
BG Nicholas R. Hurst
DCS for Procurement

Mr. George L. Jones
ADCS for Personnel

Mr. Edward J. Korte
Command Counsel



MG Thomas G. Lightner
CG, U.S. Army Security
Assistance Command



Mr. Seymour J. Lorber
DCS for Product
Assurance and Testing

Mr. Leonard Maguire
Chief, Internal Review and
Audit Compliance Office

Mrs. Maureen Miller
ADCS(DEA) for Program Mgmt
(Detailed to DMR June 1990)

Mr. A. David Mills
ADCS for Supply,
Maintenance & Transportation

MG Charles M. Murray
DCS for Supply,
Maintenance & Transportation

BG Malcolm R. O'Neill
DCS for Technology
Planning and Management
Commander, LABCOM
To December 1989

Dr. Kenneth Oscar
ADCS(DEA) for
Acquisition Management
To December 1989

COL Kenneth Pastore, USAF
Deputy Executive Director
for Conventional Ammunition

BG Virgil A. Richard
DCS for Resource Management

MG Joe W. Rigby
DCS for Development,
Engineering & Acquisition

COL Douglas H. Rogers
Chief, Public Affairs Office

Mr. Richard R. Rogowski
ADCS for Development,
Engineering & Acquisition

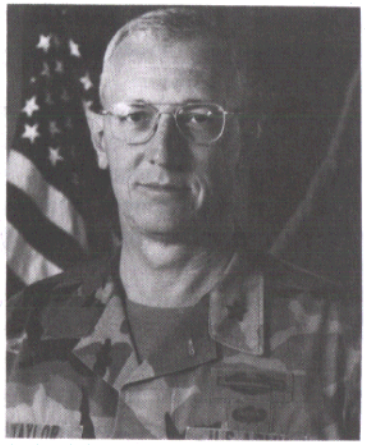
Mr. Michael C. Sandusky
DCS for Program
Analysis & Evaluation

Ms. Marilyn Scarbrough
Chief, Office of
Equal Opportunity

BG William J. Schumacher
DCS for Ammunition
From June 1990

Mr. Wayne E. Studebaker
ADCS(DEA) for
Program Management
(Detailed June 1990)

Mr. Gary E. Tagtmeyer
ADCS for Resource Mgmt
(Detailed to DSMC April 1990)



BG(P) J. B. Taylor
Program Manager, Saudi Arabian
National Guard Modernization

COL James L. Tierney
Inspector General

Mr. Robert O. Weidenmuller
ADCS for Resource Mgmt
(Detailed April 1990)

MG Albin G. Wheeler
DCS for Personnel

Key Personnel Not Pictured:

David S. Abdelnour	--	ADCS for Engineering, Housing, Environment & Installation Logistics, from February 1990
COL(P) Harvey E. Brown	--	Commander, AMC-Europe, from January 1990
Colonel Ira M. Click	--	Commandant, Headquarters Installation Support Activity, from September 1990
COL David W. Garner	--	DCS for Management & Productivity
COL Ralph C. Gauer	--	DCS for Intelligence, to January 1990
COL John M. Gravois	--	PM, Training Devices, from July 1990
COL James C. Hardin	--	DCS for Intelligence, from January 1990
COL Jerry A. Hubbard	--	DCS for Engineering, Housing, Environment & Installation Logistics, to August 1990
Mr. David H. Keller	--	ADCS for Engineering, Housing, Environment & Installation Logistics, to January 1990
COL Sam Kindred	--	DCS for Production (Acting), from December 1989 to August 1990
Mr. James Laster	--	Special Assistant for Joint Activities, to August 1990
COL Richard J. Lunsford, Jr.	--	PM, Training Devices, to July 1990
Mr. Greg McIntosh	--	Special Assistant for Joint Activities, from August 1990
COL Carl N. Price	--	Acting Commander, AMC-Europe, to January 1990
COL Manmohan V. Ranadive	--	Surgeon, from July 1990
COL John V. Ridick	--	DCS for Information Management
COL Garry A. Scharberg	--	Assistant Chief of Staff
COL George E. T. Stebbing	--	Surgeon, to May 1990
Mr. Darwin N. Taras	--	Chief, Safety Office
Mr. Ronald L. Treusdell	--	ADCS for Readiness
Mr. M. E. Westmoreland	--	ADCS for Production, from December 1989
COL W. L. Wheeler	--	DCS for Production, from August 1990
Mr. Kurt Wussow	--	Chief, Office of Small and Disadvantaged Business Utilization

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Chapter I

Command Management

AMC: Seven Missions in Search of an Agency

Redefining AMC's Role. Just before the beginning of FY90, when General William G. T. Tuttle, Jr. took command of the U.S. Army Materiel Command, he was already looking toward the future. After all, the Army had established the Program Executive Officer (PEO) management system in 1987 that removed Project Managers from AMC's direct control, relegating AMC to a support role. In 1989, a Defense Management Review by the Department of Defense (DOD) had mandated sweeping changes in the way DOD and the services performed their missions, particularly in the arena of materiel development and acquisition. DOD and Headquarters, Department of the Army, had agreed: AMC would still have a major role in Army acquisition, but what? How?

Building on the work of his predecessor, General Louis C. Wagner, Jr., and in concert with the commanders of AMC's major subordinate commands (MSCs), General Tuttle redefined AMC's role in support of the Total Army. The future course of AMC would be steered by sighting on seven major missions, he stated. These missions were: Equip and sustain a trained and ready Army; Provide equipment and services to other nations through the Security Assistance Program; Develop and acquire non-major systems and equipment; Provide development and acquisition support to program managers and program executive officers; define, develop and acquire superior technologies; maintain the mobilization capabilities necessary to support the Army; and continue to improve productivity and quality of life.

The importance of AMC's seven missions, and of the process of analyzing and rebuilding AMC, was reinforced by the fact that General Tuttle devoted most of one of AMC's premier opportunities to address the wider Army to a detailed discussion of the seven missions. The AMC article in the October 1990 issue of the Association of the U.S. Army's journal, *Army* or the "Green Book," dealt primarily with the seven missions, the key initiatives in each area, and the process by which close analysis of these missions would be used to rebuild AMC from the bottom up, especially given a number of new factors. As General Tuttle pointed out,

> We are now at a point--not at all unique in the history of the Army--when our successes call for a thorough look at where we are and where we are going. This is certainly the case for the Army Materiel Command. There is no doubt that AMC will be smaller. The evolving threat, changing national priorities, funding constraints and the mandates of the Defense and Army management reviews dictate this; yet we do not want to merely downsize in some haphazard, reactive, salami-slice way. That would mean squandering a golden opportunity to assess how we are doing and to clarify how we must be organized and operate. . .[W]e are working deliberately and methodically to improve how we operate and to position ourselves for the future.[1]

---

[1]General William G. T. Tuttle, Jr., "Seven Missions Power the AMC Contribution," *Army*, Oct 1990, p. 75.

First Mission: To Equip and Sustain. General Tuttle considered all seven missions equally important, but he also believed that AMC's first mission, to equip and sustain, could be considered a "first among equals." As he remarked during a symposium,

> I see AMC as the Army's super Division Support Command--A super-DISCOM. We have an obligation to the soldier who's out there in the field right now to keep Army systems ready today and to maintain those systems so that they'll last a long time and be effective for years to come. We won't by any means neglect our acquisition responsibilities, both to the PEO's and to the many systems we manage ourselves, but we're going to place renewed emphasis on logistic support.[2]

Second Mission: Security Assistance. As mentioned earlier, the other missions grew out of the first mission. The first mission was particularly facilitated by the second. In his *Army* article, he explained:

> AMC's second mission--one that we deliberately placed right behind equipping and sustaining--is to *provide equipment and services to other nations through the security assistance program.* Although the tensions of the Cold War are easing, U.S. national interests continue in a number of trouble spots around the world.
>
> Besides strengthening our bonds with other allied and friendly nations, our security assistance efforts--primarily foreign military sales to more than 100 nations and international organizations--give us a most cost-effective way to support these nations. . .
>
> An added benefit of the security assistance program during this time of severely restricted procurement budgets is more work to keep the defense production base active, which we must do because of uncertainty about the threat. Keeping a well-trained, stable work force is especially important. Foreign military sales, whether carried out through the Army's formal program or directly by industry, help retain those skilled workers in the industrial base.[3]

Third Mission: Systems and Equipment for Soldiers. These were systems other than major end items, and generally were those which benefited or were used by directly by the individual soldier, such as rations, or training simulators. As described by General Tuttle,

> Our third mission is to *develop and acquire nonmajor systems and equipment* for the soldier. We are now working on more than 300 systems within AMC (not including conventional ammunition), ranging from simple necessities like the 30-day ration for special operations soldiers, to mine detection sets, to high-technology items like the video-disc gunnery simulator for the Bradley. . .
>
> Although the total development and procurement cost of these items does not equal the expenditures for the major systems managed by the AAE and the PEOs, they have a direct impact on the soldier's ability to perform his or her job and are critical to the Army's readiness and modernization efforts. These systems, when combined with those developed by the PEOs, meet the full range of the soldier's needs on the battlefield.

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[2]General Tuttle, Remarks, Joint Logistics Commanders (JLC) Panel, DSMC/NCMA Acquisition Research Symposium, 18 Oct 1989.

[3]The remainder of the quotations concerning the seven missions are all drawn from General Tuttle's Oct 1990 *Army* article. See footnote 1.

Fourth Mission: Support to Program Executive Officers and Program Managers. Since 1987, AMC had no longer had Program Managers (PMs) who were responsible for developing new weapon systems. Instead, these PMs reported to Program Executive Officers (PEOs) in the Army Secretariat. As a further change, a new financing plan was to go into effect on 1 October 1990. AMC had been directly funded for all the matrix support it provided PMs. As of 1 October, the PEO/PMs would be directly funded for hardware and software system development, acquisition, and fielding through at least the date of the first unit equipped and initial operational capability. They would reimburse AMC for matrix support for those above functions, with other matrix support costs being directly funded by AMC.[4]

Not only was the system changing, but the command had to adjust psychologically to its loss of the role of major system developer. General Tuttle noted:

> I see us shifting our focus to equipment in the field. Up until the Program Executive Officers were established, we tended to concentrate on AMC's role in acquisition--with the years of the Vietnam conflict as the exception. But aside from Vietnam, we looked at AMC as the developer and tended to forget the important part we play in sustaining equipment once it's been fielded.[5]

Of course AMC, especially through its major subordinate commands, still played a major support role for the PMs and the programs which the latter managed. This was the fourth mission:

> [T]o *provide development and acquisition support to the PEOs and their program managers (PMs).* AMC's matrix support to the PEOs is vital. . .AMC's contributions cover a multitude of functions, including the direct functional support required to augment PEO and PM offices and the extensive infra-structure for management, engineering, production and testing.

Fifth and Sixth Missions: Technology and Mobilization Bases. General Tuttle linked the fifth and sixth missions, weighing them equally. He stated,

> Our fifth mission is to *define, develop and acquire the superior technologies* the Army will need as we continue to modernize. We must energetically manage our technology base so that technology will continue to be the deterrent force and combat multiplier it is today. Our fielded systems caution potential adversaries against rash actions--so does the mere possibility that we can develop even more capable systems. Our technology base, with its proven ability to focus on battlefield deficiencies and find formidable solutions, sends a powerful message.
>
> Defining, developing and acquiring superior technologies demand both that we be forward looking as we explore emerging and maturing technologies, and that we manage and track these technologies carefully. The Army's technology base master plan and technology base investment strategy help. . .
>
> Our mobilization base is equally as important. . .Simply put, AMC is responsible for *maintaining the mobilization capabilities necessary to support the Army in emergencies.* The mission includes developing and testing our mobilization and contingency plans; maintaining arsenal, supply depot and depot maintenance standby capacity; maintaining inactive munitions plants and testing facilities; maintaining a manufacturing capacity to meet the threat of war; maintaining and storing

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[4]AMC Commanders' Conference, 20-21 August 1990, Tab M9.

[5]General Tuttle, Dinner Remarks, AMCCOM, Rock Island, Illinois, 1 Nov 1989.

a prescribed level of war reserve stocks; building and/or modifying government production facilities to meet wartime needs; and planning and conducting logistics training. . .

The technology and mobilization missions require extensive work with private industry to maintain an adequate base in both areas. That base--our arsenal of democracy--has been the source of much strength and pride in the past and must continue to be just as dynamic and responsive to the soldier's needs. In these times of great uncertainty about future threats and future budgets, we take very seriously our responsibility to communicate clearly and effectively with industry and to deal with industry as fellow team members.

Seventh Mission: Productivity and Quality of Life. General Tuttle pointed out in his *Army* article that AMC's mission of improving productivity and quality of life dealt more with "how" than "what." In addition,

[T]o *improve productivity and the quality of life*. . .is really the foundation upon which all of the others rest. We cannot successfully meet our responsibilities to the soldier unless we invest in our people and strive to improve the quality of their work and family life, the safety and security of their environment, and the productivity and cost-effectiveness of their labor. Within this mission, we include our work to minimize hazardous materials and waste and our extensive environmental clean-up efforts. In fiscal 1990, we allocated $125 million for clean up of past contamination and $111 million to comply with laws and regulations that cover our current operations. We must prove our genuine commitment to good places to live and work and to be good neighbors.

We also include all of our total quality management (TQM) efforts in this all-encompassing mission, both our own TQM initiatives and those that encourage industry to improve the quality of their products and operations. Our most successful example of the latter is our contractor performance certification program (CP^2), which encourages contractors to demonstrate their commitment to improving quality in their manufacturing plants.

Command Personnel

The Man Behind the Missions. General William G. T. Tuttle, Jr. assumed command of AMC from General Louis Wagner, Jr. on 27 September 1989. General Tuttle, a West Point graduate, Class of 1958, had earned a Masters of Business Administration from Harvard University, taught the Economics of National Security at the United States Military Academy, and was a veteran of Vietnam. He had previously served as Deputy Commanding General for Logistics at the U.S. Army Training and Development Command (TRADOC) and as the Commander of the Army Logistics Center and Fort Lee, Virginia. Other key positions he had held included Director of Force Management, Office of the Deputy Chief of Staff (DCS) for Operations and Plans, United States Army; Chief of the Policy and Programs Branch, Supreme Headquarters, Allied Powers Europe (SHAPE); and Commanding General, Eastern Area Military Traffic Management Command.[6]

The New Command Group Team. On 30 September 1989, LTG Bunyard retired as Deputy Commanding General for Research, Development, and Acquisition. His successor was LTG August M. Cianciolo, who took over that position on 10 October 1989, after having previously served as the Commanding General of AMC's United States Army MIssile Command (MICOM). LTG Cianciolo had also previously served in several positions in Headquarters, Department of the Army (HQDA), first in the Office of the DCS for Research, Development and Acquisition (RDA), and later in the Office of the

[6]AMC, Biographical sketch, General William G. T. Tuttle, Jr.

Assistant Secretary of the Army (RDA). He had also once served as the Project Manager for the Multiple Launch Rocket System (MLRS).

LTG Cianciolo left AMC on 2 July 1990 for the position of Military Deputy to the Assistant Secretary of the Army (RDA). He was succeeded by LTG Billy Thomas on 11 July 1990. LTG Thomas had previously served as the Commanding General of AMC's U.S. Army Communications-Electronics Command (CECOM). Prior to that he had served in HQDA in the Office of the DCS for Research, Development and Engineering, after having been the Deputy Commander/Assistant Commandant of the U.S. Army Signal Center and School.[7]

The position of Deputy Commanding General for Materiel Readiness also changed hands in FY90. LTG Fred Hissong, Jr. retired on 31 March 1990, and was succeeded on 11 June 1990 by LTG Marvin D. Brailsford. LTG Brailsford had previously served as the Commanding General of AMC's U.S. Army Armament, Munitions and Chemical Command (AMCCOM), and prior to that as a Deputy Commanding General at AMCCOM. He had also held several positions in the U.S. Army, Europe, including that of Commanding General, 59th Ordnance Brigade.[8]

New Management Approach for AMC

The process of reorganizing AMC both at the macro level, the number and types of MSCs, and at the micro level, the internal organization within the headquarters staff and the MSCs, was still in preliminary stages in FY90. Final decisions and implementation would take at least two more years. More of the important management initiatives, which included Zero-Based Total Quality Management, Defense Management Report Decisions, Vision 2000, and Base Realignment and Closure are discussed below.

Zero-Based Total Quality Management. Before long, General Tuttle was speaking of zero based total quality management (ZBTQM), a combination of Total Quality Management, the continual process review and improvement of all operations, and zero-based management, reviewing the need and justification for every function performed in AMC.

> In every one of these seven missions we're doing what I call *ZBTQM*--a mouthful of an acronym that combines both zero-based management and total quality management.
>
> First we're looking at *what we do*, trying to eliminate anything that doesn't contribute to those missions, setting priorities within each mission, and figuring out how many resources are involved in fine detail. That's the zero-basing--paring what we do down to the core and building up again with *mission* clearly in mind and with *resources clearly shown*.
>
> Then comes the total quality management part--to look at each portion of each mission and get to work on improving *how we operate* so that we can operate more efficiently and improve quality.[9]

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[7]Resume of Service Career of August Martin Cianciolo (10 Oct 89) and Resume of Service Career of Billy Marshall Thomas (10 Jul 90).

[8]Biography, Marvin D. Brailsford, in AMC Archives files.

[9]General Tuttle, Luncheon Speech, Washington Chapter ADPA, 12 Mar 90.

By 1 April 1990 General Tuttle had approved the resource codes that would be used to determine how AMC was expending its resources,[10] and by May 1990 the data gathering phase of ZBTQM was well in progress. A command-wide database was being established which would show how AMC resources, both manpower and dollars, were distributed among the 7 missions and 51 functions (for a breakdown of the 51 functions see Appendix).

> Ultimately, AMC will program, budget, execute and defend its total resources by evaluating their support of the missions and functions to which they are applied. Progress towards this goal begins with a comprehensive apportionment of the current total AMC program and budget and by mission and function, to include a separate display for each AMC reporting activity. Such an apportionment will provide a measure of AMC missions and functions with respect to their fraction of the total AMC resources and will describe operational differences among MSCs according to the distribution of their resources to the AMC missions and functions.

To obtain this data an elaborate zero-based resourcing implementation guide was published to assist each organization in preparing a computerized database of their manpower, to the nearest tenth of a workyear, and dollar resources, to the nearest $100, according to mission and function. This process was scheduled to be completed by mid-July 1990.[11]

Defense Management Report Decisions. The Defense Management Review (DMR) process had its inception in July 1989 when the new administration under the leadership of Secretary of Defense Richard B. Cheney began a review of the Department of Defense in order to improve its efficiency, especially in the areas of materiel development and acquisition.[12] In FY90 a number of decisions in the form of Defense Management Report Decisions (DMRDs) started to impact significantly upon AMC.

In the AMC Summer Commanders' Conference held on 20-21 August 1990, the impact of a number of these DMRDs was discussed. DMRD 902 dealt with the transfer of depot supply and distribution functions to the Defense Logistics Agency (DLA). Sharpe Army Depot had already been transferred from AMC to DLA on 24 June 1990, and New Cumberland Army Depot was scheduled to be transferred in February 1991. No final decision had been made about Red River Army Depot as a number of studies and Congressional actions were pending on the depot, with the possibility that it would be retained by AMC because of its maintenance functions.

Also related to depot operations were DMRDs 908 and 909 which were designed to reduce depot maintenance operating costs. On 30 June 1990 a Defense Depot Maintenance Council (DDMC) was established to "guide service actions to attain $3.9B POM [Program Objective Memorandum] year savings." It was chaired by the Assistant Secretary of Defense (Production & Logistics) [ASD(P&L)] and had the joint logistics commanders as Service Representatives. Short term plans that impacted AMC included the proposed transfer of all automotive maintenance missions to Tooele Army Depot (TEAD), closing Seneca Army Depot (SEAD) and reassigning its missions, and increasing the organic base utilization in depots in

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[10]Trip Paper, Subj: Zero-Based Resourcing (ZBR), 3 May 90, in General Tuttle's Trip Book, Visit to West Point and Watervleit, 13-14 May 1990.

[11]Memorandum for distribution, subj: Zero-Based Resourcing Implementation Guide, and attachments, 3 May 1990.

[12]AMC AHR for FY89, pp. 6-7.

order to decrease rates by 3 percent. The long term plan to reduce depot maintenance costs was expected to be issued in October 1990.

The DDMC began a program of chartering joint service study groups to develop proposed strategies in a variety of areas. AMC was in all cases the Army lead organization in these study groups, and in a number of instances the Army was the lead service. In all cases, AMC's Depot Systems Command (DESCOM) was in support.

TABLE I - 1: DDMC Joint Service Study Groups

Topic	Lead Service	Army Lead
Rotary Wing	USA	AVSCOM
Land Based Fixed Wing	USA	AVSCOM
Landing Gear	USAF	AVSCOM
Bearings	USAF	AVSCOM
Engine Blades/Vans	USAF	AVSCOM
Ground Comm/Elec	USMC	CECOM
Combat Vehicle/ Wheeled Vehicle	USA	TACOM
Tactical Missiles	USN	MICOM
Remotely Piloted Vehicles	USN	MICOM
GTE/Comp	USA	TROSCOM
Rail Equipment	USA	TROSCOM
General Purpose Equipment	USA	TROSCOM
Conventional Munitions	USA	AMCCOM
Small Arms	USMC	AMCCOM
Type I Metro Lab	USAF	HQ AMC (Executive Director TMDE)
Industrial Plant	DLA	HQ AMC (DCS for Production)

Other topics that study groups would work on included a capability/capacity study, a cost comparability study, a performance measurement study, and a study on improving maintenance information management.

DMRD 901 dealt with reducing supply systems operating and inventory costs. The implementation of this would involve a variety of changes. The most significant, perhaps, was the plan to charge customers for the cost of operations. This was to be implemented on 1 October 1990 for consumables and for non-Army depot level reparable customers, and on 1 January 1992 for Army customers for depot level reparables. This issue of handling depot level reparables as an Army stock fund item was also dealt with by DMRD 904. Other programs under DMRD 901 included a variety of plans to reduce the inventory both by reducing the number of different types of items stocked and by reducing both wholesale and retail inventory amounts.

The Commanders' Conference was told that DMRDs 901 and 904 changed "the way we do business." We "can no longer manage functions in a stove pipe[.] Must manage the big picture as an integrated system."

DMRD 926, to reduce National Inventory Control Point costs, had the Army transferring management of Army Stock Fund consumables to DLA. This was to start on 1 October 1990 and be completed by 30 September 1993. At its end the Army was to have transferred 210K worth of consumables to DLA and retained 75K. In addition, the Army was to consolidate its cataloging functions in a phased plan that was to take place from FY91 to FY95, when it would be fully centralized under Vision 2000.[13]

Vision 2000. Vision 2000 (V2K) was General Tuttle's program to reshape the basic structure of AMC so that it would best fit into a new, smaller Army. Vision 2000 was probably rooted in the 1989 AMC attempt to formulate its input to the Army portion of the DMR process, although the term "Vision 2000" may have come later. It was described by a key participant as:

> [A] series of what have been called strategic downsizing steps. For AMC was seeking to answer "what is the minimum installation and command structure we need in order to effectively focus on our core missions, our seven core missions." To minimize the financial overhead, the burden that the Army, that AMC puts on the rest of the Army, both in manpower and in dollars, and I guess that is really the essence ... it's a strategic downsizing of the future. It can be looked at as the answer to the question "What is the minimum set of commands that AMC will need in the future--of subordinate commands and installations on which to house those commands in order to do its job."[14]

The eventual answer given by Vision 2000 was the consolidation of the existing commodity commands (TACOM, AMCCOM, CECOM, MICOM, AVSCOM, TROSCOM) into two new commands--the Development and Sustainment Command (DSC) and the Industrial Operations Command (IOC). The other major components of AMC under Vision 2000 would have been the Test and Evaluation Command and the Combat Materiel Research Laboratory (CMRL)--throughout FY90 the structure of the laboratories in the Army was under review in the Laboratory 21 study--which would essentially consist of the current Laboratory Command, and AMC headquarters. The headquarters was to be essentially a corporate headquarters, much smaller than it had been in the past and functioning primarily as a command and control facility.[15]

The Industrial Operations Command would combine elements of AMCCOM and DESCOM. It would manage all of AMC's arsenals, remaining maintenance depots and ammunition plant facilities.

At the Commanders' Conference the stress was on the Development and Sustainment Command. This command would absorb most of the functions of the existing commodity commands as well as some Headquarters AMC functions. It would be based at Redstone Arsenal, the current home of MICOM. All AMC-supported DA-level PEOs and PMs would be collocated with it and be supported by it. The DCS would also manage AMC-level PM programs. The DSC would have as its missions the provision of integrated sustainment support to soldiers in the field; the provision, in cooperation with the U.S. Army Security Assistance Command (USASAC), of equipment and services to other nations; the development and

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[13]AMC Commanders' Conference 20-21 August 1990, Tab D.

[14]Draft typescript of an oral history interview by Drs. Robert Darius and Herbert Leventhal with Dr. Richard Rhoads, 4 April 1991. For more on the seven core missions of AMC, see below.

[15]For comments on the nature of the headquarters, see General Tuttle, Opening Remarks, Executive Management Seminar, 16 March 90 and General Tuttle, Opening Remarks, Action Officers Course, 23 April 90.

acquisition of non-major systems and equipment; life cycle support for development, acquisition, and sustainment to PEOs/PMs; defining, developing and acquiring superior technologies; maintaining, in coordination with the Industrial Operations Command, the mobilization capabilities needed to support the Army in emergencies; and the provision of quality of life and base support operations to assigned and tenant organizations.[16] Implementation of Vision 2000 would not be cheap. Construction costs alone, which did not include the personnel costs involved in permanent change of station moves and terminating employments, were estimated to total $653.45 million.[17]

The problem involved in implementing this complete realignment of AMC was neatly summed up by General Tuttle in a speech he gave to students at the United States Military Academy in May 1990:

> How can we sell Congress on major relocations and capital investments that will reap benefits in a few years when Congress wants to see immediate budget cuts but no serious impacts on their districts?[18]

Base Realignment and Closure (BRAC). Another Defense-related process impacting AMC was the Base Realignment and Closure (BRAC) process. This process involved the use of a committee to recommend, after first hearing the input of the Department of Defense, bases to be closed, after which Congress could only accept or reject, but not amend, the list. This procedure had been developed to work around the political difficulties involved in closing individual bases, which always raised major objections from Senators and Congressmen representing the impacted areas. BRAC I had taken place in 1988-89 and had resulted in the projected closure of a substantial number of AMC installations, most of them minor ones.

TABLE I - 2: BRAC I Closure List

Alabama Army Ammunition Plant (AAP)	Pontiac Storage Activity
Coosa River Storage Activity	Wingate Fort Depot Activity
Pueblo Depot Activity	Umatilla Depot Activity
Indiana AAP (Partial Layaway)	Manassas Family Housing
Jefferson Proving Grounds	Navajo Depot Activity
Lexington-Blue Grass Army Depot (Lexington Only)	Aberdeen Proving Grounds Nike Site
U.S. Army Materials Technology Laboratory	St. Louis Housing

The process for selecting sites for BRAC II, also known in the Army as Quicksilver I, was underway in FY90. This process was designed to reduce AMC by some 2,975 civilian spaces. As of August 1990, the proposed actions on AMC installations and organizations under BRAC II included closing TROSCOM, Sacramento Army Depot, and Red River Army Depot and putting into layaway status Kansas AAP, Sunflower AAP, Louisiana AAP, Mississippi AAP, Lima Army Tank Plant, Scranton AAP, Longhorn AAP,

[16]AMC Commanders' Conference, 20-21 August 1990, Tab H.

[17]Ibid.

[18]Talk, General Tuttle to Economics and Management Students, United States Military Academy, West Point, New York, 14 May 1990.

and Indiana AAP.[19] In FY91, the Vision 2000 closure of installations and commands and the BRAC process would briefly merge in an effort to resolve the problem General Tuttle had raised in May to the cadets at West Point.

Personnel and Manning Issues

Reduction in Force. One of the heavy burdens which General Tuttle and his staff faced in 1990 was the Reduction in Force (RIF) action scheduled to take place just after the end of the fiscal year. Based on projected Army force structure changes, cuts in AMC programs, projected funded workload and the estimated budget for fiscal year 1991, AMC activities found it necessary to plan for the elimination of over 6,000 civilian jobs.

Plans for the RIF started early in FY90. During March 1990, in an effort to provide current guidance to the field on conducting RIFs, the HQ AMC Civilian Personnel Division's Employee Management Branch developed and published a *Planning and Information Guide for Conducting Work Force Reductions*. In April General Tuttle formally notified the AMC staff that "the AMC financial picture for fiscal year 1991 is grim. I am becoming convinced that we will have a serious funding shortfall in our Operating and Maintenance payroll account, specifically known as P7S," and that "although we are doing everything we can, the future doesn't look bright." He informed the work force that he had directed the start for the planning process for an early FY91 RIF, stating that:

> Despite our losses due to the hiring freeze in fiscal year 1990, and even considering another loss of 1,200 people due to attrition in fiscal year 1991, I am still faced with a reduction-in-force of about 6,000 people in order to live within my fiscal year OMA P7S funding guidance.

By early May, AMC installations and Separate Reporting Activities had submitted 66 requests for RIF authority. After thorough reviews and adjustments to correct discrepancies related to meeting AR 5-10 requirements, the command forwarded the requests to the Personnel Command (PERSCOM) on 21 May 1990. Also forwarded were 44 requests for voluntary early retirement authority (VERA).

The initial RIF and VERA requests were approved by HQDA on 3 August, and most RIF notices were issued on 9 August, with an effective date of 12 October 1990. (In five activities the RIF effective dates were as late as 4 January 1991 because of the late submission of requests or delays resulting from complications in the approval process.)

A total of 11,948 RIF notices were issued on 9 August 1990. Of these, 4,919 were for involuntary separations; 3,316 were for downgrades; and 3,713 were for reassignments at the same grade. As of 30 September 1990 the actual number of RIF notices in effect was 9,847. (This number reflected actions projected to be effective on 12 October and 2 November 1990.) Of this number, 3,336 were for involuntary separations; 2,735 were for downgrades; and 3,746 were for reassignments at the same grade. The actual number of involuntary separations effected as of 13 December 1990 was 194. The actual number of changes to lower grade was 1,316, while reassignments at the same grade totalled 3,421.

As of 30 September 1990 there had been 796 VERA retirements. The actual number of VERA retirements as of 13 December 1990 was 992. The vacancies created by these retirements were used to save employees from involuntary separation or downgrade. Besides VERA, another factor that came into play after the end of FY90 and contributed to the substantial reduction in the number of employees actually

[19]AMC Commanders' Conference, 20-21 August 1990, Tab E.

effected by RIF was an attrition rate that was higher than that projected during the RIF planning process. The chief factor in the higher than projected attrition rate was optional retirements spurred by anticipation of the discontinuance of the popular "lump sum retirement fund" payout option.[20]

Impact of Desert Shield on Personnel Reductions. As Operation Desert Shield in Southwest Asia (SWA) continued to develop following the Iraqi conquest of Kuwait early in August 1990, it became apparent that over 2,400 employees scheduled for involuntary separation by RIF were in critical jobs needed for direct support of Desert Shield. In mid-September, General Tuttle requested that the Secretary of the Army authorize restoration of these positions and provide the funds to support the continued employment of the individuals scheduled for RIF separation. In addition, because of the DOD hiring freeze in effect, it became necessary to pursue blanket exceptions to the hiring freeze to fill positions in direct support of Desert Shield.

TABLE I - 3: RIF Statistics by MSC

Projections are as of 9 Aug 90 and Actual are as of 13 Dec 90.
(Figures are given as actual/projected)

Activity	Involuntary Separation	Downgrade	Reassignment (Same Grade)	VERA Retirement
DESCOM	30/2,773	923/2107	1,517/1,629	564/466
AMCCOM	152/511	168/232	315/307	161/209
AVSCOM	0/263	32/147	242/295	50/106
TROSCOM	0/225	46/127	230/169	29/55
MICOM	0/146	0/116	0/197	38/124
TACOM	0/468	37/205	182/285	32/97
CECOM	1/253	46/241	727/650	43/115
SRAs	10/153	47/62	86/79	50/68
HQ AMC	1/127	17/79	122/102	25/36
TOTAL	194/4,919	1,316/3,316	3,421/3,713	992/1,276

Source: AMC Reduction in Force/VERA Retirements

Reduction in Military Strength at AMC. At the same time civilian personnel in AMC were being reduced by RIF, planning was underway to reduce the military strength of the command. DMRD 917 (Civilianization of Military in Support Positions) directed AMC to reduce 306 military authorized spaces and civilianize 302 of them by FY93 (FY91: -81 military, +80 civilians; FY 92: -193 military, +191 civilians; FY 93: -306 military, +302 civilians). In November 1989, HQDA directed AMC to accomplish the civilianization of P7S (supply management, central procurement, logistics support, logistics administration support) and of test ranges and facilities used for research, development, test and evaluation (RDTE). HQDA modified this in February 1990 by directing civilianization of the 523d Military Police

[20]Most of the data on the RIF is taken from information supplied by the DCS for Personnel as part of the historical submission for FY90. The quotations from General Tuttle's letter to the staff was from MEMORANDUM FOR ALL EMPLOYEES, SUBJECT: Update on Payroll Shortfall, 9 Apr 90.

(MP) Company at Aberdeen Proving Grounds. However, HQDA allowed AMC to submit an alternative. In May 1990 General Tuttle approved, as an alternative proposal to save the 523d MP Company, the elimination of the 65th MP Platoon and disestablishment of the 241st and 291st MP Companies in May 1990. This left MPs in organizations where there was a significant military presence. The DCS for Resource Management staff briefed the alternative to HQDA in June 1990 and included it in the AMC July 1990 Command Plan.

Quicksilver I, one of several Army plans for restructuring the Army to meet the evolving threat for the mid-90s, phased in the elimination of 79 officers, 4 warrant officers and 298 enlisted authorized spaces by FY93, with the majority of the reduction scheduled to take place in FY91.

TABLE I - 4: Total Cumulative Numbers of Military Personnel to be Eliminated

Fiscal Year	Officers	Warrant Officers	Enlisted
FY91	32	4	263
FY92	75	4	298
FY93	79	4	298

In February 1990, HQDA directed AMC to identify only the military spaces at White Sands Missile Range (WSMR) and Vulnerability Assessment Lab (VAL) for the reduction. This would have eliminated all the VAL's military, whom AMC considered essential to provide expertise on weapons systems and their deployment in battle. WSMR was one of AMC's highest priority test facilities. HQDA permitted AMC to submit an alternative. General Tuttle approved an alternative which instead spread the reduction throughout the MSCs. The DCS for Resource Management staff briefed the alternative to HQDA and included it in the AMC July 1990 Command Plan.

In the first phase of a Voluntary Military Reduction (VMR), AMC made a commitment to the Army in FY90 to turn in military authorizations equal to the strength of a brigade, 4,000 authorizations, for redistribution to support active forces. By the end of the fiscal year, AMC had identified 2,400 military savings or a 27 percent reduction, in the Defense Management Review initiatives, Quicksilver, Program Budget Decisions (PBDs) and 1,042 voluntary military give-ups. AMC initiated the VMR Phase II by requesting the field to identify a 50 percent military savings in their organizations. AMC hoped to meet the goal of identifying approximately 4,000 military authorizations "or a brigade worth of savings" within AMC through these initiatives.

The Army announced elimination of the Officer Distribution Plan (ODP) effective FY92. They also identified an over-structure of 3,000 field grade officers (major through colonel) which required that 11 percent of the field grade authorizations to be downgraded to company grade (second lieutenant through captain). Accordingly, AMC was tasked to downgrade 384 field grade authorizations (82 colonels, 169 lieutenant colonels and 33 majors) with new FY92 guidance for AMC of 184 colonels, 351 lieutenant colonels and 339 majors. This, however, was only a downgrading exercise and did not result in an actual reduction of military authorizations. Downgrade documentation was completed in the Table of Distribution and Allowances (TDA) during the July-September 1990 management of change window.

Combat Operations Affecting AMC in FY90

Operation Just Cause. The first, and by far the least demanding, of the two combat operations in FY90 that punctuated AMC's concern with organizational matters was Operation Just Cause, the invasion of Panama and the subsequent capture and imprisonment of its leader, General Manuel Noriega. From December 1989 through February 1990, U.S. forces intervened in Panama under the code name Operation Just Cause. Combat operations, however, were far more limited as they began on December 20 and could be considered to have been completed by December 24, a day that was marked both by calm in the streets of Panama City and by General Noriega effort to obtain asylum, which was ultimately unsuccessful, at the Papal Nunciature in Panama.[21]

During operation Just Cause, AMC activities opened their operations centers and maintained around the clock support. Major actions included deployment of logistics assistance personnel attached to operational units, intensive management of aviation readiness, and processing captured weapons and ammunition.

Logistics Assistance Program Activity personnel played an important role both in Panama and in CONUS, supporting the forces involved in Operation Just Cause. On 4 December 1989, Logistics Assistance Office Southern Command (LAO SOUTHCOM) was designated as the fifth geographic Logistics Assistance Office (LAO). LAO SOUTHCOM, located in Corozal, Panama, was active during Operation Just Cause in providing logistical support to troops, to insure that necessary equipment and supplies were available. The LAO was the first to provide information during the first 10 days of the conflict using the chain of command comprised of LAO Fort Lewis, LAO Fort Bragg, LAO Fort Ord and LAO SOUTHCOM.

Logistic assessments of deployed forces were provided to HQ AMC, then to the Department of the Army. CECOM Logistic Assistance Representatives (LARs) at Fort Bragg, N.C. responded late on Saturday, 23 December 1989 to help determine requirements for 3.5 brigades' worth of batteries. AMC LARs at Fort Bragg braved below zero temperatures at Pope Air Force Base on Christmas Eve to personally load 500 lbs of armament test equipment. A TACOM LAR at Fort Benning responded to an urgent requirement to account for pallets of non-TACOM materiel and personally inventoried the pallets. LARs identified the need for correct petroleum and lubrication (Class 3A) products for the maintenance of equipment in humid conditions. AVSCOM provided authorization for depot level repair of air frames. HQ AMC and MSC Emergency Operations Centers (EOC), and LAO offices were manned twenty-four hours per day by LARs and other Logistic Assistance personnel who understood logistical needs and coordinated actions to obtain needed equipment and supplies.[22]

Other AMC personnel on the scene in Panama during the invasion include Test, Measurement, and Diagnostic Equipment (TMDE) personnel. Soldiers assigned to the TMDE Support Center-Panama (TSC-Panama) saw action during Operation Just Cause. While attached to the 41st Area Support Group (ASG), and during the initial phases of the invasion, these soldiers performed duties as perimeter security for the 41st ASG Headquarters building. In the days following the invasion, TSC-Panama soldiers performed humanitarian duties at one of many refugee centers. After release from these duties, they worked around-

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[21]For an overall summary of operations, see Lorenzo Crowell, "The Anatomy of *Just Cause*: The Forces Involved, the Adequacy of Intelligence, and Its Success as a Joint Operation," in Bruce W. Watson and Peter G. Tsouras, eds., *Operation Just Cause: The U.S. Intervention in Panama* (Westview Press, 1991), pp. 67-104.

[22]This materiel was supplied by the DCS for Readiness historical submission for FY90.

the-clock shifts to alleviate the backlog of workload incurred as a result of the invasion. Several TSC-Panama soldiers received awards for their performance of duty during Operation Just Cause.[23]

AMC in Panama After Just Cause. AMC's involvement with Panama did not end with the cessation of hostilities. Foreign Military Sales to Panama, which had been restricted, were resumed following the ouster of General Noriega, and the USASAC Latin America Division was required to concentrate its efforts in support of the newly formed government of Panama. In less than three months the division was successful in obtaining critical communications equipment, uniforms, weapons and vehicles for the newly formed Panamanian Public Forces. Later in the fiscal year, additional communications equipment and support packages for vehicles and weapons were obtained and sent to Panama.[24]

Background to Operation Desert Shield. Desert Shield was ultimately a much larger military operation, although most of it was to take place after FY90.[25] On 2 August 1990 Iraq invaded and quickly captured Kuwait. By 7 August 1990 (C Day) President Bush ordered troops to move to Saudi Arabia to defend that nation, and F-15 Air Force aircraft left for Saudi Arabia. Naval forces had already been ordered into the area. By 10 August the U.S. Central Command (CENTCOM) had established its forward headquarters in Riyadh, Saudi Arabia; Iraq had announced its formal annexation of Kuwait; and the 24th Infantry Division (Mechanized) began moving to the port of Savannah, Georgia, in preparation for deployment to Saudi Arabia. By 25 September 1990 approximately 150,000 United States forces were in-theater, a number that would continue to grow in the next fiscal year, and a substantial number of reserve units had been called to active duty.[26]

AMC activated its Operations Center on 10 August 1990 and was heavily involved in sustaining the deployed forces.[27] As of C+40, 16 September 1990, AMC as a whole had filled 72,772 requisitions valued at $2.2 billion to the Desert Shield theater of operations and had shipped 92,000 short tons of supplies of all types. Of that the bulk 61,275 short tons, had been shipped by DESCOM. Of the 61,275 short tons, 39,127 were ammunition and explosives, including missiles; 9,503 were major end items; 7,938 were repair parts; and various other types of supplies such as clothing, construction and barrier equipment, and medical supplies accounted for the rest.[28]

Other supplies came from places such as AMCCOM's Crane Army Ammunition Activity in Indiana. During August, for example, Crane shipped 7,546 tons of ammunition and of the 758 requisitions it filled, 193 were in support of Desert Shield. During this period the Crane Army Ammunition Activity was

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[23]This information was supplied in the U.S. Army Test, Measurement, and Diagnostic Equipment Support Group historical submission for FY90.

[24]This information was obtained from the USASAC historical submission for FY90.

[25]A full history of AMC operations in support of Desert Shield/Desert Storm is being prepared by the AMC Historical Office and by the historical offices of AMC's major subordinate commands.

[26]Desert Shield Chronology prepared by the U.S. Army Center of Military History.

[27]AMC Desert Shield Chronology.

[28]General Tuttle, Speech, L.A. Chapter of AFCEA, 20 Sep 90.

supporting Army, Air Force, and Navy units, included the battleship Wisconsin, preparing to deploy to Saudi Arabia.[29]

AMC's Maintenance Operations Supporting Desert Shield. AMC was also heavily involved in maintenance operations in support of Desert Shield. Red River Army Depot (RRAD), for example, was the area oriented depot for most of the heavy units that deployed to Saudi Arabia, including the 24th Infantry Division (Mechanized), the 197th Infantry Brigade, the 3rd Armored Cavalry Regiment, and the 1st Cavalry Regiment. RRAD sent an assistance team to Fort Hood to paint desert camouflage on equipment and in the first thirty days of Desert Shield they painted 3,300 items of equipment. RRAD sent maintenance assistance teams to all deploying units to help inspect and repair equipment prior to deployment. It also established an Aviation Intensive Management Items (AIMI) warehouse to assemble packages of repair parts by aircraft type, which were them shipped to Saudi Arabia to facilitate in-theater maintenance operations. RRAD repaired and returned within hours key electronic components of the Chaparral Air Defense System to deploying units.[30]

Anniston Army Depot was another example of a depot that increased its operations to support Desert Shield. It accelerated its overhaul of the M551 Sheridan tank, used by the 82nd Airborne Division, which included an upgrade of the fire control system to incorporate the latest laser range finder and thermal sight technology. Anniston also used robot equipment to paint camouflage on the Sheridans using chemical agent resistent coating (CARC).[31]

USASAC in Desert Shield. USASAC, an AMC major subordinate command whose mission was to provide military equipment to friendly foreign nations, was deeply involved in supporting Desert Shield even in this early stage. An indicator of the magnitude of the USASAC operation during this period was the size of the major programs serviced. Prior to Operation Desert Shield, sales of defense equipment to Egypt and the Middle East nations (excluding Israel) approached nine billion dollars; by the end of the fiscal year, projected sales were climbing and appeared likely to approach twenty billion dollars.[32]

USASAC and the commodity commands responded to this increase by speeding up operations considerably. For example, a Saudi request for 5,000 trucks that came in shortly after the invasion of Kuwait resulted in the presentation of a letter of offer and acceptance within three weeks. Actions taken to expedite matters included expanding operations to 12 to 15 hour work days for seven days a week, streamlining procedures, anticipating requests, and assigning a project code that gave foreign military sales requisitions for allies in Desert Storm priority over all United States units other than those actually deployed or deploying to Desert Shield.[33]

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[29]Ken Rhylander, "Crane Activity supplies the Mid-East," *Ordnance* (May 1991), pp. 24-26. For another example of AMCCOM shipping supplies in support of Desert Shield, see Paul Levesque, Saudi supply line began at arsenal," *Ordnance* (May 1991), pp. 16-17 and Paul Levesque, Shifting priorities to support war," *Ordnance* (May 1991), pp. 17-18.

[30]General Tuttle, Speech, L.A. Chapter of AFCEA, 20 Sep 90.

[31]Ibid.

[32]U.S. Army Security Assistance Command, FY90 historical submission, p. 12.

[33]General Tuttle, AMC Briefing, U.S. Army Logistics Management College, 10 Sep 90.

In addition, the Security Assistance Automation, Army (SA3) system, managed by the USASAC's SA3 Product Management Office, was used to develop and electronically transmit Foreign Military Sales (FMS) cases on a high priority basis for the support of our allies. Some of these cases took less than 48 hours to prepare and transmit, a process that could normally take 40 days. SA3 allowed the major subordinate commands to maximize resources and respond in record time. A consequence was the identification of some system shortfalls that were corrected on an urgent basis by the Systems Integration Management Activity (SIMA) with the assistance of the Security Assistance Functional Support Office (SAFSO). Correction of these deficiencies not only benefitted Operation Desert Shield but the SA3 system as a whole.[34]

AMC Personnel In-Theater During Desert Shield. AMC also had a significant number of personnel in-theater even at this early stage of Desert Shield. As of 12 September AMC had a total of 453 personnel, military, civilian and contractor, in-theater. Most of them, 322, belonged to the Program Manager, Saudi Arabian National Guard Modernization Program (PM SANG), which in turn reported to USASAC. The other 131 consisted primarily of Logistics Assistance Representatives and Logistics Assistance Officers.[35]

The Logistics Assistance Program played an important role in support of Operation Desert Shield. LARs were in the desert working alongside the units and their logistic assistance was an asset to all on the ground in Southwest Asia. LAO SWA was established 19 August 1990 to provide and coordinate logistics assistance requirements in theater.[36]

As the largest American military organization in-theater at the time of the invasion, PM SANG played an important role in the early response to the invasion of Kuwait and the feared invasion of Saudi Arabia. The initial deployment order by President Bush was not issued until 7 August and the actual deployment and positioning of the forces took more time. In the interim the Saudi Arabian National Guard, whose modernization PM SANG was devoted to supporting, deployed on 3 August (less than twenty-four hours after the invasion) to the border area.[37] SANG had the advantage of quick deployability since it lacked heavy armor, although that advantage could of course become a severe disadvantage in combat against armored units of the Iraqi Army. Until 16 August 1990 the forces of the Saudi Arabian National Guard and their American advisors were the sole deterrent between the Iraqi forces and the coalition deployment airfields.[38]

The initial response to the invasion involved several actions by OPM-SANG. In addition to the American advisors who accompanied the deploying SANG troops, the other in-theater members of PM SANG were also fully occupied with Desert Shield. OPM initiated extended duty hours and a seven day

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[34]U.S. Army Security Assistance Command FY90 historical submission, pp. 15-16.

[35]General Tuttle, Speech, L.A. Chapter of AFCEA, 20 Sep 90.

[36]DCS for Readiness historical submission for FY90.

[37]U.S. Army Security Assistance Command, FY90 historical submission, p. 23.

Much of the following narrative on PM SANG was developed by LTC Michael J. Cassity, an Army Reservist who was called to active duty during Operation Desert Storm and worked in the AMC Historical Office.

[38]Interview, LTC Harry Rollins, PM SANG, 22 March 1991, by LTC Michael Cassity, AMCHO.

work week. The introduction of U.S. forces into the region taxed existing resources of the OPM and "caused the temporary diversion of selected OPM personnel to support initial mobilization activities." The PM SANG himself, BG(P) J. B. Taylor, served as interim Chief of Staff in the Army Central Command (ARCENT) HQ of LTG John J. Yeosock until ARCENT staff arrived. While a few OPM sponsors chose to return their families to CONUS, the greater blow was the decision of private companies to evacuate dependents; this meant a significant loss of support personnel at OPM. The OPM, however, was able to draw upon "the enthusiastic cooperation and employment of OPM dependents."[39]

It soon became clear that the OPM had lost more than 70% of its support staff to the evacuation of private company dependents. As OPM dependents stepped in to replace the lost staff, soon the OPM members themselves who had been temporarily diverted to support arriving U.S. forces began to return to OPM, and the program office began recovery. Despite a set of circumstances that combined a crisis atmosphere, increased demands and a heavy workload with a loss of available personnel, the PM could report at the end of the first week that "the morale and productivity of OPM personnel, military and civilian, sponsors and dependents, is encouragingly high. While a heightened and appropriate degree of seriousness is evident, anxiety within the team is less than might be expected."[40] Two weeks after the invasion of Kuwait the PM could still report that "morale remains high although concern over regional tensions is evident."[41]

The next step in the response was to establish an EOC to coordinate OPM and SANG activity during the crisis and to provide a liaison point for CENTCOM, ARCENT, and U.S. Embassy activities. "Additionally," the PM reported, "the EOC serves as a coordination point within OPM for information sharing and coordination of all in-Kingdom actions." By that point, too, the staffing effort had achieved stability. The PM reported on 27 August, "Recently hired OPM family members are now fully integrated into the organization and are a valuable supplement to the few remaining local hire clerical and support staff."[42] In its earliest phases, therefore, the PM had "responded immediately to facilitate the arrival of U.S. forces, then by augmenting his staff to expand the depth and breadth of advice and assistance, filled crisis requirements for rations, chemical defense equipment, field medical items, TOW & Stinger missiles and a multitude of other supplies and equipment. Training programs were reinforced and accelerated."[43]

In addition, weekly meetings had been provided from the very beginning to provide family members information on the situation and to maintain communication. At the first of those meetings, on 9 August,

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[39]BG(P) J. B. Taylor to MG Lightner, Aug 11, 1990, "Overview of OPM and SANG activities since the commencement of the current situation." This is the first of what will become regular, numbered situation reports from PM SANG. The first six of these situation reports (through 13 September) are unclassified. Portions of subsequent situation reports are drawn upon in this study only in their unclassified information. Copies of all the situation reports are located in the office of OPM SANG in AMC Headquarters.

[40]BG(P) J. B. Taylor to MG Lightner, Aug 11, 1990, "Overview of OPM and SANG activities since the commencement of the current situation."

[41]Situation Report [#2], PM-SANG to MG Lightner, for period 11-17 August 1990.

[42]Situation Report #3, PM-SANG to MG Lightner, for period 18-25 August 1990.

[43]U.S. Army Security Assistance Command, FY90 historical submission, p. 23.

LTG Yeosock himself briefed the group.[44] Evidence of that stability in the status of families is the fact that in the first few weeks of the crisis, only twelve families had departed while fifty-five had remained.[45] In fact, in the next week two families departed but four returned to the Kingdom.[46]

Of central importance in the unfolding events of the crisis was the ability of OPM-SANG to provide advisor support to the deployed brigades of the Saudi Arabian National Guard. U.S. Advisors accompanied those forces and "the active support of OPM personnel was solicited and welcomed on a wide range of matters. . ."[47] The office requested, and received from assets outside of the Kingdom, a ten-man augmentation team "to provide increased operational support to SANG. . ." Fortunately this team included some former OPM personnel who were able to integrate with both OPM and SANG immediately.[48] That team arrived on 19 August, and a request for a second team was forwarded on 5 September.[49] Even at that early stage, discussions were underway considering the extension of the augmentation teams for a longer period.[50] Also included in the advisors available were more than twenty-five contractor advisor personnel who had been briefed on the statutory prohibition forbidding security assistance personnel from engaging in combat and who were instructed to withdraw should the SANG become engaged. The net effect of this support was that "the presence of advisors has been a great morale booster for the National Guard."[51]

The progress of that assistance after the initial stages of deployment included the following materiel actions. During the week of 25 September - 1 October, OPM was working with USASAC to prepare and expedite a security assistance case for Light Armored Vehicles (LAV) and indicated that it would obtain 35,000 sets of Desert Battle Dress Uniforms (BDU) commercial for SANG.[52] Following the deployment of an initial augmentation package of advisors and the request for their extension, Augmentation Package II (15 members) was identified and scheduled to arrive 5 October.[53] That team arrived on the scheduled

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[44]BG(P) J. B. Taylor to MG Lightner, 11 Aug 1990, "Overview of OPM and SANG activities since the commencement of the current situation."

[45]Situation Report #3, PM SANG to MG Lightner, for period 18-25 August 1990.

[46]Situation Report #4, PM-SANG to Commanding General, USASAC, for period 26-30 1990.

[47]BG(P) J. B. Taylor to MG Lightner, 11 Aug 1990, "Overview of OPM and SANG activities since the commencement of the current situation."

[48]Situation Report [#2], PM SANG to MG Lightner, for period 11-17 August 1990.

[49]Situation Report #5, PM SANG to Commanding General, USASAC, for period 31 August-5 September 1990.

[50]Situation Report #6, PM SANG to Commanding General, USASAC, for period 6-10 September 1990.

[51]Situation Report #2, PM SANG to MG Lightner, for period 11-17 August 1990.

[52]Situation Report #9, PM SANG to Commanding General, USASAC, for period 25 September-1 October 1990.

[53]Situation Report #9, PM SANG to Commanding General, USASAC, for period 25 September-1 October 1990.

date and Augmentation Team III (Stinger) was scheduled for arrival a week later.[54] When Augmentation Package III arrived on 12 October with three members, the OPM could report that Package II had deployed and Package I still had nine soldiers who had arrived on 18 August who "continue[d] to provide hands-on training in their fields of expertise."[55] Soon, those Augmentation Packages would be extended for 179 days temporary duty (TDY) to meet the growing need since "The continued services of these individuals is essential for maintenance of SANG combat readiness and performance of the OPM mission."[56]

Speaking of the substantive role performed by the OPM-SANG, MG Thomas G. Lightner, Commander of USASAC, noted that ". . .our people working with the National Guard are doing the same thing they've been doing, but now they're doing it out in deployed areas, helping them with their operational training and planning and maintenance and preparations for the battle."[57] Similarly, commenting on the ability of the United States to supply immediately the needs of the deployed Saudi units, Lightner noted that his offices received urgent requests "for uniforms, for camouflage equipment and for vehicles, ammunition, repair parts, on and on. Now, a lot of these things, we responded to their request within 72 hours, a total of 72 hours from the time we got--some of it's verbal, we had stuff packaged, on its way to an airport to be put on a plane in 72 hours." He noted that ". . . normally it takes about 60 days. . .from the time we get a letter of request for an item from a country to complete the letter of offer, and then some time beyond that for the delivery."[58]

AMC spent FY90 simultaneously directing its attention to planning for a smaller, more compact AMC while also fully meeting the unexpected contingency demands of the present. In both cases, the effectiveness of the AMC actions would be best demonstrated in future years.

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[54]Situation Report #10, PM SANG to Commanding General, USASAC, for period 2 October-8 October 1990.

[55]Situation Report #10, PM SANG to Commanding General, USASAC, for period 9 October-15 October 1990.

[56]Situation Report #14, PM SANG to Commanding General, USASAC, for period 29 October-4 November 1990; Situation Report #15, PM SANG to Commanding General, USASAC, for period 5 November-11 November 1990.

[57]Oral History Interview with Major General Thomas G. Lightner, Commanding General of the U.S. Army Security Assistance Command, 24 January 1991, by representatives of the HQ AMC Historical Office, pp. 32-33.

[58]Oral History Interview with MG Lightner, pp. 27-29.

Appendix 1 to Chapter I: AMC Missions and Functions

The seven AMC Missions and the functions within each of the missions, together with detailed explanations of each, are given below. The numbers at the end of each mission statement represent FY90 funding. The material in italics is from General Tuttle's presentation to the Army Leadership Conference in August 1990.[59]

MISSION ONE: EQUIP & SUSTAIN A TRAINED, READY ARMY ($6.7B).

First among equals, 60% of workforce concentrates on Mission One; e.g., fielding new systems, depot maintenance, manufacturing and distributing munitions (747M rounds last year).

All effort on PEO and non-PEO systems/equipment and components after acceptance (signing of DD Form 250) of each production item into the wholesale inventory. All effort on PEO and non-PEO spare and repair parts after acceptance of initial provisioning stocks and assignment to inventory control point. All effort on PEO and non-PEO funded ammunition that has been type classified. Mission 1 includes planning for the fielding of new or improved systems; i.e., materiel fielding plans and material release activities.

Function 1 - Determine Supply and Maintenance Requirements through Weapon System Management in Response to the Soldier's Needs.

Conduct total supply and maintenance requirements determination through a weapon system management approach for assigned end items, equipment, and conventional ammunition. Includes determining supply and maintenance requirements for war reserve stocks, operational requirements, prepositioning of material configured to unit sets, maintenance of information in centralized Army databases and federal cataloging systems, overhaul and rebuild direction, post-provisioning reviews, sample data collection, update/revision of technical publications, maintenance of the Provisioning Master Record/NSN Master Data Record, and contractor logistic support management activities after signing of DD Form 250.

Function 2 - Field All New Systems.

Provide technical and logistical support through a weapon system management approach to resolve problems which might arise during the fielding process. Efforts conducted for integrated Total Package Fielding program to include preparing and negotiating material fielding plans/agreements, material release activities, on-site hand-off of material, equipment, and customer documentation, transportation management, planning and execution; new equipment training received; engineering and quality reviews of documentation, to determine impact on reliability and performance; and management and administration of Modification Work Order program. Included in this function are all efforts related to the storage and distribution (including initial fielding) of systems/equipment and initial provisioning spares such as stockpile reliability testing, surveillance,

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[59]The short summary description of each mission was taken from General Tuttle, AMC Presentation to the Army Leadership Conference, 9 August 1990. The FY90 figures on funding are taken from a speech given by General Tuttle in February 1990. The remainder of the data can be found in MEMORANDUM FOR DISTRIBUTION, SUBJECT: Zero-Based Resourcing Implementation Guide, annex 3, 3 May 1990.

resolution of Quality Deficiency Reports, distribution/redistribution, etc. for new and fielded systems/equipment.

Function 3 - Manufacture, Procure, Store and Distribute Munitions.

Manage and implement the procurement process for munitions. Provide procurement support (acquisition planning, solicitation generation, contract award, management of contracts), production management (production planning, program execution, value engineering), manufacturing, testing, and acceptance for non-PEO type classified ammunition. Includes direct hands-on manufacturing of ammunition and the related direct support (includes but not limited to numerical control equipment programmers, quality assurance and production engineers). All technical and program management activities for planning, budgeting and executing the ammunition program, and procurement funded ammunition product improvement programs, engineering and quality in support of procurement and production, material release, stockpile reliability testing, surveillance, explosive safety standards, DA/AMC logistics reviews, surety, resolution of quality deficiency reports, accident investigations, ammunition training "received" associated with career programs 20 and 33 (ammunition training provided is reported. Under function 1.8), etc.

Perform inventory management functions for Army and Single Manager Conventional Ammunition (SMCA) items to include distribution/redistribution, integrated service utilization/allocations, and transportation planning, management, and execution.

Manage the Industrial Preparedness Program in support of peacetime ammunition production. This function includes equipment management activities for active ammunition facilities and managing ammunition Production Base Support (PBS) projects. PBS projects include: Production Support and Equipment Replacement (PSR); Expansion (EXP); and Initial Production Facilities (IPF) projects.

Function 4 - Procure, Store and Distribute Spares, Tools and Other Supplies to Maintain Equipment Readiness.

Manage and implement the procurement process for subject items. Provide procurement support (acquisition planning, solicitation generation, contract award, management of contracts), production management (production planning, program execution, value engineering), manufacturing, testing, and acceptance of replenishment spares, tools, and other supplies (does not include initial spares, which are reported under Missions 3 and 4). Includes direct manufacturing of spares, assembly of tool kits/shop sets, and the related direct support.

All technical, logistical, and program management activities to include: engineering and quality assurance in support of procurement and production; receiving and processing customer requisitions; storing first and second destination transportation items such as replenishment spares, tools, and other supplies; retail material disposition instructions; resolution of quality deficiency reports; material distribution/redistribution; repair and return programs; traffic management data; and intransit safety and security programs.

Function 5 - Manage and Perform Depot Maintenance.

Direct hands-on depot maintenance and quality assurance, and the related direct and contract support to repair/overhaul and modify/convert equipment. Engineering and quality effort performed in support of the depot maintenance program. Includes developing and implementing maintenance

and quality planning through a weapon system management approach, workloading depots and other sources (interservice support agreements), soliciting national maintenance contract requirements, applying modification kits to fielded assets, and fulfilling DMPE requirements.

Function 6 - Perform Post Deployment Software Engineering.

Provide post deployment software support to address field problems, facilities, hardware, software, documentation, manpower, and personnel needed to operate and support embedded computer systems. Provide associated software quality assurance and independent verification and validation (IV&V). Field material change driven software enhancements.

Monitor, review, and revise existing test and diagnostic program software including Automatic Test Equipment (ATE)/Test Measurement Diagnostic Equipment (TMDE)/Test Program Sets (TPS).

Function 7 - Calibrate and Repair Test Equipment.

Provide calibration and repair, as necessary, of Test, Measurement, and Diagnostic Equipment.

Function 8 - Provide Technical assistance and Training to the Field.

Provide technical support to the field on spares, ammunition, and end items to include Red Team activities; coordination, development, and execution of new equipment training; inquiries from the field, supply support for non-standard items of supply and equipment, transportation planning as required, coordination of supply and maintenance support issues elevated through LAR channels, on-site LAR support, and malfunction investigations. Includes service response force training and exercises and ammunition training "provided" by USADACS (ammunition training received is reported under function 1.3); and technical assistance to the field in the planning, execution, and transportation requirements of hazardous material and munitions to include emergency response to accidents and incidents.

Function 9 - Dispose of Unusable Equipment, Supplies and Munitions.

Provide management and technical support activities relating to demilitarization and disposal of military equipment, supplies, and Munitions to include design, fabrication, and operation of facilities to perform demilitarization and disposal operations. Also includes directing disposal operations and related direct support (includes but not limited to numerical control equipment programmers, quality assurance and production engineers).

Manage demilitarization program functions for the Army and SMCA for conventional ammunition to include directing of demilitarization technology activities for processes and procedures. Provide inventory accountability support and wholesale disposition, instructions for supplies, equipment, and munitions.

Function 10 - Support other U.S. Government Agencies.

All equipping and sustaining activities which are special services in support of other U.S. Government agencies for which the MSC/SRA is not the executive Agent or single manager. Activities for which the MSC/SRA is the single manager shall be prorated among the applicable function of Mission 1 and 3.

MISSION TWO: PROVIDE EQUIPMENT & SERVICES/SUPPLIES TO OTHER NATIONS THROUGH THE SECURITY ASSISTANCE PROGRAM ($430.5M).

Growing Importance; reduce need to commit U.S. troops; keep production base warm; most visible: Assistance to Columbia.

Direct and perform program, financial management, acquisition, manufacturing, maintenance, and logistic support for Security Assistance Program.

Function 1 - Prepare and Present FMS Total Package Letters of Offer.

Preparation, management, and execution of offer for the sale of military articles or performance of services to include identity and quantity of items, pricing, technical data, source, availability, follow on support recommendations.

Function 2 - Manage Acquisition and Delivery of Materiel and Services.

Initiate and manage supply and procurement processes for acquisition, production/coproduction/manufacturing, and delivery of end items and their components, spares, and ammunition provided to other nations. Includes technical assistance, transportation support, and monitoring the acquisition and delivery of major weapon systems.

Function 3 - Manage System Fielding, Training Assistance and Follow-on Logistics Support for Allies.

Provide total package support functions through joint hand-off conferences based upon development and management of Foreign Military Sales Material Fielding Plans (FMSMFP). Includes development of Blanket Open End (BOE) and Cooperative Logistics Supply Support Arrangement (CLSSA) cases. Includes any required and negotiated new equipment/maintenance/technical training, logistics support, post fielding logistics assistance (e.g. depot maintenance), Quality Assurance Teams, and operator/support training.

Function 4 - Manage Customer Program, Perform Financial Control, and Conduct Reviews.

Perform Country Case management, control funding requirements for FMS actions, and conduct detailed mission accomplishment reviews of all aspects of security assistance. Includes managing country programs, case implementation, case execution, the Concurrent Spare Parts (CSP) process, the Report of Discrepancy (ROD) program, the Grant Aid/International Military Education and Training (IMET)/506 programs, and the case closure program. In addition, includes processing requisitions and supply status; performing requisition funding, accounting, billing, and financial case reviews; and participating in country management reviews (CMRs), security assistance reviews (SARs), and FMS conferences and meetings.

Function 5 - Develop, Negotiate and Monitor Co-production Agreements.

Assist in the efforts devoted to reaching a formal co-production agreement with foreign countries and in the monitoring of that agreement. (The preparation and execution of FMS cases in support of the agreement are in Functions 2.1 and 2.2)

Function 6 - Manage Commercial Export Licenses for the Army.

Perform technical assessment of export licenses relative to current technology, impact on industrial base, impact on available material resources, etc. and provide DA recommendation for approval/disapproval of the request for license.

MISSION THREE: DEVELOP AND ACQUIRE NON-MAJOR SYSTEMS AND EQUIPMENT ($1.1B).

Over 300 non-major systems

All effort on non-PEO systems/equipment prior to acceptance of each end item into the wholesale inventory (signing of DD Form 250) and on related spares and repair parts through acceptance of initial provisioning stocks. All non-PEO funded ammunition prior to type classification. This mission includes effort for PMs that report to AMC (through and MSC/SRA); e.g., PM, Mines, Countermines & Demolitions; PM, Training Devices (PM TRADE).

Function 1 - Develop, Test and Evaluate Equipment, Systems and Munitions.

All weapon systems management and technical activities (which includes program and financial management in 6.3b/6.4/6.5 RDTE funding activities to type classification) to include the design, development, test, acceptance, and productibility of end items/material changes/pre-planned product improvements, e.g., concept testing, operational testing, standardization activities, initial provisioning determinations, integrated logistic support (ILS) related activities (includes initial determination source of maintenance recoverability codes and demilitarization codes), preparation and validation of a technical data package leading to type classification, etc.

Function 2 - Manufacture, Procure and Test Equipment and Systems.

Through a weapon systems management approach, provide procurement support (acquisition planning, solicitation generation, contract award, management of contracts), production management (production planning, program execution, value engineering), manufacturing, testing, and acceptance for non-PEO end items, provisioning spares, and material changes (modification kits or product improvement programs for non-major systems if application of the mod kit takes place on the production line).

Includes engineering in support of procurement and production, maintaining configuration control of the technical data used to produce the end item, preparing technical publications, assessing conformance and configuration prior to acceptance of each production item into the wholesale inventory, managing the industrial preparedness program in support of peacetime production, direct hands-on manufacturing and the related direct support (includes but not limited to numerical control equipment programmers, quality assurance and production engineers), and related activities associated with the procurement budget.

Function 3 - Provide Software Engineering Support.

Provide the software design, test, and evaluation in support of the development and production of an end item. Develop and acquire material change driven software enhancements. Provide software quality assurance and independent verification and validation. Review and revise new test and diagnostic program, software including Automatic Test Equipment/Test Measurement Diagnostic Equipment/Test Programs Sets.

Function 4 - Provide for Management, Engineering, Production and Testing Infrastructure to Support Mission.

That which enables the command to do the management, engineering production, and testing, but not the activity itself, such as providing facilities/laboratories/test/ranges/production lines. Also, includes resources associated with direct AMC funded facilities and equipment for peacetime production and testing when there is no workload; e.g., test site for smart munitions, and for those overhead activities which can be identified in support of this function. Where applicable, resources will be pro-rated between the infrastructure function in missions 3 and 4.

Function 5 - Support other U.S. Government Agencies.

Develop and acquire non-major systems and equipment for other U.S. Government agencies as a special service for which the MSC is not the executive agent or single manager. Acquisition services for other agencies for which the MSC is the single manager shall be prorated among other functions of Mission 3.

MISSION FOUR: PROVIDE DEVELOPMENT AND ACQUISITION SUPPORT TO PROGRAM MANAGERS (PEOs, PMs) ($1.3B).

Initial development, then matrix support to 114 PMs, then logistic support.

All effort on (1) PEO systems/equipment prior to acceptance of end items into the wholesale inventory (signing of DD Form 250); (2) related spares and repair parts before acceptance of initial provisioning stocks; and (3) PEO funded ammunition prior to type classification.

This mission relates to PMs that report directly to PEOs and not to MSCs; e.g., PM, Advanced Attack Helicopter; PM, Abrams Tank System; PM, Bradley Fighting Vehicle Systems (BFVS); PM, Howitzer Improvement Program (HIP).

Function 1 - Facilitate the Transition of Future Systems and Munitions to and from PEO Management.

Includes planning, negotiating, executing events leading to transition of an item to include identification of workload and resources, provisions for item documentation and records, configuration management, engineering responsibility, engineering data; logistical support, software, transportation and packaging, procurement, product assurance, safety; security classification guidance, test program sets, etc.

Function 2 - Provide Direct Functional Support to Augment PEO/PM Offices.

All PEO direct funded (reimbursable to AMC) activities to design, develop, test, evaluate, manufacture and procure PEO equipment systems and munitions including design engineering, standardization, technical data package verification and maintenance, initial provisioning, technical publication development, and production base support. Personnel who provide support need not be under "Direct" PEO/PM control/location.

Function 3 - Provide General Functional Support.

All activities in support of PEO which are direct funded by the MSC to include weapon system management support, initial provisioning determinations, maintenance/ engineering planning (includes initial determination of source maintenance recoverability codes and demilitarization codes), contracting, budgeting, personnel support, administrative support, production base support, material changes/pre-planned product improvement, etc.

Function 4 - Provide Software Engineering Support.

Provide the software design, test, evaluation, and software quality assurance and IV&V in support of the development and production of an end item.

Function 5 - Provide Management, Engineering, Production and Testing Infrastructure to Support Mission.

That which enables the command to support PEO managed items with management, engineering, production, and testing, but not the function itself, such as providing facilities/laboratories/test ranges/production lines. Also includes resources associated with direct funded facilities and equipment for peacetime production and testing when there is no workload; e.g., test site for smart munitions and for overhead activities which can be identified in support of this function. Where applicable, resources will be pro-rated between the infrastructure function in Missions 3 and 4.

MISSION FIVE: DEFINE, DEVELOP AND ACQUIRE SUPERIOR TECHNOLOGIES ($1.6B).

Emphasis on keeping tech base strong although cutting new starts and production.

All basic and applied research efforts and exploratory development not related to specific system/equipment/ammunition. Primary efforts are under 6.1 through 6.3a RDTE funded activities and 6.7 RDTE funded activities for Manufacturing Test Technology (MTT)/Manufacturing Methods and Technology (MMT).

Function 1 - Identify Technology Requirements for the Future Army.

Technology Base planning with the user community, the Operational & Organizational (O&O) process, etc.

Function 2 - Demonstrate Advanced Technologies Leading to New and Improved Operational Capabilities; Facilitate Technology Transition/Insertion.

Proof of Principle efforts, procurement, pre-planned product improvements, RDTE for Product Improvement Programs, design standardization efforts, all 6.3a RDTE funded activities, and 6.7 RDTE funded activities for MMT/MMT. Applicable to both in-house and contractual effort.

Function 3 - Conduct and Sponsor Basic Research and Exploratory Development.

Includes all 6.1 and 6.2 RDTE funded activities both in-house and Under contract.

Function 4 - Influence/Leverage Independently Funded U.S. and Foreign Basic Research and Exploratory Development to Maximize Superior Technologies Available to the Army.

Includes all efforts under the international program initiative, both in house and under contract (Nunn efforts, Scientist & Engineer (S&E) exchanges, technology exchange, foreign material test and evaluation programs, independent research and development (IR&D), cooperative development, etc). Also, includes Technology Research at U.S. Academic Institutions.

Function 5 - Support PEO/PM and Army/OSD Decision Makers with both Technology and Technical Assessments.

Provide technical advise to PEO/PM and Army/OSD Decision Makers concerning requirements determination and program documentation to support non-system specific decision reviews on PEO programs.

Function 6 - Provide Technical Advice and Counsel.

Assistance/advice which cannot specifically be identified to any other function in this mission area.

Function 7 - Support Other Important National Initiatives as Identified by the Army Leadership.

Efforts expended to assist non-Army DOD initiatives, e.g., support to Drug Enforcement Agency (DEA).

Function 8 - Exercise Effective Stewardship of Resources and Provide a Supportive Research and Development Infrastructure.

Prepare key program management documentation and plan, budget, execute 6.1 through 6.3a RDTE program and 6.7 RDTE program activities for MTT/MMT. Provide support which enables performance of research and development activities.

MISSION SIX: MAINTAIN THE MOBILIZATION CAPABILITIES NECESSARY TO SUPPORT THE ARMY IN EMERGENCIES ($69.4M).

E.g., standby depot and arsenal capacity, inactive ammunition and test facilities; maintaining war reserve stocks, mobilization plans; reserve component logistics training.

Resources expended on maintenance of existing mobilization capabilities (active or inactive) over and above those required to support scheduled peacetime activities on an economical basis, and construction of new facilities for surge requirements. Mobilization exercises are included in this mission.

Function 1 - Develop and Test Mobilization and Contingency Plans.

Includes mobilization planning; equipping, maintaining and operating Operations Centers; and managing and participating in mobilization exercises.

Function 2 - Maintain Standby Supply Depot Capacity.

Includes upkeep of that portion of current supply facilities reserved for the escalation of operations from their current peacetime level to full wartime mobilization.

Function 3 - Maintain Standby Depot Maintenance Capacity.

Includes upkeep of that portion of current depot maintenance facilities and equipment reserved for the escalation of operations from their current peacetime level to full wartime mobilization.

Function 4 - Maintain Inactive Ammunition Plants and Testing Facilities.

Includes maintenance of inactive industrial facilities, inactive industrial plant equipment, Backlog of Maintenance and Repair (BMAR) programs, mobilization deficiency projects, and inactive portions of ammunition plants and testing facilities.

Function 5 - Maintain Standby Arsenal Capacity.

Includes the maintenance of inactive industrial facilities, inactive industrial plant equipment, BMAR programs, mobilization deficiency projects, and inactive portions of arsenal manufacturing facilities.

Function 6 - Maintain and Store a Prescribed Level of War Reserve Stocks.

Conduct quality assessments and surveillance testing on ammunition and maintain/exercise equipment and general supplies that are specifically identified as war reserve stocks such as ammunition on pre-positioned ships.

Function 7 - Maintain a Manufacturing Capacity to Meet the Threat of War.

Non-Government industrial capacity and includes maintenance of idle plant facilities or under-employed production equipment which would be activate or enhanced in the event of war.

Increased costs incurred over the most cost effective production for the purpose of keeping one or multiple facilities/contractors available to meet the threat of war. Also includes Industrial Planning Program for inactive contractor owned and contractor operated (COCO) facilities.

Function 8 - Build and/or Modify Government Production Facilities to Meet Wartime Needs.

Modifications of Government facilities that permit production beyond the contracted rate/quantity or beyond the Authorized Acquisition Objective in the event of wartime surge. Also includes addition of new Government facilities designed to manufacture new systems and to increase the wartime production capacity.

Expanding arsenals and ammunition plants to increase mobilization capacity, includes mobilization master planning at government-owned facilities.

The distinction between function 6.8 and 7.2 is that function 6.8 is for the modification to increase production capacity for wartime surge, whereby function 7.2 is for modification/modernization to produce more economically and/or efficiently.

Function 9 - Plan and Conduct Logistics Training for Active and Reserve Components.

All activities to support training of active and reserve components at AMC installations, to include Mobilization Designee (MOBDES) assignments, Maintenance Operation Procedures (MOP), Shop training, etc. Also, includes management and operations of high tech regional training sites.

MISSION SEVEN: CONTINUE TO IMPROVE PRODUCTIVITY AND QUALITY OF LIFE ($391.1M).

E.g., environment, TQM, family support.

All efforts geared toward improving productivity in the work place and enhancing the quality of life both in the work place and the living quarters.

Function 1 - Make Productivity Enhancing Capital Investments.

Planning and preparation of projects, costing of capital investments, and efforts to quantify the return on investments. This includes the management of the Productivity Capital Investment Program (PCIP).

Function 2 - Modernize Industrial and RDT&E Facilities.

Planning, defending, and executing the modernization of industrial and RDTE facilities and equipment for the purpose of manufacturing new systems and/or enhancing production efficiencies. For example, Renovation of Armament Manufacturing (REARM) and Computer Integrated Manufacturing System.

The distinction between function 6.8 and 7.2 is that function 6.8 is for modification to increase production capacity for wartime surge; whereby function 7.2 is for modification/modernization to produce more economically.

Function 3 - Implement Total Quality Management.

Improve services through the application of TQM principles, to include specific initiatives such as Productivity Enhancement Initiatives (e.g., Productivity Efficiencies, Enhancement and Rewards (PEER), Program Gain Sharing (PGS) and Process Action Teams.

Function 4 - Minimize Hazardous Materials and Waste and Comply with Environmental Clean-up Mandates.

Comply with mandated environmental clean-up of Government owned land and facilities and all efforts/activities associated with minimizing hazardous material and waste associated with manufacturing processes and RDT&E facilities to include but not limited to environmental baseline studies and U.S. Army Toxic and Hazardous Materials Agency (USATHAMA) Programs.

Function 5 - Improve Quality of Life in the Living and Working Environment Throughout AMC.

That effort which provides to the employee an improved office work place (office modernization). All effort devoted to upgrading and improving living conditions in the living quarters and management of the Army Facility Housing Appropriation. Establishment and maintenance of employee support functions such as child care, community activities, Chaplain, health opportunities, alcohol and drug abuse prevention and control; support to non-appropriated funded activities (commissary, PX, etc.); and all morale, welfare and recreation activities that promote and maintain the mental and physical fitness and well-being of AMC personnel. Includes Army Communities of Excellence (ACOE).

Function 6 - Operate Installations and Facilities in a Safe, Cost Effective Manner.

All efforts associated with running an installation for non-AMC tenants. Includes security, safety, facilities engineering, fire department, utilities, maintenance, roads and grounds, and related activities.

Function 7 - Acquire, Train, and Retain a Valued and Respected Work Force.

All training (with the exception of on-the-job-training and reserve mobilization training) given or received which cannot be identified to another mission/function area. For example, USADACS training received can be identified to Mission #1, Function 3 and new equipment training received can be identified to Mission #1, Function 2. On the other hand, courses such as effective writing/briefing will be identified to this function.

Establishment of a management climate and position structure which facilitates equal employment opportunity through recruitment, development, and retention activities for a quality military and civilian work force (includes personnel technical services, management employee relations, union activities, Career Program Management, etc.).

Function 8 - Provide Command and Control

Efforts of management to develop and implement management/operational improvement projects that have a major impact on efficiency, productivity and quality of output of the organization. Examples include activities associated with DMR, base closures, and organizational streamlining. Includes all current actions to close ammunition, production, manufacturing, and storage facilities.

Appendix 2 to Chapter I: AMC's Evolution (Summary)

Since its formation and activation on 1 August 1962, the U.S. Army Materiel Command has seen major organizational changes. A major Army command, AMC combined most of the logistics functions of the seven technical services into a single organization, based on the DA study which recommended the creation of a "materiel development and logistics command."[60]

The new command came into being under the direction of General Frank S. Besson, Jr., who implemented the DA recommendation. AMC was initially organized into five commodity major subordinate commands: Electronics Command, Missile Command, Munitions Command, Mobility Command, Weapons Command; and two functional commands: Supply and Maintenance Command and Test and Evaluation Command. In addition, 36 project manager offices were established to manage the development of major/visible weapons and equipment.

In July 1966 the Supply and Maintenance Command, an MSC responsible for stock control, storage, distribution, transportation, repair parts management and emergency planning, was absorbed by HQ AMC. This action led to the creation of major directorates in HQ AMC, dealing with supply, maintenance and transportation, international logistics, management systems, data automation, and operational readiness.

The absorption of the Supply and Maintenance Command into HQ AMC affected the field programs as well. Depots and installations that had reported to the Supply and Maintenance Command now reported to HQ AMC; procurement detachments were created in New York, Oakland, Los Angeles, Cincinnati and Chicago; new PMs were established at the MSC level; ammunition plants were reactivated to meet growing needs in Vietnam; and some installations (Erie Proving Ground and Dickson Gun Plant) were closed.

In 1969 General Ferdinand J. Chesarek, AMC's second commander, initiated a major realignment of Headquarters AMC. Partly driven by a DA manpower survey calling for space reductions, this reorganization and realignment led to adding a third deputy commanding general and elevating the chief scientist to deputy level, cutting back the number of PMs, increasing the MSCs' roles in monitoring PM activities, decreasing the CG's span of control and providing greater latitude to MSC commanders and to deputies in their specific areas.

Manpower cuts grew because of the drawdown in Vietnam and general cutbacks in federal employment. In 1970 AMC lost about 6,400 civilian authorizations, followed by a loss of over 15,300 in 1971 and over 7,700 in 1972. In 1973 AMC lost another 5,456 authorized spaces. The military side also experienced cuts. Reductions were handled through attrition and one-for-five replacement hiring.

In 1973 as part of the Total Optimum Army Materiel Command, DA's Baseline Development and Utilization Planning Project and the Army Reorganization of 1973, and with DA approval, AMC pulled together Electronic Command elements at Fort Monmouth; consolidated the Munitions Command and Weapons Command into the Armament Command; and a new MSC, the Mobility Command, was revamped as the Troop Support Command. Other mergers and consolidations took place as well.

General Henry A. Miley, Jr., became Commander on 1 November 1970 and was heavily involved in the ongoing AMC reorganization, thinking that these changes would keep AMC "ahead of the power curve"

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[60]This section is derived from a summary written by Dr. Robert Darius for *Army Materiel Command Evolution: 1969 - 1989*, published in 1991 by the Historical Office, Headquarters AMC.

during expected Army-wide reorganizations, consolidations and closures. The Army Materiel Acquisition Review Committee (AMARC), a DA-level, industry-heavy committee, was set up to study the sequential acquisition steps of requirements and concepts. The Secretary of the Army chartered the committee to recommend improvements in the Army materiel acquisition process, while praising consolidations and cutbacks in AMC. AMARC called for extensive personnel cuts in a system it considered over-managed, and most notably, called for evolving separate research and development centers.

On 12 February 1975 General John R. Deane, Jr. took over the Command and, having approved the concept of separate development centers, began implementing AMARC's recommendations. AMC was designated the U.S. Army Materiel Development and Readiness Command (DARCOM) on 23 January 1976.

DARCOM went from six commodity commands to eleven, six of which were primarily development commands. The eleven were increased to thirteen in January 1979 when the electronics and communications functions were split three ways. The International Logistics Command was organized and its missions were transferred in 1975 to the newly created Security Assistance Center. General Deane called for a study on how to shape the headquarters to best relate to the changes made elsewhere in AMC.

As a result of the Study to Align AMC's Functions (STAAF), the headquarters staff was cut from 2,138 to around 1,400. Some spaces were deleted and others were transferred to the field. STAAF explained the organizational changes it was making and the tradeoffs that would be required in the way DARCOM was to do business, including possible risks. When the command later decided that it had gone too far in shedding resources that gave expertise to function effectively in monitoring both development and support activities, the analysis was available to carry out "AMARC Revisited."

The the Supply and Maintenance Command merger and changes brought about by STAAF gave more direct responsibility over the wholesale supply system to HQ DARCOM. In keeping with AMARC's philosophy of decentralization, and to bring a centralized form of command and control closer to the depots, DARCOM established the U.S. Army Depot System Command (DESCOM) on 1 September 1976.

AMARC's emphasis on development paid dividends with the some 400 weapons and other items of equipment brought through the early development stages in the 1970's as a new generation of more capable Army equipment. The command did not work for long under the new organizational structure before the split between readiness and development commands began to chafe.

AMARC Revisited, initiated by General John Guthrie, began an effort to rejoin the severed commodity commands and to increase the authorized strength of the command. HQ DARCOM's FY78 Baseline study calculated that DARCOM needed a total of 137,157 personnel and it was short 21,631 authorized spaces in materiel readiness related positions, and 330 at the headquarters. As a result of the study, resources available to DARCOM began to increase. From 1979 to 1984 AMARC Revisited resulted the reconciliation of the commodity commands and the elimination of the many problems created by AMARC.

In August 1979 a study group recommended a productivity improvement concept named the Resource Self-Help Affordability Planning Effort, which sought to meet command baseline manpower requirements through, for example, greater use of overtime, overhire, streamlining, personnel incentives, reduced layering, merger of duplicative organizations, and more widespread automation. Personnel authorizations were increased for both DESCOM and HQ DARCOM. The intent at headquarters was to re-establish a technical expertise that had been effectively removed under STAAF. This deficiency was rectified with headquarters growth and a matrix management initiated by General Donald R. Keith, keyed toward newly introduced weapons systems staff managers.

Under General Richard H. Thompson, the command continued to shed the AMARC legacy, adopting a more military structure with directorates redesignated deputy chiefs of staff and the name change from DARCOM back to the U.S. Army Materiel Command. DARCOM-Europe, established in 1982 to centralize command and control and reduce costs in both Europe and CONUS, became AMC-Europe.

The U.S. Army Laboratory Command (LABCOM) was established on 1 October 1985 under General Thompson to bring together AMC's research laboratories that generated new technologies and advanced concepts to carry the Army into the future, by merger of some HQ AMC staff with personnel from the former Electronic Research and Development Command, based at Adelphi, Maryland.

In April 1986 AMC-Far East was established in Korea to provide centralized management and control of all AMC elements and to provide more effective liaison and support to the Eighth Army. In 1987, following the recommendation of the Packard Commission, most of the project managers under AMC were transferred to the newly created DA-undersecretaryship, the Army Acquisition Executive (AAE). The AAE had Program Executive Officers (PEOs) reporting directly to him, each given authority over project managers in a particular field of equipment development, with HQ AMC and its MSCs to provide programmatic advice and assistance to the PEOs. This evolution, implemented by General Louis C. Wagner, Jr., impacted all AMC elements involved in materiel development and acquisition.

In September 1989 General William G. T. Tuttle, Jr., inherited a command which was adjusting to major functional changes and declining resources while maintaining the capacity to support the Army in both peace and war. Declining resources became an ever more prominent part of the environment for AMC, largely as a result of changes in the international environment. AMC had to alter the way it worked in order to become more efficient. General Tuttle continued the emphasis on total quality management as a key component of any AMC activity.

General Tuttle initiated a detailed functional analysis of AMC to determine what it did, how it did it, what the best way to do it was, and what functions could be curtailed or eliminated. Like his predecessor, he dealt extensively with value added, total quality management, and a variety of Army and DOD studies designed to improve the efficiency of the Army. Defense Management Review and the various Base Realignment and Closure acts had significant impact upon AMC. These studies merged with AMC's own internal actions to effect a major restructuring and downsizing of the command.

This culminated in a command-wide Reduction in Force, followed in the headquarters by a 30 percent reduction in authorized staff between 1987 and 1991. The headquarters reduction was accomplished by attrition and personnel reassignments, rather than by RIF. Changes in the overall MSC structure included the planned consolidation of all AMC industrial activities--depots, ammunition plants and arsenals--in a new Industrial Operations Command at Rock Island Arsenal. Also planned was the merger of AMCCOM and MICOM into a Missiles, Armaments and Chemical Command at Redstone Arsenal. In addition, TROSCOM and AVSCOM were to merge in place in St. Louis and form the Aviation/Troop Support Command. The Army Research Laboratory would replace the current Laboratory Command.

AMC proved that its stress on realignment and downsizing did not prevent it from performing its primary mission--support of the troops in the field--as illustrated by the command's support for Operation Just Cause and Operation Desert Shield.[61]

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[61]This section is derived from a narrative written for "Project Dignify," an endeavor to recreate AMC's history in pictures for display on the 10th floor of the HQ AMC Building.

Chapter II

Resource Management

Deputy Chief of Staff for Resource Management

Organization, Key Personnel and Manpower

The personnel strength of the DCS for Resource Management (DCSRM) in FY90 was as follows:

	Authorized:		Actual Strength:	
	Mil	Civ	Mil	Civ
Beginning 1 October 1989	6	228	4	217
Ending 30 September 1990	6	200	7	192

The DCSRM was charged with giving up 36 spaces in FY90, which included 8 spaces from Management Engineering Activity personnel located at Headquarters AMC.

Due to the pending 15 October 1990 Reduction in Force (RIF), many employees sought positions with other agencies. Many eligible employees took advantage of the early out opportunity. Because of the many retirements and transfers to other agencies no employee in Resource Management was left without a job during the RIF completed 15 October 1990.[1] Key personnel of the DCSRM were as follows:

DCSRM, BG Virgil A. Richard

ADCSRM, Gary Tagtmeyer, (temporarily assigned to DSMC 30 April 1990 to fill Army Chair for 1 year)

ADCS for Cost Analysis, Robert O. Weidenmuller, (Temporary detailed as ADCSRM vice Mr. Tagtmeyer, 30 April 1990)

Executive Officer, MAJ C. B. Williams

Chief, Administrative Office, Maxine M. Elbon

Chief, Cost Analysis Division, Mary Ann Dominiak (detailed 30 Apr 1990)

Chief, Budget Division, Edgar J. Henley

Chief, Contract Cost Performance Division, Lawrence Stone

Chief, Program Budget and Funding Policy Division, Douglas Loomer

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[1]Unless otherwise noted, the information in this section is taken from the DCS for Resource Management historical submission for FY90.

Chief, Force Development Division, Philip Peters

Chief, Standard Systems Division, Alan Allison, (Temporary detailed to Task Force for Information Management, 30 March 1990), L. Klunk, Acting - effective 30 March 1990

Finance and Accounting Division, S. Link, (retired 3 September 1990), Mr. Klunk detailed as Acting Chief on same date (dual-hatted with Standard Systems Division)

Special Operations Division, Barbara Pate, Acting Chief

Because of the impending RIF two large reorganizations were planned for FY91: the Finance and Accounting Division absorbed the Standard Systems Division and Force Development started to reorganize within and reduce the number of GM employees by cutting out sections and adding more personnel into branches.

During FY90, the former Programs and Projects Office experienced three major organizational changes. The first of these occurred in October 1989, when the office merged with the Resource Management Operations Office (RMOO) to form the present Resource Management Special Operations Division, an unstructured division whose mission and functions represented a consolidation (rather than a transformation) of the functions of the "parent" offices.

Although a straight-line organization, the new division effectively retained a de facto, though unofficial, subdivision reflecting the original offices' core functions. This subdivision was the almost inevitable consequence of the sensitive nature of, and restricted access to, the classified and special access programs which necessarily isolate those working such programs, not only functionally but physically. Despite this, considerable efficiencies have accrued from the merger, especially in administrative matters: a supervisory space was eliminated and cross-training has been effected in all functions except the classified program.

The chain of events leading to the merger of the two offices began with the departure of the (GM-15) chief and (GM-14) senior action officer of the RMOO, leaving the office staffed only by a Captain (not occupying an authorized space and therefore not a permanent asset) and a secretary. The DCSRM named the chief of the Programs and Projects Office as (dual-hatted) Acting Chief of the RMOO, owing to the immediate and critical need for supervisory oversight over the RMOO and additional manpower to offset the RMOO's losses. The DCSRM subsequently determined to merge the two offices into a division with a GM-15 as chief. The chief of the former Programs and Projects Office was installed as acting chief of the new division at the GM-14 grade level, pending recruitment for the GM-15 position.

Chronologically the second organizational event of the fiscal year to affect the Division was the RIF, unquestionably AMC's most significant organizational issue of the year. Although the RIF officially took effect in FY91 (12 October 1990) the greatest part of RIF related activity took place in FY90. The Division lost one space as its share of the RIF cut. In fulfilling that levy, the chief surrendered the vacant GM-15 division chief authorization in order to avoid having to RIF one of the on-board employees, or alternately giving up the GS-560-13 authorization, the only other vacancy of the time, which DA had provided in 1989 for purposes of establishing and operating the RMOO.

The third event of the fiscal year, also effective 12 October 1990 but playing out in FY90 as a RIF casualty, was the transfer to the Division of the Resource Management Career Program Administrator function and its incumbent. Prior to the RIF, the Administrator reported directly to the Assistant Deputy Chief of Staff for Resource Management. However, the GS-13 authorization for this position was lost to the RIF. The DCSRM decided to use a vacant GS-560-13 in the Division for this purpose, re-engineering

it to a GS-343-13, and moving the resource career program administrator function into the Division. The principal roles of the Career Program Administrator function were to:

Administer and coordinate the AMC Comptroller (CP-11) and Manpower and Force Management (CP-26) career programs.

Determine intern recruitment need, training sites and requirements, and permanent duty location assignment.

Answer inquiries on career management and related matters. Provide guidance on the Army Civilian Training, Education and Development (ACTEDS) System and the Army Civilian Career Evaluation System (ACCES).

Monitor command-wide executive training programs and serve as technical advisor to the executive selection committees that evaluate candidates for long term programs.

Obtain comments from MSCs on new policies and programs relating to career program management and intern program. Write AMC position in related issues as requested by HQDA.

Write "From the Top" article for DCSRM signature in Quarterly Intern News and Notes (QUINN) Newsletter.

Represent DCSRM/ADCSRM/AMCRM-M at command level meetings. Policy developed at meetings is conveyed to AMC resource managers.

Provide counselling and guidance to AMC supervisors and employees and MSC career program administrators on career development in the manpower and force management and comptroller career fields.

Cost Analysis Division

Management Costs Associated with Component Breakout

A Department of Defense (DOD) Inspector General audit "Acquisition of the M9 Armored Combat Earthmover (ACE) Program," dated 6 October 1989, reported that the Project Manager for M9 ACE did not adequately pursue a detailed component breakout program as required by the Defense Federal Acquisition Regulation Supplement (DFARS) 217.7202. DOD Policy for component breakout was based on a probable gain of substantial net cost savings and the avoidance of adverse effects on quality, reliability, performance or timely delivery of the end item. Primary breakout consideration was directed to components that represented the highest annual acquisition costs and offer the largest potential net savings.

Concurrent with the Mediation of Issues report on the M9 ACE Program of 9 March 1990, AMC Cost Analysis agreed to develop a cost model to identify guidelines for estimating overall Government Management Cost (GMC) associated with component breakout. Upon completion in October 1990, AMC Cost Analysis provided these guidelines to each of the MSC Cost Analysis Offices for use in supporting Program Managers to evaluate their component breakout decisions.

Operating and Support (O&S) Cost Reduction Initiative

In FY90 a Joint AMC-TRADOC General Officer Steering Committee was established to set O&S cost reduction goals, determine organizational responsibilities, and review selected projects. A HQ AMC Deputy

Chief of Staff level Advisory Group and Working Group, with participation invited from the DA Staff including the Assistant Secretary of the Army (Research, Development and Acquisition) [ASA(RDA)], the Deputy Chief of Staff for Operations (DCSOPS), and the Deputy Chief of Staff for Logistics (DCSLOG), determined criteria for project selection, established priorities and trade-offs, addressed methods of funding, and implemented procedures for administration for the program.

The Advisory Group was co-chaired by the DCS for Development, Engineering and Acquisition and the DCS for Supply, Maintenance and Transportation. In conjunction with the O&S cost reduction initiative, the Cost Analysis Division prepared materials for the Commanding General's presentation at the Atlanta XVI conference in April. As a result of Atlanta XVI, an ad hoc defense industry O&S Cost Reduction Task Force was established. Several meetings of this Task Force have resulted in a better understanding by the defense industry of the problems the Army is facing in reducing O&S cost. Suggestions by this task force were being evaluated for implementation.

In April, CECOM was directed to establish a working group on technology insertion (TI) for spare and repair parts. This working group was establishing procedures and criteria to insure TI was used to reduce O&S cost by providing more reliable and maintainable spare and repair parts. HQ AMC understood the potential payoff for reducing O&S cost and was taking positive action to insure the future cost of operating weapon systems was reduced.

Operational Baseline Cost Estimate (OBCE)

The OBCE System was an AMC automation initiative to improve the efficiency and effectiveness of weapon system cost estimating. The Assistant Deputy Chief of Staff for Cost Analysis, HQ AMC, was the functional proponent of this project, which was designed to benefit the AMC MSCs, PEOs, and PMs. The OBCE System provided senior officials and managers with access to life cycle cost data displayed in various formats in a timely manner, which met Army cost analysis functional standards. During the year, the most significant event concerning OBCE was the vote of the AMC Study Advisory Group (SAG) to approve OBCE software as acceptable for release and fielding. Following release on 16 July 1990, the division initiated a survey of the OBCE users to determine acceptability in order to brief LTG Thomas, AMC's Deputy Commanding General for Research, Development and Acquisition (DCGRDA), and LTG McCall, Comptroller of the Army.

Earlier in the year in conjunction with AMC SAG members and technical representatives, the division conducted a Demonstration Test of OBCE on the Advanced Antitank Weapon System-Medium (AAWS-M) Missile System to produce a complete Baseline Cost Estimate, to answer "what-if" questions and to generate non-standard reports. This test contributed greatly to the sharing of ideas, fixing of software bugs, and identifying enhancements.

Formal SAG meetings were held on 1 November 1989 and 26 June 1990. In addition, a SAG video teleconference was held 30 January 1990. Other significant events which occurred were the installation of Release 1.0 OBCE software at twenty-nine of forty OBCE sites, the conduct of nine technical site visits, the provision of nine training classes, and continued investigation of OBCE linkage with financial management accounting systems. The division continued development of the OBCE software through its support contractor, CALIBRE Systems. In April 1990, as part of the continuing contract effort, the division submitted to Defense Supply Service-Washington a Statement of Work for award of a competitive contract to begin in FY91. The initial evaluation of proposals was in progress at the end of the year.

Finance and Accounting Division

AMC Accountant Awards Program

FY90 was the eighth consecutive year in which AMC recognized outstanding people in the finance and accounting area. As in prior years, AMC presented five awards:

Herschel B. Moore - Most Outstanding Accountant with AMC
Linda Lightfoot - Outstanding Systems Accountant
Charles B. Pryor - Outstanding Operating Accountant
Gregory Zepke - Outstanding Staff Accountant
Elaine B. Grimes - Outstanding Non-Accountant in a Support Role

FY90 Yearend Reporting

The Servicing Accounts Office successfully consolidated the FY90 yearend certified reports. In each of its four years, the accounts office had ensured the unqualified acceptance of AMC's Status Reports. This year AMC had ten additional activities for which to report; e.g., the Program Executive Officer's activities.

AMC Goals and Performance

TABLE II - 1: AMC Goals and Performance

	GOAL DEVELOPMENT	
DESCRIPTION	**FY90 BASELINE**	**ACTUAL (SEP 90)**
Delinquent Public Debt	522,426	640,993
Delinqent NAF (SC 915)	224,288	160,583
Delinqent AFES (SC 918)	24,936	25,701
Uncleared TBO over 180 days old	330	7,720
Unclear IF over 210 days old	101	399
Prior year Travel Advances by 30 Sep 90	2,425,357	1,143
"M" year Travel Advances by 30 Sept 90	25,239	2,426
"M" year Unliquidated Obligations	2,079,219,488	1,866,215,493
Dit Chargeback Transaction	180	33
Civil Service 302 vs 2812	20	16

Source: DCS for Resource Management Historical Submission, FY90.

FY90 Program Execution

The AMC FY90 obligations for the Army Procurement Appropriation (APA); Research, Development, Test and Evaluation (RDTE); Operations and Maintenance, Army (OMA); Conventional Ammunition Working Capital Fund (CAWCF); and Wholesale Army Stock Fund (ASF) were $28B against an obligation plan of $28.2B. AMC's annual program was $32.2B. AMC exceeded the plan in OMA, CAWCF and ASF. There were unobligated funds of $65M in the expiring year APA. AMC awarded $1.4B in contracts requiring congressional notification during the last week of the fiscal year. This FY90 execution data was for AMC and the AMC supported PEOs. AMC received additional funding authorities of $245M in ASF and $130M in OMA to support Operation Desert Shield. $20M of OMA authority was not used and was returned to DA.

AMC Wholesale Army Stock Fund Operating Cash

In FY90, AMC's operating cash balance improved from $36 million to $149 million even though DA withdrew $155 million for reprogramming ($100 million used as a bill payer for an OMA shortfall and $55 million was given to DLA as the Army's portion of fuel cost increase). To improve its cash position, AMC: (1) reduced FY90 obligation; (2) extended materiel delivery dates; (3) reduced back orders; (4) delayed contract awards; (5) reduced annualized buys to design only stable items. Operation Desert Shield has resulted in increased sales of stock fund materiel.

Foreign Military Sales (FMS) Case Cash Reconciliation

In FY90, the Customer Order Control Points (COCPs) at the MSCs performed the FMS reconciliation as part of normal operations. The variance stabilized on current transactions because of the Army's installation of positive transaction controls. New out of balance conditions were isolated and corrected. We tasked the MSCs to complete the review of the old lines unreconciled as of the April 1989 upload of Army FMS disbursements to the Defense Integrated Financial System. In March 1990, during an FMS Tri-Service Executive meeting, the Defense Security Assistance Agency tasked the Security Assistance Accounting Center (SAAC) to establish an equity account to place all unreconciled balances as of 30 September 1990. The SAAC was originally scheduled to establish this equity account in October 1990, but the establishment date was changed to January 1991.

FY88/89 OMA Unliquidated Obligations Scrub

During FY90, AMC identified $45.2M FY88 and $27.7M FY89 funds to return to DA to finance 1990 foreign currency requirement. The shortage in the Foreign Currency Fluctuation Account (FCFA) was caused by the difference between the budget and execution rates. AMC also identified $21.6M to issue to DESCOM to cover Army Industrial Fund (AIF) costs in depot supply operations. Use of expired year OMA funds minimized the requirement to direct current year funds for these purposes.

Automated Financial Entitlements Systems (AFES)

During FY90 we fielded AFES for prototype and completed deployment of the system to all installation Finance and Accounting Officers responsible for entitlement functions. AFES, which consisted of three modules (travel, commercial accounts and disbursing), provided the automation to support the day-to-day financial operations in these offices. On 1 October 1989, the system was installed at HQ, MICOM. A successful prototype of all three modules was completed by MICOM during January 1990. From February through June 1990 the system was subsequently deployed to the 23 additional Finance and Accounting Offices.

Standard Operation Maintenance Army, Research and Development System (SOMARDS)

In the Army Materiel Accounting System (AMAS), the SOMARDS completed its first successful yearend in September 1990 at AVSCOM, AMCCOM, CECOM, MICOM, and TACOM. The system was implemented at Letterkenny Army Depot and LABCOM. The implementation at LABCOM eliminated the last unique system within AMC which was not in compliance with General Accounting Office (GAO) principles and standards. The first, second, and third level reviews required by the Federal Managers Financial Integrity Act were completely redocumented and it was again concluded that SOMARDS met the GAO standards and that the system will perform satisfactory accounting and reporting at the allotment level.

AMC Automated Manpower Management Information System (AAMMIS)

AAMMIS was designed to automate the manpower management/force development functions within AMC. The system will provide for the gathering, definition, automation, and storage of common manpower management/force development information required by HQ AMC, its Major Subordinate Commands/Separate Reporting Activities, and its Installation/Field Elements (I/FE).

This system will be capable of evolving to support additional or changed functions and users. Features to be incorporated were: user friendliness; consistent and similar appearance and operation from module to module; and validated input (i.e., data entry will be edited and error messages presented to the user). Computational accuracy will be absolute. AAMMIS will consist of the following modules:

a. Program and Budget. Budgeting of manpower resources against identified requirements for all Planning, Programming, Budgeting, and Execution Systems (PPBES) formats.

b. Allocations. Allocation of manpower spaces through AMC Program and Budget Guidance (PBG); allowed for horizontal and vertical management; and accounting and management of manpower in special programs such as Army Management Headquarters Activity (AMHA); Foreign Military Sales (FMS); Program Element (PE) Management; and would serve as a basis for the AMC Command Plan.

c. Documentation. The Army Authorization Documents System - Redesign (TAADS-R) inclusive of Tables of Distribution and Allowances (TDAs), Modification Tables of Organization and Equipment (MTOES), and Mobilization TDAs (MOBTDAs) for AMC; Manning Document.

d. Requirements. Requirements determination for peacetime workload; Manpower Staffing Standards System (MS-3); and non MS-3.

e. Standard Reports. Reporting and analysis (including trends) of actual strength, utilization; military personnel information, other manpower; and reserve components training, etc.

f. Functional Integration module will serve as an informational bridge between all the modules and consists of three parts: position control, ratio management, and organization management.

g. Post Population Profile module will track annual strength accounting of population, by category, served by various services available at each host installation.

h. Contract Manpower Management module will consist of a Contract Manpower Utilization Report.

All life cycle documentation for AAMMIS has been completed including economic analyses for each life cycle phase and a project management plan. A Software Qualification Test (SWQT) for the allocation module was conducted at the System Integration and Management Activity, Chambersburg, Pennsylvania.

Prior to the SWQT the allocation team met and prepared the SWQT Plan and upon completion of the test a Test Analysis Report was prepared. The allocation module was deployed and the next module, Documentation, was scheduled to deploy in January/February 1991 time frame.

Force Management Division

L-Chart Project

The AMC Chief of Staff tasked the DCSRM to develop the Defense Management Review (DMR) reductions using the L-Chart process. A working group, led by the Requirements Section, Force Development Division, with representation from all of the headquarters, was established. This group studied the L-Chart process, developed guidance and tasked all HQ elements to provide L-Chart input. The working group devised the methodology to evaluate L-Chart inputs to prepare reduction recommendations for the command element. L-Chart results were provided to each DCS to be used to make final recommendations. The working group's files were consolidated and the working group disbanded.

Partners Survey Process

The DCSRM Requirements Section developed a new manpower survey procedure called "Partners," for a manpower survey of HQ CECOM. The process used HQ CECOM personnel resources along with DCSRM personnel from the Requirements and Utilization Branch to conduct the survey. The AMC and MSC analysts worked as a team to review work hours, interview employees, validate workload, and identify work effort and personnel costs to produce a given output. Final results of the survey were briefed to, and accepted by, the CECOM commander and management. Benefits achieved were a successful study completed in minimum time, survey training provided to MSC analysts, and $40,000 TDY and administrative costs saved.

Modified Manpower Survey Process

The DCSRM Requirements Section used an Enhanced Task Cost Analysis (ETCA) concept, approved for Army Materiel Command Management Engineering Activity (AMCMEA), to develop a modified manpower survey procedure. Several features were added to the ETCA, which greatly benefited the manager and supported major features of Managing Civilians to Budget (MCB), Zero Base Resourcing (ZBR), and Total Quality Management (TQM). The Task Cost Analysis sheet data were used to complete L-Charts. This combination of ETCA and L-Charts: (1) ensured local ownership of survey process; (2) identified outputs produced (goods and services); (3) computed workyears required to produce outputs; (4) provided Civilian Pay Plan (CPP) estimate; (5) documented tasks performed in resourcing priority; (6) pinpointed customers for each output produced; (7) aligned outputs and tasks to the standard AMC missions and functions; and, (8) developed resourcing models for managers to determine manpower needs and costs under varying conditions. The process was successfully used for the HQ TECOM survey. The TECOM commander approved the results and stated the process was a great success, which gave TECOM a viable tool to determine manpower needs. This process was also successfully used in the Logistics Assistance Program Activity (LAPA).

Manpower Surveys

The following actions were taken in this area:

a. Three modified manpower surveys (CECOM/TECOM/LAPA) were completed in FY90 for a total of 5,732 spaces.

b. Assistance was provided to the U.S. Army Force Integration Support Agency for two actions dealing with the Base Realignment and Closure (BRAC) and with the Forces Command (FORSCOM).

c. Assistance was provided TECOM on its survey of Dugway Proving Ground, Utah.

Managing Civilians to Budget (MCB)

The DCSRM Force Development Division (FDD), Utilization Section, provided training and guidance to the AMC MSCs/SRAs that were not MCB test sites. FDD developed classes and presented them to installation level trainers to provide them the expertise and knowledge to train personnel at the installation. Written guidance and teleconferences were provided to assist in preparing for the Army-wide MCB effort in FY91.

Defense Management Review

The following actions occurred based on the DMR: an AMC Task Force was established to conduct the DA directed reductions in several resources and base closures; and Project Vanguard, a DA directed action, further reduced and consolidated AMC activities. Resource Management, FDD, developed plans to reorganize their functions along the Commodity Commands guidelines with a cross-fertilization of all manpower management skills.

Manpower Staffing Standards System (MS-3)

Nine MS-3 standards were applied to validate 5,000+ requirements. Development of and support for standards continue for an additional 38,000 requirements. AMC was the lead team and was responsible for the reapplication of the Army-wide Safety standard.

Command Special Projects and Task Forces

A variety of intensive and innovative special projects and task forces were participated in and conducted. These projects responded to the severe DA budget crunch and the downsizing of the Army due to the end of the Cold War. They included: (a) the BRAC Task Force analysis of the repercussions of closing specific bases; (b) the DMR study of ways to streamline the Army; (c) the Vision 2000 evaluation to determine how AMC will look in the future; and, (d) the Test and Evaluation Project evaluation of the benefits of consolidating all the Army's Test Centers. AMC's FDD was instrumental in developing and participating in new methods of conducting manpower surveys; using Partners at HQ CECOM and the Task Cost Analysis at HQ TECOM and LAPA.

Integrated Management Engineering Schedule (IMES)

This schedule incorporated all the methods involved in management engineering operations (manpower surveys, efficiency reviews, functional models, conventional staffing standards, subject matter assessments, etc.). A management philosophy change indefinitely suspended traditional manpower surveys and functional models. The DMR approved Defense Management Report Decision #927C on 4 December 1989, which cancelled Efficiency Reviews and Subject Matter Assessments. IMES was discontinued as these events negated this need.

Manpower Reductions

Functional Transfers. DMRD 917 (Civilianization of Military in Support Positions) directed AMC to reduce 306 military authorized spaces and civilianize 302 of them by FY93 (FY91: -81 military, +80

civilians; FY92: -193 military, +191 civilians; FY93: -306 military, +302 civilians). In November 1989, HQDA directed AMC to accomplish the civilianization of P7S (supply management, central procurement, logistics support, logistics administration support) and RDTE (test ranges and facilities). HQDA modified this in February 1990 by directing civilianization of the 523rd Military Police (MP) Company at Aberdeen Proving Ground. However, HQDA allowed AMC to submit an alternative. The CG, AMC approved an alternative (a trade-off for the 523rd MP Company by elimination of the 65th MP Platoon and disestablishment of the 241st and 291st MP Companies) in May 1990. This left MPs in TDA units where there were significant military presence. The DCSRM staff briefed the alternative to HQDA in June 1990 and included it in the AMC July 1990 Command Plan.

Quicksilver. Quicksilver I, the Army's plan to meet the evolving threat for the mid-90s, phased in the elimination of 79 Officers, 4 warrant officers and 298 enlisted authorized spaces by FY93 in the AMC July 1990 Command Plan (FY91: -32 officers, -4 warrant officers, -263 enlisted men; FY92: -75 officers, -4 warrant officers, -298 enlisted men; FY93: -79 officers, -4 warrant officers, -298 enlisted men). In February 1990, HQDA directed AMC to identify only the military spaces at White Sands Missile Range (WSMR) and Vulnerability Assessment Lab (VAL) for all the reduction. This would have eliminated all the VAL's military, whom AMC considered essential to provide expertise on weapons systems and their deployment in battle. WSMR was one of AMC's highest priority test facilities. HQDA permitted AMC to submit an alternative. The CG, AMC approved an alternative which instead spread the reduction throughout the major subordinate commands. The DCSRM staff briefed the alternative to HQDA and included it in the AMC July 1990 Command Plan.

Voluntary Military Reduction (VMR) Phase I. In FY90 AMC made a commitment to the Army to turn in military authorizations equal to a brigade's strength for redistribution to support active forces. To date, AMC has identified +2,400 military savings or a 27 percent reduction in the DMR initiatives, Quicksilver, Program Budget Decisions (PBDs) and 1,042 voluntary military give-ups. AMC initiated the VMR Phase II by requesting the field to identify a 50 percent military savings in their organizations. AMC hoped to meet the goal of identifying approximately 4,000 military authorizations "or a brigade worth of savings" within AMC through these initiatives.

Officer Distribution Plan (ODP) Elimination. The Army announced elimination of the ODP effective FY92. They also identified an over-structure of 3000 field grades which required 11 percent of field grade authorizations to be downgraded to company grade in this exercise. Accordingly, AMC was tasked to downgrade 384 field grade authorizations (82 colonels, 169 lieutenant colonels and 133 majors) with a new FY92 guidance for AMC of 184 colonels, 351 lieutenant colonels and 339 majors. This was only a downgrading exercise and did not result in an actual reduction of military authorizations. Downgrade documentation was completed in the TDA during the July-September 1990 management of change window.

Reduction in Force. A RIF and granting of early retirements resulted in a small reduction of staffing. Several individuals retired early and one RIF loss occurred. Operation Desert Shield cancelled some actions that would have had an adverse impact on the DCSRM. Reassignments temporarily reduced expertise in some areas.

AMC Army Acquisition Corps (AAC) 4Z Critical Position Review

In the summer of FY90, the CG, AMC tasked AMCRM to compile a list of all critical AAC (4Z) positions (positions critical on the TDA) and the justification for the criticality, to include any additions, deletions and changes to these positions. MSC input was compiled and a board of AMC officers prioritized the data into four categories: Need by regulation, need and can justify, need for more justification, and not critical. A general officer board reviewed these results, further prioritized them, finalized a packet and

presented it to the CG, AMC. This input was presented to HQDA (Army Acquisition Executive Support Agency) to conduct a critical position validation board. AMC input was judged to be far superior to other data. Mr. Conver, the Army Acquisition Executive, will review and approve this list. This process will be institutionalized and conducted each year by HQDA. When approved, the information will be presented to the MSCs.

Status of AMC Units

Six AMC units were reorganized (provisional) by Permanent Orders; five AMC units were organized; three AMC units were reorganized; three AMC units were redesignated; three AMC units were reassigned; one AMC unit was amended; two AMC units were inactivated; three Permanent Orders were revoked; and, seven AMC units were discontinued.[2]

FY 90-97 Budget Program Resource Review (BPRR)

The Program Budget Decision and DMR Decisions were reflected in the BPRR manpower changes. The Management of Change (MOC) Task Force determined the identification of the manpower reductions.

Submission of FY 90-97 Command Budget Estimate (CBE) to DA

The PBDs and DMRDs levied a reduction of several thousand civilian spaces on AMC (ranging from 4,700 in FY91 to 11,800 in FY97). The PEOs and most of the PMs were transferred from AMC to the Secretary of the Army. Command and control of PEO and PM functions were transferred in 1987 but authorized spaces did not move until FY 90-97 CBE.

Program Budget and Funding Policy Division

Planning, Programming, Budgeting and Execution System (PPBES)

PPBES Process Action Team (PAT). The PPBES PAT was chartered on 9 August 1990, with the objective to:

> analyze the current process and recommend enhancements to simplify, streamline, and improve the system through automation, elimination of unnecessary actions and redundant levels of review, and rescheduling of events to facilitate integration and balance across appropriations. While near-term enhancements are envisioned, the PPBES PAT will be guided by the Vision 2000 concept, and geared towards designing a system to reflect the changing mission, workload, and organizational structure of AMC.[3]

Shortly thereafter, on 10 October 1990, the charter was revised to incorporate efforts to re-implement the Unit Cost Concept within the command. This effort became the primary emphasis of the PAT.

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[2]See AMC Permanent Orders 5-1, 16-1,2,3, 36-1,2, 38-1, 44-1, 54-1, 57-1,3, 60-1, 62-5, 65-1, 74-1, 80-1, 81-1,2,3, 90-1,2,3, 94-1, 98-1,2, and 109-2, dated 1990. This is discussed in more detail below in other significant actions.

[3]Charter of the Army Materiel Command AMC Vision 2000 PPBES Process Action Team, 9 Aug 1990.

PPBES for PEO Policy Guidance for Army Command Budget Estimate. Submission policy issues concerning PPBES guidance and the operational relationship between PEOs/PMs and AMC HQ/MSCs continued for at least the third straight year. Discussions between key HQ AMC and HQDA staff and leadership resulted in two key messages which provided consolidated guidance re-funding responsibilities for CBE submissions.

Resource Management Special Operations Division

Special Access Program Staff Assistance Team (SAPSAT)

HQ AMC received substantial criticism from external audit agencies and the Department of the Army Inspector General (DAIG) concerning AMC's lack of Special Access Program (SAP) oversight. In the past, SAP oversight was performed on a piecemeal basis with each HQ organization conducting functional area reviews separately. In April 1990, the SAPSAT was approved and established by the Chief of Staff, HQ AMC, to take a team approach in the performance of a comprehensive review of SAPs managed by MSCs and PEOs. Team membership consists of representatives from AMCRM, AMCMI, AMCDE, AMCPP, and AMCIR. The SAPSAT reviews include security procedures, secure environment contracting, program management, budget preparation and execution, classified program finance and accounting procedures, contract cost performance reviews, and internal review and audit compliances. During FY90, SAPSAT visits/reviews were performed at LABCOM, AVSCOM and MICOM. Six visits are scheduled for FY91.

Operation Desert Shield

Food and Forage Act. In Support of Desert Shield the Resources Management Special Operations Division worked the Food and Forage Act issue. The Food and Forage Act (R.S. 3732) permitted the Department of Defense (DOD), during authorized emergency situations, to incur appropriations deficiencies to obtain clothing, subsistence, forage, fuel, quarters, transportation or medical/hospital supplies which were needed during the current fiscal year. The Secretary of Defense, Richard Cheney, advised Congress on 24 August 1990 that he had exercised the authority granted by R.S. 3732. By so doing, the Secretary was required to submit a quarterly report on the estimated obligations incurred pursuant to the authority granted in the Act. The Department of the Army provided financial management guidance to the major commands and other activities supporting Desert Shield operations via an unclassified message,[4] which AMC retransmitted to major subordinate commands and separate reporting activities.

AMC, specifically AMCOC-RM, provided detailed instructions for implementing the DA guidance via another unclassified message, which provided for an initial report of estimated requirements by 5 September 1990, with subsequent bi-weekly reports. To provide timely and sufficiently detailed reporting, AMCRM-FOR provided further guidance to MSCs/SRAs.[5] DA provided additional guidance for implementing its original message with another one,[6] which AMC retransmitted to MSCs/SRAs. The initial report was submitted by AMC (AMCRM-F) to HQDA (SAFM-BUC-E) via unclassified memorandum on 6 September 1990.

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[4]MSG 312200Z Aug 90, subj: Financial Management under RS 3732 Authority.

[5]MSG 041800Z Sep 90, subj: Functional cost account for Desert Shield.

[6]MSG 071422Z Sep 90, subj: Additional Guidance - Financial Management Operations under RS 3732 authority.

On 30 September 1990, Office of the Secretary of Defense (OSD) provided the Army with supplemental funding to liquidate obligations incident to Desert Shield pursuant to Section 3732 of the Revised Statutes (41 USC 11). The United States Army Finance and Accounting Center (USAFAC) therefore issued new funding documents which replaced 3732 authority with supplemental funding approved by Congress to cover 3732 obligations incurred. On 4 October 1990, OSD was advised by the Office of Management and Budget (OMB) that the President did not actually sign the supplemental appropriations until 1 October 1990. Thus, the supplemental funding was not legally available for distribution on 30 September 1990. DA advised AMC of this fact.

DA also advised AMC that there was no R.S. 3732 authority for FY91, and directed that current allocations should be used to support Desert Shield until DA had the opportunity to review the entire FY91 Desert Shield estimated requirements.[7] AMCOC-RM requested input from all MSCs/SRAs[8] and AMC provided its Desert Shield requirements to HQDA (SAFM-BUC-E) on 11 October 1990.[9]

DA wanted to establish sound budget formulation and execution procedures for Operation Desert Shield by capturing FY90 costs and offsets and determining FY91 requirements and offsets. DA needed to accurately identify actual expenses and near term requirements to effectively validate, prioritize and acquire appropriate levels of funding. Detailed justification of operational requirements would greatly aid efforts to seek funding relief; i.e., reprogramming, supplemental.

FY91 Budget Estimate Submission. DA provided guidance and instructions for developing an FY91 budget estimate submission, which AMCOC-RM retransmitted to all MSCs/SRAs on 22 October 1990.[10] AMC requested MSCs/SRAs to provide detailed FY90 Desert Shield obligation figures and an FY91 budget estimate for Operation Desert Shield for the period 1 October 1990 through 31 March 1991, by 23 October 1990.[11] Coordination was established with AMCAM, AMCDE, AMCEN, AMCIS, AMCPE and AMCSM.[12] AMC provided a response to HQDA (SAFM-BUC-E) on 13 November 1990 by memorandum.[13] Estimated costs were briefed by category and by MSC to the AMC Command Group on the same day. Army Stock Fund requirements were forwarded to HQDA (DALO-RMI).[14]

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[7]MSG 031402Z Oct 90, subj: FY91 Continuing Resolution Authority Message No. 2.

[8]MSG 042100Z Oct 90, Subj: Desert Shield Financial Impact.

[9]Memorandum AMCRM-BC, Subj: Operation Desert Shield Requirements Update for FY91, 11 Oct 1990.

[10]MSG 221425Z Oct 90 Subj: FY91 Desert Shield Budget Estimate Submission.

[11]MSG 231950Z Oct 90, Subj: FY91 Desert Shield Budget Estimate Submission.

[12]MSG 252330Z Oct 90, Subj: same as above.

[13]Memorandum AMCRM-BC dated 13 Nov 1990, Subj: FY91 Desert Shield Budget Estimate Submission.

[14]Memorandum AMCSM-SLS dated 16 Nov 90, Subj: Army Stock Fund Requirements.

TABLE II - 2: 1 Oct 90 thru 31 Mar 91 OMA Estimated Costs ($000's)
(as of 13 November 1990)

CATEGORY	6 MONTH COST	NET DIVERTED	ADDITIONAL
Transportation	58,380	130	58,250
One-Time Deployment	621	111	510
Equip Maintenance	671,271	101,063	570,208
Increased Civilian Personnel/Comm Support	117,150	2,151	114,999
Increased OPTEMPO	719	0	719
In Country	18,837	-876	17,961
Mil Pers Support	32	0	32
U.S. Army Support Group	64,282	0	64,282
Tank Rollover	25,200	0	25,200
Commo, Uniforms, Nets	226,900	0	226,900
TOTAL	1,183,392	104,331	1,079,061

MSC	COST	DIVERTED	ADDITIONAL
AMCCOM	77,994	25,759	52,235
CECOM	84,422	43,439	40,983
AVSCOM	231,197	0	231,197
DESCOM	120,300	1,625	118,675
TROSCOM	247,613	3,315	244,298
TACOM	281,184	3,895	277,289
MICOM	110,443	26,292	84,151
OTHER	30,239	6	30,233
TOTAL	1,183,392	104,331	1,079,061

Source: DCS for Resource Management Historical Submission, FY90.

Developing a Revised FY91 Desert Shield Budget Estimate Submission. On 8 November 1990 President George Bush, Secretary of Defense Richard Cheney and Chairman of the Joint Chiefs of Staff GEN Colin Powell announced changes to the troop fielding plan associated with Operation Desert Shield. As a result, DA needed to revise its computations and determine its requirements for all of FY91 in order to submit an accurate supplemental request to OSD and Congress. DA advised AMC of this requirement via an unclassified message[15]. AMC provided guidance to MSCs/SRAs via an unclassified message.[16] Guidance pertaining to the Army Stock Fund was provided by AMCSM-SLS to affected MSCs via unclassified

[15]MSG, 151800Z Nov 90, subject: Revision to FY91 Desert Shield Budget Estimate Submission.

[16]MSG,161405Z Nov 90, subject: FY91 Desert Shield Budget Estimate Submission.

message, and AMC responded to HQDA with a memorandum. AMC stated that it needed a total of $1,621,796,000 for Desert Shield Operations in FY91. It also needed a total of $1,932,300,000 for three special programs--the U.S. Army Support Group, the Tank Roll Over (moving tanks from Europe to Southwest Asia, and the cost of camouflage, uniforms and nets).[17]

As a result of a request by the Under Secretary of the Army, the Office of the Auditor General reviewed AMC's request to cancel reduction-in-force actions and to buy back 2,407 encumbered positions because they were supported by Desert Shield workload. This review showed a need for policy establishing a way to collect and report workload data and costs relative to Operation Desert Shield, as had been set forth by the Office of the Auditor General.[18] AMCRM-F developed a list of workload collection and reporting requirements which were also distributed to the MSCs. After each MSC was asked to provide a proposed reporting format, a final format was decided upon. Reporting commenced on 4 December 1990, retroactive to 1 October 1990.[19]

In support of Operation Desert Shield, AMCRM-F provided policy for travel, entitlements, pay, and allowances for military and civilian personnel deployed to Saudi Arabia. In addition, issued policy for pay entitlements of members missing, missing in action, interned and pay to dependents.

DCSRM AMC Emergency Operations Center Standing Operating Procedures. The DCSRM, through the RM desk in the Emergency Operations Center, served as the focal point for all funding issues, regardless of the type of appropriation/funds involved. To accomplish this mission and insure continuity and cognizance of all command financial management issues relating to operations and exercises, the RM operations center desk had to be kept fully informed of all funding issues, whatever their magnitude. The DCSRM AMC Emergency Operations Center (EOC) Standing Operating Procedures (SOP) were developed and published to ensure that this was done.[20]

Budget Division

FY90 Execution

AMC closed out FY90 with direct obligations totalling $5.260 billion. This total includes $110 million for unplanned Desert Shield requirements. Actual FY90 direct obligations were slightly lower than the FY89 level of $5.289 billion. The reduction was due primarily to Congressional and DA funding reductions. Operation and Maintenance, Army (OMA) reimbursable customer funding totalled $625 million or 26 percent above prior year customer funding of $472 million. Major increases occurred in customer workloading, including Desert Shield support. AMC's FY90 OMA execution performance was highly

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[17]MSG, 161300Z Nov 90, subject: FY91 Desert Shield Budget Estimate Submission and AMCRM-BC memorandum dated 29 Nov 90, subj: Revision to FY91 Desert Shield Budget Estimate Submission.

[18]Memorandum from the Office of the Auditor General, 15 Oct 90, subject: Tracking Desert Shield Workload.

[19]Operation Desert Shield, Workload Collection/Reporting Requirements; Operation Desert Shield, Milestones for Compliance; Memorandum, GEN Tuttle to Distribution, subj: Tracking Desert Shield Workload, n.d.

[20]DCS for Resource Management AMC Emergency Operations Center Standing Operating Procedures.

commendable despite major delays by DA in releasing funds to support the "best case" funding level totalling $370 million, and unplanned Desert Shield requirements of $110 million. AMC was able to execute its missions substantially as planned and still fully support unplanned Desert Shield requirements.

FY 91-93 BPRR Process/RIF Planning

The purpose/objective of the BPRR was to specify the concepts, instructions, staff responsibilities, and schedule of events for the preparation, review, and subsequent submission of the FY91-94 Command Budget Estimates to HQDA as well as the follow-on Program Analysis Resource Review (PARR). Last year's BPRR process was significantly changed. This was due to the uncertainty and dynamic ongoing Army reductions resulting from the drawdown of forces in Europe and major changes in the funding stream. Since FY92-97 resource levels were not finalized in sufficient time to allow for timely submission, AMC reporting activities, field activities submitted only FY90-91 data. AMC staff developed FY92-93 data based on latest DA and HQ AMC workforce plans with field activity help as required.

The AMC CBE was submitted on 2 July 1991. The funding guidance received included generalized program, departmental billpayer DMR and Quicksilver drawdown reductions. The cumulative effect of these reductions exceeded our ability to absorb without resorting to RIF procedures. Built into the CBE was a plan calling for an adverse impact on about 9500 P7 (Central Supply and Maintenance) jobs in FY91. This included the release of 1,600 temporaries, the attention of 1,200 permanent employees and the voluntary separation of 5,400. P7S (Supply) funding guidance allowed us to stabilize the workforce in FY92 but FY93 guidance will require a further drawdown of the workforce. To minimize the impact of a RIF in FY93, a 1 for 3 hiring freeze was put into effect for the FY91 and extended into FY92 and FY93. Our P7M (Depot Maintenance) funding guidance will necessitate a RIF in each of the next three years (fiscal years 1991-1993).

Cost Analysis Division

DOD Directive 5000.1, DOD Instruction 5000.2, and DOD Manual 5000.2M

During the year, the division reviewed and provided comments for HQDA on proposed revisions to DODD 5000.1, DODI 5000.2, and DOD 5000.2M, each related to DOD acquisition and management policies and procedures. The drafts incorporated and consolidated the guidance in many existing acquisition management documents. The division recommended changes in a number of the cost formats and definitions and also suggested incorporating the effects of the latest guidance in Defense Management Review Decision - DMRD 904c, Stock Funding of Depot Level Reparables.

Economic Analysis (EA)

AMC Economic Analysis Review. In response to Comptroller of the Army tasking, the EA process was reviewed throughout AMC to determine if there were systemic or operational problems. The review determined that:

- although there were policies and procedures in place throughout AMC, personnel resources to provide adequate technical support were in high demand and short supply;

- there were strong indications that we must clarify information system definitions;

- that in light of anticipated personnel cutbacks, a threshold needs to be established below which the Army would not require EAs;

- and that education was essential in assuring vigilance in our staff leaders.

As part of the overall review the division included an examination of the EA processes and procedures in the Capital Investment Programs, which included Productivity Capital Investments, Production Base Support, Information Management Systems, Military Construction and Materiel Change. The review summarized the primary characteristics of each subprogram in terms of its scope, governing regulations, EA linkages, levels of decision authority and functional responsibilities.

AMC Memorandum of Instruction (MOI) on EA. In May 1990, HQDA published AR 11-18, which superseded the existing EA regulation, AR 11-28, and consequently AMC Supplement 1 thereto. To maintain continuity of the EA function within AMC, the AMC MOI was published in September 1990 for the application of EA. The MOI delineated responsibilities and provided supplemental policy and procedural guidance for the accomplishment of EA within AMC as required by AR 11-18.

DA Letter of Instruction on Information Systems. Twice during the year (April and June), the division reviewed drafts of a Letter of Instruction (LOI) for Performing EA and Cost Requirements for Automated Information Systems (AIS) developed by the U.S. Army Cost and Economic Analysis Center (CEAC). This LOI was to replace one issued in January 1988. After each review, the division furnished CEAC recommended changes to the LOI believed necessary to strengthen it. The final draft of the LOI included some of our comments. CEAC expected issuance of the LOI in late November or early December 1990.

Guidance on Military Pay Rates. During October, the Cost Analysis Division issued the Composite Standard Rates for Costing Military Personnel Services, Army for FY90 and guidance on costing military personnel services in Baseline Cost Estimates (BCEs). The DA Budget Office developed these rates and they are in FY90 constant dollars. In March, the division received and distributed new rates, revised to reflect the President's Budget.

Inflation Guidance. The Office of Management and Budget (OMB) developed inflation rate guidance which OSD then refined for application by the Services. HQDA prepared the Army's inflation indices and disseminated them to the Major Commands. The Cost Analysis Division served as the HQ AMC focal point for inflation and provided the indices to the MSCs, Project Manager Offices, and other installations and activities having a need for them. The AMC community used the indices in pricing the Baseline Cost Estimates, Selected Acquisition Reports, Program Objective Memoranda, budget submissions, and other cost estimates. In late December inflation indices were distributed to replace those issued in January 1989.

Procedures for Use of Inflation-Deflators. The division issued AMC guidance on application of inflation-deflators in weapon system cost estimates in order to assure that BCEs used a uniform methodology and adjustment factors for treatment of inflation, including historical data normalization from current dollars to a designated constant base year. The latest OSD inflation factors were processed and distributed in January of each year. In addition, AMC developed a set of deflators, for each appropriation, based upon OSD/DA information, for use throughout AMC and the OBCE system.

Vision 2000 Analysis. In response to this CG AMC initiative, the Cost Analysis Division developed a methodology and applied costing factors to present an analysis of an AMC future restructuring scenario, Vision 2000. In addition, personnel of this office visited the Management Engineering Activity in June 1990 to advise and assist them in interfacing our analysis with the development of more detailed Vision 2000 analyses for which they had responsibility.

AMC Schools Study. At the direction of the AMC Commanding General, a review of the AMC schools was conducted. The review was accomplished by four functional working committees under the oversight

of a general officer/senior executive service (GO/SES) steering committee. The four functional committees reviewed the areas of Needs Determination, Educational Posture, Cost/Benefit Analysis, and Resource Review. The Deputy Chief of Staff for Resource Management and the U.S. Army Materiel Systems Analysis Activity (AMSAA) co-chaired the Cost/Benefit Analysis Working Committee. The Cost/Benefit committee developed an informational database of FY89 Army Logistics Management College (ALMC) and Army Management Engineering College (AMEC) courses. The database was used to identify alternative distributions of course offerings by categories of courses, modes of instruction and priorities of courses; and we compared costs and benefits of the alternatives to a base case.

Chargeback Cost and Benefit Analysis. During July 1988, the Under Secretary of the Army decided to implement chargeback. He approved an action plan during September 1988 for implementing a chargeback system for Information Mission Area (IMA) services in compliance with OMB Circular A-130, Management of Federal Resources. In a 9 September 1988 memo to the Director of Information Systems for Command, Control, Communications, and Computers (DISC4) and the Assistant Secretary of the Army (Financial Management) (ASA[FM]), he assigned the DISC4 HQDA staff proponency and approved a chargeback beta test with appropriate resources. DISC4 staffed a draft test plan which included Letterkenny Army Depot, Fort Lewis and Fort Monroe as the test sites and USAISC as the implementing MACOM. HQDA formed a steering committee chaired by ASA(FM). At a meeting on 5 April 1989, the committee required DISC4 to assess the costs and benefits to implement a chargeback program for IMA services. AMC, along with TRADOC and FORSCOM, was providing cost analysis support for the evaluation, while USAISC assumed the lead role and CEAC acted in an oversite capacity.

Consolidated Maintenance Facility (CMF) at Tooele Army Depot (TEAD). In 1984, TEAD prepared an EA in support of the CMF project as a candidate for inclusion in AMC's input to the FY89 Military Construction, Army (MCA) program. The project received approval at all decision levels including final Congressional approval in October 1988. Construction of the facility to consolidate several scattered maintenance operations at TEAD began in July 1989.

In January 1990, the U.S. Army Audit Agency (USAAA) began an audit of the CMF project. Approximately midway through their audit, and well after construction began, the USAAA went on record recommending that construction be terminated based on their position that the facility was not an economical investment. It was their contention that the EA contained overstated workload projections which in turn led to design of an oversized facility. This precipitated several meetings involving TEAD, HQ DESCOM, HQ AMC, and the USAAA. AMC contested the USAAA position and, as no agreement was attainable, both parties briefed the issue to ASA(FM) in July 1990 for resolution. Based on information presented by both AMC and the USAAA, ASA(FM) ruled in favor of continuing the project.

Economic Analysis Projects. The division reviewed a large volume of EAs to determine the adequacy of the methodologies and techniques employed, as well as the formatting from a technical point of view. The reviews encompassed many major programs such as Capital Investment, Information Management, Military Construction, and Production Base Support. It also provided policy and procedural guidance to HQ AMC elements and subordinate activities when required.

AMC Cost Analysis Chiefs' Meeting

AMC conducted the Annual AMC Cost Analysis Chiefs Meeting at Fort Belvoir, Virginia, 1-2 November 1989, and developed plans for the 1990 meeting. The FY91 meeting, 15-16 November 1990, will focus on the following topics: Validation Streamlining; Organizational, Staffing, and Functional Support Considerations; AMC Cost Analysis Program Considerations; and the Operational Baseline Cost Estimate.

AMC Cost Analysis Personnel Profile and Workload Survey

The AMC Cost Analysis Personnel Profile presented data for each Cost Analysis and PM Office having Cost Analysis and/or Selected Acquisition Information and Management (SAIMS) positions. The Workload Survey assessed the professional manyears available and the percentage of time spent on activities within the MSC Cost Analysis and SAIMS functional areas. The division collected, summarized, and presented a command assessment of the data as of 1 October 1989 for the personnel profile, and as of 1 October 1988 through 30 September 1989 for the workload report. It provided the reports to each MSC in March 1990.

Cost Analysis Award

Annually, the AMC Commanding General awarded the AMC Cost Analysis Award for outstanding individual or group accomplishment in Cost Analysis to deserving AMC personnel. Those selected for awards this year were: Mr. John D. Fleck, Heavy Force Modernization Program Executive Office, in the category Cost Estimating/Cost Analysis for his lead role in cost estimating and analysis activities for the conduct and completion of various analyses related to the Heavy Force Modernization Program; Ms. Diane A. Hohn, Mr. Thomas M. Lazenby, and Mr. Ronald D. Hayostek, TACOM, in the category Cost Estimating/Cost Analysis for developing the BCE for the Heavy Force Modernization Program; Mr. James A. White, Jr., MICOM, in the category Selected Acquisitions Information and Management for improving the contract cost/schedule management process; Mr. Mark B. Coy, CECOM, in the category Research, Methodology, and Data for developing the Coy-SLIM Model for estimating and validating software costs; Mr. Roger P. Dale, DESCOM, Lexington-Blue Grass Army Depot, in the category Review and Validation for improving the quality of validations of Resource Investment Proposals; Ms. Kathryn A. Brown, TROSCOM, in the category Cost Estimating/Cost Analysis for developing the cost analysis of the Logistics-Over-The-Shore capability of Army watercraft; and Ms. Kimberley S. Schenken, AVSCOM, in the category Cost Estimating/Cost Analysis for developing an Operating and Support Cost and technical position to brief at the Office of the Secretary of Defense.

Budget-to-Most Likely Cost-OSD Cost Analysis Improvement Group (CAIG) Reviews

As part of the Acquisition Improvement Program, the OSD CAIG annually reviewed a sample of estimates from each service to assure that budgets reflected the most likely cost of materiel systems. During FY90, estimates prepared for review by the CAIG included the following systems:

LONGBOW	AFATDS	CSSCS	SADARM
ASAS	FAADC2	MCS	

Army System Acquisition Review Council (ASARC) and Defense System Acquisition Review Council (DSARC) Reviews

The division reviewed estimates developed for support of major system decision reviews by the ASARC and DSARC on the following systems:

ATACMS	AAWS-M	GPS	AFAS-C	CMV
LONGBOW	SINGCARS	SADARM	AGS	AVENGER
PLS	BLOCK III	HIP		

Baseline Cost Estimates and Reassessments

Cost Analysis Offices at major subordinate commands and HQ AMC reviewed and coordinated BCEs prepared by the project managers. BCEs formed the basis for the audit trail/track throughout the life cycle

of a weapon system. We ensured that reassessments, made at major decision points, tracked to the initial BCE. We required BCEs or reassessments for the following systems during FY90:

COMPLETED				IN-PROCESS	
FMTV	AEI	AGS	MLRS	AAWS-M	TOW-2
FOG-M	PLS	CMV	AFAS-C	HIP	HELLFIRE
STINGER	ASAS	LOS-R	AFATDS	JSTARS	PATRIOT
ADATS	GBS	SINCGARS	M1/M1A1	ADDS	
MLRS/TGW	ATACMS	MSE	MCS	LH	
SADARM	FAAD C2I	CSSCS	AHIP	TSIP	
BLOCK III	LONGBOW-APACHE				

Cost and Operational Effectiveness Analyses (COEAs), Abbreviated Analyses and Other Major Studies

COEAs required coordination with CEAC, TRADOC, MSCs, and the project manager offices. During FY90, we coordinated COEAs and other analyses/major studies for the following systems:

COMPLETED		IN-PROCESS		
AAWS-M	PED	FAADCI	TTS	UTARS
IAAWS	ICBDFEA	LONGBOW	ICR AA	IEW
M1A1	HIP	SOPS AA	BASS AA	LH
IRV	ASM	LOSAT	SORFMS AA	STINGRAY
FIFV		MPIM	ADS AA	TACFIRE/LTACFIRE AA
HIMAD		IA2	NAS	

Selected Acquisition Reports, Unit Cost Reports, Supplemental Contractor Cost Reports and Defense Acquisition Executive Summary Reports

These were standard, comprehensive, summary status reports on major defense systems, prepared for management within DOD and for submission to Congress and other government agencies. All programs designated as major defense systems by the Secretary of Defense required these reports, which summarized current estimates of technical schedules, quantity, and cost information. PMs prepared the reports which were then coordinated with the MSC cost analysis office and HQ AMC. Major systems reported included:

LONGBOW	ATACMS	ADDS	STINGER	AAWS-M
FAAD C2I	BLACKHAWK	MLRS/TGW	M1/M1A1	AHIP
ASAS	PATRIOT	TOW-2	SINCGARS	MLRS
COPPERHEAD	CH-47D	HELLFIRE	LOS-F-H	JTIDS
AAH	NLOS	MSE	FOTL	BFVS
FMTV	LH	OH-58D	PLS	JSTARS
AVENGER				

Contract Cost Performance Division

Cost/Schedule Control Systems for Large Acquisition Contracts with Cost Risk

DODI 7000.2 requires that, on major acquisition contracts, contractors use cost schedule control systems that met the DOD Cost/Schedule Control Systems Criteria (C/SCSC). The Contract Cost Performance

Division was responsible for ensuring that the systems complied with the C/SCSC. The requirement applies to non-firm-fixed-price contracts larger than $40M if for development, or $160M if for production. During FY90 the Division conducted 58 in-plant reviews on contracts with a total value over $2.5 billion.

Contractor's Submittal of Contract Cost Performance Reports

DOD Instruction (DODI) 7000.10 called for cost performance reports on non firm-fixed-price contracts over $2 million. The Contract Cost Performance Division reviewed all acquisition plans furnished by the DCS for Procurement to ascertain that the plans provided for proper contract cost performance reporting (and compliance with the C/SCSC when applicable).

Analysis and Use of Contract Cost Performance Data

The Contract Cost Performance Division received a copy of each monthly Cost Performance Report (CPR) from contractors required to apply C/SCSC, and conducted an independent analysis of cost and schedule status and of estimated final cost.

During FY90, the Division received 312 CPRs on contracts having a total value of $3.0 billion. The Division provided its monthly analysis of significant cost and schedule variances, and its own independent estimate of final contract cost, to the Deputy CG for Research, Development, and Acquisition. Based on its analysis, the Division provided information to the Deputy Assistant Secretary for Program Evaluation in the Office of the Assistant Secretary of the Army (Research, Development, and Acquisition) (OASA [RDA]), and also reviewed, as required by that office, the contract cost portion of major acquisition reports from PEOs and PMs (e.g., Selected Acquisition Reports, Program Status Reports, Unit Cost Reports, and Defense Acquisition Executive Summary Reports). The division was instrumental in developing and implementing a computerized cost performance analysis module for use at HQ AMC and all MSCs. It was called "Performance Analyzer."

Application of Contract Cost and Schedule Control on Special Access Programs with Cost Risk

The proper management and cost control of special access programs was essential and should be equivalent to that of other acquisition programs. The AMC Chief of Staff published a policy to this effect, and the division has been making progress in implementing it. To assist MSCs and stimulate compliance, the Division's representative has been made a member of a team which will visit each MSC. The MSC's programs will be reviewed to determine whether those programs have the proper cost/schedule measurement and reporting requirements.

Improvement of the Contract Cost Performance Measurement, Analysis and Reporting Processes

The Contract Cost Performance Division played a major part in a joint DOD/industry TQM effort to improve the cost/schedule management process. Division representatives served on the Executive Committee, Steering Committee, and the process action teams which reviewed the DOD process and the industry process. Also, Division representatives led information gathering teams to visit government and industry customers of the process. They chaired three of the six teams which analyzed the data collected and prepared recommendations for improvements.[21]

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[21]Memorandum for AMCRM-P, Subj: Army Management Review Strategy to Improve Acquisition and Management Processes, 12 Mar 90.

Force Management Division

AMC Unit Organizations/Reorganizations

Units Provisionally Organized. Six AMC units were organized (provisional) by Permanent Orders:

Permanent Order 98-1, 27 October 1989, organized (provisional) the U.S. Army Chemical Agent Munitions Disposal System (CAMDS) Activity, XX W26FAA, effective 1 October 1989, established provisionally to initiate personnel actions.

Permanent Order 98-2, 27 October 1989, organized (provisional) the U.S. Army Program Manager Chemical Demilitarization (PMCD), XX W2DFAA, effective 1 October 1989, established provisionally to initiate personnel actions.

Permanent Order 109-2, 19 December 1989 organized (provisional) the AMC Logistics Support Activity (LOGSA), XX W43TAA, effective 1 October 1989, established provisionally to provide effective support to the AMC in the broad areas of readiness.

Permanent Order 38-1, 23 May 1990, organized (provisional) the U.S. Army Project Manager Instrumentation Targets and Threat Simulators (PM ITTS), XL W457AA, effective 15 May 1990, established provisionally to provide engineering, development, acquisition, fielding, and capability accounting of Army targets, threat simulators and major instrumentation for technical and operational testing.

Permanent Order 90-1, 19 October 1990, organized (provisional) the HQ, U.S. Army TMDE Activity, XX W1PLAA, effective 1 October 1990, established provisionally to combine the Office of the Deputy Executive Director for TMDE, HQ AMC, into the proposed organization.

Permanent Order 94-1, 31 October 1990, organized (provisional) the U.S. Army Support Group, XW W46EAA, effective 1 November 1990, established provisionally to increment phases to establish and operate a facility capable of performing component repair, backup maintenance, supply distribution of critical assemblies, retro-grade/evacuation for unserviceables, and perform modification work orders and total package fieldings in support of deployed U.S. and allied forces. This unit was based in Dammam, Saudi Arabia and reported to headquarters, DESCOM.

Units Organized. Five AMC Units were organized:

Permanent Order 5-1, 18 January 1990, organized the U.S. Army Program Manager Chemical Demilitarization (PMCD), XL W2DFAA, effective 1 October 1990, to provide support to national efforts to obtain a verifiable chemical disarmament treaty.

Permanent Order 5-1, 18 January 1990, organized the U.S. Army Chemical Agent Munitions Disposal System Activity, XL W26FAA, effective 1 October 1990, to conduct toxic and non-toxic testing of the equipment, processes and procedures being considered for use in Johnson Atoll Chemical Agent Disposal System and Stockpile Disposal Program and the Cryofracture Disposal Process Development Facility.

Permanent Order 57-4, 17 July 1990, organized the U.S. Army Redstone Technical Test Center (RTTC), XM W1HTAA, effective 1 October 1990, to plan and conduct technical tests of small missiles and rockets and related materiel items/systems as assigned.

Permanent Order 74-1, 7 September 1990, organized the AMC Systems Integration and Management Activity (SIMA), XX W44KAA, effective 1 October 1990. PO 74-1 was revoked because of strength, now organized under PO 81-2.

PO 81-2, 25 September 1990, organized the Systems Integration and Management Activity (SIMA), XX W44KAA, effective 1 October 1990, to centralize design and integration of automated systems for AMC.

Units Reorganized. Three AMC Units were reorganized:

Permanent Order 36-1, 21 May 1990, reorganized the Program Manager for Rocky Mountain Arsenal Contamination Cleanup, XX W4UZAA, effective 25 January 1990, relocated to Commerce City, CO, and the Command Code was changed to XL. All personnel and equipment were transferred to the new TDA. TDA XX W05XAA was merged with TDA XL W4UZAA and was discontinued effective 25 January 1990.

Permanent Order 60-1, 23 July 1990, reorganized the U.S. Army Aviation Development Test Activity (ADTA), XM W376AA, effective 1 October 1990. ADTA and U.S. Army Aviation Engineering Flight Activity (AEFA) were consolidated. AEFA became a derivative with the name AWQ Test Directorate. Civilian personnel affected were placed IAW FPM Supplement 351-1. Military personnel were reassigned or reported as surplus IAW current directives. Equipment was transferred or rendered surplus and reported or disposed of IAW current directives.

Permanent Order 65-2, 31 July 1990, reorganized the U.S. Army Survivability Management Office (SMO), XD W4JPAA, effective 1 October 1990, to serve as the AMC survivability specialist and focal point; the research, development and acquisition focal point for signatures in AMC; to provide senior Army commanders with modest scientific and technical staffs, exploit low observable (LO) and counter-low observable (CLO) technological and support integration of the technologies into critical land combat systems; to provide Army management for technology base materiel development IAW requirements for target acquisition, including cooperative and non-cooperative identification of friend or foe (IFF), to manage the Army Space Technology Program, including the Demonstration Program; to serve as the Army materiel developer focal point for all space and spaces related technology matters, and as the technology base advocate for munitions against mobile hard targets.

Units Redesignated. Three AMC units were redesignated:

Permanent Order 16-1, 26 February 1990, redesignated the U.S. Army Office of Project Manager, Saudi Arabian National Guard (SANG) Modernization Program, XP W3ZLAA, effective 1 February 1990, as Program Manager, Saudi Arabian National Guard (SANG) Modernization Program.

Permanent Order 16-2, 26 February 1990, redesignated the HQ U.S. Army Security Affairs Command (USASAC), XP W1VWAA, effective 1 April 1990, as U.S. Army Security Assistance Command (USASAC).

Permanent Order 44-1, 8 June 1990, redesignated the U.S. Army Research, Development and Standardization Group - Japan (USARDSG-JA), XK W449AA, effective 1 October 1990, as the Head, Armaments Cooperation/Army.

Units Reassigned. Three AMC units were reassigned:

Permanent Order 16-3, 26 February 1990, reassigned the U.S. Army Office of Program Manager, Joint Tactical Fusion Program (JTFP), XD W4JKAA, effective 1 December 1989, from LABCOM to HQ AMC. There were no physical changes in location or personnel.

Permanent Order 54-1, 9 July 1990, reassigned the St. Louis Army Ammunition Plant (SLAAP), XQ W0QKAA, effective 1 October 1989, from AMCCOM to AVSCOM.

Permanent Order 57-3, 17 July 1990, reassigned the 95th Maintenance Company (TMDE), XX WGEHAA, effective 1 October 1990, from the U.S. Army Test, Measurement and Diagnostic Equipment Support Group (USATSG) to the 74th Maintenance Battalion.

Units Amended. One AMC unit was amended:

Permanent Order 90-2, 19 October 1990, amended the 241st Military Police Company/MTOE 19500HX101, X8 WC53AA, to read - Assigned to: U.S. Army Garrison, Fort Monmouth, X8 WOWCAA; Additional instructions: The transfer of 1 officer MP space to DESCOM and the transfer of the remaining MP officer and enlisted from the 241st to the Fort Monmouth Garrison TDA.

Units Inactivated. Two AMC units were inactivated:

Permanent Order 81-3, 25 September 1990, inactivated the 65th Military Police Platoon/MTOE 19500HX105, XM WC2JAA, effective 4 October 1990, under Quicksilver and Civilianization of Military in Support Positions (PBD 917).

Permanent Order 81-3, 25 September 1990, inactivated the 241st Military Police Company/MTOE 19500HX105, X8 WC53AA, effective 4 October 1990, under Quicksilver and Civilianization of Military in Support Positions (PBD 917).

Permanent Orders Revoked. Three Permanent Orders were revoked:

Permanent Order 76-1, 11 September 1990, revoked Permanent Order 60-1, 23 July 1990, pertaining to ADTA, XM W376AA, and AEFA, XB W043AA. PO will be rewritten as provisional.

Permanent Order 81-1, 25 September 1990, revoked Permanent Order 74-1, 7 September 1990, pertaining to the AMC SIMA, XX W44KAA. PO was rewritten under PO 81-2.

Permanent Order 90-3, 19 October 1990, revoked Permanent Order 57-4, 17 July 1990, pertaining to RTTC, XM W1HTAA. PO will be rewritten as provisional.

Units Discontinued. Seven AMC units were discontinued:

Permanent Order 36-2, 21 May 1990, discontinued the U.S. Army Rocky Mountain Arsenal, XX W0K5AA, effective 25 January 1990. All personnel and equipment were transferred to W4UZAA TDA located at Commerce City, CO.

Permanent Order 60-1, 23 July 1990, discontinued AEFA, XB W043AA, effective 1 October 1990. The unit will remain at Edwards Air Force Base under derivative UIC XM W37601.

Permanent Order 62-5, 25 July 1990, discontinued the U.S. Army Liaison Office, HQ, Air Force Systems Command, XK W0H6AA, effective 1 April 1990. Authorized manpower affected were redistributed within USAMC.

Permanent Order 80-1, 24 September 1990, discontinued the U.S. Army Field Services Activity (FSA), XQ W1NPAA, effective 1 April 1990. Mission and resources were transferred to HQ AMCCOM and redesignated as Logistics Assistance Division of HQ AMCCOM Readiness Directorate.

Permanent Order 81-2, 25 September 1990, discontinued the AMC Central Systems Design Activity (CSDA), X5 W19UAA, effective 2 October 1990. Mission, functions and resources were transferred to SIMA, XX W44KAA.

Permanent Order 81-2, 25 September 1990, discontinued the AMC Central Systems Design Activity - East (CSDA-East), X5 W2S5AA, effective 2 October 1990. Mission, functions and resources were transferred to SIMA, XX W44KAA.

Permanent Order 81-2, 25 Sept 1990, discontinued AMC Logistics Program Support Activity (LPSA), XW W4XAA, effective 2 Oct 1990. Mission, functions and resources transferred to SIMA, XX W44KAA.

Quarterly Intern News and Notes (QUINN)

The first four issues of the QUINN newsletter were published and distributed to all AMC interns and their supervisors during FY90. This effort was one of the outcomes of the Resource Management Intern Workshop held 27-29 June 1989 at Aberdeen, MD. The first editor was Ms. Emma Foxworth-Oglesby, an intern at U.S. Army Materiel Command Management Engineering Activity (AMCMEA), Huntsville, AL. A logo contest was conducted and a drawing submitted by Mr. Johnnie L. Whitson, an intern at MICOM, was selected. Honorable mentions went to interns Ms. J. Christina Perkins, AMCMEA, and Mr. Todd Miller, AVSCOM.

The Comptroller of the Army congratulated AMC on a new tool which was well-written and very impressive. We also received favorable comments from the HQ AMC Deputy Chief of Staff for Personnel's Office. Mr. Lloyd Walker, an intern at AMCCOM, edited the next three issues of the QUINN. The plan was to rotate the editorship of the QUINN on an annual basis. This will provide good experience for a number of interns who serve as reporters and editors.

Manpower and Force Management Civilian Career Program (CP-26) Awards Program

The Manpower and Force Management Civilian Career Program Awards Board met on 20 December 1989 to review nominations submitted for all award categories. The Secretary of the Army approved the Board's recommendations. The following AMC organizations and individuals were recognized:

The Force Development Division, Resource Management Directorate, HQ TROSCOM received the Organizational Excellence Award.

Ms. Donna D. Volkennant, AVSCOM, received the General Mark Clark Award for Outstanding Intern Graduate.

The awardees were presented with plaques at an awards banquet on 22 March 1990 in Washington, D.C.

Deputy Chief of Staff for Management and Productivity

Mission and Organization

The DCS for Management and Productivity was authorized seven military and 92 civilians as of the end of FY89 but lost one civilian space effective 1 October 1990. The loss was part of a space reduction approved by the Headquarters Executive Resource Action Committee (RAC) for the AMC P7S Billpayer. COL David W. Garner, the DCS for Management and Productivity, left the agency 23 July 1990 and was not replaced.[22]

The mission of the DCS for Management and Productivity was to manage the HQ AMC Commercial Activities Program and the HQ AMC Study Program; the establishment and publication of Command goals, objectives, and priorities; headquarters realignments, reductions, closures and consolidations (RRCC) actions; and the development and distribution of responsibilities and procedures for life cycle management. The DCS exercised operational control over the Defense Logistics Systems Information Exchange (DLSIE), provided support for management of the Analytical Support Services Program, and ensured that the Command used the most effective and efficient analytical resources. The DCS had proponency for AR 5-1, *Army Management Philosophy*, Strategic Long-Range Planning, and AMC Logistics Mission Area Analysis. It managed AMC Productivity and Improvement Programs, such as the AMC Management Engineering Activity. It also managed the Command Review and Analysis System, the Management Analysis Program, the Independent Indepth Analysis Program, the Command Internal Control Program, and the Technical Library.[23]

Commander's Perspective

In April 1990, the *Commander's Perspective* was published for the purpose of outlining General Tuttle's philosophy concerning AMC's role in support of the Total Army. The paper focused on the seven missions and their associated functions which were defined during his first AMC Commanders' Conference in November 1989. It also linked together the Secretary of the Army's and Chief of Staff's Imperatives with AMC's missions, and addressed the CG's emphasis on a zero-based management approach to understanding our processes and their continuous improvement. Primary input was drawn from interviews with the CG's speechwriter, Public Affairs, and individuals familiar with the CG's direction on each of the missions as well as an interview by ALOG Magazine with General Tuttle prior to his arrival at AMC. The paper was published in the HQ and MSC newspapers and was distributed to all AMC activities and HQ offices as the Commander's guidance for prioritization of AMC's resources.

Internal Controls for AMC

The DCS for Management and Productivity administered the Internal Control program for U.S. Army Materiel Command. To ensure a general understanding and application by all commanders and managers, AMC continued full support of the U.S. Army's Internal Management Control Program according to the GAO Standards for Internal Controls in the Federal Government as published in Chapter 2 of AR 11-2, *Internal Controls*. During the year, HQ AMC's Internal Nanagement Control staff continued to work closely with HQDA staff, U.S. Army Audit Agency (USAAA) auditors, and Inspector General (IG) personnel to

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[22]DCS for Management aand Productivity Historical Submission, FY90. Hereafter, all information is from this source unless otherwise noted.

[23]Draft AMCR 10-2, Organization and Functions, 1 Jul 88.

improve program operations. The staff also continued to work closely with AMC field activities, other HQ AMC staff elements, and the Army staff in identifying and correcting material internal control weaknesses.

The command continued to build on the administrative foundation of the program, carrying on an aggressive training and information program. The primary objectives were to ensure that every manager understood the General Accounting Office Standards and how to apply them in daily operations, and that assessable unit managers understood their incremental management responsibilities for using Army's standard Checklists for day-to-day guidance and periodic formal application required by the Management Control Plan. During FY90, an estimated 2,150 personnel of the Command received Program orientation or training. Presentations also explained the genesis of the Integrity Act and implementing requirements to ensure understanding of basic needs, details on how the overall Army Program operated, and practical benefits gained in compliance with the law.

AMC detected and corrected about 11 internal management control weaknesses during the year. An additional 134 were in the process of being corrected at year's end by subordinate organizations. The 76 candidate material weaknesses reported to the Headquarters in FY90 resulted in seven weaknesses being certified and reported to the Secretary of the Army.

Base Realignment and Closure Actions

Major BRAC I actions accomplished during FY90 include publication of the HQDA Base Closure Execution Plan (Mar 90), submission of Military construction projects required to implement the commission's recommendations and submission of BRAC I budget estimates to Congress. In-Process Reviews (IPRs) with the DA Staff were conducted to evaluate environmental impact statements for the majority of BRAC I installations. All National Environmental Policy Act (NEPA) documentation were to be completed and a Record of Decision obtained for all BRAC I actions prior to 30 September 1991. In order to facilitate the review process within HQ AMC, an Environmental Documentation Review Committee was established in September 1990.

On 29 January 1990 the Secretary of Defense proposed additional realignment and closure actions as part of the FY91 Budget submission. These proposals were categorized as BRAC II actions. A total of 12 AMC activities were to be affected under BRAC II proposals. A summary of the BRAC II actions is provided by the following table:

TABLE II - 3: BRAC II Actions Summary

PROPOSAL	COMPLETION DATE
Close Sacramento	FY91
Transfer AOD from Red River	FY91
Eliminate TROSCOM	FY91
Layaway Tank Plants	FY92
Detroit	
Lima	
Layaway Ammo Plants	
Indiana	FY93
Kansas	FY93
Louisiana	FY93
Longhorn	FY94
Mississippi	FY91
Scranton	FY93
Sunflower	FY94

Unlike BRAC I recommendations which became public law, BRAC II proposals must be reviewed on a case-by-case basis. As a result, environmental and socio-economic considerations may cause modification of the original list.

Realignment of the Aviation Research and Technology Activity (ARTA) Headquarters

On 15 November 1989, AMC notified the Management Directorate, HQDA of its intent to realign the ARTA Director's office and support staff from Moffitt Field, CA to St. Louis, MO. The Directorate was advised that AMC would implement the action on 1 February 1990. Since DA never responded, AMC gave AVSCOM the "green light" to proceed on 14 February 1990. AMC asked AVSCOM to provide a copy of their civilian personnel plan prior to implementation and to give written notification of the realignment before personnel notices were issued.

As of the end of the fiscal year, these documents had not been received from AVSCOM, although the realignment was effected. AMC requested that issuance of the appropriate Permanent Order be delayed, pending receipt of the documents from AVSCOM.

Consolidation of Rocky Mountain Arsenal

On 25 January 1990, the Deputy Assistant Secretary of the Army for Environmental Safety and Occupational Health requested that AMC expedite the consolidation of the Program Manager-Rocky Mountain Arsenal, Aberdeen Proving Ground (APG), Maryland, and Rocky Mountain Arsenal, Commerce City, Colorado.

The Office of the Assistant Secretary of the Army (Installations, Logistics, and Environment) approved an organization plan for project management that had been developed by AMC. As part of that organization, the Program Manager was relocated from APG, MD to Commerce City, CO. The merger reflected the change in Rocky Mountain Arsenal from a readiness organization to contamination cleanup.

The new mission of Program Manager-Rocky Mountain Arsenal was to direct the accomplishment of environmental restoration and contamination control operations at Rocky Mountain Arsenal. The Program Manager for Rocky Mountain Arsenal was reorganized and assigned to HQ AMC effective 25 January 1990, by Permanent Order 36-1, 21 May 1990.

Review and Analysis (R&A)

AMC's Review and Analysis system began an extensive revision in 1990 to improve its usefulness to management at all levels. The system was changed from an organizationally oriented system to a mission oriented oversight system. It should be noted that the change is an evolutionary process that may not be complete for several years. The basic concept of mission oriented oversight is that the Management and Productivity staff would monitor the AMC's performance without regard to internal organizational structures or boundaries. Performance monitoring was to be aligned with AMC missions and functions to facilitate process improvement under total quality management.

The Commanding General appointed mission leaders for each of the seven missions defined under Zero Based Resourcing. The mission leaders were responsible for monitoring performance in their mission throughout AMC. Mission leaders reported any exceptional performance problems or successes to the Commanding General. The mission leaders were responsible for the development of performance indicators for their missions. The emphasis under mission oriented oversight was to develop performance indicators relating AMC command-wide performance to the products and services delivered to the soldier in the field.

Army Ideas for Excellence Program

The Army Materiel Command's Army Ideas for Excellence Program (AIEP), an employee suggestion program, saved more than $30 million in tangible savings during FY9O. This represented an increase of 31 percent over FY89 tangible savings.

Employee support of the AIEP was evidenced by two AMC employees being honored as the Secretary of the Army Suggesters of the Year. This honor was given for submitting an idea that saved the government $489,257. These same employees won second runners-up for the National Association for Suggestion Systems (NASS) Suggester of the Year Award.

Several AMC subordinate commands submitted exhibits to HQDA that were subsequently used at the NASS conference to represent the Army. The conference was held in San Diego, CA, 26-28 September 1990. One AMC exhibit was used as a part of the HQDA display that won the first place award.

The new regulation for the program, AR 5-17, *Army Ideas for Excellence Program*, was published during FY90 with an effective date of 19 November 1990. AMC continued its efforts to promote program awareness and participation. Most of the MSCs distributed handbooks for suggesters and evaluators and held workshops and training sessions. As of the end of the fiscal year, the Management and Productivity reported that various forms of recognition for evaluators were either under development or were already in place.

Army Communities of Excellence

Army Communities of Excellence (ACOE) was an Army-wide effort established in 1988. ACOE was designed to enhance pride by fostering excellence in Army facilities and the services they provided. It capitalized on programs already in operation and focused community resources. ACOE stressed local initiative and involving the total Army community in improvement. ACOE contributed to Army readiness by strengthening the commitment to excellence throughout the Army. The installation commanders and

installations set their own standards and developed their own projects. Higher levels, Army, AMC, and major subordinate commands set general guidelines for services and installation design and insured the general exchange of information. In AMC, implementation of ACOE stressed the use of total quality management techniques to achieve installation excellence.

An important part of the ACOE effort was the recognition of achievement in obtaining excellence in installation operations and facilities. The Department of the Army recognized the top installations with the Chief of Staff's and Commander in Chief's awards. In the first year of competition, 1989, AMC installations won two of the three continental United States awards. Fort Monmouth won the award for large installations and Sacramento Army Depot won the award for small ones. This success continued in the 1990 competition. New Cumberland Army Depot won the small installation category and Rock Island Arsenal was the runner up in the medium installation category. In addition, Rock Island won the the Deputy Chief of Staff for Personnel award for the best Civilian Personnel Office in the Army.

The Army Study Program (TASP)

Studies and Analyses were analytical examinations to assist AMC and Army decisionmakers. They contributed to a greater understanding of relevant issues and led to conclusions and recommendations for use by these decisionmakers. AR 5-5, *Army Studies and Analyses*, October 1981, established policies, procedures, and responsibilities for the administration and management of the Army Study System. The implementation of AR 5-5 within AMC was characterized by centralized review and monitorship and decentralized development and funding. AMC's participation in the Army Study Program for FY90 included 17 in-house studies and five studies which had been contracted out.

AMC Policy Circulars

Review of AMC policy circulars may be accomplished by accessing an automated database created for that purpose. Functional proponents are responsible for updating circulars, as required. In March 1990 AMC-C 5-4 was rewritten. The circular was retitled from "Advance Study Summary" to "Gist." The functional proponent was the Deputy Chief of Staff for Management.

Arroyo Center Projects

The Arroyo Center was the Army's Federally Contracted Research Center (FCRC) for studies at the Rand Corporation. Its mission was to conduct long-term, deep-reaching policy analysis for the Department of the Army leadership. The CG and the Chief Scientist participated in semiannual meetings of the Arroyo Center Policy Committee (ACPC) to review and approve the proposed research programs and provide guidance to Rand. Of the 52 ongoing projects, six were either sponsored or co-sponsored by AMC:

Developing Ammunition Requirements and Production Schedules to Increase Combat Capability;

Technology Base Decision Aids;

Decision Support Systems for Combat Systems Support (CSS);

Improving Combat Capability through Support Alternatives;

Operations Support Costs;

Factors Affecting the Development of Advanced Munition Weapons

Gists

A "gist" was an informal one-page summation of completed study and analytical efforts. The purpose of the study gist was to keep the Commander, AMC informed regarding the quality of existing AMC studies, analyses, and CAAS efforts and their impact in the management of AMC. The AMC-C 5-4 (Nov 88) was revised in March 1990 to include Contracted Advisory and Assistance Services (CAAS) in the reporting requirement. AMC study proponents were required to prepare a gist for every analytical effort (AR 5-5) that results in a briefing or written report that was either sponsored by or performed within AMC, except scientific research and routine or recurring reports. AMC sponsors of contracted efforts (AR 5-14; AMC-C 5-6) were required to prepare a gist for every completed CAAS effort. The gist format included principal findings, assumptions, limitations, scope of effort, reason for performing the study or analysis, and the impact of the study. Gists were required within 15 days after publication of a final report or briefing, or after completion of a CAAS effort. They are reviewed by the HQ AMC Command Group and disseminated AMC-wide, thus providing timely analytical and contractual information to decisionmakers. There were 107 gists received in FY9O.

Productivity Measurement and Evaluation Program

Executive Order 12637 required Defense agencies to report against selected functions into the President's Productivity improvement Program. Since the issuance of the order, HQDA has tasked AMC to provide productivity improvement measurement data for seven of 41 selected functions Army-wide for input to the program. As of the end of the fiscal year, AMC had reported against Supply Depot Operations, Depot Maintenance, Inventory Control, and Munitions and Weapons Development/Production. AMC also provided data to HQDA for FY9l reporting on Intermediate Base Maintenance (Direct Support/General Support of Non-Tactical Equipment, Installation Supply [Base Level] Operations, and Industrial Preparedness). The staff noted that HQDA requires AMC input by FY92 in logistical related functions such as Motor Vehicle Maintenance, Motor Vehicle Operations, other Base Operating Support, and AMC-sponsored Professional Education/Training. Reported improvements were to reflect an annual productivity increase of 3 percent.

The staff's other accomplishments in Management Engineering included input to various high-yield management engineering studies conducted by AMCMEA in support of management improvement initiatives such as Zero Based Resourcing (ZBR), Managing Civilians to Budget (MCB), and TQM. Input was provided to update DA Pam 5-4-1, *Management Survey Handbook*, DA Pam 5-4-2, *Work Simplification Handbook for Analysts*, DA Pam 5-4-4, *Defense Integrated Management Engineering System (DIMES) Review Handbook* (to be published as Efficiency Review Handbook), and DA Pam 5-4-6, *Work Scheduling Handbook*, in conjunction with the rewrite of AR 5-4, *Management of the Army Productivity Improvement Program*. The staff also provided technical assistance and guidance on productivity-related matters to the MSCs and SRAs as well as HQ AMC staff elements. As the DCS for Management and Productivity proponent for TQM, the staff participated in the ongoing TQM review of all AMC publications to purge and eliminate those publications not needed for mission accomplishment.

Productivity Based Incentive System (PBIS)

During FY89, HQ AMC established AMC Reg 5-26, *Productivity Based Incentive System (PBIS)*. The regulation requires all AMC office chiefs, MSCs, SRAs, and all organizations/activities subordinate to the MSCs and SRAs to provide an annual report of all existing Productivity Based Award Systems. At present, only DESCOM has attempted to implement PBIS.

In 1990 DESCOM suspended the Red River Army Depot (RRAD) and Sacramento Army Ammunition Depot (SAAD) PBIS programs pending further review. In August 1990, DESCOM published their PBIS Program Development Guide outlining: Policy, Program Assessment, Coverage Determination, Measurement Plan, Plan Development, and Plan Approval procedures. Their plan addresses: Methods of Climate Analysis, Lessons Learned, Standard Hour Calculations, and Leveling Factors in establishing a PBIS process. At the present time, however, there is no ongoing Gainsharing Program within DESCOM or any other MSC within the U.S. Army Materiel Command. HQDA has delayed the implementation of any Gainsharing Program associated with MCB without their prior approval. These actions have caused the PBIS Program to be halted.

AMC/Army Lessons Learned Program

The AMC Lessons Learned (LL) Program began in 1985 to document lessons from the National Training Center. The program has been expanded to include all AMC LL's. A Lesson Learned is the description of an experience, observation, or accomplishment that may be of value and use in an ongoing or future program. It documents methods of operation which may be applicable to other military services.

On 16 March 1989 the Joint Logistics Commanders (JLC) signed a memorandum of agreement directing the services to share their lessons quarterly, and that the service LL representatives meet annually to discuss mutual problems. The 1990 annual meeting of LL representatives was hosted by the Navy. The meeting addressed the need to increase emphasis on sharing lessons and modifications to the LL format. The 1991 annual meeting will be hosted by the U.S. Air Force.

Secretary of Defense Productivity Excellence Awards Program

The Secretary of Defense Productivity Excellence Awards Program was established to recognize individuals and groups who have made substantial contributions to productivity improvement. The program has two levels of recognition: OSD Productivity Excellence Awards for individuals or groups whose actions result in at least $1 million in annual savings; OSD Letter of Commendation for individuals/groups who produce annual savings of at least $100,000.

AMC nominated 51 individuals for 1989 OSD Productivity Excellence Awards and 31 for OSD Letters of Commendation. The dollar savings associated with these productivity initiatives amounted to $57.5 million. The Secretary of Defense presented Productivity Excellence Awards to seven AMC employees at a Pentagon ceremony on 24 January 1990. AMC had 12 productivity exhibits on display at the Pentagon during January as part of Productivity month.

Sacramento Army Depot won the 1990 President's Council on Management Improvements award for Management Excellence at the Third Annual Federal Quality and Productivity Conference. There were four DOD recipients: Sacramento, Naval Air Station-Norfolk, Tactical Air Command-Langley Air Force Base, and Defense Communication Agency-Scott Air Force Base.

An AMCCOM productivity display titled "Total Quality Management," representing the Army, was on display on the National Mall during Public Service Recognition Week, 8-12 May 1990. In September 1990, AMC nominated 73 individuals for the 1990 Secretary of Defense Productivity Excellence Awards and 61 individuals for OSD Letter of Commendation. The awards will be presented during January 1991 at a Pentagon ceremony.

Productivity Capital Investment Program (PCIP)

The AMC Productivity Capital Investment Program (PCIP) continues to provide supplemental funding to support long-term productivity improvements. PCIP was established to acquire or lease equipment and facilities to improve the productivity of Defense activities by reducing operating costs.

PCIP funding for FY9O was provided through three separate sources: OSD Productivity Investment Funding (OSD PIF), Productivity Enhancing Capital Investment Program (PECIP), and Quick Return on Investment Program (QRIP). FY9O funding, nearly $24 million in five different appropriations, is expected to generate $60 million in benefits from 95 funded PCIP projects.

In FY9O, PCIP continued its policy of funding efforts demonstrating a potential for producing the best return on the investment. In addition, OSD approved and provided money for the acquisition of Artificial Intelligence (AI) initiatives. While each of these projects includes the acquisition of some hardware, the majority of the project costs is for software development. Approximately $4.8 million was dedicated to AI efforts being developed by the U.S. AMC Systems Integration and Management Activity (SIMA) and the AMC Materiel Readiness Support Activity (MRSA). These AI efforts are expected to generate benefits Army-wide.

Contract Advisory and Assistance Services (CAAS)

Contract Advisory and Assistance Services are managed under the provisions of AR 5-14 and consist of four categories: Category A, Individual Experts and Consultants (Chapter 304, AR 690-300); Category B, Studies, Analyses, and Evaluations (AR 5-5); Category C, Management Support Services (AR 5-14); and Category D, Engineering and Technical Services (AR 700-4). A continuing constrained resource environment and yearly reports by government investigators of the lack of adequate controls resulted in increased Congressional concern and oversight of CAAS. Public Law 101-165 imposed ceilings on funding for CAAS and required the submission of quarterly reports of CAAS obligations.

The AMC ceiling was based on the CAAS schedules submitted in FY88 for planned CAAS efforts to be accomplished in FY9O. These planned CAAS efforts included efforts planned by Program Managers that are now part of the Program Executive Office (PEO). End of fiscal year AMC CAAS efforts (including reported PEO efforts) were approximately $40 million under the imposed ceiling of $104 million. AMC published an AMC Circular to replace AMC Supplement Number 1 to AR 5-14. The circular contains the latest guidance promulgated by OMB, OSD, and HQDA. All CAAS contracts are supported by an approved Management Decision Document. The approved MDD is forwarded to HQ AMC for review. The FY9O AMC CAAS program consisted of:

	SOLE SOURCE	COMPETITIVE	TOTAL
Management Decision Documents (MDD)	20	25	45
Dollar Values	$32,013	$157,020	$189,033

Defense Logistics Studies Information Exchange

The Defense Logistics Studies Information Exchange (DLSIE) is the central DOD repository for approximately 80,000 logistical studies. They disseminate logistics and logistics management information to defense components via custom bibliographies, catalogs, and microfiche. Defense components are required to report information of ongoing and completed logistics studies to DLSIE and to research the

database before beginning new studies to avoid duplication and unnecessary costs. An on-line data system provides dial-in capability to search the DLSIE database. An automatic telephone answering and recording device is available for non-duty hours. AR 5-7 assigns HQ AMC (Deputy Chief of Staff for Management and Productivity) responsibility for the operational direction and control of DLSIE. A draft revision of AR 5-7 was published for review in April 1990. The DODIG final report was published in September 1990, following an August 1989 inspection of DLSIE. AMC input 519 studies and 26 models in FY9O.

AMC Commanders' Conferences

Three AMC Commanders' Conferences (AMCCC) were conducted during FY9O. The November 1989 AMCCC was the first conference chaired by General William G. T. Tuttle, Jr.

1989 Fall AMCCC, 7-8 November 1989, Headquarters, MICOM. The conference format was modified to provide update briefings on Army initiatives such as Airland Battle Future Concept and Airland Battle Future Logistics, AMC briefings on such initiatives and actions as Zero Based Resourcing and Base Realignments and Closures, and a lengthy discussion on identifying AMC's missions and functions. The seven AMC Mission Statements developed during the conference were:

1. Equip and sustain a trained, ready Army.
2. Provide equipment and services to other Nations through the Security Assistance Program.
3. Develop and acquire non-major systems and equipment.
4. Provide development and acquisition support to Program Executive Officers.
5. Define, develop, and acquire superior technologies.
6. Maintain the mobilization capabilities necessary to support the Army.
7. Continue to improve productivity and quality of life.

1990 Winter AMCCC, 7-9 November 90, Headquarters, AMC. The 7 March session was devoted to discussions on the Commander's desire to develop a vision of AMC in the future, which would support a reduced Army. Attendees reviewed the DOD and Army Imperatives, developed AMC imperatives, and developed alternatives which supported the imperatives. On 8 March a Procurement Warfighting Seminar was conducted by Headquarters, Command Counsel, and Deputy Chief of Staff for Procurement. Normal update briefings were presented on 9 March.

1990 Summer AMCCC, 20-21 August 1990. Due to the world situation and implementation of Operation Desert Shield, the conference was moved from New Cumberland Army Depot to HQ AMC and shortened to two days. A continuation of the Procurement Warfighting Seminar was conducted during the first session of the conference. The remainder of the conference centered on an update of Operation Desert Shield, Management of Change actions, and AMC Vision 2000 Process Action Team initiatives.

U.S. Army Commanders' Conferences

Three Army Commanders' Conferences were scheduled during FY9O. The purpose of the conferences was to provide commanders information on current Army programs and initiatives, and promote discussion

on items of concern to the Army community. Discussions at the conferences centered on efforts to reduce the military and civilian workforce and the effect of world situations on the Army mission and force.

Army Staff Meetings

In FY9O the Commander initiated monthly update meetings with the Secretary of the Army, the Under Secretary of the Army, the Assistant Secretary of the Army for Research, Development and Acquisition (ASA[RDA]) and the Chief of Staff, Army. The meetings were usually one-on-one and designed to discuss issues of concern to the AMC community.

The Vice Chief of Staff, Army, General Gordon R. Sullivan, visited AMC on 19 July 1990 for an AMC Orientation. In addition to receiving the Command Briefing, General Sullivan was briefed on AMC Matrix Support to Program Executive Officers, AMC personnel Issues, Base Realignments and Closures, Army Management Review (AMR) and Defense Management Review (DMR) ongoing issues, and the status of Deferred Logistics Studies. AMC Command Group and selected staff members were present. The Assistant Secretary of the Army for Installations, Logistics and Emvironment (ASA[IL&E]) visited AMC for a working lunch on 11 July 1990. Topics discussed were Base Realignments and Closures, AMC/DMR ongoing actions, Civilian Workforce Reductions, and the new AMC Headquarters Building. AMC Command Group and selected staff members were present at the working lunch.

Technical Library

The library staff, directed by Ms. Ann Parham, continued the implementation of the LS/2OOO automated library system and its sub-systems, Serials Control (5C350) and Acquisitions (ACQ35O), after completion of the installation in FY89. The system provides an automated database of the library collection, as well as circulation, acquisitions, and periodicals control functions. The online public catalog, LION, was available for public use in October 1989 after an extensive publicity campaign designed and implemented by the library staff. In December 1989, the staff began using the circulation functions to loan materials. Two staff members completed individual control records for over 300 periodical titles in time to use the serials control function for calender year 1990 subscriptions.

By the end of FY90, approximately 60 percent of the collection had been linked to the database. In addition, the staff added over 2500 Administrative Publications titles to the database, thus improving both accessibility and control of these regulatory publications. However, the loss of two positions (Reference Librarian and Information Support Clerk) due to the RIF has had a severe impact on library productivity. This included the failure to complete the linking project as scheduled, and a growing backlog of new materials not accessible to users. The staff also had insufficient time to complete preliminary work required to utilize the acquisitions sub-system.

CD-ROM Database. In September 1990, a subscription to the National Technical Information Service database on CD-ROM was initiated. This service provides end-user access to summaries of research and studies sponsored by more than 600 federal agencies, as well as state, local, and foreign government agencies and their contractors. The database consists of nearly 500,000 citations covering the period 1983 to the present. The subscription includes quarterly updates.

The library served as a test site for two CD-ROM prototype databases. These included MilDocs on Disc, sponsored by the Pentagon Library, and Defense Technical Information Center Technical Report Database on CD-ROM, sponsored by DTIC. A third prototype, a database of current Army Regulations, sponsored by the U.S. Army Publications and Printing Agency, will be tested when it becomes available.

On 24 August 1990, the AMC Technical Library initiated a special service to the HQ AMC Operations Center in support of Operation Desert Shield. This information consists of late breaking international news stories on Iraq, Kuwait, and Desert Shield retrieved from a daily online search of Reuters News Wire. The sources and scope are international rather than U.S. oriented, thus offering perspectives not readily available from U.S. sources. Updates every 15 minutes around the clock make full text stories available within 1 1/2 hours after filing, anywhere in the world. Military Intelligence personnel in the Operations Center used this information in daily briefings, as well as disseminating it to their counterparts in the field. The library was informed that Military Intelligence considered this a valuable information service due to its currency and relevancy to Desert Shield. The service was to continue through the end of Desert Storm.

Current Awareness Service. The Current Awareness Service for senior HQ AMC directors initiated in FY89 continued in FY90. Tables of Contents of selected journals are distributed to approximately 20 senior executives. Articles selected from these journals by the recipients are then provided by the library. The service continues to be heavily used by GEN Tuttle and other senior executives. Due to this favorable response, the service will continue into FY91.

Deputy Chief of Staff for Program Analysis and Evaluation

Organization

At the beginning of FY90, the Office of the Deputy Chief of Staff for Program Analysis and Evaluation (AMCAE) was authorized two military and 53 civilian personnel. At the end of the fiscal year, the authorization was for 54 civilians and one military. The change involved dropping one colonel in the Assistant Deputy Chief of Staff (ADCS) position and creating one civilian GS-15 ADCS.[24] There were no changes to the organizational structure; however, extensive changes were expected for FY91.[25]

Issues and Activities

Automation. Under the authority of the Chief of Staff, automated functions previously performed by the DCS for Resource Management had been transferred to the DCS for Program Analysis and Evaluation in late FY88. During FY90, the office prepared for the first automation laydown, to be held in December 1990. Scheduled briefings included displays of systems and resources in support of those systems, systems that were candidates for elimination, and systems to be standardized.

In FY90, Congress required that a cap be imposed on Operations and Maintenance, Army (OMA) expenditures. HQDA allocated $90 million to AMC for automation, which was only about one-half of the required amount. During the course of the year, the DCS for Program Analysis and Evaluation was able to have the cap raised to $188 million. After adjustments to the obligation plan, the cap was further raised to more than $200 million, which was sufficient.

During FY90, the office of the DCS for Program Analysis and Evaluation acquired a "Single Point Electronic Mail Service," which allowed the use of a local area network (LAN) mail account to transmit

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[24]It should be noted that the previous fiscal year ended with two military personnel and 48 civilians reported as authorized.

[25]DCS for Program Analysis and Evaluation, FY90. Hereafter, all information is from this source unless otherwise indicated.

and receive certain kinds of mail without additional user intervention. The office also acquired a high speed computer network interconnection between the local area network and the HQDA computer network. This required both software and hardware modifications to various computer equipment.

In support of Desert Shield, the office developed a small, stand-alone local area network in the AMC Operations Center. This LAN maintained several databases to track and maintain property, suspenses, work processing files, and DA equipment.

Zero-Based Resourcing Initiative. Zero-Based Resourcing (ZBR) is a process which provides a common frame of reference to senior management for the identification and defense of resource requirements. This common frame of reference is a set of seven AMC missions. The ZBR goals are to define AMC's missions and functions in a manner that will enhance understanding of the command by non-AMC personnel and to use the AMC mission and function framework as a basis for managing total resources. Ultimately, AMC will program, budget, execute, and defend its total resources by evaluating their support of the missions and functions to which they are applied. This will be achieved by integrating ZBR into the standard AMC program and budget processes.

During FY90, the office undertook a number of actions designed to incorporate ZBR in AMC's management and resource allocation processes. They included four major actions. The first involved development of an FY90/91 baseline database, with input from all AMC activities. The baseline database was an apportionment of all AMC dollar and manpower resources by AMC mission and function. The database broke out the information by MSC or SRA; type of resource; type of funding; appropriation or source; program element, standard study number (SSN) or Army Management Structure (AMS) code; and resource level. The second iteration of the baseline database was under review as of the end of the FY.

The second major action involved the development of an automated standard system for ZBR data collection. The focus of this effort as of the end of FY90 was on modifying an existing organic labor reporting system to accommodate ZBR requirements. Implementation was scheduled for FY92/93. In the long term, the office planned to develop an automated standard system for all resources measured and evaluated through the ZBR process.

The third major action involved selection of AMC mission leaders for each of the seven missions. Their role was to define management indicators and positive measurements for their respective AMC missions. These indicators and missions became an essential feature of the AMC Review and Analysis process. In addition, the mission leaders began standardizing work unit indicators that were to be used in the data collection effort for the ZBR automated standard system.

The fourth major effort involved incorporation of the ZBR philosophy in external reporting. ZBR became an integral part of the Commander's Statements for the Program Objective Memorandum and the Command Operating Budget estimates, and for briefings to HQDA and Congress.

Subject Matter Assessment of AMC System Analysis Offices. The AMC Management Engineering Activity conducted a study during the first half of calendar year 1990, examining the work of Systems Analysis Offices throughout the command. The purpose of the study was to find ways to improve the effectiveness of the SAOs at the MSC level.

Support to HQ AMC Task Forces. The Logistics Systems Management Review Task Force was responsible for determining a methodology for managing the many automation efforts associated with Defense Management Review Decisions. Over 100 different automation efforts were reviewed. A final recommendation was made to the Chief of Staff in late September.

In support of the AMC Management of Change Task Force, this office supported the management of implementation of Army Management Review Initiatives, as approved by DOD and Congress, as well as other mandated changes. The office prepared responses to proposed changes including development of alternatives, with focus on cost-effective work-loading, optimum capacity utilization, process improvement, and minimizing the adverse impact on people.

Cost of an AMC Manyear. The cost of an AMC manyear in FY90 was $34,000, including $29,000 average base salary and $5,000 for benefits. The manyear cost was delineated by MSC, civilian grade, and appropriation. The office derived the manyear costs by gathering manpower data from each of AMC's payroll centers and applied standard manpower practices to derive the manyear cost. The manyear cost derivation was an outgrowth of Defense Management Review initiatives discussed within the command group regarding the cost of an AMC manyear.

Cost per Output. The underlying idea of the Cost per Output initiative was that the services and defense agencies needed to monitor the unit cost of performing certain functions and that they needed to operate more like a profit-making business. The following areas were covered by Cost per Output: commissaries, military training, recruiting, medical care, supply operations; that is, integrated materiel management (IMM) at National Inventory Control Points (NICPs), supply depot operations, and depot maintenance. AMC had the lead for the Army in supply operations, supply depot operations, and depot maintenance. Within AMC, the DCS for Program Analysis and Evaluation had been the focal point for Cost per Output. However, as the systems evolved, the DCS for Resource Management was to assume a larger role.

Of the three Cost per Output systems for which AMC had the Army lead, that for supply depot operations was the most mature. AMC, in concert with DESCOM, DA, and OSD, developed output measures for secondary items, end items, ammunition, and other supply depot mission areas. These output measures were finalized at a meeting with OSD in September 1990. DESCOM provided applicable data to the Defense Manpower Data Center (DMDC), which was the automation depository for all Cost per Output systems for all services and defense agencies, on a quarterly basis. DMDC, through the use of specially designed computer programs, arranges displays from the raw data sent to them by DESCOM. DESCOM monitors the correctness of the output measures being used.

The Cost per Output system for depot maintenance was still in the developmental stage as of the end of FY90. The goals of this system were to measure and manage productivity and to control cost variances for certain common, recurring, overhaul work, and inspection and repair maintenance work. AMC was in the process of developing four different systems of depot maintenance for evaluation and possible implementation.

The Cost per Output system for the integrated materiel management functions at the NICPs was also in the developmental stage despite scheduled FY91 implementation. The DCS for Program Analysis and Evaluation worked extensively with six of the major subordinate commands on this effort. These MSCs provided a great deal of dollar and manpower data related to their IMM functions in order to assist OSD in the development of a model to calculate unit cost rations and serve as a management tool. By the end of FY90, the Inventory Control Point (ICP) model was being revised. Unit cost goals for FY91 had not yet been received, but were anticipated shortly.

Educational Posture at AMC Schools. The office of the DCS for Program Analysis contributed to the study on the Educational Posture at AMC Schools. Included among the DCS's recommendation was to task AMC Resource Management to conduct an independent audit and calculate the true cost of the Satellite Education Network and other select modes of instruction; to task schools to develop behavioral, defined

prerequisites for residential and other key or expensive courses; and to explore reallocation of Learning Resource Center resources to enrich correspondence courses which needed additional attention to be most cost effective.

Project VANGUARD. During FY90, AMCAE became the focal point for all AMC-related issues in Project VANGUARD. The basic mission of Project VANGUARD was to identify the functional requirements of the general support forces in a smaller, more CONUS-based Army, and to develop alternative concepts, policies, and organizations that were effective and provided additional cost savings to protect further degradation to the fighting force.

Project VANGUARD was also intended to reduce or redefine field operating activities; streamline the MACOM Headquarters and focus on mission execution; eliminate or reduce intermediate HQs; elevate base operations into the mainstream of vital Army missions; and provide policy formulation and resource allocations in light of a reduced Army staff. Although this was an ambitious agenda, Project VANGUARD offered AMC, its activities, and installations a unique opportunity to define the entire AMC community in terms of new political and military realities.

AMCAE developed material relating to Project VANGUARD over a period of about four months. This included memoranda forwarded to the Vice Chief of Staff of the Army and the director of the Project VANGUARD Study Group. As of the end of FY90, the project was continuing on the DA staff level.

Deputy Chief of Staff for Information Management

Manpower and Key Personnel

The DCS was authorized 8 military and 108 civilian spaces as of 1 October 1989, and 8 military, but only 97 civilian spaces as of 30 September 1990.[26] Key personnel are listed below:

Deputy Chief of Staff for Information Management
Colonel John V. Ridick

Assistant Deputy Chief of Staff for Information Management
Mr. John W. Gill, Jr.
Executive Officer
Captain Michael J. Hoff

Chief, SISOCS Project Office
Mr. Donnie W. Duft

Chief, Resources, Plans & Policy Division
Mr. Edgar F. Brasseur

Chief, Information Mission Area Project/Programs Management Division
Ms. Mary C. Carroll

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[26]Unless otherwise noted, this section is based on the Office of the DCS for Information Management historical submission for FY90.

Chief, Operations Readiness & Security Division
Mr. William E. Reich

Chief, Library Program Office
Ms. Louise Nyce

MAJ Joseph D. Lofgren, Executive Officer, had a PCS to the Pentagon. CAPT Michael J. Hoff, Chief, Personnel & Administration, was selected to replace him effective 31 May 1990.

Organizational Changes

The DCSIM organization was realigned effective 12 August 1990. The Resources & Plans Division was renamed the Resources, Plans & Policy Division. The Personnel & Administration Office came under the purview of the Resources Branch, which was renamed the Resources, Personnel & Administrative Branch within the Resources, Plans & Policy Division. The Systems Administrators, formerly assigned to the Personnel & Administration Office, were reassigned to the newly established Systems Administration Office within the Resources, Plans & Policy Division. The Acquisition & Policy Branch was disestablished and the mission and function responsibilities were assigned to the Plans Branch, which was renamed the Plans, Policy & Architecture Branch within the Resources, Plans & Policy Division.

The Operations Division was renamed the Operations Readiness & Security Division. The Operations/Readiness Branch was renamed the Operations Readiness & Logistics Branch within the Operations Readiness & Security Division. The Telecommunication Systems Branch was renamed the Information Mission Area (IMA) Facilities Operations Branch within the Operations Readiness & Security Division. The Security & Evaluation Office was renamed the Command Review & Security Branch under the purview of the Operations Readiness & Security Division.

The Systems Management and Integration Division was renamed the IMA Project/Programs Management Division. The Advanced Technology Branch of the Systems Management & Integration Division was disestablished. The Army Automated Systems Branch was renamed the ADP/Communications Management Branch within the IMA Project/Programs Management Division. The Command Automated Systems Branch was renamed the Systems Review Support Branch within the IMA Project/Programs Management Division. The Support Systems Branch was renamed the Publications/VI and Records Management Branch within the IMA Project/Programs Management Division. The Library Program Office became a separate element under the purview of the IMA Project/Programs Management Division. The Army Automated Systems Branch was renamed the ADP/Communications Management Branch within the IMA Project/Programs Management Division.

Command Management Issues

The following were the command management issues during FY90. They are discussed in more detail below, as are other significant issues.

Operation Just Cause
Operation Desert Shield
Exercises and Mobilization
Reutilization of Excess Equipment
Treaty Support
Commercial Activities
High Frequency (HF) Radio Network
Interns for Career Program 25 (Communications)

Reduction of Telecommunications Center (TCC) Operating Hours
Switchboard Cutback
Data Processing Installation Consolidations
Streamlining Information Service Operations Consolidation Study (SISOCS)
AIPC Implementation/Transition Project
ASIMS Project Funding
Manpower Cuts and Corresponding Funding Cuts
HQ AMC Command and Control Facility (CCF)

Operation Just Cause. The Information Management organizations supporting the various AMC activities throughout the country performed excellently with minimum direction from HQ AMC. The experience gained from exercises contributed to their ability to perform this well. Portions of the EXCAP system, designed for exercises, were used to improve tracking of materiel.

Operation Desert Shield (ODS). The Operations Readiness and Security Division opened a Desk in the AMC Emergency Operations Center (EOC) and manned it around the clock from the start of ODS through the remainder of FY90. The desk, with assistance from throughout the DCS for Information Management, assured that all subordinate elements were supporting ODS with all available resources and were receiving needed assistance to provide this support. The desk also provided staff support and advice to the EOC.

Operations Centers throughout the CONUS were activated on/about 8 August 1990 in support of Operation Desert Shield. All commands and agencies were required to curtail nonessential FY90 operations in order to generate resources to support Operation Desert Shield.

Effective 20 August 1990, special reporting requirements were implemented. Management Decision Package (MDEP) VKWT was set up to capture costs attributable to Operation Desert Shield. Estimates for FY90 were reported by week through 30 September 1990 and updated weekly. Actual costs were reported weekly (more often at year's end) and detailed to element of resource (EOR).

HQ, United States Army Information Systems Command-AMC (USAISC-AMC) reported $177,600 in consolidated obligations for support by their Subordinate Intermediate Activities/Separate Reporting Activities (SIAs/SRAs) to Operation Desert Shield. Of the money obligated, 64.9 percent was used for pay, 1.9 percent was used for travel, and contracts and "other" made up the remaining 33.2 percent.

Exercises and Mobilization. Several exercises were cancelled during FY90. Preparation for these exercises was useful in that it increased our ability to support real world operations. The EXCAP (Exercise Capability) activity of the Commodity Command Standard System (CCSS) was run from June through August. The Operations Readiness and Security Division of the DCS for Information Management helped coordinate the actions of the CCSS sites. A special run of EXCAP, called SPECAP, was run early during Operation Desert Shield.

Reutilization of Excess Equipment. Guidance was developed for the excessing of all IMA equipment. Specific guidance was provided to subordinate units on how to properly complete forms for Defense Department review. Equipment processing time was reduced significantly by precluding research into policies by units and by proper completion of the required forms. This, in turn, reduced requests to the units for further information by the Defense Department.

Treaty Support. Support of compliance with the Intermediate Range Nuclear Force (INF) Treaty was expanded to include other treaties of similar nature. The INF Treaty support was moved into a steady-

state situation in which the support was provided on-site by local Information Management personnel at the direction of local commanders. Coordination to support other treaties continued.

Commercial Activities. Commercial telephone contracts were recompeted during FY90 with the intention of giving small and disadvantaged businesses an opportunity for selection. The 7th Signal Command conducted the panel and made the selections.

High Frequency (HF) Radio Network. The HF Radio Network program has seen nearly half of the 28 sites successfully put their equipment into operation. Continued attempts have been made to establish a site at HQ AMC. Municipal regulations and reluctance on the part of the building owner were presenting obstacles. The Director of Information Management (DOIM) organization continued to press to obtain permission to get the system installed locally.

Interns for Career Program 25 (Communications). Members of the intern class completed the initial phase of their training in December 1989 and January 1990. Since then, the interns have worked in the Operations Readiness and Security Division and participated in the following training: Action Officer Orientation Course, Data Communications, Leadership Development, DOIM Operations Officer, and Defense Telephone Service (DTS)-Washington training on-the-job.

Reduction of Telecommunications Center (TCC) Operating Hours. In order to meet funding decrements, the Commander, 7th Signal Command directed that action be taken to reduce TCC operating hours to 12 hours a day, five days a week. Personnel levels were reduced in conjunction with this requirement. For locations where this reduction could not be accomplished, HQ USAISC-AMC was required to provide a detailed justification for why it could not be done. The 12-hour, five-day week was defined as the standard and customers were informed that they may be required to provide reimbursement for the additional hours. This action was well underway when Desert Shield began and extended hours were required at many locations. Personnel shortages were experienced in TCCs at Hawthorne Army Ammunition Plant, Sacramento Army Depot, Anniston Army Depot, Tobyhanna Army Depot, Seneca Army Depot, Sierra Army Depot, Savanna Army Depot and Natick.

Switchboard Cutback. In order to meet funding decrements, the Commander, 7th Signal Command directed that action be taken to reduce telephone switchboard operating hours to 16 hours a day, five days a week. For those locations where firm fixed-price contracts were in effect, modification or cancellation of the contract was to be considered, keeping in mind the possibility of not resulting in cost savings.

Data Processing Installation Consolidations. USAISC was tasked to execute all consolidation initiatives. The Commander, USAISC, designated BG Robert Wynn, Commander, 7th Signal Command, as the consolidation implementor. Implementation management was being accomplished through the DCSOPS, COL Michael Yocom, and a full-time Army Information Processing Center (AIPC) Implementation/Transition Team directed by Mr. Donnie Duft. The team had a core cadre of permanent members and a balanced matrix supplied from USAISC subordinate elements and supplemented by contractor support as required. This structure was in place with its first assignment to execute the Army Standard Information Management System (ASIMS) Regional Data Center (RDC) collocation effort.

Streamlining Information Service Operations Consolidation Study (SISOCS). The consolidation encompassed automation operations at the Materiel Readiness MSCs, depots, and data bank activities, specifically those supported by large Multiple Visual Storage Virtual Machine (MVS/VM) mainframe computers and operated within CONUS. The consolidation affected 24 data processing installations (DPIs) supporting 49 installations and activities. The SISOCS documented the results of a detailed, eight-month

requirements analysis, feasibility study, and associated cost/benefit analysis.[27] The findings were presented to the AMC Command Group. An affirmative command decision was sent to the Director for Information Systems for Command, Control, Communications, and Computers (DISC4) for approval on 21 May 1990 and concurrence of the concept was obtained. The Cost and Economic Analysis Center (CEAC) Deputy Director and staff were briefed and copies of the final study report provided for their review.

The program has been supported in formal Army responses to OSD and Defense Management Review (DMR 924). Funding requirements were submitted and programmed for FY92 and FY93. Favorable consideration was provided during the 18 October 1990 Office of the Secretary of Defense budget hearings. Target implementation plans called for consolidation into the first two Army Information Processing Centers (AIPCs) in FY92 and into the third during FY93. The consolidation initiatives were as follows: consolidate 24 DPIs into three AIPCs; reduce 53 mainframe processors to eight; reduce annual sustainment costs; support DMR 924 objectives.

The SISOCS initiative was assessed against the requirements of AR 5-20. Commercial activity study requirements did not apply, but RIF did apply. USAISC-AMC managed all actions related to the development of the required RIF packages, to include environmental impact assessment studies. The milestones met during FY90 included:

Study Period	Aug 89 - Apr 90
Study Report Finalized	24 Apr 90
AMC Decision IPR	27 Mar 90
Submission to DISC4	21 May 90
1st Briefing to DISC4	22 May 90
Study Report Briefing to CEAC	21 Aug 90
2nd Briefing to DISC4	24 Aug 90

Planned milestones included:

IPR Decision	Dec 90
RFPs Issued	Feb 91
Contract Award	Dec 91/Jan 92
Implementation AIPC Chambersburg	Feb 92
Implementation AIPC Rock Island	Jun 92
Implementation AIPC Huntsville	Nov 92
Full operational capability	Mar 93

AIPC Implementation/Transition Project. The scope of this project was to manage the relocation of the Army Standard Information Management System automated data processing resources (ADPR) from contractor-owned and operated (COCO) facilities to government-owned and operated (GOGO) facilities and to transfer the operations and maintenance of ASIMS from the present contractor, Electronic Data Systems (EDS), to government personnel.

To accomplish this transfer, the hardware, workload, and processing capabilities of five ASIMS regional data centers will be collocated with four existing AIPCs. Collocation will be completed not later than the

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[27]DCS Information Management, Streamlining Information Services Operations Consolidation Study (SISOCS) Final Project Report, 24 Apr 1990, revised 30 Oct 1990. This acquisition sensitive document can be found enclosed in the AMCIM historical submission for FY90, in the AMC Archives.

end of FY91 (prior to the next contract option period). The ASIMS contract will expire in August 1992. All contractor-performed services will be transitioned to the government.

A study was initiated during March 1990 to determine the feasibility of this project. Alternatives included keeping the status quo until contract expiration; relocation of the ASIMS ADPR to selected Navy Regional Data Automation Centers (NARDACs) and transfer of operations and maintenance to the Navy Computer and Telecommunications Command (NCTC); relocation of the ASIMS ADPR to selected AIPCs; and government purchase and/or lease of the ASIMS facilities, with a separate contract for the operation and maintenance of ASIMS until a replacement system can be procured through the Sustaining Base Information System (SBIS) project. This alternative was proposed by EDS in June 1990.

On 18 May 1990, USAISC-AMC briefed DISC4 on a proposed concept for USAISC-AMC to assume, by the end of FY91, the Army's MVS workload currently processed at the five ASIMS RDCs. An ASIMS Implementation Transition Team (AITT) was established by the Commander, 7th Signal Command, under joint direction of the Director, Sustaining Base Network Activity (SBNA) and the Commander, USAISC-AMC, with personnel drawn together in a matrix management structure from USAISC-AMC, SBNA, and other subordinate USAISC activities to plan and carry out the collocation of the five ASIMS RDCs into four AIPCs.

The ASIMS network within the CONUS was configured in a ring topology consisting of five RDCs in the following locations: RDC-W, Washington, DC; RDC-A, Atlanta, GA; RDC-K, Killeen, TX; RDC-M, Monterey, CA; and RDC-L, Louisville, KY. Each RDC supported 8-11 DPCs which connected more than 75,000 users to the RDCs. The sites selected for collocation of the ASIMS ADPR were:

RDC-K to AIPC-S, St. Louis, MO by 28 Feb 91
RDC-A to AIPC-H, Redstone, Huntsville, AL by 28 Feb 91
RDC-L to AIPC-R, Rock Island, IL by 30 Apr 91
RDC-W to AIPC-C, Chambersburg, PA by 30 Apr 91
RDC-M to AIPC-R, Rock Island, IL by 30 Jun 91

All four AIPC sites were identified to DOD as proposed Army magnet sites. Three of the AIPC sites (all but St. Louis) were designated as Area Data Centers (ADCs) in the USAISC-AMC DPI consolidation project, SISOCS, scheduled for implementation in FY92-93.

ASIMS Project Funding. During FY90 year-end closeout, funds were distributed to AVSCOM, MICOM, and Letterkenny Army Depot for regional data center site preparation. AMCCOM could not obligate funds. The SBNA provided funds during August 1990 to AVSCOM, AMCCOM, and MICOM in support of the ASIMS network.

Manpower Cuts and Corresponding Funding Cuts. During FY90, USAISC-AMC was slotted for several resource decrements. These decrements affected manpower spaces, on-board strength, and funding for corresponding workyears.

o 10% Direct - This decrement was slotted against 10% of actual on-board strength. Spaces, faces, workyears, and dollars were lost in this reduction.

o Congressional budget cut - This decrement cost 35 spaces, corresponding dollars, and workyears.

o PBD 670 - This Program Budget Decision decrement identified a 233 reimbursable cut in end-strength and workyears for FY91 and the outyears.

HQ AMC Command and Control Facility (CCF). During FY90, AMCIM participation in the information planning for the HQ AMC Command and Control Facility increased in quantity and tempo. For example, BG West, the DCG, Military District of Washington, Fort Belvoir, established a Realignment Task Force (RTF) with subcommittees for Base Operations, Transportation, Facilities, and Information Mission Area. All of the commands and activities scheduled to move to Fort Belvoir in the 1994-2004 timeframe are represented on the RTF and its subcommittees. These moves were caused either by the Base Realignment and Closure Act (BRAC) or the Congressionally mandated consolidation of Army-leased office space into Army-owned office space. HQ AMC was scheduled to move into an office building to be erected at the Engineer Proving Ground (EPG), which will be renamed Fort Belvoir-West.

The office building will be erected free of charge by a builder to Army specifications. In return, the builder will be given a part of EPG upon which to construct commercial office buildings, hotel and conference space, and housing. The Army will own the office building erected by the builder. It is anticipated that the building to be occupied by HQ AMC will be completed and ready for "tenant fit-up" by 31 December 1994.

As part of their assigned planning responsibilities for the new HQ AMC Command and Control Facility, AMCIM-PR personnel began participating in regular meetings of the RTF and IMA subcommittee. In February 1989, HQ AMC stated its requirement that the HQ AMC CCF be an intelligent building. This requirement was stated frequently in the meetings attended by the AMCIM-PR representative. In gaining recognition of the intelligent building concept during the planning effort, the AMCIM-PR representative faced two obstacles--the concept and features of the intelligent building itself and getting the IMA to accept functional proponency for the intelligent building.

To overcome the first obstacle, guided tours were arranged of office buildings with intelligent building features. Key members of the planning effort toured the Software Productivity Consortium in Herndon, VA and TRW Corporation's Federal Systems Complex at Fair Lakes, VA. Included in the latter tour was the Project Manager for Total Development of the National Capital Region (PM/NCR) and his staff. The PM/NCR was responsible for all development at EPG and was assigned to the Office of the Assistant Secretary of the Army for Installations, Logistics, and Environment. As a result of this tour, the PM/NCR directed the Chief, Information Systems Integration Office (ISIO)--assigned to 7th Signal Command and tasked to provide IMA support to the PM/NCR--to define the specifications for the intelligent building and to coordinate those specifications with the DCSIM, HQ AMC.

As for overcoming the second obstacle to the concept of the intelligent building, it was learned toward the end of the reporting period that proponency for the intelligent building at HQDA level will be assigned to the Chief of Engineers. This has raised the expectation that planning for and construction of an intelligent building can be done as an integrated effort, thereby realizing the benefits that an intelligent building will confer on its occupants and on the Army.

During September 1990, LTG Billy Thomas, AMC's DCGRDA, directed that a multi-disciplinary task force be established to coordinate all aspects of planning for the HQ AMC CCF, to include the IMA. This task force was in the process of being established at the end of FY90. It was to have one member each from AMCEN, AMCIM-PR, and the HQ DOIM. Other assets of the DCSIM and the HQ DOIM would be available as required.

The AMCIM-PR representative initiated the action of writing capability requirements (CAPRs) for the intelligent building and automated imaging systems. Assignment was made to other components of AMCIM to prepare CAPRs for visual information systems and conference rooms/auditorium, local area network (LAN), office automation, and technical library support.

Secure Telephone Unit Third Generation (STU-III) Improvements

The approval of the STU-III Access Control System (SACS) for classified data has expanded our ability to use STU-IIIs for data transfer. The SACS provides increased security by checking the security level and identity of callers and then terminating calls without allowing access when the caller fails to meet criteria. Vendors are also working on improved digitization algorithms for voice that will improve voice quality.

Contractor Access to Video Enhanced Network User System (VENUS)

Improvements were made in Defense Commercial Telecommunications Network (DCTN) Video Teleconferencing (VTC) Defense contractor connectivity. HQ AMC and the Defense Communications Agency (DCA) have extended VTC capability to selected Defense contractors so that PEOs/PMs located at AMC activities can confer with their contractors. This Contractor Access Point (CAP) gateway will allow those DOD contractors who are subscribers to AT&T Accunet or US Sprint access into the AMC VENUS network in an unclassified, point-to-point mode. This first commercial gateway into DCTN Army will serve as a prototype. All testing has been completed and the CAP is operational.

An AMC DOD contractor who is sponsored by a host DOD agency and will pay all Accunet/Sprint charges may have access to the VENUS network. The sponsor acted as the single point of contact for service. The sponsor was also responsible for the contractor's use of the VENUS network and ensuring that this use was limited to government business only (i.e., related to existing DOD contracts). The contractor will bear all Accunet/Sprint charges, including cost per call, connection and circuit charges. CAP gateway and circuits to VENUS network facilities were government funded.

Contractors requesting VENUS network time were subject to space availability. In general, the AMC VENUS network observed a "no-bumping" policy for VTC. However, AMC users may receive priority and contractors may be bumped. Every effort will be made to minimize bumping and to reschedule bumped calls as soon as a time slot becomes available. The HQ AMC location in Alexandria, Virginia provided central scheduling for the entire VENUS network. Access to the CAP gateway was limited to unclassified conferencing in a point-to-point mode. Any security requirement will be addressed separately on a case-by-case basis.

Supercomputers

The Army Supercomputer Network (ASNET) was established under PM Supercomputer. The ASNET comprises links from the Armament Research, Development and Engineering Center (ARDEC) to the Ballistics Research Laboratory (BRL); Corps of Engineers Waterways Experimental Station (COE-WES) to the Tank-Automotive Command (TACOM); White Sands Missile Range (WSMR) to BRL; the Concepts Analysis Agency (CAA) to BRL; and TACOM to BRL. Because ARDEC, BRL, TACOM and WSMR are AMC sites, HQ AMC participated in arranging for its establishment over the Defense Commercial Telecommunications Network. The PM Supercomputer organization has since been abolished and operation and maintenance of ASNET has been assigned to the 7th Signal Command.

Army Resource Planning Management Information System (ARPMIS) Phaseout

The ARPMIS system was an inventory of Automation Data Processing Equipment. The DCSIM and AMC activities were leading the Army in maintaining their equipment inventories. Missile Command representatives demonstrated their enhanced version of ARPMIS to the DISC4. However, during the General Officer Level Architecture Control Committee Video Teleconference of 30 August 1990, it was determined that the ARPMIS would be terminated on 30 September 1990. The required data will be added

to the Standard Property Book System - Redesign (SPBS-R). The USAISC will provide both interim and follow-on SPBS-R procedures.

CONUS Telephone Modernization Program (CTMP)

The CTMP was a program to replace outdated telephone switching systems at Army locations and to improve the telephone communications systems at AMC sites. Through the CTMP, new digital switching systems have been installed to satisfy telecommunications requirements at AMC activities. During FY90, new systems were activated at Edgewood Arsenal, Yuma Proving Ground and Vint Hill Farms Station. These three locations bring the AMC total to 21. In addition, a contract was awarded in June for installation of a new system at Lexington-Bluegrass Army Depot. This system should be placed into service during December 1991.

Telephone Mobile Maintenance Contact Team (TMMCT)

The TMMCT, operating out of Ft. Monmouth, New Jersey, was a quick reaction emergency support team with a mission for all USAISC elements (regardless of MACOM supported) within the Northeast region. Communications support provided by the TMMCT included installing cables at DMATS - St. Louis in support of the Local Area Network (LAN) to allow future transition to the Integrated Services Digital Network (ISDN); upgrading the antiquated system at Fort Monmouth Patterson Army Community Hospital (PACH) to a digital electronic switch; assisting in clearing health and life threatening safety code violations at Fort Monmouth; and assisting Dial Central Office personnel at Fort Hamilton in reducing a backlog of service work orders, providing operational and maintenance support to the Telephone Switch and maintaining the Outside Plant where many deficiencies were noted.

UNIVAC Data Communications Terminal (DCT) 9000 Program

The Defense Message System-Army (DMS-ARMY) Operational and Organizational (O&O) Concept Working Group met in April 1990 at Fort Huachuca. Representatives of USAISC, FORSCOM, TRADOC, AMC, USAISC, 7th Signal Command, and the U.S. Army Personnel Information Systems Command (PERSINSCOM) agreed on a draft short-term O&O concept. USAISC will proceed in accordance with the draft plan, while addressing concerns expressed both during the meeting and afterward. USAISC considered replacement of the DCT 9000 to be of the highest priority and will continue to use all available resources to achieve project completion by the target date of 31 March 1991. The DMS-ARMY short-term O&O concept will be published and distributed by USAISC. The DMS-ARMY program will allow DOD to eliminate TCCs and phase out the AUTODIN by 2008.

Replacement of the DCT-9000 AUTODIN equipment was scheduled to begin in March 1991 and to be completed by January 1992. There will be three systems configurations: Desktop Interface to AUTODIN Host (HOST), Automated Special Security Information Systems Terminal (ASSIST), and AUTODIN Mail Service. All three systems have been certified. Hardware has been purchased and was scheduled for shipment to the DCT-9000 sites in November 1990. Depending on the requirements at each of the sites, various combinations of the three configurations will be used.

The 11 AMC sites using DCT-9000 equipment were: Rock Island, Tobyhanna, Picatinny, Vint Hill Farms, White Sands Missile Range, Redstone, TACOM, Sacramento, New Cumberland, St. Louis and LABCOM.

Capacity Management

The Assistant Deputy Chief of Staff for Information Management (ADCSIM) tasked the Operations Readiness and Security Division with developing a capacity management program. Reports were recommended based on Communications Operations Reports. The ADCSIM directed the use of the information provided in the study on consolidation of AMC Data Processing Installations and based on the Army Standard Information Management Systems reports. The team leader for the study was contacted. The study team planned to build Capacity Management into these programs. Capacity Management needed to be addressed for the interim until these consolidation programs were implemented. During mid-August, the Capacity Management program was transferred from the Operations Readiness and Logistics Branch to the IMA Facilities Operations Branch. The SBNA format will be used for reporting. The Resources Division will enforce data collection requirements.

1990 Review and Revalidation (R&R) Program

The Operations Readiness and Security Division conducted the 1990 Review and Revalidation Program of AMC's existing long-haul telecommunication services. Its main objective was to eliminate or reduce uneconomical and unessential services. The program covered leased and government furnished services such as Dedicated Data Circuitry, Defense Data Network services, and Voice services. A total of 961 services were reviewed. The R&R program eliminated 131 services which realized annual savings for AMC of approximately $370,650.

Baseline Architecture and Configuration Management

Using existing resources, the IMA Facilities Operations Branch was tasked in August 1990 to develop Baseline Architecture and Configuration Management Reference Books for each MSC. These books will outline all IMA disciplines and will include, but not be limited to, a list of hardware, software, and floor plans. A draft of the MICOM reference book has been completed and forwarded for review by DCSIM management.

Network Management/Network Design Software

In August 1990, the IMA Facilities Operations Branch was tasked to evaluate and recommend network design software that will assist communication managers to choose the optimum mix of long distance and data service to provide economical "least cost routing." To date, using a demonstration copy of STAR software from Network Synergies, Inc., we successfully completed a design of an existing network--Readiness Integrated Data Base (RIDB). Additional research is being conducted to locate competitive software at least cost.

Geo-Technical Architecture

The geographic/technical architecture was distributed to the field in a memorandum which reflected the hardware, software, security and networking requirements for data and applications. A framework was provided for making decisions about the placement of AMC's organic capabilities, consistent with its mission and functions to achieve total information systems and services support.

The primary objective of the architecture was to achieve interoperability among AMC command organizational elements and systems, with connectivity to all AMC, Army and DOD systems, as appropriate. The architecture was the starting point for the entire information management process. It will be used to support the operation of existing systems, modernization and renewal.

Information Management Board (IMB)

The IMB evolved as a result of a 6 August 1990 meeting between LTG Thomas, LTG Brailsford and MG McGrath. During the meeting, these AMC management officials concluded that, although there were extensive automation resources within HQ AMC, major improvements could be made in the management of these resources through teamwork and TQM. At that point, it was agreed that a formal board should be established within the headquarters to define the issues, resolve them, and redirect progress as necessary during implementation. The DCSIM was tasked to write the formal IMB charter, identify the membership, and orchestrate each session by assuming the role of Secretariat to the IMB.

The first meeting of the IMB was held on 23 August 1990. In that session, the DCSIM presented and briefed the proposed charter, which was approved during the course of the meeting. The actual charter will be published as an AMC Regulation in the 15 series. The draft regulation stated that the mission of the HQ AMC IMB was "to establish HQ AMC information management policy and to direct, evaluate, and ensure the most economical, cost effective and efficient implementation of the IMB prioritized HQ AMC requirements in support of the Information Mission Area (IMA) disciplines" for the headquarters and other AMC and non-AMC occupants of the building supported by HQ AMC.[28]

During the 23 August 1990 meeting, the IMB identified and prioritized issues and assigned work groups to distribute a budget cut, which reduced the HQ AMC Director of Information Management operations/services, and assigned another group to study the AMC Local Area Network issues. As of the end of FY90, the funding issue was resolved, but the LAN issues were still being worked. Meetings and working sessions will continue through the upcoming years and the IMB will continue to resolve HQ AMC information mission area issues and direct necessary planning, prioritization and implementation.

Information Management Council (IMC)

An IMC was formed within HQ AMC during FY89. On 18 January 1990, the formal charter was published as AMC Regulation 15-9, *Boards, Commissions, and Committees: AMC Information Management Council (IMC)*. The regulation stated that the IMC would "provide executive-level strategic guidance and direction to the Information Management Area (IMA) Program of AMC."[29] The council was chaired by the Chief of Staff and included as members the Assistant Deputy for Materiel Readiness; the Principal Assistant to the Deputy Commanding General for Research, Development and Acquisition; the Director, Systems Integration and Management Activity; and the Deputy Chiefs of Staff for Resource Management, Program Analysis and Evaluation, and Information Management.[30]

During FY90, the IMC held three sessions and made the several command decisions. The AMC Systems Management Office (AMCAE-AS) proposed their Information Systems Architecture as the AMC standard information engineering methodology. The IMC agreed to accept this proposal within the current level of automation funding. The IMC also issued specific guidance in each of the functional areas for completing the information engineering of their respective business processes.

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[28]Draft AMC Regulation, p. 1, enclosed with the DCS for Information Management historical submission for FY90.

[29]AMC Regulation 15-9, *Boards, Commissions, and Committees: AMC Information Management Council (IMC)*, para 4.

[30]Ibid., para 6.

The DCSIM presented the concept of an AMC Data Processing Installation (DPI) consolidation study entitled "Streamlining Information Service Operations Consolidation Study (SISOCS)" to the IMC. The DCSIM gained the support of the IMC in proceeding to a Department of Army Major Automated Information System Review (MAISRC) for Milestone O approval and for proceeding with a pilot test of remote processing capabilities. During a follow-on session, the IMC reviewed the status of SISOCS since the project had picked up momentum in line with the SBIS program and the ASIMS selection of Chambersburg, Rock Island, St. Louis, and Redstone Arsenal as the four consolidation sites. The IMC directed actions with regard to environmental impact studies, memoranda of understanding, reductions in force, and other formal notification to field commanders.

Information Management Plan (IMP)

The Resources, Plans and Policy Division of the DCSIM had the responsible to develop, validate, prioritize, coordinate, staff, and submit to HQDA the AMC IMP. During FY90, IMP guidance from HQDA, USAISC and AMC was distributed to the MSCs, SRAs, and HQ AMC. The AMC IMP was completely automated to include budget, life cycle cost management, architecture, audit trail, return on investment, and actual procurements. Several video conferences were held to discuss the IMP submissions. A total of 78 were submitted to HQDA.

The HQDA Office of the Director for Information Systems for Command, Control, Communications, and Computers (ODISC4) was directed to streamline the information management processes. As a result, all IMPs submitted in 1985, 1986, and 1987 were reviewed and revalidated.

Military/Civilian Conversion

Program Budget Decision (PBD) 917 brought about civilianization of military spaces in support functions. USAISC-AMC was assessed a 135-space conversion for FY91, FY91, and FY93. Under this conversion, USAISC-AMC will receive 135 authorizations and 41 workyears to support this issue. A revised approach to the conversion was being worked at 7th Signal Command.

Chargeback Beta Test

During FY90, the telecommunications portion of the Chargeback Beta Test was refined to ensure accuracy in the pseudo billing. This process had been successful during FY90. The automation portion of the Chargeback Beta Test experienced some difficulty at the Letterkenny site. Charges were incurred and listed on the invoices, but the organization(s) in receipt of the automation service was untraceable with the current records. The collected data was incomplete. Currently, the automation beta test portion at Letterkenny was at a standstill until the MVS Integrated Control System (MICS) automation assistance contract was resolved. The current plan was to have actual funds transfer occur on 1 October 1991.

Base Realignment and Closure (BRAC)

During FY90, all Information Management Area Action Plans (IMAAPs) were revised/updated by the losing installations. Technical assistance was requested by USAISC-AMC in the development of IMAAPs for the larger losing installations (i.e., Lexington-Bluegrass Army Depot and Jefferson Proving Ground). The Logistical Support Annexes needed to be updated due to revision of the associated IMAAPs. All IMA funding requirements were reviewed and updated in accordance with the studies and changes that were taking place. Update of the plans, reports, and schedules will continue as necessary during FY91.

Productivity Capital Investment Program (PCIP)

The purpose of the PCIP was to identify funding requirements for productivity improvements that amortized within a specified period. The PCIP was set up to dedicate a portion of the budget (DA level or above) toward productivity initiatives. These initiatives should recover savings within a short timeframe, but were not funded in the normal planning, programming, and budgeting execution system cycle because of competition from higher priority mission requirements.

Six PCIP projects totaling $15,714,268 in USAISC FY90 funds were reviewed by USAISC-AMC during FY90. Five were submitted by CECOM and one by AVSCOM. Three were returned to CECOM for better description and stronger justification. $446,500 was provided to AVSCOM for the purchase of a communications processor. Two CECOM requests ($26,420 for upgrade of an obsolete ADP line printer and $5,761 to buy out a Xerox 5046 copier) were candidates for FY91 funding.

Responding to a 7th Signal Command data call, two projects were submitted for Quick Return on Investment Program (QRIP) funding. USAISC-Sacramento requested audiovisual equipment for $21,669 and CECOM submitted a request for a Xerox 5046 copier. Neither of these projects made the cut line. No USAISC QRIP projects were funded during FY90.

USAISC-AMC reviewed 57 FY90 AMC proposals totaling $36,026,373; 42 were approved and 18 of those were funded. One TECOM project was funded with $39K of FY89 money. FY90 PCIP funding was provided to CECOM for 12 projects ($287.2K); LABCOM three projects ($1,175K); and TROSCOM two projects ($244K).

HQ, USAISC-AMC Realignment

On 6 August 1990, 7th Signal Command approved plans for an internal HQ, USAISC-AMC realignment which became effective 12 August 1990. Reasons for this realignment included the need to streamline the organization to coincide with reduced funding levels in FY90 and the outyears; to emphasize command and control functions; and to eliminate overlapping functions between divisions. On-board strength of the HQ staff was 93 at the time of the realignment; expected funding for FY91 was 92 workyears. The realignment had no adverse impact on grades or job series and no reduction in force was necessary.

Leased Buyout

Funding for the buyout of uneconomical telecommunications equipment was provided in April 1990 to USAISC-Lexington, USAISC-MICOM, USAISC-Natick, and USAISC-New Cumberland. USAISC-Lexington received $2,400 to buy out cellular phones; however, the lease was terminated prior to receipt of funds and the funds were returned. USAISC-MICOM received $2,599,359 of procurement funds for the purchase of telephone systems; $213,044 has been obligated. MICOM anticipates spending the balance of $2,386,315 during FY91. USAISC-Natick spent $360 for elevator phones and turned in $5,600. USAISC-New Cumberland received $37,190 and obligated $25,751 for a Multiplexer/Data Concentrator. This equipment serves as AUTODIN Interface for a Compuscan Optical Character Reader. Awarded contracts totaled less than the estimate and USAISC-New Cumberland turned in $11,439.

Information Management Systems Review Committee (IMSRC)

MG William B. McGrath, AMC Chief of Staff, signed the IMSRC Charter on 9 March 1990, establishing the IMSRC as an AMC systems review committee. Approval of the IMSRC provided AMC

a structure and management base for common support systems within the IMA and a structure to optimize technical coordination for AMC systems.

The IMA was comprised of five disciplines: automation, communications, records management, visual information, and publications and printing, as well as a sub-discipline: technical libraries. The IMSRC structure reflected the IMA disciplines. Functional systems managers (FSM) have been assigned management of one or more discipline(s): FSM Automation, FSM Communication, and FSM Support Systems (records management, visual information, publications and printing, and technical libraries).

Chaired by the DCSIM, COL John V. Ridick, the IMSRC meetings have addressed issues in systems implementation, current and future architectures, funding requirements, communication and security issues, as well as many other issues required to successfully manage systems within AMC. To date, three IMSRC meetings have been held.

Area Oriented Depot Modernization/Standardization (AODM/S)

During the January 1990 meeting of the Department of the Army MAISRC, it was determined that additional documentation was required prior to receiving Milestone I and II approval. Work on the additional documentation was progressing until a 13 April 1990 DOD decision was made to transfer both Sharpe Army Depot (SHAD) and New Cumberland Army Depot (NCAD) to the DLA. DLA announced that they intend to install DLA-developed software in the Western Distribution Center in the near future; therefore, the decision was made to cease all efforts toward a standard Process Control System (PCS).

On 8 January 1990, the AMC Commander sent a memorandum to DA requesting authority to terminate the Central Distribution Center (CDC) contract due to pending force structure reductions. Authority was granted and the CDC contract was terminated on 12 April 1990.

SHAD was transferred to DLA on 24 June 1990. NCAD was scheduled for transfer to DLA in mid-February 1991. DLA, however, advised that software will be unavailable to run the Eastern Distribution Center (EDC) at NCAD. DLA has indicated that they support completion of the Maintenance and Control System (M&CS) and PCS into a working software system to run EDC until such time as they do have a software package to run the facility. Integration testing of the M&CS and PCS was ongoing at the EDC, with an implementation target date of March 1991.

Army Materiel Plan Modernization (AMP MOD)

The AMP MOD consists of interactive data bases that provides logistic and acquisition information on major items in support of the Planning, Programming and Budgeting Execution System. Significant events in FY90 were the implementation of Phase I, Personal Computer (PC) Procurement Exhibits (PC P-Forms) applications, the Assigned System Developer (ASD) for the AMP MOD has been split between Systems Integration and Management Activity (SIMA)/Chambersburg and SIMA/St. Louis. Two software updates to the system were released during FY90. Through the use of interoperability, the MSCs have the capability to access the database at another MSC and the global database at SIMA/Chambersburg. Future development for the AMP MOD includes automation of additional P-Forms capability to upload and download P-Form data between PCs and mainframe and automation of data interchange.

Workplace Automation Training

The Army has invested millions of dollars in the purchase of computer automation hardware/software to be used in the workplace. Training is a necessity in order to support this effort and to fulfill job performance within the workplace. During a time of reduced resources, formal classroom computer

automation training provided immediate payback in terms of increased worker productivity and costly error reduction. A reduction, however, in resource availability at the Army Logistics Management College (ALMC) has seriously impacted this training program.

Computer Literacy Course (CLC). There was a continued high demand for the CLC in the residence mode as evidenced in the Army Training Requirements and Resources System (ATRRS) report. Historically, since the first CLC in FY86, the actual student count has far exceeded the projections. Six hundred personnel were trained during FY90. Due to an ALMC RIF and realignment, the CLC has been cancelled for FY91. Transfer of this training to the Army Management Engineering College (AMEC) was being studied.

Computer Communications for PC Users (CCPU). A CLC follow-on course emphasizing communications training was presented eight times during FY90. Eight presentations were scheduled at ALMC during FY91. Although this was a new course, student fill rates have been exceeded as a result of articles written by AMCIM-SS about this training opportunity, published in AMC and USAISC news letters.

ADP Computer Security Training. Although mandated by public law and supporting DOD/DA regulations, this training was cancelled by ALMC/DCSPER (AMC) for presentation in FY91 because of funding shortfalls. Transfer of this training to AMEC was being studied.

Structured Functional Systems Description and Design Course. Although cancelled in September 1990 by ALMC/DCSPER (AMC), approval for reinstatement has been granted and the course will be presented on a limited basis during FY91. Twelve presentations were given in FY90 and four presentations were scheduled during FY91.

Artificial Intelligence (AI) Training Course. The U.S. Army AI Center provided funding for the development of a five-week training program to develop AI skills within the Army Operations Research System Analysis (ORSA) community. This training will provide both military and civilian personnel with an additional tool to support workplace automation efforts.

Computer Aided Acquisition and Logistic System (CALS) Support

The Army let a four-phase contract in August 1989. During the first phase in 1989-90, four competing contractors (BDM, Computer Sciences Corp., TRW, and Xerox) developed designs which were evaluated by the government. The second phase, to be awarded in November 1990, will be limited to two contractors who will develop an in-plant demonstration.

An Army CALS Test and Evaluation Master Plan (TEMP) was developed, staffed, and approved. Meetings were held on CALS security issues. The AMC DCS for Readiness, the Program Executive Officer for Standard Army Management Information Systems (PEO STAMIS), and DCS for Logistics provided individuals for creation of an Army CALS office within the DCSLOG.

The CALS Joint Government/Industry Steering Group and task groups continued their efforts. Emhart/ATI (Advanced Technology, Inc.) continued its work with assistance from a Technical Assistance Group (TAG) comprised of representatives from the military services and industry to complete an OSD Contractor Integrated Technical Information Services (CITIS) Task Order.

Artificial Intelligence and Expert Systems

All AMC FY90 funding requirements were approved and allotted to the command. Funds were dispersed in toto to the appropriate offices. The AMC AI Master Plan Working Group met in December 1989 at HQ, LABCOM in Adelphi, Maryland. The meeting was used as a forum to determine the individual technology groups into which AI could be divided. Sixteen were identified: Expert Systems and Knowledge Representations; Natural Language Understanding and Automatic Text Processing; Autonomous Systems; Machine Learning; Intelligent Vision and Image Understanding; Speech Recognition; Automatic Programming and AI in Software Engineering; Parallel and Novel Architectures; Hardware, Software and Languages; Intelligent Tutoring Systems; AI in data base (DB); AI in Manufacturing and Concurrent Engineering; AI in Simulation; AI in Sensor, Data and Information Fusion; Artificial Neural Nets; and Biological Foundations of Intelligence. The groups were later subdivided into three broad applications: Weapons Systems, Logistic Systems, and Business Systems (Scientific and Engineering Systems were added later). Ms. LouAnn Elledge, Director of SIMA, was selected to brief the AMC presentation at the March 1990 Army AI Symposium in Philadelphia, Pennsylvania.

AMC actively participated in May 1990 at the 1990 AI Proponency Conference. AMC sponsored an AI Forum in June 1990 at HQ AMC. The forum included exhibitions from the Army, AMC, and the public sector.

The Commander, AMC was briefed on the AI program within AMC in July 1990. In August 1990, the Advanced Technology Branch (the office assigned responsibility for AI within AMC) was eliminated due to a reorganization. This responsibility was transferred to the ADP/Communications Management Branch. During FY90, the business and logistics portion of the AMC AI Master Plan was developed and staffed. This portion of the Plan will be combined with the scientific and engineering portion to form the total AMC AI Master Plan to be published in 1991.

AMC FY91 funding requirements were submitted to the U.S. Army AI Center in August 1990. This request did not include SIMA Knowledge Engineering Group funding. Through prior arrangements, they submitted their request separately.

Army Civilian Personnel System (ACPERS)

During FY90, ACPERS was implemented at an additional 17 AMC sites. This brought the total number of sites receiving this Army standard automated civilian personnel system to 33 and completed deployment of ACPERS at all AMC civilian personnel offices. Implementation of ACPERS in Equal Employment Opportunity (EEO) offices and at the satellite sites was in progress and expected to be completed by April 1991.

Worldwide Military Command and Control System (WWMCCS) Connectivity at AMC Locations

The primary mission of WWMCCS was to support the National Command Authority and the DOD in planning, directing, coordinating, and controlling the operations of military forces. WWMCCS allowed the sharing and transmission of information and resources which will enhance the capability of AMC and its subordinate elements to obtain selected logistics data and to meet its mission requirements during crisis and mobilization. The purpose of WWMCCS was to provide the required selected logistics data on a real-time basis via a reliable high-speed data communication line in a secure mode. It ensured that important information exchanges can occur between command and control, tactical, intelligence, logistics, and environmental support communities.

An AMC initiative for FY90 was to lease circuits to provide a 9.6 KB circuit between the AOC/Pentagon and AVSCOM/St. Louis, Missouri. GFE multiplexors having four synchronous channel ports at 2.4 KB with 9.6 KB composite output at the AOC/Pentagon will be channeled to AVSCOM/St. Louis. The composite will be demultiplexed and connected to four ports of the DATANET 661 WWMCCS data processor. At AVSCOM, the 9.6 KB data circuit will be demultiplexed into four component circuits of 2.4 KB: one local and one each at Sharpe Army Depot (although no longer an AMC depot), Red River Army Depot, and TACOM. All work was completed in August 1990 and was operational due, in part, to Operation Desert Shield.

Interservice Materiel Accounting and Control System (IMACS)

IMACS was an asset tracking system for depot-level reparable assets that were repaired under Depot Maintenance Interservice Supply Agreements (DMISA). IMACS was directed by the Joint Depot Maintenance Analysis Group (JDMAG) and was being developed by the Air Force. For development, a configuration control board (CCB) was established. The CCB was comprised of representatives from each service.

IMACS requirements were being developed in phases. Capabilities included processing for requirements, production, budget/funding, balances/status, interrogation, shipment/receipts to and from the principal, mismatch accounting, transaction register, contract data, NSN query, and DMISA exhibits.

At the present time, most requirements have been addressed, developed, and reviewed. The JDMAG requested that efforts be made to ascertain the potential for interface between IMACS and MODELS. The possibility and advantage of IMACS being a node in the MODELS system appears beneficial. This was a good time in the MODELS development for IMACS to interject their specific requirements. The status of IMACS changes to the automated systems (as requested by the services represented on the CCB) was that the changes were correct and necessary and the changes have been completed.

Corporate Information Management (CIM)

CIM was a DOD initiative established under DMRD 925 to develop standard DOD management information systems. The CIM initiative included six functional areas. Committees were established by OSD to work on the warehousing/distribution and inventory management functional areas. AMC systems under research and analysis for consideration as standard systems included the Standard Depot System (SDS), Area Oriented Depot (AOD), and commodity command standard system (CCSS) subsystems. AMCIM-PS representatives are on standby to provide data and advice on AMC automated systems.

Joint Uniform Service Technical Information System (JUSTIS)

The Air Force Logistics Command (AFLC) was tasked by the Office of the Secretary of the Air Force to act as the implementing command for the Technical Manual (TM) system modernization effort. JUSTIS was the modernized DOD infrastructure and Automated Data System (ADS) endorsed by the Air Force, Army, and Navy within which TMs were specified, acquired, developed, managed, cataloged, published, distributed, changed, stored, and rescinded. JUSTIS was the DOD program tasked to provide ADS support to develop, acquire, accept, store, distribute, and manage TMs and TM data in paper or digital media. The Army was participating in the development of JUSTIS through the Joint Service TM Infrastructure Working Group chaired by the JUSTIS PM.

An OSD memorandum of 16 June 1989 directed the Services to establish a joint working group to identify and incorporate common requirements. Consequently, the Joint Service TM Infrastructure Working Group was established under the DOD TM Technology Exchange Subcommittee. Defense Management

Review Decision 925, 10 November 1989, further directed that the Services must not expand resources to develop systems or software to meet the same functional requirements.

Tri-Service activities included a December 1989 meeting to discuss requirements identification for JUSTIS. In April 1990, an Army team was formed in the JUSTIS System Project Office (SPO) to develop Army requirements for JUSTIS. This team was being supported by AMC and USAPPC/ISC functional representatives. A draft tri-Service Functional Description (FD) was staffed in September and October 1990, followed by a tri-Service System Requirements Review (SRR) from 29 October through 9 November 1990. The FD was scheduled to be completed in January 1991. The proposed schedule calls for a draft Request for Proposal (RFP) in March 1991; MAISRC Milestone I in August 1991; final RFP to be issued in September 1991; contract award made in August 1992; and initial operating capability (IOC) by December 1993.

Record Searches

The ODCSIM participated in a number of record searches initiated by higher headquarters and the public. The relatively infrequent requirements to search records (both active and retired) indicate the necessity and importance of proper records maintenance, as well as legal and political implications.

Foreign Military Sales (FMS) to Iran. Requested by OSD in response to a Justice Department requirement, records relating to arms sales to Iran (foreign military sales case files) were searched and reviewed.

Manuel Noriega Document Search. Requested by HQDA (DACS-DMP) in support of the Justice Department trial of Manuel Noriega and other defendants, records involving arms sales to Panama were searched and reviewed.

Records Requested Involving Civil Suit. A Minneapolis law firm representing an Army contractor at Twin Cities Army Ammunition Plant (TCAAP) requested access to records retired by TCAAP. Two contractors and the United States of America are being sued by local individuals because of ground water contamination allegedly caused by operations at TCAAP. Assistance was provided in a search at the Washington National Records Center of requested files.

Plant/Duplicating Facilities Closure and Transfers

Sharpe Army Depot was transferred on/about 1 July 1990 to DLA as a result of a Defense Management Review decision. The DCSIM provided guidance on the transfer of equipment and staff.

Decentralized Printing Procurement Program

In August 1987, the U.S. Army Publications and Printing Command (USAPPC) and AMC agreed to test the effectiveness of procuring the printing of departmental technical and equipment publications at two AMC MSCs. The test plan was developed under the sponsorship of the AMC Equipment Manuals Council, the Publications and Printing Advisory Group to the Commanding General, AMC. The purpose of the test was to determine whether the MSCs could assume the duties of print order preparation for new publications and reprint requirements, reduce current printing cycle times, meet printing commitments with a set amount of printing funds, assess the impact on MSC manpower and resources, and identify other problem areas or resource requirements.

The program began in 1988 as a six-month test at MICOM and TROSCOM and had been operating successfully; however, efforts are ongoing to expand the program AMC-wide. Currently, two AMC MSC publications productions activities (MICOM and AVSCOM) were participating in the program. During FY90, USAISC-AMC continued efforts to gain USAISC approval to expand implementation of the program AMC-wide. During the third quarter of FY90, USAISC directed AMC and USAPPC to begin work on a Memorandum of Agreement (MOA) to formally establish guidelines and procedures, the roles and responsibilities of each activity, and a schedule for implementing the program at other AMC activities by the first quarter of FY91. Initial drafts of the MOA were accomplished during the fourth quarter of FY90; however, AMC and USAPPC were unable to resolve all issues.

By the end of the fourth quarter of FY90, actions were underway on a memorandum for signature by the DCG for Materiel Readiness requesting that USAISC resolve the impasse blocking completion of the MOA and implementation of the program at other AMC equipment publications production activities. The DCSIM will continue to pursue formal USAISC approval of the program in support of the Commanding General, AMC--the Army's Equipment Publications Program Manager.

Publications Support for the AMC Total Package Fielding (TPF) Program

At the request of CECOM, USAISC-AMC requested that USAPPC chair a meeting to address and resolve a myriad of problems cited by the CECOM TQM Process Action Team (PAT) review of problems encountered in supporting requirements of the AMC TPF program. The meeting took place 10-12 April 1990 at HQ AMC and included representatives from the AMC major subordinate commands and other appropriate activities directly involved in the support of AMC TPF requirements.

The CECOM PAT identified several problem areas impacting the support of TPF requirements at all of the AMC MSCs. These problem areas were of special significance to CECOM because of the great increase in the number of TPF requirements impacting their activity during FY90. The problem areas identified by the PAT stemmed from a long-standing inability of the USAPPC to implement some of the requirements of AR/DA PAM 700-142. These problems were no fill-or-kill notification process implemented within the USAPPC requisitioning system, and inability of the USAPPC system to routinely recognize and perpetuate a DOD Activity Address Code (DODAAC)/Project Code designation to facilitate sorting of the publications at the TPF Distribution Depots (Sharpe, Red River, and New Cumberland). The USAPPC provided an interim means to meet the DODAAC/Project Code identifier, utilizing separate accounts for each TPF staging cite/project and a unique TPF requisition code. By the end of FY90, the process of establishing the many new accounts for AMC TPF requirements was underway at all MSCs.

Another key issue involved funding problems encountered in meeting TPF requirements when a required publication was out-of-stock at the USAPPC Publications Distribution Centers. AR/DA PAM 700-142 stated that, under these conditions, the designated fielding command's Equipment Publications Control Officer was responsible for funding the local reproduction of the needed publications. Action has been taken to change AR/DA PAM 700-142 so that, when a publication is unavailable at the warehouse and local reproduction funds were not available at the fielding command, the Program Manager (PM) requiring the publications support can provide funding to support local reproduction of those publications unavailable through normal channels.

FMS Reimbursable Funds from the Sale of AMC Publications

USAISC-AMC continued efforts to secure the return of reimbursable funds from the FMS of AMC equipment publications. The USAPPC advised USAISC-AMC that a U.S. Army Finance and Accounting (USAFAC) determination authorized USAPPC to retain FMS funds from the sale of AMC publications and to use these funds to subsidize the free issue of administrative forms to all major army commands.

During FY90, USAISC-AMC requested that USAFAC explain the USAPPC position on FMS reimbursable funds. USAPPC could not document the USAFAC determination and no clear understanding of the issue or position was available from the U.S. Army Security Assistance Command (USASAC), which manages the FMS program for the Army.

The USAISC-AMC position was that funds from the FMS of AMC publications should be reimbursed to the AMC/proponent account that paid for printing the publication. These reimbursable funds were needed to support increasing AMC reprinting requirements and represented a significant resource pool which could be used to help decrease a growing backlog of AMC publications that were not reprinted each year due to shrinking printing budgets. The investigation of this issue was ongoing at USAFAC, with resolution expected during FY91.

Functional Coordinating Groups (FCG)

FCG for Electronic Corporate Information Systems and Optical Digital Imaging Systems. Charters for two FCGs were prepared and forwarded to the field for review and comment. The proposed FCGs were for electronic corporate information systems and optical digital imaging systems. The two FCGs would function under the purview of the IMSRC and under the leadership of the Functional Systems Manager (FSM) for Support Systems.

FCG for Visual Information. During FY90, a FCG to deal with visual information issues was established under the auspices of the IMSRC. The FCG was to address systems management and development issues pertaining to the visual information function. The IMSRC was established to provide direction in all matters concerning the IMA within AMC. The proposed FCG will support the IMSRC in coordinating visual information initiatives and requirements with those of the other disciplines of the IMA.

The proliferation of electronic/automated visual information systems and the costs associated with escalating requirements in the present resource-constrained environment required that the acquisition and application of this technology be managed to optimize interoperability and systems integration. The FCG will develop integrated visual information systems for command-wide processes and information requirements.

Ada Programming Language

The major concerns and focus of Ada implementation planning were the need for standard methodology and software to provide the appropriate interface between Ada and Structured Query Language (SQL), Ada interface to the Customer Interface Control System (CICS), and to various Data Management Routines (DMRs). Ada Technology Insertion Program (ATIP) funds in the amount of $250,000 were petitioned for and granted to support the SIMA effort to develop the Logistics Asset Systems Estimate (LASE) subsystem. This effort will include developing interfaces to the DMRs and Model 204 Data Base Management System (DBMS). Attendance at the TRIADA '89 Conference provided valuable information on current developments such as the Government Accounting Office (GAO) review on Ada programming language. Some of the principal findings were:

Inventories of Ada projects were incomplete;

There were no projects designated to assess Ada's long-term benefits and cost savings;

Ada-specific costs were unknown;

The promised benefits of Ada were not yet achieved for some real time applications;

The GAO recommendations were to:

Update and disseminate complete inventory of Ada projects;

Develop performance data on Ada's achievement of goals;

Develop DOD-wide repository of Ada programs and modules;

Establish a committee of independent experts on Ada and software engineering to:

Identify projects to demonstrate cost savings.
Assess research efforts.
Assess repository development.
Suggest appropriate Ada use.

DOD concurred with the first two recommendations and partially concurred with the last two. The DOD position was that repository technology must be developed first and that the tasks of the expert committee can be done within current DOD structures. Areas of continued disagreement were the need for an expert committee and identification of projects to assess software cost savings.

Standard Financial Redesign Subsystem II (STANFINS II) was being developed in Ada. It was a large-scale financial management information system with a complex data interface and large complex communication and resource demands. It also had a full range of appropriation accounting functions such as accounts receivable, property accounting, funds receipt and status, and general ledger and reporting. Coding and testing of STANFINS II was completed in October 1989. Third party testing of STANFINS II by Army personnel is scheduled for completion by April 1991.

Available studies showed that first time Ada projects were expensive and that extensive training was important. Training was developed in context of work that needed to be done and in development environment. The AMC Ada Implementation Plan was updated as of October 1990 and submitted to ODISC4.

Fourth Generation Language/Data Base Management System (4GL/DBMS) Procurement

The IMSRC directed that AMC procure a 4GL/DBMS for the mini computers and evaluate AT&T DBMS, UNIFY 2000, which is on the 3B2/600G mini computer to determine if the product will perform satisfactorily on other AMC hardware (Sperry and Plexus computers). The committee also directed that AMC procure 4GL/DBMS software for the mainframe/micro computers.

UNIFY 2000 software can be purchased only off the AT&T contract for the 3B2/600G mini computer. Coordinated research efforts by the ADP/Communications Management Branch (AMCIM-PA) and the Plans, Policy & Architecture Branch (AMCIM-RB) indicated that there were no provisions in the contract (i.e., value added clause) that would allow future purchases of UNIFY 2000 for other AMC hardware.

The General Purpose Computer Support Center (GPCSC) tested the UNIFY 2000 DBMS software provided with the 3B2/600G computer and recommended to the Product Manager, SIMA that the software was unacceptable for use by Army agencies without the following changes: an update to the documentation provided, an update to the software to fix "bugs" located by UNIFY Information during the testing, and changes to the computer aided instructions (CAI) software provided for its use.

AMCIM-PA was tasked with establishing an organization to take the acquisition lead for the 4GL/DBMS mainframe. AMCIM-PA requested and received nominees from several AMC activities for the formation of a 4GL/DBMS mainframe acquisition organization.

SIMA-West volunteered to serve as the procurement office; however, the AMC Command Council advised against this, since settlement of a previous protest resulted in barring involvement of the St. Louis procurement office in any future 4GL/DBMS procurement. No one else volunteered to serve as the procurement office. The mainframe 4GL/DBMS procurement has been placed on hold due to lack of funds and the absence of any volunteer to serve as procurement office.

The IMSRC discussed the availability of the XDB 4GL/DBMS and the environments in which it could execute at the 12 December 1989 meeting. UNIX and MS DOS could be possible alternatives to UNIFY 2000. XDB can be executed on the Sperry and Zenith PCs, but it cannot run on the 3B2 mini computer.

USAISC-CECOM attempted to obtain a copy of XDB to conduct a test against the 4GL specifications, but were unable to do so. They were informed that the product was unavailable for testing. XDB AMC testing has been delayed because of serious software problems. Additional tests conducted by the GPCSC revealed that the XDB software problems had been corrected. The USAISC decided to perform a functional and technical test on XDB against a live Standard Army Management Information System (STAMIS) before releasing it to the field.

Technical specifications for the 4GL/DBMS mini/micro procurement were staffed with the 4GL/DBMS technical team for comments. Their comments were that the specifications could serve as a basis for developing a test plan with recommended changes and that the 4GL/DBMS technical team should reconvene to finalize specifications. A history of the 4GL/DBMS procurement actions and a proposed 4GL/DBMS procurement strategy were briefed during the 5-6 December 1990 IMSRC.

Model 204 Data Base Management System

System Decision Notification approval was obtained from HQDA to purchase additional copies of the Model 204 DBMS. Thirteen copies have been purchased. The DBMS was purchased under terms of the WWMCCS contract and provides for site licenses. These licenses permitted the purchaser to execute several copies of the DBMS in buildings located within one mile of each other. The following AMC subordinate activities have procured copies of Model 204: AMCCOM, AVSCOM/TROSCOM), CECOM, MICOM, TACOM, SIMA, LABCOM, ARDEC, Watervliet Arsenal, Natick Laboratory, and the Materiel Readiness Support Activity (MRSA).

SIMA and TACOM have developed systems that interface with Model 204. The SIMA-developed Procurement Automated Manpower Utilization and Projection System (PAMUPS) has been released to the MSCs.

SIMA briefed the Technical Coordinating Group (TCG) and the Application Development Division (ADD) Chiefs on plans for converting portions of the provisioning system that currently accesses S2K and Data Management Routine (DMR) databases to Model 204. SIMA also is scheduled to brief Mr. Heinbach on a global Model 204 conversion plan.

The Army Management Engineering College (AMEC) was requested to set up training courses for users of Model 204. The AMEC agreed to have courses available by the start of FY91.

U.S. Army Information Systems Command-Alexandria

Mission, Manpower and Personnel

The mission of the U.S. Army Information Systems Command-Alexandria (USAISC-Alexandria) was to effectively utilize information processing resources from both USAISC-Alexandria and HQ AMC. It was responsible for managing, directing, coordinating, and integrating the IMA disciplines of automation, communication, visual information, printing and publishing, and records management for HQ AMC and tenant organizations.[31] Key personnel were as follows:

DIRECTOR, USAISC-ALEXANDRIA	
Mr. Maurice B. Johnson	17 Jul 89 - 17 Jun 90
Ms. Joyce Ruthven	17 Jun 90 - Present
DEPUTY DIRECTOR, USAISC-ALEXANDRIA	
Mr. Robert D. Bolonde	3 Jan 89 - Present
CHIEF, INFORMATION CENTER	
Ms. Eileen Howes	1 Jul 89 - Present
CHIEF, NETWORK OFFICE	
Ms. Susan Maks	1 Jul 89 - Present
CHIEF, APPLICATION DEVELOPMENT DIVISION	
Mr. Ed Goldstein	6 Nov 89 - Present
CHIEF, OPERATIONS AND SYSTEMS INTEGRATION DIVISION	
Mr. Thomas H. Dolan	17 Mar 89 - Present
CHIEF, RESOURCE MANAGEMENT, PLANS AND LOGISTICS DIVISION	
Ms. Linda L. Pierpoint	13 Mar 89 - Present

The Administrative Office for USAISC-Alexandria, Director of Information Management (DOIM), supported 112 authorized spaces. USAISC-Alexandria was working on a reorganization because of the number of spaces cut in FY90. The organization's manpower figures for the start and end of FY90 are given below:

	OFF	CIV	INT	OH	TOTAL
Beginning FY90:					
AUTH	0	121	0	0	121
REQ	0	141	0	0	141
ASG	0	101	5	6	112

[31]Unless otherwise noted, information in this section is taken from the USAISC-Alexandria historical submission for FY90.

Ending FY90:

AUTH	0	112	0	0	112
REQ	0	112	0	0	112
ASG	0	98	4	7	109

Significant and Command Management Issues

Operation Desert Shield Information Mission Area Support. In August 1990, the Chief of the DOIM Information Center was appointed as the DOIM Desert Shield Representative. The Information Center provided 24 hour IMA support to the Operations Center and has been the primary Point of Contact (POC) for all IMA concerns. The DOIM provided support in the areas of automation, communications, printing, illustrative graphics, courier services, video teleconferencing, copiers, facsimiles, telephone, and messages. A DOIM Handbook was prepared with instructions and operating procedures for all DOIM activities in the AMC Operations Center. The USAISC-AMC Property Book Office provided start-up automation equipment. The Visual Information Branch, Operations and System Integration Division, provided responsive graphics and audiovisual support. The Resource Management Branch acted to certify funds and facilitate the processing of urgent IMA procurement actions needed in support of the AMC Crisis Operations Center.

FY90 Blanket Purchase Agreement. The Information Center was the HQ AMC central control point for ordering automation supplies through the Blanket Purchase Agreement process.

HQ AMC IMA Budget Execution. FY90 marked the first year of successful DOIM management of the HQ AMC information management area operating budget. The positive IMA budget support provided to all HQ AMC elements in support of their respective work place automation requirements was the first step taken by the DOIM in assuming full management control of all headquarters IMA requirements.

Video Teleconferences. FY90 showed a marked increase in the number of video teleconferences, from 1,831 to 2,328, a 21 percent increase. Major subordinate commands reported cost savings from $110,000 to $480,000 per MSC by reducing temporary duty and travel costs. STU III phones, used for classified discussions, have been installed in studios at HQ AMC.

The Video Enhance Users System (VENUS) network installed one new studio, bringing the total to 16 studios in the AMC VENUS network. Holiday visits to AMC family members were offered via television. The effort was coordinated with HQDA, Air Force Logistics Command (AFLC), Strategic Defense Initiative Organization (SDIO) and Naval Air Command (NAVAIR) to give employees a chance to talk to loved ones in over 50 studios in more than 20 states.

Graphics Branch, Operations and Systems Integration Division. During FY90 the Graphics Section produced 1,557 presentation projects, an increase of 197 projects and 5,669 individual work units from FY89. The FY90 programs included the Dr. Martin Luther King Celebration, the HQ AMC "Dining In," the HQ AMC Birthday, HQ AMC Celebration at Leesburg Fairgrounds, Mrs. Tuttle's Earth Day Tree Planting, Federal Women's Recognition, and the Combined Federal Campaign. By producing more graphics in-house, contracting expenditures were reduced by $21,251 during FY90.

Audiovisual personnel were responsible for 469 video tape requests totalling 26,000 minutes and for 18 audio tape projects totalling 16,000 minutes. Included were a video production of General Tuttle addressing the Army Emergency Relief Campaign, a command-wide video tape release of Total Quality

Management presentations by Florida Power and Light and 3M companies, and presentations for command-wide attendees of the AMC Family Action Conference.

Audiovisual productions were upgraded with new production equipment. The new presentation video projectors were being installed in three HQ AMC conference rooms: 10N40, G3E18, and 1W06.

Cable television service was provided to 18 locations in the HQ AMC building. A contract was let through Letterkenny Army Depot in October 1989, and the project was completed on 4 January 1990. Yearly contracts were established for the monthly service fees, and for additional drops, relocations, or service modifications.

Printing Branch, Operations and Systems Integration Division. The Printing Branch reproduced 2,975 jobs, 7,097,190 impressions, in-house. A total of 185 jobs, 25,086,255 impressions were contracted. The branch was able to reduce contract costs from $434,000 to $340,000. With the use of tighter management controls and procedures, the in-house printing costs were reduced from $34 per 1,000 reproduction units to $25 per 1,000.

In FY90, the HQ AMC copier program was reconfigured, reducing the number of copiers from 60 to 44 at an annual cost savings of approximately $250,000. The contract with the Sheltered Occupational Center of Northern Virginia to provide the handicapped personnel to run the three copier centers in the headquarters was renegotiated and extended for an additional three years.

A survey was conducted of Command-wide AMC forms, HQ AMC forms, local forms, form letters and obsolete command-wide forms. Of 373 command-wide forms, 90 were found to be obsolete or rescinded. Additional forms have since been added for a current total of 307 active command-wide forms. Of the 62 HQ AMC forms surveyed, there were currently 38 active. Of 140 active form letters, there were 25 authorized form letters. Fifty-nine of 254 local forms remained active. Based on the survey, a new AMC Pamphlet 25-2, *Index of Blank Forms*, was published in June 1990.

The Publications Editorial Section edited and approved for printing approximately 64 AMC Regulations, pamphlets, supplements, and circulars that provided policies and guidance to HQ AMC staff, MSCs, installations and activities reporting directly to HQ AMC. In addition to AMC publications, the editorial section edited 33 AMC sponsored DA Publications that dealt with subject matter such as storage and materials handling, quality and reliability assurance, ammunition and explosives.

Telecommunications Center, Operations and Systems Integration Division. General Tuttle's quarters were completely recabled. A CENTREX line from the Fort Belvoir Exchange and a drop from the Army Operations Center were installed along with a multiline STU-III to provide secure communications. Call waiting, call forwarding, call transfer and conferencing features became available.

Selected pieces of controlled cryptographic items (CCI) communications security (COMSEC) material, KG-84s, STU-IIIs and peripherals were transferred to the HQ AMC and USAISC-Alexandria Property Book Officers. Since 8 August 1990, an excess of 80 STU-III's have been installed in HQ AMC.

A survey was conducted which indicated the HQ AMC Switchboard was underutilized. The switchboard was closed and the services were instead provided by Letterkenny Army Depot and the Pentagon. It is anticipated that this will save approximately $220,000 per annum.

Computer Center Usage. The Logistics Branch reviewed Computer Center usage, facilities management, maintenance contract hours, and contract security requirements. As a result, Computer Center hours were

reduced with no appreciable degradation in services for a cost savings of $520,900 or 35.8 percent of FY90 contract costs.

Inventory of HQ AMC IMA Equipment. An inventory of HQ AMC IMA equipment was conducted by soldiers from Fort Gordon. The resulting information was provided to the HQ AMC, USAISC-AMC and USAISC-Alexandria Property Book Officers to verify property accountability records. It was also being used to analyze IMA requirements for HQ AMC.

DOIM Users Guide. The DOIM Users Guide was published and distributed in June 1990. This guide assisted users in preparing documentation to request equipment and other services in each of the IMAs: automation, communications, visual information, records management, and printing and publications.

SAPP/BPA. The DOIM established single Simplified ADPE Procurement Procedures (SAPP) and Blanket Purchase Authority (BPA) accounts for HQ AMC with Defense Supply Service-Washington. The SAPP account can be used by DCS and separate office chiefs for critically needed hardware and software requirements valued at less than $10,000. The BPA can be used for ADP supplies valued at less than $2,500.

Network Management Office (NMO). The Network Management Office, with contractor support, has removed non-plenum cable and replaced it with plenum approved cable for the HQ AMC Broadband Cable Network (BCN) to comply with fire and safety codes. As the fiscal year ended the NMO was in the process of removing non-plenum cable and replacing it with plenum cable for the Local Area Networks (LAN) in the HQ AMC building. The Fort Gordon soldiers assisted the NMO in connecting HQ AMC to the BCN, allowing all users access to electronic mail (e-mail) over the BCN.

In conjunction with the Information Management Board (IMB), the NMO was developing a network architecture for HQ AMC. This will allow for interoperability and integration of the LANs installed in and planned for HQ AMC. The NMO will become the network and communications managers for the BCN (backbone) and the sub-LANs in HQ AMC.

Applications Development Division. Improvements were made to the Video Teleconferencing Scheduling System (VTSS) by the Applications Software Branch. These improvements included automatic generation of unique control codes, password controlled updating and cancellation functions for all facilitators, and the development of a daily report resembling a time-line or Gant Chart.

The Applications Software Branch developed a database for all users within HQ AMC to enter and query for excess inventory available with HQ AMC. Records included all types of inventory. This system's purpose was to provide for better utilization of resources within HQ AMC. The Branch developed a standard menu for the HQ AMC main computer systems. The purpose of the menu was to assist new and novice users with the Pyramid computer systems. The Branch also was heavily involved in the development of IMA requirements for the planned relocation of HQ AMC to a projected command and control facility at Fort Belvoir West. The project culminated with the completed Capability Requirements Document for HQ AMC.

Other Significant Events

HQ AMC Automation Support. In conjunction with the second quarter BPRR process, the DOIM issued guidance governing the submission of HQ AMC automation requirements for FY91. All activity requirements were subsequently reviewed, consolidated and ranked in priority sequence according to criteria developed by the DOIM. With few changes, the final list of prioritized requirements was adopted in the

May meeting of Information Management Officers (IMOs) and then submitted for consideration by the Senior Resource Councils and Resource Action Committees. The resulting approved FY91 Automation Program provided the plan for budget execution.

Information Center. The DOIM Information Center implemented personal computer (PC) training in FY90 with regularly scheduled classes in PC Enable. Additional courses were being developed to cover PC graphics, spreadsheets, and database packages.

The DOIM Information Center established a permanent Help Desk receptionist to assist customers with their automation concerns, refer customers to Information Center consultants, and maintain the Information Center Tracking Database. The Help Desk was covered daily from 0730-1600 and averaged 300 calls per month in FY90.

The DOIM Information Center developed an automated memorandum program for HQ AMC end users and executives. The program prompted users for all memo entries and formatted the text, automatically spacing information in conformance with the correspondence regulation. This program will also forward a copy for processing via e-mail. The Information Center also provided full-time System Administration to the Deputy Chief of Staff for Personnel for their Burroughs XE5000/70 minicomputer and 66 work stations.

Deputy Chief of Staff for Intelligence

Personnel and Organization

Personnel. The Office of the Deputy Chief of Staff for Intelligence (ODCSINT) began FY90 with an authorized strength of 39 civilians. By the end of the fiscal year, the authorized strength was 28. Of the eleven jobs lost under the new organization, six were action officers, two were professional-level support (budget and ADP), and three were secretarial or clerical. Five of the positions were encumbered at the time the office was reorganized.

Colonel Ralph Gauer, the DCS, retired at the end of January 1990, and was replaced by Colonel James C. Hardin, who had formerly been assigned to the Concepts Analysis Activity at Bethesda. Other key personnel in ODCSINT at the end of the fiscal year were the ADCS for Foreign Intelligence, Mr. Cleves H. Howell, the ADCS for Counterintelligence, Mr. R. Bruce Kutch, and the ADCS for Special Programs, Mr. Robert Simak.[32]

Organizational Changes. During FY90, the ODCSINT transitioned into a flat organizational structure. The change was made to streamline the organization to better reflect the reduced personnel strength and new management philosophy within AMC. The ADCS's, for Foreign Intelligence, Counterintelligence, and Special Programs remained, but the divisions within their directorates were removed. Specifically, in the Foreign Intelligence Directorate the Threat Support Division and the General Intelligence Support Division were eliminated. The chiefs of those divisions remained as senior subject matter experts. In the Counterintelligence Directorate, the Security Policy Division and the Technology Security Division were eliminated. Those division chiefs also remained as senior subject matter experts.

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[32]This entire section is partly based on a draft FY90 annual history prepared by HQ AMC ODCSINT, and submitted to AMCHO in February 1991.

Most Significant Issues

Redefining ODCSINT. Given the crippling personnel shortages, the hiring freeze, and a 28 percent reduction in the number of employees, the overriding issue for FY90 was that of redefining the role and responsibilities of the ODCSINT. Using the zero-based resourcing and Total Quality Management techniques, ODCSINT defined prioritized intelligence support to the evolving mission of AMC and sought ways to allocate its limited resources accordingly. While the office was no longer able to effectively participate in the substantive aspects of threat support, threat management, and proactive current intelligence support, it was able to maintain the policy and management oversight roles, and those necessary functions defined as critical.

The Foreign Intelligence element was critically undermanned. The Bi-Weekly current intelligence briefing program initiated in FY88 had to be curtailed mid-way through the year due to lack of personnel. Also curtailed was the production and distribution of the so-called Black Book, a sensitive-source intelligence package for senior officials. Because HQ AMC's participation in threat support matters and conferences was so limited, MSCs had to be designated to act for the headquarters in several air defense, communication-electronic and aviation threat conferences.

Despite inadequate staffing, AMCMI-F presented daily intelligence briefings throughout Operation Just Cause in December 1989 and January 1990. Operation Desert Shield was supported by AMCMI-F from August through the end of the fiscal year, and it seemed likely that additional support would be required well into the next fiscal year. The DCSINT reported that positive progress had been made in strengthening AMC management and control of the Technical Reconnaissance and Surveillance (TECRAS) program. In Project "D650" Exploitation of Foreign Items, use of the non-DCSINT review process was expanded to include the AMC Chief Scientist, members of the FAST Program and Technical Directors.

Counterintelligence and Security. Despite the personnel shortages, ODCSINT was able to report significant progress in the implementation of counterintelligence and security countermeasures programs. Most notable was the continuing outstanding record maintained in the preparation for and conduct of Soviet visits to sensitive AMC installations pursuant to the Intermediate Range Nuclear Forces Treaty. ODCSINT also identified additional locations as being potentially subject to Soviet visits pursuant to new treaty initiatives. These locations were carefully prepared as well.

DCSINT implemented several initiatives to reduce the burden on the understaffed office. Clearance granting and emergency appointment authorities were further delegated, as were accreditation authorities for automated systems, and authority to approve requests for visits by foreign nationals and to release information to foreign governments. Workload for the field in information systems security was significantly reduced when the headquarters issued several "generic" accreditations which could be used, with only slight modification, in place of original, labor-intensive, locally-produced accreditation packages. The number of personnel clearances issued to AMC personnel rose, however, for the first time in five years. ODCSINT was pleased to report that they had anticipated the rise, which was due to Desert Shield events, and was therefore unavoidable.

Foreign Intelligence

Threat Assessments. During 1990 there were three primary areas of support: Air Defense, Armor, and fuzing. Within the air defense arena, the systems that comprised the Forward Area Air Defense program were the most active. Two System Threat Assessment Reports (STARs) were completed and forwarded for approval and validation, the Line-of-Sight-Rear (AVENGER), and the Line-of-Sight Forward-Heavy (ADATS). AVENGER completed validation, and ADATS was in the final stages of

validation by the end of the fiscal year. The STARs for the Patriot and Hawk systems were updated to reflect the recent changes in the threat environment. ODCSINT completed a draft STAR for a new system still in the concept phase, CORPS SAM, which it then forwarded for approval and validation. The most significant accomplishment in support of armor programs was the completion of the STAR to support the Army's Armored System Modernization (ASM) program.

The DCSINT led the effort to develop a threat document to support the Army Fuze program. This effort resulted in the publication of "Soviet Threat to U.S. Army RF Proximity Fuzes." This document was to be expanded with test results and eventually cover the worldwide threat to all types of Army fuzes. As a result of ODCSINT's efforts, the Office of the Secretary of the Army for Research, Development, and Acquisition began taking steps to develop a comprehensive fuze test program.

Additional STAR efforts completed during the year included: Sense and Destroy Armor (SADARM), a submunition designed to detect and destroy lightly armored vehicles; the Multiple Launch Rocket System with Terminal Guidance Warhead (MLRS-TGW); M1A2, the latest version of the Abrams tank; and the Bradley armored vehicles. The Single Channel Ground and Airborne Radio System (SINCGARS); Countermine, Family of Mines, and Heavy Assault Bridge System (HABS); the Light Helicopter Experimental (LHX); Special Operations Force (SOF) aircraft; and Special Electronic Mission Aircraft (SEMA) were a few of the other systems.

Intelligence and Electronic Warfare (IEW). The DCSINT continued to actively support the IEW mission area. The office was actively involved in the formulation of the Army's plan for countering Wartime Reserve Modes (WARM), and providing support to the first real time rapid reprogramming effort in support of Operation Desert Shield.

Electronic Warfare Vulnerability Assessment (EWVA) Program. The EWVA program, conducted at the Joint Chiefs of Staff level, was managed by the Air Force for all three military services. The program was intended to develop a process or methodology by which all services would conduct EW vulnerability assessments. AMC's ODCSINT was asked to assist in establishing the interfaces required to insure that threat intelligence data and assessment data were integrated at the proper points. As the DCSINT pointed out, if a realistic vulnerability assessment was to be accomplished, this interface of data was of the utmost importance. This program was still on-going as of the end of the fiscal year, and ODCSINT continued to provide support as required.

Requirements Management. Due to the Requirements Data Base (RDB), finalized in FY89, the Requirements Manager could readily monitor the status of AMC Intelligence Production Requirements (IPRs), Non-Recurring Intelligence Production Requirements (NIPRs), Quick Reaction Requirements (QRRs), and requests for Secondary Dissemination on Intelligence Products. The data base provided the tool for encouraging the Army Production centers to respond in a timely manner, or to negotiate a new suspense date. Staff visits to various AMC subordinates proved beneficial, according to ODCSINT. The staff visits provided the opportunity to address problems unique to each subordinate and provide specialized assistance. The quality of the requirements submitted to AMC headquarters for validation improved as a result of the RDB, resulting in faster validation and response time.

Separate Reporting Activity (SRA) Management. The two SRAs stationed in Japan and Europe continued to support the total AMC community with production of over 1450 reports annually on worldwide scientific and technical subjects. The AMC major subordinate commands continued their high level of direct communication with the SRAs and continue to take advantage of the information to support the AMC R&D mission.

Technical Reconnaissance and Surveillance (TECRAS). TECRAS was reactivated by the assignment of a senior intelligence research specialist (the former General Intelligence Support Division Chief) to manage TECRAS. Among the notable achievements were transfer of all General Defense Intelligence Program (GDIP) personnel spaces from INSCOM to HQ AMC review of the TECRAS Budget, and participation in the GDIP build for TECRAS. Unfortunately, DCSINT participation in Army and AMC redesign of the management structure for targets and threat simulators was neglected due to the need to focus on TECRAS.

Counterintelligence

Foreign Disclosure Program. AMC Supplement 1 to AR 380-10, Disclosure of Information and Visits and Accreditation of Foreign Nationals, was published during FY90. The supplement provided specific guidance to Headquarters, AMC Staff, major subordinate commands, and separate reporting activities on disclosure of information, foreign visit procedures, and accreditation of foreign nationals within the command. New procedures were being implemented by HQDA, DAMI-CIT and AMC to authorize embassies to send document and visit requests directly to the AMC major subordinate commands and separate reporting activities through wider use of the automated data system, the Foreign Disclosure and Technical Information System (FORDTIS).

To expedite foreign embassy requests for documentary information and to reduce administrative processing, HQDA and the Defense Technical Information Center (DTIC) established a Memorandum of Understanding (MOU) allowing Australia, Canada, and the United Kingdom to request documents directly from DTIC. AMC or its MSCs received the request and document directly from DTIC and released the information to the embassy. DTIC then charged the receiving country for the document.

AMC continued cooperation with its international partners and allies. This was evidenced by ODCSINT's strong accreditation program, since 205 foreign officers were accredited to the command. Foreign nationals made about 1,500 visits to AMC installations during FY90. The multitude of requests received from foreign nationals for AMC information included 593 requests in FY90 alone.

HQDA, DAMI-CIT approved a Delegation of Disclosure Authority Letter (DDAL) for MICOM and the U.S. Army Armament Research, Development and Engineering Center (ARDEC) to approve visit requests from specified countries on certain systems. The DDAL authorized MICOM and ARDEC direct coordination with the requesting embassy. This expedited processing and streamlined administrative requirements for foreign visits. The new system was being monitored by DA and AMC as of the end of the fiscal year. ODCSINT believed that the new system might result in further delegation of visit authority within AMC.

Elimination of Automated Systems Security Courses. The U.S. Army Logistics Management College discontinued two courses in automated information systems security as a result of their reduction in resource availability. The termination became effective on 14 September 1990; however, ODCSINT reported that it was attempting to have one of the courses reinstated. If successful, the "Security in Automated Information Systems" Course would be taught at the U.S. Army Management Engineering College. The course would be reduced from eight days to five and taught with one instructor, rather than two, as had been the case previously. The second course, an Executive version of the first, was not to be reinstated.

Delegation of Authority for Accreditation of Automated Information Systems. AR 380-19, *Information Systems Security*, was published 1 August 1990. In accordance with the regulation, DCSINT revised the delegation of authority to accredit automated information systems. The new delegation of authority, No. 5-90, was signed on 24 August 1990.

The designated accreditation authorities (DAA) within AMC were as follows. For systems processing sensitive compartmented information (SCI), the DAA was the Commander, AMC. For systems processing TOP SECRET information, general officers or civilian equivalents at the MSCs were the DAA. For systems processing SECRET information, personnel at the minimum rank of colonel, GM-15, or GS-15 who were occupying a position of command, or a principal staff officer at an installation or a general officer command, were the DAA. For systems processing unclassified sensitive information, the DAAs were personnel who held the minimum rank of lieutenant colonel, GM-14, or GS-14.

Operational Accreditations for Automated Information Systems. AR 380-19, *Information Systems Security*, provided two types of accreditations for automated information systems. The two types of accreditations were operational and generic. Generic accreditation documents were developed for fielded systems. The accreditations were broken down by level of processing; i.e., unclassified and classified. The fielded accreditation document required the addition by the activity of site specific information, such as standing operating procedures and Information Systems Security Officer appointment orders.

As of the end of the fiscal year, DCSINT noted that it had issued generic accreditation packages for the following types of configurations: personal computers operating in the Dedicated Security Mode at the unclassified-sensitive level, SECRET level, and SCI level; multi-user computer systems operating in the Dedicated Security Mode at the unclassified-sensitive level; multi-user systems operating in the Systems High Mode at the unclassified-sensitive level; word processing equipment operating in the Dedicated Security Mode at the unclassified-sensitive level; and local area networks operating in the Dedicated Security Mode at the unclassified-sensitive level. These documents were well received.

Magnetic Media Declassification Policy. The ODCSINT reported that HQDA policy on the use of National Security Agency endorsed degaussing equipment was clarified by a 10 June 1990 message. To reduce hazards of not completely erasing the media, procedures for testing and verifying the equipment and ensuring only technically qualified personnel operated the equipment were included. Specific overwrite, destruction and degaussing policy was included for types I and II magnetic tapes, magnetic disks, analog tape, and video tape.

Weapon System Technical Assessment (WSTA). The ODCSINT reported that work continued during FY90 in the development of WSTAs. The office finalized nine additional systems, while 16 were in technical staffing, and five more in draft form. A total of 42 weapon systems had been completed. In addition, two major program starts, Armor Systems Modernization (formerly called Heavy Force Modernization), which encompassed six individual systems, and Corps Surface to Air Missile (CORPS SAM) had generic WSTAs done, focusing on early development and technology options. ODCSINT established a two year cycle for updating WSTAs, as of the end of FY90, four had been completed and 24 were in various stages of data and intelligence annex updates.

A WSTA User questionnaire was sent to customers who regularly received the WSTAs. The questionnaire focused on functions and decisions for which the WSTA was used and the amount of use the WSTA received. Additionally, questions addressed the format, content, and utility of charts and graphs. Respondents stated that the level of use on the job was high and that it was used in nine separate functions ranging from 21 percent to 56 percent of the time. The highest reported use was by individuals in the category of "HQDA/Command/Security Specialist." The majority found the assessments to be clear and written at about the proper level of technology for their understanding and backgrounds.

Advanced Technology Assessment Report (ATAR). The ATAR effort had not moved as rapidly as anticipated, largely because technologies identified to be subjects of ATARs were incorporated into weapon systems and assessed as part of the WSTA program. As of the end of the fiscal year, one additional ATAR

had been completed, with three in technical staffing. Since priorities changed as rapidly as technologies, the ODCSINT stated that only six technologies would be worked on at any given point to ensure a timely completion.

Security and Technology Transfer Working Group (STTWG). The STTWG, established under the memorandum of understanding for the MLRS-TGW, pioneered many security procedures. Procedures for emergency visits, secure communications, and courier and transportation plans were adopted for non-NATO designated cooperative defense programs. These security procedures were to be incorporated into a standard operating procedures manual for the MLRS-TGW program.

Treaty Support

Treaty Inspections Operations Security (OPSEC) Coordinating Group. During FY90, AMC's ODCSINT became a member of the newly created Treaty Inspections OPSEC Coordinating Group. The group was established to look at the OPSEC implications of treaty visits. As of the end of the year, the group was conducting surveys on those sites which could be visited under one of the treaties.

Intermediate Range Nuclear Forces (INF) Treaty. The INF Treaty was entered into force on 1 June 1988. The four AMC sites involved, Longhorn Army Ammunition Plant (LHAAP), Pueblo Army Depot Activity (PUDA), Redstone Arsenal, and Dugway Proving Ground, met the challenge and accepted the responsibility for ensuring successful completion of the AMC INF mission. Inspections, both elimination and short notice, proceeded without major problems.

Strategic Arms Reduction Talks (START). START was an accord to limit strategic weapons. As of the end of the fiscal year, work involved the identification of solid rocket motor producers and of sites which might or might not be capable of developing items limited by treaty. ODCSINT established points of contact at each of three prospective AMC localities.

Chemical Initiatives. The U.S. and USSR MOU for a bilateral verification experiment and data exchange was signed in September 1989. As of the end of FY90, work involved the development of verification procedures through the conduct of visits to U.S./USSR selected sites. Soviet visits were conducted at Tooele Army Depot, Utah, Pueblo Army Depot Activity, Colorado, and Rocky Mountain Arsenal, Colorado. AMC established points of contact and conducted mock inspections at each prospective location prior to the actual Soviet visits.

Security Issues

Countering Terrorism. ODCSINT continued to develop trip papers for general officer and senior executive service travel outside the CONUS. The office provided all AMC travelers with the most current terrorist threat information, as well as State Department advisories for travel to selected countries. ODCSINT pointed out that travelers on official government business were required to receive travel briefings prior to any trip outside the continental United States. The office also provided specific briefings tailored to the needs of those transferring to AMC overseas facilities, or traveling in groups.

Entry/Exit Inspection Program. During FY90, AMC asked for relief from certain requirements of the Entry/Exit Inspection Program that had proved burdensome. This DOD-directed program, designed to deter and detect unauthorized introduction or removal of classified material, had been implemented throughout AMC during FY89. Under the program, the inspection frequency was to be determined by the local commander (based upon the threat), but at least one was to be conducted each quarter. Inspections were conducted by security personnel who had ben trained in all aspects of the program. While this requirement

seemed reasonable on the surface, input from the field security managers suggested that the program could not be equitably implemented throughout the command, partly due to the continuing shortage of security personnel. ODCSINT forwarded a request to HQDA for relief from certain aspects of the program such as exempting certain categories of personnel, including general officers, foreign dignitaries, members of Congress, media representatives and other officials under escort by cleared AMC personnel. The request for relief was denied.[33]

Security Violations. Violations declined during FY90: there were 157 violations during the year as compared to 164 the previous year. ODCSINT considered this to be a sign that command emphasis had successfully reversed the previously existing trend upward. Due to the success of program in lowering the incident rate, ODCSINT expected the new positive trend would continue.

Personnel Security. A DOD initiative of 1984 had established a goal to reduce the number of clearances within DOD by ten percent by the end of CY85. AMC had long since met that goal, and had consistently maintained that trend through subsequent years. As of the end of the fiscal year, AMC activities had a total of 68,112 military and civilian personnel with access to TOP SECRET, SECRET, and CONFIDENTIAL information. This represented a net increase of approximately one percent, explained by the requirements of Operation Desert Storm. However, AMC still maintained an overall decrease in excess of 23 percent since the reduction program had begun.[34]

New Personnel Security Requirements. AMC implemented new requirements for establishing personnel security dossier procurement accounts. A certificate of understanding prepared on agency letterhead and signed by each nominee was to be forwarded with agency nominations for retention of, or for establishing new accounts. After an account had been established with the certificate of agreement, a new certificate was required only for new personnel. Prompted by the Iraqi invasion of Kuwait and the resulting U.S. actions, AMC provided guidance to MSC and SRA Senior Intelligence Officers on the waiver of personnel security clearance requirements for access to Sensitive Compartmented Information for Operation Desert Shield. Each Command or activity granting access based on a waiver was required to maintain records of waivers and the number granted. ODCSINT ensured that the responsibilities and procedures of continuing personnel security assessment (reporting derogatory information) were emphasized at all levels of command. The office stressed the need to include personnel security in annual security awareness refresher training and the importance of close cooperation between security, personnel, legal, and medical officials in the continuing assessment effort.

Changes to AR 380-67, *Personnel Security*. The provisions of paragraph 9-102d of AR 380-67,*Personnel Security*, to include security as a area to be evaluated in performance appraisals was still a topic of concern throughout the Department of the Army. It was recommended that HQDA DCSINT and DCSPER reconcile the intent of the inclusion of security in the performance appraisals. Action to implement this requirement was being held in abeyance pending resolution. Change 1 to AMC Supplement 1 to AR 380-67 was issued 11 May 1990. This change dealt with the clarification of position sensitivity designations, the proper coding of the SF 52 (Request for Personnel Action), delegated AMCCOM the authority to approve interim TOP SECRET clearances, added authority to grant interim clearances to student aides, and members of cooperative education programs, and clarified requirements for requesting and maintaining Limited Access Authorizations.

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[33]See also HQ AMC, *Annual Historical Review, FY89*, pp. 138-139.

[34]See HQ AMC, *Annual Historical Review, FY89*, p. 141.

Communications Security. According to ODCSINT, the Army needed to "maintain the capability, even though it may not be exercised at every facility to conduct Communications Security (COMSEC) monitoring." AMC requested and was certified to authorize COMSEC monitoring operations. COMSEC certification was to remain in effect until 30 April 1992.

Civilian Intelligence Personnel Management System

Career Program Transfers. At the beginning of FY90, personnel whose duties were more than 51 percent related to intelligence were transferred from Career Program (CP) 19, Intelligence and Security, to the new CP 35, Intelligence. All personnel who had been identified by the Civilian Personnel Office (CPO) as intelligence related were included in CP 35, to include interns currently on the rolls.

Administration of Career Program 35. ODCSINT reported that a series of administrative actions to implement CP 35 followed the personnel transfers. CIPMS Qualification Standards were issued, together with AR 690-13, *Civilian Intelligence Personnel Management System (CIPMS) Policies and Procedures.* The latter was published 30 September. Other implementation actions included registration in the Defense Career Automated Referral System (DISCAS), review and comment on Army Civilian Training, Education and Development System (ACTEDS), and the Test of Army Occupational Guides (AOG).

Special Programs

Supplement to AR 380-381. The Office of the Assistant Deputy Chief of Staff for Special Programs (AMCMI-P) completed the AMC Supplement 1 to AR 380-381, *Special Access Programs.* The supplement provided further guidance on procedures and policies in the AR and outlined the responsibilities of AMC elements in the oversight of Special Access Programs (SAP).

Limited Dissemination (LIMDIS). AMCMI-P drafted a policy on LIMDIS programs which executed Secretary of the Army guidance on that subject. The policy was subsequently disseminated to appropriate AMC elements and LIMDIS programs were established under the new guidance during the year.

Automated Data Base. During FY90, AMCMI-P established an automated data base for HQ AMC elements. The data base provided information on headquarters SAP billets and program access rosters.

Deputy Chief of Staff for Engineering, Housing, and Installation Logistics

Organization and Key Personnel

The DCS was headed by Colonel Joseph Briggs, who assumed his duties effective 15 August 1990 by replacing Colonel Jerry Hubbard. His key subordinates included David S. Abdelnour, the Assistant Deputy Chief of Staff for Engineering, Housing, Environment and Installation Logistics since 1 February 1990; Andres Talts, Chief of the Environmental Quality Division; Herbert J. Louque, Chief of the Facilities Division; and Stanley H. Fried, Chief of the Real Estate Division.[35]

[35]Unless otherwise noted, this section was taken from the DCS for Housing, Environment and Installation Logistics submission for FY90.

Environmental Quality Division

Manpower

The Environmental Quality Division (EQD) authorized staffing level was increased from 11 to 16 to deal with the surge in high priority, high visibility environmental issues during FY90. However, the overall AMC reductions in force and hiring freeze resulted in only 9 professional staff members being on board for most of the year.

Most Significant and Command Management Issues

The most significant and the command management issues handled by the EQD in FY90 included the Army Environmental Requirements Report, Environmental Compliance Program Execution, Installation Restoration Program, and Environmental Automated Compliance Programs. These and other significant issues are discussed below.

Overall Environmental Status. Environmental compliance at AMC installations continued to worsen as installations were subjected to more frequent and more intensive inspections by Federal and State regulators, with the low environmental management staffing levels at AMC installations continuing to be a root cause of the problem. Principal shortfalls were related to the management of hazardous waste. Base Realignment and Closure (BRAC) actions caused a high level of environmental assessment activity to comply with National Environmental Policy Act (NEPA) regulations, and enhanced preliminary assessments of sites in need of cleanup. Interim remedial measures and removal actions were undertaken to mitigate imminent threats while long range, complex investigations proceeded to define requirements for permanent solutions. Hazardous materials/hazardous waste minimization activities were effective in reducing quantities of wastes generated or discarded and a pollution prevention program was integrated into the materiel acquisition program's life cycle management. Finally, environmental management data reporting was radically changed and major steps were taken in the automation of reporting requirements during FY90.

Army Environmental Requirements Report. The Army Environmental Requirements Report (AERR) (RCS-1383) was the five-year environmental master plan which summarized pollution control actions and solutions consistent with all applicable standards. The AERR informed the Environmental Protection Agency (EPA) of Army actions to comply with environmental laws. Its data was also used as a basis for preparing the Budget Planning Resource Requirements Schedule 11 for each appropriation.

The U.S. Army Toxic and Hazardous Materiel Agency (USATHAMA) had revised the automated data collection in the AERR reporting system, and the Spring 1990 submission of the AERR was completed using the new automated data program. A major effort was made by all installations, MSCs, and HQ AMC to ensure completeness and validity of the submission.

Environmental Issues Related to Mobilization. During AMC's surge in production to support Operation Desert Shield, several environmental issues were identified which potentially could have prevented AMC from supporting the soldier. The requirement to repaint vehicles from woodland camouflage to desert sand color resulted in air pollution permit violations at Letterkenny Army Depot. Due to similar concerns at Sacramento Army Depot and at Fort Monmouth, painting operations had to be modified to remain in compliance with applicable regulations.

In looking at other environmental areas, some installations could violate permits issued under the Clean Water Act or the Resource Conversation and Recovery Act if production activities were increased beyond normal peacetime levels. The Army and EPA began in August 1990 to discuss methods of treating

wastewater, air emissions, and hazardous wastes generated at Army ammunition plants through the production of TNT. The focus of this effort was to ensure that the proper permits were in place, that existing treatment facilities could meet the permit discharge limits, and that off-site commercial hazardous waste disposal facilities were available.

To expand this current initiative, the Army Toxic and Hazardous Materials Agency and AMCCOM's Production Base Modernization Activity were investigating long term and expedient options which could reduce or eliminate non-compliances during surge. These activities examined off-the-shelf package plants for on-site treatment and off-site commercial facilities for treating wastes shipped from the installation. These efforts were aimed at realizing significant cost and energy savings compared to existing treatment facilities and at minimizing, recycling, and reusing wastes in a cost effective manner. Several recommendations from both projects have already been implemented.

Environmental Compliance Program Execution. The Clean Air Act and Clean Water Act were the expensive driving laws of the 1970's, but the regulations implementing the Toxic Substance Control Act (TSCA), Resource Conservation and Recovery Act (RCRA) and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), also known as the superfund, which came to the forefront in FY82, had a major impact on the command's environmental status during FY88-90.

TSCA regulated manufacturing, use and importation of chemical substances, including polychlorinated biphenyl (PCBs). AMC installations stored and used large quantities of PCBs. RCRA and CERCLA addressed the management of land disposal of hazardous waste. Under RCRA, AMC was spending several millions of dollars annually to obtain RCRA Part B hazardous waste permits. Under CERCLA, problems at installations with groundwater contamination were quite pervasive. With the amendment to CERCLA known as the Superfund Amendments and Reauthorization Act (SARA), more hazardous waste requirements were forthcoming on AMC installations.

At the beginning of FY90, AMC had 41 noncomplying installations including four air noncomplying sources, 19 wastewater noncomplying sources, 42 hazardous waste sources, four drinking water, and one solid waste source. At the close of FY90, the total number of noncomplying installations was still 41, but due to increased attention and regulatory emphasis by Federal and State regulators, the number of noncomplying sources increased to 100. This was revised to five air noncomplying sources, 27 wastewater, 18 groundwater, 38 hazardous waste, four drinking water, two toxic substances, two underground storage tanks and three solid waste problem areas. The net AMC compliance posture became considerably worse during the fiscal year in the areas of wastewater pollution and ground water sources.

A very serious environmental problem within AMC was ground water contamination from past Army operations. This area was regulated by CERCLA and the DOD Superfund program. EPA evaluated the seriousness of this area at each site via a complex formula, and critical candidates were placed on its National Priority List (NPL). At the start of the period, 12 AMC installations were on the NPL and 6 more were on the candidate NPL list. At the close of FY90, AMC had 23 installations on the NPL with three installations being listed twice. The installations listed on the NPL had to enter into Interagency Agreements (IAGs) with federal and state regulatory agencies for clean-up actions. During FY90 AMC added 10 new IAGs and three more were in negotiation.

The CERCLA Act of 1980 required investigation of and response to contamination caused by disposal activities. The DOD program in this area was an outgrowth of the AMC Installation Restoration Program started in 1975, and was managed by the USATHAMA located at the Edgewood Area of Aberdeen Proving Ground. USATHAMA developed protocol for each ground water (GW) problem, gave press releases, and provided technical expertise to installation commanders to help with these GW problems.

A new environmental compliance program management indicator initiated by the Environmental Quality Division in FY90 was the quarterly tracking of regulatory inspections by federal and state regulators (e.g. single media inspections at AMC installations in air, wastewater, drinking water, RCRA, etc). Thus, environmental compliance status was measured by regulatory inspections passed with a goal to pass at least 65 percent of these inspections. In FY90 there were 213 such inspections at AMC installations with a pass rate of 77 percent, 63 percent, 70 percent, and 47 percent for the first through fourth quarters, respectively. For the year, the average pass rate was 64 percent, falling just below the overall goal. This Review and Analysis indicator will be continued in FY91 to determine if it is a meaningful indicator.

AMC had conducted the largest, most aggressive environmental audits programs within DOD from 1985-1987. This $1.2 million program reviewed the compliance status of 64 installations in 34 states in the more than 1000 applicable federal, state and local environmental laws and regulations. The ten pollution areas covered ware: air, water, solid waste, hazardous waste, toxic substances, pesticides, noise, drinking water, spill plans and environmental management.

A follow-on Environmental Compliance Review (ECR) program conducted by AMC's Installations and Services Activity (I&SA) continued the environmental audits by an in-house team visiting AMC installations on cyclic basis. Twelve multi-media ECRs were scheduled each year and in FY88 and FY89, 22 were completed. In FY90, 12 ECRs were completed at the following locations:

Radford AAP	Redstone Arsenal	Lexington-Blue Grass Army Depot
Mississippi AAP	Hawthorne AAP	Vint Hills Farm Station
Lima Army Tank Plant	Seneca Army Depot	Charles Melvin Price Support Center
Twin Cities AAP		Crane Army Ammunitions Activity

The AMC Chief of Staff signed each ECR report through the MSCs to the installations and requested a report on the schedule of correction of special attention item deficiencies within 180 days. AMC installation commanders were to review resources and implement corrective actions on a priority basis.

After each ECR, I&SA provided each installation with an Environmental Management Plan to establish the framework and focus on objectives for the corrective action. The Environmental Management Plan was an integrated management approach to implement and represent solutions to environmental management noncompliance issues. According to a February 1989 CG AMC policy directive, each installation commander was required to personally attend the ECR in-briefings and out-briefings at their installations.

The proactive AMC environmental audits received positive exposure in FY90 when briefings outlining the program were presented to the American Defense Preparedness Association annual conference, the Army Logistics Management College, the HQDA Army Environmental Office, the Corps of Engineers, the Inspector General, the AMC Field Safety Office and the national conference of the National Association of Environmental Professionals.

Installation Restoration Program. AMC demonstrated initiative and leadership in remediating contamination from past activities at its installations. Guidance for the program was issued by William H. Parker, Deputy Assistant Secretary of Defense (Environment), on 29 September 1989 and supplemented by the Deputy Assistant Secretary of the Army for Environment, Safety and Occupational Health. The Army's FY90 Installation Restoration Program spent $210M to remediate contamination at 1,391 separate sites on Army installations in CONUS, Hawaii, and Alaska. A goal of the program was to complete the current phase of Remedial Investigation/Feasibility Study by the end of FY92.

Section 105(e) of CERCLA required that the EPA maintain a national inventory of hazardous waste sites, the National Priority List. Contaminated sites were first proposed for, and later added to, the NPL.

At twenty-three AMC installations, twenty-six sites were listed on the NPL, with none being currently proposed for the NPL. Those added in 1990 are marked with an asterisk (*):

Aberdeen PG	*Longhorn AAP	Michaelsville Landfill
Louisiana AAP	*Edgewood Area	Milan AAP
Alabama AAP	*Picatinny Arsenal	Anniston AD
*Riverbank AAP	Cornhusker AAP	Rocky Mountain Arsenal
*Iowa AAP	*Sacramento AD	Joliet AAP
Savanna AD	LAP Area	*Seneca AD
*Manufacturing Area	Sharpe AD	Lake City AAP
*Tobyhanna AD	Letterkenny AD	*Tooele AD
PDO Area	Twin Cities AAP	Southeast Area
Umatilla ADA	Lone Star AAP	

The 1986 SARA required, in Section 120(e), the development of Interagency Agreements (IAGs) between federal facilities and the EPA. IAGs detailed the technical and legal procedures for remedial action at federal facilities listed on the NPL. At the end of FY90, IAGs were in place at the following installations and those for which the agreement was signed in 1990 are marked with an asterisk (*):

*Aberdeen Proving Ground	Louisiana AAP	*Alabama AAP
Milan AAP	*Anniston AD	Riverbank AAP
*Cornhusker AAP	Rocky Mountain Arsenal*	Iowa AAP
Sacramento AD	Joliet AAP	Savanna AD
Lake City AAP	Sharpe AD	Letterkenny AD
*Tobyhanna AD	*Lone Star AAP	Twin Cities AAP
*Umatilla ADA		

During FY90, $115M in Installation Restoration Funds was used in remediation at the following fifty-two AMC installations:

Aberdeen PG	Navajo ADA	Alabama AAP
New Cumberland AD	Anniston AD	Newport AAP
Badger AAP	Picatinny Arsenal	Blossom Point FTA
Pueblo ADA	Cornhusker AAP	Radford AAP
Detroit Arsenal	Ravenna AAP	Dugway PG
Red River AD	Fort Wingate ADA	Redstone Arsenal
Hawthorne AAP	Riverbank AAP	Holston AAP
Rock Island Arsenal	Indiana AAP	Rocky Mountain Arsenal
Iowa AAP	Sacramento AD	Jefferson PG
Savanna ADA	Joliet AAP	Seneca AD
Kansas AAP	Sharpe AD	Lake City AAP
Sierra AD	Letterkenny AD	Sunflower AAP
Lexington-Bluegrass AD	Tobyhanna AD	Lima Army Tank Plant
Tooele AD	Lone Star AAP	Twin Cities AAP
Longhorn AAP	Umatilla ADA	Louisiana AAP
Volunteer AAP	Materials Technology Lab	Watervliet Arsenal
Milan AAP	White Sands Missile Range	Natick RDE Center
Yuma Proving Ground		

In FY90, Installation Restoration funding was not adequate to meet Class I requirements. AMC's Class I requirements alone exceeded the available funds for the entire Army. Shortage of funds required that the

U.S. Army Toxic and Hazardous Materials Agency alter their priority system from installation by installation to project by project. The agency used the Defense Priority Model, which assesses the relative risk to health and the environment, to prioritize the individual projects. The most critical projects were funded: those required by IAGs or by Consent Agreements, and those which eliminated serious risk to human health or to the environment.

Environmental Automated Compliance Programs. The Defense Environmental Management Information System (DEMIS) (RCS-1485) replaced the old Defense Environmental Status Report (RCS-1485) and now requests information by installation/state for submission to Congress. This new system will be expanded and automated to include DA and MACOM recurring compliance reports. The anticipated fielding date was June 1991. The intent of the DEMIS was to arrange the information in such a manner that it will be a daily tracking mechanism of environmental compliance programs at the installation level. AMC continued to take the initiative and provided each MSC with an automated version of the Environmental Compliance Data System (ECDS), which is a tracking system for notices of violation. This system started out with minimal information and has been expanded to provide installation tracking capability by notice, finding, and milestone. This will provide those from installation level and above with increased accuracy when doing trend analyses. Additionally, since the DEMIS will not be fielded until June 1991, the ECDS will provide MSCs the capability to answer HQDA compliance update quarterly taskers in a timely and effective manner.

Air Quality. The Air Quality Program throughout AMC continued to work without major problems and was mostly controlled by State Implementation Plans individually administered by State or Local authorities. As with the remainder of the air pollution control community (both regulators and regulatees), AMC awaited the final enactment of overdue amendments to the Clean Air Act. There were no significant air pollution source problems in 1990.

The Clean Air Act (CAA) excluded military combat vehicles from any mobile emission regulations. In addition, Section 203(b)(1) of the CAA provided that the EPA may exempt certain motor vehicles or engines for reasons of National Security. After considerable negotiations between the EPA and the Army in 1987-1988, the EPA on 4 October 1988 granted a conditional National Security Exemption (NSE) for 31 different tactical vehicles/engines. In 1990, contractors sent to TACOM, and TACOM forwarded to the EPA, several requests to change the acquisition of tactical vehicles and replacement engines from conditional to final NSEs.

Water Quality. The Clean Water Act instituted the National Pollutant Discharge Elimination System (NPDES), requiring all Army installations with point sources discharging directly to waters of the United States to possess a discharge permit. An NPDES permit specified site specific pollutant discharge limits, various other conditions, and required monthly Discharge Monitoring Reports (DMRs) be filed with the applicable regulatory agency. During FY90, AMC installations were issued nearly 50 Notices of Violation (NOVs) for failing to comply with a permit condition or effluent limit. At the end of the fiscal year, 18 violations remained to be resolved, either through project upgrades or operational modifications.

On 20 April 1990, Secretary of Defense Richard Cheney and Environmental Protection Agency Administrator William Reilly signed a DOD-EPA Cooperative Agreement on Chesapeake Bay Activities. The purpose of the Agreement was to ensure the Defense Department not only abated pollutants entering the Bay from its installations, but also assisted EPA in restoring and protecting the Bay. Seven AMC installations were located within the Chesapeake Bay watershed: Aberdeen Proving Ground, Letterkenny and New Cumberland Army Depots, Vint Hill Farms Station, and the Adelphi, Blossom Point, and Woodbridge facilities of LABCOM. These installations had undertaken various projects in the areas of

Living Resources, Water Quality, Population Growth, Public Participation, Public Access, and Government Agreements to meet the goals of the Agreement.

Environmental Noise. The purpose of the Army Installation Compatible Use Zone (ICUZ) program was to safeguard installation mission capabilities from off-post encroachment. Chapter 7 of AR 200-1, 15 June 1982, and the updated version of 23 April 1990, implement the ICUZ Program for the Army. The ICUZ program required the development of noise zone contours at those installations generating sound from aircraft operations, weapon firings, munitions detonations or other excessive noise activities. It further required identification and analysis of agreements with local communities. This requirement had to be documented in an ICUZ analysis study for each installation generating significant environmental noise.

At the end of FY90, 47 AMC installations had been identified as needing complete noise contour maps and 44 installations had completed this requirement. It had also been determined that an additional 20 installations generated no significant environmental noise and that there was no requirement for noise contours or an ICUZ analysis study at those installations. Compliance with the ICUZ requirements will be an ongoing requirement for the next several fiscal years. At the close of FY90, eight AMC installations required on-site noise monitoring and four had completed this requirement. Further, two AMC installations had noise warning systems in place and one had a weather monitoring system. Six installations have MOUs on noise with their surrounding communities and 11 have started their public participation ICUZ programs.

Environmental Training. A very comprehensive and up-to-date environmental training program was offered by ALMC. Among the environmental offerings were: Basic Environmental Coordinator's Course (10 days), National Environmental Policy Act (NEPA) Implementation Course (5 days), Manager's Environmental Coordinator's seminar (4 days), and Defense Hazardous Materials/Waste Workshop (5 days on-site only). The Environmental Management Committee (EMC) at ALMC was authorized a chief, six professional instructors and one secretary. This included two instructors from the Historical Black Professor Program. The chief of the EMC at ALMC was Mr. William Hamilton.

The Defense Hazardous Material/Waste Handling Course was originally developed and presented by the Army Logistics Management Center at Fort Lee, Virginia for DLA during FY82. It was offered in FY83-90 in residence and on-site to AMC, other Army, other service, other government, and contractor personnel. The revisions to ALMC environmental courses in FY86-89 brought about flexibility in course material, modernization of generalized blocks of instruction, separation of target audiences and variability offered courses. The courses were offered in the resident, on-site, satellite, and accredited off-campus instructor modes.

During FY90 the ALMC EMC conducted 159 classes (excluding correspondence) and taught 4,778 students in its eight environmental courses. Of special merit was the fact that EMC added 59 unprogrammed classes to the FY90 schedule. This excluded additional offerings by correspondence. Of the attendees, 33 percent were from AMC. Thus, AMC personnel were taking advantage of the management, logistics and environmental offerings of ALMC. This was largely due to the proactive publicity given their courses by the EQD through TWXs, memos, and the Army Training Requirements and Resources System.

A major proactive initiative of the EQD in FY90 was the design, printing and distribution of 4,000 copies of a pamphlet which listed all eight ALMC environmental courses and told interested parties how to register for each of the environmental courses.

Resource Conservation and Recovery Act. The management of hazardous waste was regulated by RCRA and the Hazardous and Solid Waste Amendments of 1984. There had been an increase in emphasis by the EPA on monitoring Federal facility compliance with RCRA. The EPA policies had developed

enforcement strategies that would seek to enter into Federal Facility Compliance Agreements (FFCA) within 120 days of any RCRA violation. One of the ways EPA accessed RCRA compliances was with the Hazardous Waste Data Base (HWDMS). DOD was in the process of making this system available to the different services. AMC provided updates to this database to ensure that the EPA could verify or amend the compliance data to reflect current and accurate information.

A major milestone affecting AMC's disposal of hazardous waste was the submission of applications for RCRA Subpart X permits. These permits were for the Hazardous Waste Management Systems and Standards for Owners and Operators of Miscellaneous Units. One of the areas within AMC to which this classification applied was open burning/open detonation (OB/OD) operations. The submittal of the application allowed the continued operation under interim status until a final determination was made on the permits. The discharges from OB/OD operations were a concern due to the requirements of both RCRA and the CAA.

Deactivation furnaces and explosive waste incinerators were being upgraded to meet RCTA requirements. These units were used for the demilitarization of small arms, primers and fuses that, when disposed of, were classified by the EPA as hazardous waste. Based on evidence submitted, EPA had the classification of many of these items changed to non-hazardous.

Toxic Substance Control Act (TSCA). The major impact of the TSCA on AMC activities was in the regulation of operations concerned with PCBs. Efforts centered on compliance with storage, handling and disposal regulations. While not regulated as hazardous waste, these materials were included as an area of interest in the ongoing environmental audit program.

Radon Reduction Program. The Army established the Radon Reduction Program (RRP) on 21 March 1988 with the publication of HQDA Letter 40-88-3. The program required that buildings owned and leased by the Army be tested for radon and that remedial action be taken if the indoor radon levels were higher than 4 picocuries per liter (pCi/L) of air. The Army plan called for 100 percent testing of its buildings by FY91 and complete mitigation efforts by FY97. Installations were responsible to fund, execute, document and manage their monitoring and mitigation efforts based upon the DA Radon Program. Installations were required to monitor the use of detectors and analytical services purchased through centrally awarded and managed contracts by the U.S. Army Engineering and Housing Support Center (EHSC). Mitigation efforts will be based on radon concentrations detected during the testing period with remedial actions required within one month for high levels.

Underground Storage Tank (UST) Program. The Federal Regulations on Underground Storage Tank System (40 CFR 280), as promulgated by the EPA in 1988, required all AMC installations to comply with the requirements relating to leak detection (LD), corrosion protection (CP), and spill/overfill prevention (SOP). in accordance with the following schedules:

TABLE II - 4: Underground Storage Tank Environmental Compliance Schedules

TANK/PIPING	LD	CP	SOP
New Tanks	at installation	at installation	at installation
Existing Tanks			
Installed:			
*Before 1965	22 Dec 1989		
*1965-1969	22 Dec 1990		
*1970-1974	22 Dec 1991	22 Dec 1998	22 Dec 1998
*1975-1979	22 Dec 1992		
*1980-1988	22 Dec 1993		
Existing Piping			
*Pressurized	22 Dec 1990	22 Dec 1998	does not apply
*Suction	same as existing tanks	22 Dec 1998	does not apply

To comply with the above mentioned deadlines, AMC installations identified and requested funding for various UST studies and corrective projects. Last year's funding level requests amounted to approximately $23 million. As of March 1990, the 1983 Execution Status List for UST's indicated a total of $17.789 million. This reduction in funding level was indicative of the fact that AMC installations had already expended approximately $5.2 million for UST Program.

AMC headquarters was an active member of the DA UST Working Group. This working group met once every quarter to develop guidelines and strategies for complying with UST regulations. The proponent of this working group was the DA Environmental Office. A contract was currently being negotiated with Georgia Institute of Technology to conduct a UST training course for DA personnel during February/March 1991. AMC was allocated 12 slots for this upcoming event. Nominations for this training course had been received from several MSCs (DESCOM-4, AMCCOM-5, LABCOM-1, TECOM-1, AMC HQ-1). It is anticipated that this training course will enhance AMC's efforts to comply with UST regulations.

Base Realignment and Closure. In 1988, the Secretary of Defense chartered the Commission on BRAC to recommend military bases for realignment and closure. In December 1988, the Commission issued its report and recommendations, which were subsequently approved by Congress. Recommendations of the report will directly affect 14 AMC activities/installations. Eight installations will be closed, with others were scheduled for realignment. Under provisions of the Base Closure and Realignment Act, Public Law 100-526, AMC must initiate all closures and realignments no later than 30 September 1991 and complete all such actions not later than 30 September 1995. No closure or realignment actions could be initiated before January 1990.

The law further required the preparation and processing of Military Construction, Army (MCA) project documentation associated with facility construction and infrastructure requirements to accommodate realigned activities and missions, on a compressed MCA programming milestone schedule. The total program for AMC was comprised of 23 projects at 11 installations, estimated at $221 million, to be accomplished during FY91-FY94.

Environmental requirements to support BRAC actions were significant, both in terms of scope and resources required. Consideration of environmental impact(s) was one of the explicit criteria of the Secretary of Defense's charter. The procedural and substantive requirements of two major environmental laws were the thrust of this effort. Foremost among the environmental requirements was compliance with NEPA. NEPA required that federal agencies assess and document the environmental effects of their proposed actions before the actions were initiated. While the base closure statute specified that NEPA would not apply to the actions of the commission (e.g., identification of installations to be closed or realigned), it did require that NEPA documentation be prepared which addressed the environmental impacts of BRAC at affected installations. The Engineer was heavily involved in the development of policy, guidance, and implementing strategy for NEPA throughout the Army.

A "packaging" approach was developed and utilized, to ensure that mutually affected losing and/or gaining installations were covered in the same Environmental Impact Statement (EIS) or Environmental Assessment (EA), thereby addressing the true "cumulative" impacts as required by NEPA. Public scoping meetings were held to determine the significant environmental issues which needed to be addressed in the documents. The majority of issues raised in the scoping meetings, both in frequency and by site, were related to contamination and cleanup of past hazardous materials/waste sites, and ultimate land "re-use" alternatives. It was critical in that implementation of BRAC actions could not be initiated prior to completion of NEPA documentation requirements.

Concurrent and subsequent requirements were those pursuant to the RCRA for cleanup of hazardous waste sites, as regulated by the CERCLA, commonly known as "Superfund." Contamination issues were the focus at AMC installations scheduled for closure and/or realignment. CERCLA required environmental restoration of past contaminated sites. DA policy for BRAC actions was that excess sites will be cleaned up to an "unrestricted" use level, and that the cleanup will be initiated on a "worst first" basis. Enhanced preliminary assessments will determine the nature and extent of contamination, and determine which installations needed remedial investigations/feasibility studies. Due to the unique mission/function of some AMC installations, large amounts of contamination were revealed. Requisite cleanup efforts were anticipated to be lengthy and costly, and will require completion prior to declaring the properties excess.

The Environmental Quality Division, as well as the Facilities Division, was heavily involved in developing Army wide implementing strategies and actions necessary to comply with varied and comprehensive environmental requirements associated with base realignments and closures. The five-year program will require extensive effort and resource commitment with the Real Estate Division Disposal and Cultural Resource Preservation Programs.

Hazardous Waste Minimization. The 1984 Hazardous and Solid Waste amendments to the Resource Conservation and Recovery Act resulted in comprehensive EPA regulations, promulgated on 15 July 1985, which required the hazardous waste (HW) generator to certify the creation of a hazardous waste minimization (HAZMIN) program. In February 1983 AMC had formally listed the reduction of HW as its first priority, and the new EPA regulations introduced the need to centralize and prioritize AMC's local HAZMIN efforts.

In 1985, AMC developed a comprehensive command hazardous waste reduction plan. The AMC HAZMIN Plan outlined actions that AMC will take to reduce its HW generations and how it will manage the HW already generated. The goal was to reduce the 1985 HW generation level 50 percent by 1992. By the end of CY89, AMC had reduced its generations by 42 percent.

Responsibility for HW reduction efforts was not given to HW generators alone in AMC's HAZMIN Plan, but rather to all parties who could affect AMC HW reduction efforts. The HQ AMC HAZMIN Board was established 1 June 1986. This interdisciplinary group formed from HQ AMC DCS's and separate

office chiefs and chaired by the AMC Chief of Staff, advised the Commanding General about HAZMIN progress and advocated AMC HAZMIN actions. AMC-R 14-46, *U.S. Army Material Command Hazardous Waste Minimization Board*, stated the responsibilities and activities of the AMC HAZMIN Board. In addition, the regulation established three working groups, with a fourth being established to be the functional arm of the board. The HAZMIN Board met three times during 1990.

During 1990, Defense Environmental Restoration Account (DERA) funds were not made available for HAZMIN projects. However, due to the high priority installations and MSC's placed on reducing HW generations, approximately $5.0 million was spent by installations, MSC's, and HQ AMC on HAZMIN initiatives using operational and/or year-end funds.

AMC installations were implementing a number of R&D demonstration projects either through their own initiatives or through USATHAMA management. Specific areas included paint application; paint removal using chemical, abrasive, and thermal treatment; degreasing compound alternatives; and plating and surface finishing operations. In addition, USATHAMA had at least five R&D projects ongoing to reduce hazardous waste generations from pyrotechnic, explosive, and propellant production facilities. DESCOM implemented the HAZMIN Center for Technical Excellence (CTX) Program wherein a installation was responsible for reducing/eliminating a specific hazardous waste stream throughout DESCOM.

An ad hoc team was formed under the auspices of DCS for Production to assist PMs/PEOs in their consideration of HAZMIN within the concept development phase of the acquisition life cycle. The team was currently working with both the PEO for Armored System Modernization (TACOM) and the Light Helicopter Modernization (AVSCOM). Also, the DCS for Production had two R&D projects under their Environmental Acceptable Treatment Technology initiative (Manufacturing Technology Program) to determine feasible alternatives to cadmium coatings and chromic-acid finishing. An internal study was chartered through the AMC Management Engineering Activity (AMCMEA) to review AMC's HAZMIN Program management and to provide recommendations for improvement.

Facilities Division

Organization, Manpower and Key Personnel

The division was authorized 12 spaces and had 11 on hand at the end of FY90. The FY90 reduction in force eliminated three vacant positions: one each GS-14 and GS-13 General Engineer from the Planning Team and one GS-13 General Engineer from the Management Team. The permanent loss of engineering expertise and the organizational disruptions caused by the lack of full-time supervision and the reassignments/details of clerical personnel, caused considerable hardship to the remaining professional staff. Only through their dedication and commitment to excellent support of the AMC mission, including Desert Shield requirements, were the critical elements of the Facilities Division functions accomplished.

Herbert Louque became the division chief on 13 October 1990, shortly after the end of FY90. From 1 February 1990 until that date, the chief's position had been vacant, with the two remaining GS-14 engineers serving as acting chiefs, alternating on 60-day details. Prior to 1 February, Mr. David Abdelnour served as Chief, Facilities Division, until his detail as acting Assistant DCSEN. The division was organized using a "working team leader" concept, wherein its major mission areas are assigned to teams, headed by senior engineers. These teams were:

(1) Planning Team, which was responsible for master planning, mobilization master planning and related programs;

(2) Programming Team, which handled the MCA program including interfacing with BRAC actions; and

(3) Management Team, which oversaw the energy program and other Real Property Maintenance Activities (RPMA) functions including project administrative reviews, Directorate for Engineering and Housing (DEH) awards, and Engineers & Scientists (Resources and Construction [RC]) career program support.

Although not in the mainstream of the Facilities mission, the Headquarters Relocation Project Officer was attached to the division for liaison and administrative support.

Most Significant Issues

The most significant issues handled by this division included the RPMA funding shortfalls, the Base Realignment and Closure Act impact upon AMC, MCA, and the headquarters relocation. This and other significant issues are discussed below.

RPMA funding Shortfalls. RPMA funding shortfalls, an immense backlog of maintenance and repair (BMAR), BRAC impact, and the continuing MCA freeze, had serious long-term implications on the maintenance and modernization of the AMC industrial complex, environmental compliance and quality of life programs. The value of projects indentified as BMAR grew to $408 million. The intensity level increased further in FY90 as studies and scenarios aimed at downsizing AMC will have significant repercussions on the future of the RPMA program and who will manage it. Partial relief was sought through a request to Congress to reprogram $29 million of Research, Development, Test and Evaluation (RDTE) funds from research programs to RPMA accounts, to fund critically needed maintenance, repair and minor construction projects.

Base Realignment and Closure Act. The Base Realignment and Closure Act (Public Law 100-526) affected numerous AMC installations and generated substantial workload in Facilities Division, as well as Environmental Quality Division. Compliance with the law required preparation and processing of MCA project documentation associated with facility construction and infrastructure requirements to accommodate realigned activities and missions - on a compressed MCA programming milestone schedule.

MCA Program Status. The FY90 MCA Authorization and Appropriation acts made provisions for 16 AMC construction projects totaling $125,490,000. Among the projects were: Aberdeen Proving Ground Computer Addition, Building 394, $1,700,000; Price Support Center Enlisted Barracks, $370,000; and Savanna Army Depot Universal Functional Test Range, $850,000. These were provided through Congressional addition to the original Army program request. Subsequently, an additional five projects totaling $3,265,000 were funded by HQDA through Unspecified Minor MCA program, raising the total construction to 21 projects and $128,755,000.

Headquarters Relocation Project. Considerable effort continued in support of the Headquarters Relocation Project, an effort to move AMC command and control out of its presently leased facility to a site on Fort Belvoir in the mid-90's. In the 1990 RIF at HQ AMC, all three of the Relocation Project Office spaces were identified for elimination. Two of the individuals were reassigned to the EQD and the third (the office chief) was to be reassigned to the Office of the DCS for Production. The Command Group interceded, however, and the chief's position was restored and reassigned to the Facilities Division. Having transferred to the EQD, the other two members of the former Relocation Project Office were no longer involved in the actions necessary to relocate the headquarters, and their experience was basically lost.

At the beginning of FY90, AMC's new Commander received several briefings on the status of AMC's relocation efforts to include the program to relocate Army Agencies to office space to be built at the Engineer Proving Ground (EPG) at Fort Belvoir. He came to the conclusion that it would be in the Army's and AMC's best interests for HQ AMC to relocate to Fort Belvoir as part of that ongoing effort, rather than try to pursue the goal of relocating to another site, either on or off of Army-owned land. The EPG effort will provide the Army up to 3.1 million square feet of office space for Army agencies in the National Capital Region. The office space will be provided by developers who in exchange will receive development rights to other parcels of land at the Proving Ground.

Very preliminary tasks were performed, which primarily included providing information to the EPG Program Manager's office at Fort Belvoir. Many meetings were attended and, throughout the year, AMC was the singular proponent for the construction of "Intelligent Buildings" for the proposed tenants of EPG. By the end of FY90, AMC had reestablished the Relocation Task Force, which included not only Facilities persons, but also Information Management personnel, who could address Office Automation, Telecommunications and the "Intelligence" aspects of AMC's new Command and Control Facility.

Master Plan Non-Reimbursable Funds. In the past, non-reimburseable funds were used to fund Master Plan updates at seven AMC installations (both the costs of an Architect and Engineering firm to do the actual update and the Corps of Engineers District personnel to oversee the contract). FY90 brought severe cuts Army-wide to the non-reimburseable program (AMC only received $135,000). As a result, Headquarters, Corps of Engineers decided to change the program in FY91. Only the District Engineers' support will be funded through non-reimburseable money; the cost of actually updating a Master Plan was placed on the installation to fund through its operating budget. As all AMC installations were already working under severely constrained budgets, this new development was a critical blow to Master Planning at AMC installations.

Mobilization Master Planning (MMP) Non-Reimbursable Funds. While the non-reimburseable funds for Peacetime Master Planning were being cut drastically, the MMP non-reimburseable program enjoyed continued funding support in FY90. Two new developments occurred within the last year which will aid in improving MMP updates in the future. The Industrial Readiness Directorate at AMCCOM was now providing active support and functional guidance to the MMP program, which will help the installations identify ways to reduce pre-mobilization capital investments. Also a new initiative was to be piloted in FY91. Two environmental studies were being developed (at Lone Star AAP and at Radford AAP) which will aid in identifying the environmental constraints which impact Mobilization Production Rates.

Energy Conservation. Facility energy (including process consumption) in AMC was reduced 4 percent in FY90 compared to FY89. This decrease reflected a generally mild winter and reduced workload. Several installations excelled in energy management and conservation, as evidenced by the four "exceptional" ratings given by AMC's I&SA during their staff visits, and the recognition bestowed upon installations and individuals by the AMC Commander for performance in FY89. In addition, Milan AAP and Mr. Peter Fludovich, the energy coordinator for New Cumberland Army Depot, received Federal Energy Efficiency Awards from Department of Energy. Dugway Proving Ground was the third place winner of the Twelfth Annual Secretary of the Army Energy Conservation Award - the first AMC installation since FY86. At year-end, AMC was on a glidepath to meet and possibly exceed the Army's FY 85-95 facilities energy goal.

DEH Automation. Under the oversight of the Facilities Division and AMC I&SA, and with support from EHSC, work continued to bring AMC into the Integrated Facilities System-Micro/Minicomputer (IFS-M) scene with the rest of the Army. The IFS-M is the latest version of a standard Army management information system for life cycle management of real property assets. This greatly expanded and enhanced, interactive system provides information on all aspects of DEH operations, along with a central database of

facilities technical and budget data. It assists facilities engineers from installation level to HQDA, and supports decisions from day-to-day operations to long range planning and budgeting. Designed to operate in a mini/micro computer environment, IFS-M incorporates six modules: real property inventory, customer service, job cost accounting, DEH contract administration, work estimation, and DEH supply interface (DEHs outside AMC generally operate a dedicated supply function).

The system is scheduled for implementation at 18 AMC installations, with completion planned for the end of FY92 (Adelphi Laboratory Center was the first AMC site, completed in FY90). Estimated cost is in excess of $3.5 million for the computer hardware, software, training and initial maintenance. Implementation in AMC is complicated by the proliferation of automated systems not compatible with Army standard systems, including the predecessor to IFS-M. However, the EHSC, the DA Project Manager for ISF-M, is assisting in developing software interfaces which should be able to crosstalk between AMC systems and ISF-M. Initial efforts in this area have concentrated on the TEAMUP system, used by TECOM.

Real Estate Division

Significant Issues

The most significant issue handled by the division was real estate support for Operation Desert Shield, which started from the inception of the operation. Other important issues under the concerning the division were Environmental Baseline Surveys and Base Realignment and Closure.

Operation Desert Shield. Support consisted of two persons, one on-site in Saudi Arabia and one in HQ AMC. The on-site person served to verify requirements for AMC real estate, make final site selection recommendations to the Commander of AMC-SWA, work with the central command to assure proper priority, work with the Corps of Engineers on-site personnel to obtain acceptable sites and work with the Saudi Arabian government to achieve timely final approval and beneficial occupancy. Tasks at HQ AMC consist of insuring that proper pay and other support is available to on-site personnel, coordinating as required with other HQ elements to assist the on-site personnel and keeping their families informed.

Environmental Baseline Survey. Environmental Baseline Surveys and their predecessor, the Preliminary Assessment Screening, establish baseline data relating to the degree of contamination of real estate, to establish clearout liability for mitigation in real estate actions involving third parties (i.e., leases, sales and other transfers of real estate). The regulatory requirement for the surveys caused a major realignment of real estate priorities. Substantial numbers of real estate projects were held up awaiting the new and as yet unfunded requirement. Some relief was achieved and the regulations were rewritten. This area is still under study by HQDA.

Base Realignment and Closure. The Base Realignment and Closure operation was another major issue. Cultural resource requirements as a part of the base closure effort took a major part of the HQ AMC cultural resource funding during the year.

Headquarters Installation Support Activity (HISA)

Organization and Personnel

HISA was headed by the HQ AMC Commandant. On 1 August 1990 Colonel Lewis R. Heffner, who had served as Commandant since 1 June 1989, retired from military service. He was replaced by Colonel

Ira M. Click on 18 September 1990. Colonel Click had previously served as the Executive Officer to the Commanding General, AMC.[36] Shortly after the end of the fiscal year HISA was disestablished.

Frequent Flyer Program

In June 1990 the Department of the Army revised the regulations governing the use of airline frequent flyer programs by military and civilian members of the Department of the Army. The establishment of a frequent flyer program by major commands was made optional and participation in such programs by employees was made voluntary, but MACOMs still had to provide assistance to those who elected to remain in the program. Frequent flyer mileage earned on official business could not be used for non-government travel but it could be used to obtain upgrades on airline seats, rental cars, and hotels. In addition, field grade officers traveling in uniform were now allowed to accept airline seat upgrades, as had already been the case for other employees.[37] HQ AMC program participants were surveyed to determine the interest level for the continuation of the program. The majority of the responses favored closing of accounts, which AMC was in the process of doing.

Civilian Personnel Office (CPO)

Manpower and Personnel. The Headquarters Civilian Personnel Office (HQ CPO) for FY90 was authorized a staff of 58. The Personnel Officer was Robert Brooks, who retired at the end of the fiscal year.

Reduction in Force (RIF). In June 1990, HQ AMC identified 167 encumbered civilian positions to be abolished through a reduction in force (RIF). The RIF reductions were necessary due to projected workload and budget reductions. The HQ CPO established a RIF team to administer the RIF and provide out-placement assistance and counseling to impacted employees. On 10 August 1990, over 300 RIF notices were issued to employees, with offers ranging from reassignment to separation. Initially, 126 employees were scheduled for separation and 79 were to be placed in lower graded positions. As a result of attrition and the out-placement efforts of the RIF team, no employees were separated. One employee resigned in lieu of an involuntary separation action (i.e., discontinued service retirement), and 16 were placed in lower graded positions when the RIF actions were taken.

Union Contract Negotiations. Contract negotiations which began in April 1989, between HQ AMC and the National Federation of Federal Employees, Local 1332, continued. By the end of FY89, an agreement had been reached on all contract provisions except one. This remaining provision, declared non-negotiable by management, concerned civilian/military rank equivalency in completing civilian performance appraisals. The union filed a negotiability determination with the Federal Labor Relation Authority (FLRA) since management refused to negotiate on this proposal (it would have directly interfered with management's right to assign work). When the union failed to submit their request before the deadline, it was dismissed as untimely by the FLRA. With this action, negotiations were completed and the contract was signed in early January 1990 and became effective on 14 February 1990.

Army Civilian Personnel System (ACPERS). The Field Level Army Civilian Personnel System (ACPERS) was the automated personnel system for Army civilian personnel offices. It was designed to

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[36]Unless otherwise noted, information in this section was taken from the HISA historical submission for FY90.

[37]See also msg, HQDA/ALO-TSZ, 211336Z Jun 90, Subj: Revised Frequent Flyer Program Policy.

improve the accuracy and response time of civilian personnel information required for personnel management at the activity and headquarters levels and to provide a single uniform system throughout the Army. The HQ AMC CPO deployed ACPERS on 27 November 1989. This resulted in the elimination and reduction of some clerical routines. It also provided access for civilian personnel data updates and inquiries, documented personnel actions, and established and maintained historical data used for planning, analysis, and reporting.

Effective Writing Workshops. In keeping with the Army's goals for more effective writing, the CPO's Training and Development Branch conducted a series of "Effective Writing Workshops" during FY90. Nine workshops were conducted with a total of 131 Action Officers and Managers attending. The primary benefits of this training were substantial gains in writer productivity; demonstrable improvements in the writer's clarity of thought and the effectiveness of their message; and the ability of the employee to competently edit their work for accuracy, brevity, and clarity. All these benefits saved HQ AMC time and money and have improved communication.

On-Site Automation Training. During the fiscal year there were 41 automation classes conducted with 325 employees in attendance. The dollar outlay for these classes was $18,300.00, which averaged $56.00 per student. Similar classes conducted at a contractor site or by the OPM would have cost approximately $300.00 per student or $98,000.00. Thus, the on-site automation training gave AMC a cost avoidance of approximately $80,000.00.

Learning Resource Center (LRC). The Learning Resource Center had been opened and operating for three years under a contract with A/S/K Associates of Lawrence, Kansas. During FY90, 2,166 participants utilized the LRC for a total of 1,836 hours of instruction and 162 course completions. The LRC has continued to prove to be a viable means of training for HQ personnel.

OPM Position Classification Standards Implementation. Outdated position classification standards continued to present a challenge in classification of positions. The OPM was making a concentrated effort to publish new classification standards. Revised standards were being published in either factor evaluation system (FES) or modified FES format. During FY90 the GS-510 Accounting Series, the GS-391 Telecommunications Series, and the Grade Level Guide for Test and Evaluation Work in Engineering and Science Occupations were received and applied.

Timeliness of Performance Appraisals. During FY89 only 34.78 percent of performance appraisals had been received within the DA established goal of 45 days following the performance rating period. During FY90, as a result of the implementation of ACPERS and follow-ups to managers and supervisors, 82.76% of performance appraisals were received within the established time-frame. This was viewed as a significant improvement.

Support/Equipment, Facilities and Safety Management Branch

Organization and Manpower. At the start of the fiscal year the branch was authorized 14 civilian spaces. At the close of the fiscal year the office was authorized 11 civilian spaces. The reduction actually took effect on 12 October 1990, the start of the first full pay period of the new fiscal year, when three critical positions were cut from the office as part of the Reduction in Force. Cut were two Supply Technician (GS-06) position, and the Safety Specialist (GS-11) position. The loss of these three personnel severely affected the ability of the office to keep pace with property accountability management, and all safety functions were curtailed except for those directly related to employee and building safety.

AMC Building Fire Safety. Extensive actions to correct fifteen years of neglect that had resulted in the threatened closure of the building by City of Alexandria fire officials, continued during 1990. Fire officials were pleased with the progress and reduced their weekly fire inspections to once per quarter. However, as a small segment of the building's population refused to comply with fire and safety code requirements by not removing all cables from ceilings and other hazardous areas, city fire officials filed suit. Written notification from the city was sent to, and received by, the Commanding General. The AMC Chief of Staff then became personally involved, paving the way for a team of soldiers trained in cable and wire communications to come TDY from Fort Gordon, GA, to correct the cabling problems throughout the building. These soldiers worked under the supervision of the DOIM. Alexandria fire officials have checked the soldiers' work thus far and approved it. The project was near completion and the DOIM was coordinating with Alexandria to re-inspect the entire building.

Automatic Data Processing Equipment (ADPE) Accountability. Accountability of ADPE remained an area of high visibility. On 25 September 1990, the AMC Inspector General completed a follow-up to the 17 August 1989 Special Inspection of ADPE at HQ AMC and briefed the results to the Chief of Staff. The follow-up determined that ADPE accountability continued to improve but that increased command emphasis was needed to hold Hand Receipt Holders accountable for lost property, correct all discrepancies from inventories, and to conduct a 100% inventory of all ADPE. The Commandant was tough on property losses and became personally involved in assuring that Reports of Survey were initiated in a timely manner and that liability for losses was appropriately placed.

HQ AMC Occupant Emergency Plan. AMC Memorandum 385-2 was published on 22 May 1990. It was the first comprehensive emergency evacuation plan developed for the Headquarters. Key players were trained and the plan was tested on 11 October 1990 during a surprise fire drill. The building was evacuated in fourteen minutes.

HQ AMC White Paper Recycling Program. The program to collect for recycling the waste white paper in the headquarters kicked off on 26 September 1990.

Resources Division

Organization and Manpower

At the beginning of FY90, the resources function was part of the Operations and Support Division. To improve organizational efficiency, the Headquarters Commandant elevated the Resources Branch to division status in January 1990.

The Resources Division started the fiscal year with 12 manpower authorizations and ended with 13, when an authorization was transferred from the Equipment Support Branch to support the surge in workload in the HQ Budget Office. To focus on mission priorities, accommodate expanding workload and improve the quality of division outputs and services, a number of other TDA changes were made.

The Division Chief's position was upgraded in September 1990 from GS-13 to GS-14, based upon an accretion of duties. The accountant's job was reclassified, since the duties required of that position were actually budget analyst duties. The authorization acquired from the Equipment Support Branch was used to establish another budget analyst GS-12 position. A budget analyst GS-05 position was converted to the budget officer GM-13 position. A travel clerk GS-05 position was converted to the program analyst GS-12 position to support the newly acquired, highly visible MCB Program. However, as a result of the DOD-imposed hiring freeze, the accompanying HQ AMC hiring freeze and delays in obtaining position

classification or reclassification, the new budget officer and the MCB program manager positions were unfilled during FY90. In addition, when asked to identify the division's lowest priority function in preparation for the FY91 RIF, the travel clerk GS-07 position was targeted for disestablishment. (The Commandant felt the administrative support travel function should/would revert to the Adjutant General's Division in the Deputy Chief of Staff for Personnel.)

Division morale began to deteriorate as early as May 1990, in anticipation of the FY91 RIF. Because of the lower grade level of employees in HQ support functions, most division employees were junior analyst with less than the mean average years of service for HQ AMC. Rumors of the FY91 RIF created understandable anxiety and severely hampered productivity. RIF notices were issued in August 1990 at a time when eleven of the division's thirteen authorizations were filled. Five of those eleven employees received RIF Impact Notices: a budget analyst GS-12, the management analyst GS-12, the management analyst GS-09, the travel clerk GS-07, and the clerk typist GS-04. Through priority placement and/or bump/retreat rights, all incumbents departed these positions on or before 15 October 1990.

Significant Issues

Managing Civilians to Budget. In January 1990, the Resources Division was designated as the HQ AMC point of contact for this program. Concept development and implementation absorbed three fourths of a work year. Training courses were conducted and a variety of specific policy decisions were made concerning the implementation of the program.[38]

Zero Based Resourcing. In May 1990, the Chief of the Resources Division attended a zero based resourcing workshop in St. Louis, Missouri, hosted by the DCS for Program Analysis and Evaluation, exploring the feasibility of implementing this management initiative within the Army Materiel Command. To date, division participation in zero based resourcing has been limited; however the Office of the Commandant missions and functions were apportioned to the seven AMC mission areas.

FY90 Year-End Closeout. The accuracy and timeliness of the HQ AMC FY90 Year-end Closeout represented a milestone accomplishment for the HQ Budget Office. Due to increased analysis, careful planning and increased organization, the HQ achieved a 99.6 percent OMA obligation rate, a 100 percent AMHA obligation rate, a 100 percent Foreign Military Sales administrative obligation rate, a 69.2 FY90 Research, Development, Test and Evaluation (RDTE) (multiyear appropriation) obligation rate, an 86.6 percent FY90 Other Procurement Army (OPA) (multiyear appropriation) obligation rate, and a 100 percent reimbursable OMA and RDTE obligation rate. In addition $5.5 million in excess OMA funds had been identified and returned to the DCS for Resource Management in late August and early September, which was early enough to permit the funds to be utilized elsewhere in the command.[39]

Operation Desert Shield. HQ AMC manpower and dollar requirements for Desert Shield were funded and monitored by the Resources Division. The Headquarters diverted $810k of its FY90 Program and received approximately $1.6 million to support Operation Desert Shield from 6 August - 30 September 1990. The following funds were used to support operation Desert Shield, exclusive of regular man years diverted to Desert Shield support:

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[38]AMCIS-M, Memorandum for all MCB Managers/Supervisors, n.d., subj: Implementation of Managing Civilians to Budget (MCB) Program at HQ, US Army Materiel Command (AMC).

[39]AMCIS DISUM, 4 Oct 90, Subj: HQ AMC FY90 Yearend Closeout.

TABLE II - 5: Funds Used to Support Operation Desert Shield

APPR	MAJ/SUBPROGRAM	OBJECT CLASS	AMOUNT
OMA	P2	Contracts	$900,000
	P72	Premium Pay	$762,364
		Travel	$8,106
		Contracts	$40,000
	P73	Printing	$745,000
		TOTAL	$2,455,470

Source: FY90 Desert Shield Resource Data, included in the HISA FY90 historical submission.

Travel Program Study. The division's FY90 summer hire conducted a study of the HQ AMC Travel Program. The purposes of the study were to collect statistical data on the HQ Travel Program that could be used when developing budget requirements and planning program utilization and to give the summer hire a meaningful developmental project.[40]

Budget Program Resource Review and TDA Update. Two other major projects the division worked on were the HQ AMC FY90-91 Budget Program Resource Review BPRR and the 30 September 1990 HQ AMC FY91 TDA update.

Military Support Division

Organization and Manpower

The Military Support Division was authorized nineteen positions at the beginning of the fiscal year. One secretarial position was deleted as a result of the RIF.

CG's Enlisted Aides

The Commanding General's Enlisted Aides were transferred from HQ Company, U.S. Army to HQ AMC Headquarters Detachment in June 1990. However, as of 30 September 1990, neither the transfer nor the creation of the headquarters detachment had obtained final approval from HQDA. Of note was the expected requirement to obtain authorizations for the aides from within AMC due to the overall ceiling imposed on this Command.

Deputy Chief of Staff for Personnel

The DCS began FY90 with 176 manpower authorizations but, by the end of the fiscal year, was reduced to 158 authorizations, a loss of eighteen civilian spaces. In support of DMRD 927A, which called for streamlining HQ AMC by reductions achieved through economies and efficiencies, the DCS for Personnel

[40]The study is included in the HISA historical submission for FY90.

eliminated seven supervisory and administrative support positions; eight specialist and analyst positions; and three vacant positions: one budget analyst and two secretaries.[41]

The DCS key personnel as of the end of the fiscal year included:

DCSPER	MG Albin G. Wheeler
ADCSPER	Mr. George L. Jones
Executive Officer	LTC William Z. Lord
Plans and Operations Office	Ms. Blanche D. Crabtree
AG/Community Activities Division	COL Richard S. Bassett
Civilian Personnel Division	Mr. Kenneth C. Morris
Military Personnel Division	COL Clifton Houston (through 4 Sept 1990)
Provost Marshal	COL Dale R. Price

COL Clifton Houston was the Chief of the Military Personnel Division through 4 September 1990. COL Arthur J. Gipson was to become the Chief, Military Personnel Division, as of 29 October 1990. In the interim, COL Bassett became Acting Chief of the Military Personnel Division and Mr. Donald J. Helbig was designated Acting Chief of the AG/Community Activities Division.

Command Management Issues

The most significant and the Command Management Issues handled by the DCS in FY90 are listed below. These and other significant issues are discussed in more detail in subsequent sections:

Pay Telephone Profits
Marketing Support
Training
Transfer of ALMC to TRADOC
Managing Civilians to Budget (MCB)
Core Personnel Document Test
Reduce Costs of Civilian Personnel Administration
Logistics and Acquisition Management Program (LOGAMP)
Department of Army Civilian Announcement Distribution System (DACADS)
AMC Reduction in Force (RIF)
Desert Shield Impact on Civilian Personnel
Officer Distribution Plan (ODP)
Military Manpower Reductions
Policy on the Utilization of Military Personnel
Leader Development Program
Noncommissioned Officer Development Program (NCODP)
Personnel Support For Operation Desert Shield
Individual Mobilization Augmentee (IMA) Support of Operation Desert Shield
Military Child Care Act

[41]Unless otherwise noted, the information in this section was taken from the DCS for Personnel historical submission for FY90.

The top Secret Repository transferred to the Headquarters Installation Support Activity (HISA) on 31 August 1990.

Pay Telephone Profits

Consolidating installation pay telephone profits from the Army Air Force Exchange Service (AAFES) at HQ AMC continued to allow a major concentration of resources that were committed to priority needs of installations throughout AMC. This program funded projects that may otherwise have been unfunded. The FY91 committee reviewed and evaluated installation requests for pay telephone money. Approximately $849K will be distributed to selected installations throughout the year.

Marketing Support

The Community Morale Services Branch hired a second marketing specialist to satisfy the expansion of marketing requirements for MSCs and installations. This marketing specialist will provide management assistance in the marketing area, e.g., needs assessments, surveys and focus group discussion.

Training

The Community Morale Services Branch conducted several training sessions for business activity managers, community operation directors and assistant directors of community and family activities. The training session lesson plans were approved by Department of the Army, Community and Family Support Center, for granting continuing education units (CEU) to those attending. The HQ AMC Community Morale Services Branch was the first Army MACOM authorized to grant CEUs for training.

Transfer of ALMC to TRADOC

On 26 July 1990, the Commander, AMC approved a recommendation made by the AMC Schools Study General Officer/Senior Executive Service (GO/SES) Committee to transfer ALMC to TRADOC. The transfer will include the Schools of Acquisition Management, Materiel Readiness, and Logistics Science; Satellite Education Network; Army Logistician; Defense Logistics Studies Information Exchange at Fort Lee; and the School of Military Packaging Technology at Aberdeen Proving Ground, Maryland.

ALMC's School of Engineering and Logistics (SEL), Texarkana, Texas, and the Directorate of Intern Training were to remain part of AMC. The School of Engineering and Logistics was being established as a separate reporting activity parent unit. The Directorate of Intern Training from ALMC will be included on SEL's TDA for administrative purposes only.

A memorandum of understanding between TRADOC, AMC, and ALMC provisionally transferred ALMC to TRADOC for operational control to be effective 1 January 1991. ALMC was to be fully integrated into on TRADOC 1 October 1991.

Family Programs

In FY90, AMC held its first Family Action Plan Planning Conference with the theme "Excellence in Action." In preparation for this conference, 25 installations held forums/symposia reviewing quality of life issues in their communities and forwarded issues that they could not resolve locally. Attending the conference were seventy-five delegates from throughout the command who represented the entire AMC family of service members (active, reserve, married, single, sole parent), civilians, retirees, adult family

members and youth. Of the 143 issues submitted by the MSCs and reviewed by the delegates' working groups, 87 were included in some manner in AMC's top 33 issues. Twenty-nine of the top issues were forwarded to HQDA for action in the Army Family Action Conference. AMC retained the remaining four issues which were specific to AMC installations for resolution at the headquarters level.

Family Advocacy Program (FAP). The Family Advocacy Program was established to address the issue of prevention, identification, reporting, investigation and treatment of spouse and child abuse. In FY90, the FAP made a number of accomplishments in various areas. The Health Services Command (HSC) established special supplemental care accounts to address the FAP treatment shortfall at small/remote AMC sites. This resulted in AMC's obtaining a significant plus-up of HSC, Office of the Secretary of Defense (ODS) fenced FAP funding. Funding was expected to continue in FY91 with possibilities of obtaining HSC treatment contracts.

AMC obtained an exception from HSC for installation Family Advocacy Program Managers to provide administrative treatment services until a more permanent solution can be obtained. This greatly enhanced the FAP mission and resulted in the installation programs being able to take a more proactive approach to the prevention of family violence as well as out-of-the-home child abuse. Procedures were established at this headquarters addressing the appropriate management of child abuse reports received by the Department of Defense Child Abuse Hotline. These procedures were in compliance with the 1990 Military Child Care Act requirements and clarified the different reporting time requirements for FAP and Criminal Investigation Division (CID) as well as departmental coordinating efforts needed in reported cases. Child and spouse abuse reports increased significantly over last year. Increased reports were in the suspected category, probably the result of FAP managers taking a more proactive approach for the prevention mission.

Child Development Services (CDS) and Youth Services (YS). In 1990, CDS began implementation of Public Law 101-189, The Military Child Care Act (MCCA). The intent of the MCCA of 1989 was to improve the quality of child care, increase availability of care and increase the number of appropriated fund (APF) care-giving personnel. It directed the stabilization of the care-giving work force, accreditation of child development centers, annual unannounced inspections, parent boards, DOD uniform fees and increased APF funding. Child abuse prevention measures are also required for child safety and welfare. Quality CDS programs increase readiness and the morale and quality of life for soldiers and families.

Following guidelines of the Army care-giving personnel pay program, AMC converted care-giving personnel to a new improved Non-Appropriated Fund pay schedule and new GS spaces. One hundred and forty-seven APF authorizations were distributed in the command. Early childhood education specialists were placed in all CDS programs to provide required staff training and curriculum. Eleven child development centers began working toward professional accreditation in 1991.

AMC began mandated annual unannounced inspections of CDS programs with a functional area specialist team representing fire prevention, health, safety, resource management, facilities and child development. Inspections began with Rock Island Arsenal, Picatinny Arsenal, McAlester Ammunition Plant, White Sands Missile Range and Sierra Army Depot. These compliance inspections were also assistance oriented to help installations meet Army standards. AMC adopted the new DOD fee policy that contained four categories of total family income and a range within each for soldiers' ability to pay. New child development centers opened at Rock Island Arsenal and Dugway Proving Ground (DPG). The DPG center was the best designed center in the Army with an open plan for child and staff supervision and child abuse prevention. The $10M CDS program served over 10,000 children ages 4 weeks to 12 years at 21 AMC installations that included 24 centers and over 400 Family Child Care homes.

Army Community Service (ACS) Program

FY90 was a time of considerable transition for the ACS program. During this year many of the family support programs were asked to automate and many had to be quickly updated to meet the challenges of Operation Desert Shield. The Relocation and the Family Member Assistance programs were the first to use new automation systems, and the ACS annual report was also automated. Operation Desert Shield had a profound impact on all AMC family programs. Family support groups were organized for the first time at the installation level to support the families of soldiers deployed to the mideast, hotlines were developed, newsletters and informative pamphlets were distributed in support of the military family, family assistance teams were made available to the total military family, and video teleconferencing played a larger part in providing information to AMC's major subordinate commands.

Adopt-A-School

During FY90, AMC continued to lead the Army in supporting HQDA's Adopt-A-School program. Thirty-six AMC installations provided voluntary support to 62 different schools/school systems. Additionally, 30 AMC employees provided volunteer support for HQ AMC's adopted school, George Washington Junior High School. AMC was able to raise $18,000 in cash register receipts for the Giant/Safeway computer redemption program.

Educational Support for Soldiers

During FY90 the Army Continuing Education System provided educational support to soldiers, reservists and family members at 11 AMC Army Education Centers (AEC). Soldiers enrolled in 7,135 college courses (a 12 percent increase over FY89); 9,949 college level, vocational aptitude, and academic diagnostic tests were administered; and 55,619 educational/vocational counseling sessions were conducted (a 6 percent decrease compared with FY89). Additionally, 243 undergraduate and 103 graduate degrees were earned by soldiers through college programs offered at AMC installations serviced by AMC AECs. AMC Education Services Officers continued cost control measures begun in FY89. As a result, the cost per enrollment for lower and upper level college courses was lowered for a second straight year. They also were able to assist soldiers and family members to obtain $150K (a 49 percent increase over FY89) in Pell Grant monies that helped soldiers and family members pay for college courses.

AMC Health Promotion Program

The AMC Health Promotion Program was established in 1985 as a cost/benefit study designed to measure the return on investment of allowing civilian employees duty time for health/fitness activities. It was a companion to a similar study being conducted in the Army Staff, and was one of the pilots used to generate AR 600-63, *Personnel-General: Army Health Promotion.*

Program costs and the costs of employee participation were weighed against decreased sick leave usage; decreased health care claims; increased productivity; improved morale; and positive changes in lifestyle, health age, and various health/fitness indicators. From 1985 to 1990, the program became increasingly identified as a model for Federal agency health promotion programs not only in its design and implementation, but also in its efforts to improve employee productivity, morale, and health/fitness levels.[42]

[42]For a more detailed description and history of the Health Promotion Program (Fitness Center), see Unites States Army Materiel Command: Health Promotion Program, in the DCS for Personnel historical submission for FY90.

In 1990, the HQ, AMC Health Promotion Program was selected from 96 nominees to be one of six recipients of the Director's Award for Outstanding Employee Health Services Programs awarded by OPM.

Alcohol and Drug Abuse Prevention and Control Program (ADAPCP)

Prior to FY89 AMC did not have the internal capability to provide clinical treatment services to military and civilian personnel or their families, except at Fort Monmouth, Aberdeen Proving Ground, and Redstone Arsenal. By the end of FY89, with support from Health Services Command, AMC had approximately 15 of the 33 overhire ADAPCP counselor positions on board. By mid-FY90, AMC finally had the majority of these positions filled, providing full service capability in the ADAPCP. Availability of these resources increased the number of personnel who either were referred by supervisors or referred themselves to the program; in many cases, the increase was in the 100 to 200 percent range.

There were problems obtaining these resources in early FY90 because of the hiring freeze and because these positions were temporary, but DA provided a waiver for certain medical personnel which included the overhire counselors. With the RIF, the downsizing of the Army, losses due to retirements and transfer were not being replaced. The HQ AMC Alcohol and Drug Policy Office Alcohol and Drug Abuse Program Specialist, who dealt primarily with the civilian program and drug testing, retired and was not replaced that year. FY90 continued the downward trend in drug positive rates for both civilians and military personnel. During the latter part of FY90, the AMC Inspector General started a systemic review of the total AMC ADAPCP, with special emphasis on the civilian portion.

OCONUS Travel

During FY90 the Travel Branch processed 4,603 requests for OCONUS TDY travel from HQ AMC, major subordinate commands, separate installations and activities. Request for priority military air transportation were evaluated and scheduled through Centralized Army Aviation Support Office (CAASO).

Civilian Personnel Division

Position Management and Classification Branch

Managing Civilians to Budget. During FY90, Natick Research, Development & Engineering Center and Red River Army Depot continued the test of MCB. In addition, all of TROSCOM, Anniston, Seneca, and Tobyhanna Army Depots, Watervliet Arsenal, Combat Systems Test Activity, and the U.S. Army Security Affairs Command joined the test as expansion sites. The Army Audit Agency and the Civilian Personnel Evaluation Agency conducted the Phase II review of MCB during the period of November 1989 through April 1990. In January, in anticipation of a decision to implement MCB throughout the Army, two more sessions of the "Train the Trainers Course" for MCB were conducted by individuals of the HQ AMC DCS's for Personnel and Resource Management. This provided trainers for AMC commands, installations, and separate reporting activities.

In June 1990, we received official notification that MCB would be implemented CONUS-wide, within the Army, in FY91. In July, the Commanding General, AMC confirmed to Commanders that AMC would go to MCB effective 1 October 1990 and that classification authority would be delegated to supervisors, preferably on 1 October 1990, but not later than 1 January 1991.

The draft reports from the Phase II review have been issued for each of the original test sites, including Red River and Natick. These reports included the position classification case listings and required corrective actions for the grade errors and other classification problems. Final reports will be issued in

go to MCB effective 1 October 1990 and that classification authority would be delegated to supervisors, preferably on 1 October 1990, but not later than 1 January 1991.

The draft reports from the Phase II review have been issued for each of the original test sites, including Red River and Natick. These reports included the position classification case listings and required corrective actions for the grade errors and other classification problems. Final reports will be issued in FY91. The reviews found that there were problems with position classification accuracy (primarily misassignments) and with the gainsharing plans. It was also found that the concept of managing the payroll solely by the Civilian Pay Ceiling had not been fully implemented because of the DOD Hiring Freeze and other constraints.

Core Personnel Document Test. We began a project to develop an integrated civilian personnel document that would be a concise, internally consistent, streamlined replacement of the separate documents now used: position description, skills, knowledges, abilities statement and performance standards.

Visits and contacts with other government agencies revealed that the Air Force was testing an integrated personnel document called a Core Document. In addition to the features set forth above, the Air Force Core Document was generated from automated menus of duty statements, supervisory relationships, skills, knowledges, abilities statements and performance standards. Menus reflect specific occupations or groups of related occupations. In addition, a contractor-developed system under test in Air Force included automated position classification. Both systems enable the personnel specialist or the supervisor, or both together, to use an IBM compatible personal computer to generate a Core Document.

We gave several briefings to representatives of interested civilian personnel offices in AMC. We also gave a video teleconference presentation on 1 February 1990 to representatives of HQDA, the Personnel Command (PERSCOM), TRADOC and AMC's MSCs. As a result of these presentations and the fact that the concept fits well with delegation of position classification authority under the Managing Civilians to Budget program, several AMC elements and TRADOC expressed strong interest in launching a test, which DA agreed to sponsor. A contract was let by DA on 29 September 1990 with Resource Management Software of Tacoma, Washington to conduct an automated Core Document Test. The U.S. Army Concepts Analysis Agency (CAA) will evaluate the Test.

The Automated Core Document Test (ACDT) dovetailed with the DOD Laboratory Demonstration Initiative for automated classification. Accordingly, laboratories and research and development centers of LABCOM, MICOM and AMCCOM were taking part in the Test. Actual AMC test sites were Fort Monmouth, Picatinny Arsenal, Redstone Arsenal, White Sands Missile Range, Aberdeen Proving Ground and HQ LABCOM/Harry Diamond Laboratory. Other commands involved in the Test were TRADOC, FORSCOM, the Corps of Engineers and the Medical Research and Development Command. The occupations under test had large populations including engineering, research and development, test and evaluation engineering, secretarial, supply, clerical, budget analyst, and contract and procurement.

DA granted authority to conduct the test to the test sites on 1 October 1990. The Test was scheduled to run in FY91, ending by August. Prior to actual testing, the menus developed for the Air Force will be modified to fit Army organizations, functions and terminology.

The Position Management and Classification Branch (AMCPE-CP) had the lead for this DCSPER undertaking. The HQ AMC Test Oversight Committee constituted an advisory group. It had members from the Civilian Personnel Division, DCSPER and the DCS for Resource Management. HQ AMC was represented on the DA Working Group. Thus during FY90, HQ AMC was heavily involved in planning the test for the Army.

Career Management and Development Branch

Leadership Training. Leadership training continued to be emphasized during FY90. Approximately 600 first year interns completed the Intern Leadership Course, 70 managers completed the Organizational Leadership for Executives program, and all activities had teams trained to conduct the Leadership, Education and Development program for first line supervisors. AMC had 36 managers complete the Army Management Staff College and 6 top level managers completed the 4-week Federal Executive Institute program. Two new initiatives were started this fiscal year. The AMC Pamphlet 350-2, *Leader Development Program*, was developed and published. This pamphlet provided guidance to commanders for development of local leader development programs. The AMC Civilian Leader Development Program was developed during the fiscal year, for implementation in FY91. This competitive program, for GS-12 and GS/M-13 level employees, will train/develop a cadre of managers to assume future civilian leader positions.

Training Funds. There was a severe cut in training funds during FY90. No DA funds were allocated to support executive/managerial training, and funds to support the Facilities Engineer Apprentice Program (FEAP) were frozen, resulting in no new FEAP hires during the fiscal year. The FEAP will be phased out from DA central funding, with the last FEAPs receiving DA funding to graduate in FY93. While the DA central funds were curtailed, AMC activities used mission funds to continue providing essential managerial training (approximately $16M in local funds were used top support short-term training during the fiscal year). Innovative approaches to the funding shortage included increased on-site training in lieu of training requiring TDY, sharing resources with other Army/DOD activities in the local area, increased use of Learning Resource Centers and the PLATO computer-based-instruction network, and increased use of DA centrally supported programs, i.e. Intern Leadership Course, Army Management Staff College, Organizational Leadership for Executives, etc.

Intern Section. The AMC Displaced Professional Employees Program (DPEP) was developed in the third quarter of FY90 as a result of AMC downsizing and the resulting impact on Department of Army centralized interns.

Upon completion of the internship, interns are reassigned to local installation rolls (space and funding) and then become vulnerable to RIF. As a result of DPEP, Master Intern Training Plans were extended to thirty-six months to allow interns additional training time and to remain on DA centrally funded rolls (contingent upon the intern's willingness to sign an extended mobility agreement).

The program targeted all interns who had graduated after 1 October 1989. There were two exceptions granted. The Engineer and Scientist (Nonconstruction) (CP 16) interns and FY90 Quality Assurance Specialists (Ammunition Surveillance) (QASAS) graduates (CP 20). Of the 217 interns who had completed their internships and had been converted to local rolls, 171 opted to return for an additional year of training.

Of the approximately 925 current interns all but 16 agreed to extend their training phase to thirty-six months by signing extended mobility agreements. This policy change ensured that AMC interns were fully trained when reaching journeyman positions, safeguarding the Army's investment and protecting interns from RIF. This initiative also lessened the impact on minorities and females. This, in turn, maintained the Army's credibility as a responsible employer. However, this resulted in a total FY91 intern hiring freeze for AMC to ensure DA funding provided in FY91 would be able to support all associated program costs for the current pipeline of interns.

As a one-time exception to the Army Master Intern Training Plans, all target grades were changed to GS-11. This change applied to those interns who were serving in a thirty-six month internship to ensure

interns were provided continual career progression. The Army's Functional Chief Representatives (FCRs) concurred with this initiative.

Logistics and Acquisition Management Program (LOGAMP). The LOGAMP was established in November 1983, as an Army-wide program jointly sponsored by the HQDA DCS for Logistics (DCSLOG), HQDA DCS for Personnel (DCSPER), and the Commanding General of AMC. The program was designed to provide interfunctional structured training and developmental assignments to civilians involved in the logistics and acquisition management process. Civilian career programs covered under LOGAMP included Supply Management, Contracting and Acquisition, Quality and Reliability Assurance, Materiel Maintenance Management, Engineers and Scientists (Nonconstruction), Transportation Management, Comptroller, Automatic Data processing, Communications and Engineers and Scientists (Resources and Construction). LOGAMP is administered by HQAMC and governed by a committee composed of representatives of the Office of the Secretary of the Army for Research, Development, and Acquisition (OSARDA), DA DCSLOG, DA DCSPER, and HQ AMC.

The program was divided into two parts. Part I consisted of Competitive Development for GS-12s and GS/GM 13s-15s. Part II consisted of staffing key LOGAMP positions at the GM-13 and GS/GM-14 levels up to and including positions in the Senior Executive Service (SES). Six competitive intakes resulted in 409 current participants and 162 graduates. The program was centrally resourced by HQDA.

The LOGAMP Committee has approved 1,814 key positions, defined as those having two or more logistics and/or acquisition functions. The Key Position Referral process, which provided for the referral of LOGAMP graduates concurrently with other highly qualified candidates, was implemented in October 1988.

Department of Army Civilian Announcement Distribution System (DACADS). The DACADS was developed in April 1982 to provide engineers and scientists a means of receiving vacancy announcements for positions Army-wide. The system has been expanded to include career programs with decentralized referral and SES positions. The system meets a critical need in the recruitment process for hard-to-fill positions, and where career program officials wish to ensure that careerists are aware of job opportunities. Six-hundred sixty announcements and 39,837 individual copies were distributed during FY90. Army funding is being pursued and an Army regulation is in process.

Employee Management Branch

Acquired Immune Deficiency Syndrome (AIDS) in the Workplace Policy and Training. AMC has consistently supported the need for AIDS in the Workplace Training. The AMC endorsement to the DA Guidelines for Handling Issues Related to AIDS, distributed to the AMC Community in June 1988, stated that "educating the work force is the key to resolving conflicts that may arise among employees infected with HIV (Human Immunedeficiency Virus), their supervisors and their coworkers." To further emphasize the importance of training in this area, the AMC Commanding General, in a 6 July 1989 message, solicited the support of all AMC commanders to ensure that training programs were established for supervisors and employees on the DA guidelines for handling civilian personnel issues related to AIDS.

AMC Civilian Personnel Offices responded to this request and ensured training programs were established. The majority of AMC activities were using the training material presented at the DA AIDS in the Workplace Train the Trainer Workshops. Many AMC activities have solicited support from private agencies in conducting their AIDS awareness training. These agencies included the Red Cross, the Whitman-Walker Clinic of Washington, D.C., the Arkansas AIDS Foundation, and the AIDS Action Committee of Massachusetts. Information on the DA Policy concerning AIDS in the Workplace was also

being presented at supervisory development sessions and new employee orientation sessions. Activities were further reinforcing the classroom training by publishing articles highlighting the DA policy in local activity newspapers and supervisory personnel bulletins.

Voluntary Leave Transfer Program. Public Law 100-566, the Federal Employees Leave Sharing Act of 1988, authorized the continuation of leave sharing as a test within the federal government until 1993 and required OPM to provide a report to Congress on the operation of the voluntary leave transfer program by October 1990. Since the implementation of the Voluntary Leave Transfer Program, the generosity shown by AMC employees in donating annual leave to coworkers has been truly inspiring. A total of 117,910 hours of annual leave was donated to 775 leave recipients during the one year reporting period, 31 April 1989 through 31 April 1990. All activities agreed that the increase in morale of both the leave recipient and the leave donor was the major factor supporting the success of the program. Other factors that contributed were good publicity, employee generosity, intramanagement cooperation, the public expressions of gratitude by recipients, union cooperation, ability to donate use or lose annual leave, an increase in morale of both donors and recipients, ease of effecting the transfer, and the continuing support from all levels of management.

Selective Civilian Employee Retirement (SCER) Program. AMC presented a proposal to HQDA recommending a legislative change be initiated to the laws governing RIF to allow for involuntary retirements of civilian employees. Current legislation governing RIF of civilian employees limits managerial flexibility in determining how to best meet the needs of the organization. The order of retention preference required by law during a RIF disproportionately impacts newer employees and sometime strips the organization of those employees who hold the key to future success in meeting mission requirements. The legislative proposal would allow management an alternative to a RIF which can be evoked when at least 25 career employees are to be displaced after attrition. A locally appointed board is convened and the personnel records of all retirement eligible employees are reviewed and ranked according to merit factors. The Commander selects, from the bottom of the list, those employees who will be retired. Only 30% of those eligible to retire or a number equal to the number of employees projected to be separated by a RIF may be involuntarily retired. This proposal was being reviewed by OPM and the Office of Management and Budget.

HQ/Field Army Civilian Personnel System (ACPERS). AMC civilian personnel offices were in the process of implementing ACPERS in FY90, after having previously played important roles in testing the system. On 29 April 1988, the Under Secretary of the Army selected the Air Force Personnel Data System-Civilian (PDS-C) as the Army ACPERS in lieu of an Army contractually developed system. The decision was based on functional engineering and programmatic analysis and associated risks. The system was to be operated at the Air Force Computer Service Center located in San Antonio, TX. The Army's existing UNISYS 5000/70 central processing unit purchased for Office Automation will be used by the civilian personnel offices to operate ACPERS.

Effective 5 July 1989 the name of the installation level ACPERS changed to "Field Army Civilian Personnel System (Field ACPERS)." The DA Headquarters system was changed to "Headquarters Army Civilian Personnel System (HQ ACPERS)." The installation level civilian personnel offices' connectivity was linked directly into the Air Force Computer Service Center in San Antonio, TX. HQ ACPERS will reside at HQDA, Hoffman Building, Alexandria, VA. HQ ACPERS will be phased in by functional modules (i.e., Career Management; Labor Relations; USACARA; and Program Evaluation).

Corpus Christi Army Depot was the Pre-Deployment Site and the Software Acceptance Test (SAT) site. The Pre-Deployment Site test and the SAT were conducted from 15 November 1989 to 17 February 1989 at Corpus Christi Army Depot. Letterkenny Army Depot was the Lead Deployment Test site. The Lead

Deployment Test was conducted from 27 February 1989 to 3 March 1989. Letterkenny Army Depot was also the Nonappropriated Fund (NAF) Test site. The NAF test was conducted from 26 to 30 June 1989.

As of May 1990, AMC had completed training and deployment of Field ACPERS throughout the Command. The following sites were identified as satellite sites: Lexington Blue-Grass Army Depot, Camp Stanley Storage Activity, Pueblo Depot Activity and Edgewood Arsenal. HQ AMC and the MSCs are identified to use HQ ACPERS. Connectivity, training and deployment will be completed during 1991.

On 4 June 1990 the Deputy Chief of Staff for Personnel approved the establishment of a Civilian Personnel Functional Coordinating Group (FCG). The FCG will allow the Command to benefit from broad participation and the combined expertise of its functional users and technical experts in developing, evaluating and modifying HQ/Field Army Civilian Personnel System. It also provided a consensus of functional users requirements for a system change.

The Civilian Personnel FCG was established as a permanent AMC group. It will be the sole Command functional authority for civilian personnel automation coordination. No subgroups of this FCG were authorized; however, MSCs may establish working groups to consolidate/coordinate data. FCG membership consisted of functional representatives from the headquarters staff elements and the MSCs. Technical representatives from the headquarters staff and field activities were nonvoting members. The staff element and MSCs designated an individual as a permanent group member and at least one alternate member.

The Civilian Personnel Division, Office of the Deputy Chief of Staff for Personnel, will designate a Chairperson for FCG. The Chairperson will convene and chair the group as deemed necessary.

Workers' Compensation. Workers' Compensation costs were continuing to spiral upward out of control. Congress realized that something must be done to bring costs down, but although they have held hearings no action was taken. The costs within the Army have increased from $20M in FY73 to $153M in FY90. The Army recognized the reduction of workers' compensation costs as a high priority, high visibility issue.

The Office of Workers' Compensation Program (OWCP), Department of Labor, was responsible for paying all Workers' Compensation benefits for on-the-job injuries. Agencies were billed annually for their costs ("chargeback"). In the past, HQDA paid for all Army costs billed by OWCP. The Office of the Secretary of Defense directed that the chargeback bills for Workers' Compensation benefits be decentralized to the installation level for FY89 and thereafter so that management of cost reduction efforts could be focused at the lowest practical level. Under this new procedure, installations will pay their individual bills. AMC's portion of the $153M chargeback for FY90 was $54M.

Each installation had policies, programs, and procedures established to manage their Workers' Compensation programs. All installations had working groups consisting of representatives from Civilian Personnel, Safety, Medical Services, and Resource Management, who coordinate actions at the local level to bring about reductions in costs. Commanders, managers, and supervisors at all installations are involved.

AMC Reduction in Force. Fiscal year 1990 was marked by major RIF planning in AMC. Based on projected force structure changes, cuts in AMC programs, projected funded workload and the estimated budget for fiscal year 1991, AMC activities found it necessary to eliminate over 6,000 civilian jobs.

RIF planning commenced early in the fiscal year. In March 1990, in an effort to provide current guidance to the field on conducting RIFs, the Employee Management Branch developed and published a "Planning and Information Guide for Conducting Work Force Reductions." By early May, AMC installations and Separate Reporting Activities had submitted 66 requests for RIF authority. After thorough reviews and adjustments to correct discrepancies related to meeting AR 5-10 requirements, the Command

forwarded the requests to PERSCOM on 21 May 1990. Also forwarded were 44 requests for voluntary early retirement authority (VERA).

The initial RIF and VERA requests were approved by HQDA on 3 August, and most RIF notices were issued on 9 August, with an effective date of 12 October 1990. (Five activities had RIF effective dates as late as 4 January 1991, because of late submission of requests or delays resulting from complications in the approval process.)

A total of 11,948 RIF notices were issued on 9 August 1990. Of these, 4,919 were for involuntary separations; 3,316 were for downgrades; and 3,713 were for reassignments at the same grade. As of 30 September 1990 the actual number of RIF notices in effect was 9,847. (This number reflects actions projected to be effective on 12 October and 2 November 1990.) Of this number, 3,336 were for involuntary separations; 2,735 were for downgrades; and 3,746 were for reassignments at the same grade. The actual number of involuntary separations effected as of 13 December 1990 was 194. The actual number of changes to lower grade was 1,316, while reassignments at the same grade totalled 3,421.

As of 30 September 1990 there were 796 VERA retirements. The actual number of VERA retirements as of 13 December 1990 was 992. The vacancies created by these retirements were used to save employees from involuntary separation or downgrade. Besides VERA, two other factors coming into play after the end of FY90 contributed to the substantial reduction in the number of employees actually effected by RIF: the restoration of 2,000 abolished positions essential to operation Desert Shield, and an attrition rate that was higher than that projected during the RIF planning process. The chief factor in the higher attrition rate was optional retirements spurred by anticipation of the discontinuance of the "lump sum retirement fund" payout option.

TABLE II - 6: RIF Statistics by MSC
Projections are as of 9 Aug 90 and Actual are as of 13 Dec 90.
(Figures are given as actual/projected)

Activity	Involuntary Separation	Downgrade	Reassignment (Same Grade)	VERA Retirement
DESCOM	30/2,773	923/2107	1,517/1,629	564/466
AMCCOM	152/511	168/232	315/307	161/209
AVSCOM	0/263	32/147	242/295	50/106
TROSCOM	0/225	46/127	230/169	29/55
MICOM	0/146	0/116	0/197	38/124
TACOM	0/468	37/205	182/285	32/97
CECOM	1/253	46/241	727/650	43/115
SRAs	10/153	47/62	86/79	50/68
HQ AMC	1/127	17/79	122/102	25/36
TOTAL	194/4,919	1,316/3,316	3,421/3,713	992/1,276

Source: AMC Reduction in Force/VERA Retirements

Desert Shield Impact on Civilian Personnel. Operation Desert Shield began to have an impact on the civilian work force early in September 1990 with the call-up of military reserve personnel for active duty. The sudden departure of reservists who were also AMC civilian employees created vacancies which in many cases could not be immediately filled.

As the situation in Southwest Asia (SWA) continued to develop, it became apparent that over 2,400 employees scheduled for involuntary separation by RIF were in critical jobs needed for direct support of Desert Shield. In mid-September, General Tuttle requested that the Secretary of the Army authorize restoration of these positions and provide the funds to support the continued employment of the individuals scheduled for RIF separation. On 5 October 1990, approval was granted to restore 2,000 positions.

The developing mission in SWA created the need to send civilian employees TDY to the area. DCSPER's Civilian Personnel Division developed policy and procedures for all AMC employees assigned TDY to SWA. Because of the DOD hiring freeze in effect, it became necessary to pursue blanket exceptions to the hiring freeze to fill positions in direct support of Desert Shield.

Program Planning and Evaluation Branch

A significant action taken by the branch was the implementation of DMRD 906 to reduce costs of civilian personnel administration. The services had different levels of civilian personnel working in personnel administration compared to the population being serviced. The Navy had the highest ratio (lowest cost) primarily because they delegated more responsibility to their line managers. DMRD 906 would adjust funding levels in the other Departments and DLA to provide the same ratio as the Navy (1:61). Even though AMC's ratio (1:65) was better, the Army imposed a share of the cuts on AMC.

In FY90, under a plan of 4 January, AMC was to lose 200 spaces (184 civilian personnel spaces and 16 equal employment opportunity spaces), 24 spaces in FY91 (22 civilian personnel spaces and 2 equal employment opportunity spaces), and 27 spaces in FY92 (25 civilian personnel spaces and 2 equal employment opportunity spaces), for a total of 251 spaces (231 civilian personnel spaces and 20 equal employment opportunity spaces).

Based on AMC's persistence that we were recovering an unfair share of the Army cuts, a new plan of 1 March was issued. AMC was to lose 119 spaces in FY90 (103 civilian personnel spaces and 16 equal employment opportunity spaces), 24 spaces in FY91 (22 civilian personnel spaces and 2 equal employment opportunity spaces), and 27 spaces in FY92 (25 civilian personnel spaces and 2 equal employment opportunity spaces), for a total of 170 spaces (150 civilian personnel spaces and 20 equal employment opportunity spaces). As of 4 June 1990, AMC was to lose 120 spaces in FY90 (104 civilian personnel spaces and 16 equal employment opportunity spaces), 17 spaces in FY91 (14 civilian personnel spaces and 3 equal employment opportunity spaces), and 15 spaces in FY92 (15 civilian personnel spaces and no equal employment opportunity spaces), for a total of 152 spaces (133 civilian personnel spaces and 19 equal employment opportunity spaces).

The Commanding General, however, recognized the importance of fully staffed CPOs and EEOs assisting our field commanders during the FY90 challenges of reorganizations and associated personnel turbulence. He advised major subordinate commanders not to take these FY90 cuts up front, but to defer them to FY92-95. The Chief of Staff, in repeating the message that the CG had given the MSC Commanders during the 1990 Commanders Conference, stated:

> I hope you agree that adequate staffing of your CPOs and EEOs, particularly during the early years of AMC restructuring, is critical to overall AMC successful planning and implementation. The formal planning of reductions in force is but one many personnel-associated tasks that require

counseling, and general work force communication are immensely important associated tasks which consume an extraordinary amount of CPO and EEO resources.[43]

Military Personnel Division

Officer Distribution Plan (ODP)

PERSCOM released the End Fiscal Year (EFY) 91 ODP to AMC on 16 July 1990. Total ODP support for AMC was 1,741 for 2,163 authorizations (80 percent). AMC's ODP support reflected Army-wide shortages of field grade officers, especially lieutenant colonels. Compared to last year's ODP, EFY 91 ODP decreased by 586 (11 percent).

The ODP shortages in AMC are at lieutenant colonel (60 percent) and colonel (70 percent). Especially hard hit Branches (BR) or Functional Areas (FA) include BR 15, Aviation (40 percent); BR 25, Signal (76 percent); BR 91, Ordnance (82 percent); and BR 92, Quartermaster (55 percent).

The Army-wide ODP support levels for FA 51 (Research, Development and Acquisition) were colonels 58 percent, lieutenant colonels 56 percent, majors 82 percent, and captains 95 percent; total ODP support was 74 percent. There are two primary reasons why the support levels declined so drastically. First, authorizations for FA 51 increased from 1,349 to 1,917 (28 percent increase) due to the recoding of Program Executive Officer/Program Manager (PEO/PM) positions, acquisition management positions in SARDA and combat development positions in TRADOC from FA 51 to BR 15. Second, the need to track developmental assignments in FA 51 positions for officers in the AAC resulted in discrete OPD for 934 positions (i.e., OPD for authorizations requiring AAC officers with FA 51 designation), further increasing the draw on the limited pool of FA 51 officers. The low level of ODP support resulting from the limited population, coupled with the high number of FA 51 authorizations in the expected fill category, resulted in extremely low support levels for AMC and TRADOC.

Military Manpower Reductions

AMC conducted a detailed analysis of military authorizations to make necessary cuts to meet the DA's and General Tuttle's guidance. The adjustments below were made to the AMC authorization base for FY91. Most cuts will take place in FY91 thru FY95. AMC faces further reductions in the out years as a result of the Audit Task Force and CG, AMC guidance to give up approximately 50 percent of AMC total military authorizations.

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[43]CS Memorandum for Distribution, Subj: Deferral of Civilian Personnel Office/Equal Employment Office CPO/EEO Reduction (PBD 906), 14 May 1990.

TABLE II - 7: Military Manpower Reductions

CATEGORY	*OFF	WO	ENLISTED	TOTAL
QUICKSILVER I	-32	-04	-263	-299
PBD 917	-41	0	-40	-81
PEO PM	-309	-10	-30	-349
Sharpe Army Depot	-43	-08	-28	-79
Army Plant	-20	0	0	-20
Army Tank Plants	-09	0	0	-9
MSE	-30	-09	-26	-65
TOTALS	-484	-31	-387	-902

* Included in authorization base for FY91 Officer Distribution Plan.

Source: Deputy Chief of Staff for Personnel historical submission, FY90.

The Quicksilver I Reduction was the DA-directed military cut as part of the Army's plan to reduce the size of the Army. DMRD 917 was the decision to civilianize military support positions. Remaining AMC Program Executive Officer and Program Manager personnel were transferred to DA. Sharpe Army Depot, Army Plan Representative Officers, and Army Tank Plants were transferred from DESCOM to the Defense Logistics Agency. Mobile Subscriber Equipment transferred from CECOM to DA.

Policy on the Utilization of Military Personnel

Policy guidance was issued by memorandum on 10 April 1990 and applied to all TDA organizations within AMC and was based on the AMC Commander's philosophy concerning utilization of military personnel. Soldiers play a vital role and provide an invaluable service in accomplishing the mission of AMC by: (1) bringing field experience to a largely civilian AMC work force; (2) providing developmental positions for the future leaders in Army logistics, research and development, acquisition, and procurement arenas; and (3) providing the soldier-to-soldier interface with supported units and customers around the world needed maintain the highest level of support to the Army.[44]

This policy stresses how important it is for commanders to use AR 570-4 in making organizational decisions (i.e., whether a position should be designated military or civilian). All commanders should properly classify TDA positions for soldiers to ensure that they are utilized to maximize their skills, qualifications, training, and experience. For example, coding of some officer positions on the TDA in the past has been designated Army Educational Requirements Board (AERB) or Training with Industry (TWI) for the wrong reasons (i.e., as a method to ensure "quality" officers were assigned; to suit professional needs or personal desires of the incumbent; or in anticipation of receiving additional ODP support). This type of miscoding is counter-productive and prevents the Army from developing soldiers with the proper skills in a timely manner. Positions designated AERB/TWI should be utilized by officers trained for and assigned to the AAC.

[44]Memorandum for Distribution, Subj: Utilization of Military Personnel, 9 Apr 90.

Personnel Development Programs

Leader Development Program. On 19 July 1990, the CG approved AMC PAM 350-2, *Leader Development*, for use as the command's policy on leader development. The pamphlet was the first in the Army to combine civilian, officer, and noncommissioned officer leader development issues into one package. The goal of the program was to provide AMC with competent and confident leaders. It used approved Chief of Staff, Army (CSA) studies as its benchmark, and was staffed through such subject matter experts as the Center for Army Leadership, Army Research Institute, U.S. Army Training and Doctrine Command, and U.S. Army Forces Command, Offices of the Deputy Chief of Staff for Operations (DCSOPS) and for Personnel (DCSPER), HQDA, and the U.S. Total Army Personnel Command (PERSCOM).

The subject matter experts said that the pamphlet was doctrinally correct and the MSCs said that the PAM was do-able. The PAM included information on civilian and military leader development programs, performance and appraisals, implemented the latest training programs regarding Military Occupational Specialty (MOS), Army Civilian Training, Education and Development System (ACTEDS), Self-Development Test (SDT), skill levels 2-4 Common Task Testing (CTT), the command's reading program, Army Acquisition Program (AAP), and senior leader training. AMC took the aforementioned actions to begin formalizing the way it conducted business and to establish written guidance on the utilization, training, and career development of its people.

The actions were prepared in a way that would assist the implementation of a Total Army - Total AMC corporate culture, with a goal to begin integrating civilian and military issues into one program or package. The idea was to simplify activities, reduce the manpower required and the overall cost of managing these activities. The actions of the Inspector General, senior leadership committees, and the DCSPER staff contributed immeasurably to this effort.

Noncommissioned Officer Development Program (NCODP). The CG approved an NCODP which directed MSC/SRA commanders to develop a formal written program which would include goals to supplement the Noncommissioned Officer Education System (NCOES), and to include the training on master training schedules.

Support for Operation Desert Shield

Individual Mobilization Augmentee (IMA) Support. During August 1990, AMC received approval to call 55 IMAs to active duty in support of Operation Desert Shield. As of 30 September 1990, 26 IMAs had reported for active duty.

Personnel Support. Beginning in early August 1990, AMC was tasked to provide both enlisted and officer personnel to support Operation Desert Shield. The Enlisted Personnel Section, Military Personnel Division, received taskings from PERSCOM and in turn contacted the appropriate MSC for soldiers. As of 30 September 1990, 113 soldiers were attached and 63 were reassigned to units supporting ODS.

Plans and Operations Office

Command Post Exercise (CPX) Homeward Bound 90-1. This special exercise was conducted from 30 July to 3 August 1990 to examine the implication of a reduction in force. The exercise assessed the impact of the "steep ramp" end strength reduction on logistics policies, procedures, and resource requirements across staff functional responsibilities. Specific objectives were: (1) examine how to execute an accelerated reduction of Army forces and determine its impact on AMC plans, policies, procedures and resources; (2)

respond to requirements from the Army Operations Center; and (3) identify issues related to the receipt, storage, sales or disposition of excess for each class of supply.

The main DCSPER focus during the Homeward Bound Exercise was to evaluate the effect of the AMC real-world drawdown on Homeward Bound. We submitted a number of major findings to DA. AMC will involuntarily separate approximately 5,400 personnel on 12 October 1990. In addition, 1,600 temps will be released and 1,200 are expected to be lost through attrition. Another 1,300 were expected to take early retirement before that date. A total of 16,200 personnel will be affected due to reassignment and bump and retreat. As a result, AMC's ability to absorb and/or place returning personnel will be severely limited since the return will take place at the same time AMC is drawing down its workforce by RIF. Many jobs to which overseas employees were entitled will be abolished in the RIF. Restructuring will make it difficult to have an audit trail on jobs to which overseas employees have statutory return rights.

The impact of the personnel reduction in AMC combined with the expected increase in workload due to redistribution, transportation, retrograde and storage of material can be considered a war-stopper. FY91 Class V (Ammunition) impact alone reflects an increase of 61.4 manyears to process 50,000 short tons per year into CONUS storage, and an additional 21.6 manyears to store the Class V supplies within AMC.

AMC Long Range Training Plan (LRTP) (1991-2001). AMC's first Long Range Training Plan (LRTP) was developed in draft form in accordance with HQDA DCS for Operations guidance. The plan's main focus was on AMC's seventh mission: to continue to improve productivity and quality of life. The initiatives outlined in the plan will provide the conduit for developing policies and programs to train our civilian and military personnel. Coordination with HQ AMC DCS's, staff offices, and PATs was completed by 31 May 1990. The draft LRTP was briefed at the Army Long Range Planning Conference 24-25 July 1990 and was now being staffed with MSC Commanders for review/comments. The final approved plan was due to HQDA 15 January 1991.

Equal Opportunity Office (EEO)

Mission and Personnel

The mission of the Office of Equal Opportunity (OEO) was to manage and direct the Command's military Equal Opportunity (EO) and civilian Equal Employment Opportunity (EEO) programs, policies, and operations. The office was divided into three components: Affirmative Action, Complaints Management and Military Equal Opportunity.[45]

At the beginning of FY90, AMCEE was authorized 12 spaces, which fell to 10 by year's end. The office had a large personnel turnover this year. Ms. Grace Sweeney, Equal Employment Specialist, GS-12, retired in October 1989. Mr. Paul Williams joined the staff as an EEO Assistant, GS-5, in November 1989. In November 1989, Ms. Marcia Chalmers, Equal Employment Specialist, GS-12, was selected as the Headquarters Installation Support Activity (HISA) EEO Officer in a temporary position not to exceed one year. Mr. Emmanuel Smith, a personnel intern, began a 60 day detail to the office in November 1989. In December 1989 Ms. Elois Wilson, secretary, GS-07, retired; and Captain Giselle Ross joined the military EO program until July 1990. In January 1990, Mr. Vondell Carter, formerly of LABCOM, joined the AMCEE staff as the Black Employment Program Manager. Ms. Elvia Valdes joined the EEO staff as a

[45]Unless otherwise noted, the information in this section was taken from the Office of Equal Opportunity historical submission for FY90.

GS-06 Secretary in February 1989. Mr. J. Ronald Sexton joined the staff in May 1990 as GS-12 Complaints Processing Manager. Mr. Sexton came from the Department of Army's Equal Employment Opportunity Compliance and Complaints Review Agency (EEOCCRA). In July 1990, after 21 years of service with this office, another GS-12 Equal Employment Specialist, Ms. Annette Johnson, retired. Finally, in September 1990, Dr. Ronald Shanks transferred to LABCOM as their EEO Officer.

St. Michael's Retreat

The staff went off-site for a 3-day retreat in November 1989 to define AMCEE's direction, objectives and priorities in program administration and management. Staff members built valid individual performance plans specifically defining roles, responsibilities and indicators of success. These performance plans become modules for a performance management system, using Total Quality Management principles, exported to all AMC major subordinate command, installation and activity Offices of Equal Opportunity.

Equal Opportunity Officers' Conference

A December 1989 conference was held in Chambersburg for MSC EEO Officers and the AMCEE senior staff to discuss program directions for the 1990s. As a result of this conference a series of monthly video teleconferences (VCTs) were initiated in January 1990. They have become a regular forum for MSC EEO Officers and AMCEE staff to share successes, air problems and discuss special subject matters through guest speakers. Hosting of the VTCs was rotated among the MSCs for enrichment and experience.

Most Significant Issues

The command's overall EO program was in compliance with the policies established by the Department of the Army and AMC. Quality of life issues continued to be important within this command. The responses from soldiers, civilians and family members assessed at all levels of command and EO reports indicated that the chain of command throughout AMC typically exercised good leadership skills and that the EO climate had not been significantly impacted by the negative actions observed in several communities. Our FY90 ethnic observance events were very successful with participation by various representative groups to enhance cultural awareness. The Equal Opportunity Program appears to be making good progress within AMC during this time of force reductions.

The most significant issues handled by the AMC Equal Employment Opportunity Office included EO/EEO Program Evaluations, EO/EEO Training Program, Affirmative Employment Program Overview, Complaints Procedures Overview, Federal Women's Program (FWP), Hispanic Employment Program, Black Employment Program, Asian/Pacific American Employment Program, Complaint Processing, RIF, and the Equal Employment Automation System.

EO/EEO Program Evaluations. Limited travel funds and severe staffing shortages forced cancellation of the program evaluation schedule for FY90. Because program evaluations continued to be an excellent method to assist commanders in implementing effective EEO/EO programs and ensuring unity of effort, it was hoped that they might be resumed in FY91.

EO/EEO Training Program. Members of the OEO staff provided assistance to many Department of Army EO/EEO training programs. Although too numerous to report in detail, Dr. Shanks made briefings to new commanders at ALMC's Logistics Pre-Command Course at various times throughout FY90. Other staff members assisted in training at HISA, to the HISA EEO Office (operational), in the areas of "First Line Supervisors" training and Prevention of Sexual Harassment (POSH) and complaint processing. Staff presentations were also made for non-Army organizations, such as: "Working Together-EEO Offices and FEW" at the Regional Training Conference sponsored by FEW, Inc. (Metro Area Region) and "Managing

a Culturally Diverse Workforce" for EEO Officers and Counselors at the National Oceanic and Atmospheric Administration (NOAA), in Sandy Hook, New Jersey.

Affirmative Employment Program Overview. In March 1990 the Commanding General was given an overview of the Affirmative Employment Program within AMC. This briefing established program directions for the 1990s emphasizing the elimination of persistent pockets of resistance to parity and monitoring accomplishments. No longer would statistical reporting be inclusive of the general categories of women and minorities. Each category would be reported separately by race, national origin and gender. Furthermore, statistical analysis and numbers would identify problems and focus on barrier elimination. The CG gave his support in shifting focus from "number crunching" to emphasis of barrier identification.

AMC was in its third year of the five year affirmative employment program plan for minorities and women. An annual update and an accomplishment report were prepared and forwarded to DA for submission to the EEO Commission. AMC Achieved most of its major employment objectives and obtained a waiver from the EEO Commission to use skill based statistics rather than national or local Civilian Labor Force (CLF) statistics for the blue collar work force.

Although subject to a substantial reduction in force for civilian employees, AMC was still able to achieve most of its major employment objectives. The permanent work force strength decreased by 7,778 in FY90, and by fourth quarter, we had a permanent strength of only 98,412. Still, adjusted goals were met for White women, Black men and women and Hispanic men and women. Goals were not met for Asian/Pacific Island men and women. No goals were necessary to achieve parity for American Indian men and women. The major manifest imbalance in AMC was in women, particularly white and Hispanic women. Although there was concern regarding the representation of Black and Hispanic men at the mid and senior grade levels, they did not constitute a manifest imbalance.

Complaints Procedures Overview. At the Commanders' Conference in August 1990 all AMC Commanders were briefed on complaints processing. The new EEO Commission's regulation, 29 CFR 1614, was the driving force for the briefing. Faced with the challenge to expedite the complaint process without jeopardizing AMC's resolution rate, EEO Officers in FY90 substantially improved processing time. AMC was the most improved MACOM in Army with a 59 percent decrease in the time it took to resolve complaints. The improvement was the result of initiatives that included changes in personnel assignments, the use of TQM, establishing tracking systems, and other measures to identify and eliminate process bottlenecks. Because of the difficulty in building an automated complaints tracking system, valid statistics on the timeliness of each MSC were not available. Commanders were told that the new emphasis was on process management and not individual processing and that the bottom line was their support. The resolution rate for informal complaints in FY90 was 73 percent.

Federal Women's Program (FWP). In July 1990, Ms. Scarbrough and Dr. Ron Shanks, AMC Federal Women's Program Manager, represented AMC at the Federally Employed Women's (FEW) National Training Program in San Antonio, Texas. The luncheon meeting they conducted for the more than 40 AMC attendees provided an excellent opportunity to share success stories and improve networking activities among AMC FWP Managers. Dr. Shanks also assisted the DA Director of the Federal Women's Program in presenting a workshop titled "Involving Management in EEO Programs" as part of the FEW training program. His two sessions were attended by more than 100 representatives from agencies throughout the government. In December 1989, Dr. Shanks also assisted HQDA in the presentation of training for new FWP Managers in Oakland, California.

Hispanic Employment Program. In January 1989, Ms. Ana Ortiz, AMC Hispanic Employment Program (HEP) Manager assisted HQDA in presenting training for new HEP Managers in Corpus Christi, Texas.

Ms. Ortiz represented AMC at IMAGE's[46] annual conference in Oakland, California in May 1990. Ms. Ortiz also participated in the annual training conference sponsored by the Washington, D.C. Council of Hispanic Employment Program Managers in St. Michaels, Maryland, in March 1990. She served as moderator and panelist on the workshop entitled "Alternate Methods of Training."

Black Employment Program. The Black Employment Program (BEP) was again staffed in FY90 with the addition of Mr. Vondell Carter. During the year he and Ms. Scarbrough attended the National Association for the Advancement of Colored People (NAACP) Conference in Los Angeles, California, and met with other AMC members of the EEO community to discuss program goals and objectives.

The BEP Manager assisted the DA Director of BEP with the planning of a one day training prior to the Blacks in Government (BIG) conference. At the same time a caucus of AMC BEP Managers yielded valuable information and important opportunities for consultation and face-to-face program guidance. Mr. Carter also made a presentation at this conference entitled "The Crisis in Education and Implications for Black Employment Programs." An HQ AMC chapter of BIG was re-established. AMC's BEP Manager served as an ex-officio member.

Asian/Pacific American Employment Program. Ms. Scarbrough and Mr. Carter participated in the planning and conduct of the third annual Federal Asian/Pacific American Council (FAPAC) Training Conference held in Washington, D.C. during May 1990. Ms. Scarbrough presented the keynote address for the opening conference banquet. Mr. Carter also participated in the planning and conduct of the kick-off ceremony at the Department of State for the inaugural of Asian/Pacific Islander Heritage Month.

In coordination with the U.S. Department of Agriculture's Graduate School, AMCEE provided research and visitation sites and resource experts in support of a fellowship program for Ms. Michiko Ando of the Women's Bureau, Ministry of Labor, Japan. Ms. Ando's research focused on the implementation of civil right laws in the United States and their implications for Japan's civil rights laws, primarily those instituted for women's rights.

Complaint Processing. This office managed the EEO complaint process for AMC and traditionally monitored the resolution rates of EEO complaints. The resolution rate for informal complaints in FY90 was 73 percent. A total of 413 formal complaints of discrimination were filed throughout the command in FY90. One hundred and eight formal complaints were settled, 11 were cancelled, 43 were withdrawn, and 35 were rejected. In FY90 the Department of the Army rendered 99 decisions on AMC complaints based on their merits, with only four of these leading to findings of discrimination.

Reduction in Force (RIF). The decision to conduct a RIF resulted in the generation of documentation packages in accordance with AR 5-10 for virtually every AMC installation. Each package necessitated a local EEO Impact Assessment and a review by the Office of Equal Opportunity. The impact varied at each installation; however, in each instance, resultant actions to avoid adverse impact were initiated, including negotiations with DA to extend the protected status for individuals employed in Army Career Program Intern positions. The total representation of minorities and women in AMC did not decrease as a result of RIF actions. The OEO reviews resulted in higher quality assessments at the local level, a more comprehensive picture of the effect or potential effect on the workforce, and more cogent advice to commanders at all levels.

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[46]IMAGE is a Hispanic organization whose major objective was the employment of Hispanics in the private and public sectors.

Equal Employment Automation System. The Army Civilian Personnel System was deployed to most AMC installations this fiscal year. This system should eventually provide for the automation of EEO statistical data to include employment information and a complaint tracking system. Major systemic problems in the EEO library of ACPERS were identified to HQDA by this office for operational field activities, and several staff members participated in efforts to correct system-wide deficiencies. An earlier problem caused by the refusal of Air Force to certify our INTEL 320 hardware in 1988 was resolved with our receipt of ICC packages and boards for Zenith PCs began in April 1990. Another problem involving the security of the complaint tracking files was resolved in FY90 by arranging to have double passwords issued to EEO Offices, excluding unauthorized or casual access to the records.

Military Equal Opportunity Issues

Force Content. A breakout of AMC force content was as follows: Women were 7.9 percent of the commissioned officer strength, an increase of 0.1 percent from FY89 when women were 7.8 percent of our commissioned officers. The number of female warrant officers assigned remained at 3. Women were 13.3 percent of the enlisted strength, an increase of 0.7 percent from (12.6 percent). Women were 16.8 percent of the enlisted grades E1-E5, down 3.8 percent from FY89 (20.6 percent).

Minorities were 14.0 percent of the commissioned officers, 13.7 percent of the warrant officers, and 36.0 percent of the enlisted strength. Of the soldiers in grades E1-E5, 34.3 percent were minorities; 28.2 percent were Black, 2.8 percent were Hispanic, 0.3 percent were Native American, 1.0 percent were Asian/Pacific Islanders and 2.1 percent were classified as other/unknown. The overall military population was reduced 9.5 percent. Of these reductions, 80.4 percent were majority members and 19.6 percent minority or 95.1 percent male and 4.9 percent female.

Staffing. Due to reductions in military population, the authorization for 20 Equal Opportunity Adviser (EOA) positions was reduced to 19 in FY90, and 17 school-trained NCOs were on board. Most depots, activities, and installations were staffed with collateral duty personnel because of their small military population.

Justice Actions. Articles 15, Unfavorable Discharges, and Courts Martial increased from 155 in FY89 to 180 in FY90, a 13.9 percent increase. The increase was attributable to a growth in positive urinalysis and driving under the influence/driving while intoxicated (DUI/DWI). Narrative and statistical reports were received quarterly from all subordinate activities. There were no trends that indicated a disproportionate representation of females or minorities.

Complaints. Complaints increased from 9 in FY89 to 12 in FY90. Of those filed in FY90, 7 were based on race, 2 on sexual harassment, 1 on religion, and 3 were gender-related. Of the 12 complaints, four were substantiated. All complaints were resolved within the chain of command.

Majority/Minority Selection Rates. Enlisted promotions continued to show parity throughout the fiscal year. A breakout of the minority selection rate by ethnic group/race showed that Hispanics and Blacks had a higher selection rate than all other ethnic groups.

Equal Opportunity Training. The EO goal was to train 7,293 military and 2,018 civilians. The actual accomplishment was 6,683 military and 1,887 civilians, representing 91.6 percent of the goal for military personnel and 93.5 percent for civilians. Training objectives were not met for FY90. Failure to reach the goal of 95 percent was attributable to an inability to get replacements for two equal opportunity advisors. Replacements were received late in the fiscal year and training goals should be reached next fiscal year.

Affirmative Action. During FY90, AMC's primary goals were to conduct Program Evaluation Visits to MSCs, to closely evaluate punitive actions and insure that all soldiers were fairly treated in their pursuit for quality of life and to provide the momentum to pursue personal and professional goals. Other goals included monitoring the staffing of EOA positions throughout the command and ensuring the adequacy and continuity of the EO education and training program through the use of an EO training plan. All goals were accomplished during FY90.

Community Affairs

AMC's major subordinate commands continued to report active involvement in community activities such as Blacks in Government, community outreach, public affairs, Red Cross, Boy/Girl Scouts, and co-celebrating ethnic observances. Activities varied according to geographical location. Community involvement in ethnic observances appeared to be making the greatest contribution to better understanding between the military and civilian populations throughout the command.

Safety Office

Organization and Mission

The HQ AMC Safety Office had a manpower authorization of 13, which included 12 civilians and one military officer as of the end of FY90. This number was unchanged from the previous year; however, the year ended with five vacancies which were not expected to be filled because personnel authorization levels were to be reduced over the next three years in all areas of AMC, including the headquarters.

Key personnel changes during the year included the retirement of the Aviation Safety Officer, LTC Edward Strazzini, the departure of Mr. Raymond Vaselich from the Engineering Division, and the departure of Ms. Vickie Kolb from the Occupational Safety and Health Division to the Corps of Engineers.[47] The loss of the safety professionals did not adversely affect the Safety Office to an outwardly noticeable degree. The mission was accomplished as a result of longer work hours and a reprioritization of effort.

The mission of the Safety Office was the direction and staff supervision of the AMC Safety Program. That program included provision of maximum safety consistent with operational requirements in the design of Army materiel; prevention of injuries to military, civilians, and contractor personnel; and the prevention of damage to Government property and interruption to essential operations.

A key element in the prevention in injuries was the AMC Aviation Safety Program which was supervised by the Safety Office, in addition to the AMC Safety Program. The latter ensured AMC compliance with safety regulations and standards, and provided corrective action as needed. Additionally, the Safety Office worked to develop DA guidelines and provide technical advice for environmental radiological monitoring, for environmental protection regulations relative to radioactive material licenses. The AMC Safety Office identified and directed the effort to eliminate from the environment those effects of AMC operations that might otherwise represent a hazard to the civilian populace. The Office managed and administered the AMC Occupational Safety and Health Program in compliance with Public Law 91-

[47]Except where otherwise noted, this section is based on a draft FY90 Annual Historical Report, prepared by the Safety Office, HQ AMC, submitted 9 Jan 91. UNCLASSIFIED.

596, Executive Order 12196, and 29 Code of Federal Regulations (CFR) 1960. It also had responsibility for the direction and control of the AMC Field Safety Activity.[48]

Aircraft Accident Rate

For the second year in a row, the Command completed a year without experiencing a Class A accident, achieving an accident rate of zero based on 35,440 flying hours. However, it should be noted that since AMC contractors experienced two Class C accidents, this resulted in a command-wide A through C accident rate of 5.6 per 100,000 flying hours. This did not compare favorably with the FY89 A through C accident rate of 2.85 percent.[49]

Other Accidents and Incidents

FY90 was a safe year for civilians and military within AMC. There were fewer accidents in the categories of: Army motor vehicles, property damage, explosions, and total ground accidents. The Safety Office noted that overall military injuries continued to decrease for the fifth consecutive year. AMC Safety efforts and accomplishments were reflected in a reduction for the fifth consecutive year in design and materiel defect accidents reported by soldiers in the field. This reduction was both in absolute terms as well as a percentage of all reported accidents.[50]

Civilian Resource Conservation Program

AMC not only achieved, but surpassed its FY90 Civilian Resource Conservation Program Goal for lost time injuries. The established lost-time reduction goal was a rate not to exceed 24.36 lost-time injuries per 1,000 employees. The command experienced an FY90 rate of 22.7, well below the established goal. Contributing greatly to this success were DESCOM, AMCCOM, and TECOM. These three MSCs had previously been responsible for over 50 percent of the total civilian injuries in AMC.

Administration of the Safety Program

During FY90, the AMC Safety Office completed a number of administrative actions which were of significance to the command. Some concerned nuclear, radioactive, or chemical materials and their control or disposal. In addition, the Safety Office continued to update and improve key publications, such as the AMC Safety Manual. Details of some actions are given below.

Nuclear and Radioactive Materiel Issues. During the fiscal year, the AMC Safety Office was designated as the DOD point of contact for a DOE/DOD Memorandum of Understanding (MOU) involving the disposal of low-level radioactive waste. The Defense Consolidation Facility became fully operational in August 1990 with super-compaction capability. The office established an MOU with the Defense Logistics Agency to provide health physics and Nuclear Regulatory Commission (NRC) support to Army depots and contractor sites being transferred to DLA control.

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[48]This section is based on AMC Organizations and Functions, HQ, U.S. Army Materiel Command (AMC-R 10-2), 15 October 1985, pp. 7-6 to 7-11.

[49]See HQ, AMC *Annual Historical Review, FY89*, p. 106.

[50]See HQ, AMC *Annual Historical Review, FY89*, p. 107.

The NRC issued a confirmatory action letter to an Army licensee for having an unauthorized radioactive waste burial site at Fort Bragg, NC. The unauthorized burial of radioactive components from the M72A2 Light Antitank Weapon was discovered by Fort Bragg in late 1990. This amounted to a violation of the AMCCOM license which fields the commodity. Via the confirmatory action letter, the NRC ordered the Army to investigate and, if necessary, clean up the site.

The Safety Office requested and received relief from the NRC to comply with certain radioactive commodities that enabled a greater degree of support to Operation Desert Shield forces. Shipment procedures were abbreviated to allow for the expeditious movement of supplies and commodities to SWA. Also, the NRC assisted the Army in expediting license amendments to allow for the quick fielding of ammunition containing depleted uranium to forces in SWA. The office processed in excess of 300 Army and other Federal agency radioactive material licensing requests during the course of the fiscal year.

Other Materiel-Related Issues. The AMC Safety Office oversees the U.S. Army Ionizing Radiation Dosimetry Center (AIRDC) in Lexington, KY, which operates the Army's radiation dosimetry program. Conversion from the older film badges to the state-of-the-art thermoluminescent dosimeters (TLDs) began in the mid-1980s. In January 1990, the AIRDC completed the project when the last of their 30,000 customers (worldwide) received their TLDs and the film badges were permanently retired.

During FY90, the Safety Office also prepared and issued a waiver for chemical agent Lewisite operations. Due to lack of real time monitoring (i.e., equipment able to detect agent concentrations in a timely manner), the waiver was recommended and approved by the CG, AMC. This waiver allowed operations to be conducted using existing monitoring equipment with other compensatory measures.

Administrative Changes. During FY90, the office completed the publication of Change 1 to AMC-R 385-100, *AMC Safety Manual.* In addition, the office revised AMC Supplement 1 to AR 385-16, *Systems Safety Engineering and Management.* Also in 1990, the U.S. Army Belvoir Research, Development and Engineering Center (BRDEC) sponsored two courses related to radiation protection: in May, the "Preparation for Health Physics Inspections" course; and in August, the "Depleted Uranium Munitions Radiation Safety Course." The BRDEC holds these courses for anyone interested, however, AMC customers get first choice on available spaces. AMC sponsored four specialized health physics training courses.

Safety Awards Program

Instituted in accordance with AMC Circular 385-6, the noncompetitive Safety Awards Program consisted of three levels of achievement. Each MSC evaluation was based on criteria that included such elements as meeting assigned goals, sharing good ideas, being responsive to field and higher headquarters, and executing special emphasis programs. The FY90 performance was the third year covered by this program. AMC presented Awards of Excellence to AMCCOM and CECOM; Awards of Honor to AVSCOM, DESCOM, LABCOM, MICOM, TACOM, and TROSCOM; and TECOM received a commendation.[51] AMC also presented the FY89 Department of the Army System Safety Professional of the Year Award to Mr. William H. Hulse, Jr., a Supervisory Safety Engineer assigned to the CECOM Safety Office.

[51]See HQ, AMC *Annual Historical Review, FY89*, p. 106.

Office of the Surgeon

Mission and Organization

The mission of the Office of the AMC Surgeon was to provide policy and guidance to HQ AMC and subordinate elements on all medical matters. This included such duties as providing guidance regarding the establishment and maintenance of occupational and environmental health programs, including health care, sanitation, occupational medicine, pest control and environmental health engineering. The Surgeon's mission also involved providing guidance in the establishment and operation of a system for the early identification, assessment, and control of health hazards in the research, development, testing manufacturing, storage, use and disposal of materiel under the jurisdiction of AMC. This enabled AMC to minimize adverse health effects to the user.[52]

During FY90, the Office of the Surgeon maintained its previous authorization of nine individuals. While there were no changes in the positions authorized during the year, two officers departed during the year and only one was replaced. Colonel George E. T. Stebbing, who had been the Command Surgeon since October 1988, left in May 1990. His replacement, Colonel Manmohan V. Ranadive, arrived in July. The position of Chief, Medical Entomology, held by LTC Benjamin F. McLaurin until July, remained vacant as of the end of the fiscal year, reflecting the Army-wide shortage of active duty entomology officers.[53]

Two IMAs performed their normally scheduled two weeks of Active Duty Training during the year. One of the two was also activated in response to Operation Desert Shield as backfill for regularly assigned officers diverted to support the HQDA Office of the Surgeon General. His 90-day tour of duty was extended for the duration, and ended during July 1991.

Preventive Medicine Support to AMC

The U.S. Army Environmental Hygiene Agency provided direct, nonreimbursable, consultative support of more than $1.5 million to AMC installation and Program Managers in the areas of Industrial Hygiene, Occupational Health, Pest Management, Environmental Quality, and Non-ionizing and Ionizing Radiation Control to comply with environmental and occupational health laws and regulations. The Office of the Surgeon planned and coordinated these services, evaluated recommendations for adequacy and appropriateness and required response from the requesting subordinate command on those issues affecting regulatory compliance. Other DA agencies, including the Medical Research and Development Command and the U.S. Army Toxic and Hazardous Materiel Agency, also provided significant indirect support in the areas of Health Hazard Assessment and cleanup of contamination from past operations.

Health Hazard Assessment (HHA)

Propellant Health Hazard. During FY90, the Office of the Surgeon continued working with the AMCCOM on the steps to be taken regarding a possible health hazard arising from a commonly used propellant. The problem dated to Ames/Salmonella tests conducted by Lawrence Livermore Laboratories in 1987. The labs had found the solid residue resulting from the open-air burning of M6 propellant to be

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[52]AMC Organizations and Functions, HQ, U.S. Army Materiel Command, 15 October 1985, pp. 7-12 to 7-13.

[53]Except where otherwise noted, the remainder of this section is based on a draft FY90 Annual Historical Review submitted by AMCSG, dtd 18 Dec 90.

mutagenic, capable of changing the genetic make-up in a cell. Follow-up testing by Research Development and Engineering Center in cooperation with the Army Environmental Hygiene Agency (AEHA) had then substantiated the results. Subsequent mammalian cell testing provided further confirmation.

In a 5 July 1990 memo, the commander of AMCCOM, Major General Paul L. Greenberg, reviewed his command's actions, proposed a test schedule and made recommendations to ensure compliance with all applicable regulations in response to the positive results of the "in vitro" studies. AMC's Chief of Staff, MG William B. McGrath, concurred with AMCCOM's actions, test schedule and recommendations; however, he recommended certain modifications, in order to conform with a proposed message prepared by the Office of The Surgeon General. These included restriction of the safety-of-use message to AMC and following Occupational Safety and Health Administration (OSHA) guidelines. Those guidelines required inserting certain warning information in the appropriate safety data sheets, and providing information to potentially exposed employees.

Upon receipt of the laboratory test results from AEHA, the Office of the Surgeon recommended in a 21 September 1990 endorsement to the Commander, AMCCOM, that the safety-of-use message be issued to all M6 propellant users with the additional recommendation that it be noted that "in vitro" tests could not be used to establish conclusively whether a compound would or would not be carcinogenic in humans or animals. The Office of the Surgeon noted that positive results suggested extensive testing of the chemical should be done in long-term animal studies. Such tests were under consideration at the end of FY90.[54]

Medical Assessment in Support of Materiel Acquisition. During FY90, the AMC Health Hazard Assessment Officer continued implementation of The HHA Program in Support of the Army Materiel Acquisition Decision Process, which had been formalized with the publication of AR 40-10, effective 15 October 1983. The HHA Officer reported that appropriate procedures had been integrated throughout all phases of the materiel acquisition process to ensure that health hazards are identified, evaluated, and eliminated or controlled to give personnel maximum protection consistent with mission requirements and cost effectiveness considerations.

On-going assessments during FY90 included the medical assessment of the Armored Systems Modernization Program, M43 Protective Mask, Self-Contained Toxic Environment Protective Outfit-Interim (STEPO-I), Lightweight Chemical and Biological Protective Garment (LCBPG) (MARK IV), M109 Howitzer Improvement Program, and numerous communication systems, training devices and new munitions. The HHA Officer continued to coordinate key information to support these assessments.

Administration of the Health Hazard Assessment Program. Among the accomplishments of the HHA Officer during the fiscal year were rewriting certain relevant Army Regulations and providing input to the rewriting of three DOD-level regulations. That office also assisted in developing HHA research issues, and coordinated and monitored a large number of requests for medical and HHA support. These accomplishments are discussed in greater detail below.

Rewriting the AR 40-10, *Health Hazard Assessment in Support of the Materiel Acquisition Decision Process*, September 1990, brought AR 40-10 in line with the new DODD 5000.1, *Defense Acquisition*. The

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[54]Memo, MG Paul L. Greenberg, Cdr, U.S. Army Armament, Munitions and Chemical Command to Cdr, AMC, subj: Mutagenicity of Gun Propellant Residues, dtd. 5 Jul 90; 1st End to memo, AMSMC-CG/5 Jul 90, MG W. B. McGrath, CS, AMC to MG Greenberg, subj as above, dtd 20 Aug 90; 1st End to HSHB-MO-T/29 Aug 90, COL Manmohan V. Ranadive, Command Surgeon, AMC for Cdr, AMSMC-DEM-D, subj as above, dtd 21 Sep 90.

HHA Officer also provided input to the rewrite of DODD 5000.1, *Defense Acquisition*, July 1990, DOD Manual 5000.2, *Defense Acquisition Management Documentation and Reports*, DODI 5000.2, *Defense Acquisition Management Policy and Procedures*, AR 602-1, *Human Factors Engineering*, September 1990, and AR 602-2, *MANPRINT (Manpower and Personnel Integration)*, February 1990.

The HHA Officer assisted the DA Surgeon General in establishing priorities among Health Hazard Research being conducted by the U.S. Army Medical Research and Development Command (AMRDA). During the fiscal year, the HHA Officer continued to identify relevant medical research issues. The issues were based on the fact that only military personnel were likely to be exposed to certain potential health hazards, and therefore there were voids in the available biomedical data base. These HHA research issues were identified as a direct result of the HHA program for materiel acquisition implemented by AMC in accordance with AR 40-10.

The HHA Officer also coordinated and monitored over three hundred (300) requests for medical and HHA support during FY90. Over one hundred and ninety one (191) HHA reports were written for materiel systems. These HHA services resulted in timely medical input to control and eliminate health hazards arising from developmental and non-development items managed by DA PEO/PM and AMC. The recommendations contained in the HHA reports provided specific administrative and engineering controls to reduce the adverse health impacts to operators and maintainers of Army systems.

The HHA served as the point of contact of the Office of the Surgeon for the medical Deployable Medical Systems (DEPMEDS) and at numerous MANPRINT, HHA and System Safety working group meetings. He also served as the Executive Officer to the AMC Deputy Chief of Staff for Development, Engineering, and Acquisition, Major General Joe W. Rigby.

Medical Support to AMC

Medical and Dental Support Issues. The Command Surgeon participated as a subject matter expert for medical and dental support issues in the HQ AMC "Excellence in Action" conference. Out of a total of 37 issues in this area, 29 were addressed and consolidated into 5 issues for forwarding to HQDA. The Family Action Conference at the DA selected 2 of those 5 among the Army's 5 top issues.

Personnel Shortages. In a letter dated 7 February 1990 the Commander, U.S. Army Health Services Command (HSC), advised the Commanding General, AMC that the shortage of active duty general medical officers and physician assistants would continue to worsen throughout the fiscal year. By the end of FY90, 98 vacancies were projected for a shortfall of 27 percent. At the Army Medical Department Distribution Conference in January 1990, the Surgeon General expressed his intent to maintain the physician staffing of the medical clinics within AMC at the current level, and neither HSC nor PERSCOM contemplated a change in the agreed upon staffing levels. This meant that HSC would have to alleviate the shortage through some other method. HSC proposed hiring qualified physicians and physician assistants as DA civilians, or contracting out health care.[55]

Medical Support to AMC Personnel for Operation Desert Shield. The Office of the Chief of Occupational Medicine provided Travel Medicine support, both to command personnel deploying as part of Operation Desert Shield, and those performing TDY worldwide. To reduce the risk of disease, the Command Surgeon recommended immunizations and preventive medicine practices. The office also insured

[55]Letter, MG John E. Major, CG, Health Services Command to General William G. T. Tuttle, Jr., dtd 7 Feb 90. Copy available in AMC Historical Office.

backup support by reserve component physicians to the clinics at AMC installations, whose medical staff were deployed to SWA.

Preparation for Overseas Rotation (POR) for Civilians. In coordination with HQ HSC, the Occupational Medicine Office arranged for expeditious POR screening of all AMC employees being deployed for Operation Desert Shield. The office developed medical guidance screening civilian employees deploying to SWA as part of DESCOM forward. Based on AMC's experience and observations, that office forwarded a recommendation to the Office of the Joint Chiefs of Staff in November 1989 that the existing regulation for military POR, AR 612-2, be expanded to include civilian POR procedures. The proponent agency for the addition to the regulation was to be the U.S. Army Military Personnel Center.

According to the Command Surgeon, guidance had not been available for preparing civilians for overseas assignment in the theater of operations. Guidance designed for military personnel assumed that personnel routinely received field training and periodic records reviews. Since civilians did not, this meant that screening and preparation were complicated by the necessity to prepare individual medical histories, screening for disqualifying medical conditions, immunizations, supplies of prescription medications, optical inserts for protective masks and prescription eyewear, dental pantographs, and basic preventive medicine training. These were demands on home station clinics far beyond normal requirements, and in many instances the designated mobilization station had to complete those preparations not accomplished at the home station. As a result, there were delays, confusion, and repetitive processing.[56]

Routine Medical Support to HQ AMC Personnel. The Office of the Surgeon provided coordination and direct medical oversight for the Influenza Immunization program at HQ AMC in November 1989. One hundred and seventy military personnel and 246 civilian personnel were vaccinated. In addition, the office provided clinical medical support to the Civilian Employee Health Clinic and Command personnel.

Child Development Program Inspections. HQDA Community and Family Support advocates required follow-up Child Development Service Evaluations to validate subordinate command inspections, to assure effective, safe, and healthful provision of child development services. The AMC Environmental Quality Office provided medical augmentation to MACOM Child Care Evaluation Teams (MCCETs) for those inspections, as mandated under the Military Child Care Act of 1989. During the fiscal year, the MCCETs completed nine initial and pre-occupancy inspections. The team reported minor deficiencies at all sites. At one location the team recommended that the Food Service facilities be closed, because of serious health deficiencies.[57]

Surety Mission

Oversight and Management Support to the Surety Mission. During FY90, the Office of the Surgeon continued to provide oversight and management of medical support to Surety Management Reviews (SMR) and Chemical/Nuclear Surety Inspections (C/NSI) of AMC installations with chemical and nuclear missions. Physicians and Health Physicists from the Preventive Medicine Service of various supporting Medical Department Activities (MEDDACs) and Medical Centers (MEDCENs) participated in the SMRs. In

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[56]Draft FY90 Annual Historical Review submitted by AMCSG, dtd 18 Dec 90; Joint Universal Lessons Learned System (JULLS) Report, AMCOC-SG, "Preparation for Overseas Rotation (POR) for Civilians, Desert Shield," 14 Nov 90. Copy available in AMC Historical Office.

[57]HQ, AMC *Annual Historical Review, FY89*, p. 109; Draft FY90 Annual Historical Review submitted by AMCSG, dtd 18 Dec 90.

addition, physicians from the U.S. Army Environmental Hygiene Agency and the Office of the Surgeon General provided medical support to the CSIs. The Chief, Medical Physics, AMC, provided radiation health support to the NSIs. The Chief, Occupational Medicine, AMC, provided medical support when the aforementioned personnel were unavailable.

This shared responsibility for medical support to SMRs and C/NSIs at AMC had come about because the Office of the Surgeon lacked sufficient personnel to participate on both AMC Inspector General (AMCIG) and SMR visits. The Office of the Surgeon recognized that few medical officers were involved in surety operations, even though many military hospitals had contingency plans to support AMC installations in the event of an accident, and that all the clinics on AMC installations belonged to a larger Army hospital. He had therefore successfully proposed to the Office of the Surgeon General (OTSG) and HSC to have the previously mentioned physicians and health physicists from the MEDCENS and MEDDACs participate in the inspections.

As FY90 inspections continued to prove, this shared duty had several salutary effects: it forced the supporting MEDDAC/MEDCEN to become actively involved in the surety program at the clinic level; broadened the number of physicians with surety experience; and created a layering of responsibility at successively higher levels within HSC.[58]

Medical Support to the Surety Mission. The Chief, Occupational Medicine participated in SMRs and CSIs at three AMC installations. One SMR was held April 1990 at the U.S. Chemical Research, Development and Engineering Center at Aberdeen Proving Ground, Maryland, and another AMCIG CSI at Newport Army Ammunition Plant in Newport, Indiana, during July 1990. The third Department of the Army Inspector General (DAIG) CSI was performed at Johnston Island in September 1990, prior to the arrival of chemical munitions from Germany for demilitarization.

During these visits, the inspectors evaluated various aspects of medical support to the Surety program, including occupational health surveillance, medical training, health care provided during emergency exercises, medical records management, and external support to the installation from civilian and military medical activities. The Office of the Surgeon then served as liaison with HSC and contractors to correct medical deficiencies identified during each inspection.

The AMC Chief of Medical Physics participated in NSIs at three AMC installations: Aberdeen Proving Ground, November 1989; White Sands Missile Range, December 1989; and Seneca Army Depot, February 1990. During these inspections, the team evaluated various aspects of radiation health and safety support to the Surety program. These included nuclear safety; Personnel Reliability Program (PRP) screening; health physics standards and practices; handling, storage and disposal of hazardous material; casualty management; decontamination (personnel and area); survey and detection; Nuclear Accident and Incident Response and Assistance (NAIRA) activities; medical support; and radiation protection. The team found only minor deficiencies in these areas.

Occupational Medicine

On-Site Inspections of Industrial Operations. The Office of the Surgeon provided instruction to resident physicians in the specialties of Preventive Medicine (PM) and Occupational Medicine (OM) and accompanied the residents on visits to the sites of various industrial operations within the Command. The OM residents visited Radford Army Ammunition Plant in Virginia and Waterveliet Arsenal, New York in

[58]Ibid.

November of 1989. The PM residents visited Anniston Army Depot, Tooele Army Depot, and Rock Island Arsenal in December of 1989.

New Heat Stress Recommendations for AMC Employees. At the Prevention and Treatment of Heat Injuries Working Symposium on 24-27 April 1990, AMCSG presented data gathered at Rock Island Arsenal's foundry by health clinic industrial hygienists. As a direct result of this presentation, the OTSG agreed to exempt AMC employees working in CONUS industrial operations from compliance with a proposed technical bulletin on heat stress. Instead, AMC was to use the American Conference of Governmental Hygienists recommendations, which allowed for productivity even during very hot environments, provided that the production process was medically supervised. The proposed medical guidance in the technical bulletin had called for cessation of all work activity under certain conditions. However, this would have been an unrealistic action in a CONUS industrial environment.

Rotations in Occupational Medicine. The Chief, Occupational Medicine noted that practical rotations in Occupational Medicine were developed for Occupational Medicine resident physicians at the Uniformed Services University of the Health Sciences (USUHS). USUHS offered one month rotations in either general Occupational Medicine or Chemical and Nuclear Surety.

Industrial Hygiene

Chemical Agent Resistant Coating (CARC) Cost Avoidance. The AMC Industrial Hygienist held meetings on 13-14 June 1990 with representatives from the Raytheon Company, the Patriot Project, MICOM, Anniston Army Depot, AEHA and AMCSG to discuss and review CARC paint specifications including safety, health and environmental issues. Raytheon had requested additional funding for past expenditures on improvements to spray-painting facilities and acquisitions of new painting and safety equipment. AMC representatives refuted Raytheon Company's data by reviewing AMC's CARC experience and explaining the environmental and occupational health ramifications, and resolving administrative misunderstandings. Patriot Project management indicated that occupational health issues would be resolved with only a small funding adjustment.

Environmentally Acceptable Materials Treatment Program (EAMTP). In support of EAMTP, the Office of the Surgeon asked twelve companies for a description of the surface treatment which they advocated, together with required engineering controls, administrative practices, protective clothing and equipment to comply with current OSHA and EPA regulations and pertinent material safety data sheets. Seven companies responded. The resulting data was reviewed and evaluated with comments forwarded to the EAMTP project manager.

Pest Management Materiel Readiness

Army War Reserve Pesticides. Army War Reserve Pesticides were being issued by DLA to the Navy and Air Force in support of Operation Desert Shield. Because this could create a shortage for the Army this issue was taken to OTSG and the Armed Forces Pest Management Board (AFPMB). The Office of the Surgeon reported that as of the end of the fiscal year, DLA was in the process of determining Navy and Air Force requirements, at the request of the AFPMB. DLA was also determining the condition, requirements and storage of war reserve pesticides, and initiating corrective actions. The Office of the Surgeon anticipated that Army War Reserve Pesticides management would be transferred to DLA during the next fiscal year.

Medical Recommendations on New Aerosol Generator. The Office of the Surgeon provided input to The Surgeon General's Working Group on Pest Management Materiels and Operations concerning the

Medical Research and Development Command's development of a light weight electric aerosol generator. AMCSG provided specific recommendations to the material developer on operational requirements for the generator.

Service Response Force Exercise

At the request of the Surety Field Activity, the Chief of Occupational Medicine provided medical support for the 1990 Service Response Force Exercise (SRFX-90), as it had the previous year. Medical controllers and players for the exercise were selected with the cooperation and assistance of HSC and OTSG. The Office of the Surgeon provided one health physicist as controller from 6-15 June 1990.

Inspector General and AMC Inspector General Activity

Mission, Manpower, and Personnel

The mission of the AMC Inspector General (IG) and AMC Inspector General Activity was to inquire into and report on matters that pertained to the performance of mission and the state of discipline, efficiency, and economy within AMC; coordinate inspector general activities throughout AMC; and perform such other duties as are required by law and regulation, or as directed by the Commanding General. The AMC Inspector General was dual-hatted: he served as the Inspector General on the headquarters AMC staff and as the Chief of the AMC IG Activity which was a separate reporting activity.

Our actual authorizations did not change in FY90 and continued to consist of 52 civilian and 24 military spaces. However, a number of plans were developed in FY90 as a result of HQDA realignment initiatives regarding downsizing that impacted the AMC IG and the AMC IG Activity. The Defense Management Review (DMR) resulted in a hiring freeze beginning in January 1990 and continuing for the remainder of the fiscal year. The DMR resulted in the loss of one civilian authorization for the Office of the IG (GS-8, IG's secretary) on the HQ TDA (UIC X2WOGWAA) and the identification of five additional authorizations (two GS-13s, a GS-12, a GS-6 and a GS-5) on the AMC IG Activity's TDA (UIC X3W2GJAA) to be lost as of 6 October 1990. Two of those five spaces were encumbered. One employee was released under the Reduction in Force and the other was retained due to retirement of another employee within the Activity.

The ODP Elimination/Commander's Brigade Give-Up resulted in the identification of five military authorizations to be deleted from the AMC IG Activity TDA as follows: three O3 spaces in FY91 (not supported by ODP); one E7 space in FY91 and one O3 space in FY93 (ODP supported). To offset these losses, authorization and funding for one GS-13 was requested, but has not yet been authorized.

The Project Vanguard initiative resulted in the identification of 18 more authorizations--7 military and 11 civilian--for gradual reduction over the Program Objective Memorandum cycle (FY 92-97). This plan was approved and will be implemented unless it is subsequently changed at the DA level. In addition, the Project Vanguard recommendation to move all AMC IG Activity authorizations from the derivative Unit Identification Code (UIC) to the HQ AMC TDA Army Management Headquarters Account (AMHA) was projected to be implemented in FY97.

In summary, the impact of the above initiatives would be the downsizing of the AMC IG Activity's authorizations from the FY90 baseline of 76 (52 civilians and 24 military) down to 46 (34 civilians and 12 military) in FY97, for a net 40 percent reduction. These realignments will curtail mission functions.

The key personnel in the Office and Activity were:

Inspector General
Colonel James L. Tierney

Chief, Policy, Followup & Analysis Division
Mr. Lewis J. Leithauser, GM-15 (Oct-Dec 89)
Ms. Billie M. Labhart, GM-15 (Jan-Sep 90)

Chief, Investigations Division
Colonel Dennis E. Welch

Chief, Inspections Division
Colonel Alfred J. Theriault (Oct 89-Apr 90)
Mr. Norman S. Klein, Acting Ch (May-Sep 90)

Chief, Technical Inspections Division
Colonel Herman H. Jones

Investigations/Assistance

Assistance and Soldier Support Program. The purpose of the Assistance Program was to help field commanders, their soldiers, and their civilian employees. Once again, commanders from organizations ranging in size from detachments to MSCs have expressed appreciation for the candid feedback provided to them during FY90. Initiated in FY87 and augmented with the Soldier Support Team in FY88, the Assistance Program provided AMC personnel and their families the opportunity to express their opinions and suggestions on a broad range of Army/AMC policies and programs. The Soldier Support portion of the Assistance program reviewed how administrative, training and personnel offices managed under established regulations and directive procedures.

The Soldier Support Team also reviewed support provided to soldiers in the areas of medical, CHAMPUS, dental and community service programs. Feedback was then given to the commanders, allowing them to affect positive outcomes to actual and perceived organizational challenges. The program's guarantee of non-attribution and non-retribution fostered meaningful dialogue and honest input. Similarly, the program's policy of leaving issues at the lowest appropriate level and not requiring formal replies, reduced the perception among commanders that the program was a threat to their operations. To date the AMC IG Assistance and Soldier Support Program had visited 146 organizations/activities at 97 locations, totaling 98,921 soldiers, civilians and their family members.

IG Trends and Hints. FY90 was a relatively normal year with regard to Inspector General Action Requests. Trends remained virtually unchanged in comparison to FY89, with 49 percent of cases in the assistance category and 51 percent of the cases classified as allegations. The functional case categories at the top of the complaints chart were: Civilian Personnel Management (26 percent), Personal Conduct (12 percent), Finance and Accounting (10 percent), Military Personnel Management (10 percent), and Acquisition (9 percent). In order to take advantage of lessons learned from various cases, we developed the concept of "IG HINTS." We took actual cases and generically published the circumstances of wrongdoing or violations of regulations in the HQ AMC Weekly Bulletin. The idea was to provide our employees with a form of preventative training to assist them in avoiding the same mistakes others have made.

Planning and Analysis

The AMC IG Plans, Analysis and Followup Branch completed its analysis of systemic issue candidates for FY91/92. The following issues were recommended to, and approved by, the CG, AMC:

a. Managing Civilians to Budget (MCB);

b. Impact of Defense Management Review Decisions on Training Resources;

c. AMC Career Intern Programs;

d. Materiel Returns Process;

e. Management of Research Grants Program;

f. AMC Policy Compliance Review (PCR) Program;

g. Army Ideas for Excellence Program within AMC;

h. Aviation Depot Maintenance Roundout Unit (ADMRU) Program.

These issues were developed using a new planning and analysis methodology which will be further refined in FY91.

Inspections

The AMC Inspector General Activity conducted 18 inspections throughout AMC during FY90. They fell into three categories: (1) systemic issue inspections; (2) procurement inspections of a compliance nature; and (3) surety technical inspections.

Systemic Inspections. Four systemic issue inspections were conducted covering the following issues: Packaging, Handling & Storage Program; AMC Quick Buy Program; Depot Maintenance Work Requirements; and Corrosion Prevention and Control Program. The following significant weaknesses were identified:

Packaging, Handling & Storage Program. There were inadequate controls over the Cluster Depot Concept and dormant stock was occupying critically needed storage space.

AMC Quick Buy Program. The program had been established for local procurement of commercially available repair parts/consumables. It was determined that the program was no longer needed and it was subsequently cancelled.

Depot Maintenance Work Requirements. As no critical disconnects were found, the inspection was terminated early.

Corrosion Prevention and Control Program. The program had inadequate resources, management emphasis and guidance. In addition, base closure will cause loss of management/oversight of training for nondestructive testing.

Procurement Inspections. Ten procurement inspections were conducted covering the areas of procurement management, acquisition planning, contract pricing, acquisition of information resources, task

order contracting, acquisition of services, Competition in Contracting Act of 1984, small purchases and small business program, interservice support agreements, nonappropriated fund contracting as well as other topics relevant to ensuring that AMC procurement offices were complying with applicable regulatory requirements.

Although procurement activities in general were providing quality acquisition services and maintaining a commendable level of excellence, some areas were found where deficiencies were identified. Following are some of those areas: splitting or reducing requirements to avoid the small purchase dollar limitation; improper documentation of price negotiation memoranda; making appropriated and nonappropriated fund purchases not in accordance with contracting policies; justification and approval documentation required improvement; a need for more complete documentation of the business clearance memoranda; deficiencies in evaluation procedures for information resources acquisitions; and independent government estimates not utilizing proper estimating techniques.

Surety Technical Inspections. There were four types of surety technical inspections: Nuclear Weapons Technical Inspections (NWTIs), Chemical Surety Inspections (CSIs), Limited Scope Surety Inspections (LSSIs), and Reactor Facility Inspections (RFIs). There were 16 technical inspections conducted at 13 AMC activities in FY90. Deficiencies resulting in failure were in the areas of security, external support, safety, and operational inspection.

Followups to Inspections

Eight on-site followups to inspections were conducted during FY90. They included initial followups on Aviation Depot Maintenance Roundout Units; Technical Data Management; Test, Measurement and Diagnostic Equipment; and Automatic Data Processing Equipment and Software. They also included second followups on the Army Oil Analysis Program; Integrated Logistics Support After Fielding (Interim Contractor Support); and Configuration Management. A third followup was conducted on the AMC Schools Program. Followups were an important and effective means of determining whether cited deficiencies had been corrected.

Policy Compliance Reviews

In accordance with AMCR 11-45, Policy Compliance Reviews were conducted at AVSCOM, TROSCOM, CECOM, MICOM, TACOM and TECOM to determine if their IG offices were performing their missions in accordance with applicable regulations. They were all performing in a satisfactory manner.

CG's Monthly Inspection Update

A monthly update for the CG was begun which reported on the status of upcoming, ongoing and completed AMC, Department of the Army Inspector General and Department of Defense Inspector General inspections. It was also provided to HQ AMC primary staff elements and MSC IGs.

IG Support to PMs/PEOs

A Memorandum of Understanding was drafted in March 1990 by the Secretary of the Army IG (SAIG) in an attempt to establish policy and provide procedures for the Inspector General role in the materiel acquisition process. The SAIG and the AAE have gone through several iterations toward resolving differences concerning the level of involvement by MACOM and MSC IGs in the Program Executive Officer/Project Manager (PEO/PM) structure. The matter was still being addressed between the SAIG and ASA(RDA). In the interim, the provisions of AR 20-1 still applied.

Redundant Audits and Inspections

The AMC IG was tasked by the CG to collect data for a 90-day test period to ascertain the number of manhours expended by AMC elements in support of external oversight efforts. Information was collected through both IG and Independent Review Audit Compliance (IRAC) channels. The conclusions of the study were that the time spent in response to external oversight activities resulted in a significant loss of productivity and that the dollars expended had to be absorbed as overhead. It was also found that the problem was not so much duplication, as was often stated, but rather a review of different issues and problems in the same functional area. The AMC IG was working closely with all oversight agencies to improve coordination and share inspection/audit information.

Training

The AMC IG conducted the annual Acting Inspector General (AIG) Course on 22-23 May 1990 at HQ AMC. Eleven AIGs and one IG administrative employee attended. Course instruction consisted of practical exercises and lectures. AMC guest speakers represented Management Employee Relations, the Office of Equal Employment Opportunity and the Command Counsel. Instruction was also presented by the Department of the Army Inspector General Legal Office.

The biannual "IG Tips" was published, featuring items of command-wide interest, such as problem areas revealed during inspections, practical tips, scheduled IG events, and other informational articles. Quarterly video conferences with all MSC IGs were conducted. Forty-one staff members received formal training in management courses related to their positions, and two attended the DAIG Course.

Automation

The Intel microprocessor systems were enhanced by the purchase of Lyrix 5.0 software for improved word processing. Personal computer capability was also enhanced by the purchase of Harvard Graphics upgrade kits for more efficient graphics development. One Zenith laptop computer with operating software was purchased for the specific use of the Technical Inspections Division.

The IG Network (IGNET) system was upgraded to include installation of a PC emulator board to permit use of MS-DOS programs, Art Designer for graphics capability and Solution Designer for additional spreadsheet capability. Two additional work stations, one laser printer and two dot matrix/letter quality printers were also acquired.

Internal Review and Audit Compliance

Mission and Organization

The Internal Review and Audit Compliance (IRAC) Office was a separate organization reporting directly to the Chief of Staff. This office was responsible for providing staff supervision over internal review activities within AMC as well as the audits of nonappropriated fund activities. The office also analyzed and evaluated external audit reports issued by the GAO and other organizations, to point out any major AMC-wide deficiencies and adverse trends. The office developed and recommended policies, developed and issued

procedures governing AMC actions related to audit and review by audit organizations external to AMC, and supervised corrective action followup programs.[59]

In March 1990, the AMC Commander met with senior GAO officials to discuss external audit coverage and issues of command concern, including items of high interest to Congressional committees. In his initial meeting with GAO as AMC Commander, General Tuttle talked with the auditors about the Army's management of unserviceable secondary spare parts, Apache Supportability, and Area Oriented Depots. He also told GAO of command concerns with duplication of effort among audit agencies.

During FY90, IRAC performed internal reviews which dealt with MCB, BMAR, unliquidated obligations, material internal control weaknesses, and the Installation Morale, Welfare and Recreation Fund. Significant external audits dealt with the Apache Helicopter, Defense Management Report Decisions, consolidated maintenance facility, and the TOW missile system. The office issued followup reports on several external audit reports and provided status information to DAIG on unimplemented recommendations. IRAC provided the AMC Commander with audit related information via the AMC Audit Update. Using the Audit Alert Network, IRAC informed AMC activities of problems which could exist at their activity. AMC's semiannual reports to Congress and the semiannual followup status reports identified audit related achievements. The office also disseminated guidelines on implementing GAO's continuing education requirements.[60]

During FY90, the office's authorized strength was 10 spaces, as had been true the previous year. Actual strength decreased from 10 to 9 personnel, however. Mr. Leonard Maguire continued to serve as the Office Chief.

Internal Reviews

Managing Civilians to Budget. In conjunction with HQDA instructions on implementing MCB, IRAC assumed primary responsibility for monitoring MCB program evaluation throughout AMC. In January 1990, IRAC developed and provided an MCB Evaluation Guide to all AMC activities. The guide identified the minimum essential controls for implementing MCB and was a useful tool for managers and auditors to evaluate progress and effectiveness of initial implementation efforts. As the auditors pointed out in the guide, documentation and controls were needed to ensure that the program resulted in a better structured, effective and productive work force.

During FY90, IRAC received initial evaluation reports on the implementation and management of MCB from DESCOM, TECOM, TROSCOM, USASAC, and Watervliet Arsenal. IRAC provided the Command Group and HQDA a summary of the review results in May 1990. Its evaluations indicated activities were effectively implementing and managing the MCB program in accordance with the HQDA Letter of Instruction and were in compliance with the spirit of MCB. IRAC raised general concerns, however, regarding the strict hiring freeze, restricted overtime and awards, and severe civilian personnel ceilings, as well as budget cuts. IRAC reported that common feelings among managers were that the MCB program could not work successfully in a restricted environment. Under the conditions then prevailing, i.e.,

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[59]HQ AMC, *AMC Organizations and Functions*, 15 Oct 85, AMC-R 10-2, pp. 7-6 to 7-7.

[60]The remainder of this section is based on a draft annual historical report prepared by IRAC and submitted to AMCHO 18 Dec 90. Additional sources are as noted in subsequent footnotes.

constantly declining resources and major changes regarding closure and reorganization, the managers felt that they would be unable to take full advantage of potential program benefits.[61]

Audit of Backlog of Maintenance and Repair. IRAC issued an audit report, dated 24 July 1990, which provided the results of evaluating the BMAR process at a number of AMC locations. The audit was performed because of Command Group concern with the credibility of BMAR reported to HQDA. Its overall objective had been to evaluate the BMAR process within AMC. Specific objectives had included the evaluation of specificity and consistency of guidance, adequacy of reporting procedures, adequacy of BMAR determination, validity of BMAR requirements, adequacy of AMC's oversight role, adequacy of selected management aspects, and implementation of the Army's Internal Control Program. The audit was scheduled and performed at 12 activities and was completed in FY90. It showed that improvements were needed in the BMAR process. IRAC discussed those conditions which could be addressed at HQ AMC, which included guidance, reporting procedures, BMAR determination, validity of requirements, AMC's oversight role, and implementation of the Army's Internal Control Program.[62]

Assistance in Review of Unliquidated Obligations. During April and May 1990, IRAC personnel assisted in a review of unliquidated FY 88 and 89 OMA obligations. Their purpose was to assist in identifying potentially available funds to help HQDA fund a critical Army shortfall in the Foreign Currency Fluctuation Account. IRAC offices participating in the review included HQ AMC and all MSCs except LABCOM and USASAC. The auditors noted that for most MSCs, efforts to review unliquidated obligations were generally adequate.

The summary report discussed reasons why funds were not turned in, which included additional funding requirements which had to be met before any excess could be turned in. Others were awaiting final audit by DCAA. In one instance, an MSC was holding $500,000 pending a DCAA audit, and indicated that the funds would not be turned in unless there was a written guarantee that any future needs would be covered by HQDA. In a few cases, programs or orders appeared to be questionable, or funds had been identified for de-obligation, but the necessary action had not then been initiated by the MSC.[63]

Material Internal Control Weaknesses. During FY90, as in previous years, the IRAC office performed an audit to verify actions taken to correct material weaknesses shown in the prior year's AMC Annual Assurance Statement on Internal Controls to the Secretary of the Army. The Assurance Statement contained over 30 material internal control weaknesses. Of these, IRAC selected 16 for review because corrective actions had been reported as complete. Nine Deputy Chiefs of Staff or separate offices provided information and documentation, and IRAC then issued individual reports to each DCS or separate office. IRAC also provided a summary report to the AMC Internal Control Administrator. IRAC found, however, that adequate corrective action had been completed for only nine of the 16 weaknesses. For these nine, IRAC recommended elimination from the annual assurance statement. Further efforts were needed to

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[61]AMC Point Paper, Mr. David A. Hodge, AMCIR-I, subj: Managing the Civilian Work Force to Budget (MCB) Evaluation Results, 14 May 90; AMCIR, "Managing the Civilian Workforce to Budget (MCB) Evaluation Guide," dtd Jan 1990. Copies of both are retained in AMCHO archives.

[62]HQ AMC, IRAC, Internal Review Report No. 3-90, "Multilocation Audit of Backlog of Maintenance and Repair," dated 24 Jul 90, p. i. Copy retained in AMCHO Archives. See also, HQ, AMC, *Annual Historical Review, FY89*, p. 145.

[63]Memo for DCS for Resource Management, AMC, from Mr. Leonard H. MaGuire, Chief, IRAC Office, subj: Internal Review Assistance in Review of Unliquidated Obligations, dtd 5 Jun 90.

correct the remaining seven weaknesses, which the office believed should be reported as "open" on the annual statement. The 16 recommendations in these two categories are shown in the table below.[64]

TABLE II - 8: Weaknesses Recommended to be Reported as Open on AMC's Annual Assurance Statment

Item Number	Reporting Title
AMC 86-026	Item Identification
AMC 86-027	Weapon Systems Action Plan
AMC 87-002	Physical Fitness and Training of Security Guards Inadequate to Ensure Protection of Personnel, Materiel, Equipment, and Facilities
AMC 87-004	Comprehensive Personnel management Information System
AMC 87-013	Support for Tactical Software
AMC 88-010	Management Oversight and Support of AMC Contract Administration Offices
AMC 89-001	Excessive Research, Development, Test and Evaluation, Army Unfilled Customer Orders
AMC 89-003	Mechanism for Environmental Funding
AMC 89-011	Contract Termination Process Needs Improvement
AMC 87-006	Production Control Policies and Procedures
AMC 88-009	Integration of Design for Productibility with Functional Design
AMC 89-002	Identification of Export Sales/Recoupment of Nonrecurring Costs
AMC 89-005	Industrial Preparedness Operations
AMC 89-006	Tracking/Calculation of Administrative Lead Time
AMC 89-007	Potential Loss of Money Due the U.S. Government from Noncollection of Nonrecurring Costs
AMC 89-008	Accounting for Foreign Military Sales Customer's Cash

Installation Morale, Welfare and Recreation Fund (IMWRF). At the request of the Director, Internal Review, Assistant Secretary of the Army (Financial Management) [ASA(FM)], audit work was performed to determine if management checklists included in Army Audit Agency IMWRF advisory reports had been effectively applied. Work was performed by IRAC Office personnel at all single fund activities within AMC. IRAC also evaluated HQ AMC's oversight role. The principal objective was to determine if single fund managers were using the advisory reports and checklists.

The auditors found that improved management and operations, which were supposed to result for using advisory reporting techniques, were not being realized. This was caused by delays in making revisions to AR 36-5 and AR 36-75 to incorporate the IMWRF functional audit concept into formal guidance. The final audit report discussed concerns and conditions regarding distribution and receipt of the advisory

[64]AMC IRAC, Report No. 19-90, "Audit Followup on Material Internal Control Weaknesses," dtd 10 Oct 90.

reports, application of checklists by IMWRF personnel, formalization of the IMWRF functional audit concept, and the realization of benefits.[65]

Additional Internal Reviews. Additional reviews performed during the period included: a review of the consolidation of AMC allottee reports into the AMC Integrated Command Accounting and Reporting report at Systems Integration and Management Activity (SIMA), Tobyhanna Army Depot; development of an IMWRF Auditable Entity File; and various assistance reviews associated with Special Access Programs.

Reports on External Audits

Defense Management Report Decisions. The U.S. Army Audit Agency issued several audit reports on AMC's management plans to achieve savings projected in DMRD. The reports showed adequate management planning and tracking to achieve efficiencies and savings projected in the various DMRDs. For example, DMRD 927B required DA to streamline AMC, with a focus on streamlining acquisition management functions and eliminating unnecessary management functions. The proposed savings for the period of FY91 through FY95 total $500 billion. DMRD 927A required DA to streamline HQ AMC, with projected savings totalling $48.5 million for the period FY91 through FY95.

Apache Helicopter. During FY90, GAO issued an audit report critical of the Army AH-64 Apache Helicopter. They reported that during 1989 the 11 active combat Apache battalions achieved only a 49 percent fully capable rate and a 37 percent non-mission capable rate. In addition, fully mission capable rates decreased as units aged and accumulated flight hours. CBS's 60 Minutes also reported on the helicopter system. DOD disagreed with GAO's conclusions, because the GAO report did not contain current data.

Consolidated Maintenance Facility. The U.S. Army Audit Agency issued a time sensitive report on the construction of the consolidated maintenance facility at Tooele Army Depot. The auditors reported that the command was building an over-sized facility which would not be used at acceptable capacity levels. AMC disagreed with the auditors, and HQDA sustained AMC's position.

TOW Missile System. The DODIG issued a report on the acquisition of the TOW Missile System. The auditors determined technical data packages for the TOW were not adequate to provide for efficient procurement of repair parts and the Project Office did not pursue component breakout procurement strategies for some TOW components.

Reports on External Audit Followups

Relations with USAAA. The AMC Commander met with Mr. Harold Stugart, the Army Auditor General, in May 1990. The purpose was to discuss audit coverage of the command and foster good command relations. Mr. Stugart explained how USAAA operates and their interface with Army organizations. He also discussed the Agency's involvement with the Defense Management Report Decisions. General Tuttle advised Mr. Stugart of his concerns on the audit of the Consolidated Maintenance Facility -

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[65]HQ AMC, IRAC, Internal Review Report No. 24-89, "Audit of U.S. Army Materiel Command Welfare Fund, 1 Oct 82 - 30 Sep 88," dtd 8 Mar 90; HQ AMC, IRAC, Internal Review Report No. 7-90, "Utilization of Installation, Morale, Welfare & Recreation Fund Advisory Report Management Checklists," dtd 20 Jul 90. See also, Memo for Cdr, U.S. Army Community and Family Support Center from L. H. MaGuire, Chief, AMCIR, subj: Development of an AMWRF Auditable Entity File, 11 Jul 90. Copies of all three reports are maintained in the AMCHO Archives.

Tooele Army Depot. The Commander, AMC also explained how he received audit related information and how the command used audit reports.

Followups to USAAA Reports. IRAC performed followup work and issued reports on implementation of recommendations contained in external audit reports addressed to HQ AMC. Followup reports were issued on USAAA reports dealing with: Administrative Budgeting and Pricing for Foreign Military Sales (FMS); Program Management of Position and Navigation Requirements; and the Duplicate Emergency Files Program. Other followup work was performed on audits involving Army Master Data File (AMDF) pricing of major items, acquisition and use of computer resources, and spare parts acquisition.

The report dealing with FMS was to evaluate policies and procedures for administrative budgeting and pricing for FMS, and specifically to evaluate administrative budgets and security assistance funds used to support the FMS workforce; price estimates for materiel and services sold to foreign customers, and implementation of the Army's Internal Control Program for security assistance. The followup report found that corrective action had been taken on all of the recommendations addressed to AMC, with the exception of "D-6." That recommendation had been to require that AMCCOM and TACOM adjust the contract administration cost clearing account for erroneous billings made in FY 85 and 86. However, the report also found that this action had not been taken because the files needed to compute the revised ratios were not available, and in any case would not result in a significant billing adjustment. This recommendation was then considered closed by IRAC.

The USAAA report dealing with Program Management of Position and Navigation Requirements was to determine if initiatives had been established to furnish effective management of the Army position and navigation program in determining requirements, avoiding duplication, and reducing proliferation. The report found that improvements were needed, and generated a number of findings and recommendations. Of those addressed to the AMC Commander, AMC had nonconcurred with three recommendations. HQDA had sustained the AMC position. Of the remainder, IRAC's followup report found that all of the recommendations had either been corrected or overtaken by events. As a result, IRAC reported that no additional followup was required.[66]

Office of the Inspector General, Department of the Army Request. At the request of DAIG, IRAC provided that office with information regarding the status of unimplemented Army Audit Agency recommendations addressed to AMC activities. Seven MSCs with open recommendations were required to respond. One recommendation, pertaining to contracts for program support of the APACHE helicopter, claimed $18 million in monetary benefits. The MSC said the contracts were fixed-price, level of effort contracts, not cost-type contracts. HQDA agreed with the position taken by the MSC, and as a result no monetary benefits were achieved and the recommendation was reported as closed.

Audit Update and Audit Alert Network Programs

Audit Update. IRAC provided the Audit Update at least monthly to the AMC Commander. The update discussed new audits beginning as well as findings and audit reports received. During FY90, over 250 articles were prepared and submitted in the Audit Update. One article in the Audit Update discussed a DODIG draft report on Spare Parts Breakout. The article prompted a number of questions regarding

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[66]HQ AMC, IRAC, Internal Review Report No. 4-90, "Followup Review of USAAA Audit of Administrative Budgeting and Pricing for Foreign Military Sales Report No. HQ 88-701," dtd Jul 90; HQ AMC, IRAC, Internal Review Report No. 20-90, "Followup Review of USAAA Audit of Program Management of Position and Navigation Requirements Report No. SW 87-203," dtd 3 Oct 90.

the process. Another article resulting in considerable attention involved a GAO final report entitled *ARMY LOGISTICS: Use of Long Supply Assets in Depot-Level Repair Programs Could Reduce Costs*. GAO said that the ICPs had not been screening their inventories to identify assets in long supply that could replace assets scheduled for repair.

Audit Alert Network (AAN). The AAN was used to inform AMC activities of problems which could exist at their activity. During FY90, the HQ AMC IRAC issued eight Audit Alerts. Seven activities reported that they experienced similar problems in a number of audit alert areas. For example, a large unfilled customer order balance was in the merged year Army Procurement Appropriation. This was due to a lack of well defined procedures and quarterly reviews. Duplicate payments for federal excise taxes were being made for diesel fuel used off-highway. Problems in time and material contracts included historical cost and performance data which were not used, a 5 percent labor charge not withheld, and a lack of effective surveillance procedures. Technical manuals were not updated for extended periods after engineering changes were approved. The publications division was not notified of approved changes, thereby causing delays in issuing manuals.[67]

Semi-Annual Report to Congress

Requirement for Semi-Annual Report. The IRAC Office reported to Congress on a semi-annual basis, under a requirement established by the Inspector General Act of 1978. As the office stated in its report for the period, 1 September 1989 - 28 February 1990, "We continue to emphasize the prevention and detection of fraud, waste, abuse, and mismanagement in addition to improving the economy, efficiency, and effectiveness of the U.S. Army Materiel Command (AMC) operations." In the pursuit of these objectives, IRAC reported that the command initiative, AAN, in use since 1985, continued to be highly rewarding.[68]

Yearly Summary of Operations. For the period 1 September 1989 through 31 August 1990, IRAC Offices operated at a cost of $10.8 million and issued 807 reports. The reports contained recommendations that might result in monetary benefits totalling about $29 million and other recommendations that would improve internal controls, efficiency, and the effectiveness of AMC operations. AMC also received 44 Army Audit Agency reports with $34 million in potential monetary benefits. AMC realized $44 million by closing 53 AAA reports from current and previous years.

Training Requirements

Continuing Education and Training (CET) Requirements. IRAC disseminated GAO tentative guidelines on implementing CET requirements contained in the Government Auditing Standards (Yellow Book). All auditors responsible for planning, directing, conducting, or reporting on government audits were required to complete at least 80 hours of CET every 2 years.

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[67]HQ AMC, Report 90-003, extract from Audit Alert Network (AAN) No. 89-001, Federal Excise Tax, dtd 8 Dec 89; HQ AMC, extract from Report 90-006; HQ AMC, extract from Report 90-007. Copies of all three are on file in the AMCHO Archives.

[68]Memo for Mr. Ernest J. Gregory, SAFM-ROR, from MG William B. McGrath, subj: Information Requirements for Semiannual Report to the Congress RCS-IG(SA) 1717, dtd 16 Mar 90; Memo for Mr. Ernest J. Gregory, SAFM-ROR, from MG William B. McGrath, subj: Information Requirements for Semiannual Report to the Congress RCS-IG(SA) 1717, dtd 20 Sep 90. Copies of both maintained in AMCHO Archives.

Training Vacancies. IRAC was responsible for allocating training spaces for Army Audit Agency courses, which are a principal source of audit-related training for IRAC personnel within AMC. During FY90, AMC IRAC offices had a requirement for 193 student spaces in Army Audit courses. Because of a limit on available spaces and restrictions on travel funds, only 35 of the 193 requirements were filled.

Command Counsel

The Office of the Command Counsel served as the legal advisor to the CG, AMC and to his staff. The office also served as the primary legal advisor to the MSCs, installations and field activities in the areas of law and patents. During FY90 the office lost 8 civilian positions to the Reduction in Force and hiring freeze. At the end of FY90 the office was authorized a total of 27 civilian and 5 military spaces.[69]

At the request of the CG, the office prepared for the Atlanta XVI conference a presentation on "Communicating with Industry." This dealt with AMC's response to the "Procurement Integrity Provisions" passed by Congress in 1988 in response to the Navy's "Ill Wind" scandal. It involved a five point program to enable AMC to continue its dialogue with industry while complying with the provisions of law.[70]

The CG also requested the preparation of the Evaluation of Contractor Past Performance Final Report. This was the evaluation of a program which had started in January 1988 as a pilot program in an effort "to develop an effective methodology for evaluating contractor past performance in the source selection process." This evaluation of the project stated:

> We believe the benefits of evaluating contractor past performance in the source selection process were clearly demonstrated in the pilot procurements, and those benefits warrant continuation of a program for conducting such evaluations in future selected procurements. The experience our MSCs gained and the lessons learned in the pilot program will enable them to successfully utilize the methodology in future procurements. We are confident that the AMC program will continue to provide an effective and efficient means of evaluating past performance in AMC procurements, particularly after implementation of the recommendations made by the Project team.

The eight recommendations included having the CG issue a policy statement on the program, revising current guidance to incorporate lessons learned, MSC training of personnel in the program's methodology, updating the database with all AMC contracts over $500,000, networking with other DOD components to share information on contracts, having project team members go to the MSCs to provide assistance in planning and executing the evaluations, playing an active role in related DOD and DLA programs in order to ensure interoperability, and assessing the methodology for use in high volume-low dollar procurements.[71]

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[69]Unless otherwise noted, the information in this section was taken from the Office of the Command Counsel historical submission for FY90. Specific cases and legal decisions made by the Office of the Command Counsel are not discussed in this AHR.

[70]The "Communicating With Industry" presentation is available as an enclosure to the Office of the Command Counsel historical submission in the AMC Archives.

[71]See the Final Report of the Evaluation of Contractor Past Performance Project enclosed with the Office of the Command Counsel historical submission for FY90.

The Office conducted its Annual Continuing Legal Education Program from 27 November to 1 December 1989 in St. Louis, Missouri. Over 180 attorneys from AMC, HQDA, and other organizations attended the program and it was deemed to be a complete success.

The Office also developed the 1990-1995 Strategic Plan for the AMC Legal System. The strategic objectives of the plan were to "project the mission, resources, and operational circumstances most likely to be encountered during the period 1990-1995" and to "identify appropriate 'anticipatory actions' to be taken that will prepare the AMC Legal System to successfully accomplish its support mission to AMC and the Army during the 1990-1995 timeframe."[72]

Public Affairs

Personnel

The Public Affairs Office personnel authorization was increased during the year with the addition of an enlisted position. One officer and 13 civilians remained on the TDA.[73] Three employees transferred to other organizations during the year: Mrs. Tansill R. Johnson, Marketing Branch Chief; Jose Morales, Public Affairs Specialist with the Community Relations Branch; and Mrs. Bernadene Williams, Secretary with the Media Relations Branch. None of the vacancies were filled. The enlisted position established on the TDA was filled by Sergeant Major Dale M. McInnis. Major Sherrel W. Mock, assigned as an overhire, continued to serve as the Public Affairs Executive Officer.

Congressional and Media Interest

Congressional and national information media interest focused on several issues during FY90, including Defense Management Review; Vision 2000; realignments and Reductions in Force at AMC Headquarters, subordinate installations and activities, as well as the environment.

During the latter part of the year, a lot of media activity centered around the preparation and shipment of equipment from subordinate installations and activities to Saudi Arabia in support of Operation Desert Shield. Information was either provided directly to media requesters by Headquarters Public Affairs staffers, or coordination was accomplished to enable subordinate Public Affairs offices to provide same.

Public Affairs personnel coordinated numerous requests and visits by reporters for interviews with AMC subject matter experts during the fiscal year, as well as assisting to arrange interviews with subject matter experts at major subordinate commands, installations and activities.

Support for the Association of the United States Army

Substantial support was provided to the Association of the United States Army (AUSA), including an exhibit at the AUSA Annual Meeting, 16 to 18 October 1989, and preparation of the weapons directory for the October (Green Book) issue of AUSA's *ARMY* Magazine.

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[72]See "The 1990-95 Strategic Plan for the AMC Legal System," enclosed in the Office of the Command Counsel historical submission for FY90.

[73]Unless otherwise noted, the information in this section came from the Public Affairs Office historical submission for FY90.

AMC Image

Marketing efforts continued to improve the AMC image in terms of the perception of the quality of materiel and the people responsible for its development and distribution. Several brochures and other products were developed, including a videotape which highlighted AMC's seven missions. Several videotapes were produced in which the Commanding General communicated with the workforce on various current issues. Several other video spots intended for release over Armed Forces Radio and Television Service were developed to convey the message that AMC cares about its ultimate customer, the soldier.

MSC Support

With respect to managing and monitoring the Public Affairs activities of the MSCs and installations subordinate to them, the Headquarters AMC Public Affairs Office held its annual Public Affairs Symposium, 30 October to 3 November 1989, at Virginia Beach, Virginia; and participated in the Service Response Force Exercise, at Seneca Army Depot, Seneca, New York, in June 1990, conducted by the AMC Surety Field Activity, Dover, New Jersey.

Special Assistant for Total Quality Management

Mission and Organization

The mission of the office was to develop a set of guiding principles for improving AMC on a continuing basis. This included not only identifying the necessary tools, but also increasing management awareness, involving senior level management at both the headquarters and major subordinate commands. TQM applied quantitative methods and human resources to improve both material and services within AMC.

As part of the Department of Defense TQM effort, AMC embarked on a participatory TQM leadership initiative that was process oriented, and driven by the need to achieve customer satisfaction. AMC established a number of Quality Management Boards (QMBs) and chartered eight cross functional Process Action Teams (PATs). The TQM Office expanded, gaining a Quality Management Assessment specialist who transferred in from the Office of the Deputy Chief of Staff for Personnel in June 1990. This brought the total number of personnel within the office to 5. Under the proposed Table of Distribution and Allowances for FY91, a Program Management specialist was to be added later.

TQM Accomplishments in Operation Desert Shield/Desert Storm

As a result of the implementation of TQM in AMC's major subordinate commands, the MSCs became more focused on the customer. The success of this implementation was illustrated by MSC activities and accomplishments during Operation Desert Shield. For example, the problems involved in producing potable water in Saudi Arabia were handled via a TQM process. The contractor had not been producing a high volume, there was a lack of trust between the government and industry team members, and the Reverse Osmosis Water Purification Units (ROWPUs) were being built by hand. Through the TQM process, trust was established, production engineers were stationed at Fort Belvoir and TROSCOM to facilitate producibility and design issues, and all ROWPU operations personnel were trained in Process Action Team seminars. Common goals were achieved in a more timely manner through TQM.

TQM Training

During FY90, The TQM Office continued to develop a training strategy and conduct in-house training. AMC's approach to TQM was institutionalized in the curriculum at the Army Logistics Management College and the Army Management Engineering College. MSCs were encouraged to implement their own training programs as well as utilizing the college.

CECOM established a TQM university with three colleges. Each college concentrated on an area or discipline necessary to the mastery of TQM as practiced at CECOM. The concept of constructing a local "university" with colleges yielded benefits to the CECOM workforce in several ways. First, it offered the employee a variety of classes and workshops at various times which allowed flexibility to plan training consistent with both management and employee goals. Second, it formalized and professionalized TQM training. Third, it reduced costs by eliminating contractor fees, since training was designed in-house, eliminating TDY expenses. Fourth, the training was tailored to CECOM's unique environment.

AVSCOM completed a Train-the-Trainer (T3) course book (first edition), graduated 200 T3s, trained 140 senior level and mid-level managers, and published the Continuous Improvement Guidebook. The latter was a Standard Operating Procedure (SOP) for completing continuous improvement projects.

TQM Self Assessment Guide

The TQM Self Assessment Guide was presented for discussion during the AMC Commanders' Conference, TQM Executive Steering Committee Meeting. The Guide was intended to be a tool for commanders to use in assessing actual progress toward institutionalizing the philosophy and practices of TQM within their respective organizations. When conducted with an open, honest attitude, it will highlight the strengths and weaknesses in TQM implementation at a particular point in time. After discussion, the guidebook was accepted as beneficial. It was stressed that the Self Assessment was to help bridge the gap between where we are and where we want to be, and was not to be used as a "report card."

AMC TQM Brochure

By the end of FY90, the AMC TQM Brochure was completed and ready for distribution. This brochure was not intended to be a training tool but rather a public statement of General Tuttle's vision for AMC, its mission challenge, and how AMC planned to utilize the tools of TQM in the accomplishment of that mission. The stage was set for measuring its processes, bringing them under statistical control, and improving them.

TQM Definitions

In their 14 August 1991 meeting, the AMC Executive Steering Committee adopted a set of 17 common TQM terms and definitions. General Tuttle later distributed the list to all offices, to ensure that the AMC staff would use these terms and definitions in their daily business practices. As he stated:

> We must be open and responsive to new ideas and improvements from all sources as we proceed on our journey to continuous process improvement and increased customer satisfaction. This listing of terms and definitions can be no exception.

To provide a common point of reference for future AMC Historical Reviews, a list of the 17 terms and definitions follows.

Benchmarking - A tool or process for achieving superior performance through the continuous measurement and comparison of operating practices and philosophies in companies or organizations recognized as "best in class." Used to identify and incorporate the best practices in order to continually improve and to surpass the "best in class" performer.

Culture - A prevailing pattern of activities, interactions, norms, sentiments, beliefs, attitudes, values, behaviors, and products that are present in an organization's business environment, measured as organizational climate and reflected by a written philosophy.

Customer - The recipient of the outputs of your work efforts or the purchaser of your products and services. May be either internal or external to the organization. The recipient determines quality of product and service.

Facilitator - Specially trained consultant who possesses expertise in structured and unstructured group problem solving, group dynamics, TQM principles, tools and techniques, and concepts. Available to assist and guide group process action teams (PATs) and organizations.

Goal - End state to which effort is directed. It is expressed as a state of being or in terms of attainment or achievement.

Horizonal Integration - The inclusion of cross functional or multi-functional elements into an activity, process, team or organization, in order to achieve continuous improvement as an output of the total organization.

Objective - A statement of the desired specific, observable, measurable, and verifiable end result to be achieved within a specified time. By definition, it always has an associated schedule and quality level.

Process - A group of usually sequential, logically related tasks involving people, machines and equipment, materials, methods, and environment, that use organizational resources to add value and provide a product or a service to internal and/or external customers/users. It has an identifiable beginning and an end, with specific inputs, outputs, and customers. A process may be a repeated activity consisting of a collection of subprocesses that can be measured to show process stability.

Process Action Team (PAT) - A leadership-driven, management supported group composed of subject matter experts which include the process owner. Experts come from all areas of the process, and are appropriately trained to work on any process in order to improve it. They operate with a charter and receive direction from management to work on a defined process, applying quality management tools and techniques to analyze, measure, and display their data. The goal of the team is to flow chart, measure, and communicate the process improvement to those involved in implementing, and to continuously improve the process in order to increase customer satisfaction and reduce waste.

Process Owner - Person within the process, designated by the organization leader(s), who has authority to manage the process improvement across functional and organization boundaries, allocate resources, document process flow from input to output, implement change, provide information and training, identify and continuously measure process performance and customer satisfaction, resolve issues and is responsible for overall process results/performance, and communicates same. Process ownership is a permanent responsibility.

Product - An output from a process or work effort that goes to a customer.

Quality - Conformance to a set of customer requirements that, if met, result in a product or service that is fit for its intended use and satisfies the customer. Quality is defined by the customer.

Supplier - An individual, organization or firm who provides input to the process. A supplier can be internal or external to a company, group or organization.

System - A complex set or cluster of interdependent processes required to produce a definable and measurable output. It has a discrete beginning and ending, can be measured to show system stability, and involves external suppliers and customers. It focuses on the whole, with emphasis on interrelationships and the interaction of the processes. Improvement of the system is achieved through the improvements of interactions between processes.

Total Quality Management (TQM) - TQM is both a philosophy and a set of guiding principles that represent the foundation of a continuously improving organization. It is the application of quantitative methods and human resources to improve the material and services supplied to an organization, all the processes within an organization, and the degree to which the needs of the customer are met, now and in the future. TQM integrates fundamental management techniques, existing improvement efforts, and technical tools under a disciplined approach focused on continuous improvement. (Source: DOD)

Trainer/Facilitator - An individual within an organization who delivers training to the organization at large. This individual would have skill and experience in group processes facilitation, training, application of TQM tools and techniques for problem solving, TQM implementation, strategic and business planning, and visioning.

Vision - A picture of a desired organizational future state of being. It sets the stage for building a strategic and business plan.

Chapter III

Materiel Acquisition

Deputy Chief of Staff for Development, Engineering and Acquisition

Organization

Effective 1 October 1989, the Office of the Deputy Chief of Staff for Development, Engineering and Acquisition (AMCDE) TDA authorization was 35 military and 225 civilians, for a total of 260 positions. Effective 30 September 1990, the TDA authorization increased to 38 military and 227 civilians for a total of 265 positions.[1]

The detailed changes throughout FY90 were as follows: an increase of five civilian positions was effective 1 October 1989 with the establishment of the Electromagnetic Environmental Effects (EEE) Branch in the Acquisition Integration and Analysis Division. The mission of this branch was to provide oversight of all EEE related activities within AMC. Its five positions included one GM-15 Supervisory Electronics Engineer, two GS-14 Electronics Engineers, one GS-13 Program Analyst and one GS-6 Secretary. Mr. Joseph A. Kreck was the Branch Chief.

An internal realignment disestablished the Armor/Anti-Armor Branch in the Acquisition Integration and Analysis Division and established the Materiel Change Management Branch effective 1 January 1990. The Armor/Anti-Armor function with one space and its assigned employee were transferred to the Missiles and Weapons Division, Close Combat Heavy Branch. The remaining five spaces and incumbents, four civilians and one military, were reassigned within the division. The Materiel Change Management Branch was established with four positions and later increased by two positions. This branch served as the Executive Agent for Materiel Change Management for the Army, with Mr. Stephen O. Richey, Jr. serving as Branch Chief.

The CG AMC directed the transfer of the Special Projects Office Armored Family of Vehicles Integration Group to AMCDE effective 12 March 1990. The transfer increased the AMCDE TDA by nine spaces: five military and four civilians. The Special Projects Office was renamed the Armored Systems Modernization (ASM) Branch and was established in the Missiles and Weapons Division. The nine spaces that transferred included an O-6 Chief, an O-5 Systems Management Officer, an O-5 R&D Coordinator, an O-5 Procurement/Production Officer, an O-5 Operations Research Analyst, two GS-14 General Engineers, a GS-14 Logistics Management Specialist, and a GS-8 Secretary.

The Special Projects Office served as the Executive Agent which managed and directed AMC involvement in the Modernization Systems Program, a top priority for the Army and AMC. The transfer moved management of the program into the mainstream of AMC's management of program issues. The Chief of the Armored Systems Modernization Branch was MAJ Moore.

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[1]Unless otherwise noted, information for this section was taken from the DCS for Development, Acquisition and Engineering submission for FY90.

The Chief of Staff, HQ AMC, directed the closing of the Air Force Systems Command (AFSC) Liaison Office, located at Andrews AFB, effective 1 April 1990. The Liaison Office had been established in 1962 and represented HQ AMC at HQ AFSC to provide interservice coordination of Joint Service Activities and to assist the exchange of information between the services. The AFSC Liaison Office was authorized one military and two civilians spaces. A permanent order was published to discontinue U.S. Army Liaison Office, Headquarters AFSC, UIC XKW0H6 and the AMC regulation 10-22, *Mission and Major Functions of the Liaison Office*, was rescinded. The three incumbents were reassigned to vacant positions, HQ AMC ODCSDEA.

To better utilize diminishing military personnel resources, two of the hardware divisions, Missiles and Weapons Division and Tracked Combat Vehicle Division, were combined and retitled the Missiles and Weapons Division, provisionally effective 1 October 1989 and TDA approved 1 January 1990. In the consolidation, one O-6 position was downgraded to an O-4 and one GS-7 secretary to a GS-5 Acquisition Clerk. The incumbents were reassigned to Support Systems Division along with the two downgraded positions.

Additionally, the DCS was directed to designate two military positions for reduction as part of the HQ downsizing of military authorizations. The two positions were: an O-6 Chief, Missiles and Weapons Division, Armored Systems Modernization Branch; and an O-5 R&D coordinator in the Program Planning and Integration Division, Program Integration Branch. Both positions were vacant and deleted from the TDA on 8 June 1990.

The special Programs was established in the Special Operation Division effective 8 June 1990. The spaces were realigned and personnel reassigned as follows:

1 - GS-14 General Engineer
1 - GS-13 Program Analyst
1 - GS-6 Secretary

Effective 10 July 1990, the Chief of Staff, HQ AMC directed that the Joint Activities Coordinator Office be returned to the Office of the CG. The two authorized positions that were deleted from AMCDE TDA were:

1 - GS-14 Special Assistant for Joint Activities
1 - GS-8 Secretary

In line with HQ AMC Reductions in Force, AMCDE was directed to identify 47 spaces as its fair share of the HQ AMC reduction of the 314 civilian spaces. Of these 47 spaces, 28 were vacant and 19 encumbered. Positions were withdrawn from the TDA as of 12 October 1990. Reduction in Force (RIF) letters were distributed to affected personnel. Personnel losses in critical positions in FY90 were as follows:

Mr. Jack Lynn	Chief, Procurement Appropriation Management Division	15 Oct 89
LTC Louis Curl	Chief, Special Operations Division	30 Nov 89
Dr. Kenneth Oscar	ADCSDEA for Acquisition Management	11 Dec 89
Mr. Paul Bubernak	Chief, Acquisition Policy Division	31 Dec 89
Mr. Richard Franseen	Chief, Aviation Equipment Branch	20 May 90
LTC James O'Looney	Chief, Close Combat Heavy Branch	31 May 90
LTC Martin Owen	Executive Officer, DEA	20 Jun 90
Mr. James Laster	Special Assistant for Joint Activities	10 Jul 90

Personnel gains in critical positions in FY90 were as follows:

MAJ Gaylon King	Chief, Special Operations Division	11 Dec 89
LTC Edward O'Keeffe	Acting Chief, Acquisition Software & Automation Division	11 Dec 89
COL Wilbur Speer	Chief, Command, Control, Communications/ Intelligence Division	5 Jan 90
LTC Raymond Strom	Chief, Close Combat Heavy Branch	13 Jul 90
LTC Richard Hayes	Executive Officer, DEA	23 Jul 90

In FY90 a number of people were detailed into critical positions into or from the DCS. Effective June 1990, Mrs. Miller, ADCSDEA for Program Management, was detailed to the Defense Management Review (DMR). Mr. Wayne E. Studebaker was detailed to ADCSDEA for Program Management in addition to serving as Chief of the RDTE and Procurement Appropriation Management Divisions. Mr. Richard R. Rogowski was detailed as the ADCSDEA for Acquisition Management during the entire period.

Acquisition Policy Division (AMCDE-PQ)

Command Management and Other Significant Issues

Command management issues handled by the division included Program Executive Officer-Matrix Support Relationship; the Atlanta XVI Conference; revision of DOD Directive 5000.1, DOD Instruction 5000.2 and DOD 5000.2 Manual; Joint Logistics Commanders (JLC) Acquisition Streamlining Ad Hoc Working Group; and the DSB Acquisition Streamlining Task Force. These and the other significant issues handled by the division are discussed below.

PEO - Matrix Support Relationship. In mid-August 1990, the Acquisition Policy Division was tasked to work jointly with the office of the Assistant Secretary of the Army (Research, Development, and Acquisition) [ASA(RDA)] to draft an Army Acquisition Executive (AAE) Policy Memorandum clarifying the roles and functions of the Program Executive Officers (PEOs)/Project Managers (PMs) and the Major Commands (MACOMs) within the context of the PEO matrix support structure. The original memo drafted by the ASA(RDA) laid out a policy where the PEO was totally dominant and the MACOMs and their major subordinate commands (MSCs) at best represented a "body-shop" for PEO/PM resources. Through a number of "give and take" negotiations, a mutually acceptable draft memorandum was prepared that recognized the need to create an atmosphere where the PEO/PM and the MACOM/MSC work together towards program success, though acknowledging the PEO's/PM's ultimate responsibility and accountability for the program.

The draft memorandum was briefed to the CG AMC and obtained his concurrence. AMC's Deputy Commanding General for Research, Development, and Acquisition (DCGRDA) presented the draft memo to the AMC MSC commanders and gained their unanimous approval of the principles postulated in the memorandum. Unfortunately, a number of PEOs took issue with the philosophy of the draft memorandum and issued strong nonconcurrences to HQDA during final staffing. The memorandum was rewritten unilaterally by the ASA(RDA), de-emphasizing the "mutually supportive partnership" and striking the requirement that MACOMs/MSCs perform contracting services when internal matrix resources could not be provided to meet program requirements. This latest rewrite prompted a nonconcurrence from AMC.

As of the end of the fiscal year, the memo was still in draft form, unsigned by the Army Acquisition Executive.[2]

RDA Magazine Article on PEO Matrix Support. In July 1990, the CG AMC requested that the Acquisition Policy Division submit an article to the RDA Magazine (now known as the *Army Research, Development & Acquisition Bulletin*) on matrix support. The article was entitled "A New Perspective on Matrix Support: Establishing a Partnership Between the MSC and the PEO and PM Staffs" and was published in the November-December 1990 edition of the magazine. The article emphasized the need to establish a partnership between the functional support activities at the MSCs and PEOs/PMs. The article also provided some key matrix support definitions, proposed new initiatives in the development of MSC/PM support plans, and showed the role Total Quality Management (TQM) plays in providing effective matrix support.

Atlanta XVI Conference. This office provided the planning and administrative support required for this annual conference sponsored by the American Defense Preparedness Association (ADPA). The theme for this executive seminar was "Facing Tough Issues." The CG AMC provided the command's perspective on the subject and made closing remarks. Joint panels consisting of industry executives and senior government officials discussed acquisition issues of primary concern including preserving a defense industrial base in the shrinking environment ahead, procurement integrity and ethics, operating and support (O&S) cost reduction, and international cooperation.

Revision of DOD Directive 5000.1, DOD Instruction 5000.2 and DOD 5000.2 Manual. As part of the DMR effort, a DOD Joint Task Force was formed to develop a new DOD Directive 5000.1, DOD Instruction 5000.2 and DOD 5000.2-Manual. In developing these new issuances, DOD sought to: (1) Implement the major provisions of the DMR regarding the acquisition management structure, responsibilities and review process; (2) Streamline and identify specific requirements associated with each milestone decision point; (3) Rationalize, update and consolidate existing major acquisition policies and reporting/documentation requirements into three primary source documents. DOD Directive 5000.1 established major acquisition policies and management responsibilities. DOD Instruction 5000.2 contained implementing guidelines and procedures. DOD 5000.2-M provided instructions for completing requires milestone documentation and periodic reports.

The final drafts of these documents both cancelled and incorporated provisions of 61 DOD directives, instructions, and memorandums. The Acquisition Policy Division was the AMC focal point for DODD 5000.1 and related documents. The new draft documents were staffed several times with HQ AMC and the MSCs. All comments were reviewed and a consolidated AMC response was prepared and forwarded to ASA(RDA).

JLC Acquisition Streamlining Ad Hoc Working Group. In 1990, acquisition streamlining was intensely reviewed by the JLC. The Acquisition Policy Division coordinated and managed the efforts of the other services and the Defense Logistics agency (DLA) in support of an ad hoc group established by the JLC and chaired by the HQ AMC Principal Assistant Deputy for Research, Development and Acquisition to brief the acquisition streamlining efforts of all the services and DLA. Based on the briefings from each of the services and DLA, the JLC concluded that, while much remains to be done, considerable progress had been

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[2]Copies of the 31 October 1990 draft, favorable to shared responsibility and cooperation between MACOMs and PM, and the 19 November 1990 draft, which gave the PEO/PM chain the dominant role, and an AMC analysis of the difference between the two drafts can be found attached to the DCS for Development, Acquisition and Engineering historical submission for FY90.

made toward streamlining acquisitions. The JLC therefore urged the Under Secretary of Defense (Acquisition) [USD(A)] to resist the DMR thrust that would prematurely eliminate references to acquisition streamlining in DOD documents and to retain it as a viable, discrete program until it was fully institutionalized.

Despite the JLC's efforts, DODD 5000.43, Acquisition Streamlining, was cancelled by the most recent version of DODD 5000.1, System Acquisition, effectively eliminating acquisition streamlining advocates. A degree of coverage is contained in DODI 5000.2; however, it was substantially changed from the coverage in the soon to be cancelled DODD 5000.43. In light of the DOD revised policy, the scope and direction of the Army Streamlined Acquisition Program (ASAP) must be sorted out as a part of the Army's implementation of the new DOD policy on acquisition in AR 70-1.

Defense Science Board (DSB) Acquisition Streamlining Task Force. A task force was established by the Under Secretary of Defense (Acquisition) [USD(A)] under the auspices of the Defense Science Board. The DSB Task Force on Acquisition Streamlining was chartered to recommend a streamlined acquisition process which will have the potential for significantly reducing cost and schedule requirements on the order of fifty percent while still preserving required performance characteristics.

The task force divided their effort into three phases. The objective of Phase 1 was to characterize and "timeline" the current acquisition process and to identify best practices as well as the impediments to implementing recommendations made by previous studies. The objective of Phase 2 was to develop specific streamlining proposals to improve the process. Phase 3 will focus on developing specific procedures and approaches for implementing accepted streamlining proposals identified in Phase 2. Two representatives from this division supported the first phase of this effort on teams 1 and 2.

The Phase 1 effort was subdivided among three separate teams. Team 1 focuses on identifying and "timelining" the current acquisition process and making recommendations for streamlining the process. Mr. Ben Perchik from this division was one of the Army representatives on Team 1. As a part of Team 1's analysis effort, they were tasked to develop a computerized life cycle model of the acquisition process. The Analytical Sciences Corporation (TASC) was contracted to review the Critical Design Review (CDR) and Request for Proposal (RFP) processes contained in the model and determine if current processes can be streamlined. TASC formed two Process Action Teams (PATs) consisting of representatives from each of the services and DOD contractors. Mr. Joe Potts of the Acquisition Policy Division was one of the Army representatives on the PAT reviewing CDR processes.

The objectives of the PAT review were: (1) Determine the problems with the current CDR process; (2) Provide recommendations for alleviating the current CDR problems; (3) Identify solutions to improve the CDR process. Three of the nine member PAT's recommendations were to develop a paperless system for transmitting volumes of technical data to CDR principals, to establish more PATs at MSCs to improve CDR functional support efforts, and to reduce Government micromanagement of the design.[3]

Team 2's effort involved the identification of "best practices" employed by Government agencies, defense industries and commercial companies that manufacture analogous products to improve the processes associated with the design and manufacture of materiel systems. Mr. Ivory Fisher of the Acquisition Policy Division was a member of Team 2.

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[3]A draft dated 7 Dec 90, not yet approved by the Defense Science Board, on the CDR process can be found in the DCS for Development, Acquisition and Engineering submission for FY90.

The Team 3 effort involved the development of a compendium of barriers to the implementation of recommendations from prior studies and the formulation of suggestions on how to overcome or avoid the same or similar barriers in implementing the recommendations of this study. The completion of the task force effort is anticipated in early 1991.

AMC FIRST Program. The AMC Functionally Integrated Resource Support Team (FIRST) program was an initiative instituted by the Deputy Chief of Staff for Development, Engineering, and Acquisition (DSCDEA) to provide expert assistance to the AMC major subordinate commands, PEOs, and PMs in a variety of functional and technical areas. The program was designed to provide hands-on help, usually on-site, to the MSC, PEO, or PM lacking the manpower or expertise to accomplish a specific task or produce a specific product, such as a report, an acquisition document, a technical study, an equipment specification, or a procurement related item.

During 1990, the Acquisition Policy Division participated in two FIRST efforts, a test and evaluation strategy for PM TRADE and two functional area inputs for the Trade Off Determination portion of a Tank and Automotive Command (TACOM) Concept Formulation Package.

The request for assistance from PM TRADE resulted in a 24-31 July 1990 FIRST effort in Orlando, FL. This action involved resolution of an operational test issue raised by the Operational Test and Evaluation Agency (OTEA) on the Guardfist I gunnery trainer. OTEA nonconcurred in the trainer's test strategy due to low achievement of reliability goals. The nonconcurrence could have stalled the program by terminating in-process testing, with possible loss of planned procurement funds. Mr. Carlos Piad, Acquisition Policy Division, DCSDEA, was selected to lead the FIRST team with assistance from Mr. Whitely from the office of the Deputy Chief of Staff for Product Assurance and Test.

The team reviewed all pertinent documentation and data and recommended action to be taken by PM TRADE to resolve the issue. PM TRADE agreed to the course of action and the FIRST team undertook efforts to mitigate the issue. Mr. Piad prepared a memorandum requesting that OTEA delay a decision meeting with the Deputy Under Secretary of the Army, Operations Research, to allow for the completion of in-process testing. He also drew up a draft request for waiver of the trainer's Initial Operational Test and Evaluation (IOT&E) based on the total reliability growth projections derived from all testing. Mr. Whitely reassessed the test data acquired to date and calculated a rationalized reliability that was far above the initial projections that led to the OTEA nonconcurrence.

TACOM requested FIRST assistance in the development of the MANPRINT and Integrated Logistics Support (ILS) functional areas for the Trade Off Determination (TOD) portion of the CALEB Concept Formulation Package. CALEB was an unmanned ground vehicle, the name of which relates to a historical figure who was a spy in the Middle East. Mr. Herman Tarnow of this division worked on site with TACOM from 21-27 June 1990. The key MANPRINT issues addressed were the use of a dedicated versus non-dedicated CALEB operator, the additional training required for the Military Occupational Specialty (MOS) 11B, and the impact of the integrated design on human factors engineering. An assessment of the ILS elements of the support concepts considered indicated that CALEB's logistics support risks were low. This was primarily due to the fact that most of the components and subsystems were developed using proven technology and some were already in the supply system. The TOD was delivered to the Army Infantry School on 2 July 1990.

Design to Cost (DTC). High level emphasis continued to be placed on the application of DTC within the materiel acquisition process. DTC was a program management tool for controlling production and operating/support costs through the judicious use of optimal design considerations. The emphasis by AMC resulted in the development of a DOD DTC course presented by the Army Logistics Management College (ALMC) and an automated DTC quarterly status reporting system. Training in the use of the reporting

system was provided by SIMA, the developer of the application. Video conferences were held with the various DTC proponents to provide updates on policy and to maintain peak awareness of DTC related issues.

One such issue was raised by LTG Babers, a retired former AMC Deputy Commanding General for Materiel Readiness and now a consultant, regarding the application of DTC principles earlier in the materiel life cycle. An analysis by the Acquisition Policy Division concluded that the application of DTC to the Advanced Development/Prototype phase added to the risks involved in achieving a proper balance among performance, technology, and cost trade-offs. A provisional assessment was provided to the Principal Assistant Deputy for Research, Development, and Acquisition; however, pending the finalization of DODD 5000.1, no final decision to implement the Babers suggestion will be made. Once the decision is made, institutionalization can be accomplished through the update of AR 70-1 and DA PAM 70-2.

MANPRINT. AMC continued to place high-level emphasis on the MANPRINT Program during 1990. The Acquisition Policy Division's major work efforts centered around participation in the development of the draft MIL STD 1478 on Task Analysis, which is of particular interest to the Human Factors Engineering community, membership on the steering committee for revisions to the System MANPRINT Management Plan (SMMP), oversight of ALMC's MANPRINT training program of instruction, and continued involvement with the Materiel Readiness Support Activity (MRSA) in the development and coordination of requirements for the MANPRINT data base. In addition, Mrs. Roscille Nelson of this division represented AMC at various workshops, seminars and staff assistance visits to the MSCs. Two of these actions are particularly noteworthy, the General Officer/Senior Executive Service (GO/SES) Executive Seminars and the draft MIL STD 1478 staffing action.

Two GO/SES Executive Seminars were conducted in 1990, one hosted by HQ TRADOC and the other hosted by HQ AMC. The seminars stressed the increased importance of MANPRINT as the Army moved towards the twenty-first century. The presentations also advocated MANPRINT as one of the organizational techniques that must be exploited if the Army is to realize the full potential of its human resources. Those attending the seminars thought both sessions were excellent and pledged their commitment and continued stewardship toward the success of the MANPRINT program.

After considerable effort by AMC, a draft MANPRINT MIL STD for tri-service use was developed and sent out for worldwide staffing. Inasmuch as MANPRINT was an Army initiative developed to address Army organizations and issues, most of the comments received during this staffing were opposed to publication of an Army-specific MIL STD. Those comments coupled with the push to reduce duplication and redundancy in military standards and regulations caused the MIL STD effort to be cancelled.

Popular Names for Major Items of Equipment. Requests for the assignment of popular names were submitted by the proposing agency to the Acquisition Policy Division for processing, e.g., request for trademark search and coordination with other military departments. Requests were then forwarded to ASA(RDA) for HQDA coordination and approval. During 1990, this office processed requests for popular names for the Howitzer Improvement Program (HIP), the Airborne Adverse Weather Weapons System, the OH-58D Armed Helicopter, and the Advanced Antitank Weapon System-Medium (AAWS-M). The following popular names have been assigned: PALADIN for the HIP and LONGBOW for the Airborne Adverse Weather Weapon System. The name Kiowa Warrior for the OH-58D was pending approval in the office of the Secretary of Defense.

Materiel Acquisition Handbook. A Department of the Army Handbook to provide procedural guidance in functional areas was being developed jointly by AMC and the Office of the Assistant Secretary of the Army (Research, Development and Acquisition). The handbook will supercede AMC/TRADOC Pamphlet

70-2 but will be similar in form and content. Chapters covering the following areas were staffed by the Acquisition Policy Division in FY90 and will be incorporated into the DA Handbook: *Type Classification, Nondevelopmental Item Acquisition and Materiel System Computer Resources*. The handbook will be published in FY91.

DEA Role in Total Quality Acquisition Management. As part of DCSDEA's implementation of TQM, a DCSDEA action plan for TQM was developed, approved, and executed. Key accomplishments included the completion of the entire Army Management Engineering College suite of TQM courses (TQM for Executives Course, TQM for Mid-Managers Course, TQM Process Action Team Course, TQM Trainer/Facilitator Course) by key DCSDEA personnel; the establishment of an DCSDEA TQM infrastructure (TQM Executive Steering Committee, TQM Quality Management Board, and Process Action Teams (PATs); the development and approval of a DCSDEA Vision Statement; the identification of 58 major DCSDEA processes;[4] the initiation and chartering of 3 DCSDEA PATs (PAT for Requirements Documents Approval Process, PAT for Operating Budget Process, PAT for DEA Staff Actions Process); and the conduct of a TQM survey designed to establish the DCSDEA TQM baseline. These accomplishments form the basis for an on-going TQM implementation effort.

Acquisition Streamlining Awards. The Acquisition Policy Division was responsible for assembling the Army nominees for the Secretary of Defense Acquisition Streamlining Program Achievement Awards for 1990. The nominations were provided to the Army Streamlining Advocate (the Principal Deputy for Research, Development, and Acquisition) who made the final recommendations to OSD regarding the Army recipients. The Army recipients of the FY90 Acquisition Streamlining Awards were:

CATEGORY	RECIPIENT
Program Manager	LTC Willie B. Nance, Jr., TOW Project Office
Individual	Mr. Ross Aboff, U.S. Army Communications Electronics Command
Program Office	Pershing Reuse Team, Pershing Project Office
Field Command	Directorate of Engineering, U.S. Army Tank Automotive Command

The awards were presented on 5 December 1990 by Mr. Donald Atwood, Deputy Secretary of Defense.

Army Streamlined Acquisition Program (ASAP) Pamphlet (AMC PAM 70-24). The Acquisition Policy Division developed and published an ASAP Pamphlet to promote wider acceptance and understanding of the program and to continue the acquisition streamlining momentum. It provided a summary of the program through a "facts, features and feedback" format. In addition to distribution within AMC, the pamphlet has been distributed at government/industry meetings, including Atlanta XVI.[5]

Type Classification (TC). The Acquisition Policy Division prepared and staffed a second draft of the Army's equipment type classification procedures. This draft incorporated many field-recommended revisions, however, additional recommended revisions were received in response to the staffing of the second draft.

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[4]For the processes, see Memorandum for the AMCDE Executive Steering Committee (ESC), 6 Sept 90, SUBJECT: Identification of Major AMCDE Processes, in the DCS for Development, Acquisition and Engineering submission for FY90. An overall laydown of the DCS TQM program is also included in the DCS for Development, Acquisition and Engineering submission for FY90.

[5]The pamphlet is included in the DCS for Development, Acquisition and Engineering submission for FY90.

Completion of the third draft has been delayed by the resolution of issues raised regarding the second draft. Also, the third draft will be further impacted by the pending issuance of a revised DODD 5000.1 and the corresponding revision of AR 70-1. When finalized, the TC procedures will become part of the Army Materiel Acquisition Handbook.

Nondevelopmental Item Policy/Procedures. With the reduction in Defense funds, emphasis increased on acquiring nondevelopmental items (NDI) as a more efficient way than development to satisfy requirements. Defense Management Review Decision 901 (DMRD 901) called for the increased use of commercial items, which was one subset of NDI, and this division responded by accelerating the update of policy and procedures in the NDI chapter of the AMC/TRADOC Pam 70-2, *Materiel Acquisition Handbook.* The procedures were staffed and are being revised in accord with the comments received. The latest information is available in draft form to provide current procedures to acquisition managers. The new procedures will be incorporated into the Army Materiel Acquisition Handbook.

In a related NDI action, a briefing on NDI was provided to General Richardson, U.S. Army Retired and former TRADOC Commander, in his capacity as a member of a National Security Industrial Agency study group analyzing the acquisition of low density NDI. The study results were scheduled to be available in the spring of 1991.

Assistance was given to the Defense Systems Management College on a study of NDI requested by Mr. Conver, the ASA(RDA). The study reviewed existing NDI statutes/legislation and regulations and compared that policy with actual Government management practices. Information on practices was obtained through interviews with managers of NDI programs. The study found that the policy was adequate and flexible enough to guide and encourage NDI. Other findings were that the execution of NDI acquisition strategies was tremendously helped by high level sponsorship and a willingness of functional experts to reduce requirements to those essential to manage risk. Problems occurred with NDI strategies when major and/or essential components needed development or strategies were erroneously labeled NDI. Usually either of these conditions will cause programs to exceed cost and schedule projections.

Army Acquisition Management System (AAMS). The Acquisition Policy Division actively sought and acquired 20 sets of AAMS hardware and distributed them within DCSDEA and to the AMC MSCs. AAMS is a personal computer based executive information system designed to assess program status for the Army's acquisition systems and to help identify potential program problems early. It compares planned performance versus actual performance in the areas of program baseline requirements, costs and schedule milestones, financial execution, and contract performance and deliveries. In addition, it displays the monthly Program Executive Officer/Program Manager letters, program assessment review and exception reporting, trend analysis, and breach identification. The Research, Development, and Acquisition Information Systems Activity (RDAISA) will control the system, which was developed for ASA(RDA) by PM Acquisition Information Management.

Hazardous Waste Minimization (HAZMIN). Increasing DOD attention on the disposal of toxic and hazardous wastes has heightened the Army's activities in this critical area. The ASA(RDA) directed that a study be conducted on how to preclude the production of hazardous wastes during systems acquisition. AMC was tasked to conduct the portion of the study dealing with HAZMIN during the design and operation and maintenance of systems. Mr. Donald Gower of the Acquisition Policy Division was assigned to the study effort for AMC.

Acquisition Integration and Analysis Division

Most Significant Issues

The most significant issues covered by this division in FY90 were the Materiel Change Management (MCM) Process, Quarterly Management Report (QMR) on AMC Managed Systems, Monthly report on MSC Functional Support to PEOs/PMs, Industry Visits to Army Units, and the RDTE Surge for Desert Shield.

Materiel Change Management (MCM). The fourth quarter FY89 Materiel Change Status Report (a semi-annual report displaying all on-going, pending, completed and cancelled materiel changes) was published 10 April 1990. This report reflected the status of materiel changes as of 31 October 1989. MCM encompasses the management of all changes to type classified systems/end items, both in production and in the field. The basic concept for the MCM process was approved by the Under Secretary of the Army in June 1987, and the formulation of a new Army Regulation to govern MCM was initiated in FY88. Two drafts of the proposed AR on MCM were staffed Army-wide in FY89, and a third draft was staffed in HQDA in FY90. In response to DOD direction to limit the number of Army Regulations, it was determined that the final draft of the MCM AR should be published as Interim Operating Instructions (IOI). The IOI for U.S. Army Materiel Change Management, which superceded AR 70-15, *Product Improvement of Materiel*, were published on 6 September 1990 and served as the Army's basic policy guidance for MCM.[6]

Quarterly Management Report on AMC Managed Systems. AMC defined seven HQ AMC Missions, one of which was to "develop and acquire non-major systems and equipment." To support this requirement, and in response to deficiencies addressed in a 5 August 1988 Army Audit Agency (AAA) report related to management of non-major systems, the DCGRDA directed the establishment of the Quarterly Management Report. The objective of this report was to provide the HQ AMC Command Group an effective oversight management tool for AMC managed systems. The MSCs and AMC PMs report the status of their AMC Managed Systems, the Materiel Readiness Support Activity (MRSA) provides a Selected Milestones Report from the Acquisition Management Milestone System (AMMS) Database with HQ AMC staff analyzing this input and the DCSDEA administrator briefing the HQ AMC Command Group. The number of systems managed varied each quarter, but stood at 299 at the end of FY90.

Establishment of Monthly Report on MSC Functional Support to PEOs/PMs. As a management tool for AMC Mission IV, Direct Functional Support to Augment PEOs/PM Offices, the CG AMC directed the establishment of the Functional Support Report (FSR) starting in March 1990. A monthly FSR reporting requirement (a summary sheet, status sheets and detail sheets for Amber and Red rated areas) was described in a 7 March 1990 Memorandum of Instruction (MOI) for FSR. The purpose of the monthly reporting requirement was to inform the HQ AMC Command Group on functional support issues in preparation for the monthly Secretary of the Army for Research, Development and Acquisition (SARDA) Program Executive Officer Review (usually held 25-28 of the month).

The MOI and subsequent minor policy changes required MSCs to prepare monthly updates of functional support assessments but to prepare functional support reports only on an exception basis,

[6]The IOI is included in the DCS for Development, Acquisition and Engineering submission for FY90.

including a response to any issue raised by a PEO/PM in their monthly Program Status Report to HQDA.[7] Throughout FY90 all the MSCs except TACOM were reporting a Green rating, which indicates no problems existed with the MSCs' functional support to PEOs/PMs. TACOM had been reporting an AMBER rating at the same period indicating a shortage of manpower support to PMs.

Industry Visits to Army Units. AMC initiated a program whereby key industry leaders and engineers were invited to visit Army units. Visits addressed a specific mission area (e.g. Close Combat Heavy, Aviation, etc.) and focused on the use of materiel systems in the operating environment and related maintenance from organization through depot. The first week long visit was conducted 23-26 April 1990 and focused on the Abrams tank and Bradley fighting vehicle (Close Combat Heavy). The 24th Infantry Division, Georgia Army National Guard Mobilization and Training Equipment Site, Fort Stewart, and Anniston Army Depot were hosts. A second visit was conducted the week of 30 July 1990 on Air Defense systems. The 6th Air Defense Artillery Brigade, Fort Bliss, White Sands Missile Range and Red River Army Depot hosted this visit. Solid positive feedback was received from participants on both visits. Industry visits for Aviation, Fire Support and Communications had also been planned for the pilot year of the Industry Visit Program; however, these visits were cancelled due to Desert Shield deployments.

Electromagnetic Environmental Effects (EEE or E^3) Branch

The Electromagnetic Environmental Effects branch was created on 1 October 1989. Its mission, as the Army E^3 oversight management office, was technical proponency for the E^3 program, policy and standards. The branch also served as the E^3 program advisor to the ASA(RDA). E^3 itself was defined as "the impact of the electromagnetic environment on the performance of systems and subsystems containing electronic components."[8]

Army E^3 Action Plan. A number of significant issues were identified in the Army E^3 Action Plan. One of them was the establishment of subordinate structures dealing with E^3. They included establishing the AMC E^3 Technical Advisory Committee, composed of members from MSCs, proving grounds, RD&E centers, and laboratories. This group was the Army's primary action matrix for E^3. There will be a single HQ AMC E^3 point of contact in the acquisition policy division of DCSDEA. The initial subordinate structure within AMC MSCs will be formalized. This issue will be resolved by establishing a matrix management structure within the AMC E^3 community to accomplish the program tasks and milestones previously assigned to HQ AMC. The E^3 technical advisory committee will be chartered officially to provide AMC-wide program control. Regular meetings of that group will be accomplished primarily by video conference. Each of the 11 AMC action items is discussed below.

E^3 Policy. The branch drafted and coordinated the "Interim Guidance for the Electromagnetic Environmental Effects (E^3) Program," implemented by the AAE on 5 March 1990. The branch also drafted (under contract) a white paper entitled "Historical Review of the Army Electromagnetic Environmental

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[7]Memorandum for Distribution, 7 March 1990, SUBJECT: memorandum of Instruction for Functional Support Reports (FSR) and msg, CDR AMC to MSC CDRs, 051600Z Apr 90, Subj: Functional Support Report (FSR) Policy Changes. These documents can be found in the DCS for Development, Acquisition and Engineering submission for FY90.

[8]Electromagnetic Compatibility Design Guide, included in the DCS for Development, Acquisition and Engineering historical submission for FY90.

Effects (E^3) Program," illustrating the rise and fall of Army concern, and the consequences, over the past 56 years, from 1934 to the present time.[9]

Technical Certification. The branch conducted interviews with government, academic and private industry personnel to assess the feasibility of adapting the U.S. Navy program for certification of E^3 engineers for the Army. By January 1991 it was anticipated that an AMC lead office would be designated to manage this task. The branch planned to draft a certification package for Army-wide coordination by video conference.

Standard Test Procedures. The branch was working from an OSD compiled list of E^3 test specifications and standards to determine which were appropriate for Army use and, of those, which needed to be updated. The branch designated the Army members to participate in the DOD sponsored MIL-STD-462 update process. TECOM produced a staff study entitled "E^3 Testing of Aviation Systems" in support of this and one other task. The next step was to identify a focal point from the HQ AMC Concurrent Engineering Directorate to manage the task.

Update Design Criteria. Operating with support from LABCOM, the branch defined the classes of materiel and categories of environments and combined them into a matrix with applicable standards, specifications, and other design documents. The matrix was made as inclusive as possible, and was incorporated in a wall chart, "Electromagnetic Compatibility Design Guide,"[10] that was readily accessible to system developers.

A computer based version, which will be updated, was developed by the branch. By a contract effort for design criteria under DCSDEA's enhanced automation initiative, the Technical Analysis Support System (TASS) was directed and guided by HQ AMC and accomplished by the Electronic Proving Ground (EPG) at Fort Huachuca. Initial fielding of the TASS was in conjunction with the *Criteria Development and Assessment Handbook.*[11] A contractual effort and matrix Contracting Officer's Technical Representative (COTR) will be sought to enhance, publish, and maintain the design criteria expert system.

Design Criteria Handbook. The HQDA E^3 Handbook was designed under contract to the E^3 branch to provide guidance to program sponsor E^3 requirements boards for developing criteria, but not necessarily to provide all the answers. Clearly, no single publication can be all-inclusive. The *Criteria Development and Assessment Handbook* was predicated on the use of the existing E^3 specifications and standards to the greatest extent possible. The E^3 focal point selected from the AMC community will oversee the continuous update and modification of these documents, as required.

E^3 Review Board Procedures. Coordinated procedures and policy for E^3 review and regulation of deviations and waivers was developed by the E^3 branch and the AMC technical advisory committee. The initial procedures and policy for waivers were contained in the *E^3 Interim Guidance*, distributed 5 March 1990 under AAE signature. Lessons learned from ASA(RDA) implementation of the Interim Guidance with the three pilot PEOs--air defense, aviation, communications--will be reviewed and the tailored process will be incorporated into the final version of E^3 policy.

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[9]These two documents are included in the DCS for Development, Acquisition and Engineering submission for FY90.

[10]Included in the DCS for Development, Acquisition and Engineering historical submission for FY90.

[11]Included in the DCS for Development, Acquisition and Engineering historical submission for FY90.

Non-traditional Acquisition E^3 procedures. The non-developmental acquisition strategy will be analyzed for inclusion of E^3 requirements and tests. Particular emphasis will be placed on describing E^3 criteria in terms of industrially recognized standards and specifications, early in the concept formulation process. In this manner, there will be a reasonable possibility of finding an NDI which meets the criteria. The E^3 input to DA PAM 70-2 will include the process for incorporating electromagnetic considerations in NDI. Non-traditional acquisitions were addressed nominally in The E^3 Interim Guidance of March 1990.

Life Cycle Monitoring of E^3. Life cycle surveillance of E^3 features, once a system is fielded, is difficult for two reasons: special skills and test equipment would normally be required; and some electromagnetic effects can not be realistically simulated in the field, e.g., high power, far field, wave planarity. A preliminary study of what should (and can) be done has been summarized in a white paper on life cycle management of E^3: "Electromagnetic Environmental Effects Hardness Assurance, Maintenance, Surveillance: E^3 HAMS."[12] The paper recommends practical tests and evaluations such as visual inspection or measurements during routine maintenance. A contract will be required to develop a process for E^3 life cycle inspections, testing, MOS skills, test equipment, and reporting system. This is a matrix support issue, with a focal point to be identified from LABCOM.

E^3 Feedback Procedures. The rapid identification of E^3 problems in the field was critical to Army readiness, E^3 program definition, system surveillance and maintenance of system safety and effectiveness. Field personnel must identify system E^3 degradations, the frequency of occurrence and intensity. In June 1989 a review was carried out by querying the deficiency reporting at four MSCs for electromagnetic compatibility (the ability of communications to operate in their intended environment without suffering unacceptable degradation due to electromagnetic radiation) and electromagnetic interference (any electromagnetic disturbance that degrades systems containing electronic components) incidents.

The review determined that the Army's quality deficiency reporting system combined with E^3 hotline was the appropriate mechanism for the capture of E^3 problems, and could provide problem data for analysis. Further investigation under a contract initiated by the branch, and funded by LABCOM, to assess the quality deficiency reporting system as an E^3 feedback mechanism resulted in the following recommendations for appropriate action:

Establish one failure code to identify all potential E^3 problems.

Establish a requirement that all QDRs, both CAT I & II, identify the failure code that best describes the problem encountered.

Revise the DRS to provide the capability to sort QDRs by failure code to complement the system's ability to perform a keyword search of the problem narrative.

Ensure that TRADOC has effectively integrated E^3 awareness training into the appropriate TRADOC training components, for both officer and enlisted soldiers, at all levels.

Heighten E^3 awareness in the field through the use of formal electronic messages and *PS Magazine*. This will reinforce the need to report E^3 problems and can provide "lessons learned" to the field.

Establish a link between CECOM and the E^3 Hotline at Fort Huachuca, AZ, for additional E^3 problem identification and trend analysis.

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[12]Included in the DCS for Development, Acquisition and Engineering historical submission for FY90.

Resourcing E^3 Test Facilities. A meeting of the AMC E^3 Technical Advisory Committee in February 1989 to plan "get well" actions and funding for test facilities identified the basic sufficiency of the Army test capability for the near term. The June 89 *TECOM E^3 Testing of Aviation Systems*, a staff study, noted that much of the current work load was absorbed by Navy facilities, and the Army must plan for the day when they were less available, or not available at all, to the Army. This branch intended to develop a matrix to work with research, development, test and evaluation (RDT&E) organizations to develop, coordinate, and establish the necessary program elements to support E^3 in all phases of the Army materiel life cycle. HQ AMC support will be required to facilitate this task.

Resourcing the Frequency Allocation Process. The process of allocating frequencies to AMC developed hardware was specifically defined by AR 5-12, *Army Management of the Electromagnetic Spectrum*, section 2-5, paragraphs j. and q. DARCOM Supplement 1 to AR 5-12 specifically assigned the responsibility for AMC frequency management, specifically resourcing and the actual process, to the Communications Research and Development Command (CORADCOM), now CECOM.

In messages (131400Z March 1989 and 201400Z October 1989) CECOM claimed that funding cuts and program restructuring impeded their ability to fund the process, and consequently attempted to institute a "pay-back" policy for funding frequency allocation. The Army Spectrum Manager took exception to this attempt (in SAIS-SM message 031430Z May 1989) and informed the E^3 branch that it was unacceptable for CECOM to charge users for their services when Army and AMC policy dictated they fund it.

Ms. Brenda Ely of the E^3 branch researched the issue, assembled the facts of the restructured frequency allocation funding line, coordinated with the appropriation manager at HQ AMC, and staffed a tasking message (081915Z November 1989) to CECOM to resolve the problem. A CECOM message (171500Z November 1989) responded that they had complied by reprioritizing 6.3 programs to accomplish the frequency allocation mission. It became clear to the DCS that an AMC E^3 branch with strength in budgetary as well as technical disciplines was essential to the accomplishment of Army E^3 goals.[13]

Program Planning and Integration Division (AMCDE-PI)

Command Management Issues

FY90 Long Range Research Development and Acquisition Plan/Mission Area Material Plan (LRRDAP/MAMP) Process. The major command management issue handled by the division was the LRRDAP/MAMP process, which had been jointly established in 1985 by Headquarters AMC and Headquarters TRADOC, the combat developer. In 1987 the Information Systems Command (ISC) became the third Army command to join the process, thereby lending further credibility to the Field LRRDAP. Also participating were the ASA(RDA), the Army PEOs and the DCS for Operations (ODCSOPS).

The MAMP process converted the user's materiel deficiencies, as defined in the TRADOC Concept-Based Requirements System (CBRS) into Research, Development and Acquisition (RDA) plans and programs. Each AMC Major Subordinate Commander was also a Mission Area Manager (MAM) responsible for formulating strategies and defining the appropriations required to develop materiel solutions to the deficiencies for their mission area. The MAMs present their plans to a Mission Area Integration

[13]Messages, CDRAMC, 081915Z Nov 89, Subj: Funding Frequency Allocation to Equipment and CDRCECOM, 171500Z Nov 89, Subj: Funding Frequency Allocation to Equipment. Both messages can be found in the DCS for Development, Acquisition and Engineering historical submission for FY90.

Team (MAIT) that develops an affordable Field LRRDAP. The proposed Field LRRDAP is reviewed by the participating MACOM commanders and when approved is sent to HQDA to be used as the input document for the Program Objective Memorandum (POM) process. The HQDA FY92-06 LRRDAP included the requirement for direct participation by all MACOM and Commanders in Chief (CINC) Army Component Commanders and PEOs. To ensure early consideration of new RDA requirements, MACOMs, CINCs and PEOs submitted their requirements to the field proponents early in the LRRDAP build process.

The results of the 1989 LRRDAP/MAMP review (The Field LRRDAP) were sent to HQDA on 5 October 1989. The field LRRDAP was used to initiate the HQDA 92-97 POM exercise. This LRRDAP is structured to take an Army that has made significant accomplishments in modernization, readiness, and quality of life and transition it into a smaller, trained, and ready strategic force.

Several significant decisions concerning this process were made in FY90. The term Field LRRDAP will be replaced by Long Range Army Materiel Requirements Plan (LRAMRP) and the term MAMP will be dropped from the title. MAMs will change to Requirements Managers (RQM) for combat developers and Acquisition Managers (AQM) for materiel developers. By direction of SARDA, the lead for the LRAMRP was transferred to HQ TRADOC in May 1990.

Materiel for Winning. This publication was introduced in 1986 to describe the RDA process and results. It contains generalized unclassified data which is used as guidance by industry to develop R&D programs and as a training aid and planning guide for the government. The results of the FY90 Field LRRDAP with POM revisions were used to publish the *Materiel for Winning* document for this LRRDAP cycle.

Automation. The TIER III automation initiative which started during this fiscal year was directed toward providing standard LRRDAP software for MDEP data transmission, input, and analysis of funding decisions for use on the LRRDAP Standard PC system procured the previous fiscal year. These tailored software applications were developed by the RDAISA and HQ AMC and were incorporated into TIER III. Input of the standard DA Management Decision Package (MDEP) information is accomplished through the RDAISA software; while analysis of funding and priorization decisions were provided through the AMC-developed Executive Tool. The results of these decisions can be displayed through a variety of graphical outputs. The Executive Tool includes the ability to handle the materiel change Information System data and displays this data in a LRRDAP format.

The standard RDA/MAMP database was being converted from the Informix 3.2 relational database to Informix 4GL. Conversion was completed for the RDA portion of RDA/MAMP. In addition, a hardware conversion was initiated to convert from the present mini-computer environment to a PC environment using the Unisys PW2 800/20 PC obtained through the U.S. Air Force Desktop III contract.

RDA Appropriation Management Division

Most Significant Issues

Summer Budget Review. The Procurement Appropriation Summer Review of the FY92 Budget was a joint effort of ASA(FM), ASA(RDA) and HQ AMC to review all Procurement Appropriations for defensibility, executability and pricing. The Office of the Deputy Chief of Staff for Operations (ODCSOPS) also participated in the review. Separate on-site reviews were held during the period June-July 1990.

Desert Shield Procurement/RDTE Surge Proposals and Other Unfinanced Requirements. Issue Sheets/Surge Packages in support of Desert Shield unfinanced requirements were consolidated, coordinated

and presented to an AMC General Officer Surge Committee for approval. Approved proposals and requirements were forwarded to HQDA (ODCSOPS) for approval and funding or inclusion in Congressional Reprogramming Actions and FY91 Supplemental Budget Request. This has been a major effort since August 1990.

Program Execution. AMC was required to submit to the Department of the Army a monthly status of Procurement Programs execution. This report was a detailed analysis of obligation of funds for current and prior years.

PEO Direct Funding. As of 1 June 1990 the PEOs were directly funded for the FY90 (and beyond) procurement appropriations. Program/funds formerly issued through AMC to the MSCs for PEO managed systems were distributed directly from HQDA to the PEOs.

Environmental/Real Property Maintenance Activities (RPMA)/Backlog of Maintenance and Repair (BMAR). Research, development, test and evaluation funding had been inadequate to cover the real property maintenance activities annual recurring requirements for several years. As a result, the backlog of maintenance and repair has grown from $50 million in FY85 to over $229 million at the end of FY90. In addition, significant recent growth in environmental requirements reduced real property maintenance activities funding available to maintain facilities. As a result, research, development, test and evaluation facilities were currently in the "worst condition" in the Army.

The Army initiated a program to fix the problem by budgeting additional funds for the real property maintenance activities' annual recurring requirements in order to control the excess growth of the backlog of maintenance and repair. In addition, the Army submitted a reprogramming request in FY90, which was approved by Congress, to transfer $29.0 million into the RDTE appropriation to fund critical RPMA requirements. This $29.0 million requirement resulted from the need to replace funds diverted from normal RPMA requirements to cover high priority environmental bills.

CY90 Research, Development, Test and Evaluation (RDTE) Execution Review. In March 1990, AMC conducted an extensive review of its RDTE programs with the Major Subordinate Commands/Separate Reporting Activities (MSC/SRA) reporting to this headquarters. The review covered all FY89 and FY90 programs that did not meet AMC or HQDA execution goals. Each MSC/SRA briefed their qualifying projects to the AMC staff. As a result of these reviews, this headquarters identified $51.771 million in billpayers and $43.605 million in additional bills.

Our review results were briefed to OASA(RDA) on 10 April 1990. Since OASA(RDA) had received a large bogey to pay for other Army bills, OASA(RDA) accepted all our billpayers and merged our bills with the other Army bills. By the end of the year AMC had paid all of its bills, which totaled $65.145 million. Included in this total were the bills presented to HQDA during the Execution Review.

Research and Development Descriptive Summaries (RDDS). RDDS for the RDTE Appropriation, Army provide narrative information on all program elements and projects within the appropriation. Each RDDS explained why the program was needed, how it will meet the Army's missions, and what shortfall it will satisfy. RDDSs were prepared for selected program elements and submitted to HQDA in April 1990 as part of the FY92-96 POM submission to the Office of the Secretary of Defense (OSD). RDDS were again prepared in August 1990 for selected program elements for inclusion in the Army's FY92 Budget Estimate Submission to the OSD in September 1990.

FY90 RDTE Obligation Plan. Recognizing HQDA plans to implement direct release of funding to PEOs during FY90, AMC implemented new procedures to establish separate obligation plans for each PEO

and AMC. As a result of this action, during FY90 AMC had the only capability in the Army to accurately report obligations and disbursements for PEO programs. Utilizing these plans AMC prepared and presented detailed monthly briefings to senior leadership at both HQ AMC and HQDA on the obligation and disbursement execution of both AMC and PEO programs. These in-depth briefings supported by detailed analyses have provided early identification of execution problems allowing corrective actions to be implemented early in the year to avoid, to the maximum extent possible, large end of year unobligated balances. The FY90 RDTE Obligation Plan was submitted to HQDA based on 98 percent of AMC's total program. Although AMC did not meet its intended goal of 98 percent, AMC did exceed the OSD goal of 95 percent by obligating 97 percent of their FY90 program. The FY90 PEO obligation plan was based on 99 percent of their total program, of which they obligated 95 percent.

FY90-97 RDTE Budget Reviews/Program Objective Memorandum to Budget Issues. In May and June 1990, AMC conducted on-site, in-depth reviews of AMC MSC/SRA RDTE programs. Representatives were also present from HQDA and TRADOC. The reviews were issue-oriented with the purpose of ascertaining the executibility of the various programs. The reviews covered FY90 execution, FY90 unpaid Must Funds, FY91 Must Funds with tails, FY91 business sense adjustments, FY92-93 budget adjustments and FY94-97 budget tails.

For FY91 $76M was approved for reprogramming, $26M was referred to the Technology Base Advisory Group (TBAG) for approval/validation and $35M was deferred pending HQDA decisions/resourcing. For FY92 and FY93, $295M and $278M respectively were identified and approved for reprogramming as POM to Budget Issues. For the FY94-97 budget tails minor adjustments were made, based on prior year reprogrammings, while major issues will be addressed in the FY94-08 LRAMRP.

Support Systems Division

Most Significant Issues

High Mobility Multi-Purpose Wheeled Vehicle (HMMWV). A follow-on contract for additional HMMWVs was awarded to AM General, the original supplier. The over $1 billion contract will provide over 30,000 additional HMMWVs for the Army's light truck fleet.

Development of a Draft Soldier Modernization Plan (SMP). The SMP was a joint TRADOC, AMC, ODCSOPS, and ODCSLOG effort designed to make the soldier more lethal, survivable, effective, and sustainable by the means of a systematic, integrated plan which addresses requirements, priorities, and funding from the present through the year 2006. The SMP will provide a road map for the development and procurement of the "Soldier System" items. The Soldier System comprises those items of equipment that are worn, carried, or consumed by the soldier in the field. While developing the SMP, improvements of capabilities were identified in five categories: Lethality, Command and Control, Protection, Sustainment, and Mobility. The SMP basic document has been completed and the annexes were being completed at the current time. The completed draft SMP will be staffed throughout the U.S. Army in 1991.

Desert Shield Production/RDTE Surge Process. Since the onset of Operation Desert Shield, it has become necessary for AMC to surge selected items in production, to accelerate programs in RDTE, and to consider New Ideas from Technical Base Industry to meet the materiel needs of deployed forces. The process was initiated when a shortage was identified from the field (Commander of Army forces in the Central Command [ARCENT]), ODCSOPS, MSCs, PMs, the Labs, Research, Development, and Engineering Centers (RDECs), AMC Logistic Assistance Office, and the Commanders-in Chief (CINC) Critical Items List (CIL). Through the use of a standardized format, the selected system was screened by AMC action

officers to validate the requirement, producibility, and costs. A system was then recommended for review by a nine star general officer panel for approval and submission as a surge candidate to ODCSOPS.

As final authority, ODCSOPS approved or disapproved the surge recommendation or could recommend continuation with a current program as structured. Once approved, the system was tracked on a weekly basis and briefed to the command. Delivery schedules, costs, and other pertinent data were monitored to ensure delivery of the needed system(s).

Flameless Ration Heater. The Flameless Ration Heater development program began in early FY90. The heater was a water-activated chemical pouch designed to heat the meat portion of the Meal, Ready to Eat (MRE). The heater used less than two ounces of water, as opposed to current requirement of ten ounces of water, and a flame producing bar. The development program was accelerated and the Flameless Ration Heater was put into full scale production in August 1990 to support Operation Desert Shield. The Flameless Ration Heaters are being incorporated into the production process for the MRE. By packing the heaters with the meals, the soldiers will be automatically provided a safe, effective means to heat the meal.

Mine Clearing Rake. The mine clearing rake, an attachment for the M728 Combat Engineer Vehicle (CEV), was designed to breach a full vehicle width path for follow-on M1 and M60 tanks. The 4,300 pound mine rake will clear both surface laid and buried anti-tank mines in the sandy soils of Southwest Asia (SWA). The mine clearing rake was quickly developed and produced by the Belvoir Research, Development and Engineering Center (BRDEC) at the direction of the DCSOPS in support of Operation Desert Shield. Two prototypes were produced for testing at Fort Dix, NJ and Yuma Proving Grounds, AZ.

Nuclear, Biological, Chemical Reconnaissance System (NBCRS). The NBCRS was a NBC sampling, detection, and warning system integrated into a high speed, highly mobile, armored carrier capable of performing NBC reconnaissance on primary, secondary or cross-country routes. The FY90 program followed the Congressionally directed NDI approach and completed the competitive shootoff for the contract between General Dynamics Land Systems (GDLS)/Thyssen Henschel and TRW/General Motors of Canada. The contract included 48 initial production systems for urgent fielding; a systems improvement phase; and 5 years of production options for a full rate production Type Classified standard system. The Army requested Best and Final Offers (BAFO) from both competitors in January 1990 and a final source selection was made in February 1990. The Team of General Dynamics Land Systems and Thyssen Henschel of Kassel, Germany was awarded a Firm Fixed Price production contract on 15 March 1990 for 48 interim systems at a cost of $98.9M. They were also awarded the system improvement phase RDTE contract for improved NBCRS for a cost of $79.8M.

In August 1990, Operation Desert Shield resulted in an immediate requirement for NBCRS systems to enhance the chemical detection and avoidance capabilities of U.S. Forces in the Middle East. The German Government offered 60 systems (50 for the Army and 10 as a gift for the Marines) from the German Army to support this requirement. The German Army "FUCHS" (FOX) NBCRS systems were basically interim model systems that required "Americanization" prior to use by American forces. The German firm Thyssen Henschel "Americanized" 60 NBCRS systems which were used in the Middle East.

Palletized Load System (PLS). During FY90, the PLS program successfully completed a Defense Acquisition Board Milestone IIIA review on 18 September 1990. A 5-year contract with option production was signed with Oshkosh Truck Corporation on 28 September 1990 for approximately $1 billion. Basic program quantities consist of 2,707 trucks, 1,083 trailers and 30,719 flatracks. PLS consists of a 16.5 ton truck with self-load/unload capability and a companion 16.5 ton trailer. PLS will be an integral part of the Army's Maneuver Oriented Ammunition Distribution System and is being studied for other uses.

Close Combat Tactical Trainer (CCTT). The CCTT is a system of computer driven combat vehicle simulators such as M-1 Tank, M2/3 Bradley, etc. These simulators are interactive among crew members and connected via local area network to other simulators. This creates a simulated battlefield which, when viewed by soldiers using the system, creates the illusion of moving and fighting over actual terrain. The Training Device Requirements (TDR) document was staffed through TRADOC and AMC. GEN Foss, CG TRADOC, signed it on 11 June 1990 and GEN Tuttle, CG AMC, signed it on 9 July 1990.

Solar Shade Systems. Natick Research, Development, and Engineering Center (NRDEC) designed and procured several items which reduced the effects of solar heat buildup on supplies, vehicles, and personnel in support of Operation Desert Shield. These systems included lines that attach under camouflage nets; covers for combat vehicles and aircraft; an improved maintenance tent frame and cover; nuclear, biological, and chemical protective covers; and large area shade systems. After user evaluation, procurement quantities areas were scheduled for fielding by Spring 1991.

Sleep Restraint System (SRS). The Human Engineering Laboratory (HEL) and NRDEC developed the SRS for the M1 and M60 series main battle tanks in support of Operation Desert Shield. The SRS consists of a Kevlar webbed hammock installed inside the tank. The SRS allows two crewmen to get restful sleep inside their tank while buttoned up. When stationary, the crew normally sleeps outside of their tank, exposing them to possible artillery or nuclear, biological and chemical attack. The SRS allows crew members to sleep inside their vehicle, protected from these hazards. HEL and NRDEC will continue development of SRS for other combat vehicles.

Clamshelters. AVSCOM and TACOM procured maintenance clamshelters in support of Operation Desert Shield. These clamshelters served as relocatable buildings to perform aircraft and vehicle maintenance while protected from the sun and blowing sand. The aviation clamshelter was large enough to house two CH-47 helicopters, both with rotor blades unfolded. The vehicle clamshelter has eight bays of workspace for combat vehicles. These clamshelters have a significant impact on equipment readiness. Over 250 clamshelters will be procured from September 1990 through April 1991.

Standard Integrated Command Post System (SICPS). The Standard Integrated Command Post (SICPS) Tent Command Post (Tent CP) was Type Classified - Standard in February 1990. A total of 800 Tent CPs will be deployed to units in FY92. A Milestone I/II In-Process Review decision transitioned the SICPS Rigid Wall Shelter (RWS) into Full Scale Development in May 1990. The SICPS consisted of four variants, including a tent CP complete with mapboard, lights, and tables; a RWS mounted on the HMMWV; a 5-Ton Expando van; and the M577 Tracked CP. The RWS, 5-Ton van, and M577 versions also came with a SICPS tent CP. The SICPS family of shelters will house the communications nodes of the Army Tactical Command and Control System, a multi-billion dollar major program. The SICPS standardizes command post operations throughout the Army.

Air Ground Engagement System II (AGES II). The Ages II system augmented the Multiple Integrated Laser Engagement Simulation (MILES) and allowed the division's aviation assets to conduct force-on-force level training with MILES equipped units. The AGES II system simulates the threat and vulnerability characteristics of the host platform by using eye-safe low power lasers and laser detectors. The AGES II system includes weapon simulation, vulnerability simulation and control subsystems. These functions provide AGES II the capabilities to perform a simulation of war fighting capabilities in a training environment without utilizing live ammunition. AGES II will support Army training by providing commanders with the ability to judge the performance of the unit and assess collective training shortcomings.

The AGES II systems are planned to be used at home station and at the Combat Training Centers (CTC) during tactical training/force-on-force exercises. Air to ground weapons include HELLFIRE, Hellfire ground support system, 30mm Gun, and 2.75 Rockets. AGES I was the earlier program that has fielded devices for the AH-1, UH-1, Stinger, Vulcan, etc. In production at this time for AGES II are devices for the UH-60, CH-470, UH58-D, AH64A and HGSS (C/YLLD). Under full scale development are devices for the AH64B and OH58D helicopters.

Aviation Division

Most Significant Issues

The two most significant issues handled by this division were the dehumidification/dry air machine foreign weapon evaluation and the Aircraft Ultra Light Weight Camouflage Nets. These and other topics are discussed below.

Dehumidification/Dry Air Machine Foreign Weapon Evaluation. Events in Panama heightened awareness and reinforced concerns about the effects of humidity and corrosion on aircraft readiness. Dehumidification/Dry Air Machines, being used by some of our NATO allies, can significantly reduce humidity and corrosion in aircraft, track vehicles and electronic systems. Currently, the Army (AMC lead) is participating in a tri-service (Navy lead) Foreign Weapon Evaluation (FWE) of dehumidification equipment. The objective is to identify aircraft operational availability impacts and Operational and Support (O&S) cost savings.

Aircraft Ultra Light Weight Camouflage Nets (ULCANS). The ULCANS is an NDI, light weight, fine mesh net system that is easy to install, does not exhibit the snagging characteristics of conventional nets, and will effectively conceal aircraft.

USAREUR requested ULCANS for test during Reforger 90. Deficiencies/shortcomings were identified in three different prototype net systems. An acquisition strategy was developed which would field ULCANS in USAREUR as a limited procurement urgent (LPU) item in FY92 and to the rest of the Army as a type classified standard (TC-STD) item in FY93. With the advent of operation Desert Shield, a more immediate need arose. Based on the results of REFORGER 90, a sole source contract for 500 nets was awarded. Delivery to SWA began in November 1990 and was completed in December 1990. An additional 500 nets were contracted for under an option in the original contract. Delivery of these nets will be completed by February 1991.

LONGBOW Apache Weapon System. The LONGBOW system consisted of three parts: a fire control radar mounted on the aircraft; a radio frequency (RF) seeker for the Hellfire missile; and modifications to the AH-64 to accept the radar system.

The Ad-Hoc working Group continued to prepare for the Milestone II Army Systems Acquisition Review Council (ASARC) and to function as the Materiel Acquisition Review Board (MARB).

At the request of PEO Aviation and PM Target Acquisition Designation Systems/Pilot Night Vision Systems (TADS/PNVS), the Red Team that had been formed to do a technical risk assessment for the Milestone 1b ASARC was reactivated and chaired by AMC. Several new members were added to the team which visited each of the contractors and provided a written assessment of the results. The rated team's bottom line was that the LONGBOW:

promises to be a major leap ahead in technology improvement complementing the lethality of the present Apache Weapon System. It should be given full support for continued full scale development/production proveout and fielding.[14]

Following the ASARC in July, the OSD Conventional Systems Committee (CSC) recommended restructuring the program prior to going to the Defense Acquisition Board (DAB). The DAB was held in December and approved the LONGBOW entering the Development Production Proveout (DPP) phase.

Air Traffic Control Transfer. The Army's Air Traffic Control (ATC) system consists of fixed base facilities and tactical ATC. Fixed base equipment and facilities were generally procured to support permanent or semi-permanent Army airfields and traffic management, while tactical ATC was primarily employed in the combat environment.

In 1986, the Vice Chief of Staff of the Army (VCSA) directed transfer of ATC materiel acquisition functions from the U.S. Army Information Systems Command (USAISC) to supported Major Commands, proponency to the U.S. Army Aviation Center (USAAVNC), and Materiel Development to AMC. In the interim, most Planning, Programming, Budgeting Execution System (PPBES) functions remained with USAAVNC and the U.S. Army Air Traffic Control Activity (USAATCA) at Fort Rucker.

In 1989, AMC and TRADOC initiated actions to extract TRADOC from ATC materiel developer functions. In February 1990, HQDA tasked TRADOC and AMC to develop a plan of action to transfer residual Air Traffic Control (tactical and fixed base) materiel development missions, functions and resources from TRADOC and USAISC and consolidate within AMC.[15] The concept to restructure ATC was organized into two phases: Phase I-Acquisition Management resources to be transferred; and Phase II-Study ATC Maintenance and Supply Support System beginning in January 1991.

Phase II, to begin January 1991, will study the ATC Maintenance and Supply Support System worldwide to see if life cycle support, currently managed by TRADOC, should be transferred to AMC. During this period of transition, critical fielding of equipment continued. Further transition of ATC life cycle support to the materiel development community will improve overall life cycle management.

Aviation Cockpit Compatible Lighting Program. Compatible cockpit lighting was achieved by changing the spectrum of light in the cockpit as seen through the Aviation Night Vision Imaging Systems (ANVIS) used by aviators. ANVIS is a passive, helmet mounted, binocular image intensification device using third generation image intensification tubes. These tubes were extremely sensitive to radiation in the 600 to 900 nanometer (NM) portion of the electromagnetic spectrum (orange to near infrared). When ANVIS is exposed to cockpit light that is too intense (from approximately 600 to 900 NM in wavelength), it becomes less sensitive to the radiance of the outside scene and amplifies the light inside the cockpit. As a result, the pilot can no longer see objects outside the cockpit. The technical fix requires blue-green light instead of red for fielded inventories, systems in-production and future systems. To achieve this goal, a tri-service group developed the MIL-L 85762A specification as a standard for producing compatible aircraft lighting

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[14]The red team report, MEMORANDUM for the Record, 18 June 1990, SUBJECT: Final Report of the Red Team for the Longbow Apache Milestone II can be found in the DCS for Development, Engineering and Acquisition historical submission for FY90.

[15]For the proposed transfer plan see TRADOC MEMORANDUM FOR HQDA, 12 Oct 90, Subj: Plan of Action for Transfer of Air Traffic Control (ATC) Materiel Development Functions, in the DCS for Development, Engineering and Acquisition historical submission for FY90.

components and equipment, which was completed in 1987. AVSCOM's Aviation Electronics Management Office (AEMO) was then established and given the AMC lead responsibility for integrating aviation electronics including aviation night vision compatible lighting.

Through 1989, AEMO has prototyped four aircraft with compatible light specifications: AH-1F, OH-58D, CH-47, and UH-60. Technical data packages have been supplied to program and acquisition managers for implementation of materiel and engineering changes. Other aircraft are being prototyped this year.

In 1990, the Army's Senior Leadership has continued to focus on aircraft safety/night vision operations as priority items. These included priority procurement of radar altimeters and an altimeter audio warning capability for rotary wing aircraft; procurement of Heads-Up Displays; testing to identify Night Vision Goggle (NVG) technical limitations; and NVG compatible cockpit lighting on a priority basis. Goals and time lines were established to achieve these requirements.

HQ AMC drafted a MIL-L 85762A policy which was being coordinated for Army-wide approval. The policy will require all aviation cockpit avionics/electronics/systems be Night Vision Goggle acceptable/safe by the mid-1990s. Waivers will be required for: any new development aircraft with a Milestone IIIA that failed to implement MIL-L 85762A for interior lighting; any aircraft undergoing block upgrade/modification failing to implement MIL-L 85672A for interior lighting; all aviation interior cockpit replacement avionics/electronics systems or subsystems installed in aircraft after FY95 failing to fulfill MIL-L 85672A.

Desert Shield Support

Aviation Division personnel have supported Operation Desert Shield from the beginning. Personnel have worked overtime (day, night, weekend) shift duty in the AMC Emergency Operations Center (EOC) on numerous occasions. Initially three of the division's eight personnel were devoted full time to EOC duty in support of the DCS for Readiness. Full time personnel were eventually relieved from full time support when AMC received Individual Mobilization Augmentees (IMA) to perform EOC duties.

Division personnel have reviewed more than 80 surge proposals from AVSCOM and CECOM. Seven surge proposals were funded below threshold. Seventeen recommended/validated programs, valued at $54.4M, were included in the FY91 Supplemental Budget Request. Additionally, the division received several unsolicited proposals/recommendations from contractors and private citizens with suggestions for equipping/solving problems encountered by our soldiers in Saudi Arabia. Recommendations/proposals were passed to the appropriate agencies (AVSCOM, AMC-SWA, Public Affairs, etc.) for review/validation/action.

Command, Control, Communications, Intelligence Division

Significant Issues

The most significant issues facing this division in FY90 included substantial fielding of the Single Channel Ground and Airborne Radio System (SINCGARS) Combat Net Radio System; completion of proof of principle for the Combat Service Support Control System (CSSCS); the restructuring of the Forward Area Air Defense (FAAD) Command and Control System (C2); the deployment of the Army Tactical Command and Control System (ATCCS) Common Hardware in the Middle East for C2 operations in Combat Service Support, Maneuver Control and at Echelons Above Corps (EAC); the fielding of 506 Small Lightweight Global Positioning Satellite Receivers (SLGR) to Desert Shield and ordering of 3,500 additional SLGRs for Desert Shield; the continuing fielding of Maneuver Control System (MCS) equipment to USAREUR and the rest of the Army, especially Desert Shield. Mobile Subscriber Equipment (MSE) fieldings continued in FY90, with V Corps fieldings commencing in December 1989 and III Corps fieldings

completed in February 1990. In addition, the following items were fielded: 33 Trainer units for the Remotely Monitored Battlefield Sensor System (REMBASS) early warning and target development system; 33 QUICKFIX EH-60A Countermeasures System; 3 TACJAM AN/MLQ-34 Countermeasures Systems; and the TRAFFIC JAM AN/TQL-17A(V)3 Countermeasures System continued to FORSCOM and TRADOC.

Single Channel Ground and Airborne Radio System (SINCGARS). SINCGARS is the first new combat net radio since the AN/VRC-12 and AN/PRC-77 families of radios were fielded in the 1960's. SINCGARS was initially fielded in December 1987. There were a total of 15,822 ground radios and 1240 airborne radios delivered at the end of FY90. There were 1,088 radio transmitters (RT) fielded to TRADOC at the end of FY90. The Eighth U.S. Army (EUSA) in Korea fielded 6,951 ground RTs and 215 airborne RTs by the end of FY90. A Milestone IIIB, DAB, Review in December 1990 made a decision to go to full scale production of the Integrated Communication Security (ICOM) ground radio and to award Option 4 for up to 16,000 ICOM ground RTs.

A contract was let to a second source for the SINCGARS program in July 1988. The contract was for a base year and two priced options for a total of 12,650 ground radios. A Milestone IIIB DAB review was scheduled for December 1990 for a decision to award Option 1 for 1725 RTs. A new production facility in Tallahassee, Florida was put into operation. The First Article Tests were scheduled for mid-1991, and production was scheduled to start upon successful completion of these tests.

Combat Service Support Control System (CSSCS). CSSCS is one of five ATCCS nodes and provided logistics information on operational readiness, combat sustainability and projected shortages. It utilizes inputs from a variety of Standard Mission Information Systems (STAMIS) to provide status of medical, ammunition, maintenance, personnel, supply, and property book information. It provides Army commanders with command and control of assets from EAC down to the battalion level. It is composed of five blocks of software and has completed proof of principle for versions one and two.

Forward Area Air Defense (FAAD) Command and Control (C2). FAAD C2 is one of the five ATCCS nodes providing command and control of air defense assets from EAC to the battalion level. It provided commanders with targeting information and queuing of weapons systems; i.e., Non Line of Sight (NLOS), Line of Sight Forward (LOSF), Line of Sight Rear (LOSR) and Combined Arms. Due to technical delays, primarily with the Masked Target Sensor (MTS) and the Ground Based Sensor (GBS) as well as funding cuts, the AAE directed the PM Air Defense Command and Control System (ADCCS) to restructure FAAD C2. Consequently, it was planned to develop FAAD C2 to be implemented in the light divisions first with the Light Special Division Interim Sensor (LSDIS). The GBS, heavy division capability and MTS will be developed in later years. Initial Operational Test and Evaluation (IOT&E) is scheduled for late 1993.

Common Hardware/Software (CHS) for Application in the ATCCS. In 1986, the Under Secretary of the Army and the Vice Chief of Staff of the Army directed the acquisition of NDI for a standard set of common hardware and shared common software for utilization in all systems and sub-systems of ATCCS, where feasible. CHS is the most effective and economic means of achieving integration and interoperability of the five functional areas of the battlefield to provide the Commander with full Command, Control and Communications (C3) wherever he may be on the battlefield.

In August 1988 PM-CHS awarded the initial contract for ATCCS CHS to the MILTOPE team. Ford Aerospace Communications Corporation (FACC), Hewlett Packard, General Telephone and Electronics and Analytics, Inc. were members of the MILTOPE team. Production hardware for integration into the Forward Area Air Defense C2 (FAAD-C2), Advanced Field Artillery Tactical Data System (AFATDS), Maneuver Control System (MCS) and CSSCS began delivery in FY89.

Proposals for a Lightweight Computer Unit (LCU) for ATCCS Common Hardware are now under evaluation. The Combined Arms Center Development Activity (CACDA) is preparing a Required Operational Capability (ROC) for procurement of sdecond generation ATCCS Common Hardware/Software, with both Large Screen Displays (LSD) and Large Screen Printer Plotters (LSPP), to achieve technology insertion and continued production after the initial contract expires in 1993. ATCCS Common Hardware has been deployed in the Middle East for Desert Shield for C2 operations in Combat Service Support, Maneuver Control and at Echelons Above Corps.

GPS Receivers for U.S. Army Use in Operation Desert Shield. GPS is a Tri-Service network of satellites that enables a radio receiver to obtain passive precision location on land, over sea and in the air. To deny access by Selective Availability (SA) function, the Army foresaw the ultimate need for 68,000 or more Lightweight Army User Equipment (LAUE) secure receivers. For Tri-Service application, the GPS Joint Projects Office (JPO) has defined LAUE as the Precision Lightweight GPS Receiver (PLGR). SA capability in PLGR will enable 16 meter location accuracy in a wartime scenario. Because of the need for definition of multiple service requirements, full scale development and formal test programs, PLGR will not enter production until FY93/94. The DCSOPS estimated the immediate Army need for the LAUE function in Desert Shield to be about 8,500 units, enough to extend equipment down to every squad leader.

The Army owned 506 SLGRs purchased from Trimble Navigation Limited of Sunnyvale, California, for field demonstration of GPS location capability. The JPO claims this Trimble equipment demonstrated an Operational Readiness of 96% in extensive field use with the Army and Marine Corps. No formal tests were recorded. SLGR does not have SA capability. With SA distortion of zero percent, the location accuracy of SLGR is 25 meters. In standard peacetime SA operation, SLGR is capable of location accuracies of 100 meters. As SA distortion is increased, the location accuracy of SLGR is further degraded.

Available equipment from the original 506 Trimble SLGRs, has been fielded to Army troops in Desert Shield and another 3500 SLGRs have been ordered from Trimble. That should be enough to equip all Company Commanders, Air Defense Platoons, Maneuver Platoons, Scout Platoons, Artillery Batteries, Fire Support Sergeants and Forwarded Observers in Desert Shield. OSD has approved acquisition of an additional 4735 SLGRs for deployment in the Middle East, but OSD recommends the Army use OMA funds for this additional procurement.

Maneuver Control System (MCS). In evolving from a full militarized Command and Control system to a diversified system of NDI built around a small core of militarized Tactical Computer Terminals (TCT), MCS has become the prototype for the ATCCS. Current MCS operational software, containing the Interim Force Level Control System (IFLCS), is the proof of principle for ATCCS. Thompson Ramo Woolridge (TRW) is the system integration contractor for MCS.

MCS NDI equipment, the Tactical Computer Processors (TCP) and Analyst Consoles (AC), are ruggedized applications of commercial Hewlett Packard computers. Ford Aerospace Communication Corporation (FACC) completed production deliveries of more than 1,500 assorted TCPs and ACs in 1990. The Program Manager-Operational Data Systems (PM-OPTADS) was in the process of fielding MCS NDI equipment to USAREUR and the rest of the Army, and TCTs were being phased out of field applications. ATCCS Common Hardware, which uses ruggedized versions of similar Hewlett Packard computers, was deployed to Desert Shield for integration with MCS-NDI equipment.

Mobile Subscriber Equipment (MSE). MSE was an advanced, secure and survivable telephone system with data and facsimile capability which enabled Army commanders and their staffs to exercise command and control from mobile platforms and static command posts throughout an entire five division corps area. GTE was the prime contractor. MSE was initially fielded in February 1988. Fielding was being

accomplished by one corps at a time, in the sequence of III, V, VII, XVIII and I Corps. III Corps fielding took place in February 1988 through February 1990. V Corps fielding commenced in December 1989 and continued into FY91. VII Corps fielding will commence in FY91.

Remotely Monitored Battlefield Sensor System (REMBASS). The REMBASS was a ground-based remotely monitored surveillance, early warning and target development system capable of day/night worldwide operation under all weather conditions. The REMBASS system was composed of modular components that could be combined to form various system configurations tailored to each unique mission scenario. The final fielding of the SM750, commonly known as the Trainer, was accomplished in May 1990 to the 2nd Infantry Division in Korea. The fielding completed a total of 33 Trainer units.

QUICKFIX EH-60A Countermeasures System. The QUICKFIX EH-60A was a Communications Jamming Emitter Intercept/Locating System that was carried in the Blackhawk Helicopter. A total of 15 systems were fielded in FY90 as follows: 3 to Fort Bliss, Texas; 3 to Fort Riley, Kansas; 3 to Fort Richardson, Arkansas; 3 to Fort Carson, Colorado; and 3 to Fort Polk, Louisiana. A total of 66 systems had been fielded as of the end of FY90.

TACJAM AN/MLQ-34 Countermeasures System. The TACJAM AN/MLQ-34 was a High Power Communications Jamming System carried in the M1015 Tracked Vehicle. Three systems were fielded in FY90 to Fort Polk, Louisiana. A total of 63 systems have been fielded to date.

TRAFFIC JAM AN/TQL-17A(V)3 Countermeasures System. The TRAFFIC JAM AN/TQL-17A(V)3 was a High Power Communications Jamming System carried on the Common Utility Cargo Vehicle (CUCV), which was currently being replaced by the High Mobility Multipurpose Wheeled Vehicle (HMMWV). A total of 34 systems were placed on HMMWVs in FY90: 29 to FORSCOM and 5 to TRADOC. Replacements for Europe and Korea are scheduled for FY91.

Acquisition Software and Automation Division

Most Significant Issues

The most significant issues handled by the division in FY90 were as follows:

a. Life Cycle Software Engineering Centers (LCSECs). Standardization of AMC LCSECs was major focus this past year.

b. Policy Issues. AMC-R 70-16 is the mission critical computer resources policy guidance superseding DARCOM-R 70-16.

c. Database design. A database design effort aimed at improving the MCCR management has been initiated but FY91 funding will be needed to continue this effort.

d. OSD/JLC (JPCG-CRM) Ada Joint Program Office Management and Infrastructure initiatives are continuing in support of embedded software systems.

e. Software Engineering Self-Assessment Training is being done at the Software Engineering Institute.

f. Army Software Implementation Task Force efforts aimed at removing significant issues are continuing.

Life Cycle Software Engineering (LCSE). FY90 saw the beginning of standardization among the LCSE centers and better communication between LCSE centers, AMC and HQDA. AMCDE was recognized as the functional proponent for LCSE. HQDA functional representatives were educated on the LCSE Program. Funding among the centers was standardized. Weapon systems, supported by all centers, were prioritized by HQDA and TRADOC for the first time. Guidance on LCSE funding was revised in the Budget and Program Resource Review (BPRR). The funding policy for embedded software was changed to reflect "who fund" for changes made to a system and impacting another. Guidance was provided to the centers on reimbursable dollars, that is, what should be reimbursed by the PM. A data base was established to track LCSE dollars.

A standard Information Management Plan (IMP) was approved by HQ Information Management. Approval of Capability Requirements (CAPRs) authority was assigned to the DCSDEA.

The Software Engineering Intern Program suffered a delay due to loss of spaces. Efforts were made to establish Software Engineering undergraduate and graduate programs at universities near St. Louis, MO and Huntsville, AL.

AMC-R 70-16, *Management of Computer Resources in Battlefield Automated Systems.* AMC-R 70-16 was promulgated on 11 April 1990 as AMC policy for the management of computer resources in Battlefield Automated systems. It reflected experience and lessons learned from the AMC's Life Cycle Software Engineering Centers. It superseded DARCOM-R 70-16, augmented AR 70-1 and AR 700-127 for computer resources, and provided for effective management of the acquisition of battlefield automated systems and their support over the life cycle. PEOs and PMs operating under the AMC functional support concept were encouraged to implement this regulation in their system acquisition projects. Use of this regulation by the PEOs/PMs will help ensure efficient transition of their systems to the post deployment phase.[16]

OSD/JLC (JPCG-CRM) Ada Joint Program Office Management and Infrastructure. This office was heavily involved in Joint Logistics Commanders Joint Policy Coordinating Group, Computer Resource Management (JLC-JPCG-CRM) (hereafter cited as the CRM) efforts throughout the year. Mr. Michael S. Saboe was the principal for this group. The CRM had been attempting to solidify an approach for getting the maximum return on limited software infrastructure resources. During the past year, General Tuttle, as well as this branch and participants in the CRM, articulated the importance of maintaining and investing in software infrastructure initiatives.

In June 1990, thanks to the support of Mr. James Laster, Army Joint Activities Secretariat and General Tuttle, the JLC principals moved this effort dramatically forward when they signed off on a memorandum endorsing Ada, and emphasizing the need to stress investment in software "support effort multipliers such as support environments, facilities, related research, infrastructure and staff" throughout the Planning, Programming, and Budgeting System process.

In August, the House Armed Services Committee National Defense Authorization Act FY91 (HR 4739) also stressed these matters and expressed their concern. The HASC also requested the GAO to:

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[16]The request, not direction, that PEOs/PMs implement the AMC regulation was included in a Memorandum from AMC's Deputy Commanding General for Research, Development, and Acquisition to the various PEOs and PMs, dated 11 April 1990, Subj: AMC-R 70-16, 5 April 1990, *Management of Computer Resources in Battlefield Automated Systems*, inclosed in the DCS for Development, Acquisition and Engineering historical submission for FY90.

undertake a broad study of computer software embedded in weapon systems. ...examine what policies and procedures the Department of Defense and the military services have in place for *managing and controlling the development and acquisition* of this software.

As the result of the JLC DOD Software memorandum to Mr. Betti, the JLC was seen as leaning forward on this matter. The JLC and its CRM well ahead of the power curve in the actions that were taken in this area.

On 24 October 1990, the Conference Report HR 101-938 accompanying HR 5803 put forward a budget and wording that reinforced the Ada endorsement in the JLC memorandum. Congress went further and wrote into law that all DOD software will be written in Ada.

On the same day that the Conference Report was approved for printing, the OUSD(A) issued a strong statement reaffirming Ada. Further, the OUSD(A) memorandum stated:

Infrastructure initiatives to support embedded software systems must continue to be emphasized throughout the Planning, Programming and Budget System process.

This was the memorandum proposed by the JLC in June for USD(A) distribution to the Service Secretaries.[17]

A rare event for the times occurred in the FY91 Budget Authorization Bill, the Ada Joint Program Office budget was increased by $10 million. The JLC memorandum, initiated by the division and promoted by General Tuttle, along with past efforts to support the AJPO, played a significant role in this budget adjustment. Ada was an infrastructure initiative, but not the only one that needed to be consolidated and receive coordinated support.

After waiting months for these developments, the CRM proposed a new subgroup and developed and approved a charter for a study group to start focusing on infrastructure initiatives. The intent of the new subgroup was to study and develop a decision package that represents workable alternatives to maximizing return on software infrastructure investments through an Infrastructure Joint Program Office. "Workable" was the key term. Pooling resources seems to promise the best leveraging of our thin staff and dollars. The JLC/OSD approach has demonstrated its utility as a workable solution. The CRM was taking measured, calculated steps in implementing these efforts.

The recent success with the Ada initiative clearly demonstrated that a heavy load can be moved by the team approach. With the JLC in the lead, the CRM, and a Joint Program Office with OSD and Congressional funding lines, we thought we had a good working model. The CRM subgroup study effort will identify candidate alternatives which promise "doable", low risk, high return solutions to managing software infrastructure (i.e., managing and controlling the development and acquisition).

The budget legislation also requires that after 1 June 1991, all DOD software (not just weapon systems) must be in Ada where cost effective or where exempted by an official of the Secretary of Defense. Further, the most recent version of DODI 5000.2, refers to a Software Executive Official. This was envisioned as the Ada waiver approval authority.

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[17]Memorandum, Joint Logistics Commanders the Undersecetary of Defense (Acquisition), 26 June 1990, Subj: Ada Joint Program Office Management, and DoD Embedded Software, inclosed in the DCS for Development, Acquisition and Engineering historical submission for FY90.

Database for the Management of Mission Critical Computer Resources. A database design and development effort aimed at improving the management of mission critical computer resources was initiated in FY90 in response to recommendations from both the Army Audit Agency and the Army Software Task Force. This project was moving forward at a slow pace because it was unfunded. AMC planed to include it as a high priority project under the Software Implementation Task Force Initiative (see below) to ensure funding in FY91 and beyond.

Software Engineering Self-Assessment Training. The Software Engineering Institute (SEI) was a federally funded research and development center owned and operated by the Carnegie Mellon University in contract with DOD. SEI had been tasked to provide self-assessment training to software professionals from AMC's four life cycle software engineering Centers at AVSCOM, MICOM, CECOM, and AMCCOM. Self-assessment of the first center (CECOM) will be conducted by the team, using SEI's methodologies, within four months after the training period.

Army Software Implementation Task Force. As Army systems increased their reliance on computers, software complexity and criticality increased. Although progress had been made in recent years, the Army still did not have a cogent software acquisition and support policy nor did it have a strategy for the insertion of new technology in a controlled, purposeful manner. As a result, a report was compiled which addressed these problems and provided recommendations/actions which must be taken to correct the problems.

LTG Bunyard formed the Software Implementation Task Force (SITF) in October 1989 to implement the recommendations of the report. The activities of the AMC SITF have continued throughout the year. In March of 1990 the SITF was transitioned to AMCDE under the management of the Software Branch. SITF will continue to function and address the high-priority recommendations as well as the 45 lower priority recommendations and their respective subtasks totalling 177 tasks in the future.

Missiles and Weapons Division

Most Significant and Command Management Issues

Armored Systems Modernization (ASM). The development of a Future Infantry Fighting Vehicle (FIFV) Trade Off Determination (TOD) was specified in the 31 May 1988 Memorandum of Agreement between TRADOC and AMC. The effort to develop a new Reliability, Availability and Maintainability (RAM) Model by Government and graduate students for the Colorado School of Mines required General Tuttle's involvement.

Electronic systems integration was critical to the overall success of the ASM program. The scope of the problem encompasses vehicle electronics (VETRONICS), computers, communications (Command and Control [C2]), and power. To manage the integration of computers, communication systems and VETRONICS to fulfill user requirements, the PEO chartered the Automation Communication Resource Working Group (ACRWG). The ACRWG was a high level multi-command forum which enabled the PEO to facilitate the development and integration of automation requirements, computer hardware/software, communications and VETRONICS systems/subsystems. During FY90, the ACRWG managed and guided the development of several key Capstone Draft Life Cycle documents presented to the ASARC/DAB including draft required operational capability, with Vehicle Control and Operating System (VCOS) Functional Description (FD), Draft VCOS Technical System Operational Concept, Draft VCOS System Segment Specification (Level A), and Preliminary Automation Communication Resource Management Plan (ACRMP).

Light Weapons and Fire Support. Under the provision of the Intermediate-Range Nuclear Forces (INF) Treaty Implementation, the Secretary of the Army must certify to OSD every six months that no existing or contemplated Army ballistic or cruise missile research, development, or acquisition program is in violation of the treaty. HQDA tasked commanders of AMC, TRADOC, the Strategic Defense Command (SDC) and the Operational Test and Evaluation Agency (OTEA) to certify by letter that all existing or contemplated Army missile programs have been reviewed and that their areas of responsibilities, as indicated in the plan, are in compliance. In response to this, HQ AMC, under CG's signature, issued two letters to HQDA, in April and October 1990, stating AMC compliance with the INF Treaty.

Air Defense Missiles. The CG, AMC approved a $15M investment to buy 10 additional HAWK Phase III modification kits. All HAWK fire units will be converted from Phase II to Phase III configurations. A $275M Operating and Support (O&S) cost savings will be realized by not having two different configurations in the field. The Corps Surface-to-Air Missile (Corps SAM) Project Management Office was established on 7 August 1990, under the Commander, U.S. Army Missile Command.

Armored Systems Modernization Branch

Reliability Modeling Project. For the last two years, Combat and Materiel Developers have been working to establish reasonable, achievable goals for system reliability, availability, and maintainability (RAM). One of the conclusions reached by the community in late 1989 was that the primary simulation model (developed in the '70s) used to predict system performance was not accurate, given the dramatic technological innovations and changes in maintenance doctrine projected for the future.

With the current austere budget environment, we reached the conclusion that the Army could not afford to hire a contractor to either redesign the existing simulation or develop a new one. Therefore, we began looking to other government sources. The most promising, lowest cost approach was to use a combination of full time government assets and graduate students to develop a new simulation. GEN Tuttle approved this approach in October 1989.

Based on his reputation and standing promise that he would do government work for free, AMC (representing the Combat and Materiel Development Community) approached Dr. R. E. D. Woolsey at the Colorado School of Mines with the project. Dr. Woolsey agreed to conduct a feasibility study to determine if the project was both appropriate for, and could be done by, graduate students as masters or Phd level theses. GEN Tuttle approved the selection of Colorado School of Mine and Dr. Woolsey to conduct the feasibility study in January 1990.

Over the last months, Dr. Woolsey and his students researched the problem (to include visits to Fort Knox and Fort Lee), and concluded that the project can be completed by graduate students using the thesis as the mechanism. Different students would work different "pieces" of the problem. Actual development work would be started in FY91. Prior to implementing the modeling phase of the project, we polled the RAM community (PEO, Combined Arms Support Command [CASCOM], OTEA, AMC, etc) to determine if they still supported the approach and agreed that the need for a replacement model was still considered critical. All concurred with the approach and need. GEN Tuttle continued to support the project, and called it "a high priority" effort in a recent letter to MG Foley and LTG Salomon.

Future Infantry Fighting Vehicle (FIFV) Trade Off Determination (TOD). The purpose of a TOD is to identify the range of material possibilities from which the Trade Off Analysis (TOA) can prioritize and select the system characteristics which best meet the stated operational requirements, and identify technological alternatives. The TOD established, where appropriate, the bands of performance, the physical

characteristics, limitations and system benefits and burdens given current technology projections. In addition, the TOD provides information on the trade off relationship between key design and performance parameters.

The TOD did not analyze these characteristics in an operational "user" sense. The TOD provided the background data that allowed TRADOC to conduct analysis and prioritization of performance requirements. Given today's limited budgets, the goal of the TOD was to provide the TOA enough information to allow intelligent selection and identification of key requirements while "nice to have" items are identified for possible elimination based on cost or other considerations. In short, the TOD is a "data dump."

In May 1990, the Infantry School requested AMC to update the existing trade off determination study for the FIFV, in support of their desire to conduct a detailed FIFV TOA. AMC representatives met with the Infantry School and the PM FIFV in late May to discuss the specific information required. As a result of that meeting, AMC MSCs were tasked to provide the requested information, if it could be produced at "no charge," or the cost estimate if the work was "billable."

Over the course of the summer, AMC collected either the information or the cost estimates. At the same time, the ASM program underwent changes which altered the data requirements of the Infantry School. Based on this, AMC decided to consolidate into one document all information that could be useful to the Infantry School in conducting a TOA. The significant issue was determining the operational performance possibilities of FIFV to include an assessment of the available technology in terms of performance characteristics, time available, and acceleration potential. Where significant, the trade off relationship between parameters must be quantified and shown through the use of characteristic curves.

The future warfighting doctrine for Infantry as a part of the combined Arms Team was being developed based on system capabilities which exploit future technologies. Many of these technologies were in the early stages of development and had not been viewed in light of the benefits and burdens of other technical approaches. Therefore the impact of this TOD will be felt primarily in the area of definition. The operational benefits (predictions, in some cases) have been succinctly stated and the technological dependencies documented. With this information, the appropriate combat modeling can be done to determine which are essential, which are affordable, and which are merely nice to have.

Since any new data (or any data that required a significant level of effort to re-invent) would come with a cost to develop, the TOD study effort first looked back over the wide variety of comprehensive study efforts already conducted on the ASM program. The review spanned that period of time measured by the Armored Family of Vehicles Phase I report and concluded with the ASM Cost and Operational Effectiveness Analysis (COEA) and Baseline Cost Estimate. Specific emphasis was given to finding information that was not used in previous studies (as a result of the wide focus over several vehicles) but was applicable to the infantry trade off question. Where existing information was deemed inadequate, the appropriate AMC MSC was asked to develop the information or provide the cost estimate. The resulting data was organized into appendices with the purpose and recommended TOA use summarized.

Information already provided to the Infantry School was not repeated here. The significant items that fell into this category are the ASM Baseline Cost Estimate, the detailed Ballistics Research Laboratory (BRL) vulnerability work, and the Army Materiel Systems Analysis Activity (AMSAA) modeling data provided to TRADOC Analysis Command (TRAC) White Sands.

ASM Automation Communication Resource Working Group (ACRWG). The ACRWG conducted several work sessions during FY90. The focus initially was to develop draft program documents which were needed to successfully proceed through Milestone decisions. The program documents were completed and

provided to DA for preliminary staffing prior to the ASARC. The work group continued to update the documents as deemed necessary.

Component Advanced Technology Test Bed (CATTB). The Technical Development Plan for the CATTB was staffed in February 1990. The CATTB program was critical to the initial effort of integrating electronics within a chassis. The CATTB Technology Development Plan reflected the efforts of TACOM R&D Center for demonstrating key U.S. Army Technology base components for potential use in the ASM program. The objective of the CATTB was to demonstrate the integration and interaction of subsystems, thus correcting compatibility problems. The cornerstone of the design philosophy was the modularity of the lethality, survivability and electronic subsystems to greatly extend the leap-ahead effectiveness of future Army systems. The CATTB is a joint TACOM/ARDEC/Center for Night Vision and Electro-Optics (CNVEO)/BRDEC/CRDEC/BRL project and was being accomplished through multiple contracts.

Standard Army Vetronics Architecture (SAVA). SAVA was the critical technology associated with ASM Vehicle Control and Operating System (VCOS) and will be MIL STD 344. The Critical Design Review for SAVA Standard Hardware and Preliminary Design Review for SAVA Standard Software was held 4 and 5 April 1990 respectively, by Armored Vehicles Technologies Associated (AVTA). AVTA, a conglomerate of General Dynamics, FMC, GE Aerospace, and Texas Instruments, was contracted to develop the SAVA Technology under supervision of TACOM. There were two demonstrations connected with the SAVA development contract. The thrust of these efforts was to test and demonstrate standard modules with simulated application involvement. The applications represent some of the VCOS required functions such as graphics, menus, crew stations, intercom systems, vehicle sensors and video. This effort fed into the Component Advanced Technology Test Bed and the Common Chassis Advanced Technology Transition Demonstrator (CCATTD) programs.

Common Chassis Advanced Technology Transition Demonstrator (CCATTD). The CCATTD was the mobility platform portion for ASM. Embedded in the CCATTD will be SAVA and VCOS. The major effort has been focused on contracting and contract award.

Battalion and Below Command and Control (B2C2). B2C2 is an embedded ASM requirement with Army wide application as an extension of the Army Tactical Command and Control System. It reflected basic command and control warfighting requirements to support the combined arms battalion task force down to the vehicle commander. B2C2 was identified by CECOM as an FY91 must fund item. Efforts to fund the program also fell short in FY90. A memorandum of agreement was initiated to begin work and fund the program, however, the issue was still being resolved.

Life Cycle Support. The lead agency for ASM Life Cycle Support is AMCCOM's Life Cycle Software Engineering Center. Support will be obtained by CECOM and TACOM to develop ASM Computer Software Development Plans.

Air Defense Missiles Branch

HAWK. FORSCOM First Unit Equipped (FUE) was achieved in November 1989. The CG, AMC approved materiel release of the Phase III modifications to FORSCOM units. Materiel release of Phase II equipment to the Florida Army National Guard was approved by CG, AMC in January 1990. Production started on the field maintenance equipment consolidation in February 1990. Release of the AN/TSQ-73 version 34 software upgrade was approved in February 1990. Prototype fabrication for launcher digital electronics and launcher mechanical and hydraulics improvements were initiated on January 1990 and March 1990, respectively. The HAWK advanced training simulators contract was awarded in April 1990. The FY90 option of the missile multi-year contract was awarded in April 1990. The CG, AMC approved a

$15M investment to buy 10 Phase III modification kits to convert all HAWK fire units from Phase II to Phase III configuration. A $275M O&S cost savings will be realized from not having two different configurations of HAWK.

PATRIOT Air Defense System. Japan successfully completed Initial Operational Test and Evaluation (IOTE) using Japanese produced missiles and fire units in November 1989. Sweepdown I and II, field installation of several product improvements, were completed in CONUS by February 1990. The Italian Implementing Agreement was signed in April 1990. Phase III & IV PATRIOT/HAWK interoperability tests were completed in June 1990. The PATRIOT Maintenance Facility (PMF-3) achieved Initial Operational Capability (IOC) in June 1990. The first European backfill (an addition of three fire units to complete the battalion set) was completed in August 1990. Post Deployed Build (PDB-3) software was fielded to Southwest Asia in August 1990.

PATRIOT Anti-Tactical Missile Capability (PAC-2). PAC-2 transition to production was completed in November 1989. The first production fuze was delivered in March 1990. The first production missile was delivered in August 1990. FORSCOM FUE was achieved in August 1990.

AVENGER. In April 1990, the Defense Acquisition Board granted approval for the AVENGER system to begin full rate production (DAB IIIB). The Army Systems Acquisition Review Council (ASARC) approved the Avenger for Type Classification-Standard in January 1990. The Avenger fielding to the 1st Cavalry Division, at Fort Hood, Texas, was completed in August 1990. AVENGER was one of the first air defense systems deployed during operation Desert Shield.

Corps Surface-to-Air Missile (Corps SAM). MICOM was designated as the materiel developer by the Army Acquisition Executive on 11 June 1990. Authority to negotiate Annex B or the Extended Air Defense Memorandum of Understanding was received on 20 July 1990. Annex B will look at different options in meeting the U.S. and German requirements for a readiness altitude air defense system. The Mission Need Statement for Corps Sam was approved by the Joint Requirement Operational Council. The Defense Acquisition Board approved the Corps SAM program to enter the Concept Definition Phase and the Acquisition Decision Memorandum was signed on 8 August 1990. The project office was established on 7 August 1990.

Fiber Optic Guided-Missile (FOG-M). The FOG-M is the NLOS system element of the Forward Area Air Defense system. The NLOS system consisted of a multiple missile launcher and fire control ground station mounted on a High Mobility Multi-Purpose Wheeled Vehicle (HMMWV) compatible with both light and heavy divisions. As part of the FAAD system, it will provide air defense protection to the maneuver force against masked, stand-off rotary-wing aircraft. In addition, the NLOS system will provide fully adequate precise anti-armor fire capability against the most severe threat armor, well beyond the maximum range of tank main guns or direct fire anti-tank missiles. The system will have a night/adverse weather capability via its imaging infrared sensor and will utilize an on-board passive sensor which will allow the fire unit to autonomously acquire targets.

Resources for FY90 support of the NLOS FOG-M program totaled $105.4 million in RDTE funds. During FY90, progress was made in all aspects of the Full Scale Development (FSD) phase of the NLOS program. However, funding stability continued to be a cause of major concern. In December 1989, all NLOS procurement funding was deleted from the President's Budget submission. Procurement funding was restored via the POM building process. In April 1990, as a result of NLOS-PM efforts, HQDA approved NLOS procurement funding beginning in FY94. The Army Cost Position (ACP) and the Management Decision Package (MDEP) both included FY94 full production funding.

The NLOS FSD contract experienced cost overruns during FY90, which were attributed primarily to the Boeing/Hughes team's unrealistically low bid to accomplish the FSD contract effort. Cost containment was formulated by NLOS-PM and the contractor to reduce FSD cost and still produce a sufficiently lethal air defense weapon. The initial cost containment efforts were consolidated and incorporated into Engineering Change Proposal (ECP) J2236, designed to baseline the contract into a more realistic target cost and to insure no future overruns were incurred.

Cost containment measures included the decision to produce only the NLOS light fire unit mounted on a HMMWV chassis, to be deployed in both heavy and light divisions. The ECP would be followed with the maturation modification, a contractual instrument designed to accommodate required system testing not provided for in the initial FSD contract and to provide contractual coverage for FY93-94 necessitated by the production funding delay. The culmination of NLOS-PM efforts was the approval of the restructured $630.8M baseline NLOS program at the 27 September 1990 In-Process Review (IPR) by a panel chaired by LTG August M. Cianciolo, Military Deputy to the ASA(RDA) September also marked the decision by General John W. Foss, TRADOC's Commanding General, to assign the NLOS Anti-Tank proponency to the Infantry Center and School, Fort Benning, Georgia.

During FY90, the Initial Operational Evaluation (IOE) and Extended User Evaluation (EUE) testing programs were successfully completed. A total of 14 hits out of 25 IOE missiles launched in the MICOM qualification and IOE/EUE record firing programs produced a 58% success rate. This result far exceeded the expected success rate documented in the February 1989 Performance Growth Plan.

During FSD only a two student station (versus 6 in production and fielding) Institutional Conduct of Fire Trainer will be used. Also, a user initiated change has resulted in the deletion of the Unit Conduct of Fire Trainer since the Fire Unit's embedded training capability is a superior solution. The new FAADS maintenance concept necessitated the creation of an NLOS Maintenance Trainer in lieu of the Multi-round Trainer (MRT) and the Maintenance Parts Task Trainer (MPTT). A full organic supply and maintenance capability was scheduled to be place at FUE for operator, unit and Direct Support/General Support (DS/GS) levels. Critical design reviews were conducted in FY90 for 69% of the system's principle components.

Line of Sight-Forward-Heavy (LOS-F-H). The LOS-F-H program, a component of the Forward Area Air Defense System, was based on an NDI acquisition strategy with Martin Marietta Missile Systems (MMMS). This system will have both gun and missile capabilities. The LOS-F-H component will engage fixed-wing, aircraft and line of sight, stand-off helicopter threats engaged in close air support missions near the forward line troops.

During FY90, comprehensive testing and evaluation were conducted to determine operational capabilities of the system. The purpose of the Technical Testing (TT) was to fill data voids, complete system safety qualification, support system simulation model maturation, provide data for system safety certification for troop use, and verify corrections of the anomalies and concerns from the candidate evaluation test.

In TT Phases A and B at the White Sands Missile Range (WSMR), from January 1989 through February 1990, nine missiles were fired in addition to the two fired early in the test. The planned 250 mile road test was terminated after approximately 190 miles due to a malfunction of the filtration system of the Prime Power Unit (PPU) generator. The new filtration system appeared to function well and there were no problems with the PPU itself.

TT Phase C, completed in October 1989, consisted of evaluating the LOS-F-H system in a representative European environment. Acquisition and tracking tests were conducted to collect data on

radar and electro-optical subsystem performance. Subsystem performance data were used in modeling efforts to further evaluate overall system capability. Sufficient instrumentation was used to provide adequate data to accurately characterize and assess the LOS-F-H performance in the European environment.

Technical Test Phase D consisted of missile firings and signature testing. Six missiles were fired with five hits at North Oscura area, WSMR during February 1990. Missile firings in TT-D were Production Verification Test (PVT) performance firings. Countermeasures were employed as appropriate. A paper analysis of Nuclear Survivability and Nuclear, Biological, and Chemical (NBC) contamination survivability was performed on the LOS-F-H system and support platform (modified Bradley Fighting Vehicle [BFV]). Results indicated the LOS-F-H is no worse than the BFV. Force Development Test and Experimentation (FDTE) Phase II entailed examination of the LOS-F-H operational concepts. These concepts were examined to refine deficiencies that became apparent. The test scenario was representative of European terrain (Fulda Gap).

The LOS-F-H platoon demonstrated the capability to be an operationally effective air defense system capable of providing significant protection from hostile fixed wing and line of sight, standoff rotary wing aircraft of all types for the supported maneuver force in the forward area. The primary factors affecting platoon effectiveness were mission and terrain. The platoon provided better effectiveness in the defensive scnario due to the fire units being stationary for longer periods of time. One particular terrain feature at the test location significantly impacted the effectiveness in the offensive scenario. Other test conditions, early warning, electronic countermeasures, operations in Mission Oriented Protective Posture (MOPP) 4, etc did not have a significant effect, either positive or negative, on the platoon performance.

The IOT&E missile firings were conducted from January to February 1990 at WSMR, NM and IOT&E force-on-force trials were conducted from April to May at Fort Hunter Leggett, CA, utilizing four Canadian production fire units mounted on the M3A1 Bradley chassis. Testing included both day and night conditions. During force-on-force testing, the system met or exceeded all of its critical mission effectiveness criteria but failed to achieve its required critical operational availability criteria. One major source of Reliability, Maintainability, Availability (RAM) failures was attributed to the poor performance of the PPU, particularly due to dust ingestion problems. Missile rearm times were achieved well within stated criteria but lack of attention to MANPRINT issues resulted in connector damage which rendered several missiles incapable of being fired. OTEA concluded that the use of single fire unit criteria as a measure of true system operational performance during the IOT was inappropriate. Technical testing was suspended and the fire units have been returned to Martin Marietta Missile Systems to start a reliability growth program. Production of the LOS-F-H system has been suspended until the RAM maturation phase is completed and the system has demonstrated the necessary reliability growth.

The LOS-F-H Initial Operational Test and Evaluation was completed in May 1990. The results of the RAM Assessment Conference conducted in June 1990 indicated that the system had not met its RAM criteria. An independent RAM review was conducted on the LOS-F-H during the period from 1 April to 18 May 1990. The review findings indicated that the program should continue but that additional test time would be required to mature the system RAM. The LOS-F-H program entered a two-year RAM maturation phase directed by the ASARC, based on the results of the IOT&E and the ADATS RAM Review Team Report. The RAM maturation phase will provide for government verification of system reliability through a series of exit point tests. The exit criteria were defined as follows:

TABLE III - 1
Exit Criteria for System Reliability

Exit Criteria	Measurement Test	MTBHMF (WSS)
A	Corrective Action Verification	30 Hrs
B	Exit Point Test	54 Hrs
C	Reliability Demonstration	85 Hrs

MTBHMF - Mean Time Between Hardware Mission Failures

Source: DCS for Development, Engineering and Acquisition AHR Submission, FY90.

The ASARC agreed to an interim reliability requirement of 85 hours in order to satisfy the LOS-F-H mission need requirement. After Exit Criteria C is achieved, the contractor will implement a reliability growth program in order to meet and demonstrate the 117 hours requirement by IOC.

MARK XV. MARK XV is a form, fit, function, backward compatible and NATO interoperable replacement for the currently fielded MK XII identification friend or foe system. It is a tri-service, Air Force led program with the joint program office located at Wright-Patterson Air Force Base, OH.

The tri-service FSD core program consisted of six airborne, ground and ship configurations. Army FSD core platforms were the HAWK Phase III Missile System and EH-60 helicopter. The DAB II also recognized an Army unique program which included MARK XV development for the PATRIOT Air Defense System, the FAAD Ground Based Sensor (GBS) and selected special electronic mission aircraft, attack helicopters and Mobile Air Traffic Control systems. MARK XV Tri-service System Design Review (SDR) was successfully completed in December 1989.

The Requirements Analysis and Preliminary Design Phases of the Tri-service core FSD contract were completed, culminating with the Preliminary Design Review (PDR). These phases included technical studies and negotiated agreements on many of the open requirements in the contractual specifications. The PDR was held in incremental sessions starting with the KI-15 COMSEC session in February 1990 and followed by the transponder, time-of-day, interrogator and summary reviews in May and June 1990. Approximately 500 review items were generated on design and programmatic issues and will be tracked until closure. Completion of all actions will allow establishment of the allocated baseline. The NATO Identification System (NIS) Project Directors resolved three remaining significant Standardization Agreement (STANAG) technical issues and agreed to mutually seek cost reductions at the 24-26 April 1990 NIS Project Directors' meeting in Annapolis, MD. Resolution of STANAG issues aided in successful completion of the PDR.

The first period Award Fee evaluation for the tri-service core program was conducted. Bendix's performance over the period February 1989 to April 1990 was assessed as good. Bendix was awarded $100K, based on a total award fee pool of over $770K. This award fee evaluation focused on poor performance in systems engineering, and average performance in program management and production planning. The strongest area was logistics management. OSD approved the Test and Evaluation Master Plan (TEMP) on 12 February 1990. The TEMP was previously signed by the service acquisition executives and submitted to OSD on 2 November 1989.

In March 1990, HQ TRADOC published an interim position that MARK XV would be installed on approximately 4,100 aircraft as well as fixed and mobile air traffic control systems. Primary reason for this decision was that the Federal Aviation Administration will require Mode S capability in all military aircraft by 1997. Mode S capability is inherent in the MARK XV System. However, in August 1990, the Army Aviation Center at Fort Rucker reversed their previous position. Their new recommendation was to install MARK XV on only 500 special operations and special electronic mission aircraft. Both quantities and platforms are currently under review at HQDA. The final number is expected to be approximately 2,000 aircraft.

The MARK XV PATRIOT development and integration will be a two-phased effort. Phase I, HAWK Expanded Digital Interface (HEDI), which will include development of expanded digital interface capability for the Ground Target Intercept (GTI), was put on contract November 1989. Subsequently, an Advance Change Study Notice was submitted to the MARK XV contractor team (Allied-Signal/Raytheon Equipment Division) to initiate Phase II which will address integration and test on the PATRIOT platform. Both technical and cost proposals have been received and detailed technical evaluations conducted. Fact-finding was accomplished in August 1990, with negotiations and contract award scheduled for first quarter of FY91. The acquisition strategy for both efforts was to issue modifications to the current Air Force core FSD contract.

CHAPARRAL Air Defense Guided Missile System. The CHAPARRAL was effective against rotary-winged, propeller and high speed jet aircraft at low to medium altitudes during visual and adverse weather conditions. The CHAPARRAL complemented the capabilities of all-weather, radar-directed air defense systems, particularly against daylight penetrators flying nap of the earth. It was fielded with the VULCAN Air Defense System in CHAPARRAL/VULCAN battalions which were organic to the armored, infantry and mechanized divisions and to rear area air defense artillery organizations for defense of critical air bases, supply depots, and bridges. The Improved CHAPARRAL Missile was a "fire and forget," supersonic, passive infrared homing missile with an all aspect capability permitting immediate re-engagement of multiple targets after launch of each missile (up to four).

Forward Area Alerting Radar (FAAR). FAAR was a D-band pulse doppler radar used to detect low flying aircraft and provide alerting and tentative identification to CHAPARRAL and VULCAN fire units and Man Portable Air Defense System (MANPADS) teams. The FAAR section consists of three men and one vehicle and trailer. The radar has a range of about 20 km, and contains the Mark XII IFF/Selective Identification Feature (SIF) System. In March 1990 a DA decision mandated the retirement of FAAR from the Army by the end of FY90. Partial completion of this directive was accomplished prior to involvement in Operation Desert Shield. Continued deployment in this operation and beyond will require further directives regarding FAAR retention in the Army. During FY90, the CHAPARRAL/FAAR Systems continued to meet or exceed the established system requirements or goals for System Effectiveness, Operational Readiness, and Probability of Single Shot Kill (PSSK), Inherent.

Stinger: Reprogramammable Microprocessor Program (RMP). The Stinger RMP completed their Engineering Development Test in May 1990 and their Production Verification Test III Program in September 1990. The advanced Threat/Countermeasures Performance Assessment was completed in May 1990. FUE in USAREUR was achieved in November 1989 and FUE in FORSCOM during August 1990.

Light Weapons and Fire Support Branch

Pershing. The Pershing II (PII), an intermediate-range surface-to-surface missile, provided the U.S. Army a capability to deliver nuclear fires at preselected targets within the Soviet Union with significant accuracy. The INF Treaty, effective 1 June 1988, required the elimination of all existing, surface-to-surface

intermediate-range (1,000 to 5,500 kilometers) and shorter-range (500 to 1,000 kilometers) ground-launched ballistic missiles. In accordance with the provisions of the INF Treaty, all PII and U.S. owned Pershing 1a (P1a) will be eliminated by 31 May 1991.

The elimination of P1a and PII missiles and launchers was initiated in 1988 and continued during 1990. Timelines to eliminate both P1a and PII assets were met as planned. All tactical P1a rocket motor stages were eliminated by July 1989. The Longhorn Army Ammunition Plant was the P1a elimination site. PII rocket motor stages were being disposed of at Longhorn and Pueblo Depot Activities. The PII elimination schedule was on target. The current schedule for elimination of last PII rocket motor stages was planned for 7 May 1991 at Longhorn to ensure elimination of all INF treaty controlled assets by 31 May 1991.

In addition to providing staff support to the timely execution of the retrograde/elimination implementation plan for the Pershing missiles, the DCSDEA provides a staff responsibility for the issuance of an HQ AMC letter to HQDA on a biannual basis. This letter certifies that all existing or contemplated Army research, development, test and production programs, within the purview of AMC, are in compliance with the INF Treaty. In April 1990, HQ AMC issued such a letter in support of this requirement. During the execution phase of the INF Treaty retrograde/elimination implementation plan, AMC continued to provide support in maintaining tactical PII units at the highest possible state of readiness until the last PII battery was removed prior to 31 May 1991. Monitoring and reporting of the reliability and maintainability status, as addressed in AR 702-3, remained in effect until that time.

M24 Sniper Weapon System. The M24 Sniper Weapon System (SWS) is a 7.62mm weapon which provided precision fire on selected high value targets beyond the effective range of all standard issue rifles. The FUE occurred on 3 November 1988 at Fort Bragg. A CG, AMC memorandum to MG Shoffner, DCSOPS, 26 October 1988, expressed concern that the total quantities to be procured were not adequate for all Army requirements, that AMC Special Reaction Teams (SRT) should have M24 SWS's, and sensitive military sites be given priority over National Guard units in the distribution plan. A follow-up memorandum was sent on 12 December 1988 by MG Rigby, DCSDEA. A subsequent meeting between MG Rigby and MG Shoffner on 2 February 1989 resulted in an agreement that two Army Depots would be given M24s and other AMC SRTs M21s. MG Rigby's message of 27 February 1989 requested that depots storing lethal chemical agents also be provided M24s. DCSOPS decision message, 131130Z Feb 90, was to support teams at the two Army depots but not at eight other depots that stored lethal chemical agents.

Multiple Launch Rocket System - Terminal Guidance Warhead (MLRS-TGW). This was an international program based MOU between the United Kingdom, France, Federal Republic of Germany and the U.S. The Component Demonstration Substage was completed in February 1989. The U.S. entered into the 36 month Demonstration Substage program in July 1989 after European funding issues were resolved. The U.S. share during FY91 was $47.2M (40 percent of total funding). The MLRS-TGW action required review of the funding documents and participation by the HQ AMC member on the Ad Hoc Working Group (AHWG) as well as the staffing and approval of the AHWG charter by HQ AMC.

Close Combat-Heavy Branch

Improved Recovery Vehicle (IRV). The IRV development program was terminated in April 1989 for affordability. The 1990 Appropriations Act required completion of testing and acquisition of the Technical Data Package (TDP). Congress provided $15M for the effort. TACOM identified the remaining effort as requiring the refurbishment of 5 prototypes and both technical and user testing. An IRV Project Office was formed at TACOM's RDEC. Initial program and contracting documentation was accomplished in the fourth quarter of FY90. Refurbishment and testing will begin in FY91.

M-551 Sheridan. The improvement program for the M-551 Sheridan incorporated the M60A3 Tank Thermal Sight and the and Bradley Driver's Night Viewer onto M551A1 used by XVIII Airborne Corps. Developmental Testing/Operational Testing of two prototypes was successfully completed at Fort Bragg in the first quarter of FY90. A production decision was made by the CG, TACOM in the second quarter of FY90. The program was subsequently accelerated in support of Operation Desert Shield. Delivery of converted vehicles will be completed by the second quarter of FY91.

Abrams Fire Prevention Program. Following success of an FY89 program to reduce Abrams Tank Fires, it was decided to defer further quarterly reviews. Remaining items identified by the program consisted mostly of Abrams system modifications. The task force structure will remain indefinitely and will meet on an as-required basis.

Unmanned Ground Vehicle (UGV). The UGV will consist of a generic, automotive, tele-operated, mobile base unit; an operator control unit; a secure communications data link; and a reconnaissance module. The automotive base unit will be capable of employing other mission modules (e.g. weapons modules, NBC modules, etc.) as they are required and developed. In FY90, TACOM performed a Trade-Off Determination in support of a Infantry School draft Operational and Organizational (O&O) Plan and a USMC draft Initial Statement of Requirement (ISOR) for the UGV. Following approval of a joint Memorandum of Agreement, a Joint Program Office (JPO) was formed at MICOM with a Marine Corps lieutenant colonel as Project Manager. The Army is the lead service on the program. JPO will transition to Army PEO at milestone I/I. O&O Plan approval is expected early in FY91. A proof of principle is planned for FY92 with 14 surrogate vehicles.

AMC Test and Evaluation Task Force. This division contributed two of its personnel full time between January and June 1990 to the AMC Test and Evaluation task force directed by LTG Cianciolo, DCGRDA. The task force was organized in response to the tasking by Mr. W. Hollis, the Deputy Undersecretary of the Army for Operation Research (DUSA [OR]) for AMC to develop implementation plans to execute PBD 936. This was a DMR initiative to reduce AMC operating costs by consolidating test and evaluation activities spread among AMC MSCs into TECOM. The consolidation plan involved identifying personnel, funding and facilities and preparation for their transfer into existing TECOM activities. Division personnel, Mr. Pagan and Mr. Follansbee, were responsible for developing plans for AMCCOM and MICOM transfers. In coordination with TECOM it was recommended that the entire MICOM RDEC Test and Evaluation Directorate and a small caliber weapon firing range under the control of AMCCOM be transferred. By the end of FY90 these units were provisionally transferred to TECOM but final action depended on the outcome of a broader DOD study of test and evaluation consolidation.

Armored Gun System (AGS). AGS was designated a PEO managed system in August 1990. The AGS is to replace the M551 Sheridan to satisfy the need for a highly mobile, direct fire weapon system to support contingency force operations world-wide. Because of the urgency, Army leadership directed an accelerated acquisition program. The system requirement emphasized lethality, mobility, supportability, and deployability. This division provided three personnel initially to TACOM and later to the PM AGS, on a part time basis, to help develop and review program documentation supporting future ASARC decisions. Some of this effort was funded by the AMC FIRST (Function Integrated Resource Support Team) program which was intended to directly support subordinate Commands and PEOs with HQ AMC subject matter experts in unique and high priority situations.

Special Operations Division

Anti-Drug Program

In FY89, the DCSDEA was designated the AMC focal point for Anti-Drug issues. In June of 1990, the Support Programs Team was established within the Special Operations Division to be the focal point for Anti-Drug RDA issues. The team was created by utilizing resources internal to the DCS. FY90 was AMC's first opportunity to submit programs for the DOD Anti-Drug POM for FY92 through FY97. A total of 11 programs were submitted which involved eight different Research, Development, & Engineering Laboratories and Centers. These 11 programs fell within four broad categories: Target Detection and Monitoring; Chemical Detection and Monitoring; Taggants (see the discussion on the TAGGANT's Working Group below for a definition of taggants); and Communications Systems.

A Department of the Treasury letter, dated 21 May 1990, requested that formal cooperative efforts be established between the U.S. Customs Service and Program Executive Office for Intelligence and Electronic Warfare (PEO IEW) in support of the National War on Drugs. Based on guidance from the ASA(RDA), HQ AMC responded to the request and detailed the Special Operations Division as the Army's single point of contact for this interagency coordination. This was to assure that there would be technical liaison not only with PEO IEW, but also with laboratories and research centers responsible for the entire array of sensor development within the Army. On 8 August 1990, a meeting between HQ AMC, the U.S. Customs Service, and PEO IEW was held to describe the mission and functions of the technical community within the Army to Customs representatives and to establish informal working relationships.

An MOU was drafted as result of the cooperative efforts of HQ AMC, PEO IEW, the U.S. Customs, and CECOM's Center for Signal Warfare. This MOU defined a simple, clear process to enable Customs to attain technical support from the Army. The MOU required that issues of funding and the priority of the work be resolved before any work was accepted by the Army. Additionally, it defined the process of attaining support in sufficient detail to ensure timely negotiations between services.

TAGGANT Working Group. The TAGGANT Working Group (TWG) was established through the Office of National Drug Control Policy (ONDCP). The TWG was composed of the Law Enforcement Agencies responsible for Anti-Drug operations including the Drug Enforcement Administration, Federal Bureau of Investigation, Bureau of Alcohol, Tobacco & Firearms, Central Intelligence Agency, U.S. Secret Service, U.S. Coast Guard, and representatives from ONDCP and the OSD. The TWG defined the term TAGGANT as the device, substances, systems, and/or technologies involved in the physical, electronic, and/or chemical markings of a substance, object, or person. A TAGGANT is associated with or carried by the target to be tracked, located, or identified. HQ AMC Special Operations Division was an associate member of the TWG, and regularly attended TWG meetings. AMC provided research and development support for TAGGANTs through the POM process. AMC also provided assistance by obtaining required technologies and equipment through its Research, Development, and Engineering Laboratories and Centers.

Special Operations Forces (SOF)

Type Classification of SOF Equipment. The following systems were type classified during the past year: Ram Air Parachute System - December 1989; Ration Lightweight 30-Day - December 1989; and MSQ-85 (a mobile audio-visual system) - May 1990.

Support to Desert Shield Operations. Six SOF items were fielded in support of Desert Shield operations, including The Leaflet Artillery Round and the Leaflet Rolling Machine which were still in development. Three other items fielded were the Modular Print System, the MSQ-85B Mobile Audio

Visual System and the AN/TSQ-171 Transportable Video Transmitter, 5 kilowatt. The above items supported the 4th Psychological Operations Group. The sixth item fielded was the Desert Operations Vehicle. No production surge requirements were identified.

Recovery and Distribution of Foreign Weapons. This office had a HQDA DCSOPS (DAMO-ODF) directed requirement to acquire foreign weapons (primarily NATO/Warsaw Pact types) to be provided to the JFK Special Warfare Center and School (JFKSWCS) and 1st Special Operations Command units (the users) for training. Approximately $8M FY 90-93 Weapons and Track Combat Vehicles (WTCV) Special Operations Forces funds were currently programmed for this effort. The office had been working with DESCOM, Anniston Army Depot (ANAD), AMCCOM, and the users to identify and recover from ANAD approximately 242 foreign weapons of various types (approximate value $122K) scheduled for demilitarization. These weapons were recovered and shipped to the users during 1990. We provided ANAD $14,721 FY90 SOF OMA finds to support processing and shipping cost related to this action. By obtaining foreign weapons free from ANAD and other sources a total cost avoidance of approximately $163,500 was achieved during 1990.

Ranger Anti-Armor/Anti-Personnel Weapon System (RAAWS). RAAWS was Type Classified Limited Procurement Urgent (TC-LPU) on 29 March 1990. A Production Contract was awarded on 13 April 1990. Hardware was shipped from FFV Ord Sweden on 9 July 1990. Hardware arrived at Fort Benning, GA, on 10 July 1990 for further distribution/delivery via truck to Fort Stewart, GA, and Fort Lewis, WA, with deliveries completed by the end of July 1990. A Materiel Release Review Board (MRRB) meeting was held 19 July 1990 and the RAAWS full release was approved on 3 August 1990 by AMCCOM's Deputy Commander. In a 14 August 1990 memo by AMCQA, the AMC DCGRDA converted the full release to a conditional release which remained in effect until a "man-in-the-loop" test conducted by OTEA and the 75th Ranger Regiment was satisfactorily completed. This test began on 26 August 1990 and was completed 30 August 1990. A full materiel release was approved soon thereafter. Equipment Hand-Off and New Equipment Training for the 1/75 Bn (Fort Stewart) 2/75 Bn (Fort Lewis) and 3/75 Bn Ceremony was held at the Picatinny Arsenal Officers Club. At the Hand-Off Ceremony the 75 Ranger Regiment Commander, Colonel (P) Kernan, expressed his appreciation to the AMC community for fielding the RAAWS within 26 months of Program Initiation.

Operations and Plans Division (AMCDE-O)

Significant Issues

The significant issues handled by the Operations and Plans Division in FY90 were the Internal Control Systems Program, Mobilization, the Defense Acquisition Executive Summary, Zero-Based Resourcing Implementation, Managing Civilians to Budget, and International Rationalization, Standardization and Interoperability.

Internal Control Systems Program. DA Circular 11-90-3, *Army Programs Army Management Control Plan*, provided a 5-year schedule of formal Internal Control Review Checklists required for completion. Applicable checklist for FY90 was identified and completed.

Mobilization. During the period 12 October to 3 November 1989, AMCDE participated in one of the largest Joint Chief of Staff mobilization exercises to date. AMCDE had an opportunity to take a closer look at its role/interrelationship with PEOs and PMs. For the first time a representative from AMCDE was selected to present all the DCS's daily briefings to the Command Group.

Defense Acquisition Executive Summary (DAES). DCSDEA's portion of the Defense Acquisition Executive Summary remained the same as the previous fiscal year. The Operations and Plans Division was the DCS's focal point for DAES reporting, evaluating and analyzing DAES reports from PEOs/PMs on a monthly basis and determining the appropriate office for distribution and action when necessary.

Zero-Based Resourcing Implementation (ZBR-I) Guide. The ZBR-I guide provided instructions for the distribution of AMC resources by mission and function. Reporting requirements consisted of apportioning total resources (manpower and dollars) separately for FY90 and FY91 by AMC mission and function.

Managing Civilians to Budget (MCB). DEA continued to provide support to the HQ AMC MCB Working Group. The MCB will be implemented ARMY-wide (CONUS) in FY91 and (OCONUS) in FY92. DEA furnished guidance on RDTE and procurement related issues to the MSCs and helped develop policy and guidance as appropriate. Additionally, membership was provided to the Civilian Pay Plan Committee which established and monitors the fiscal year ceiling on payroll expenditures.

International Rationalization, Standardization and Interoperability. DCSDEA's portion of the International Rationalization, Standardization and Interoperability matters remained the same as the previous fiscal year.

Chief Scientist

Organization and Personnel

There were no organizational or personnel changes during FY90. The Office of the Chief Scientist (AMCSCI) continued to be organized and staffed as follows:[18]

Chief Scientist	Dr. Richard Chait
Assistant Chief Scientist	Mr. Richard E. Smith
Military Asst to the Chief Scientist	LTC Albert A. Sciarretta
Secretary	Mrs. Ruth T. Feltner

AMC - United States Military Academy (USMA) Cadet/Faculty Summer Study Program

The AMC-USMA Cadet Faculty Summer Study Program proved to be another outstanding success. Participation increased from 50 cadets (FY89) to 71 cadets. Technical Directors were extremely impressed with cadet enthusiasm and knowledge. The CG's personal attention included the addition of 6 economics majors to a program which in the past included only scientific and engineering majors. The FY90 program ended with the CG traveling to West Point to meet with cadets who had just finished the program. His discussion raised two issues: funding and advanced notification of projects.

As a result of the discussion, it was decided that all future cadet travel would be centrally funded out of HQ AMC. AMC had funded all TDY in the past; however, the funding was by individual MSCs and laboratories. This generated numerous fund citations which created an immense administrative burden for USMA. A single fund citation would eliminate that burden.

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[18]Unless otherwise noted, the information in this section was taken from the Office of the Chief Scientist historical submission for FY90.

It was also decided that cadets need to be informed of their project before they arrive. With the cadets spending only 4 to 6 weeks in AMC, it is imperative that they not waste the beginning of that period "learning" about their project.

Uniformed Army Scientist (UAS) Working Group

The Army's Deputy Chief of Staff for Operations (DCSOPS) requested that AMC and the Personnel Command (PERSCOM) co-chair a Uniformed Army Scientist (UAS) Working Group to determine how a UAS Program could be established. The CG, LABCOM, became AMC's Chairman, but the Office of the Chief Scientist became the primary action office for establishing the need, requirements and life-cycle management for a UAS. This office continued to push the program, gaining support from many of the Army's key leaders. The CG, AMC, became personally involved, wanting a UAS program which stressed the use of these officers primarily as scientists. A decision brief to the Chief of Staff of the Army was planned for March 1991.

AMC's Field Assistance in Science and Technology (FAST) Program

Upon request of the CG, AMC, the Office of the Chief Scientist reviewed AMC's FAST Program, and provided mentorship to FAST Science Advisers. The office began to review FAST programs to ensure that the Tech Base was being fully explored as a source of technical solutions for field Army Commanders' needs. In support of Operation Desert Shield, this Office supported FAST projects, sought out additional technologies and prepared to get personally involved with a FAST Team visit to Saudi Arabia.

Strategic Technologies for the Army (STAR) Study

The office continued to lead and coordinate the National Academy of Sciences' (NAS) Board on Army Science and Technology (BAST) Strategic Technologies for the Army Study, and acted as the Contracting Officer's Technical Representative for the STAR study. The study is looking at future technologies and systems that will give the Army enhanced capabilities in the year 2020. It is due to be completed in the Fall of 1991. The report will culminate the efforts of about 50 Army scientific experts as well as at least 100 experts from NAS.

1990 Army Technology Base Master Plan

The Office of the Chief Scientist took on the responsibility for writing (in concert with the Army Research Office) Chapter III, "Key Emerging Technologies" and Chapter IV, "Science Base" of the November 1990 Army Technology Base Master Plan. Those chapters were the main thrust of the Plan--giving guidance as to where the Army should invest its resources in the near future.[19]

University Research Initiative Program

The office conducted on-sight reviews of the Army's University Research Initiative (URI) Program, stressing the need to leverage the Tech Base. These reviews of the Army's URI Program participants were necessary to assure the Army that it was getting quality basic research for the money it is investing. Additionally, it was important to ensure that the Army leveraged the efforts of these universities and colleges.

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[19]The Technology Base Master Plan for FY90 can be found in the *Army Technology Base* (Nov 1990) enclosed with the Office of the Chief Scientist historical submission for FY90.

Army Science Board Summer Study on O&S Cost Reduction

The office provided the Army Science Board (ASB) with fully coordinated recommendations for a Summer Study on Operating and Support (O&S) Cost Reduction methodologies. It coordinated the Terms of Reference and assisted the ASB in the study. The office continued to act as the AMC point of contact for all ASB studies.

Technology Leveraging

The office proposed a methodology that allowed AMC to increase its leveraging of technology, that is, how one can benefit from someone else's efforts in the tech base, by initiating two major thrusts. The first of these thrusts sought to increase the leveraging of international efforts. Based on a review of Canadian scientific expertise, the office recommended opportunities to strengthen the interface between AMC and Canadian laboratories. It included participation in visits to Canadian labs and industries and supported the initiative of an exchange of scientists and engineers. As an initial effort, a USMA cadet will be funded by HQ AMC to conduct research at a Canadian lab in the Summer of 1991.

The second thrust involved an effort to promote the exchange of information and enhance technology transition among AMC assets. In an effort to do this the Office of the Chief Scientist hosted a composite materials conference for representatives from the AMC Laboratories and Centers, the Corps of Engineers and from the Federal Aviation Administration (FAA). Representatives established personal contacts and discussed their on-going projects. A Standing Committee was established to assist in future leveraging efforts and to serve as a model for the review of additional technologies in the Tech Base.

Deputy Chief of Staff for Procurement

Key Personnel

DCS Level. On 13 November 1989, BG Nicholas Hurst, DCS for Procurement, departed HQ AMC for an assignment at the Pentagon. The DCS for Procurement vacancy was filled with BG John G. Coburn on 27 November 1989.

On 5 June 1989, Mr. Thomas J. Moran had been detailed as Acting Assistant Deputy Chief of Staff (ADCS). Recruitment to fill the vacancy of the ADCS for Procurement was submitted to the Civilian Personnel Office on 15 June 1989. On 15 September 1989, Mr. Moran's detail was terminated and Mr. Gary A. Tull was detailed as the Acting ADCS. His detail to Acting ADCS for Procurement was extended until 18 June 1990, after which the detail for the ADCS for Procurement was terminated.

Administrative Office. Ann Arrington, GS-11, Administrative Officer, was promoted to GS-12 and transferred to the Department of the Army Inspector General Office at the Pentagon on 3 December 1989. On 1 January 1990, Doris Houser was temporarily promoted from Administrative Assistant to Administrative Officer until 30 April 1990. The position was finally filled on 26 March 1990 by Kathleen A. Miller.

Contract Administration/MSC Support Division. On 17 December 1989, Gary A. Tull, the Chief of the division, was detailed as Acting ADCS for Procurement until 16 March 1990 with the detail later extended to 18 June 1990. MAJ Brenton Jones was reassigned as executive officer (XO) effective 1 May 1989 but left for a permanent change of station on 17 August 1990 and was replaced by LTC William R. Stramm as executive officer on 30 July 1990.

Contract Policy Division. Effective 25 February 1990, Thomas Colangelo, Chief of the division, laterally transferred to DA (SARD-KP). Mr. Verne McKamey was detailed into this position on 26 February 1990 for a period not to exceed 120 days (25 June 1990). The detail was extended for another 120 days and terminated on 3 September 1990.

Aviation/Communications/Troop Support Division. Effective 9 November 1989, Mr. Philip Beaumont's detail as ADCS for Competition and Procurement Management terminated and he transferred back as Chief, Aviation/Communications/Troop Support Division. On 31 December 1989, Mr. Beaumont retired. On 24 January 1990, recruitment for this position was cancelled due to a hiring freeze.

MSC/Lab/Depot/Test Division. On 6 February 1990, Mr. George Reardon was detailed from Supervisory Procurement Analyst to ADCS for Competition and Procurement Management. The detail was extended for 90 days (May to August).

Career Program Office. This office was reorganized in October 1989, changing its office symbol from AMCPP-M to AMCPP-C (Career Program Office).[20]

Most Significant Issues/Command Management Issues

The most significant issues handled by the DCS, issues which also had strong command interest, included planning for a future acquisition center under the Vision 2000 program, support for operation Desert Shield, the transfer of three Army plant representative offices (ARPROs) and two tank plants to the Defense Logistics Agency's newly created Defense Contract Management Command, and new acquisition initiatives to improve the acquisition process. These issues, as well as other important issues and programs handled by the DCS are discussed below.

Vision 2000. Vision 2000 was initiated in the spring of 1990. It was a long range effort to streamline AMC in light of diminishing resources. A small task force was established in the DCS for Procurement to develop plans for a future acquisition center under Vision 2000. This is a long range program to design a future AMC structure responsive to the continuing needs of the soldier in an era of diminishing resources. In the acquisition arena, the DCS for Procurement and the Command Counsel were chairing a group chartered to plan improved acquisition processes. They were being assisted by the Principal Assistants Responsible for Contracting (PARCs) at each of the commodity commands. The plans involved the standardization of functions between MSCs and consolidation of efforts when feasible.

The DCS for Procurement had been planning an Acquisition Center as part of the Vision 2000 efforts which would be utilized if some MSCs are merged. It was also to be utilized for standardization in place in the near term. The Acquisition Center will have product line divisions for system hardware purchases in addition to Research and Development buys. Support divisions in management analysis and procurement policy will also be utilized. Headquarters small business and legal advisors will be collocated in the Acquisition Center. Vision 2000 was expected to expand greatly in FY91. The direction and extent of the effort was dependent upon Congressional, DOD, and Army fiscal management restructuring.

Desert Shield Support. Support to Operation Desert Shield was receiving top priority. Because of the availability of assets and the fact that the DCS had an ongoing requirement to maintain and sustain the troops in a ready condition, there has not been a significant increase in the workload. The DCS for

[20]Unless otherwise noted, the data in this section was taken from the DCS for Procurement historical submission for FY90.

Procurement provided four individuals during the weeks of 26 September through 6 November 1990 to act as the first Shift Leader for the AMC Operations Center. The Shift Leader was required to provide guidance to the action officers representing the DCS offices; review all messages received in the AMC Communication & Operation Centers, and determine distribution of these messages to the appropriate DCS desks; sign out messages as necessary or required to facilitate timely mission accomplishments; receive, assign and ensure timely response to taskers; assimilate information for the daily CG briefing and Significant Action Reports; provide information to the Operations Center Staff as requested; establish an interface between the action officers and the administrative staff; and act as the focal point for all incoming telephone calls and requests from other DOD and Government Desert Shield Operation Centers.

Transfer of ARPROs/Tank Plants to DLA. On 24 June 1990, the three ARPROs and two tank plants officially transferred to the newly created Defense Contract Management Command, a subordinate command of DLA. This culminated an effort to consolidate contract administration services (CAS) into a single DOD agency. In February 1989, the President had directed the Secretary of Defense to develop a plan to improve the defense procurement process.

Few realized then how this would impact CAS. Little more than one year later, Army, Air Force, and Navy contract administration offices joined DLA's existing plant representative offices to form a command which was 25,000 people strong. In February 1990, the Deputy Secretary of Defense directed consolidation of Continental U.S. CAS by 30 June 1990 and international CAS by 30 September 1990. From February to June 1990, much sacrifice and commitment to the project made the transition successful. A memorandum of agreement (MOA) formalized the transfer of ARPRO Bell Helicopter Textron, Fort Worth, TX; ARPRO Boeing Helicopters, Philadelphia, PA; ARPRO McDonnell Douglas Helicopter Company, Mesa, AZ; Detroit Arsenal Tank Plant, Warren, MI; and Lima Army Tank Plant, Lima, OH. Lieutenant General Charles McCausland, Director, DLA signed on behalf of DLA and Mr. Stephen K. Conver, Assistant Secretary of the Army (Research, Development and Acquisition) signed on behalf of the Department of the Army. The MOA transferred a total of 517 civilian and 36 military personnel.

The MOA for International CAS transferred 98 Department of Army civilians and local national employees in Germany, Israel, the United Kingdom, and Korea to Defense Contract Management Area Offices in Frankfurt, Tel Aviv, Uxbridge and Kimkae.

Acquisition Warfighting Initiatives. At the CG's direction two Procurement Warfighting Seminars were conducted to address "Acquisition Efficiencies for the '90's - A program of Initiatives." Major subordinate commands and HQ AMC recommended 10 initiatives each to improve efficiency and effectiveness throughout the acquisition process. This program of initiatives was designed to save dollars, time, and resources AMC-wide.

To meet this challenge, the program featured active participation by AMC's command, procurement and legal leadership. A full-time Acquisition Initiatives Task Force, established in the DCS for Procurement, developed a methodology to manage and to ensure that the cumulative number of initiatives received full AMC consideration. It was at the headquarters level that similar and critical problems, ideas, and issues could be identified and evaluated for AMC-wide policy development. A small team was formed to ensure these initiatives were followed through to completion. It is evident that the work accomplished at headquarters level would not have been successful without the valuable review of all aspects of the acquisition process provided from the perspective of each MSC.

While adapting to the rapidly changing environment facing the Army Materiel Command today and in the foreseeable future, the task force will continue to provide assistance in understanding and in handling AMC-wide concerns and ideas for change.

Ammunition Plant Study

As an outcome of Defense Management Report Decision 916, "Streamlining Contract Management," an Army Ammunition Plant (AAP) study was commissioned by the Deputy Secretary of Defense. DLA was directed, with Army support, to prepare an analysis on whether contract administration at the AAPs should transfer to DLA. Members of the study team were chosen from HQ DLA, HQ AMC, and HQ AMCCOM. From July to December 1990 the team travelled to selected Army Ammunition/DLA plants, collected data on contract administration functions, established criteria for evaluation, detailed alternatives and developed recommendations. A draft report was currently being staffed with HQ DLA and Army functionals. It was due at the Office of the Secretary of Defense on 31 January 1991.

AVSCOM Procurement Management Review (PMR)

The PMR program, mandated by DOD Directive 5126.34, provided a management consultant service to procurement activities within DOD. Primary emphasis was on reviews directed at improvement of mission performance through recognition of, and assistance in, the cure of basic problems.

The DCS for Procurement was responsible for carrying out PMRs of AMC major subordinate command organizations and activities. During the first quarter of FY90, the DCS for Procurement conducted an on-site PMR at AVSCOM in St. Louis, MO. The purpose of the review was to assess the effectiveness and adequacy of AVSCOM procurement operations. The 11 member review team was principally composed of members of the DCS for Procurement, supplemented by AMC functional experts from the DCS's for Supply, Maintenance and Transportation, for Product Assurance and Testing, and the Office of Small and Disadvantaged Business Utilization, as well as a pricing expert from AMCCOM.

The review indicated that AVSCOM had made significant improvements in most areas since the previous PMR in 1987. Observations and recommendations for improvement were formalized and forwarded to AVSCOM in a formal report. AVSCOM responded to all observations and has taken necessary action to address the recommendations made as a result of the PMR.

Contract Management Review - Radford Army Ammunition Plant

A Contract Management Review was conducted at the Radford Army Ammunition Plant during the period 1-25 October 1989. The purpose of the review was to evaluate the contractor's operation of the government-owned facility. The major finding from this review was that Hercules Corporation was commingling costs between their Government contracts and their third party commercial contracts, where Hercules was acting as a subcontractor. This was occurring throughout the full range of their operations. Another finding was that in comparison with the local law enforcement, educational, and corporate organizations, Hercules was paying their security guards a lower rate of pay.

MICOM Special Review

A special review was conducted at MICOM from 4-14 December 1989 after reports of possible serious problems on service contracts. A four member team from the DCS for Procurement found that there were serious problems in the administration of service contracts.

Army Acquisition Corps (AAC)

AMC's participation in the AAC has undergone significant changes during calendar year 1990. AMC reviewed military and civilian critical AAC positions to identify and submit recommended additions and deletions to the Army Acquisition Executive. The Deputy Chief of Staff for Procurement has been

concerned about the low AMC participation of military (Functional Area 97) and civilian (Career Field 1102) in the AAC. This situation has changed significantly with the passage of the FY91 Authorization Bill. Included in this bill was the "Defense Acquisition Workforce Improvement Act" which specified in part that all GS-14 and LTC or above in procurement and contracting positions will be included in the AAC. This will greatly enhance participation of AMC's military and civilian procurement personnel in the AAC.

Procurement Automation

At the beginning of FY90, the Program Executive Officer for Standard Army Management Information Systems (PEO-STAMIS) proposed to the AMC Commanding General that the Standard Army Automated Contracting System (SAACONS) should be used as a platform for the Integrated Procurement System (IPS) design. The CG subsequently directed the Office of the Deputy Chief of Staff for Procurement to make a comparison of SAACONS capabilities and the IPS requirements.

Representatives from the AMC MSCs, Systems Integration and Management Activity (SIMA), PEO-STAMIS, and HQ AMC participated in efforts to satisfy the CG's requirement. After considerable research and analysis, it was determined that a major redesign of the SAACONS would be required for its use as a platform for the IPS design. The user requirements and technical considerations deemed necessary were outlined and presented to the PEO-STAMIS.

During the second quarter of FY90, PEO-STAMIS briefed the CG on the proposed approach to the IPS design using SAACONS. PEO-STAMIS assured the CG that, with the use of SAACONS in the IPS design, the user requirements would be satisfied, the cost of IPS would decrease, and implementation of IPS would be accelerated. The AMC Commander and the Assistant Deputy for Materiel Readiness decided that the PEO-STAMIS proposal was in the best interest of the Army.

On 20 February 90, the PEO-STAMIS was informed of the AMC decision to support the PEO-STAMIS proposal. The milestone schedule for IPS was changed to reflect implementation of Increment I during the first quarter of FY91.

The entire effort became moot, however, when the DOD committee for Contract Information System determined that a universal standardized system would be preferred among the services and agencies, and selected a Navy system for use on an interim basis pending long range development of the standard. The budget for the SAACONS 4/IPS effort was withheld and the development ground to a halt. The fiscal year ended with all in doubt pending progress on the DOD CIM schedule.

Contractor Information System (CIS)

Phase II of the AMC Contractor Past Performance Pilot Program, which required all MSCs to apply past performance methodologies in selected procurements, has been completed and the final report recommending full implementation was signed by the AMC CG. Copies were forwarded to DA, MSC Commanders, the Joint Logistics Commanders (JLC) Working Group, and the Joint OSD-DOD Task Force. Follow-on policy and guidance in the form of a draft AMC Federal Acquisition Regulation (FAR) Supplement was transmitted to the field for review and comment. As a minimum, past performance will be used in all major weapons systems buys (subject to approval of HQDA) and when circumstances indicate the need to conduct a performance risk analysis to ensure award is made to a quality producer. Authority to waive this requirement will be vested in officials in the procurement chain of command. Currently, the draft change to the AMC FAR Supplement was being reviewed at the AMC Legal office. Procedural guidance (Volume IV of AMC Pamphlet 715-3) was being completed by the AMC Legal office.

Additionally, three separate projects, the Performance Incentive Contracting (PIC) program at AMCCOM, the Blue Ribbon program at CECOM, and the TACOM's Red/Yellow/Blue program, have been undertaken by specific MSCs to tailor past performance information into their smaller buys where award decisions have historically been made on price alone. It is premature to assess the outcome, as many of these procurements are still in process.

Defense Management Review Rewrite of DOD Federal Acquisition Regulations (DFARS)

Since January 1990, all the Defense Acquisition Review (DAR) Council Committees have been evaluating recommendations resulting from the zero based review of the DFARS mandated by the Secretary of Defense and conducted by a Joint OSD-DOD Component Regulatory Relief Task Force. Using the Task Force recommendations as a baseline, the Committees' objectives were to focus on an end product that addressed contracting officer responsibilities. Material primarily addressed to other than the contracting officer and which was unnecessary and duplicative were recommended for deletion from the DFARS. Other material was reviewed to identify common areas of coverage for possible consolidation and incorporation into the Federal Acquisition Review (FAR) or DFARS. The committee recommendations reflect a move toward greater contractor self-reliance and standardization of policy and procedures among the services. All proposed FAR and DFARS changes were submitted to the DAR Council and will be published for public comment.

Defense Management Review Acquisition Streamlining

The Deputy Chief of Staff for Procurement personally participated in the following two acquisition streamlining related efforts during the fourth quarter of FY90. The first was the Multi-Purpose Individual Munition (MPIM) solicitation review at MICOM, Huntsville, AL, on 18 September 1990. The second was the Mobile Automated Instrumentation Suite (MAIS) solicitation review at PM TRADE, Orlando, FL, 27 September 1990. These reviews ensured that high level management attention at the general officer and senior executive service level was given to streamlining high visibility solicitations before the solicitations were released to industry.

Business Clearance Reviews

Business Clearance Review is the process of assuring that a planned acquisition had been adequately prepared, conformed with public law and regulation, and demonstrated sound business judgement. The Business Clearance Memorandum (BCM) documented the negotiation objectives and served as the historical record of the business and pricing aspects of a contract action.

Business Clearances by an MSC were required for procurements over $100,000. AMC participation was required by AFARS 1.691-2(1) which stated, "HQ AMC is responsible to ensure the quality and consistency of BCMs prepared by its MSCs." HQ AMC functional representatives participate, on site, in all BCM reviews of PEO [Program Executive Officer] managed items for sole source actions in excess of $50,000,000 and competitive actions over $10,000,000.

AMC participated in these reviews in an advisory capacity. AMC personnel reviewed the BCMs, attended the locally chartered business clearance review boards, and provided written comments and recommendations to the approving official. These recommendations become part of the official contract file and the rationale for taking alternative action had to be fully documented.

TABLE III - 2
DCS Procurement Participation in Business Clearance Reviews

MSC	Actions	Dollar Value
AMCCOM	14	$ 1,268,600,000
AVSCOM	6	1,480,302,000
CECOM	11	2,201,741,000
LABCOM	2	160,812,000
MICOM	10	2,239,609,000
TACOM	13	4,188,842,000
TECOM	3	95,004,000
ARPROs	9	28,845,000
AFRTS	5	8,636,000
TOTAL	73	$ 11,672,391,000

AMC's review of the largest programs that ensured the Government negotiators were thoroughly prepared and the objectives were fully supported. It was difficult to quantify the dollars saved as a result of this process, but it was believed they were significant.

Reactivation of the Cost Accounting Standards (CAS) Board

The Cost Accounting Standards Board was reactivated under the Office of Federal Procurement Policy (OFPP) Reauthorization Act (P.L. 100-679). The board was chaired by Dr. Allan V. Burman, OFPP Administrator. The five-member CAS board will be composed of a single representative each from the Department of Defense and the General Services Administration, and two private sector representatives appointed by the Administrator.

The Reauthorization Act (P.L. 100-679) gave the new CAS board exclusive authority to: (1) "make, promulgate, amend and rescind cost accounting standards and interpretations, (2) exempt classes or categories of contractors and subcontractors, and (3) establish procedures for waiver of CAS requirements with respect to individual contracts and subcontracts.

Total Quality Management (TQM) with Industry

During their March 1990 meeting, the JLC directed the formation of a task force to examine how the services and DLA interfaced with industry on TQM. The JLC discussed various signals received by and confusion of industry with respect to TQM requirements.

Once convened, it became clear to the task force members that while a variety of TQM activities were being practiced with respect to contracting and procurement, the initiatives were being executed as individual process improvements. A straightforward cataloging effort placing the various initiatives under the TQM "umbrella" resulted in an impressive list. Although each military service and DLA had their own specific programs, the initiatives lent themselves to groupings in basic categories expressed as: (1) Best Value Contracting, to include past performance; (2) TQM in Source Selection; (3) TQM Performance as a factor in Incentive/Award Fee determinations; (4) TQM techniques in the manufacturing/quality arena; (5) Contractor Outreach Programs; (6) Acquisition Streamlining.

Obviously, these initiatives were not new, but neither was the concept of continuous process improvement. The major finding of the task force to date was that the agencies were basically in harmony using the same philosophy with minor differences. As the various test programs were completed, the successful ones will be standardized and the others allowed to fade away. This was a healthy approach that recognizes the need to tailor processes to the desired end product.

Deputy Chief of Staff for Production

Organization and Manpower

Throughout the fiscal year the DCS was authorized 76 civilian and 6 military spaces.[21] In December 1989 a number of key personnel changes took place: COL Sam Kindred, formerly the ADCS, became the Acting DCS for Production, replacing Mr. Darold L. Griffin, who became the Principal Assistant Deputy for Research, Development and Acquisition (under the DCG for RDA); Mr. M. E. Westmoreland took COL Kindred's place as ADCS; and MAJ J. Ulans replaced LTC R. D. Kerrins as executive officer. In August 1990, COL W. L. Wheeler replaced COL Kindred as the DCS for Production. Other key personnel within the DCS included:

Mr. H. R. Barnett--Production Base Advocate

Mr. J. H. Sullivan--ADCS for Production Support (vice Westmoreland) and Chief, Engineering and Production Support Division

Mr. R. A. Hersam--Chief, Production Assessment Division

Mr. S. V. Balint--ADCS for Weapon Systems Production Management

Dr. B. E. Sumner--Chief, Aircraft and Depot Operations Division

Mr. R. R. Keenan--Chief, Missile, Communications and Electronic Division

Mr. A. O. Elkins--Chief, Weapons and Tracked Combat Vehicles Division

Mr. G. B. Langford--ADCS for Industrial Preparedness

Mr. R. H. Crooks--Chief, Program Formulation Division

Mr. R. Burton--Chief, Industrial Mobilization Planning Division

Mr. J. E. Holvoet--ADCS for Industrial Engineering

Mr. C. Digiandomenico--Chief, Processes Development and Integration Division

[21]Unless otherwise noted, the data in this section was taken from the Office of the DCS for Production historical submission for FY90.

Most Significant Issues

The four most significant issues handled by the DCS in FY90, all of which had a significant degree of command interest, included the AMC response to the Defense Management Review (DMR), defense standardization program automation, support for the Javits-Wagner-O'Day program, and the specification and standards working group.

Defense Management Review. The DCS prepared a portion of the Army's response to the Defense Management Review. The AMC portion of the response, dated August 1989 and later revised in December 1989, was entitled *Achieving Excellence in the Defense Industry Through Acquisition Process and Management Improvements*. It concluded that a 3 billion dollar savings in fiscal years 91 through 95 could be realized without changes in public law as it relates to system acquisition and that a 6 billion dollar savings could be achieved with some major changes in public law, and current acquisition practices.

Defense Standardization Program Automation. As the Army Departmental Standardization Office, the DCS initiated two significant Army initiatives and participated with the Office of the Secretary of Defense (OSD) in an automation study. Under the direction of the DCS the Army Materiel Systems Analysis Activity (AMSAA) developed an analytical methodology and, with the use of the Automated Specifications and Standards Information System (ASSIST), produced a prioritized list of standardization documents. This prioritized list was used by Army preparing activities as a guide to developing a schedule to accomplish actions to the documents that were recommended in the DMR survey forms. Prioritized lists were also provided to the Navy and Air Force for the documents for which they were the preparing activity.

A project was initiated to give all Army standardization activities access to the on-line ASSIST data base. The Systems Integration and Management Activity (SIMA) was tasked to initiate the project. The DCS also participated with OSD in a Process Action Team (PAT) as part of the Working Group on Specifications and Standards (WG-9) of the DMR. This PAT developed and recommended a comprehensive approach to an OSD-wide automation of the Defense Standardization Program (DSP).

Javits-Wagner-O'Day (JWOD) Program. AMC supported the Javits-Wagner-O'Day (JWOD) Act which requires Federal Agencies to purchase certain commodities and services from qualified workshops serving persons who are blind or severely handicapped. This program was administered by the Presidentially appointed Committee for Purchase from the Blind and other Severely Handicapped. This committee, in turn, had designated the National Industries for the Blind (NIB) and the National Industries for the Severely Handicapped (NISH) to assist in program administration. Literature was distributed at the August 1990 Commanders' Conference to publicize the program. In addition, General Tuttle announced an AMC video conference for 18 October 1990 to acquaint the MSC commanders with the capabilities of the NIB and NISH. He noted to the MSC Commanders that "it is through your leadership and personal commitment that we will sucessfully increase our utilization of this program throughout AMC."[22] The program was of a continuing nature, with video conferences and literature disseminations to promote and educate field activities planned.

Specifications and Standards Working Group. The defense standardization community has been mobilized for implementation of the DMR. As part of the DMR, a Working Group on Specifications and Standards (WG-9) was established and charged with conducting a zero-based review of all specifications, standards, and related acquisition documents used by DOD. The action plan centered around an accelerated

[22]Memorandum from General William G. T. Tuttle, Jr. to distribution, 21 Aug 90, Subj: Support for Javits-Wagner-O'Day Program.

review of the nearly 50,000 documents listed in the DOD Index of Specifications and Standards (DODISS). The review evaluated the need for each document, and if a valid requirement existed, determined compliance with existing Defense Standardization Program policies, with special emphasis on commercial products and processes, metrication, qualification, hazardous materials, and the overage document review.

Two PATs were formed to assist in the objective of WG-9. One PAT took a critical look at document preparation procedures, and the other addressed feedback to document preparers from sources such as quality deficiency reports, contract waivers and deviations. The DCS actively participated in WG-9 meetings, as well as served on and participated in both PATs. In addition, the DCS initiated and led a survey of DOD contractors to help identify documents which they believe add more costs than value. It also coordinated the Army's successful efforts to complete survey forms on each of the approximately 16,000 standardization documents for which they have responsibility.

Mobilization Requirements Under Quicksilver Scenario

This mobilization study provided FY91-94 financial analyses of 22 selected aircraft, missile, tracked combat vehicle and weapon/ammunition systems chosen from a DA critical item list. Cost outputs were developed for three production alternatives: zero production to minimum sustaining rate (MSR), trickle rate to MSR, and MSR to surge rate.[23] The study displayed savings from certified processes, commercial processes, higher quality and lower overhead/operating costs. Considerations included cost of industrial preparedness measures and layaway costs, loss of knowledge and skilled labor, start-up risks, multi-year and second source contract terminations, impact on the price and availability of spares/repair parts, and impact of cutbacks on production facilities supporting non-Army requirements including foreign military sales.

Configuration Management (CM)

The DCS provided the Army's representative to the Configuration Management Advisory Group (CMAG) at the Defense Quality and Standardization Office. The CMAG worked to establish uniform practices between all U.S. services and agencies, and was made up of representatives from each of its members. The CMAG updated its CM Standardization Plan (CMAN), undertook the consolidation of twelve different MIL-STDs into a single military standard, MIL-STD-973, undertook the development of handbook, MIL-HDBK-61, for configuration management, and provided input to NATO Standardization Agreements (STANAGs) for configuration management.

The development of a consolidated standard and handbook for configuration management was projected to be a two-year effort with completion targeted for the end of CY90. AMC Circular 70-4, *Configuration Management and Release of Software*, was prepared and published, thereby establishing a uniform command-wide policy for software. The update of AR 70-37, *Configuration Management*, for Army-wide configuration management policy was initiated to provide guidance for computer software configuration items in systems, CM for non-developmental items (NDIs), common usage of configuration items (CIs) in two or more systems, and interoperability between systems at all levels (e.g. between systems within one service, two or more U.S. services, between U.S. and other countries, as well as between U.S. and foreign suppliers).

[23]MSR was the lowest rate for economical production. Trickle rate was the absolute lowest production rate to maintain critical skills and facilities. It included costs to resume MSR within 12 months. Zero production was no production but with a high state of readiness and it included costs to start-up and reach MSR in 12 months.

Army wide policies have been developed to eliminate recurring approvals of the same Requests for Deviation Waiver (RFD/W), and provide for cost effective blocking of engineering change proposals (ECPs). In addition, CM is promoting the use of electronic media for exchange of CM data to the maximum extent practical and consistent with sound CM principles, participating in the formation of CM policies for the Industry/Government Computer-aided Acquisition and Logistic Support (CALS) initiative, participating in suggesting a standard minimum number of fields to be tracked in the Technical Data/Configuration Management System (TD/CMS).

Technical Data Packages (TPD)

The update of AMC-R 70-46, *Technical Data Packages*, was initiated. The primary foci were to incorporate the "lessons learned" thus far, to establish a command wide minimum set of policies for periodic update of these packages, and to clarify some of the definitions common to TDPs as well as configuration management.

Technical Data/Configuration Management System (TD/CMS)

The prototype TD/CMS(E) system was installed at TACOM. A total of 10 systems were installed throughout AMC to include two program manager offices (PM Howitzer Improvement Program and PM TOW). These systems were experiencing problems due to decentralized funding and multiple management responsibilities; the systems were not capable of transferring data between commodity command sites. Nevertheless, TD/CMS was to be nominated as the interim standard configuration management system by the DOD Corporate Information Management Materiel Management Working Group.

Digital Storage and Retrieval of Engineering Data System (DSREDS)

The DSREDS program has been successfully installed with the final system acceptance at Belvoir Research, Development and Engineering Center in January 1989. The remaining efforts for DSREDS included a system change for compliance with CALS standards which were adopted after DSREDS was developed and fielded. The CALS compliance effort was under way and had undergone an initial test resulting in the identification of some technical problems which were being corrected. Fielding of the CALS compliancy upgrade was expected in mid-1991. Additional plans were being formulated for DSREDS expansion to provide DSREDS capability at the maintenance depots and for total system upgrade in FY94-95.

Program Management Risk Reduction Roadmaps

The AMC-P 70-22, *Program Management Risk Reduction Roadmaps*, pre-publication distribution was made in June 1989. The pamphlet was dated 13 July 1990 and has been distributed. The roadmaps pamphlet was AMC's implementation of DOD Manual 4245.7-M, *Transition from Development to Production.*

Revision of DODD 5000.1, DODI 5000.2 and DOD 5000.2-M

This headquarters has exerted significant efforts to review and comment on the three draft revisions to these documents. They represent a major change to the acquisition of military systems and the initial drafts were lacking in establishing the necessary requirements for materiel acquisition. The DCS in particular responded with comments that retained the authority for the services to establish implementing regulations, instructions, and associated guidance. Additional input was provided that retained the current functional programs to assure producibility and support for materiel.

Defense Priorities and Allocations System (DPAS)

With the advent of Operation Desert Shield, the DPAS office received many requests for DX rating authority. This was not practical due to the time it takes to get approval. DX priority ratings identify programs of the highest national priority and require approval by the President. Request for Special Priorities Assistance have been handled on a case-by-case basis by the DPAS Office at HQ AMC. The programs assisted include the Patriot Missile, the UH-60 Helicopter, the Lighter Air Cushion Vehicle (LACV-30), the High Mobility Multipurpose Wheeled Vehicle (HMMWV), and the Air Transportable Hospital. The DPAS Office improved the delivery situation for every request for assistance.

DPAS training of contracting and production management personnel has been enhanced with the addition of an Army oriented video tape for distribution to the MSCs and Army acquisition activities.

During Desert Shield an Army Reserve Augmentee was activated to facilitate accelerated contract deliveries and related DPAS compliance issues.

New and Updated Regulations

Two draft Army regulations were in the final stages of review before being sent to the U.S. Army Printing and Publications Command for publication. One was a new Army Regulation, AR 700-XX, *Management of Government Furnished Property*. The second, AR 700-90, *Army Industrial Base Program*, was a complete update of the 13 March 1986 edition entitled *Army Industrial Preparedness Program*.

Industrial Mobilization Planning Draw-Down Model

The DCS developed an industrial mobilization planning draw-down model for use in determining asset draw-down and replenishment. The model could be used to determine when to start production prior to D-Day and was related to step functions for the DOD directed Graduated Mobilization Response. The model was briefed internally at HQ AMC and to the Army Mobilization Review Committee.

Army System for Automation of Preparedness Planning (ASAPP)

The recommendation to automate Industrial Preparedness Planning (IPP) was included in the 1975 study, Review of Army Mobilization Planning (RAMP). From 1976 thru 1980 mini-studies were conducted on how to automate the IPP process. The major problem was the state-of-the-art equipment available to accomplish the desired result.

The ASAPP planners envisioned a classified central data base for IPP input and remote Personal Computers (PC) that could access the data base, obtain data and manipulate it. A classified central base was available or could be arranged. However, in the early 1980s, Tempest PCs (approved for classified data) that could access and manipulate were just becoming available and the cost was prohibitive. Another consideration was data links that could carry classified data.

During the 1980s, three significant events took place which helped solve these problems: the Army Materiel Plan Modernization (AMPMOD) data network, a classified data network, was installed throughout AMC; cheaper and more powerful PCs became available; and the Tempest requirements for special equipment and a separate room were changed.

The ASAPP plan includes a classified network with a PC at each MSC and at the IPP office in HQ AMC. The MSC IPP staff will input their data into their MSC AMPMOD data base and have the

responsibility for maintaining it. They will also have the capability to extract any data in the AMC AMPMOD data base and manipulate it for their own analysis. The HQ will have the same capability except for input responsibility.

As of the first quarter of FY90 the equipment for the ASAPP workstations was installed at each MSC and the HQ and a contract had been awarded to General Services Administration (GSA) to connect these workstations to the AMPMOD network. Work was completed at two of the MSCs with the rest scheduled for completion by the end of the second quarter of FY91.

Manufacturing Technology

In FY90, the Manufacturing Technology (MANTECH) Program with budget authority of $23.4 million supported a variety of on-going manufacturing process changes that have made significant improvement to Army materiel and system readiness. The major technology thrust areas supported by some 68 individual tasks were chemical defense, composites/adhesive bonding, energetic materials, environmentally acceptable process, microelectronics manufacturing process control, non-destructive evaluation, optics manufacturing, soldering, and welding of metallics. The Army MANTECH Program was coordinated and leveraged with other MANTECH initiatives to enhance the effect of limited resources.

Contractors Requiring Special Attention (CRSA)

The CRSA program underwent a major review in preparation for revising AMC Circular 70-3 (which was published 12 July 1990), and for the purpose of incorporating MSC experience into an improved program. During the year, the Command Council had established a Debarment Program where contractors, identified by the CRSA program, who did not improve their performance would be processed for debarment with the intent of preventing the award of additional contracts to these known poor performers. AMC was also responding to the Army Audit Agency's review of several MSCs. That audit had found that the CRSA program was potentially the most effective quality enforcement tool across the Command for use in the MSCs as a means for making the contractor more accountable for the quality of contracted items.

Contractor Information System (CIS)

In August 1988, the DCS for Production agreed with the DCS for Procurement to take on the task of developing a personal computer software program for a data base known as Contractor Information System. The data base would provide information on past contractor performance for contracts over $500,000 in value, based on the DD forms 350 completed by contracting agencies. Phase I software was completed in April 1989 and distributed to 18 AMC Major Contracting Offices in May 1989. Phase II evaluation was completed in January 1990. In this phase each MSC provided FY89 contract data to AMC for inclusion in the AMC data base and applied the CIS procedures on two major procurements. The CIS system presently had data on over 3,600 contractors and 7,000 FY87-91 Army contracts. Coordination between AMCPD, AMCCC, DLA, CECOM, and Vint Hill Farms Station for this project has been very good. Implementation of Phased III follow-on was in progress at the end of the year.

Acquisition Improvement Reviews (AIR)

Production Acquisition Improvement Reviews were in-depth evaluations in support of MSCs, PEOs, PMs, and higher headquarters to identify productivity problems, propose solutions, evaluate the extent of contractor Total Quality Management involvement and recommended specific contractor and government corrective actions. Since 1985, 45 AIRs have been conducted. During FY90, 8 AIRs were conducted in support of HQDA, AMC, and PEO/PM elements. An AIR was normally a 1-2 week intense team

assessment of the functional areas of Production/Manufacturing, Quality Assurance, Software Engineering and Management. It was anticipated that during FY91, 10-12 AIRs will be accomplished.

AMC Bonding Improvement Initiative

In 1990, the AMC Bonding Improvement Initiative continued to make gains in the areas of communication and research. In communication, the Armament Research, Development and Engineering Center (ARDEC) expanded the number of adhesive training workshops to include a total of 250 technical personnel at five AMC sites. These included:

Missile Command (MICOM)
Anniston Army Depot (ANAD)
Aviation Systems Command (AVSCOM)
Corpus Christi Army Depot (CCAD)
Lake City Army Ammunition Plant (LCAAP)

The training agenda for each workshop was specifically tailored to the particular mission and interest of the site. Feedback from each of these workshops has been exceedingly positive, and at least two sites (AVSCOM and CCAD) have requested follow-on sessions for FY91. In adhesive research the Materials Technology Laboratory (MTL) continued work on new adhesive formulations; durability of adhesive bonded joints; and molecular modeling.

Tooele Army Depot Consolidated Maintenance Facility (CMF)

In May 1990, DOD suspended the construction of the CMF at Tooele Army Depot. The DCS for Production established the Army's position that it was in the best interest of the Department of Defense to continue this modernization initiative as scheduled. In July 1990, this position was fully accepted by DOD. The CMF project would allow the Army to continue operation of these maintenance activities dependent upon reducing the amount of hazardous wastes generated. CMF will minimize the generation of sludge/solvents and eliminate the steam cleaning discharge for secondary items. The CMF construction contract was awarded in July 1989. It consolidated wheeled vehicle component and power generation maintenance now performed in numerous World War II buildings into a single state-of-the-art facility. The total cost of the project was approximately $107M and will generate an annual savings of $18M.

Deputy Chief of Staff for Product Assurance and Testing

Organization and Manpower

The DCS for Product Assurance and Testing (AMCQA) was authorized 41 civilian and two military spaces throughout FY90. Headed by Seymour J. Lorber, the DCS consisted of three divisions: Product Quality Division, Engineering Division, and System Evaluation and Testing Division. The latter had separate Evaluation and Testing Policy Branches. However, the office was scheduled to undergo a major reorganization, effective 1 October 1990, in which it was to merge with the Office of the DCS for Production into a provisional organization called the DCS for Concurrent Engineering.[24]

[24]Unless otherwise noted, information for this section is taken from the AMCCE-QP AHR submission for FY90. Additional information regarding the reorganization will be provided in the FY91 AHR.

Quality Engineering

Change in Standardization Documentation. The Office of the Assistant Secretary of Defense (OASD) directed the services and the Defense Logistics Agency to remove "Acceptable Quality Levels/Lot Tolerance Percent Defective" (AQLs/LTPDs) standards from all standardization documents. The Naval Publications and Forms Center had been directed not to publish any standardization documents containing AQLs/LTPDs after 30 June 1989. OASD later waived the 30 June 1989 deadline, since the services and DLA were unable to comply. OASD also established a DOD Process Action Team (PAT), chaired by Stan Breitch of Headquarters, Marine Corps, to study the fixed defect problem and to make recommendations on how to remove them in an expedient manner.

Due to the lack of progress by the Tri-Service/DLA Ad Hoc Working Group, AMC issued its own policy statement on the elimination of these standards. In addition, the Army representative to the PAT established an AMC Task Force consisting of representatives from each MSC. The Task Force was expected to make recommendations on AMC's further implementation of the OASD directive.

Development of New Army Regulation 702-3. AR 702-3, *Army Materiel Systems Reliability, Availability and Maintainability (RAM)*, was last officially published in May 1982. Since that time, two interim revisions were issued for use without publication, and numerous improvements were coordinated among working levels within the RAM community. The major objection to these interim revisions was that they contained not only RAM policy, but they also RAM philosophy and methodology. DA decided to limit AR 702-3 to RAM policy and to develop a separate DA Pamphlet, DA Pam 702-3, to contain the RAM philosophy and methodology. AMCQA estimated that AR 702-3 would be issued by the end of FY91, and that DA Pam 702-3 would be finalized approximately one year later.

Army Warranty Program. As the Army Executive Agent, AMC continued working on a revision of AR 700-139, *Army Warranty Program*, to incorporate needed policy changes. These changes were primarily in the area of reporting requirements, development of warranty duration, various factors for consideration in developing warranty coverage and incorporating the required redesign remedy. A parallel effort was initiated to revise AMC Supplement 1 to AR 700-139.

The Army Audit Agency (AAA) began another review of the implementation and execution of weapon system warranties within the Army. AMC was to address cost effectiveness, execution, and tracking of implementation. The final report was scheduled to be completed by mid-FY91.

Contractor Performance Certification Program [(CP)2]. (CP)2 was AMC's operational initiative to recognize contractors who consistently deliver quality products, control manufacturing processes, employ proactive self-audits, and demonstrate aggressive continuous improvement efforts. Three contractors were certified under (CP)2 in FY90. TACOM certified General Dynamics, Detroit Arsenal Tank Plant, for the M1A1 Tank in January. MICOM certified Martin Marietta's Orlando and Ocala plants for the Copperhead, Hellfire and Patriot in April. AMCCOM and TACOM certified General Dynamics, Sterling, MI, for the M1A1 Fire Control and Electronic Systems and Gunner's Primary Sight in November. AMC Pam 702-4 was published in March 1990 to provide industry and government personnel with an overview of (CP)2.

Exemplary Facility (EF) Program. As of the end of FY90, EF was under development as the single DOD performance based management program for contractors. Elements of the Army's (CP)2 have been incorporated. Representatives from the Army, Air Force, Navy, Marine Corps and DLA participated in a Technical Advisory Group (TAG) to prove out the EF concept. Industry participated in and endorsed the endeavor. The TAG published a report in September 1990 with recommendations to implement. The

DOD QA Council endorsed EF and chartered a Working Group chaired by DLA for implementation. An EF Joint Service Regulation has been drafted.

Testing and Evaluation

Materiel Release Program. AMCQA reported significant achievements in materiel release improvement efforts during FY90. Draft materiel release improvement recommendations, prepared by MSC release coordinators during second quarter FY90 were then staffed both by MSCs and PEOs. Their comments were incorporated into a new draft, reviewed by representatives from AMC, U.S. Army Materiel Systems Analysis Agency (AMSAA), TECOM, U.S. Army Operational Test and Evaluation Agency (OTEA), and the DA Office of the Deputy Chief of Staff for Logistics (ODSLOG). These agencies reviewed the draft from a test and evaluation perspective and recommended other changes and additions. An updated draft was staffed in HQ AMC during July 1990. A final draft was forwarded to AMCSM for inclusion in the next revision of AR 700-142, *Materiel Release, Fielding and Transfer*. When adopted, AMCQA expected that the suggested changes would significantly reduce the required supportive documentation, and reduce the preparation and staffing time for each release package.

FY90 also saw the completion of individual MSC materiel release forecasts and input of corrective data to the Acquisition Milestone Management System (AMMS) database maintained by MRSA. This forecasting and reporting automation effort was initiated in the beginning of FY88 when the DCS for Product Assurance and Testing asked MRSA to review existing databases and recommend the most cost effective method of obtaining hard copy media. MRSA suggested using the AMMS with an added module to include specific materiel release corrective narrative and completion dates. The input and output formats were presented to the MSC materiel release coordinators during FY89. Minor changes recommended by the MSCs were incorporated and the formats were accepted for use. The MSCs began inputting corrective data to AMMS during the first quarter FY90. All MSCs had completed their input by the end of FY90. AMCQA noted that the hard copy report requirement was to be eliminated at the end of the year. AMCQA reviewed, resolved issues and staffed 56 releases for the CG's approval.

The AMCQA Materiel Release Package Tracking database was revised and updated. This refined the existing report capability, designed additional reports, and incorporated additional fields in the database structure.

Test and Evaluation Policy. AMCQA participated with DA, the Operational Test and Evaluation Command (OPTEC), TRADOC, and the U.S. Army Information Systems Command (ISC) in writing, reviewing and staffing the Army's Test and Evaluation Regulation, AR 73-XX, *Test and Evaluation Policy*. AMCQA personnel served as principal members of the DA lead team to create and implement the new AR. Working under the auspices of DA, AMCQA personnel began to prepare the DA pamphlet accompanying the AR (DA PAM 73-XX) and were serving as team leaders for the capstone DA PAM as of the end of the fiscal year.

Test and Evaluation Engineering Intern Program. August 1990 marked the graduation of the first Test and Evaluation Intern class from the formal classroom training portion of the intern program. AMCQA personnel established the program in 1988 and the first intern class began their training in January 1989. AMCQA personnel worked with the School of Engineering and Logistics staff to establish permanent duty locations for the interns and to ensure that an adequate program of instruction was prepared and implemented. The commencement address was given at Texas A&M University by Mr. Walt Hollis, Deputy Under Secretary of the Army for Operations Research.

Army Guide to Live Fire Test and Evaluation. The AMCQA staff directed the Subject Matter Assessment Live Fire Test and Evaluation (LFT&E) study, which resulted in the development, publication, and distribution of a detailed guide by the Vulnerability Lethality Assessment Management Office, DA. This guide, which outlined policies, responsibilities, and procedures for LFT&E within the Army, was established as DA policy by DUSA(OR). It provided the Army community with a foundation for significantly improving the efficiency and effectiveness of the LFT&E process, while ensuring compliance with the law and OSD guidance. The OSD LFT&E Director commended the Army for its efforts and expressed a desire to use the guide as a model for the other services.

Deputy Chief of Staff for Ammunition

Organization and Manpower

The DCS for Ammunition undertook significant organizational restructuring in FY90. In January 1990 the DCS dissolved its Management of Systems division and created an Operations Office. Most of the missions of the Management of Systems Division were reassigned to the Executive Officer and the Administrative office.[25] The Chemical and Nuclear Division from the Office of the Executive Director for Chemical and Nuclear Affairs was assigned to the DCS's Logistics Directorate until September 1990 when it became a separate Division. The Logistics Troop Support and Logistics Policy branches were upgraded to division status and the positions of the chiefs changed to GM-15 positions. Additionally, due to Defense Management Review streamlining initiatives, in October 1990 the Plans and Programs Division merged with Budget division to become the Plans and Budget (PB) division with the lost of a GS-7 Secretary and GM-15 Supervisor position.

The total number of spaces authorized for the DCSA increased from 71 to 79 from October 1989 to October 1990. The following are the changes in key positions:

	OCT 1989	OCT 1990	DATE OF CHANGE
DCS for Ammunition	MG Greenberg	BG Schumacher	1 Jun 90
Assistant Deputy	Mr. Fisette	COL Hood(Acting)	30 Jan 90
Dir Pentagon Core	COL Hood	Mr. Lawson(Acting)	30 Jan 90
Chief, Ammo Mgt Division	COL Martinous	COL Martinous	
Chief, Logistics Directorate	Mr. Fahy	Mr. Fahy	
Chief, Logistics Troop Support	Mr. Blanchard	Mr. Blanchard	
Chief, Logistics Policy	Mr. Gulledge	Mr. Gulledge	
Chief, Management Systems	Dr. Starr	Div. was dissolved	
Chief, Ops Officer	New Position	Dr. Starr	Feb 90
Chief, Budget Division	M.A. Danser	Div. merged into PB	
Chief, Plans Prog Division	Mr. Lynch	Div. merged into PB	15 Oct, abolished
Chief, Programs Budget Division	New Position	M.A. Danser	Oct 90
Chief, Production Division	Mr. Mytryshyn	Mr. Mytryshyn	
Chief, Chemical/Separate Nuc Div Office (EDCN)	COL Licata		July 90
Executive Officer	MAJ Ehlinger	MAJ Ehlinger	

[25]Unless otherwise noted, the data in this section is taken from the DCS for Ammunition historical submission for FY90.

Most Significant Issues and Command Management Issues

The most significant issues handled by the DCS in FY90 included development and implementation of the Base Consolidation Plan, ammunition demilitarization, Conventional Ammunition Working Capital Fund, Congressional requirements, U.S./Soviet Bilateral Chemical Weapon Destruction Treaty, and support to Operation Desert Shield. This and other significant issues are discussed below.

Base Consolidation Plan. In reaction to planned reductions in the defense budget, the Army continued its efforts to consolidate its ammunition production base. The Army completed its Base Consolidation Plan which charts the course for the development of a smaller and more efficient production base capable of meeting the ammunition needs of the future. This plan had major social and political implications since it affected the work force and economies of the communities in which Government Owned Government Operated/Government Owned Contractor Operated (GOGO/GOCO) plants were located.

Ammunition Demilitarization Operations. Starting in FY92, the Procurement Ammunition Army (PAA) Appropriation will finance demilitarization operations. To ensure execution of this critical initiative, $15M was shifted from the Operation and Maintenance, Army (OMA) appropriation to PAA. This transfer was effected to deal with the growing stockpile of ammunition in the demilitarization account and its negative impact on explosive safety and storage space availability. As Open Burning/Open Detonation (OB/OD) come under increasing environmental scrutiny, the price of demilitarization may escalate dramatically, i.e., from $813 per short ton in a controlled environment.

Establishing a separate budget line in PAA furnishes the necessary management consistent with ammunition priorities. Significant advantages of a separate line include furnishing a specific Army appropriation line and visibility of ammunition demilitarization requirements; allowing the flexibility offered by a three year appropriation and realignment of resources; permitting ammunition managers to prioritize demilitarization; promoting a no-growth (in tonnage) of the demilitarization stockpile and ensuring greater probability of executing the required demilitarization, thus freeing up necessary storage space needed for the European Retrograde and Strategic Arms Reduction Treaty (START).

Conventional Ammunition Working Capital Fund (CAWCF). The CAWCF was a revolving fund used for managing and reporting the procurement of ammunition components and their assembly into conventional ammunition. It was established in 1982 to serve as the vehicle to procure all Single Manager for Conventional Ammunition (SMCA) items. The CAWCF obligation rate of 83.7 percent for FY90 exceeded the rate of 82.3 percent directed by PBD 450 of 9 November 1989. Since March 1989, the Army took aggressive action to ensure that over-aged CAWCF orders were resolved and operations refined to preclude future backlogs.

In response to a 9 November 1989 PBD 450 directive to expand aggressive management action to accelerate deliveries and shorten ammunition procurement lead times, AMC requested and received OSD approval to pursue several initiatives to improve CAWCF efficiencies. Approved initiatives included a limited contract authority test; procurement authority prior to termination of a contract with a contractor in bankruptcy proceedings, and identifying CAWCF as a "no year" fund account. Additionally, Defense Management Report Decisions issued in November 1989 directed a "stabilized rate policy" for CAWCF pricing. This policy was implemented on 1 October 1991 for all DOD FY82-90 orders and for all FY92 and future prices. FY91 prices will convert to fixed standard prices on 1 October 1991. Requests for price changes must be approved, through the CAWCF Management Council, by OSD.

Congressional Requirements. In CY90 the Office of the DCS for Ammunition participated in two formal congressional hearings involving both the Senate Armed Services Committee and the House

Appropriations Committee. In addition, the office provided input for six other General Officer hearings. Congressional interest in the ammunition appropriation during this fiscal year's Congressional hearings resulted in the requirement for the DCS to provide answers to numerous questions for the record. The DCS also responded to over 150 other ammunition related inquiries, and gave briefings to or visited numerous Congressional representatives or their staffs.

U.S./Soviet Bilateral Chemical Weapons Destruction Treaty. The Memorandum of Understanding (MOU) on the banning of chemical weapons was signed June 1990. AMC agencies (AMCCOM, DESCOM, and CRDEC) developed and were in the process of implementing all plans necessary to meet the requirements of the treaty banning chemical weapons (CW). Soviet and U.S. delegations visited several AMC sites to develop inspection procedures for use in chemical treaty verifications. The Original MOU was signed at Jackson Hole, Wyoming on 26 September 1989. It was designed to facilitate the process of negotiations, signature and ratification of a comprehensive and verifiable global convention on the prohibition and destruction of CW weapons.

Both the U.S. and Soviet governments were convinced that openness about each other's chemical weapons capabilities was essential for building the confidence necessary for early completion of the convention. To that effect, a decision was made to hold bilateral experimental visits to exchange the required information and gather the required technical data. Verifications will be conducted in two phases with each country using its own national means to evaluate data.

Phase I: By 31 December 1989 the two sides exchanged general data on their chemical weapons capabilities, and planned a series of visits to relevant facilities. Visits to U.S. facilities include Tooele Army Depot, 20-21 June 1990; Pueblo Depot Activity, 3 August 1990; Rocky Mountain Arsenal, 1-2 August 1990; Activity WESTCOM, Johnston Island, January 1991; and Muscle Shoals, Alabama, February 1991.

Phase II: The two sides will exchange detailed data and conduct challenge inspections of applicable sites, as previously reported on initial Phase I data. Accuracy of provided data will also be verified. Final protocol for conduct of visits will be signed in December 1990.

Desert Shield Support. The DCS for Ammunition quickly responded to the requirements of fielding troops in Southwest Asia. The Logistics Troop Support Branch and the Chemical/Nuclear Division initially provided the core personnel to staff the Emergency Operations Center desk. From the beginning the DCSA established a 24 hour operation and incorporated Division Chiefs as rotating shift leaders. By September all action officers were assigned tours at the Ammo/Chem-Nuc desk.

The first priorities included the identification of ammunition stocks and Chemical defense equipment in CONUS, OCONUS and in the production pipeline along with arranging transportation of same to the deploying troops. DCSA, which has dual missions both in the DA staff (Assistant Secretary of the Army for Research, Development and Acquisition [ASA(RDA)]) and in the AMC staff, also provided personnel to perform liaison missions with the DCSLOG. The plans, procedures and training which DCSA had refined during previous exercises was invaluable in the initial stages of the Desert Shield support.

Program Objective Memorandum (POM) FY 92-97

The DCS participated in all phases of the development of the POM FY92-97, which shaped an Army smaller than any our nation has had since 1948. Due to the severe fiscal constraints, the overall POM strategy was to sacrifice near-term modernization to ensure technological advantage and readiness for the future. Priority went to the first-to-fight. As the Army's Total Obligation Authority (TOA) for Research, Development and Acquisition has continued to decline, the portion allocated to ammunition also declined

drastically. The FY92-97 Ammunition POM was based on the reduced TOA, projected changes in force structure and Army program prioritization decisions.

Stockpile drawdown of war reserve ammunition to support training totaled approximately $345 million per year over the POM period. Anticipated increases in the use of training devices and simulators for tank ammunition, Hydra 70 rockets, 4.2 Inch and 20MM Vulcan; and projected force structure reductions allowed the Army to support training at reduced levels beginning in FY94. The POM also reflected a production base in the process of being consolidated to eliminate inefficiencies, reduce production costs, and to become flexible and responsive to future needs. The Army planned to retain smaller active ammunition production bases. More reliance will be placed on the commercial sector for non-explosive ammunition components. The POM also reflected the newly transferred responsibility for maintenance of the inactive base.

Ammunition Management

In spite of funding restrictions the Ammunition Programs Management Division continued aggressive program management of ammunition improvements across the entire spectrum of the battlefield. Significant activity occurred with the 120MM Mortar Program, the 105MM High Explosive Rocket Assisted (HERA) Artillery Projectile, the 25MM, Armor Piercing Fin-Stabilized Discarding Sabot-Tracer (APFSDS-T) cartridge, and 155MM Extended Range (BASEBURN) Artillery Projectile. Development continued on 120mm Mortar ammunition to replace the aging 4.2" mortar in use since WWII. Low Rate Initial Production (LRIP) was executed on the 25MM APFSDS-T Bradley Fighting Vehicle ammunition. LRIP was also completed on the 155MM BASEBURN projectile. The 105MM HERA artillery projectile was type classified standard, and transitioned into production. The LRIP of the 155MM BASEBURN and 25MM APFSDS-T were expedited in support of Operation Desert Shield. The Division also made numerous adjustments to the FY91 Ammunition Program to improve support to forces deployed to Saudi Arabia.

FY92/FY93 Procurement Ammunition, Army (PAA) Summer Budget Review

The review was held at AMCCOM, from 16-20 July 1990, for all PAA programs, i.e., PEO and non-PEO managed programs. This review was held in two sessions. Session one, chaired by DCS for Ammunition, was held 16-19 July 90. HQDA participants included representatives from the Assistant Secretary of the Army for Financial Management (ASA-FM); the Office of the Deputy Chief of Staff for Operations, and the Office of the Deputy Chief of Staff for Logistics. Other participants included representatives from the Marine Corps; the Executive Director for Conventional Ammunition; the Research, Development and Acquisition Information Systems Agency; PEO Armaments, and various training centers and schools. Focusing on prior-year execution, requirements, pricing, funded delivery periods, and support of base closure initiatives, the FY92-FY93 budget request was finalized for review by HQDA.

Session two, co-chaired by ASA-FM and SARD-RPR, was held on 20 July 1990. The objective of this review was to identify programs considered at risk and to recommend resource adjustments. ASA-FM recommended several programs be adjusted before the budget request was submitted to Office of the Secretary of Defense.

A follow-up meeting was held late in July 1990. ASA-FM presented programs identified for adjustments during session two of the FY92/FY93 PAA Summer Budget Review. None of ASA-FM's recommendations were accepted by the Army staff.

Chemical Programs

Chemical Stockpile Demilitarization Program (CSDP). Public Law 99-145 directed the Secretary of Defense to destroy the nation's stockpile of lethal unitary chemical agents and munitions stored throughout

CONUS by 30 September 1994 in conjunction with acquisition of binary chemical weapons. The CONUS chemical storage sites, which were all Army installations, included: Aberdeen Proving Ground (APG) near Edgewood, MD; Anniston Army Depot (ANAD) near Anniston AL; Lexington-Blue Grass Army Depot (LBAD) near Richmond, KY; Newport Army Ammunition Plant (NAAP) near Newport, IN; Pine Bluff Arsenal (PBA) near Pine Bluff, AR; Pueblo Depot Activity (PUDA) near Pueblo, CO; Tooele Army Depot (TEAD) near Tooele, UT; and Umatilla Depot Activity (UMDA) near Hermiston, OR.

Chemical agents included in the stockpile were of two basic types--nerve and blister--and were configured in a variety of munitions and bulk containers. All of the agents and munitions were at least 19 years old, and some were more than 40 years old. The Department of Defense was further directed to compare the advantages and disadvantages of destruction on-site, at regional destruction centers, or at a national destruction center--both inside and outside the United States.

In Support of the 1990 POM submission, the Army prepared a new chemical demilitarization program schedule and started developing the life cycle cost estimate. The updated program schedule incorporated the lessons learned from the Johnston Atoll Chemical Agent Disposal System (JACADS) start-up experience, included State-mandated reduced plant operations during the Resource Conservation Recovery Act (RCRA) review periods of test burns (required for each furnace and agent), and Congressional reductions in the FY90 chemical disposal program budget.

The revised program schedule projected a completion of toxic operations in December 1998, with cleanup and closure to follow. This schedule was provided to Congress in March 1990 and discussed during the Congressional budget hearings. The schedule can no longer be met due to several factors. First, mechanical problems experienced at JACADS may extend the period for the Operational Verification Test. Second, fiscal year 1991 procurement funds were cut from the program, resulting in an extension of the schedule. Finally, the environmental permit development and approval process needed more time. The Army was developing a revised schedule and will submit it to the Congress in early 1991 as requested.

Title VI, FY90 Defense Appropriations Conference Report 101-345, directed that the Army investigate and report on the feasibility and desirability of using chemical disposal facilities for other purposes after the primary mission of munition destruction is completed. On 7 June 1990, the MITRE Corporation was awarded a contract to conduct such a study and prepare a report to be used by the Army to fulfill the Congressional requirement.

This study will address all eight projected CSDP plants, the proposed Cryofracture/Incineration Demonstration Plant (CIDP), the BZ Disposal Plant at Pine Bluff, AR, the JACADS facility, and the Chemical Agent Munition Disposal System (CAMDS) testing facility at Tooele, UT. The study will be conducted in two phases. Phase one entails collecting information from the various installations and industry on possible hazardous waste and other chemical materiel that could be fed into these plants and studying other uses for each of the plants. This aspect of the study has been completed. In the second phase, already underway, the various potential uses for each location will be analyzed. A draft of the feasibility and desirability report was expected in January 1991.

Munition Overpack Project. The On-Site Container (ONC), mandated in the program's Final Programmatic Environmental Impact Statement (FPEIS), was specifically conceptualized for the protection of munitions in case of an accident during transportation from the storage yards to the destruction facilities. Its design is near completion. Major component testing to verify performance vis-a-vis the established safety performance criteria has been completed successfully. Construction of a prototype ONC and its transporter is well underway. Development of a final Technical Data Package (TDP) for the acquisition of the fleet of ONCs and transporters has begun and will be completed during the second quarter of FY91.

Design Activities. Design activities during the year were directed at completion of detailed designs of the pollution abatement systems for the basic CSDP plants, incorporation of design changes driven by lessons learned at the CAMDS and JACADS facilities, and preparation of the initial set of technical data packages to support equipment acquisition for the Tooele disposal facility and out-year plants.

Design and engineering information required for the preparation of RCRA and Clean Air Act (CAA) permit applications for the facilities at Anniston, Pine Bluff, and Umatilla was developed ahead of other design efforts. Preparation of the same type of information for the remaining sites has been started. Process and facility designs for the Anniston Chemical Disposal Facility (ANCDF) and Pine Bluff Chemical Disposal Facility (PBCDF) were completed through the 60 percent level. The Umatilla Chemical Disposal Facility (UMCDF) project produced the generic laboratory design which will be used at most of the CONUS sites. Depot support design projects for Umatilla, Anniston, and Pine Bluff such as munition reconfiguration, laundry facilities, etc. were further developed and will continue throughout FY91.

Cryofracture/Incineration Program. After an approximate 24-month hiatus, the cryofracture program was reactivated by Title VI of Public Law 101-165, the FY90 Department of Defense Appropriations Act. The program guidance requires reinitiation of research and development testing and the design, engineering, environmental and other preparatory work leading to the possible construction of a full scale cryofracture demonstration plant. A 24-month long R&D testing of several acknowledged program gaps was started in January 1990. Testing started at the General Atomics (GA) facilities in LaJolla, CA, and will be conducted at the CAMDS facility in Tooele Army Depot, UT; and Dugway Proving Ground (DPG), UT during 1991. The Oak Ridge National Laboratory (ORNL) was tasked to initiate the program's site-specific Environmental Impact Statement (EIS) documentation. Burns and Roe Industrial Services Company (BRISC), Oradell, NJ, was engaged in reviewing existing design documents and will be preparing the plant's final process and facility designs.

Chemical Facilities

Pine Bluff Arsenal (PBA) BZ Disposal Facility. Disposal operations of agent BZ at PBA began in May 1988 and continued through January 1990. Clean-up, decontamination, and closure of the facility was completed in June 1990. The entire BZ inventory--including bulk and munition stocks, and the solid and liquid wastes generated from the disposal operation as well as earlier production and test programs--was destroyed without a single safety mishap. All Federal and State environmental requirements were met and exceeded.

Chemical Agent Munition Disposal System. With the completion of a VX agent burn in the Liquid Incinerator (LIC) in November 1989, CAMDS has been in a stand-by mode awaiting issuance of a Research, Development and Demonstration (RD&D) permit by the State of Utah. The permit application was initially submitted to the State for review in May 1989. A first draft operating permit was issued for review by the Army in April 1990 followed by a second draft in June 1990. The completed permit was to be issued in September 1990, but the date was later changed to October and once again postponed to November. Current expectations were that the earliest date for the Utah Bureau of Solid and Hazardous Waste (UBSHW) to issue the operating permit was January 1991. Without the permit, CAMDS was unable to perform any agent testing using the plant's furnaces.

Several non-agent operations involving stimulant and brine tests in the LIC and Deactivation Furnace System (DFS) were conducted earlier in the third quarter of FY90. CAMDS was scheduled to conduct several tests involving mustard agent as soon as an operating permit was issued.

Johnston Atoll Chemical Agent Disposal System (JACADS). Delays in the completion of operator training and of modifications to correct equipment malfunctions dictated a delay in the start of toxic operations at JACADS from March to June 1990. Processing of GB M55 rockets began on 30 June 1990, once final system activities were completed and the pre-operational safety survey of the facility was concluded. Operations were temporarily suspended shortly thereafter as a result of anomalous agent readings detected by the plant's monitoring system.

An investigation of the causes of the anomalies determined that the agent readings were not caused by agent but by an interferant. GB M55 rocket operations were resumed and the Operational Verification Test (OVT) evaluation of the JACADS rocket line system began on July 16, 1990. A 600 rocket "certification of start of destruction" of JACADS mandated by the Congress was completed on 23 July 1990.

Processing of GB M55 rockets in the Deactivation Furnace System and agent processing in the LIC is progressing steadily, although at a slower pace than projected. As of 30 November 1990, 4,800 M55 rockets and 34,000 pounds of agent GB were safety destroyed.

Chemical Demilitarization Training Facility (CDTF). The CDTF, under construction in the Edgewood Area of Aberdeen Proving Ground, MD, will operate for the entire life of the CSDP. The primary objective of the training facility is to provide all chemical plant operator personnel uniform and sustained training to minimize the time required for actual in-plant training and systemization. The CDTF will utilize only simulated agent and munitions in its training mission.

Tooele Army Depot Chemical Disposal Facility (TOCDF). The TOCDF was the first of eight disposal facilities to be constructed in the CONUS. The facility was designed to accept and destroy all the chemical agents and munitions stored at Tooele Army Depot, UT. In September 1989, the EG&G Defense Materials Group, Incorporated, of Falls Church, VA, won the contract to build, equip, operate, and finally close the TOCDF plant. EG&G's primary subcontractors were the M.V. Kellogg Company, responsible for construction, and Battelle Laboratories, whose assigned responsibility included laboratory operations and environmental and surety related tasks. EG&G has overall project management responsibility, equipment start-up, operations and closure. In July 1990, the M. W. Kellogg Company was replaced by the Morrison-Knudson Ferguson Company, of Boise, ID.

Construction was proceeding at an accelerated pace. Foundations for major facility buildings and installation of underground utilities were complete. Engineering and procurement actions to support construction were proceeding as scheduled. Some of the government furnished equipment (GFE) was starting to arrive at the site. EG&G has begun its plans for the plant start-up protocols, systemization operations, and was developing its personnel training plans to be consistent with the training to be provided at the CDTF. The start of toxic operations at TOCDF was scheduled for October 1993.

Chemical Stockpile Emergency Preparedness Program

The Chemical Stockpile Emergency Preparedness Program (CSEPP), a Joint Army/FEMA (Federal Emergency Management Agency) Program, shifted emphasis in 1990 from accident response to emergency preparedness. The philosophy of the program also began to focus on current chemical munition storage scenarios rather than scenarios relating to Chemical Demilitarization Operations. These changes prompted accelerated planning efforts and equipment upgrades at AMC chemical storage sites during the year.

Nearly $3M was received from CSEPP for equipment purchases at the chemical storage sites. Additional funds were received for the design and testing of additional response equipment such as personnel decontamination trailers and emergency lighting sets. A multimillion dollar CSEPP budget for

AMC was developed for FY92-97 and Submitted to the Assistant Secretary of the Army (Installations, Logistics, and Environment) (ASA [IL&E]).

A decision was made to hold the Service Response Force Exercise 91 (SRFX-91) at Tooele Army Depot and incorporate SRFX-91 into the CSEPP exercise program as a pilot Full Scale Exercise to validate the CSEPP process for evaluating the joint Army/civilian response to an accident at one of our chemical storage sites. This office was heavily involved in the planning efforts for this exercise.

The Chemical Operations Office continued to participate in the CSEPP operating subcommittees with particular emphasis on the planning, automation, and the exercise subcommittee. The Chief of the Division continued to participate as a standing member of the Joint Army/FEMA CSEPP Steering Committee.

Chemical Decontamination Solution No. 2

The General Accounting Office concluded their investigation of the Army's use of the Chemical Decontamination Solution No. 2 (DS2). The GAO report resulted in hearings before the Subcommittee on Environment, Energy and Natural Resources, House Committee on Government Operations. The report criticized the Army for following: purchasing large quantities of DS2, even though Army tests have shown that DS2 can damage current weapon systems, making them inoperable; that DS2 storage facilities did not conform to DOD regulations resulting in potential danger to humans and the environment; that Army's tests have indicated that household bleaches were just as effective as DS2; and that the Training and Doctrine Command has recommended the Army replace DS2 with a less damaging decontamination agent.

The Army partially concurred with the GAO and agreed to change doctrine so that DS2 would no longer be used on any equipment or weapons that could be damaged by the solution. The Army also agreed to improve storage facilities and conform to regulations for storing DS2 as a hazardous material. The Army rebutted the remaining criticism by pointing out that DS2 is the only available decontamination agent that meets all the Army's requirements to neutralize all known chemical warfare agents. However, the Army agreed to continue a program to develop a less corrosive decontamination agent.

Project Manager for Nuclear Munitions

Mission and Organization

The Office of the Project Manager (PM) was located at Picatinny Arsenal in Dover, New Jersey. The Office was responsible for the "research, development, procurement, production, distribution, logistical support, and stockpile safety and reliability testing programs of assigned nuclear munitions programs." It also served as the AMC spokesman on such issues to higher and lateral headquarters and it was organizing and chaired the Joint Nuclear Weapons program groups for which the Army was the designated materiel developer. This included Joint Department of Energy/Department of Defense (DOE/DOD) Phase 2 Feasibility Study Groups, Design Review and Acceptance Groups, DOE/DOD Project Officer Groups, Joint Test Working Group, and the Comprehensive Test Plan Group. It also served as the principal Army member of the Configuration Control Group and the Joint Task Group, as well as providing Army membership on all Air Force and Navy Design Review and Acceptance Groups. Furthermore, it provided the Army official observer to activities of the Air Force and Navy Joint DOE/DOD Phase 1, 2, and 2A study group, which was a joint study group from the Weapon Concept Phase, Program Feasibility and

Advanced Development on new weapon systems leading to DA approval and a Phase 3 development request (Engineering Development).[26]

The Office of the Project Manager for Nuclear Munitions also had field offices headed by Assistant Project Managers at Albuquerque, New Mexico, and Rock Island, Illinois. The Assistant Project Manager at Albuquerque was the Project Manager's principal representative in the Albuquerque, Los Alamos, Las Vegas and Livermore areas and was the Army representative on all Design Review and Acceptance Groups. The Albuquerque field office also provided the Army member to the Air Force B61 and PAL/CD Controller Project Officers Groups (POGs) to establish scope and schedule for design definition and cost study as well as tentative development and production schedules and division of responsibility. The Rock Island Assistant Project Manager was located at AMCCOM and served as the principal representative of the Project Manager on nuclear munitions life cycle activities that involved AMCCOM support.

Prior to FY90 the Office of the Project Manager for Nuclear Munitions had been authorized 39 civilians and 11 military spaces. Two civilian spaces were eliminated, bringing the total authorized civilian spaces down to 37. Military authorized spaces remained at 11, but for most of the year the organization operated with only 9.

Weapons Access Delay System (WADS)

AMC, in response to an urgent request from the U.S. Army, Europe (USAREUR), had developed the Weapons Access Delay System (WADS). It was a family of devices which, when acting together, delayed access to stored weapons and precluded their removal until on-site security forces could be augmented. The delay was achieved by the synergistic affect created by a series of obstacles that had to be overcome in sequential order. Construction of WADS was completed and the lightning upgrades (phase 1-grounding and phase 2-surge arrestors) was completed north of the Alps and nearly completed south of the Alps.

Cancellation of Follow-on-to-Lance (FOTL) and XM785 155M Artillery Fired Atomic Projectile (AFAP)

On 3 May 1990, following the political changes in Europe, especially the unification of Germany, the President directed the cancellation of the FOTL program. On 27 July 1990 the Deputy Secretary of Defense directed an orderly termination of the AFAP program. All production programs were stopped immediately and subsequently terminated except for the rocket motor which was recommended for descoping, or entering into negotiations with the contractor to evaluate the contract in the best interests of the government.

Non-Strategic Nuclear Forces Survivability, Security and Safety (NSNFS3) Program

In accordance with AR 11-20 the Program Advisory Group issued guidance to the NSNFS3 POG. Several accomplishments were made under the NSNFS3 POG in FY90 by the Maintenance and Assembly Secure Storage (MASS) Working Group and by the Advanced Storage Concepts Working Group. The MASS Working Group developed and evaluated concepts to enhance the security of nuclear weapons during maintenance and/or short time storage in a maintenance and assembly building. This was done in support of the NATO Joint Theater Surety Management Group. In FY90 it evaluated two concepts, a Foam Encapsulation System and a Secure Storage Structure (SSS). These evaluations determined that the SSS concept could satisfy program requirements; however, in view of the uncertainty over the future status of Army nuclear weapons in Europe, it was decided to explore cheaper and more quickly implemented

[26]Unless otherwise noted, all the information in this section was taken from the Office of the Project Manager for Nuclear Munitions historical submission for FY90.

concepts before making a final decision. The Advanced Storage Concepts Working Group investigated concepts for providing access delay components and systems for the proposed AMC Underground Storage Facility. The development of preliminary access delay concepts was initiated and tested; however, due to funding constraints and the uncertainty over future Army stockpile requirements, this program was put on hold.

Survivability Overpack Container (SOC)

The SOC was being developed to enhance the security, survivability and safety of AFAPs during all phases of transport and storage. A SOC Required Operational Capability was approved and engineering development was initiated, including design and evaluation efforts to enhance the demonstrated safety and security aspects of the SOC. Preliminary results indicated that the SOC could meet the security delay requirements and the results of the propagation test (a test to determine the possible sympathetic detonation of one weapon resulting from the detonation of another weapon) were also encouraging. The initial operational capability was scheduled for the fourth quarter of FY93.

Classified Topics

For a variety of classified projects handled by the PM Office, see the Office of the Project Manager for Nuclear Munitions historical submission for FY90 in the AMC Archives.

Project Manager for Training Devices

Organization and Manpower

Manpower authorized for the Project Manager for Training Devices (PM TRADE) as of the start of the fiscal year consisted of 26 officer, 4 enlisted and 205 civilian personnel. The manpower authorization at the end of the review period consisted of 25 officer, 4 enlisted and 234 civilian personnel. PM TRADE was decremented one officer (from 26 to 25) and four civilian authorizations (from 205 to 201) by Headquarters, Army Materiel Command for fiscal year 1991. The increase of 33 civilian authorizations was the result of the consolidation of Contractor Logistics Support workload at PM TRADE.[27] The following is a list of key personnel. Changes occurring during the reporting period are indicated:

Project Manager	COL John M. Gravois (7/15/90)
Deputy Project Manager	Mr. William Marroletti
Administrative Officer	SFC Johnny Stallings (10/5/89)
Resources Management Division	Mr. Edward M. Beckmann
Research and Engineering Management Division	Dr. Ronald C. Hofer
Technical Support and Readiness Division	Mr. Louis A. Sucich
Procurement and Production Office	Mr. Ora Tillman Hall
PRODUCT MANAGERS:	
Close Combat Training Systems	LTC Richard L. Knox
Air Combat Training Systems	LTC Mark W. Russell (8/22/90)
Combat Support Training Systems	LTC John W. Holly (1/30/90)
Combined Arms Training Systems	LTC Stephen S. Overstreet

[27]Unless otherwise noted, the data in this section was taken from the FY90 historical submission by PM TRADE.

The fiscal year saw a number of organizational changes within PM TRADE. The Fielded Systems Management Branch was established within the Technical Support Division in compliance with a CG, AMC direction to centralize the responsibility for oversight of contractor logistic support of training devices with PM TRADE. The Foreign Military Sales mission, organization and functions were transferred from the Technical Support Division to the Resources Management Division and the organization, mission and functions for support of the National Training, Combat Maneuver Training and Joint Readiness Training Centers were transferred from the Product Manager for Combined Arms Training Systems to the Product Manager for Combat Support Training Systems.

Contractor Logistic Support

Transition of management responsibility for logistic support of training devices from AVSCOM and AMCCOM to PM TRADE was proceeding toward a scheduled completion of transition on 1 July 1991. Previous plans for transition of training device support responsibility for systems developed by PM TRADE have been terminated and the responsibility for their support will be retained by PM TRADE in compliance with directives from CG, AMC.

Family of Simulations Master Plan

The family of simulations master plan charts the course for Combat, Combat Support and Combat Service Support Command and Control Synchronization Training Simulations programs through 1998. It identifies key participants; near, mid and far-term program objectives and resource requirements; and major decisions/actions affecting the program.

Support of Armor

Development was completed and production contract award was made for four M1 Tank Driver Trainers. Seventy-two Video Disk Gunnery Systems for the M2/3 Bradley were delivered.

Support of Army Aviation

The sixth AH-1 APACHE Combat Mission Simulator was delivered; three UH-60 BLACK HAWK Flight Simulation Systems were delivered, bringing the total number fielded to 17; and block updates of fielded UH-60 BLACK HAWK Flight Simulation Systems were completed.

International Cooperative Programs

Organization

The Office for International Cooperative Programs (OICP) served as the focal point for international cooperative research, development and standardization programs. It functioned as the National Office of Record for agreements resulting from assigned programs and promulgated draft and approved agreements to concerned activities. The office maintained records on 325 Data Exchange Agreements, 37 international Memoranda of Understanding, over 1,050 NATO standardization agreements (STANAGs) and approximately 723 American, British, Canadian, Australian (ABCA) quadripartite standardization agreements (QSTAGs) and Air Standards.

The OICP facilitated the identification of opportunities and initiation of international armaments cooperation. Extensive coordination was performed throughout OSD, HQDA, MACOMS, AMC major subordinate commands and TRADOC Centers and Schools. The office also provided the organizational interface for the U.S. Army Research, Development and Standardization Groups in the United Kingdom, Germany, Canada and Australia and the AMC Representative-France. Interpreters from the OICP provided French and German linguistic support to Army International forums.[28]

Key Personnel

LTG Cianciolo, after his assignment as Commander of MICOM, became the Deputy Commanding General for Research, Development and Acquisition and Deputy Commanding General for International Cooperative Programs on 10 October 1989, replacing LTG Jerry M. Bunyard who had retired on 1 October. LTG Cianciolo, in turn, was replaced on 11 July 1990 by LTG Billy Thomas. Other key personnel within the OICP are listed below:

Mr. Michael F. Fisette, Assistant Deputy for ICP

COL Edwin T. Vernon, Chief, OICP/Asst NATO/ABCA Activities,
replacing COL Robert A. Goodwin on 20 August 1990

Mr. Aaron Mahr, Chief, Policy, Plans and Programs Division

Mr. Rodney Smith, Chief, International Standardization and Staff Talks Division

Mr. James Lash, Chief, Research, Development and Evaluation Division

Mr. Julian McAuley, Chief, International Materiel Evaluation Division

Policy, Plans and Programs Division

Organization

The Policy, Plans and Programs Division was initiated in January 1990. It was formed with personnel from the Cooperative R&D Division, the Standardization and Staff Talks Division, and the Foreign Materiel Division.

This division was responsible for all of the international Army Regulations, the OICP and Standardization Group budgets, office automation, interpreting and translations, and numerous special projects. It had also been envisioned that this division would negotiate all memoranda of understanding.

One of the first of these major special projects was the collection of "L" chart data in preparation for the impending reduction in personnel in order for AMC to remain within its budget. AMC levied a 25 percent manpower reduction (nine of thirty-six spaces) on the OICP. Following a prioritization of OICP missions, it was determined that seven of the nine spaces would come from the newly formed division, including the three interpreters. One space (a GS-14 engineer) would come from the newly formed

[28]Unless otherwise noted, the information in this section is taken from the Office of International Cooperative Programs historical submission for FY90.

International Standardization and Interoperability Division and one space (a GS-13 physical scientist) would come from the International Materiel Evaluation Division at Aberdeen Proving Ground. Following an intensive lobbying effort, and intercession by the International Office of the Office of the Assistant Secretary of the Army (Research, Development and Acquisition), the three interpreter spaces were restored. As the year ended plans were finalized for the disestablishment of the division, to be effective 12 October 1990. Since the three interpreter spaces had been restored, only four spaces (GM-15 Division Chief, GS-14 vacant International Cooperative Programs Specialist position, and two vacant secretary spaces) would be lost.

Future Tank Main Armament (FTMA) Memorandum of Understanding

A major accomplishment was the hand-carrying of the Future Tank Main Armament (FTMA) Memorandum of Understanding to France, the United Kingdom and Germany for signature following the U.S. signature. Three of the four signatures were obtained in record time (less than one week).

Linguistic Support

In FY90, the requirements for German and French interpretation support for Army-sponsored international meetings/conferences continued to increase. The staff interpreters provided linguistic support during FY90 to 38 meetings including:

Four Power Senior National Representative-Army
Executive Session and Technical Working Groups
U.S./GE Army Armaments Working Group (WG)
Army Research Institute: U.S./French Human Eng. Discs
HQ AMC U.S./FR Quality Assurance Discussions
NATO Allied Data Systems Interoperability WG
Autonomous Precision Guided Munition (APGM)
Executive Management and Joint Steering Committees
HQ TECOM Test Standardization Meetings
TRADOC U.S./FR Subject Matter Expert Exchanges
Four Power SNR-Air
Electronic Warfare WG
U.S./French Staff Talks
AC 225/ AC 301/ AC 310
Future Tank Main Armament
U.S./GE Maintenance Group
DARPA U.S./FR Reactive Armor Program
U.S./GE M1/Leopard II Harmonization Talks
MLRS - Executive Committees and TWGs
U.S./FR Data Exchange Annexes WGs

AMC interpreters provided linguistic certifications of the foreign language versions of significant bilateral and multilateral Memorandums of Understanding (MOUs) (e.g. Future Tank Main Armament), DEAs and Security Guides (e.g. Supplemental Interim Medium Anti-tank [SIMAT] Program) and translated numerous short and lengthy technical program documents from French and German into English and vice versa. The interpreters provided technical advice on the procurement (and installation, as applicable) of simultaneous interpretation equipment to TECOM and to PEO Armaments. PEOs and MSCs involved in active international programs will realize major cost savings by procuring rather than renting interpretation equipment.

Other Functions

During the year the division monitored the Logistics Management Institute (LMI) contract, managed more than $700,000 in DA travel funds for unprogrammed international travel, continued to improve AR 70-41, developed input to AR 70-1 to ensure that international cooperative projects were considered in every phase of the acquisition process, developed a Memoranda of Understanding data base, published a Weekly Significant Activities Report, held a Standardization Group Commanders' Conference, and assisted the American Defense Preparedness Association in their planning for an International Cooperation in Defense Trade Conference to be held in November 1990. The division also contained the OICP Training Officer and OICP Property Book Officer.

Research, Development and Evaluation Division

Nunn Cooperative R&D Program, Foreign Comparative Test Program, and Other Armaments Cooperation

In support of Army Acquisition Executive Policy Memorandum 88-8, International Cooperation in Research, Development, Testing, Evaluation and Acquisition (RDTE&A) Programs dated 8 November 1988, OICP provided assistance and support to the U.S. Army PEO/PM/MSC acquisition community on Nunn Cooperative R&D Program, Foreign Comparative Test Program, Armaments Cooperation. In addition, OICP reviewed and revised AR 70-1 policy guidance on system acquisition as applied to the foreign Non-Developmental Item (NDI) process. AMC institutionalized a process to facilitate identification of foreign materiel and technology under the Nunn Cooperative R&D and the Foreign Comparative Test Programs. A list of the current projects follows.

Nunn Cooperative R&D Program:

Combat Vehicle Command & Control
Hawk Mobility Co-development Program
Multimode Seeker Demonstration Program
All Agent Biological/Chemical Detector
Ammunition Storage Explosive Safety
Future Tank Main Armament System
Laser Stand-off Chemical Detector
Cooperative Analyses of Ground-Based Air Defense
Covert Night/Day Operations in Rotorcraft
Electrothermal Gun Technology
Surface-to-Air Missile Operation Center
PATRIOT Alternate Multimode Seeker Demonstration

Foreign Comparative Test Program:

ELTRO GMBH Mine Detection Radar
Helicopter Obstacle Avoidance System (OASYS)
M1 Tank Diesel Engines
CL-227 Rotary Wing Unmanned Aerial Vehicle (UAV)
Folding Float Bridge (FFB) 2000
Image Intensification Night Vision Sights
Leguan Bridge
German NBC Fuchs Reconnaissance Vehicle
ROBOT-X Rocket Powered Target (RPT)
NATO Gas Mask Canister

Other Major Army Armaments Cooperation Projects:

Autonomous Precision Guided Munition
Mobile Subscriber Equipment
Line-of-Sight, Heavy
Air Defense System (ADATS)
Squad Automatic Weapon
M119, 105mm Light Gun
Bridge Erection Boat Product Improvement
European Telephone System

German .50 Caliber, Plastic Practice Cartridge (Ball and Tracer)
Chemical Agent Monitor
Improved 81mm Mortar System
German NBC Contamination Marking Set
105mm Kinetic Energy Practice Ammunition

Memorandum of Understanding Status

A weekly MOU reporting system was established to track the status of MOUs during the staffing process. Negotiations were initiated on the U.S./UK Scientist and Engineer Exchange program MOU. Approximately 15 proposed MOUs were in various stages of staffing during the year. The following MOUs were signed in FY90: U.S./UK Armor Technology MOU - Mar 90 and U.S./FR/GE/UK MOU on Future Tank Main Armament Systems - May 1990.

Cooperation with Foreign Governments

Canada. U.S./Canada DDSP (Defense Development Sharing Program) Working Groups at AVSCOM, CECOM, TACOM, NRDEC and ARDEC continued to actively work with their Canadian counterparts to identify new projects. New working groups were established at MICOM and BRDEC (Belvoir Research and Development Center). AVSCOM's Advanced Icing Severity Level Indicating System project was terminated. Significant progress was made in facilitating interchanges with USAF Working Groups. A new DDSP Working Group was established at LABCOM. Several new projects were proposed with the Nitrile Rubber Track Pad - TACOM, Tactical Atmospheric Profiler - LABCOM and the Low Cost Fuel Control System for Turbojet Engines - MICOM showing the most promise for success. The program continued to have three active projects, one each at TACOM, ARI (Army Research Institute) and the Corps of Engineers. The OSD led U.S./Canada Steering Committee met in May to review the program.

Japan. In June 1989 the Japan Armaments Study Team (JAST) visited U.S. Army laboratories and RD&E Centers. The JAST visit was considered successful by the Government of Japan (GOJ). Therefore, GOJ sent a letter to General Louis Wagner, CG, AMC, inviting him to lead a reciprocal visit to Japan. General Wagner concurred and delegated the mission to his DCG for International Cooperative Programs, LTG Jerry Max Bunyard. LTG Bunyard led a 17 man U.S. Government/Industry team (9 government scientists from Army labs and RD&E Centers, and 6 industry reps from the Science Board). This "Army Reciprocal Visit to Japan" visited GOJ government and industry labs from 17-27 January 1989. The last visit took place in 1990 and ARVJO was being planned for summer 1991. HQ AMC also initiated action to establish a U.S. Army Research, Development and Standardization Group in Japan at the U.S. Embassy.

Pakistan. The outset of FY90 saw armaments cooperation with the Government of Pakistan on the fast track. Unfortunately, by the close of FY90, cooperation had ground to a halt due to contentious political issues: nuclear proliferation and the democratization of Pakistan in light of the improbable dismissal of the popularly elected government of Benazir Bhutto. Prior to the waning of cooperation, two Data Exchange Annexes (DEAs) in areas of Explosives and Proving Ground Techniques were signed.

Egypt. The Tri-Service Survey of Egyptian R&D facilities (delayed throughout FY89) finally took place in January 1990. The result of the survey demonstrated few areas where Egypt and the U.S. could have armaments cooperation. However, where areas of possible cooperation did exist, cooperation agreements were to be pursued with vigor. As a result, the Egyptians quickly followed-up the Tri-Service Survey with a visit to U.S. DOD R&D establishments in August 1990. The first tangible outcome of these reciprocal visits has been agreement to sign a new International Professional (Scientist and Engineer) Program MOU; the original agreement which was signed in 1984 had been allowed to expire.

The goal of the International Professional Scientists and Engineers Exchange Program (SEEP) was to exchange scientists and engineers for participants to gain practical knowledge in military R&D, production and testing. The U.S. has signed bilateral MOUs with 8 countries and has four more agreements in staffing.

Israel. U.S./Israel R&D community continued to exercise the Defense Data Exchange Program (DDEP) as a significant R&D effort, and numerous actions were undertaken during the year to further strengthen the program. Visitors from throughout the AMC visited Israel R&D programs and took tours of their military/industry complex. A significant event occurring in March was the signing of the Tech Base Working Group (TBWG) Terms of Reference by CG, LABCOM and Israeli Director of Defense R&D. An immediate outcome was the development of several potential cooperative programs; four of which were receiving serious consideration by year's end. Similar activity took place under the auspices of the Military Vehicle Research Program (MVRP). Visits were exchanged by Director, Research, Development and Engineering (RDE) Center, TACOM and the Chief, Ordnance Corps, Israeli Defense Force (IDF), and potential cooperative programs were developed, with some nearing fruition by the end of the year. Success in any of these cooperative programs will result in significant savings in our R&D dollars.

CECOM initiated developing their own Comm-Elec Working Group which should be fully approved and functionally in place by mid CY91. To support the DDEP, a DEA on Biotechnology was approved and signed by both countries in June. Authority to negotiate and conclude the Smoke/Obscurants DEA was also received and by November was in Israel for their acceptance. Work continued to progress on other DEAs initiated previously and several reached SARD-DI for their staffing and authority to negotiate and conclude.

One Israeli engineer arrived in the U.S. under the SEEP to work at TACOM. His efforts will be concentrated in the area of Vetronics; a likely candidate to become a full fledged cooperative program under MVRP during CY91. Unable to get Chief of Missions approval for their candidate to enter Israel under terms of SEEP, TACOM settled for a six-month TDY exchange. In all, the U.S./Israel R&D community continued to experience and build on the fruitful relationship developed over the previous years.

France. In supporting the U.S./France Materiel Working Groups, the OICP conducted several review meetings. Since the inception of the seven WGs, there has been activity and discussions to promote Armaments Cooperation. Several technology candidates under these working groups have been listed as potential areas for cooperation in the near future.

International Standardization and Interoperability Division

International Standardization Agreement Management Data Base

By direction of OSD, the Institute for Defense Analyses (IDA) has worked with OICP to develop an International Standardization Agreement Management Data Base which resides on the Interoperability Decision Support System (IDSS). The new system contains basic information on NATO STANAGs, American-British-Canadian-Australian QSTAGs and Air Standardization Coordinating Committee (ASCC) Air Standards, including ratification and implementation information. The system was available to the entire international community, DOD-wide. It was user-friendly with responsibility for maintaining the data delegated to the proponents of the agreements, and OICP managing the system.

Optical Laser Disk System

A contract for an Optical Laser Disk System (OLDS) was awarded to Severn Companies, Inc., with the system to be delivered in March 1991. The OLDS will support OICP in its mission to maintain records

as the Office of Record for International Agreements (ORISA), a library totally some 550,000-plus pages of documentation. The full text of the agreements and supporting documentation will be stored on the optical disk, with retrieval information keyed into a searchable "index" data base. The OLDS will greatly enhance the management capability of the ORISA. In addition, the OLDS will offer remote user interface, providing print order or facsimile service to the Army community.

TEAL XXIX

ABCA TEAL XXIX, will be hosted by Australia at Sanctuary Cove, near Brisbane in Queensland, from 12 to 16 November 1990. The theme is "The ABCA Program in a Changing Global Environment." The CG, AMC will represent the U.S. Army as head of delegation with delegates from HQDA and TRADOC.

Significant TEAL preparation included:

DISC4 (Director of Information Systems, Command, Control, Communications and Computers)/TRADOC/AMC agreement on a program of action by which interoperability of Combat Net Radios can be achieved;

Support of the Logistics Seminar in Australia;

Formulation of a TEAL TEAM at the direction of HQDA, Deputy Chief of Staff for Operations (DCSOPS), to prepare the TEAL Delegation;
Preparation of the U.S. positions on all issues expected to surface;

Selection of delegates;

Identification of a U.S. Presentation topic and tasking the XVIII Airborne Corps to present it.

The U.S. NSO (National Standardization Office) supported the TEAL TEAM and provided subject matter expertise, data base contact and support, and development of proposed U.S. positions.

Standardization and Interoperability

A number of significant accomplishments in the area of standardization and interoperability took place in FY90. The U.S. ratified the initial three chapters of NATO Land Forces Logistics Doctrine (ALP-9), which provided, for the first time in NATO's 40-year existence, logistics concepts and doctrine for a combined NATO force at echelons above corps. The NATO Land Forces Ammunition Interchangeability Catalogue (AOP-6), which catalogued the interchangeability of ammunition in NATO nations, was provided to the Operation Desert Shield ammunition office, to assist in logistics support of the multi-national force.

The NATO Fuze Characteristics Catalog (AOP-8), which provided descriptions and information on the systems for arming and safing of fuzes in use or development by NATO countries, was also provided Operation Desert Shield for use by the multi-national force.

In addition to the significant number of International Standardization Agreements (ISA) already in place, some 50 NATO STANAGs and 60 ABCA QSTAGS were adopted in 1990 which contribute to enhanced interoperability in operational and technical fields. Some of the more important new ISAs include: STANAG 2014-Operation Orders, Warning Orders and Administrative/Logistics Orders; STANAG 2101 - Establishing Liaison; STANAG 2406 - Land Forces Logistics Doctrine; STANAG 2889 - Marking of Hazardous Areas and Routes Through Them; STANAG 2936 - Intelligence Doctrine; STANAG 4326 - NATO Fuze Characteristics Guide; STANAG 4312 - Interoperability of Army Short Range Air Defense

(SHORAD) Surveillance, Command and Control Systems; and STANAG 4324 - Electromagnetic Radiation Test Information to Determine the Safety and Suitability of Electro-explosive Devices in Munitions and Weapons Systems.

The division reviewed and coordinated within AMC and HQDA an OSD "Draft Guide for DOD Personnel Participating in NATO Standardization," which will provide standardized DOD guidance to personnel travelling to NATO to participate in NATO standardization meetings.

Subject Matter Assessment

As a result of the Subject Matter Assessment (SMA) conducted by the AMC Management Engineering Activity (AMCMEA), fourteen enhancements were proposed for action by the division. Three of the most significant ones are discussed herein. U.S. representatives to NATO and ABCA panels were formally designated, resulting in issuances of letters of appointment, which notify commanders and international bodies that the delegate was selected and will represent the United States on the panel concerned. A recommendation that a means to provide copies of NATO Allied Publications to the nations was needed, resulted in NATO establishing procedures which will provide nations five copies without charge. Further copies would be made and distributed by nations at their own expense. Another enhancement recommended that procedures be initiated to handle foreign documents which have a "Restricted" classification as U.S. "FOUO" instead of U.S. "Confidential." This would be consistent with the handling of NATO "Restricted" documents, which are now U.S. "FOUO." Impacts on the Freedom of Information Act were reviewed, and a proposed request for change of classification was staffed, and submitted to HQDA for approval.

Deactivation of the HQDA Rationalization, Standardization and Interoperability Policy Office

Due to the deactivation of the Rationalization, Standardization and Interoperability Policy Office at HQDA (DAMO-FDN), AMC's responsibilities as the Army's Functional International Activities Agent for the NATO Military Agency for Standardization (MAS) were expanded in March 1990 in the following three areas: AMC will appoint principal MAS Working Party Members, coordinate the approval of U.S. positions for final disposition by DA, and ensure that all required information on international standardization agreements are maintained by the Office of Record for International Standardization Agreements.

Army International Activities Plan (AIAP) 1990-1994

The AIAP was a key Army initiative which had the personal interest of the Chief of Staff of the Army. It was to improve the effectiveness of international activities through enhanced coordination and consistency with U.S. national security objectives and policy. While it was originally called for in AR 11-31, *Army International Activities Policy*, dated 31 March 1988, it has taken DAMO-SSM some time to develop with input from all the Commanders-in-Chief and MACOMs. AMC commented on the draft in March 1990:

> The inclusion of procedural guidance to the MACOMs on how to program and budget resources necessary to accomplish international activities would strengthen the document with respect to "links planning and programming of international activities." An example of guidance needed is: Should international activities efforts be programed for normal mission accounts using mission MDEPs [Management Decision Packages], or will there be specific accounts and displays to give visibility to the program? Some general guidance with references to documents that contain the specific program and budget instructions would be most helpful.
>
> The inclusion of China with appropriate guidance in Section III, Strategy and Regional Planning Guidance, would ensure coverage of all key areas.

The AIAP that AMC submitted for approval to the Chief of Staff, Army included many of those comments particularly with respect to the Army goals. Of particular interest to AMC were the regional and country aims which will assist in setting up the AMC supporting objectives. The AIAP was viewed as the vehicle to resolve the concerns expressed by the Army general officer-level international community with respect to an "Overarching International Policy."

Under the AIAP's aegis, there was a General Officer Steering Committee (GOSC) for international activities on which AMC was represented by the Assistant Deputy for International Cooperative Programs. The GOSC provided overall general guidance as required, while a council of colonels (AMC was represented by the Chief, Office for International Cooperative Programs) from the same organizational representation provided a working forum to resolve most of the issues and set the agenda for those that required GOSC attention. Both of these groups met during FY90.

White Paper on "Acquisition Aspects of Army International Activities Plan"

The original white paper on "Acquisition Aspects of Army International Activities Plan" was prepared by AMC and submitted in September 1988 to the Army Staff including the CSA where it was well received. Subsequent events overcame several of the supporting strategies. SARD-DI requested that AMC in coordination with TRADOC update the white paper and include aviation, especially the light helicopter, experimental (LHX). A special task force with materiel and combat development representatives from the commodity areas of tank/automotive, armaments, C3I (Command, Control, Communications and Intelligence), aviation and missiles prepared the draft.

After staffing with the PEOs, MSCs and TRADOC was completed in April 1990, it was provided to SARD-DI for HQDA staffing, approval by the Secretary of the Army/Chief of Staff of the Army in June 1990 and possible incorporation in the Army International Activities Plan (AIAP). AMC volunteered to incorporate Army Staff changes in October 1990, and the revised draft was returned to SARD-DI in December 1990 for appropriate disposition. There still existed a void which this document would fill by institutionalizing the objectives, formalizing Army leadership support and focusing Army efforts.

NATO Standardization Symposium

The U.S. Army Standardization Executive's and International Standardization focal point representatives attended the meeting of the NATO Standardization Symposium from 26-28 June 1990 and coordinated in the margins with key international players in international cooperative programs and STANAGs. These discussions were characterized by a number of recurring themes. One such point was that the need for standardization will increase as smaller, more mobile NATO units have more need to interface at even lower echelons and while reduced budgets require more cost effective equipping of the combined forces. Another point was that there was a need for greater coordination of military and civilian standardization efforts and development and use of international civilian standards. It was felt that NATO could be a vehicle to harmonize U.S. and European standards and influence international standards for the benefit of both the defense and nondefense sectors. Finally, the point was made that the standardization community must better communicate the importance of their work in order to compete for resources.

A number of important formal presentations were made. The theme of the symposium, "Standardization, Making the Alliance Work," was well covered by the program. The consensus of the speakers and discussion was that international standardization and interoperability (S&I) will become more important as national forces are drawn down through Conventional Forces Europe (CFE) agreements and domestic budget pressures, which will result in multinational forces at much lower echelons than before. The rapid integration of Europe under the European Community (EC) 92 concept was seen as particularly significant with respect to both civilian and military standardization, but the continued relevance of NATO

as a transatlantic bridge was emphasized. The NATO Standardization Group, AC315, was seen as the main instrument to optimize NATO efforts since they have the charter to address all NATO groups with respect to standardization efforts.

An operational perspective was presented by the Commander of the III German Corps. He echoed the increasing importance of S&I in line with the emphasis on conventional forces and mobility due to the politization of nuclear weapons and shrinking forces. The new assessments required with respect to the relationships of force, area and time tend to reinforce the need for maximum S&I.

An industrial view was presented by a Dutch shipbuilding executive who stated that the prime aim of standardization must be cost savings for both the manufacturer (production) and the customer (life cycle). It can only be achieved when the customer is willing to compromise, industry is willing to cooperate and politics allows it. Early involvement of industry is therefore critical as well as identification of centers of excellence which can provide their specialized efforts to a cooperative program.

The Under Secretary of the Army provided a U.S. Army perspective on NATO standardization. Among his key points were the positive impacts such as improved combat readiness and added economic value that appropriate standards and interoperable equipment can have on the increasingly important arena of multinational logistics. He noted that there were critical standardization issues still to be resolved such as exchange of operational logistics data. He stated that adaptation of elements of the U.S. integrated logistics support discipline to the NATO logistics standardization process could lead to resolution of most of the problems.

An Italian industrial presentation on "Problems Encountered" echoed the need for addressing standardization as early as possible even into the basic technology arena and in defining the architecture of the system and its subsystems. The representative reinforced the idea that the highest level of standardization, i.e. major systems, can only be attained with the concurrence of the highest levels of both the governments and industries involved due to the problems normally encountered, which he enumerated. He also recommended that standardization programs be started in the technology base well in advance of the specific weapons programs and be directly managed by intergovernmental agencies along the lines of the space programs.

A United Kingdom Ministry of Defense presentation on "The Impact of NATO Standardization on National Defense Acquisition Planning" dwelt on the general policy initiatives within NATO supporting standardization such as collaboration in research and development. He suggested that the potential in research cooperation was relatively untapped and could pave the way for harmonization of requirements to support cooperative developments. The harmonization of civil and military standards was growing in importance. During this time of great change, cooperation of which standardization is a vital component is becoming even more important and the main question remains: "Do we have the will to succeed?"

The Chairman of the NATO Army Armaments Group supported the thesis that S&I will become more important with fewer forces and new equipment programs. He indicated that the most progress could be made incrementally and it would be a positive cohesive factor in a post CFE world.

An Italian industry presentation ("Is There an Atlantic Gap in Standardization?") highlighted the presence of two distinct standardization communities, one American and the other European, which makes NATO S&I efforts more difficult. He recommended that NATO take the initiative in guiding the civil and military standardization efforts which are taking place internationally, regionally and nationally in a way to enhance Alliance interests. The goal would be to achieve common standards.

The Acting Deputy Under Secretary of Defense (International Programs) echoed the increasing importance of S&I and armaments cooperation and made a number of points. The progress made in U.S. legislation allowed cooperative arrangements that cut across the entire life cycle of equipment as well as recognizing items of equivalent value for the purposes of meeting obligations in cooperative agreements. At the same time, the needs of the industrial base were being given stronger consideration than before and the coordination requirements with Commerce and Congress were more firm. The first DOD issue paper of the 1992-97 program was on international programs. It asked the leadership to sign up to a way ahead on international cooperation. He agreed that there was an Atlantic Gap but actions were being taken by both government and industry to close it. He also noted that the similar gap with respect to the Pacific must also be considered.

The Chairman of the NATO Materiel Standardization Group, AC 301, recognized the need to refine the ability to demonstrate the cost effectiveness of standardization to those outside the standardization community in this era of declining resources. He noted that the group is comprised of representatives who are not only aware of NATO and military concerns but who are also knowledgeable of civilian standards. As a result, every effort was made to adopt international (first) or national standards as NATO document interfaces required to make the components interoperable rather than a rigorous standardization of all parts.

A German presentation on "The Impact of Standardization on RAM [Reliability, Availability, Maintainability]" provided a number of advantages ranging from the ability to predict performance uniformly to logistical enhancements due to maintenance and repair benefits.

A Dutch presentation on "The Future of NATO Standardization" provided areas of standardization emphasis such as interoperability of multinational formations, command and control, surveillance, verification, integrated logistics support and simulators. Three key points were posited: the need to harmonize operational requirements and timelines, that the evolving situation will result in an unavoidable necessity to standardize, and that only firm political decisions to work and operate together will allow their accomplishment.

A French industrial perspective on the future of standardization provided three recommended guidelines: only absolutely essential standards and then at the most universal level possible should be imposed, military unique standards should be replaced with "trade" standards, and that appropriate choices of focus in each key field of standardization should be made to avoid diluting the limited expertise and resources.

A European Community presentation on NATO and 1992 emphasized the great strides that were being taken within Europe and the importance of standardization not only currently but for future economic cohesion. The strong connection between the European standards and public procurement was expected to enhance the importance of standardization. The explosion of the European standardization community in the past three years was seen as only a precursor to the time when European industry realized the full potential economic benefit of a transition from national to European standardization. They expected most of the relevant standards to be in place by the year 2000, many of which will be international since they give first preference to international standards where available. Closer cooperation by NATO was urged as well as more effective channels of communication throughout the worldwide standardization community.

The closing remarks by the Chairman of the NATO Standardization Group, AC 315, indicated that a list of actions to be taken as a result of the symposium would be compiled and disseminated. The NSG would take the lead in initiating action on all the key items identified, to include determining measures of goodness for standardization and seeking national support for international standardization cooperation.

International Materiel Evaluation Division

The International Materiel Evaluation (IME) Division was an operating division of the OICP located at Aberdeen Proving Ground, Maryland. The IME Division was responsible for project management of the Army portion of the OSD Foreign Weapons Evaluation (FWE) and NATO Comparative Test Programs. These programs allowed the Army to identify through market investigations in friendly foreign nations those items, primarily end items, which had good potential to satisfy U.S. requirements.

In FY90 two items, or rather families of items, were adopted by the U.S. Army after extensive evaluation. The German NBC (Nuclear, Biological, Chemical) Reconnaissance Vehicle (FUCHS) with its onboard subsystems was adopted to satisfy the requirement for NBC Reconnaissance System. The Swedish Carl Gustaf Rifle and Subcaliber Devices, along with high explosive antitank (HEAT), target practice (TP), high explosive (HE), Illumination and smoke Cartridges was adopted to satisfy the requirement for the Ranger Anti-Armor/Anti-Personnel Weapon System.

TABLE III - 3: Market Investigations Active at End of FY90

Armored Security Vehicle	Multiple Countries
Armored Gun System	Multiple Countries
Automotive Battery (Togaku)	Hungary
Combat Load Handling Equipment (CLOHE)	Multiple
CNIM Bridging Systems	France
Decoy Ribbon Bridge	Sweden
Dehumidifier for Aircraft	Sweden
HAWK Msl Ldr/Transporter Mod Prog	NATO
Large Area Mobile Projected Smoke System	Belgium
M1 Diesel Engine (Styr)	Austria
MISTRAL Air-to-Air Missile	France
Muzzle Velocity System	Multiple
Orendon Powered Generator	Multiple
Stand-off Mine Detector System	France
StarStreak Missile	United Kingdom
Ultra Ltwg Camouflage Screening Sys	Multiple
Unicharge Interoperability Demo	Germany/UK
Soldier Enhancement Program	Multiple
Artillery Comm/Aural Prot System	United Kingdom

Source: Office of International Cooperative Programs historical submission, FY90.

Current active Candidate Evaluations, formal nominations of Army projects for OSD funding, are listed on the following page.

TABLE III - 4: Active Candidate Evaluations

9mm Penetrator Cartridge f/M9 Pistol	Sweden
35mm In-Bore Trng Device f/120mm	Germany
Comm/Aural Protective System (Caps)	UK
Focal Plane Array	France
Ground Based Sensor	Multiple Countries
Heavy Assault Bridge (HAB)-Leguan	Germany
High Expl Dual Purp RD F/RAAWS	Sweden
Image Transmission Systems	Israel
Improved Chemical Agent Monitor	UK
Improved Ribbon Bridge	Multiple
Ltwt CB Protective Garmet	UK
M1 Tank Diesel Engine	Multiple
Manpack HF Commo Systems	Israel/UK Reverse Osmosis
Water	Austria/UK
Rocket Powered Target-Robot-x	Canada
Rotary Wing Vehicle (CL227)	Canada
Semi-Auto Loader f/ Howitzer Impro	Austria/Switzerland
Suplmtl Interim Med Anti-Tk Sy	France/Sweden
Trelleborg Survivable Tire	Sweden
Unmanned Aerial Vehicle-maneuver	UK

Source: Office of International Cooperative Programs historical submission, FY90.

Small and Disadvantaged Business Utilization

Significant Issues

Impact of Operation Desert Shield. FY90 was an exceptionally busy year for the AMC Office of Small and Disadvantaged Business Utilization (AMCSB) due to the office's work with industry and the business community in response to Operation Desert Shield. In a special notice in *Commerce Business Daily* on 20 September 1990, industry was advised of a new program called "Good Ideas Desert Shield" and encouraged to submit ideas and information on products that could be used to benefit troops in Saudi Arabia. Although "Good Ideas" were to be submitted to the Small and Disadvantaged Business Utilization (SADBU) office at the major subordinate command level, AMCSB acted as the initial point of contact for the program. The office established a procedure for processing "Good Ideas Desert Shield" that was used throughout AMC and all its subordinate activities.[29]

When industry sent an idea or information to AMC, it was forwarded to AMCSB. It would then be forwarded to the appropriate MSC SADBU office for evaluation. AMCSB was responsible for maintaining a log of the ideas and information and sending an acknowledgment or thank you letter to the submitting

[29]This entire section, *Small and Disadvantaged Business Utilization*, is based on a draft FY90 historical review submitted by AMCSB, 1 Mar 90. Additional sources are as footnoted in subsequent text.

firm. It was also the office's responsibility to determine whether the idea had merit, recommend appropriate action, and forward appropriate information to the Acquisition Integration and Analysis Division under the Office of the Deputy Chief of Staff for Development, Engineering, and Acquisition. That division would then bring the suggestion before the General Officer Surge Committee for their decision regarding submission as a surge candidate.

Outreach Counseling Program. As part of its continuing program to reach out to small businesses, AMCSB launched a new Outreach Counseling program. The Outreach Counseling Program involved personal contact and providing information on doing business with the Department of Defense, the Army, and AMC. The counseling contact ranged through the Historically Black Colleges and Universities/Minority Institutions (HBCU/MI) community; small businesses; small disadvantaged businesses, which included "8(a) firms" such as businesses owned by women, American Indian firms, and Puerto Rican firms; and the Army Blue Chip firms. The term "8(a)" referred to a section of the Small Business Act which provided for certain underprivileged groups, while Army Blue Chip manufacturing firms were special small and disadvantaged firms that had already established a good record as reliable contractors with reliable products.[30]

Through concentrated efforts, AMCSB was able to counsel, write, contact, and furnish materials to over 6,000 concerns during FY90. The office expected that this extensive outreach counseling effort would heighten long term program participation in all aspects of the SADBU program.

Small Business Competitiveness Demonstration Program. AMCSB reported that the reestablishment of set-asides under the Small Business Competitiveness Demonstration Program had generated a number of new issues. The AMC Small and Disadvantaged Business Utilization Office was requested by DA to reestablish small business set-aside procedures pursuant to subpart 19.5 of the Federal Acquisition Regulation for these two Federal Procurement Data System (FPDS) service codes in all effected solicitations issued on or after 1 October 1990, or as soon thereafter as practicable, until otherwise directed. All contracting activities under AMC were made aware of this notification. The Office of Federal Procurement Policy had implemented Title VII of Public Law 100-656 through the issuance of the "Small Business Competitiveness Program Test Plan" on 31 August 1989. The Demonstration Program initially suspended small business set-asides under four designated industry groups: Construction, Architectural and Engineering Services, Non-nuclear Ship Repair, and Refuse Systems and Related Services. Section IV (A)(4) of the Small Business Competitiveness Demonstration Program Test Plan required participating agencies to reestablish small business set-asides whenever awards to small business under any individual FPDS service code within an industry group fell below 35 percent.

Program Goal Accomplishments

AMC's Overall Program Peformance. AMCSB showed a marked improvement in the program performance against DA goals. The AMC percent of dollars awarded to small business during FY90 was 13.5 percent, which exceeded the assigned goal. The overall assessment of the actual performance against the DA goals was the best AMCSB had accomplished in four years.

AMC Program Goal Accomplishments by Type of Goal. The following table compares AMC's program goal accomplishments for FY90 to the goals established by DA for the year. In the case of certain goals marked with an asterisk, a second figure for AMC is shown. This is because AMCSB established a Tailored

[30]Information on "8(a) firms" and "Blue Chip firms" per TELECON between Ms. Doris Agnew, AMCSB, and Ms. K.O. Lockwood, 16 Sep 91. See also HQ AMC, *Annual Historical Review*, FY89, p. 231.

Business Base (TBB) susceptible for small business participation using 31.7 percent of the total dollar base. The second figure compares the achievement to the tailored base, rather than the total dollar amount.

TABLE III - 5
AMC Program Goal Accomplishments by Type of Goal

TYPE	ACTUAL	TBB	GOAL
Total Small Business	13.5%	42.5%	12.3%
Small Business Set-Asides	5.4%	17.1%	5.3%
Small Business R&D	11.9%		12.5%
Small Disadv Business	2.4%	7.6%	5.0%
Woman-Owned Business	$96.5M		$93.5M
Small Business Subcontracting	43.6%		49.2%
Sm Disadv Bus Subcontracting	2.3%		5.0%
HBCU/MI	12.9%		5.0%

Source: Office of Small and Disadvantaged Business Utilization Annual Historical Submission, FY90.

Chapter IV

Materiel Readiness

Deputy Chief of Staff for Readiness

Organization and Manpower

The organization of the DCS for Readiness remained unchanged during the fiscal year. It consisted of the DCS headquarters office, Administrative Office, Automation Support Office, Military Plans and Operations Division, Analysis and Systems Division, Logistic Assistance Division (also known as the Logistic Assistance Program Activity [LAPA], a separate reporting activity within AMC), and Aviation Office.

The DCS was authorized 11 military and 49 civilian spaces for a total of 60 manpower spaces. In addition, the LAPA was authorized 48 military and 252 civilian spaces for a total of 300 spaced. Thus, the combined DCS for Readiness/LAPA TDA authorization was for 360 spaces. Although there were no manpower authorization changes during FY90, the mandated HQ AMC reductions, announced in March 1990, impacted the DCS for Readiness with a loss of 9 civilian spaces and LAPA with a loss of 23 spaces, scheduled to occur in October 1990. Due to the projected cuts, the DCS was forced into a reorganization to accommodate the loss of positions. The planned reorganization would combine offices to effectively utilize the fewer number of employees and meet essential mission requirements. The reorganization also was planned to accommodate the loss of 1 military (0-6) space caused by a reduction in the Officer Distribution Plan.

The key personnel within the DCS for Readiness in FY90 were as follows:

MG Thomas B. Arwood, DCS for Readiness

Mr. Ronald L. Treusdell, SES, Assistant Deputy Chief of Staff for Readiness

Ms. Shirley A. Comras, GS-11, Administrative Officer

Ms. Mary Ferguson, GS-12, Chief, Automated Data Processing Office
(replaced by Mr. Arto Willis, in December 1989)

COL Craig M. Dexter, Chief, Military Plans and Operations Division (retired 30 September 1990); replaced by COL Dennis L. Griggs in August 1990

COL James G. Edge, Chief, Analysis and Systems Division

COL Thomas E. Johnson, Chief, Aviation Office

Mr. Robert O. Greber, GM-15, Chief, Logistic Assistance Division and Director, Logistic Assistance Program Activity (replaced Mr. David M. Manning, January 1990)

Significant Issues

The most significant issue for the DCS during FY90 was its continued emphasis on direct support of the Army in the Field. This is evidenced by the DCS's involvement in Joint Chiefs of Staff (JCS) and other field exercises, and support to Operations Just Cause and Desert Shield, continuing efforts to develop better ways to receive and analyze equipment readiness data, and direct support in improving and sustaining the readiness of equipment in the hands of Army units worldwide through the Army's Logistic Assistance Program. Three programs with strong command management interest--Operation Just Cause, Operation Desert Shield, and the CG's Congressional testimony--are discussed below, as are a variety of other significant issues.

Operation Just Cause. From December 1989 through February 1990 U.S. forces intervened in Panama under the code name Operation Just Cause. AMC activities opened their operations centers and maintained around the clock support. Major actions included deployment of logistics assistance personnel attached to operational units, intensive management of aviation readiness and processing captured weapons and ammunition.

Operation Desert Shield. Operation Desert Shield was the deployment of U.S. forces to Southwest Asia (SWA), especially to Saudi Arabia, for defense of the area from Iraqi aggression. Beginning in July 1990, when Iraq threatened Kuwait, AMC monitored the situation and established a crisis action team. The Operations Center opened on 8 August 1990 on a 24-hour basis. Among its first actions, AMC deployed Logistic Assistance Personnel and on 12 August 1990 established AMC-SWA. Follow-on actions included development and execution of push packages of supplies to support the deployed units plus and the establishment of a central processing center for deploying military, DOD civilian and contractor personnel at Aberdeen Proving Ground.

Commanding General's Congressional Testimony. The Deputy Chief of Staff for Readiness was assigned responsibility for the preparation of the Commanding General's 22 March 1990 testimony before the Senate Armed Services Committee, Subcommittee on Readiness, Sustainability and Support. Mr. Christopher D. Gardner, Military Plans and Operations Division, was the team chief in charge of developing the CG's presentation. The testimony team consisted of full-time representatives from the Deputy Chiefs of Staff for Readiness, Resource Management and Supply, Maintenance and Transportation. The team coordinated input from various Deputy Chiefs of Staff throughout HQ AMC and prepared, edited, printed and distributed the testimony record. In addition, they prepared the charts, point paper book and question and answer book for General Tuttle's use during the hearing. The AMC Public Affairs Office prepared the oral presentation. The testimony addressed AMC's seven missions, focusing on our missions to equip and sustain the force; maintain mobilization capabilities and continue to improve productivity and quality of life. Challenges to these missions addressed excess inventory, ammunition demilitarization, funding for Operations and Maintenance, Army (OMA) for depot maintenance and impact of reduction of OMA in FY91. Foreign Military Sales was addressed as a viable means of maintaining a warm production base for the future. The testimony was well received by the subcommittee.

Military Plans and Operations Division

Significant Issues and Activities

Command Readiness Program. The Command Readiness Program was a seminar for the senior leadership to fully review emergency plans. With the assistance of contract personnel from Martin Marietta Energy Systems, a Situation Manual was developed. The manual summarizes emergency plans in short

narratives and graphics. The staff level seminar was to be 29-30 August 1990 and the command level would have been held in conjunction with the Commanders' Conference in October 1990. However, both seminars were postponed because of Operation Desert Shield.

Reserve Component (RC) Training. High Tech Regional Training Sites - Maintenance (HTRTS-M) have been constructed at Sacramento and Tobyhanna Army Depots. Both sites are fully operational, with TRADOC accreditation scheduled for early 1991. During FY90, 1,055 mandays of Active Duty for Special Work (ADSW) site support were provided to AMC installations/activities hosting Reserve Component unit training.

The AMC General Officer Reserve Component Policy Council (GORCPC) provided AMC with a command focus point for reserve component policy and support issues. The GORCPC quarterly meetings identified mobilization and readiness issues which impacted RC units, equipment, and training. This council had been the leader in the resolution of equipment supportability issues for RC equipment. It also had been instrumental in the direction and priority for use of AMC resources in support of the RC.

LOGEX 90. LOGEX 90 was conducted 14-22 June 1990 at Fort Pickett, VA. It emphasized logistics support of NATO warfighting. AMC support of the exercise was twofold. AMC provided information and education, including displays of AMC managed material and support activities, plus command briefings to visitors and participating units. Also, HQ AMC and major subordinate commands took an active role in the wholesale logistics play through realistic analysis and the resolution of Logistics Situation Reports.

Proud Eagle 90. Proud Eagle 90 was a Command Post Exercise, held from 12 October through 3 November 1989. It was based on a European contingency and, unique in the series of major mobilization exercises (MOBEX), started with a period of heightened tension leading to mobilization and hostilities. Thus, for the first time, AMC was able to exercise execution of the full range of Mobilization/Emergency Action (MEA). In conjunction with the main exercise, there was a surge at Corpus Christi Army Depot.

Analysis and Systems Division

Significant Issues

Computer-aided Acquisition and Logistic Support (CALS). During FY90 the Army continued to make significant progress in implementing the OSD mandated CALS initiative, with AMC continuing as the functional proponent agency for the program. A key accomplishment for the year occurred on 16 August 1990, when the CALS project was presented to the Army-level Major Automated Information Systems Review Committee (MAISRC) for a Milestone I system decision. AMC played a major role in preparation of the System Decision Package (SDP) through revalidation of the Mission Needs Statement (MNS) and participation as a member of the Test Integration Working Group (TIWG) which developed the first iteration of the CALS Test and Evaluation Master Plan (TEMP). The Army MAISRC approved the Milestone I package for presentation to the OSD MAISRC early in FY91.

As Phase I (Concept Design) for the CALS Architecture commenced (the contracts had been awarded on 31 August 1989), the four selected contractors (BDM Corporation, Computer Science Corporation, TRW Incorporated, and Xerox Corporation) started work and continued the competitive design process during the entire year. AMC, as the Functional Proponent Agency, furnished a number of logistic functional experts (including the Vice Chairperson) to the Source Selection and Evaluation Board (SSEB), which evaluated contract deliverables throughout the period. In the first quarter of FY91, the SSEB will exercise contract options to select up to two of the competing contractors to demonstrate their designs.

A CALS Functional Matrix, previously developed by AMC to depict expected enhanced processes and "values added" from the user perspective, was reworked to insure compatibility with the CALS architecture contracts and to begin assigning quantification to the "values added" expected from CALS. This was accomplished with design contractor feedback as delineated by the Contracting Officer, estimates and data provided by member organizations of the CALS Functional Coordinating Group (FCG), and a joint working session with PM CALS staff members and support contractors. A Revised Matrix was published, and actions were initiated to further refine the quantification process during the coming year.

On 11 December 1989, a CALS "Roundtable II" meeting was hosted by the DCS for Readiness to address the status of actions on issues identified at 18 May 1989 "Roundtable I," to bring key leaders up to date on recent CALS events, and to identify any remaining or newly developed issues requiring further action. Senior attendees included the commander of the Logistics Center, the PM, Light Helicopter Experimental (LHX), the AMC Assistant Deputy for Materiel Readiness, the PEO Standard Army Management Information Systems (STAMIS), the Director of the OSD CALS Office, and General Officer representatives from the DCSLOG and the Director of Information Systems, Command, Control, Communications, and Computers (DISC4). One result of the meeting was the establishment of the DA CALS Office, noted below.

During this period, at the instigation of AMC, a Department of the Army CALS Office was established in the Office of the Deputy Chief of Staff for Logistics. Initial staffing was accomplished through detailing of one individual each from the DCSLOG, PEO STAMIS, and AMC's DCS for Readiness. The AMC representative was became the Office Chief. The DA CALS office will provide Department level functional management, policy and oversight, and public relations liaison for Army CALS.

Monthly Readiness Video Teleconferences (VT). During the year, the DCS for Readiness continued to conduct a monthly Readiness Video teleconference (VT) with the Directors of Readiness at each of the MSCs, MRSA, and AMSAA. Traditionally the conferences have provided a forum for briefings and discussions on subjects of mutual interest involving the materiel readiness of the Army. With the onset of military deployments to Southwest Asia, the monthly VT discussions have centered on issues associated with support to Operation Desert Shield.

Functional Area Assessments/Other DA-Directed Reviews. In FY90, the Functional Area Assessment Team coordinated AMC support for two significant projects. The first was the Echelons Above Division Transition Plan, which involved the transition from the 8" Howitzer to Multiple Launch Rocket System (MLRS). The second project was the preparations for a Medical FAA scheduled for first quarter FY91.

AMC provided support to the Field Artillery School in its analysis of an Echelons Above Division Transition Plan for the conversions from 8" Howitzer Battalions to the use of the Multiple Launch Rocket System. MICOM led the AMC effort to determine AMC's capability to provide materiel support to those units scheduled to activate with MLRS or convert from the 8" howitzer to the MLRS during the FY 91-93 period. Several In-Process Reviews were held prior to the final briefing presented to the Assistant Deputy Chief of Staff for Operations and Plans, HQDA.

The purpose of the Medical FAA was to present to the Army Vice Chief of Staff (VCSA) and other senior Army managers/leaders those identifiable issues that precluded or inhibited execution of the Medical Force 2000 (MF2K) conversions. The Army Missile Command was designated as the lead AMC MSC for coordination of other MSC efforts to provide materiel support for the Medical FAA. CECOM, TACOM, and TROSCOM were designated as supporting MSCs. The full Medical FAA presentation for the VCSA was postponed due to exigencies imposed on the Army Staff and supporting agencies by Operation Desert Shield. The DA DCSOPS and the Surgeon General will announce a decision to reschedule a Medical FAA in the Spring of 1991. The Medical FAA was to focus on:

Status of Medical Force 2000 conversion (Personnel and Equipment issues)
Impact of MF2K conversion process on installation health services support
Impact of force reductions on the conversion process
Medical Manpower and force balance

The Medical FAA will review the VCSA approved Table of Organization and Equipment (TOE) that target the MF2K structure to which units will convert during FY92 through FY93. Equipment Readiness Code A (ERC A) items of equipment were being identified. AMC involvement focused on the review of 15 Special Requirements Codes (SRCs) and assessment of 19 critical Line Item Numbers for Non-Medical Associated Items of Equipment. AMC accomplished this assessment of projected equipment availability by using automated management tools available through existing automated data bases at HQDA and the U.S. Army Systems Integration Management Activity (SIMA), Chambersburg, PA.

The use of the automated data bases was hampered by the lack of documented requirements via Modified Tables of Organization and Equipment (MTOE). Undocumented requirements in the HQDA Data Bases Structure and Composition System, (SACS), Requisition-Validation (REQ-VAL) for MF2K rendered the automated products (Total Army Equipment Distribution Plan [TAEDP] derivatives) less useful. To avoid a manual review of equipment requirements and projected fills, the DCS for Readiness staff at HQ AMC provided Unit Identification Codes (UIC) of applicable units to SIMA in August 1990. The resultant special ADP printouts produced by SIMA were used to prepare required charts for the AMC portion of the Medical FAA.

Logistics Research and Development (LOG R&D). The DCS for Readiness supported the LOG R&D program through participation in the LOG R&D Working Group and a General Officer Steering Committee (GOSC). Meetings have been held to propose and prioritize needs that qualify for funding. The LOG R&D GOSC, established by the AMC Deputy Commanding General for Materiel Readiness (DCGMR) in 1987, met on 2 March 1990, and directed that a Council of Colonels (CoC) be held to perform an Execution Year Program Review. The CoC met on 23 May 1990 and prepared a revised LOG R&D prioritized list. The AMC Deputy Commanding General for Research, Development and Acquisition (DCGRDA) was added to the LOG R&D GOSC in the Spring 1990. The LOG R&D Program was in the second biannual cycle of the prioritization process to develop LOG R&D needs and work packages.

Operations & Support Cost Reduction (OSCR). The DCS for Readiness participated at the Working Group and General Officer level in the OSCR effort, which AMC and TRADOC had initiated as a joint effort in FY89. An AMC/TRADOC General Officer/Senior Executive Service Steering Committee continued in FY90 to identify potential joint efforts to reduce weapons system sustainment costs. An OSCR Advisory Group was established by the AMC DCGRDA with DCS level participation. The DCS for Development, Engineering and Acquisition (DEA) and the DCS for Supply, Maintenance and Transportation were designated as co-chairs of the Advisory Group. Several meetings of the OSCR Action Officer Working Group were held in FY90 to identify and propose prioritization for the various OSCR potential projects. As the fiscal year ended, the DCGRDA indicated that the OSCR effort would be expanded to include the Department of the Army level, and that a task force would be formed to develop key memoranda and briefings to educate senior Army leaders and institutionalize the OSCR program. The original OSCR Working Group and Advisory Group have been placed on temporary hold.

Army Materiel Status System (AMSS). AMSS was an automated materiel readiness reporting system developed in 1988 by the Office of the Deputy Chief of Staff for Readiness. The AMSS utilized two existing Standard Army Management Information Systems, the Unit Level Logistics System (ULLS) and the Standard Army Maintenance System (SAMS), to collect Not Mission Capable (NMC) data for all reportable Army equipment and systems, including aircraft and missile systems. The AMSS was a significant departure

from the current materiel readiness reporting system in that it provided NMC visibility on the total weapon system, including all on-board subsystems. Since the AMSS utilized existing STAMIS system to collect NMC data, it was virtually transparent to the user, a major AMSS goal. The NMC data collected via AMSS will be in digital ADP format, a major improvement over the current manual reporting system. The Combined Arms Support Command (CASCOM) began development of AMSS in September 1990 with completion scheduled for June 1991. Software acceptance and subsequent fielding was planned for the third quarter of FY91. Due to hardware limitations in the Reserve Components, AMSS will be fielded first in the active Army divisions, with non-divisional and Reserve Component units coming on line in the future.

Readiness Integrated Data Base (RIDB). The identification of field logistic readiness problems meant little without an in-depth analytical capability. AMC was dedicated to the development of automated products to enhance the ability of the field Commander and AMC to improve both equipment and unit readiness postures. An example was the RIDB which was located at the U.S. Army Materiel Readiness Support Activity (MRSA) in Lexington, Kentucky and for which The Office of the Deputy Chief of Staff for Readiness (ODCSRE) served as the Program Management Office.

The RIDB provided integrated historical trend data to commanders and decision makers using four separate readiness trend reports as input: the Unit Status Report (Unit profile); Materiel Condition Status Report (Ground); Army Missile Materiel Readiness Report (Missile); and Army Aircraft Inventory, Status and Flying Time (Aircraft). Once these reports were received, the RIDB edited and analyzed readiness data from field units and output decision making products directed by DODI 7730.25, *Materiel Condition Reporting for Mission-Essential Systems and Equipment*, as implemented by AR 700-138, *Army Logistics Readiness and Sustainability.*

The RIDB was accessible to a number of remote users. The HQDA Office of the Deputy Chief of Staff for Logistics (ODCSLOG) National Guard Bureau, HQ AMC, and AMC major subordinate Commands. In February 1990, RIDB Forward (operating on a mini-Hewlett Packard 3000-70) was installed at 200th Theater Army Materiel Management Center (TAMMC) at Zweibrucken, Germany, to provide the Assistant DCSLOG for the U.S. Army Europe with access to the RIDB. This has proven very successful and plans are underway to network AMC-Far East and RIDB Forward to the mainframe at USAMC MRSA via the Defense Data Network (DDN) in FY91-92.

Monthly Readiness Briefing to the CG. In February 1990, the quarterly readiness briefing to the Deputy Commanding General for Materiel Readiness was changed to a monthly presentation to the Commanding General. The purpose of the briefing was to provide the AMC command group with a detailed assessment of materiel and unit readiness problems impacting the combat capability of the Army's major combat units. The CG continued to receive a monthly read-ahead package, and a detailed briefing was available on call. This briefing was coordinated with the Status of Resources and Training (SORTS) briefing prepared monthly for the Army Chief of Staff.

Unit Status Reporting. During FY90, the division continued to receive and process Unit Status Reports for AMC Test, Measurement and Diagnostic Equipment (TMDE) units. These reports summarized the unit's readiness capabilities and highlighted problems related to training, equipment, and personnel. The reports were reviewed for accuracy and analyzed to determine if the reporting unit(s) were experiencing problems related to readiness and if assistance was required. Upon completing this review, the reports were then forwarded electronically to HQDA and OJCS.

Logistic Assistance Program Activity (LAPA)

Establishment of LAO SOUTHCOM and Operation Just Cause. On 4 December 1989, LAO SOUTHCOM was designated as the fifth geographic Logistic Assistance Office. LAO SOUTHCOM, located in Corozal, Panama, was active during Operation Just Cause in providing logistical support to troops and insuring that necessary equipment and supplies were available.

Contributions made by the LAOs and MSCs in support of Just Cause left no one in doubt that the program contained hardworking, dedicated personnel who cared about what they did. The LAO was the first to provide information during the first 10 days of the conflict. The chain comprised of LAO Fort Lewis, LAO Fort Bragg, LAO Fort Ord and LAO SOUTHCOM. Logistic assessments of deployed forces were provided to HQ AMC, then to the Department of the Army.

CECOM Logistic Assistance Representatives (LARs) at Fort Bragg, NC responded late on the Saturday before Christmas 1989 to help determine requirements for 3.5 brigades' worth of batteries. AMC LARs at Fort Bragg braved below zero temperatures at Pope AFB on Christmas Eve to personally load 500 lbs of armament test equipment. A TACOM LAR at Fort Benning responded to an urgent requirement to account for pallets of non-TACOM materiel. He never questioned the request and personally inventoried the pallets. AVSCOM provided authorization for depot level repair of air frames. LARs identified the need for correct petroleum and lubrication (Class 3A) products for the maintenance of equipment in humid conditions. HQs AMC, MSC Emergency Operations Centers, and LAO offices were manned twenty-four hours per day by LARs and other Logistic Assistance personnel who understood logistical needs and coordinated actions to obtain needed equipment and supplies.

LAPA Support to Operation Desert Shield. The Logistic Assistance Program Activity was playing a vital role in providing assistance in support of Operation Desert Shield. LARs were in the desert working alongside the units. Once again, their logistic assistance was proving to be an asset to all on the ground in Southwest Asia. LAO SWA was established 19 August 1990 to provide and coordinate logistics assistance requirements in theater.

AMC Aviation Office

The AMC Aviation Office had been established as the focal point for Aviation Readiness issues worldwide. Colonel Thomas Johnson served as the AMC representative on Army Safety Action Team functions. Additionally, the office had been directly involved with all actions and participation concerning the GOSC for the AH-64A Aircraft. This office completed 13 Aviation Resource Management Surveys of AMC aviation activities. Forty-four Pilot Proficiency Flight Evaluations were conducted and completed satisfactorily, achieving a 100% pass rate. The pass rate for FY90 for Army, Reserve Components and National Guard personnel was 88%. A vacancy occurred in the Aviation Office on 6 August 1990 for an Aircraft Pilot, GS-2181-13, upon the transfer of Mr. John S. Scott to Red River Army Depot. The additional loss of Captain (P) Matt Granger, in August 1990 caused a noticeable void in office staffing. Due to RIF actions and the hiring freeze, the vacant pilot position could not be filled. The position was critical to the conduct of office functions. A replacement for the military vacancy was identified but had not yet arrived by the end of the fiscal year.

Deputy Chief of Staff for Supply, Maintenance and Transportation

Integrated Logistics Support (ILS) Division

Significant Issues

Logistics Planning and Requirements Simplification System (LOGPARS). LOGPARS is an expert system designed to run on a personal computer and to assist ILS Managers in the performance of their job. By the end of FY90 over 491 offices were using it. In FY90 a new version, LOGPARS 2.1, was completed and distributed to users. This release contained software enhancements that were made as a result of user feedback from several months of training conferences. In addition, an electronic bulletin board was installed for LOGPARS users to allow changes to the LOGPARS software, handbooks, and tutorials to be downloaded immediately without waiting for the next distribution. Work was also started on the development of a provisioning advisor for LOGPARS with an estimated date of second quarter FY91 for development of the initial prototype. LOGPARS was awarded the DOD Distinguished Logistics Artificial Intelligence (AI) Application at the fourth annual AI Military Logistics Symposium held in March 1990.[1]

Logistic Support Analysis (LSA). In FY90 a rewrite of Military Standard (MIL STD) 1388-2B, *DOD Requirements for a Logistic Support Analysis Record*, was initiated because of the many changes that had occurred since the last update in 1986. A draft of the new document, MIL STD 1388-2A, was completed in April 1990, staffing was accomplished by August 1990. The new version satisfied a wider range of logistic product requirements, promoted the use of relational database management systems, allowed the use of any validated relational contractor software, and accommodated the product requirements of other functional areas. The final product was more usable and readable than the previous version and was predicted to be submitted for publication in December 1990.

Army Integrated Logistic Support Executive Committee (AILSEC). The AILSEC was charted by the HQDA DSCLOG in June 1971 to ensure that the planning, development, coordination and implementation of ILS policies and procedures were compatible and consistent. Its responsibilities included identifying and resolving systemic ILS issues, establishing long range ILS goals, maintaining the DA ILS Master Plan, and recommending policies and procedures to improve ILS.

The AILSEC was chaired by the HQDA Office of the DCSLOG and had representatives from AMC, AMC's major subordinate commands and separate reporting activities, the Logistics Center, Information Systems Command, Secretary of the Army for Research, Development, and Acquisition (SARDA), Corps of Engineers, U.S. Army Medical Materiel Agency (USAMMA), the Army Logistics Management College (ALMC), Army Materiel Systems Analysis Activity (AMSAA), the Operational Test and Evaluation Agency (OTEA), Military Traffic Management Command (MTMC), PM Training Devices, and TRADOC schools. The AILSEC met three times in FY90. Its significant accomplishments included the development of an ILS policy for accelerated acquisition programs, development of a DA pamphlet on depot maintenance requirements, development of a policy on ILS in source selection, and establishment of an Army ILS Achievement of the Year Award.

Integrated Logistic Support Long Range Master Plan (ILSLRMP). The ILSLRMP described the ILS issues worked by the AILSEC and served as the ILS road map for the future. It was a "living" document

[1]Unless otherwise noted, the information in this section is taken from the SMT historical submission for FY90.

which was updated periodically (as it was in the first quarter of FY90). Other achievements in the course of the fiscal year included the update of two DA Pamphlets, which at the end of the year were in final draft form. These pamphlets were DA Pamphlet 700-28, *ILS Assessment Criteria* and DA Pamphlet 700-127, *ILS Manager's Guide*. A third DA Pamphlet, 700-XX, *Depot Maintenance Support Plan*, was under development and by the end of the year was in final staffing. FY90 also saw the completed update of several ILS regulations: AR 700-127, *Integrated Logistics Support* (July 1990), AMCR 700-15, *Integrated Logistics Support* (January 1990), and DA Pamphlet 700-55, *Instructions for Preparing the Integrated Logistics Support Plan* (December 1989). A number of ongoing initiatives that would continue in 1991 included developing post fielding review policy and procedures, developing a supportability design influence primer, and development of ILS policy and procedures on transitioning from interim contractor support to organic support.

Quarterly ILS Review for Non-Major Systems. These reviews were chaired by the Deputy Assistant Secretary of the Army for Logistics and were attended by representatives of DCSLOG, SARDA, AMC, TRADOC, and other interested organizations. Their purpose was to provide a summary of the assessments and positions taken by the designated logistician, the Logistics Evaluation Agency (LEA), on non-major systems. In addition, these reviews identified problem areas and assigned issues to appropriate organizations for resolution. In FY90 two of these reviews were held, which together addressed 38 non-major systems. However, effective 1 October 1990 the mission of serving as the designated logistician was transferred from LEA to AMSAA. This was a result of Defense Memorandum #936, which directed a reorganization of the Test and Evaluation Command functions. AMSAA's first review was scheduled for December 1990.

Materiel Fielding and Transfer Policy. AR 700-142, *Materiel Release, Fielding and Transfer*, was reviewed and updated. It was projected that it would be sent to the U.S. Army Printing and Publications Agency in the second quarter of FY90 for printing and distribution. In conjunction with this revision, DA Pamphlet 700-142, *Instructions for Materiel Release, Fielding and Transfer*, would be revised to reflect the changes in the AR. In FY90 a total of 145 weapon systems were fielded using the total package fielding procedure at a cost of $113.1M in OMA P2 funds.

New Equipment Training (NET). HQ AMC and the HQDA Office of the Deputy Chief of Staff for Operations co-chaired a joint meeting of the New Equipment Training Managers Conference and the Army Modernization Training Automation System (AMTAS) Users Conference on 27-29 March 1990 in Alexandria, Virginia. The annual NET managers Conference acted as a forum for NET managers, combat/training developers, and user activities to address issues relative to training the total force. High visibility issues in the 1990 conference were NET funding, especially the transfer of OMA funds to the PMs/PEOs; augmentation of NET teams by TRADOC; responsibilities and support requirements of gaining Major Commands and units; and definitive guidelines for terminating NET. In addition, guest speakers made presentations on FY91 OMA funding, contractor logistics support for training devices, and Basis of Issue Plan (BOIP)/Qualitative and Quantitative Personnel Requirements Information (QQPRI) updates.

The AMTAS is the automation tool NET, which is accessible throughout the Army and is used to develop and coordinate over 900 new equipment training plans. At the AMTAS users conference the attendees were able to discuss issues pertaining to system usage and restructuring, technical problems, funding, and proposed enhancements. At an HQDA executive session for AMTAS, AMC highlighted past and future initiatives and emphasized the need for Army-wide participation.

Significant Issues

Depot Materiel Maintenance and Support Activities. FY90 Depot Maintenance Activities (PE 732207) obligations (excluding Operation Desert Shield) for overhaul and repair were:

Contract	$497M
DESCOM	963M
Mainz AD	140M
Other	164M
	$1.764B

The Operation Desert Shield obligations were $143M for total obligations of $1.907B. The breakout by MSC and type of support for this 1.764B was as follows:

TABLE IV - 1: Operation Desert Shield Obligations

COMMAND	CONTRACT	ORGANIC	MAINZ AD	OTHER
AMCCOM	18	110	10	55
AVSCOM	270	251	0	0
CECOM	90	151	3	46
MICOM	105	115	8	7
TACOM	5	298	119	6
TROSCOM	9	31	0	1
DESCOM	0	7	0	0
OTHER	0	0	0	49
TOTAL	$497M	$963M	$140M	$164M

During FY90, funding for equipment modifications transitioned from OMA to Procurement Appropriation. The transition was initiated by a congressional directive. In accomplishing the move, there was intensive management between the OMA Programs Branch and procurement appropriations managers in DEA. In FY90, $143.7M in OMA funding was transferred to procurement funding.

Reviews of HQ AMC/DA depot materiel maintenance and support activity requirements were held at each MSC from May to June 1990, with members of the Logistics Resource Division attending. The purpose was to validate total depot materiel maintenance and support activity requirements, develop the best contract and organic (in-house) mix of depot maintenance with emphasis on transitioning to organic maintenance, and review the effect on requirements of impending troop reductions in Europe. The Depot Maintenance OP-25s (programming and planning documents showing depot maintenance requirements funded and unfunded for the budget year) for the AMC FY 91-93 Command Budget Estimates were submitted to the Army's Office of the Deputy Chief of Staff for Logistics in August 1990.

Total Maintenance Support Activities (PE 738017). The Total Maintenance Support Activities Program (PE 738017) was critical to the fielding of new systems and equipment; maintenance engineering support before, during, and after deployment; new equipment training for units receiving equipment; training for all

depot maintenance personnel; updating of publications and technical manuals; and technical assistance to support equipment after fielding. The Operation Desert Shield obligations were $21M for total obligations of $570M. The FY90 program ended the year with obligations (excluding Desert Shield) as follows:

AMCCOM	$78M	MRSA	4M
AVSCOM	86M	USACTA	3M
CECOM	91M	HQ	11M
DESCOM	31M	AMSAA	2M
MICOM	127M	TMDE SUPPORT GROUP	6M
TACOM	70M	TOTAL	$549M
TROSCOM	30M		

Supply Operations Managed by the DCS for Supply, Maintenance and Transportation

Supply Depot Operations (PE 721111) and Supply Management Operations (PE 721112). The shipping and receiving function at AMC depots was not fully accomplished within constrained resources due to reduced workyear availability and the onset of Operation Desert Shield. Reduced effort also affected the accomplishment of supply support functions such as care of supplies in storage (COSIS), inventory, and rewarehousing. These functions were being accomplished at about 44 percent of requirements.

Several managerial changes were decided on in FY90. Defense Management Report Decisions (DMRD) transferred ownership of Sharpe Army Depot to the Defense Logistics Agency on 28 June 1990. Beginning in FY91, OMA funding will no longer be used for the processing of secondary items at the depots. DMRD 901 transferred funding for all secondary items to the Army Stock Fund beginning in FY91. DMRD 901 also included a number of initiatives related to supply management that will make it possible to reduce costs and related inventory. This policy change provides visibility over total operating costs and gives managers the requisite data to make better supply decisions while generating operating efficiencies. There were no significant unfunded requirements remaining at the end of the year in PE 721112. USASAC reimbursable personnel were transferred to OMA program P10 in FY90.

First Destination Transportation (PE 728009). All known requirements were funded during the fiscal year. This PE will transfer to the Procurement Appropriation in FY91.

Second Destination Transportation (PE 728010). All known requirements were funded during the fiscal year. The secondary item portion of this program will be transferred to the stock fund in FY91.

TABLE IV - 2: FY90 AMCSM Managed Supply Operations Obligations
(Includes Operation Desert Shield Costs)

PE	TITLE	DIRECT	REIM	TOTAL
721111	Supply Depot Ops	484.5	21.0	505.5
721112	Supply Mgt Ops	167.5	9.9	177.4
728009	First Dest Trans	41.1	2.2	43.3
728010	Second Dest Trans	56.1	1.1	57.2
728013	Overseas Port Opns	00.3	0	00.3

Source: DCS for Supply, Maintenance and Transportation Historical Submission for FY90.

Army Stock Fund (ASF)

Army Stock Funding of Depot Level Reparables (DLRs). Defense Management Report Decision (DMRD) 904 mandated the Army to stock fund all DLRs effective 1 October 1990. Prior to that date, DLRs had been coded as Procurement Appropriation-Spares (PA-2); henceforth, the Army will manage no PA-2 items. AMC's draft implementation plan dated 10 August 1990 called for all DLR assets to capitalize into the ASF on 1 October 1990. DLRs were to be purchased using ASF Obligation Authority beginning 1 October 1990. Repair of DLRs, which had been funded by P7M money, will be funded by ASF beginning 1 July 1991. Army customers were to begin reimbursing the ASF for DLRs requisitioned beginning 1 January 1992; DLRs will be free issued from 1 October 1990 to 31 January 1991. An AMC Ad Hoc Work Group was formed to develop and implement AMC's Action Plan.

ASF Desert Shield Requirements. During August and September 1990, the MSCs identified an additional requirement of $245.4M in FY90 ASF Obligation Authority (OA) to support Desert Shield operations. AMC, working with HQDA, was able to satisfy the entire requirement and all the MSCs fully obligated their Desert Shield dollars prior to 1 October 1990.

ASF Program Status. AMC's FY90 total ASF approved program was $1.282B (including $110.5M for Desert Shield requirements identified at that time). Another $134.9M was provided above the DA Mark (the amount DA authorized to be spent by AMC) for additional Desert Shield requirements subsequently identified, bringing the total FY90 ASF program to $1.417B. All FY90 ASF dollars were obligated.

Supply Division

Significant Issues and Activities

Operational Projects Data Base. The AMC-RCS-145, Operational Projects Stock Status Report, was a multi-volume report that including an analysis and cost report. The report consisted of over 6,000 pages and over 80 copies of it were printed and distributed quarterly. The preparation of the report was very labor and cost intensive.

AMC tasked the Systems Integration and Management Activity (SIMA) to develop a database in 1988 for operational projects. The intent was to replace the AMC-RCS-145 report with an online system. The system, *DATAQUERY*, went online in January 1990. Currently, more than 100 customers worldwide have been assigned passwords. *DATAQUERY* permited customers to query data elements of the report, i.e., authorizations, stock levels, locations, etc. It also permited customers to create custom-designed queries/dialogues to meet specific needs without going through the 6,000 page report.

Training for selected Forces Command (FORSCOM) units at Fort McPherson and a session at SIMA were held in June and July 1990, respectively. Activities/MACOMS which had received training and were using the system at the end of the fiscal year included FORSCOM, HQDA, Western Command (WESTCOM), Korea, AMC, TRADOC, I CORPS, AMCCOM, U.S. Army Southern Command (USARSO), 200th Theater Army Materiel Management Center (200th TAMMC), U.S. Army Support Activity, Philadelphi (USASPTAP), U.S. Army General Materiel and Petroleum Activity (USAGMPA), U.S. Army Medical Materiel Agency (USAMMA), and XVIII Airborne Corps.

Consumable Item Transfer (CIT) to the Defense Logistics Agency (DLA). DMRD 926, Inventory Control Point Consolidation Study Report, recommended the transfer of item management responsibility for approximately one million consumable items from the military services to DLA. The Army was

scheduled to transfer 1,000 items per month from each MSC to DLA over the next 3 years, starting 1 February 1991. Automation capabilities were in place at the MSCs to facilitate the transfer of data between the Army and DLA.

Common User Item List (CUIL). In July 1987, HQDA directed the Army to take the lead in coordinating DOD actions necessary to implement the DOD portion of the CUIL. The CUIL established a requirement for NATO countries to establish a data base which will identify like items used on weapons systems common to NATO countries. Definitions and procedures for the CUIL were stated in draft NATO Standardization Agreement (STANAG) 2386. The CUIL data base will contain data for the interoperability, survivability, and supportability of NATO land forces. The source for the CUIL data base had been determined by SIMA, the Army Logistics Center (LOGC), the Catalog Data Activity (CDA) and AMC. CDA developed an initial prototype CUIL tape of items common to the M109A1/A2 self-propelled Howitzer. The prototype tape was sent to the NATO Maintenance and Supply Agency (NAMSA) in May 1989. Although NAMSA reviewed the tape in June 1989 and published a favorable report in November 1989, no further action was taken.

Defense Inactive Item Program (DIIP). The DIIP was an automated cataloging process that analyzed national stock numbers (NSNs) for the purpose of inventory control by identifying obsolete items for deletion. The computer used data maintained by functional elements to generate delete notifications to the item managers. The item manager reviewed delete notifications and decided to delete or retain items based upon empirical data. This program also generated a report to the item managers to dispose of assets that should have been deleted from the system. The DIIP automation process was redesigned within the Army to provide increased visibility of inactive items. A DIIP redesign to improve inventory management of inactive items included a feature for tracking each item through a complete DIIP cycle. This cycle began in October 1990 and continued through August 1991.

Management of Depot Level Reparables. HQDA's management philosophy in Europe was changed to eliminate "closed-loop" management. This required the transfer of ownership/management of depot level reparables (DLRs) to the Army Materiel Command. An initial transfer test involved 269 items, 84 percent of which were components of the M1 Tank, M2/M3 Bradley Fighting Vehicle, Multiple Launch Rocket System (MLRS), or the Improved TOW Vehicle (ITV). Since the test had been initiated the readiness rates for the M1, M2/M3, MLRS and ITV had improved from 89 to 95 percent. DLR transfers were expanded to 546 items in June 1990, and the Letter of Instruction for Expansion of DLR Management in USAREUR was signed by all parties on 20 July 1990.

European Redistribution Facility (ERF) Ownership Test. USAREUR requested a procedure which would enable it to retain ownership of selected items turned in to the ERF in order to reduce theater "buy-back" of consumer funded items and eliminate the need for granting wholesale credit on turn-ins. The ERF ownership test, established to evaluate such a methodology, began in November 1989. Originally, 400 stock numbers were included in the test for theater ownership of stock stored at the ERF for redistribution within theater. The stock was maintained on 200th TAMMC accountable records allowing assets to be redistributed at no cost to USAREUR theater units. The ownership test has proven to be a success, whereby USAREUR saved about $250,000 per month in credit. Theater ownership was expanded to 5,132 stock numbers in September 1990 and the plan was to expand to a final level of 11,000 - 13,000 stock numbers by the end of the year.

Supply Management Career Program. Through the third quarter of FY90 there were 5,352 supply careerists within the AMC community. This represents approximately 76 percent of the 7,058 supply careerists within DA. Due to reduced requirements and a funding shortage, only one centralized supply intern class was brought on board at the School of Engineering and Logistics in FY90. The Supply Career

Appraisal Panel scheduled for 14 to 16 November 1990 was cancelled due to lack of TDY funding and the need to support Desert Shield.

Stock Control and Requisition Processing Improvements. The period from 1 October 1989 to 30 September 1990 saw significant turbulence as well as some significant accomplishments. DOD, led by the Comptroller, created a number of DMRDs which had the impact of Program Budget Guidance directing the Services to take cuts based on OSD's projected savings. In order to implement these cuts, funds for automation were cut before the programs could be implemented. DMRDs 904 and 925 had a direct bearings on stock control. DMRD 904 required developing a method to track MACOM expenditures of withdrawal credit and new ways to grant credit and track materiel. DMRD 925 requires the creation of a DOD Corporate Information System which will eventually replace Service unique systems such as the Commodity Command Standard System (CCSS) and place all system design activities under DOD. DMRD 902 could eventually put the Army out of the depot supply business by consolidating all supply depot functions under DLA.

Along with the directed cuts in the Army automation budget, OSD decided to implement the Modernization of the Defense Logistics Standard Systems (MODELS). In phase I, there were about 200 changes and no funding to implement them. OSD also insisted on one MODELS POC per Service despite accelerating meetings to every 6 weeks or more. The program was assigned to the DCS's Logistics Systems Division.

The Stock Control FCG workload projection at the beginning of Fiscal Year 1990 was 40 systems change requests (SCRs) scheduled for future releases. Of these 40 SCRs, five were deferred and 11 were candidates for Quick Fixes. At SIMA, significant manyears in Stock Control were used up by Defense Management Review (DMR) related workload required by 1 October 1990 and Management Control Activity work required as a result of a new start from last year's version.

Despite increased workload due to Operation Desert Shield and the cancellation of the depot synchronization effectiveness report, AMC closed the year out with an average requisition processing time of 1 day for both high and low priority requisitions.

While progress was made on phase two of the Supply Depot Workload Forecasting System, not nearly as much was accomplished as desired due to the FCG Chairman being detailed for 5 months to work on automation impacts of the DMRDs. Care of Supplies in Storage (COSIS), Care of Materiel in Storage (COMIS) and Rewarehousing for general supplies were decided upon but ammunition was as yet unresolved. Inventory in both categories remained unresolved. Consolidation Containerization Point (CCP) had been dropped as DMRD 902 transfers both of them to DLA. Total packaging was being pursued but had been delayed due to the Defense Management Review, Reductions in Force and Desert Shield.

A new special requisitioning procedure using the Defense Automatic Addressing System/Defense Excess Program for Reutilization of Assets (DAAS/DEPRA) was developed to support Desert Shield by USAREUR and the Eighth Army in Korea (USAEIGHT). It included putting the new U.S. Army Support Group in the requisition search matrix of CCSS along with the ERF and Mainz, ahead of CONUS depots.

Modifications to the Weapon System Supply Performance Analyzer (WS/SPA). In August 1991, features will be incorporated into the WS/SPA to provide users with capability to input target supply availabilities. The WS/SPA will then generate the shortage cost value necessary to obtain the desired supply availability. In addition, shortage cost value ranges will be produced to assist in analyzing the cost benefit of safety level investment. Features will also be added to facilitate additional analysis of safety level investment based on weapon system combinations and within specified tolerance limits.

Economic Order Quantity/Variable Safety Level (EOQ/VSL) Enhancements in Commodity Command Standard Systems (CCSS). In August 1990, enhanced EOQ/VSL was fielded to CCSS. Improvements in the model included a complete update of all economic factors used in the computation of safety level, a revision to the modeling that allowed a "long supply" consideration and a change to the computation for reparable items. Incorporation of these changes yielded efficiencies within the modeling and a lower forecast safety level investment. Gains were made in reducing inventory levels without impacting stock availability. The full impact of these gains will become visible during FY92 as AMC's major subordinate commands show reductions in requirements and inventory levels.

Supply Management Data Base (SMDB). AMC was developing SMDB as a result of a tasking by the Department of Defense to develop a data base management system that would enhance the CCSS. This will provide users with the capability to access data simultaneously from multiple files and update data in a "real-time" mode. Further study indicated that a system was needed that would maximize the utilization of available resources by employing additional interactive processes (i.e., trend analyses and "what-if" capabilities). The development of SMDB represents the most comprehensive and ambitious secondary item automation initiative undertaken in recent years. It will be used to assist in the implementation of several Defense Management Report Decisions. Milestones I and II have been approved and the estimated completion date for project was June 1992.

DOD Inventory Reduction Plan (IRP). The Office of the Assistant Secretary of Defense (Production and Logistics) [OASD(P&L)] transmitted the IRP to the Assistant Secretary of the Army (Installations, Logistics and Environment) [ASA (I,L&E)] on 14 June 1990. The DOD IRP was to be used as the basis of Services' plans. The overall goal was to reduce the cost of doing business while maintaining readiness. IRP included 12 specific action items and milestones. The key elements for AMC were reducing requirements lead time levels, improving materiel distribution/redistribution, flexibility of automated data processing for rapid response to force structure changes, improving the provisioning process, and developing performance measure tracking system. The Secretary of the Army's memorandum of 1 August 1990 to the Deputy Secretary of Defense indicated that the Services and OSD agreed that IRP initiatives could be used as a vehicle to achieve funding reduction targets contained in DMRD 901. Based on estimated constraints to wholesale leadtimes and safety levels, AMC forecasted a cost savings of $1.3 billion during FY92-97.

Special Programs Office

Intermediate Range Nuclear Force (INF) Treaty Status. The INF Treaty between the U.S. and USSR, signed on 8 December 1987, went into effect on 1 June 1988. The purpose was the retrograde and elimination of U.S. Pershing Pla and Pershing II missile systems. The First CONUS elimination began on 8 September 1988 with the static firing of Pla motors at Longhorn Army Ammunition Plant (LHAAP). A total of 343 Pla missile stages, one Pla erector launcher, and 71 Pla training stages were eliminated in accordance with INF Treaty. Pueblo Depot Activity (PUDA) and LHAAP were the two CONUS INF elimination sites for rocket motors and erector launchers. The Equipment Maintenance Center (EMC) Hausen, the launcher repair facility, was the OCONUS elimination site for USAREUR erector launchers. Eliminations were on schedule and will continue through May 1991.

Lance Missile System. Anniston Army Depot started the refurbishment of the missile propulsion system in 1986. This removed sludge which was caused when the oxidizer stored on board reacted over the years with the aluminum fuel tank. That sludge blocked orifices in the system, which caused flight guidance and termination problems. A total of 1,199 Lance Missile Main Assemblages (MMAs) were refurbished prior to the facility shutdown on 12 June 1990. Based on HQDA message, dated 2 July 1990, the direction was to drawdown/retrograde conventional Lance MMAs in USAREUR. Some alternative options to alleviate overocean transportation costs were being pursued. They included USASAC's survey of potential

FMS customers for possible sales and demilitarization of Lance MMAs in theater with the cooperation of the NATO Maintenance and Supply Agency.

Action Officers Workshop (AOW) for Petroleum Distribution System. AOW 18 was held at Fort Belvoir, VA, on 5-6 December 1989. Its purpose, which had been initiated in July 1983 under guidance from the General Officer Steering Committee, was to improve the Army's petroleum distribution capability. Since the first AOW in August 1983 at Fort Story, Virginia, the growth and accomplishments have been impressive. Detailed equipment and facilities data for the Southwest Asia Petroleum Distribution System Operational Project (SWAPDOP) Inland Petroleum Distribution System (IPDS) had been established; participation increased from 10 organizations to over 30; the IPDS was successfully tested and produced; distribution plans were completed, and a Logistics Civil Augmentation Plan (LOGCAP) contract was in place for SWAPDOP IPDS areas 1 and 3. Hundreds of individual actions and tasks had been accomplished to support the development, testing, and acquisition of capabilities which were only ideas six years before.

JP8 Demonstration Program. The JP8 Demonstration Program, initiated by the HQ AMC Special Programs Office and monitored by the Materiels, Fuels, and Lubricants Laboratory of the Belvoir Research, Development, and Engineering Center (BRDEC), was in support of the DOD plan to convert all diesel-consuming vehicles and equipment in NATO to JP8 fuel (NATO Code F-34). The demonstration program, in operation since February 1989 at Fort Bliss, Texas, was proving that the concept of a "Single Fuel on the Battlefield" was viable and attainable. Originally scheduled for one year, the program was extended through January 1991 to obtain additional data.

Water Resources Management Action Group. In accordance with DOD Directive 4705.1, Management of Land-Based Water Resources in Support of Joint Contingency Operations, 11 October 1983, the Army was designated the DOD Executive Agent for land-based water resources. In addition to other executive agent duties, the DOD directive established a Water Resources Management Action Group (WRMAG), which coordinated and resolved joint water support issues. Meeting number 14 of the WRMAG was scheduled for September 1990 at BRDEC, but Operation Desert Shield caused its cancellation. Ideas promulgated in previous WRMAGs resulted in outstanding water support for Desert Shield.

Apache Program Status. The first Apache production delivery occurred on 26 January 1984. By the end of FY90, 617 Apaches had been accepted by the Army and fielded to AH-64 Battalions. A total of 21 battalions have been fielded and one was in training (18 were in Cobra transitions to AH-64 and 4 were new AH-64 activations).

Mobile Subscriber Equipment (MSE). Fielding of MSE to III Corps units was completed in August 1990. Fielding to USAREUR commenced in May 1990 with completion scheduled for November 1992. GTE was the prime contractor for MSE; however, AMC participated heavily by executing the Total Package Fielding of MSE DELTA items. The MSE DELTA are the new and increased items of equipment generated by MSE Signal Battalion unit conversions and activations, which are not MSE peculiar items. All fieldings to date have been successful and the equipment has been well received by the troops. One MSE equipped unit has been deployed to the Desert Shield Area of Responsibility (AOR), and GTE will provide MSE contractor logistics support in the AOR.

Blackhawk (UH-60) Special Operations Aircraft (SOA) Swapout. In a 13 October 1990 message HQDA tasked HQ AMC to transition the SOA UH-60 fleet from their current UH-60A configuration to the newer and more capable UH-60L aircraft. The program required the turn-in of 60 SOA UH-60A aircraft for 36 UH-60Ls. The changeover started in January 1990, with a four year completion milestone, at a total cost of $27 million. Major cost drivers were the return of "A"s to their standard configuration after dismantling 77 SOA unique modifications and reinstalling modifications on the "L" models. Work was being

accomplished at Corpus Christi Army Depot (CCAD) and Lexington-Bluegrass Army Depot (LBAD), with funding provided jointly by SOA and AVSCOM. As of 30 September 1990, the CCAD/LBAD had completed three "A" and six "L" model aircraft.

Army Tactical Missile System (ATACMS). ATACMS was a ground-launched missile system consisting of a surface-to-surface guided ballistic missile. The missiles were fired from the Multiple Launch Rocket System's modified M270 launcher, providing corps commanders with the ability to engage deep targets. Warheads for the system were divided into two separate development programs for Anti-Personnel/Anti-Materiel (Block I) and Anti-Armor (Block II). Block I, which was being developed first, was initially scheduled for fielding in USAREUR 30 September 1990. However, the unprogrammed fielding of Block I missiles to a deploying Army Central Command unit in August 1990 postponed USAREUR's initial fielding until the third quarter of FY91. The fielding also established an immediate requirement to fill stocks for SWA resupply, USAREUR Theater Reserve, and CONUS Contingency Stocks (CONSTOCKS). Immediate requirements were filled through production surge and delays in unit fieldings.

Conventional Forces in Europe. The Conventional Forces in Europe (CFE) Treaty set ceilings for aircraft, tanks, armored combat vehicles, artillery and helicopters located in Europe from the Atlantic to the Urals (ATTU) Mountains. This equipment was known as treaty limited equipment (TLE). During the negotiations for the treaty, the U.S., as a force modernization initiative, retrograted some TLE items (tanks, armored combat vehicles, and artillery) from Europe to FORSCOM, TRADOC, the National Guard, and foreign military sales current/future requirements. In addition, under the military assistance program, M60A1 tanks were transferred to Egypt (700), Morocco (60), and Tunisia (30).

To meet Desert Shield needs and committments to our allies in that operation, 616 M1A1 tanks and 240 M60A3 tanks were transferred from Europe to Southwest Asia prior to the 19 November 1990 signing of the CFE treaty at the Paris summit of the 34 nation Conference on Security and Cooperation in Europe. The Air Force was receiving 20 M60A3 tanks equipped with bulldozer blades to be used in rapid runway repair. Of the remaining M60A3 tanks, Saudi Arabia received 150, Oman 43, and Bahrain 27. All these tanks were included in the baseline for calculating the number of tanks that NATO will destroy.

Foreign Assistance Act, Section 506 (a) (2), Counter-Narcotics. Public Law 101-167 amended the Foreign Assistance Act of 1961, and provided a new authority to the President under section 506 f(a) (2). On 19 August 1990 the President signed Presidential Determination 90-33, having concluded that it is in the national interest of the United States to draw down defense articles from stocks of the Department of Defense for the purpose of the provision of counter-narcotics assistance to Mexico, Columbia, Bolivia, Ecuador, Jamaica, and Belize. The President further authorized $53.3 million for this act. Equipment identified for draw down included UH-1H Helicopters, tactical wheeled vehicles, communications equipment (spare parts, tools, and test equipment), small arms, uniforms, and individual field equipment. A 120 day execution clock was started on 25 July 1990 when notification to Congress was made. All materiels had to be in the transportation pipeline and all training and services initiated before 22 November 1990.

M1A1 Rollover. In October 1990 HQDA decided to move over 600 M1A1 tanks from stocks prepositioned in Europe to Saudi Arabia under the Prepositioning of Materiel Configured to Unit Sets (POMCUS) program. This required the tanks to be repaired, to undergo up to five modifications, as required, and to be painted with Chemical Agent Resistant Coating (CARC) before being issued to units in accordance with the total package fielding concept. It was projected that they would all be modified no later than 31 December 1990.

A decision was also made to modernize and enhance other tank units currently in Saudi Arabia. As a result another batch of over 200 M1A1 tanks would be removed from POMCUS and undergo the same

process of repair, modification, and CARC painting. In addition, issues of M1AHA tanks would be made from new production. Eventually the plans were to modify as required and to CARC paint all M1A1 and M1A1HA tanks fielded in Saudi Arabia.

Maintenance Division

Significant Issues

Aviation Classification Repair Activity Depot (AVCRAD). The Aviation Depot Maintenance Roundout Unit Program (ADMRU) was established under the National Guard Bureau in 1979 and assigned to the Army Materiel Command in 1979. The ADMRU program maintained an assigned strength of over 1,300 soldiers and consisted of five units: one Mobilization AVCRAD Control Element (MACE) located in Maryland and four AVCRADs located in California, Mississippi, Missouri, and Connecticut.

The AVCRAD pre-mobilization mission was Aviation Intermediate Maintenance (AVIM) and depot-level maintenance support of the more than 2,700 aircraft assigned to the Army National Guard (ARNG). The ADMRU mobilization missions were AVIM and depot-level maintenance support of the deploying FORSCOM forces, classification of field returns and stocks in storage, expansion of the mobilization capability of CONUS aviation depots, and projection of a mobilization aviation depot maintenance capability into an OCONUS theater of operations. Upon mobilization, the AVCRADS were to straddle the wholesale pipeline and screen critical items of aviation materiel for return to units in the field.

An OCONUS warm base facility had been established in Brussels in FY86. Personnel from the California, Connecticut, and Missouri AVCRADs trained in this facility for twelve 3-week increments annually. An increment from Missouri also participated in Reforger. This program provided about 270 personnel annually for OCONUS deployment training. During pre-mobilization, the European AVCRAD facility was staffed with a cadre of DynCorp contract field team personnel. European AVCRAD personnel (AVCRAD soldiers in overseas deployment training [ODT] and DynCorp contract field team) have classified, repaired, and returned to the supply system in excess of 1,500 components. This has resulted in a cost avoidance of nearly $2.2 million.

In addition to ODT, AVCRAD personnel were actively involved in classification of field returns and stocks in storage in CONUS as part of their mobilization preparedness. Teams of maintenance and supply personnel examined stocks in storage depots. By positive identification of items in storage, reconstructing historical data, and correcting discrepancies in condition coding/tagging, a significant amount of aviation materiel with a substantial dollar value was reclassified and returned to the supply system. This included AH-64 and CH-47 components in support of Operation Desert Shield.

Chemical Agent Resistant Coating (CARC). On 14 July 1988, the CG, AMC and the DA DCSLOG briefed the Chief of Staff of the Army on the results of the DA/AMC/TRADOC/TROSCOM CARC relook program. The Chief of Staff approved the continuation of the CARC program and directed an increase in publicity to make the Army aware of the positive aspects of CARC. Two video tapes have been produced and distributed to the field. Many *PS Magazine* articles, including a comprehensive 16-page article about spot painting CARC with a brush and/or roller, have been published. CARC coatings were now free of lead and chromate, which alleviated many of the health concerns previously associated with CARC.

The acceptance of CARC significantly increased in FY90 as a result of the publicity highlighting its durability and dispelling negative concerns. CARC enhanced the Army's capability to survive and to deter an opposing force's use of chemical agents. All new acquisition materiel and all depot-overhauled

equipment were now painted with CARC. Desert Shield requirements were expected to exceed 200,000 gallons in FY90.

U.S. Army Materiel Maintenance Management Intern Program. The central DA intern program was used to recruit, develop, and graduate high potential employees for placement Army-wide. The main objectives of the program were to provide for planned intake of personnel with high potential to meet DA-wide career program staffing needs and to provide employees with the knowledge, skills and abilities required to advance and successfully perform at the target level in a specific career program.

Due to the hiring freeze, the last maintenance class completed training at Red River School of Engineering and Logistics in June 1990. Intern hiring for FY91, both internal and external, was frozen pending finalization of the Army build-down. Emphasis was instead placed on utilization of interns currently in the pipeline. As a one-time exception, interns who completed the two years' required training in FY90 were given the option of being put back on the DA intern roles for a third year to protect them from potential RIF. Of the 27 interns eligible, 21 elected to take this option and sign mobility agreements. The Office of the Deputy Chief of Staff for Personnel determined that these interns will be non-competitively promoted to GS-11 upon completion of the third year. There are currently 121 interns on the Materiel Maintenance Management roles, including the 21 participating in the third year option.

Army and Joint Oil Analysis Program. The Army Oil Analysis Program (AOAP) began in 1961 as a result of oil analysis performed on Army aircraft experiencing problems with engines and transmissions. This initial analysis was performed by participation in the Navy Oil Analysis Program. The first Army laboratory had been established at Fort Rucker in September 1961. Analysis of oil from non-aeronautical equipment began on a test basis in 1967. Routine oil analysis of combat nonaeronautical equipment began in 1975. Other selected non-aeronautical equipment was enrolled in the program in 1977. As a result of a General Accounting Office evaluation, a joint agreement was approved in September 1975 to establish a Joint Oil Analysis Program (JOAP) Coordinating Group and a JOAP Oil Analysis Technical Support Center at Pensacola, Florida. Individual service charters were written and a JOAP regulation was published in March 1980.

During FY90, the AOAP Program Director provided support for Operation Desert Shield in a variety of ways. Initially, recommendations were provided to FORSCOM on methods for obtaining interim AOAP support for our deployed forces. Ten military personnel were trained in laboratory operations and two technical representatives were deployed with the mobile laboratory to assist in its set up and initial operation. Two technical representatives were also deployed to conduct a site survey in anticipation of establishment of fixed-base AOAP facilities in country. The Program Manager for Petroleum and Water Logistics was tasked to expedite fabrication of the second mobile laboratory.

AOAP Standard Data Systems (SDS) Software. Software update version 4.5 was implemented during the third quarter of FY90. The Army's spectrometer conversion program was completed during the fourth quarter of FY90. This program upgraded the old A/E35U-3 Baird Spectrometer to a FAS-2C configuration which incorporated state-of-the-art electronics.

The Program Director made 22 assistance and assessment review visits in accordance with AR 750-1. The number of visits was severely limited by funding constraints. The USAMC Regulation 11-47 on AOAP was published in April 1990. It described policy, responsibilities, and procedural guidance.

The Program Director for the AOAP had been involved with support of agency aircraft of the U.S. Border Patrol, Drug Enforcement Agency, and the Army Corps of Engineers as part of a drug enforcement effort. Meetings between these organizations were held during the fourth quarter of FY90. Draft memos

of agreement for support were being prepared and were anticipated to be finished during the second quarter of FY91. However, support was initiated early in FY90. The Program Director also provided support to the Bright Star Exercise early in FY90, with a mobile shelter concept for evaluation.

Theater Aviation Maintenance Program (TAMP). The TAMP was a joint AMC and USAREUR initiative to enhance aviation maintenance capabilities. The TAMP was part of the AVSCOM Directorate for Maintenance. It managed contractors who provide maintenance support to Theater Aviation units. The TAMP management office was headed by LTC Tom Cole, who replaced LTC Jim Verity in June 1990.

AVSCOM's acquisition plan was approved by HQDA in February 1987 and contained two contracts. The airframe contract was awarded to Agusta-Teamco, Belgium, in November 1987 and provided backup Aviation Intermediate Maintenance support. There were 106 aircraft in work, and 179 aircraft had been completed as of 15 October 1990 at the TAMP facility in Brussels. Twenty-eight contractor field teams at 18 locations in Germany and five contractor field teams in Saudi Arabia were supporting aviation units. The TAMP office has been providing additional maintenance augmentation teams to USAREUR units as they prepare for eventual deployment. The TAMP Office also processed over 75 civilian contractors and obtained their administrative clearance into Saudi Arabia and other middle east countries in support of Desert Shield.

The components contract was awarded to CASA, Spain, in September 1987. The contract provided depot-level repair and overhaul of 42 selected line item components. A total of 856 overhauled components have been returned to theater and two hundred sixty-nine were being worked. Project OLR, a contract awarded to DynCorp, provided for Modification Work Order applications and limited depot repairs for USAREUR aviation.

Two additional contracts were added to TAMP in FY90. The South of Alps (SOA) contract was awarded to Kay and Associates and provided contractor field team support for Aviation units in Italy, Greece, and Turkey. The Martin Marietta Special Repair Activity received a contract for the overhaul and repair of AH-64 electrical components.

Modification Application Program. Based on Materiel Change Management and the AAE/PEO concepts, the way AMC processed modifications to equipment has been changed. AR 70-15 and AR 750-10 were combined into one document. AR 70-15 was issued in the format of an Interim Operating Instruction (IOI) until final coordination can be achieved. Staffing was ongoing.

The austere budget for automation efforts, shortage of travel funds, and a high turnover of key Modification Work Order (MWO) personnel at MSCs had a severe negative impact on the orderly conduct of the MWO application program. Nevertheless, a total of 167,700 modifications was applied to equipment during FY90. This number was considered normal.

Depot Maintenance Interservicing (DMI). Depot Maintenance Interservicing was accomplished within the DOD military components for newly acquired items and those being reconsidered for repair sourcing. Its purpose was to minimize depot maintenance facility and personnel investments, preclude unwarranted duplication, promote the exchange of technical data and management information and develop and enhance a broad DOD organic capability to respond to contingencies. Overall direction and policy guidance for the Army emanated from the DCS SMT, AMC. Joint Service coordination was accomplished by the JLC-chartered Joint Policy Coordinating Group on Depot Maintenance (JPCG-DM). The AMC DCS SMT served as the Army principal member to that group. The other Services were represented by the Air Force Logistics Command, Air Force Systems Command, Naval Air Systems Command, Naval Sea Systems Command and Marine Corps Logistics Base, Albany, Georgia.

To a significant degree DMI was a joint operation. The JPCG-DM has been in existence since 1974. In 1988 its charter was revised to encompass all depot maintenance. The JPCG-DM provided joint oversight direction, assured consistence in the application of joint depot maintenance policies, DMI studies, source of repair and military construction decisions and fostered the exchange of information. Under the DCS SMT, AMC, the Army Maintenance Interservice Management Office (MISMO) tended to Army interservicing actions. These included two principal functions: (1) the DMI study process which accompanied the introduction of new items, or items transitioning to organic maintenance; (2) the conduct and oversight of Depot Maintenance Interservice Support Agreements (DMISA).

To execute the DMI process, the six commodity commands and DESCOM had Maintenance Interservice Support Offices (MISOs). The principal function of these offices was to manage DMISAs. The MISOs technically responded to the MISMO at HQ, AMC. The JPCG-DM had several direct joint assets. One was the Joint Advisory Board (JAB), which acted as a direct asset of the DCS SMT, AMC. Next was the Joint Depot Maintenance Analysis Group (JDMAG), located at Dayton, Ohio. This permanent organization consisted of 42 people, 11 of which were Army/AMC personnel. JDMAG responded to AMC and the other Service's logistical commands in the conduct of DMI studies, joint staff studies, and as the proponent of two joint data bases. They published a quarterly joint depot maintenance newsletter and also chaired three joint committees: The Joint Technology Exchange Group (JTEG), Joint Depot Environmental Panel (JDEP), and the Joint MILCON Review Panel (JMRP).

Traditional interservicing actions related to the Army for the fiscal year can be expressed two ways: (1) the Army conducted about $100 million in depot repairs for the other Services; (2) the other Services conducted about $6.8 million in repairs of Army-owned materiel.

One significant accomplishment during FY90 within the DMI process was the DMI decision related to the Air Force PeaceKeeper Rail Garrison (PRG) system. The USAF Program Manager awarded Tooele Army Depot (TEAD) a contract to refurbish two prototype locomotives to a GP-40-2 model configuration. TEAD was selected after outbidding a very qualified commercial contractor. Refurbishment of 60 more locomotives was pending Congressional approval of the entire program and the success of the prototype refurbishment. Additionally, TEAD was assigned as source of repair for depot-level and intermediate-level PRG maintenance.

With the advent of the Defense Management Review in the fall of 1989, most emphasis and actions of the JPCG-DM and the DMI process have been concentrated on realignment of depot maintenance management to conform to the requirements of DMRs 908 and 909, Consolidation of Aeronautical and Non-Aircraft Depot Maintenance, respectively. Much of the DMI capability has been devoted to the conduct of these two studies and to the support of the Defense Depot Maintenance Council (DDMC), formed in June 1990, chaired by the Assistant Secretary of Defense for Production and Logistics and attended by the Commander, AMC as a council member.

Actions recently accomplished or in progress include development of a long-range plan to achieve $3.9 billion in savings by FY95 (Army projected share is $512 million); development of a Joint Depot Business Plan to accommodate new strategies for increased interservicing to a level of 10 percent; increased capacity utilization to 100 percent and achievement of 82 percent of projected savings noted before by competing workloads among public/public and public/private interests; participation in 21 commodity-related groups to realign workloads IAW DMRs 908/909; and participate in other study groups to support joint depot operations, such as cost comparability, core quantification and more standardized approaches to capacity measurement, performance measurement and maintenance management information systems.

Transportation and Equipping Division

Significant Issues

Direct Support System/Air Line of Communication (DSS/ALOC). At the close of FY90 there were 1,005 recorded DSS units, of which 214 were ALOC units. This was the same number of total DSS units as in FY89. However, the conversion of CONUS DSS units to ALOC for Operation Desert Shield increased the net numbers of ALOC units by 29 (185 to 214) from FY89.

Continued FY90 shortfalls in Second Destination Transportation (SDT) funds for air overocean shipments resulted in two major actions taken by DA. The first was the removal of 20 units from ALOC effective April 1990. Seventeen units were removed from ALOC in Europe, including Mainz Army Depot (MZAD), the largest single ALOC requisitioner. Three AMC Test, Measurement, and Diagnostic Equipment (TMDE) maintenance units in Europe were retained on ALOC. Two Western Command units and one U.S. Army Japan unit were also removed. The second was the total suspension of ALOC during the fourth quarter of FY90, except in support of Operation Desert Shield (ODS) in Southwest Asia (SWA). All shipments of priority 09-15 materiel to ALOC units was via ocean carrier during this period, adding approximately 20-25 days to average order ship time (OST).

In support of ODS, 32 CONUS-based units were converted from DSS to ALOC in the period from August to September 1990. Another 17 units were added to ALOC, for a total of 49 units being supported by ALOC in SWA. Seventeen DSS units were also deployed to SWA. Close coordination between HQ AMC, 1st Corps Support Command (COSCOM), Ft. Hood, FORSCOM, SIMA, and the Desert Shield Area of Responsibility during this period was crucial in establishing the supply support structure for the operation.

In general, DSS and ALOC performance in FY90 improved over FY89. The Army's average annual performance (with objectives in parentheses) for DSS and ALOC respectively was: Europe (45 days/23 days) - 57.5 days/30.0 days; Korea (59/28) - 50.9 days/22.2 days; Panama (40/25) - 57.1 days/22.3 days; Hawaii (40/25) - 50.0 days/23.0 days; Japan (52/29) - 47.5 days/20/5 days; Alaska (42/26) - 38.2 days/25.7 days; TRADOC (20) - 22.2 days. FORSCOM (20) - 23.0 days. For DLA, the FY90 DSS and ALOC average OSTs were: Europe - 62.4 days/33.1 days; Korea - 54.3 days/28.2 days; Panama - 59.3 days/ 28.1 days; Hawaii - 56.8 days/29.5 days; Japan - 56.2 days/28.7 days; Alaska - 44.6 days/32.8 days; TRADOC - 28.5 days; FORSCOM - 30.0 days. Finally, GSA annual average OST figures were: Europe - 72.0 days/37.8 days; Korea - 62.0 days/31.4 days; Panama - 65.3 days/42.0 days; Hawaii - 68.1 days/40.3 days; Japan - 56.4 days/44.7 days; Alaska - 51.5 days/43.7 days; TRADOC - 27.9 days; FORSCOM - 29.9 days. Due to the suspension of ALOC in the fourth quarter FY90, the ALOC times shown above are for the first three quarters of FY90 only. Of the 14 Army performance measurements shown above, nine were better than (i.e., lower) or the same as in FY89.

Army Materiel Loan Program. As the need for Army equipment by other DOD and federal agencies increased, the activity in this vital program also increased. The past year has seen a dramatic increase in the number of equipment loans or leases being made to Federal and civilian law enforcement agencies for use in drug interdiction operations. As the number of loans increased, so did the number of loans that were delinquent. The status of delinquent loans or leases reported quarterly by the major subordinate commands was being assessed on a continuing basis. Fourth Quarter FY90 reports indicated an increase in the number of delinquent loans over previous quarters. The action agencies having the increases were taking actions with the borrowers to recall all of the delinquent loans. Equipment loans were made to the U.S. Military Academy in support of the 1990 Cadet Summer Training, the Goodwill Games held at Auburn, Washington on 20 July - 10 August 1990, and the U.S. Capitol Police.

Logistics Applications of Marking and Reading Symbols (LOGMARS). LOGMARS non-area-oriented depot shipping was implemented at Anniston Army Depot, Lexington-Blue Grass Army Depot and Letterkenny Army Depot. General Supply Inventory/Location Survey and Inventory/Location Survey were completed. General Supply Receipt stowage was completed except at Corpus Christi Army Depot and Rock Island Arsenal. General Supply Quality Assurance was completed except at Rock Island Arsenal. DA funded implementation of LOGMARS AMC Installation Supply System at 16 AMC non-depot activities.

Serial Number Tracking of Category One Nonnuclear Missiles and Rockets in Department of Defense Small Arms Serialization Program (DODSASP). In November 1988, the Department of Army directed Army MACOMs to begin manual tracking of subject items in the DODSASP program. In February 1988, automatic tracking by Guided Missiles and Large Rocket Reporting/System proved not to be feasible. In December 1988, DA had issued to Army MACOMs the basic guidance (initial registration milestones, documentation, transaction codes, and partial National Stock Number List) needed to begin this tracking. The guidance directed tracking to begin 1 April 1989 with a completion date of 1 July 1989. To date, the extent of the MACOMs' compliance is not known. Currently, neither the Central Registry nor the MACOMs have a reliable way to determine compliance. Recently, however, the DA Central Registry has recommended an urgent change in Army Regulation 710-3 to disallow use of Unit Identification Code in weapon owner block of the transaction (Document Identification Code DSM). If approved by DA, this change should correct this problem.

Inventory Control Effectiveness (ICE). The ICE program measured performance indicators for the DOD Physical Inventory Control Program (PICP) required by DOD 4140.35. The FY90 Army ICE for general supplies achieved a major inventory variance rate of 4.6 percent (DA/DOD ceiling). The major inventory variance rate was calculated by comparing the number of stock numbers with major adjustments (over $800) to the total stock numbers inventoried. Performance for the location record audit, which compared depot and inventory control point (ICP) computer records, decreased slightly to 95.4 percent, below the 97 percent DA/DOD goal. The materiel release denial rate, at 1.1 percent, remained slightly above the DA/DOD goal of 1.0 percent.

The denial rate increased during the fourth quarter FY90 due to the inordinately large volume of telephonic (off-line) materiel release orders required to support Operation Desert Shield. In addition to resource constraints, on-time receipt stowage and posting was heavily impacted by high covered storage space occupancy rates. Maintaining near-goal performance was difficult, considering the inventory program was funded at only 50 percent for FY90. The impacts of ODS were evidenced throughout the ICE program, since the Depot System Command ordered depots to halt all storage support functions (e.g., inventory, location survey, rewarehousing, etc.) to divert resources to shipping and receiving in support of ODS.

Area Oriented Depot Modernization (AODMOD). AMC's AODMOD project was a conscious effort to modernize the area oriented depots, which ship over 90 percent of all Army managed items, primarily Class IX repair parts, to our combat elements. The modernization program was designed to provide 3.7 million square feet of highly automated distributing facility space (not to be confused with storage space) to enable these AODs to more rapidly distribute critical repair parts in both peacetime and mobilization. This would ultimately improve material readiness during peacetime and promotes faster response to repair parts requirements needed to return weapons systems to combat effectiveness during mobilization or wartime situations. Due to a downward trend in projected workload, the program today projected a need for only 2.5 million square feet of this distribution space. For this reason, construction of Red River Army Depot's Central Distribution Center was suspended. Currently, the program consisted of two distribution centers (New Cumberland Army Depot's Eastern Distribution Center and DLA's Defense Depot Region West-Sharpe Site) which were respectively 98 and 100 percent complete as of the end of FY90.

Operation Desert Shield Packaging and Packing. Since the inception of Operation Desert Shield, the AMC Packaging, Storage, and Containerization Center (AMCPSCC) provided packaging guidance and technical advice on materiel preservation and packing (P&P) levels of protection. AMCCPSCC personnel furnished on-site packaging assistance at Forts Bragg, Bliss, and Polk to Regular and Reserve Army Units deploying to Southwest Asia. AMCPSCC developed and forwarded to DESCOM listings of preservation and packaging materials, necessary forms, and applicable documents and microfiche files required for the establishment of HQ DESCOM U.S. Army Support Group (USASG) in Saudi Arabia.

Performance Oriented Packaging (POP). A major undertaking during the latter half of FY90 was performance testing of hazardous materials (HAZMAT) packagings in anticipation of the 1 January 1991 implementation date for the international requirement that dangerous goods be transported only in tested packagings. Using American Society for Testing and Materiels (ASTM) test method D 4919, a refined method for the tests described in the United Nations *Orange Book*, the AMCCPSCC laboratory tested a variety of both specialized and nonspecialized containers. DLA requested the testing of over 60 configurations, while the Chemical Research, Development and Engineering Center (CRDEC)/AMCCOM and MICOM provided the remainder of the workloading. Testing was scheduled into FY91 for TACOM, CECOM, New Cumberland Army Depot, AVSCOM, and additional testing for DLA, MICOM, and CRDEC/AMCCOM.

AMCPSCC participated in a POP assistance and fact finding trip to USAREUR. The visit provided considerable insight into the impact POP will have on the retail community. AMCPSCC was also updating DA/DOD regulations with POP requirements and providing assistance to DOD, DA, MSCs and DESCOM depots. An urgent Systems Change Request (SCR) was prepared and submitted to initiate POP coding in the Army Master Data File (AMDF), Standard Depot System (SDS), Commodity Command Standard System (CCSS), and the Standard Army Intermediate Level Supply System (SAILS). AMCPSCC has been designated as the AMC executive agent for packaging of hazardous material.

Logistics Systems Division

Significant Issues

AMC Standard System (AMCSS). AMC began strategic planning by developing a set of precepts for future Army logistics. The AMCSS Task Force was established August 1989 to continue AMC's strategic planning. Based on numerous interviews with senior DOD and industrial logisticians, 21 precepts for the "seamless logistic system" were developed. Based on the precepts, a detailed examination was conducted of the existing and emerging systems within AMC to determine their fit and applicability to the "precepts" for the "seamless logistic system." Two concepts, Readiness Based Maintenance (RBM), which anticipated requirements at all levels within the Army maintenance system, and the Objective Supply System (OSS), aimed at reducing order ship time and redistribution of on hand stocks, were being tested by the Strategic Logistics Agency (SLA) with close coordination within AMC, to demonstrate the feasibility of the precepts.

Single Stock Fund (SSF). The Army planned to implement the SSF under the auspices of DMRD 904, Stock Funding of Depot Level Reparables, Phase II. Currently the Army had two levels of management of its stock fund: wholesale and retail. Recent studies recommended the creation of a single Army stock fund manager. This will relieve tactical commanders of financial management burdens, and complement the creation of a streamlined, seamless logistics system. In February 1990, the CG, AMC directed the Deputy Chief of Staff for Supply, Maintenance and Transportation to conduct a Proof of Principle demonstration of the SSF concept at Fort Rucker, Alabama, in conjunction with the planned implementation of the Objective Supply System. A concept plan was approved to test SSF at Fort Rucker during the fourth

quarter of FY91. Program execution was deferred indefinitely because of mobilization/deployment of units at Fort Rucker for Operation Desert Shield.

Logistics Systems Management Review Task Force. The Logistics Systems Management Review Group was established in May 1990. The purpose of the group was to provide an in-depth review of logistics systems automation required to support the DMRDs and to integrate them into a comprehensive plan. The task force reviewed all DMRDs synthesizing data, identifying requirements, scheduling implementation and scoping resource requirements. The task force's recommendation resulted in a direction from the Commanding General of AMC on 1 November 1990 that the following actions be taken:

1) Proceed with implementation plan for logistics automation.

2) Restructure functional user representation within AMC to align with the Corporate Information Management (CIM) program.

3) Establish functional integration managers to support the DA Strategic Logistics Program.

4) Expand the Logistics System Review Committee (LSRC) process to include command unique systems.

5) Replace functional system manager process with functional system integrator process and assign to Logistics Systems Office.

6) Restructure logistics system support functions to combine related actions into Logistics Systems Office.

Executive level progress reviews including the chairman of the LSRC and Resource Management System Review Committee will be held to ensure directed actions are completed.

Wholesale/Retail Integration. As a result of the DMR, AMC was tasked to develop a wholesale/retail integration concept. The proposal outlined four initiatives: Objective Supply System (OSS), Readiness Based Maintenance (RBM), Total Asset Visibility, and Usage Based Provisioning (UBP). Preliminary economic analysis results were promising and proposal was approved and established as DMRD 927.

Action to develop an operational prototype for the Objective Supply System at Fort Hood has been ongoing. Government delays in delivery of Government Furnished Items (GFI), software development problems, and activation of units at Fort Hood for Operation Desert Shield caused implementation, originally scheduled to be implemented in January 1990, to slip until November 1990. A limited software acceptance test will be held at Fort Hood through 31 December 1990. A contract to develop, install and test the communications connectivity for the OSS in USAREUR was awarded on 24 September 1990. The contract will run for twenty-one months. An initial operational capability in USAREUR will be provided in September 1991, with a full operational capability by December 1991. This will be followed with six months of test and evaluation.

The RBM decision support system allowed item managers to distribute materiel by prioritizing the fill of existing requisitions and by identifying serviceables for delivery to units even before requisitions can be issued or before failures in weapons systems or Line Replaceable Units (LRUs) be created. The increased responsiveness of a logistics system using the RBM decision support system should more than offset costs associated with reducing reliance on batch workloading of repairs.

Congress directed an Army capability for total visibility of assets throughout the Army coupled with distribution as a way to get rid of excess and to improve the general management of assets. The test

concept included In-Transit Visibility (ITV), which is visibility of secondary items and major item reparables. Over the next three years, additional testing will extend visibility to all classes of supply.

The Usage Based Provisioning (UBP) initiative was based on a Provisioning Systemic Review (PSR) completed in July 1989 which recommended a number of System Change Requests (SCRs) that resulted in anticipated project requirements based on actual usage data rather than demand data. This demonstration prototype will include networking of usage data sources and modeling to project requirements. An online master data record base will be built.

Logistics Systems Review Committee (LSRC). The LSRC conducted three In Process Reviews (IPRs) of standard automated system releases during the fiscal year. The Release 9020 IPR I was conducted 10-11 January 1990 in McLean, Virginia. The meeting was hosted by AMCSM. The Committee reviewed and approved the proliferation of Release 9020 to be prototyped by TACOM beginning 15 January 1990.

The Release 9030 IPR I was conducted 6-7 June 1990 in McLean. The Committee reviewed and approved Release 9030 to be prototyped by AMCCOM beginning 11 June 1990. The Committee also approved a Special Release 9043 which contained changes required to support Depot Level Reparables and changes required to support Federal Acquisition Regulations (FAR) changes effective 1 October 1990.

Release 9030 IPR II was conducted via Video Conference on 8 August 1990. AMCCOM recommended proliferation on Release 9030. The Committee approved proliferation to the other MSC for installation, which was completed by 1 September 1990.

Executive Director for Test, Measurement, and Diagnostic Equipment

As of 1 October 1990 the Office of the Executive Director for Test, Measurement and Diagnostic Equipment (TMDE) was consolidated into a new U.S. Army TMDE Activity at Redstone Arsenal, the site of the U.S. Army Test, Measurement, and Diagnostic Equipment Support Group.[2] As a result the following submission of TMDE activities is largely taken from that of the TMDE Support Group historical report, which also includes the activities of the U.S. Army TMDE Support Activity--CONUS.[3]

U.S. Army TMDE Support Group

Manpower

The FY90 manpower authorization for the U.S. Army TMDE Support Group (USATSG), reflected in the AMC program and budget guidance as of 30 September 1989, was 22 officers, 37 warrant officers, 925 enlisted personnel, 1,257 direct hire civilians and 88 indirect hire local nationals. Adjustments from the end of FY89 to FY90 included an increase of one civilian authorization. There were no adjustments to the manpower authorization during FY90. The commander of the support group was Colonel Michael F. Boyd,

[2]AMC Permanent Order 90-1, 19 October 1990.

[3]FY90 AHR Historical Submission by the U.S. Army Test, Measurement, and Diagnostic Support Group.

who assumed that position from Colonel George E. Patch in July 1990. The actual versus authorized strength figures as the start of FY90 were:

	Actual	Authorized
Military Personnel	897	984
Civilian Personnel	1,195	1,257
Indirect Hire Local Nationals	71	88

Base Closure and Reorganization of the TMDE Function

Extensive plans were developed and partially implemented toward the reorganization of the USATSG headquarters. The reorganization was required as a result of the Base Realignment and Closure Act and Defense Management Review (DMR) Initiative 927E. The initiative called for the consolidation of all TMDE organizations to include the office of the Deputy Executive Director for TMDE (HQ AMC), the U.S. Army Central TMDE Activity (Lexington, KY), the PM-TMDE (CECOM, Fort Monmouth, NJ), and the U.S. Army TMDE Support Group (Redstone Arsenal, AL) into a single TMDE Activity at Redstone Arsenal, AL.

A potential second round of base closures including Sacramento Army Depot, Sacramento, CA, Fort Gillem, GA, and Fort Ord, CA, required data input and initial planning for relocation of calibration facilities/missions from these locations. Since missions have been moved rather than eliminated, no loss of spaces has resulted. Planning is ongoing and tentative due to uncertainties of mission changes and base closures.

Budget

The USATSG operating budget for FY90 totaled $88.716 million (including $2.015 million in prior year funds). Breakout by appropriation was as follows:

	OPA	RDTE	OMA	OMAR	FMS	TOTAL
Army	$12.478	$1.054	$54.579	$1.466	$2.681	$72.258
Customer	.350		16.108			16.458
Total	$12.828	$1.054	$70.687	$1.466	$2.681	$88.716

Modernization of AN/GSM-286 and AN/GSM-287 Calibration Sets

Progress continued with the modernization of these calibration sets, which had begun in FY86.

Phase One, Core TMDE Workstation. Reprocurement (after terminating the original contract with Valhalla Scientific, Inc.) was made from John Fluke Manufacturing Company in late FY89. The first articles were delivered 6 April 1990 and were accepted on 24 July 1990. The contractor satisfactorily completed new equipment training during September 1990. Production deliveries will be made during FY91. On 22 June 1990 Valhalla Scientific, Inc., filed a suit in the Court of Claims, complaining that the Army had wrongfully terminated their contract for default. Valhalla asked for damages or recovery of cost of approximately $760,000. Potential witnesses had been identified for the Army but a hearing date had not yet been established.

Phase Two, Signal Generator Workstation. The procurement for this workstation was competitively awarded to Harris Corporation in September 1988. The first articles for the workstation were rejected twice and were resubmitted 15 June 1990. Several failures occurred during testing of these first articles, but

acceptance was anticipated for October 1990. Delays in this procurement have impacted the planned fielding for the first three workstations. Assuming the first articles are accepted as anticipated, production deliveries will begin in FY91.

Phase Three, Oscilloscope Calibration Workstation. This workstation included several procurements. The first, a contract with Tektronix for an oscilloscope calibrator with controller, was competitively awarded in September 1989. The first articles from this procurement were delivered on 10 August 1990 and were undergoing first article testing. If the articles pass inspection, production deliveries will begin during FY91. This procurement represents USATSG's first tri-service acquisition (from the Calibration Coordination Group Acquisition Subcommittee). Both the Air Force and the Navy metrology groups still plan to purchase some of these units by utilizing our contract. In September 1990 the Marine Corps purchased some workstation components from the Army contract (approximately $223,000).

In addition, a number of other oscilloscope procurements made progress. A Tektronix Model 2465 oscilloscope purchased against an existing Air Force contract in FY89 was delivered, and logistics support was purchased by the USATSG. A digitizing oscilloscope for use in the reference laboratory was competitively purchased. The contract was awarded on 28 September 1990 to Hewlett-Packard. The first article was due 14 November 1990, with production deliveries scheduled to be completed in April 1991. Funds were sent to PM-TMDE to purchase the 0S291 oscilloscope, a test equipment modification item, during FY90. The contract option was issued in July 1990, with deliveries scheduled through May 1991.

The next phase planned for FY91, a TMDE counter and frequency calibration workstation, was postponed. A Notice to the Trade was issued in March 1990. Based on responses to that survey and other information from the U.S. Naval Observatory and from the Air Force, a decision was made in July 1990 to postpone this procurement to a later fiscal year.

Procurement Actions/Events

Much turbulence was experienced in the procurement program during the fiscal year because of uncertainties in the funding arena. Some procurements were delayed because of budget cuts, which were in some cases later reinstated. A significant cut that was not reinstated was a reduction of over $5 million, supposedly made as a result of the late award of the oscilloscope calibration workstation procurement. A concerted effort has been made to process procurements earlier so that awards can be made during the first two quarters of the fiscal year. Much improvement has been made, and USATSG was in better shape for positioning its procurement for early award than it had ever been.

Modification of Environmental Controls. The USATSG had been working for several years toward a contract for a modification of the environmental controls for several environmental enclosures located at reference laboratories. The contract was finally awarded to Control Solutions, Inc., on 19 July 1990. The contract funded work was to be performed at Tobyhanna Army Depot, Tobyhanna, PA, Aberdeen Proving Ground, MD, and Sacramento Army Depot, Sacramento, CA. In addition, it contained options for laboratories located at Letterkenny Army Depot, Chambersburg, PA, Picatinny Arsenal, NJ, Fort Greely, AK, and White Sands Missile Range, White Sands, NM. Work was to begin in December 1990. The options were to be exercised during FY91.

Five-Year Requirements Contract for Thermoluminescent Dosimetry (TLD) Badges and Hangers. For the very first time, a requirements contract was successfully awarded to Panasonic to provide TLD badges and hangers to be used by the Army Ionizing Radiation Dosimetry Center (AIRDC) in the Army dosimetry program. The initial contract was issued on 19 September 1990 for the purchase of 70,000 badges at a cost of $980,000 in Operations and Maintenance, Army (OMA) funds. Because of unanticipated losses and new

customers, as well as USATSG's inability to fund and purchase badges as needed, the dwindling supply of badges at AIRDC was causing concern about our ability to provide for the safety and health of Army personnel who were exposed to radiation. These badges were required to monitor radiation exposure rates of individuals. The award of this contract will allow us to quickly purchase additional quantities of the badges as funds become available.

FMS Procurement for the United Arab Emirates (UAE). During FY89 a procurement awarded for reference and transfer calibration sets for UAE was cancelled. Assets on hand were accepted on behalf of the country. A concerted effort was made to reprocure the balance of the equipment for the country as soon as possible. As a result, several procurements were awarded and delivered during FY90. One competitive procurement remained to be awarded and should be completed during FY91. The Environmental Systems, Inc. (ESI) contract that was cancelled was finally settled on 15 August 1990. While the USATSG was inventorying the equipment on hand at the contractor's plant, one of the subcontractors who had not been paid for his equipment (Weinschel Engineering) appeared with a court order and reclaimed most of the Weinschel equipment. To regain possession of that equipment, the Army sued Weinschel in the U.S. District Court. A final decision was issued on 4 May 1990, and the equipment was returned to the USATSG on 9 May 1990.

A $738,844 contract for a mobile calibration facility (MCF) for the UAE was awarded to Ellis & Watts on 15 August 1990. The contract included a van to house the UAE secondary transfer set, training, spare parts, and specifications for UAE to procure a truck tractor in UAE that will be compatible with the MCF. Specifications for the truck tractor were due by 15 October 1990, and delivery of the MCF in country was scheduled for March 1991.

USATSG Support of Operation Desert Shield

Selected Area TMDE Support Teams accompanied CONUS divisions deployed to Saudi Arabia. Other personnel from the 95th Maintenance Company and USATSG Headquarters were sent to Saudi Arabia to perform secondary reference calibration and assist AMC Forward.

GS-802 Conversion

The implementation of the Improved DA Concept for TMDE Support in the Continental United States from 1980 to 1985 resulted in USATSG personnel being permanently located at 60 different installations. With USATSG Headquarters at Redstone Arsenal, the MICOM Civilian Personnel Office (CPO) became the principal servicing CPO for USATSG's CONUS management element, the U.S. Army TMDE Support Activity-CONUS (USATSAC). Thus, the MICOM CPO provided primary guidance to USATSAC on all personnel matters, while local CPOs across the country administered routine personnel servicing such as recruitment, classification, training, and various other services.

Acting on MICOM CPO advice, USATSAC began converting its mixture of wage grade (WG) and general schedule (GS) classified personnel to GS. With nearly 90 percent of that task completed, USATSAC encountered opposition from two servicing CPOs which in 1986 resulted in a request for AMC intervention. This intervention ultimately led to an Office of Personnel Management (OPM) agreement in October 1988 that the most nearly appropriate classification standard was the GS-802 engineering technician standard.

Upon receiving OPM's decision, HQ AMC directed USATSG to begin converting all USATSAC civilian calibrators to GS-802 engineering technicians. The first step by USATSAC was to initiate a change to its table of distribution and allowances (TDA), completed in May 1989, to reflect only GS-802 requirements for its technicians. The task also involved the classification and implementation of 16 engineering technician

position descriptions which had been previously developed by USATSAC in factor evaluation system format and were sufficiently generic in terminology to satisfy most CONUS positions.

Concurrent with resolving the classification issue was a parallel and related action by USATSG to obtain total position classification and management by the MICOM CPO. The change was made to eliminate the past fragmented and diverse classification decisions which had actually caused the GS versus WG conflict. Civilian personnel servicing agreements with 59 servicing CPOs were modified to cover this consolidated classification provision and were distributed to the CPOs during August 1989. The effective date for the change was 6 October 1989. Except for a few supervisory positions to be converted before the end of FY90, the total GS-802 conversion task has been completed.

Logistics Support

The Logistics Directorate nominated the 523d Maintenance Company (TMDE) for the Army Award for Maintenance Excellence (FY89). The unit was selected as winner of the USATSG Commander's Award for Maintenance Excellence (FY89). In addition, the 2d Maintenance Company was nominated for the FY90 Supply Excellence Award. The Company won first place in the AMC competition and was the first runner-up in competition at the DA level.

Efforts continued in the review of excess equipment for turn-in to the Installation Supply Activity (ISA). During FY90 this effort resulted in a total of 946 lines of equipment being excessed to the ISA for a total dollar value of $821,779. In addition, efforts continue to cross-level excess equipment to fill shortages within the USATSG as well as the calibration schools prior to turning in equipment to supply support activities. The total dollar value cross-leveled during this fiscal year was $1,102,393.86.

In February 1989 AMC approved implementing a proposed model installation program (MIP) which allowed the USATSG Commander to approve lateral transfers to other activities both within and outside AMC. The 1-year evaluation has been completed. Fifteen equipment transfers were approved under the MIP which would have required DA approval according to regulatory guidance. A request is being prepared for a 5-year waiver that would allow the Executive Director, U.S. Army TMDE Activity, to approve these equipment transfers.

In an effort to dispose of obsolete or unserviceable depot stock, while assuring all usable assets were maintained, the Logistics Directorate reviewed 354 lines of equipment. This resulted in savings by disposing of the obsolete/unserviceable items no longer required. Other reviews included 173 materiel acquisition requests and the initiation and/or review of 48 engineering change proposals (ECP). These ECPs changed the configuration of the calibration sets to meet the current workload being supported by elements of USATSG.

Military interdepartmental purchase requests for the procurement of new nontactical vehicles were approved by the U.S. Army Tank-Automotive Command. A total of 21 vehicles for the 517th Maintenance Battalion and 6 vehicles for the 74th Maintenance Battalion were funded. USATSG received 89 percent of the total AMC funding for new nontactical vehicles. The total dollar value of funds received was $476,000.

The issue of the aging fleet of 5-ton vans remained a critical concern. In an effort to obtain relief prior to the year 2000, the current replacement year, a letter was forwarded to the Office of the Deputy Chief of Staff for Logistics, Department of the Army. This letter clearly stated the current vehicle posture and requested assistance in establishing a program to rebuild the M820A2 vehicles or to upgrade the Department of the Army master priority list sequence of the units for replacement with M939 series vehicles. A vehicle rebuild program was established at Lexington-Blue Grass Army Depot, Lexington, KY,

for the rebuild of eight M820A2 5-ton calibration vans, eight White calibration vans, and three truck-mounted air conditioners. The dollar value of the rebuild program was $888,000. This will provide continued support for the civilian teams and help upgrade the tactical vehicles for the military teams. Through coordinated efforts, tactical and nontactical vehicles were redistributed to Depot Systems Command, Far East. The dollar value of vehicles transferred was $158,000.

Data bases have been built for the reference calibration set, the calibration transfer set (AN/GSM-286), and the calibration transfer set (AN/GSM-287). These data bases provided several capabilities including the extraction of information for publication of the supply catalog/hand receipts and printing change pages as changes were made to the sets. New catalogs have been printed and distributed for all the calibration sets. Change pages were being printed and distributed to the field elements. This solved a long existing problem of outdated catalogs and significantly improved support to the elements.

The USATSG processed a loan agreement with CECOM for the AN/TPM-25A and AN/APM-305. These items will be needed at the Area TMDE Support Center (ATSC) at Tobyhanna Army Depot to calibrate the AN/APM-421. In addition, USATSG personnel finalized the agreement which established the ATSC-Tobyhanna as the first support site for the AN/APM-421, transponder test set.

A review and evaluation was performed on the missile automated test equipment modification, and suggestions for improvement and conformance with MIL-M-7298D (Commercial Off-the-Shelf Manuals) were provided to MICOM. Personnel met with MICOM maintenance engineers to arrange for the USATSG to assume maintenance responsibility for the Hawk special-purpose digital multimeter. This change permitted the Hawk Project Manager to cancel development of a test program set for repair of the digital multimeter, which meant over $300,000 in savings to the program.

Automated calibration procedures developed by field activities continued to be sent to the USATSG for approval. These were procedures developed for use on common fielded automated calibration systems. The procedures were reviewed for technical deficiencies and for compliance to authorized source documents. When validated, the procedures were included in the library of authorized automated calibration procedures and listed in the USATSG calibration procedure master list.

The USATSG generated 52 procedures to be added to the ROTEK John Fluke automated calibration system library. Also, the problem associated with developing software for PC type controllers was surmounted. In the past, the development of automated calibration procedures for PC-type controllers was always tedious and time-consuming and required the skills of a calibration technician proficient in programming. USATSG has developed a generic program generator (PROGEN II) to enable a technician not proficient in programming to develop an automated calibration procedure. An important additional benefit of using this program generator is the reduction of development time.

The procedures application list (PAL) data base was extensively purged to eliminate duplicate and erroneous data entries. The PAL was a compilation of technical calibration procedures developed over the past 20 years by DOD and equipment manufacturers. Equipment specialists have identified items in the current Army calibration standards set that can be substituted for standards required by the procedures listed in the PAL. The PAL is now a more comprehensive and useful tool than it ever was during its entire 20-year history. The PAL will no longer be available in printed form; however, its data base is readily available on the Sperry system.

The USATSG responded to an urgent field request to develop a calibration procedure for the Barfield pilot static tester. This procedure was written and evaluated at Fort Bragg, NC, and fielded within a 2-month timeframe.

Security Assistance

During FY90 the Security Assistance Division, Logistics Directorate was actively involved in foreign military sales (FMS) cases for 11 countries, valued at $22.1 million. Projected FMS cases valued at $3.9 million for seven countries were in varying stages of approval or acceptance.

The Security Assistance Division provided guidance and information to all previous and current FMS customer countries regarding the modernization of the U.S. Army's transfer and secondary reference calibration sets. These calibration workstations provided automated calibration capability as well as greater versatility and increased accuracy in calibrating conventional TMDE in the field. These workstations replaced several older model calibration standards and items of TMDE currently in use.

In addition, the Security Assistance Division provided various services under existing FMS cases. Calibration equipment purchased under FMS case TC-B-UBH for the UAE was shipped. Approximately 60 percent of reference set line items and 53 percent of transfer set line items were shipped. Fielding of this equipment was completed 11 September 1990. Technical assistance was also provided to the country throughout the year.

The Government of Jordan took the necessary action to extend the period of performance for higher level support under FMS case JO-B-VKY. Also, FMS case JO-B-VIP was amended to add the core workstation, signal generator workstation, and the digitizing oscilloscope to the Jordanian calibration facility.

Technical assistance to Egypt under FMS case EG-B-UIR was suspended until the delivery of equipment purchased under this case. Equipment delivery was anticipated by mid-1991. In addition, eight Egyptian officers attended a 3-week calibration familiarization course at Redstone Arsenal in July 1990.

Higher level support to Saudi Arabia under FMS case SR-B-VDD was completed 23 February 1990.

USATSG continued to support the Government of Japan for their annual Hawk firing exercise conducted at White Sands Missile Range, through FMS case JA-B-VWW. Also, calibration and repair support was provided in-country by the Area TMDE Support Center-Japan under FMS case JA-B-VXO.

A letter of offer and acceptance was mailed to the Government of Pakistan. This projected case was for more than $1 million in TMDE and parts and several man-years in technical assistance and engineering support.

The Joint U.S. Military Assistance Group (JUSMAG), Manila, contacted the Security Assistance Division regarding modernization of the Philippine Air Force precision measurement equipment laboratory. The JUSMAG will request planning and review data preparatory to requesting a letter of offer and acceptance for an as yet undetermined quantity of core, signal generator, and oscilloscope workstations.

Ongoing calibration and repair support for equipment belonging to the Government of Honduras was provided by the TMDE Support Center-Panama under FMS case HO-B-UNJ.

Periodic support to the United Kingdom for a specific list of calibration equipment belonging to the British Army stationed in the Federal Republic of Germany, was provided under FMS case UK-B-WBG. This support was provided by the 521st Maintenance Company in Schwanheim, Germany.

Calibration and repair support for equipment belonging to the Republic of Korea was provided by elements of the 74th Maintenance Battalion under the provisions of FMS case KS-B-YGP.

New Equipment Training (NET)

New equipment training personnel conducted classes during this period for a total of 250 students. The primary courses were the Calibration Standards Refresher Course, Tactical Army Combat Computer System/Calibration Management Information System (TACCS/CALMIS), and Cardiopulmonary Resuscitation (CPR). Six instructors were certified as multi-media first aid instructors, which has enabled the CPR course to be expanded to include first aid training.

Personnel developed an exportable training package for TMDE support coordinator training. A hard copy lesson plan was prepared and distributed to the field in May 1990. With the assistance of the AMC NET video facility at St. Louis, a package of four video training tapes was produced for use in conjunction with the lesson plan. These tapes were distributed via the Army training and audio-visual support system.

A special training class was prepared and conducted on the laser test set calibrator (LTSC). The training was conducted during the period from 20 to 31 August 1990, with an inoperative LTSC being repaired and calibrated. Four personnel from the 74th Maintenance Battalion were trained and certified for the use and repair of the LTSC.

U.S. Army TMDE Support Activity-CONUS (USATSAC)

The realignment of the USATSAC came as a direct result of the Base Realignment and Closure Act and DMR Initiative 927E. Mission and function statements, a proposed TDA, and organizational charts were prepared and submitted to the TMDE Activity organization planner for inclusion in the overall reorganization package. Regional boundaries were established and all USATSAC TMDE Support Centers were pre-aligned into the four regions to reflect the organizational structure submitted in the TDA. The four regions were in the process of being established at Letterkenny, Redstone, Sacramento, and White Sands. Until the regional staffs and managers were in place to assume control, an alignment of personnel management, budget distribution, and CALMIS reporting was temporarily set up under the USATSAC Eastern and Western Divisions. This step will facilitate the final objective of splitting into the four separate entities in an orderly manner and with a minimum of turbulence.

A study was conducted during the period 11-20 April 1989, to determine whether it would be more cost effective to establish a permanent calibration support facility at Fort Irwin, CA versus procuring calibration support from the Marine Corps Logistics Base at Yearmo, CA. Since 1986 the density of TMDE had increased by 78 percent and the cost by 148 percent. During the February 1989 Army Audit Agency inspection, findings showed that controls were not adequate to ensure that the calibration of TMDE was in accordance with governing regulations. The study reflected that a savings in excess of $500,000 would be realized over a 5-year span, thus the decision was made to establish a U.S. Army Calibration Laboratory at Fort Irwin to become operational on 1 October 1990.

Beginning 1 October 1990 TMDE support responsibility for Alaska, including the 6th Infantry Division, will be assigned to the 74th Maintenance Battalion (TMDE). Two fixed USATSAC facilities located at Forts Wainwright and Greely will be transferred. The workload in Alaska was predominately field Army TMDE that was remotely separated from the contiguous United States and was not unfamiliar to 74th Maintenance Battalion personnel.

Personnel from the USATSAC participated in 11 U.S. Army Forces Command (FORSCOM)/U.S. Army Training and Doctrine Command (TRADOC) aviation resource management survey (ARMS) inspections during FY90. Overall, a total of 89 organizational units were surveyed during this period. These inspections were performed to assess the effectiveness of the TMDE management programs at

FORSCOM/TRADOC aviation activities to ensure that aircraft safety and mission requirements were being accomplished. Major areas of TMDE program review for compliance included publications, adherence to regulatory requirements, proper upkeep of the instrument master record file, adequacy of TMDE to meet mission requirements, and management of temporarily stored TMDE. The overall assessment of aviation TMDE programs was good, with high equipment availability evident and TMDE delinquency rates well within the Department of the Army established goal.

Soldiers assigned to the TMDE Support Center-Panama (TSC-Panama) saw action during Operation Just Cause. While attached to the 41st Area Support Group (ASG), and during the initial phases of the invasion, these soldiers performed duties as perimeter security for the 41st ASG Headquarters building. In the days following the invasion, TSC-Panama soldiers performed humanitarian duties at one of many refugee centers. After release from these duties, they worked around-the-clock shifts to alleviate the backlog of work incurred as a result of the invasion. Several TSC-Panama soldiers received awards for their performance of duty during Operation Just Cause.

In July 1990 the Federal Aviation Administration (FAA) representatives for the Southwest Region Office Headquarters, Washington, D.C., Pacific Northwest Region, and the Alaska Region met with USATSAC personnel to express their interest in having the Army provide them with calibration support because they were having trouble with the current support provided by a contractor. As a result of the meeting, ISAs were prepared and submitted to each of the three regions. The FAA workload was estimated to equate to 12 man years, which would net approximately $742,824 reimbursable dollars. Negotiations were finalized and the ISA signed with the Alaska Region for TMDE Support Operation-Fort Lewis (TSO-Fort Lewis) to start providing the calibration support on 1 October 1990. The Pacific Northwest Region was expected to be finalized immediately and work to begin thereafter. The Southwest Region support was pending resolution of the federal budget.

74th Maintenance Battalion (TMDE)

The Commander of the 74th Maintenance Battalion was LTC Charles McKenzie, who assumed that position in June 1990. A directed mandate to withdraw troop strength from the Korean peninsula was received from the AMC Commander. It was proposed that the Headquarters, 74th Maintenance Battalion (TMDE), be withdrawn and relocated to a CONUS West Coast installation, preferably Fort Lewis, WA.

The movement and reorganization of the 74th Maintenance Battalion from Korea to Fort Lewis presented a unique challenge to the command structure. A temporary infrastructure was required to preclude discontinuance of the usual battalion level support to the 2d Maintenance Company and its subordinate detachments on Okinawa, Japan, and Hawaii. Another consideration was the potential issue of turbulence in customer support brought about by the relocation of the battalion headquarters. To resolve this challenge, a civilian liaison position was added to the battalion's structure, and stationed in the Republic of Korea with responsibility for interfacing the interim battalion command element and the 2d Maintenance Company along with detachments in Japan and Okinawa.

On 1 October 1990 the battalion's mission was to be expanded to include the responsibility for the 95th Maintenance Company's FORSCOM divisional support detachments and Area TMDE Support Team-Alaska (ATST-Alaska). Command and control of these additional elements will be exercised from the battalion's new location.

95th Maintenance Company (TMDE)

The command philosophy of CPT James J. Kolasinski, Commander of the 95th Maintenance Company, emphasized missions, training and community/family activities. The mission culminated with two major

events--participation in Operation Desert Shield and reassignment to the 74th Maintenance Battalion (TMDE).

Training for the Company Headquarters, Redstone Arsenal, was highlighted with a successful emergency development readiness exercise in conjunction with a field training exercise (FTX) from 25-28 June 1990. During the year, three qualification ranges were conducted. In October 1989 at Fort McClellan, AL, personnel qualified on the M16 rifle and familiarized themselves with the M60. In March 1990, at Redstone Arsenal, personnel qualified on the M16 rifle, familiarized themselves with the M60, and conducted a nuclear, biological and chemical (NBC) chamber exercise. In September 1990, at Redstone Arsenal, personnel qualified on the M16 rifle and .45 pistol; familiarized themselves with Mission Oriented Protective Posture (MOPP) 4,[4] firing, and night firing; and conducted an NBC chamber exercise. Unit detachments conducted FTXes and range qualifications with their units of attachment.

Operation Desert Shield began for the Company on 3 August 1990. Company teams and laboratory deployments were made from Redstone Arsenal, AL, Fort Hood, TX, Fort Bragg, NC, Fort Campbell, KY, and Fort Stewart, GA. Additional personnel from Redstone Arsenal were deployed to fill other unit vacancies. The company continued to provide logistical support to its deployed elements.

Executive Director for Conventional Ammunition

Organization and Manpower

The Office of the Executive Director for Conventional Ammunition (EDCA) was reorganized during FY90 as a result of a continuing HQ AMC reorganization. Two divisions, the Logistics Base Division and Production Base Division, were combined into a single division, the Production and Logistics Division. The third division, Plans and Programs, remained unchanged. The authorizations for the Office of the Executive Director remained the same: 6 military and 11 civilian spaces.

The Executive Director was LTG Marvin D. Brailsford, who was dual-hatted in that function in addition to serving as AMC's Deputy Commanding General for Materiel Readiness. He assumed these duties vice LTG Fred Hissong, Jr. The Deputy Executive Director for Conventional Ammunition was COL Kenneth W. Pastore, U.S. Air Force.[5]

Conventional Ammunition Working Capital Fund (CAWCF)

The CAWCF was a working capital fund used for the procurement of ammunition components and for the assembly of components into conventional ammunition. Funds for the CAWCF came from customer procurement funds, with the customers including the DOD military services, other non-DOD U.S. customers, and foreign military sales. Management improvements in the CAWCF again resulted in an obligation rate that exceeded the directed rate of 82.3 percent under Program Budget Decision (PBD) 450, dated 9 November 1989. The overall obligation performance rate was lower than the previous year's 85 percent, due solely to the receipt of $516 million in Foreign Military Sales (FMS) orders. The planned FMS orders

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[4]MOPP 4 refers to the complete protective outfit worn by the soldier and includes the chemical suit, boots, gloves and mask.

[5]Information on organization was derived from December 1990 organization chart and AMC AHR, FY89.

should have totalled only $239 million. Since FMS orders are generally obligated at a slower rate, FY90 obligations did not meet those achieved in FY89. Service obligation rates were as follows: Army, 90.2 percent; Navy, 91 percent; Air Force, 85 percent; and Marine Corps, 96.7 percent.[6]

AMCCOM developed a sales (deliveries) plan for the CAWCF in March. As of 30 September 1990, the sales plan called for a total of $3,357 million. Actual sales were $2,965 million, resulting in a shortfall of $392 million.

PBD 450 had also directed the Single Manager for Conventional Ammunition (SMCA) to initiate aggressive action to reduce the unfilled order backlog and to shorten ammunition procurement lead times. Although improvements were made during FY90 on the prior year (FY82-FY86) orders, the reported delinquency was worse for FY90 than for the prior two years. It should be noted that the USAF FY84 program increased from $21.8 million as of 30 September 1989 to $27.1 million as of 30 September 1990. Furthermore, AMCCOM requested and received an additional $6 million from the USAF to rework the Solar Flame production for the cartridge 40mm HEI PGU-9 A/B, 1310-B549. EDCA noted that prior year backlogs (FY82-FY86) of delinquent order deliveries were improving, but that there were still problems in deliveries.

AMCCOM, in response to the CAWCF Acquisition Decision Memorandum (ADM), May 1989, had requested approval from the Office of the Secretary of Defense (OSD) on several initiatives to improve CAWCF efficiencies. OSD approved reprocurement before termination of a contract with a contractor in bankruptcy proceedings, and agreed to treat CAWCF customer orders in the same manner as orders placed with stock funds, but did not approved limited contract authority.

DMRDs 936 (Army), 937 (Navy), and 938 (Air Force) were issued in November 1989, directing a "Stabilized Rate Policy" for the CAWCF. Projected savings from this initiative were subsequently reduced from the Services' budgets. Implementation was to begin on 1 October 1990. All DOD FY 82-92 prices were stabilized or fixed, except FY91 non-standard prices, which were to convert to fixed standard on 1 October 1991. Any price changes were to be approved by OSD through the CAWCF Management Council. EDCA reported that all DOD future year prices were to be priced at the fixed standard. The office also noted that factors such as the declining ammunition procurement budgets for all services might have an effect on stabilized pricing. They pointed out that the situation needed to be monitored to ensure established pricing policies were not detrimental to the operation of the CAWCF.

Defense Standard Ammunition Computer System (DSACS)

DOD Directive 5160.65 required that there be a centrally maintained DOD-wide automated data system covering the SMCA logistics functions. During FY90, DSACS was under continuing development to meet this requirement. In the course of development it had been expanded to include acquisition and financial aspects. When fully implemented, DSACS will provide a dedicated automated information system capable of networking with the Services' installations.

The severe funding constraints of FY89 continued into FY90. Verification and Validation (V&V) testing continued for the so-called "Big Four" modules, or subsystems, supporting the SMCA acquisition functions. These modules were developed using a "rapid Prototyping" methodology. The V&V testing

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[6]The remainder of this chapter, unless otherwise stated, is taken from the Executive Director for Conventional Ammunition's FY90 Annual Report, *Progress and Status of the Single Manager for Conventional Ammunition.*

revealed defects requiring many engineering change proposals (ECPs). The ECPs continued to increase and funding became more constrained, so that successful completion was questioned.

The Joint Logistics Review Committee (JLRC) chairman called for an independent review of the DSACS with four objectives:

1) Identify the system baseline and its relation to the baseline approved in system documentation;

2) See if current funding and development schedule permitted fielding of the Big Four by the end of FY91;

3) Determine if the "bare bones" configuration satisfied minimal user requirements; and

4) Identify resources needed to overcome deficiencies or shortfalls related to the second and third objectives.

The independent review revealed that the approved systems baseline had not yet been achieved and that deficiencies existed in configuration management, quality assurance, and systems documentation. In addition, while the functional requirements were included in the Big Four, inefficient coding made for slow performance and high software maintenance costs. On the positive side, the review found that the systems hardware and telecommunication portions of DSACS were very good, and many of the DSACS modules operated as planned.

The review team offered two alternative solutions. The one preferred by the team called for freezing design at Release 90.01, recoding the Big Four, and correcting the configuration management, quality assurance, and systems documentation defects. This was estimated to cost about $6 million and take three and a half to four years to develop, test and install. It was estimated that systems maintenance for this option would equal 3.8 man-years per year. The second alternative was to continue current development to bare bones configuration and correct the deficiencies noted. This was estimated to cost about $10 million over a three to five year period. Systems maintenance was estimated to require 39.2 man years per year for this option because of a higher incidence of "bug" fixes. The advantage to this option was the ability to scale down activity to the level of available manpower and funding. The ultimate cost was projected to be greater for the second option.

FY90 DSACS funding totaled $1 million, although $7.2 million was required. As the year closed, FY91 funding was planned at $210 thousand to support a "minimum operating level." This would not provide development support, however. The Headquarters AMC Resources Allocation Committee (RAC) and JLRC were seeking to determine the priority for DSACS support and the least costly way to make the corrections. The DSACS Manager was examining alternatives to work around the problem so that some progress could be made with available resources. In the meantime, an examination of existing utilities used at AMCCOM and the various military services was being done by the DSACS Manager.

EDCA concluded that nearly 60 percent of all DSACS programming worked well. The four acquisition related modules would require time and resources to complete; if not, existing utilities or enhancements could be made to meet the need. In this event, there would be some inefficiencies, however. EDCA pointed out that DSACS will have to compete for resources with other systems based on priority and the likelihood for success.

Ammunition Maintenance

The Integrated Conventional Ammunition Maintenance Plan (ICAMP) was used as the coordinating mechanism for the services' major ammunition maintenance planning. FY90 marked the plan's eighth year.

Major Maintenance. As a result of the ICAMP process, the SMCA recommended program changes for 50 percent of the major maintenance requirements on 126 ammunition items submitted by the military services. The services accepted 90 percent of the SMCA recommendations (compared to 85 percent of the changes the year before). The procurement program was adjusted to accommodate these recommendations and significant economies of scale and schedule were realized.

The Army and the Navy continued to have the largest ammunition maintenance backlogs. The Army and the Air Force backlogs were most volatile in that large parts of these backlogs were generated or identified during the execution year. The Army and the Marine Corps backlogs were reduced between FY90 and FY91 by maintenance and reclassification. Some operationally required stocks were identified as not economically repairable and were moved to the demilitarization account.

At the end of the fiscal year, the EDCA's projections indicated that the services' FY91 major maintenance plan (see below) will accomplish approximately 15 percent of the requirement carried forward from FY90. The EDCA stated that the backlog generated in FY91 will probably exceed this 15 percent and the net major maintenance backlog will grow.

TABLE IV - 3: Major Maintenance Backlog

	PLANNED	COST	% OF BACKLOG
Army	15.6 ST	$28.0M	24.3
Navy	3.5	3.8	5.0
Air Force	5.7	10.9	5.5
Marine	5.6	3.7	8.5
TOTAL	30.4 ST	$46.4M	14.9%

Minor Maintenance. This category of maintenance consisted of the care of ammunition in storage, and was accomplished with OMA funds. The long downward trend in the minor maintenance backlog was reversed after FY88. Starting in FY89, due to a shortage in OMA funds, the amount of minor maintenance generated exceeded the amount eliminated, causing a growth in backlog. The EDCA also pointed out that, pending significant changes in the distribution of the stockpile between CONUS, Europe and the Middle East, the major maintenance backlog would remain relatively constant in the next year.

Ammunition Supply

Since the inception of the Single Manager for Conventional Ammunition, gains had been made in inventory and supply performance. This continued in FY90 despite base closures, compounded by a reduced work force and reduced funding. The release of materiel to satisfy customer requisitions remained the first supply priority during FY90. The Materiel Denial Rate continued its steady improvement, as it had since FY88. This performance, EDCA pointed out, was oftentimes maintained at the price of diverting scarce resources from supply support missions to accomplish critical issues and receipt missions.

For FY90, all measures of inventory accuracy met or exceeded the Department of Defense goals. Comparative figures for FY88, FY89, and FY90 are shown in the table below:

TABLE IV - 4: Inventory Accuracy Figures

INDICATOR	FY88	FY89	FY90	GOAL
Materiel Denial Rate	1.4%	1.2%	0.9%	<= 1.0%
Inventory Variance Rate	4.0	0.2	0.3	<= 5.0
Post/Stow on Time	94.5	90.8	94.2	>=90.0
Location Reconciliation	88.7	99.2	*	>=98.0
Location Accuracy	99.2	98.0	9.2	>=98.0

* The Location Reconciliation for the third quarter was not reported due to a modification to the Commodity Control Standard System. The indicators for the 1st, 2nd, and 4th quarter of FY90 were 99.8, 95.0 and 99.2 percent, respectively (averaging 98 percent for those quarters).

The EDCA stated that overall, supply performance indicators for FY90 were sound. However, supply operations continued to be underfunded. In fact, only 65 percent of the requirement was funded. The EDCA warned that major supply performance indicators would probably decline in the future if resources were again diverted from supply support missions such as surveillance and minor maintenance.

Ammunition Demilitarization

In FY90, demilitarization of conventional ammunition continued to be a serious and unsolved problem. Since 1977, the Army had been the ammunition single manager, and had inherited a 138,000 short-ton backlog of ammunition requiring demilitarization. In 1986 a blue ribbon panel had developed a seven-year demilitarization program to reduce the backlog to 40,000 tons by FY93. This program would have required approximately $30 million per year. The program was not executed, however, and the demilitarization stockpile continued to grow through the end of FY90.

As of the end of year the EDCA was planning to halt the growth of the backlog through an annual program costing $15 million. An estimated $7 million per year in operations and support funds would be required to sustain the backlog. Without continued funding, the demilitarization backlog could grow to 290,000 short tons by FY94. The EDCA warned that delaying disposal of excess explosives would pose increasing cost and safety risks. Additionally, the EDCA pointed out that changes in environmental regulations could significantly increase demilitarization costs.

Starting in FY92, demilitarization was to be financed from Procurement Ammunition, Army (PAA) appropriations. The EDCA believed that this would provide visibility, flexibility and additional emphasis to the demilitarization program.

Ammunition Production Base Restructuring

The ammunition production base consisted of Government Owned-Government Operated (GOGO), Government Owned-Contractor Operated (GOCO), and Contractor Owned-Contractor Operated (COCO) production facilities. Driven by declining peacetime budgets and resulting procurement requirements for conventional ammunition over the past several years, the production workload for the existing government-owned base in turn declined. Noting this, and with overhead support costs becoming increasingly untenable,

the Single Manager embarked on a major effort to restructure the government-owned production base, beginning in FY90.

Two closely related studies, completed in FY88 and FY90, developed alternatives for a more cost effective production base configuration. The second study, which was directed by the Secretary of the Army, was expected to be approved by the Under Secretary of the Army in early FY91. *See Figure 1 (page 295) for a summary of the study's findings.* The EDCA noted that the ability of the Single Manager to produce ammunition while effectively executing this complex consolidation hinges on sustained emphasis and support within DOD and Congress throughout the 1990s. The EDCA also pointed out that timely procurement and proper funding were essential for the execution of each phase of the consolidation.

Integrated Conventional Ammunition Procurement Plan (ICAPP)

The SMCA produced the ICAPP on an annual basis to serve as an integrated and analyzed compilation of the services' conventional ammunition procurement programs. The plan is provided to OSD budget analysts at the time of the Budget Estimate Submission (BES) and is used in their review of the Services' Consolidated Conventional Ammunition program. The ICAPP consists of five parts: Executive Summary, EDCA Analysis, Ammunition Procurement Plans, Industrial Base Investment, and Ammunition Plant Workloading.

The most recent ICAPP covered the FY90-97 period. The EDCA pointed out that the total DOD conventional ammunition programs had reduced from the FY85 high of $3.8 billion to about $1.8 billion in FY97. The projected allocation of program totals by service for the FY90-97 ICAPP were as follows: Army, 56 percent; Navy, 18 percent; Air Force, 16 percent; and Marine Corps, 10 percent. According to the EDCA, stockpile modernization was projected by the FY90-97 ICAPP, but at a reduced rate. Investments in the production base were to be dramatically reduced, and restricted to safety, environmental, and security projects in the "must-fund" category. During the period covered by the latest ICAPP, just over $795 million was planned for Industrial Base Investment.

Changes to Funding of SMCA Operations

During FY90, the DOD Office of the Comptroller recommended the establishment of one Program Element (PE) for conventional ammunition to provide a more efficient and effective means of budgeting and controlling ammunition funds. Effective in FY92, all OMA support for ammunition was to be in PE 728041 under P7S Central Supply. This would capture all functions currently scattered among many P7S program elements such as Supply Depot Operations, Supply Management Operations, Central Procurement Activities, etc. These would come under two Management Decision Packages (MDEPs): one for SMCA conventional ammunition, and the other for non-SMCA conventional ammunition. Under this concept, HQ AMC's Deputy Chief of Staff for Ammunition (DCSA) would have total authority for budgeting and controlling P7S ammunition funding.

As of the end of FY90, the Army Budget Office still worked with the AMC Deputy Chief of Staff for Resource Management (DCSRM) or Deputy Chief of Staff for Supply, Maintenance and Transportation (DCSSMT) on ammunition budget issues. Beginning in FY92, however, they were to work with DCSA. While HQ AMC concurred with establishing one PE for conventional ammunition operations, the EDCA believed that separate point accounts must be established to coincide with the seven definitive ammunition management disciplines. The EDCA stated that separate point accounts were necessary to allow AMC the flexibility required to accurately assemble, defend, and manage detailed requirements. The EDCA worked with DCSA during FY90 to establish the separate point accounts and coordinate with AMCCOM and high headquarters.

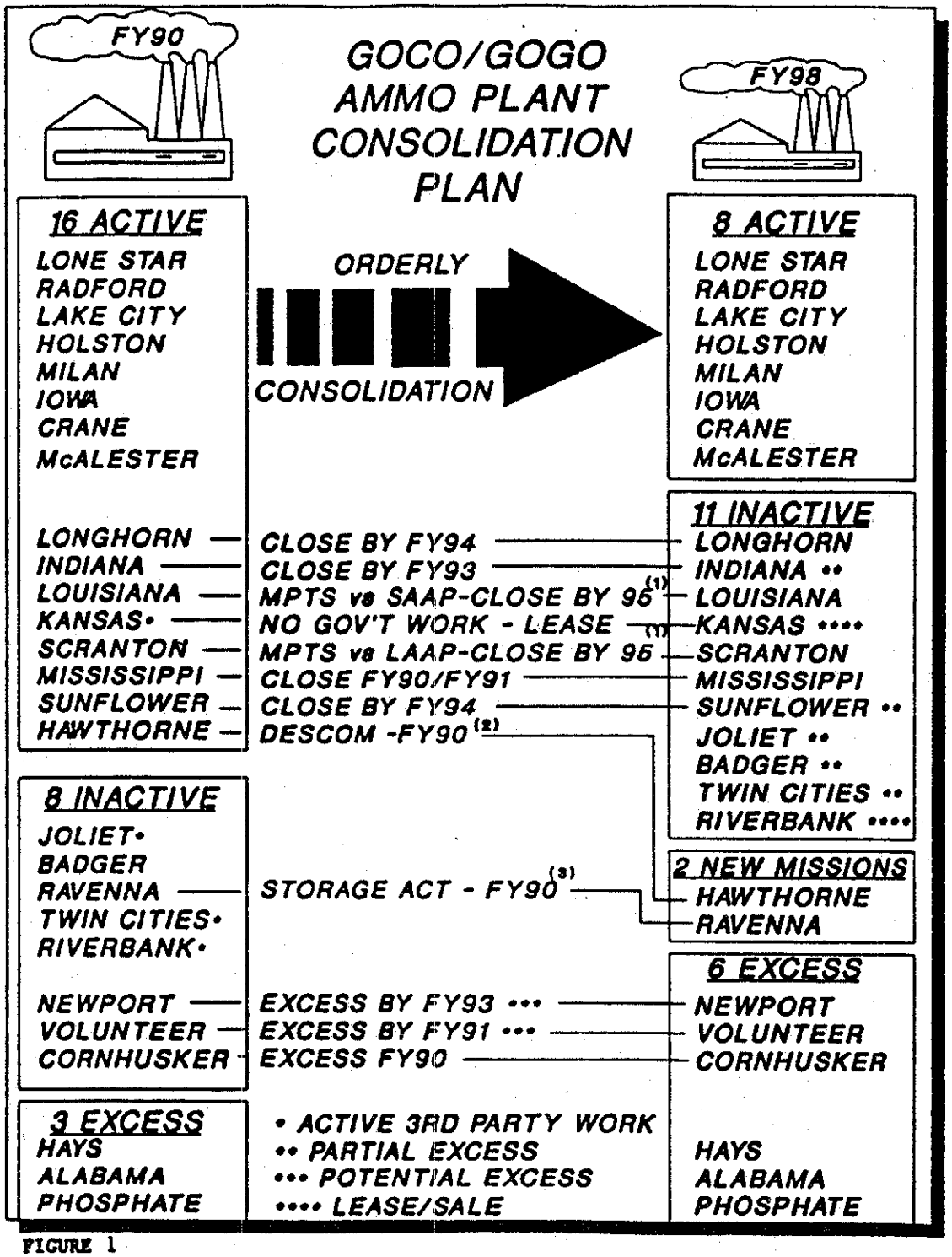

FIGURE 1

(1) Louisiana AAP competes with Scranton AAP for outyear metal parts (MPTS) production. Loser closes in FY 94, winner in FY 95.

(2) Becomes a depot activity under DESCOM in FY 90/91.

(3) Becomes an industrial storage activity.

Special Assistant for Joint Activities

The Office of the Special Assistant for Joint Activities was responsible for the actions involved in the quarterly meetings of the Joint Logistics Commanders (JLC), which included key logistical commanders from the Air Force, Army, and Navy as principals and had high ranking members of the Defense Logistics Agency and the Marine Corps as guests. The FY90 meetings were held at Kelly Air Force Base, Texas, from 5-7 December 1989; at the Naval Air Test Center, Patuxent River, Maryland, from 13-14 March 1990; at the Arnold Engineering Development Center at Arnold Air Force Base, Tennessee, from 13-14 June 1990; and at Sacramento Air Logistics Center, McClellan Air Force Base, California, from 11-13 September 1990.[7]

U.S. Army Materiel Command-Europe

Manpower and Key Personnel

At the start of FY90 the manpower authorization for HQ AMC-Europe was 82 civilian and 25 military positions for a total work force of 107 personnel. By fiscal year's end, there were 90 civilian and 25 military positions for a total of 115 manpower authorizations. The increase resulted from the authorization of civilian positions for the European Aviation Classification Repair Activity Depot (AVCRAD) in Brussels, Belgium.[8]

Colonel (P) Harvey E. Brown, for commander of the III Corps' 13th Corps Support Command,[9] assumed command of AMC-Europe on January 9, 1990. He accepted the command from COL Carl N. Price, Chief of Staff, AMC-Europe. Colonel Price had been acting commander since August 1989 when then Brigadier General Joseph S. Laposata had left AMC Europe to become the Deputy Chief of Staff for Logistics for the United States Army Europe (USAREUR).[10] General William G. T. Tuttle, Jr., passed the guidon to COL Brown in a ceremony held at the Hammonds Barracks Gymnasium. Included in the ceremony were troops from the 517th Maintenance Battalion Test, Measurement of Diagnostic Equipment (TMDE), the Wackernheim Military Police Company, Mainz Army Depot, and the Headquarters Detachment, AMC-Europe. Colonel (P) Brown was promoted to brigadier general on August 1, 1990 during an honors ceremony held at HQ, U.S. Army Materiel Command in Alexandria, Virginia.

The Deputy to the Commander, Mr. Joseph Lowman, transferred on 25 November 1989 and was replaced by Mr. Richard Roane who arrived on 1 February 1990. Mr. Roane had previously been the

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[7]For the details of these meetings, see the following documents which comprise the Office of the Special Assistant for Joint Activities historical submission for FY90: MEMORANDUM FOR THE RECORD, Subj: Joint Logistics Commanders' Meeting, 13 Dec 89; MEMORANDUM FOR THE RECORD, Subj: Joint Logistics Commanders' Meeting, 26 Mar 90; MEMORANDUM FOR THE RECORD, Subj: Joint Logistics Commanders' Meeting, 23 Jul 90; MEMORANDUM FOR THE RECORD, Subj: Joint Logistics Commanders' Meeting, 28 Sep 90.

[8]Unless otherwise noted, the data in this section is taken from the AMC Europe Historical Submission for FY90.

[9]For a biographical sketch of Col Brown see "Brown is new AMC-E commander," AMC-Europe's *News Dispatch*, March-April 1990.

[10]Ibid.

Executive Director at Letterkennny Army Depot and had also been involved for several years in establishing the contract to operate the Mainz Army Depot.[11] The Chief of Staff, Colonel Carl Price transferred on 14 June 1990 and was replaced by Colonel Stephen Etzel, formerly the Commander of Letterkenny Army Depot,[12] who arrived on 1 August 1990.

Other Command Group changes included the transfer of the Secretary to the General Staff, Captain Donald Chrans, on 7 May 1990 and his replacement by Major Andrew Chmar who arrived 1 May 1990. The Staff Judge Advocate, Lieutenant Colonel Thomas Burns, transferred on 6 June 1990 and the position remained vacant for the rest of FY90. The Inspector General, Major Steven Medaglia, transferred on 31 May 1990 and was replaced by Lieutenant Colonel Jerry Hill who arrived 15 June 1990 and was subsequently assigned to a special project and appointed Chief, Conventional Forces Europe on 4 September 1990. Mr. Rockwell Gerlach was appointed interim Inspector General as of 5 September 1990.

The Directorate for Materiel Fielding had one key personnel change in FY90. The Chief, Force Analysis Division, Mr. James Folk, transferred on 11 August 1990 and MAJ Samuel Prestipino was assigned to the position on 1 June 1990. The Directorate for Supply, Maintenance and Transportation also had one key personnel change in FY90. The Chief, Procurement Office, Mr. Daniel Schwemmer, transferred on 21 October 1989 with the position remaining vacant through the end of the fiscal year.

The Directorate for Resource Management had several key personnel changes in FY90. The Director for Resource Management, Mr. William Harris, transferred on 3 February 1990 and was replaced by Ms. Ruth Lilley on 20 May 1990. The position of Chief, Force Management Division, formerly held by Ms. Lilley, remained vacant through the end of the fiscal year. The position of Chief, Program/Budget Division, which was vacant at the start of FY90, was filled by Mr. John Petersen who arrived on 2 December 1989.

The Security, Plans and Operations Office Chief, MAJ Richard Bell, transferred on 11 January 1990 and was replaced by LTC James Gray. The Headquarters Detachment also had one key personnel change in FY90. The Commander, Headquarters Detachment, CPT Neil Heckman, transferred on 10 April 1990 and was replaced by CPT Glennys Warsocki who had arrived on 3 April 1990.

The U.S. Army Logistics Assistance Office Europe (LAO-E) had several personnel changes during FY90. MAJ(P) Mary C. Kimmel, Chief, Readiness Division, departed LAO-E in October 1989, to assume duties as the Senior Command Representative for the U.S. Army Tank Automotive Command, AMC-Europe, Seckenheim, Germany. She was replaced by Mr. Raymond J. Coffman. Mr. William R. Coleman joined LAO-E in January 1990, as Chief, Support Division. In March 1990 CPT(P) Jaun R. Garcia departed LAO 11th Army Cavalry Regiment (ACR), Fulda, Germany to assume duties at the 4th Infantry Division Replacement Detachment, Fort Carson, Colorado. Mr. William W. Vaughan departed LAO-E as Chief, LAO-West in April 1990 to assume duties as Chief, U.S. Army Logistics Assistance Office, Central, Fort Hood, Texas. Mr. Geoffrey B. Embrey replaced Mr. Vaughan.

MAJ Martin T. Utzig, Chief, LAO 32nd Army Air Defense Command (AADCOM), left LAO-E in June 1990 to attend the U.S. Army Command and General Staff College, Fort Leavenworth, Kansas. CPT(P) Wayne A. Palm replaced MAJ Utzig. Mr. Thomas E. Billings, Chief, LAO-E Central, departed in May 1990 to assume duties as Chief, LAO-West, Fort Lewis, Washington. LTC Stephen G. Kore, Chief, LAO 2nd Corps Command Support (COSCOM) Nellingen, Germany departed in July 1990 and retired from

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[11]"Roane is new deputy at AMC-E," *News-Dispatch*, March-April 1990.

[12]"COL Etzel is new AMC-Europe Chief of Staff," *News-Dispatch*, Aug-Sep 1990.

service. LTC Gil Goodman joined LAO-E in September 1990, as Chief LAO-2nd COSCOM. In August 1990, COL Wimpy D. Pybus, Chief, LAO-E, departed to Washington, D.C. to assume duties at the Pentagon. Mr. Hardie Lequire, Deputy Chief, LAO-E assumed duties as the Acting Chief.

In August 1990, LTC Ernest K. Zelenka, Chief, 3rd COSCOM, assumed duties as Chief, Readiness Division, in the absence of Mr. Raymond J. Coffman. On 24 August 1990, Mr. Coffman and Mr. Dana E. Thorpe, Logistics Management Specialist, Support Division, deployed to Saudi Arabia in support of Operation Desert Shield. Mr. Coffman and Mr. Thorpe were assigned 90-120 days temporary duty with AMC-Forward in Daharan, Saudi Arabia.

Removal of Chemical Munitions from Germany

An issue with high level interest and visibility was the removal of chemical munitions from the Federal Republic of Germany (FRG). As directed by the President George Bush and agreed to by Mr. Helmut Kohl, Chancellor of the Federal Republic of Germany, the removal of Chemical Munitions in Germany was to begin in 1989 and be completed by September 1990.

Mainz Army Depot was chosen as contractor to produce 5,680 steel containers to pack the chemical munitions to be removed from FRG. Mainz began producing the containers in June 1989 and completed production on 22 August 1990. Mainz Army Depot was also chosen as the contractor to repair MILVANs to meet the International Maritime Dangerous Goods (IMDG) standards for shipment to Johnston Island. The total requirement was for 600 MILVANs to meet the IMDG standards. The Mainz contract was to repair 350 of the 600 MILVANs. Mainz met the required delivery date, July 1990.

AMC-Europe monitored both contracts at Mainz and participated in the acceptance testing for the steel containers. AMC-Europe worked closely with AMCCOM, Savanna Army Depot and Aberdeen Proving Ground on all the testing for acceptance.

AMCCOM and Aberdeen Proving Ground fabricated a total of 122 single round containers for 155mm and 8-inch loose rounds. In addition, Aberdeen fabricated 12 each nonstandard single round containers for rounds that could have been out of tolerance. AMC-Europe worked closely with AMCCOM to meet the required delivery date of 31 May 1990.

AMC-Europe participated in all seven operational phases with USAREUR to make the project a success. In addition to monitoring contracts at Mainz Depot, AMC-Europe also was in charge of the monitoring team from Southern Research Institute. This team performed continuous monitoring at the munition site, monitored at Miesau Army Depot while the trains were being loaded, and provided continuous monitoring at the port while the munitions were being loaded onto ships. AMC-Europe briefed the USAREUR Commander-in-Chief and Deputy Commander-in-Chief monthly until the project was completed on 27 September 1990.

Command Group

The Sergeant Morales Club was founded by the European Command in 1972, designed to honor outstanding noncommissioned officers. AMC-Europe's Sergeant Morales Club was established in February 1990. The first screening board convened in April 1990. SSG Roger D. Macon became the command's first Sergeant Morales inductee. Other honorable mentions are SGT Michael R. Alfred and SPC Michael A. Altenhoff who were selected as AMC-Europe's NCO-of-the-Year and AMC-Europe's Soldier-of-the-Year respectively.

Logistics Assistance Office-Europe (LAO-E)

LAO-E Restructures. On 2 April 1990, LAO-E restructured its organizational alignment by eliminating the LAO-E Central Region and reassigning the Chief, LAO-E, Central position as Operations Officer under HQ, LAO-E. LAOs under the Central Region were realigned as follows:

(a) LAO-56th Field Artillery went under LAO-VII Corps.

(b) LAO-200th Theater Army Materiel Management Center (TAMMC) went under LAO-West.

(c) LAO-7th Army Training Center went under LAO-VII Corps.

(d) LAO-SETAF (Southern European Task Force) went under LAO-WEST Corps.

(e) LAO-Berlin Brigade went under LAO-V Corps.

LAR Workshop. LAO-E conducted Supply Logistics Assistance Representative (LAR) Workshops in March and June 1990. A total of 20 LARs were brought together with U.S. Army Europe logisticians from the 200th TAMMC, 1st Transportation Management Control Activity (TMCA), Defense Reutilization and Marketing Region (DRMR) and other key organizations to establish a baseline of knowledge about the logistics system with particular emphasis on retail supply operations in Europe.

Relocation. In June 1990, HQ LAO-E relocated from Building 974, Hammonds Barracks, Seckenheim, Germany to Building 973, Hammonds Barracks.

Directorate for Materiel Fielding

Conventional Forces Europe (CFE) Treaty Negotiations. In 1990, CFE treaty negotiations were conducted between NATO and the Warsaw Pact countries. These negotiations were a follow-on to the Intermediate Nuclear Forces (INF) treaties and deal with equipment limitations within the European theater. AMC-Europe involvement was to prepare for the future drawdown of AMC forces in theater, to assist the theater in removing excess equipment and to assist in treaty verification. To accomplish these actions, AMC-Europe organized a CFE cell under the Directorate for Materiel Fielding. The personnel section of the CFE cell has been tasked to design the AMC-Europe organization that will be needed to support the forces remaining in theater at the conclusion of the drawdown. The equipment section has been assisting the theater in moving excess equipment out of Europe. The treaty verification section has been assisting AMC-Europe organizations in the development of battle books and logistic support plans for sites which may be inspected. All actions of the CFE Cell were ongoing and 1991 will be a year of transition and change.

Approximately 35 percent of USAREUR equipment will become excess to the theater's need during the CFE drawdown. AMC-Europe had the role of advising USAREUR as to whether the excess equipment should be transferred, turned in to depot, or disposed of locally. Major objectives within AMC-Europe's CFE planning include concentrating maintenance efforts on equipment which will be transferred and moving equipment only once. USAREUR and AMC have agreed that disposition instructions will be provided within 7 days after excess equipment is reported in order to allow completion 30 days prior to unit deactivation. AMC has coordinated exceptions to normal procedures to insure wholesale response is timely. To further insure that the wholesale response is accelerated, AMC-Europe has developed a database to assist USAREUR track and close open disposition instruction requests. Emphasis and concern at both HQ AMC and the MSCs have resulted in expedited responses early on in the drawdown process.

INF Treaty Verification. During FY90, 31 Pershing Erector Launchers were eliminated, at the Equipment Maintenance Center Hausen, in accordance with the Intermediate Nuclear Forces Treaty. This process consisted of three elimination inspections, each attended by a ten man Soviet Inspection Team. All inspections were conducted in a professional manner with only complimentary remarks by the Soviet Inspectors.

New Equipment Fielding Effort. During FY90, 81,918 items of new equipment were handed off to USAREUR units. The greatest activity occurred in February, when 39,293 items were fielded. The least activity occurred in April, when 393 items were fielded.

There were 72,811 Communications-Electronics items handed off during the fiscal year, which constituted 88.9 percent of the total. The size and complexity of this effort ranged from major system fieldings, such as MSE and Digital Group Multiplexers (DGM), to minor system fieldings such as night vision goggles and radiac detectors.

Tank-Automotive equipment made up the second largest group of fieldings with 4,828 (5.9 percent) items handed off to USAREUR; armored systems such as the M1A1 Abrams and M2/3A2 Bradleys and tactical vehicles such as the HMMWV and M939A2 5 Ton-Trucks were issued. Significant fieldings of other commodities included Patriot, Multiple Launch Rocket System (MLRS) and the Chaparral PIP (Missile); Apache and Chinook helicopters (Aviation); M24 Sniper Weapon and Chemical Agent Monitor (CAM) (Armament, Munitions, Chemical) and; Laundry Units and Quiet Reliable Generators (QRG) (Troop Support). The command was monitoring 166 Total Package Fielding (TPF) systems at the beginning of FY90 and 174 systems at year's end. This was down from a high of 191 systems monitored in April, May and June. A total of 36 system fieldings were completed during FY90.

Gaining Unit Fielding Assessment. This assessment was an effort to improve the timely feedback of lessons learned during the fielding of a system by establishing a simpler report system. Director Material Fielding (DMF) developed a simple form designed for LAO use. The form had 12 questions on fielding criteria targeted specifically at unit level and provided for a rating of excellent, good, fair, or poor on each question. When a system had been fielded to a unit the normal procedure had been for the unit to submit a DA Form 5666-R. This is a complex form and most of the time it is not completed by the unit. Using the simple form developed by DMF, LAOs will report the ratings provided by units on each system fielded in the Force Modernization paragraph of the LAO's Monthly Update. This procedure did not replace the requirement for the unit to submit a DA Form 5666-R, but did provide a rapid lessons learned conduit.

Force Modernization Database. The AMC-Europe issue-oriented database had been operational since February 1989. The database recorded current open issues that may impact the fielding schedule of new equipment being introduced to the European theater. It was menu driven and required no training for users. It was updated on a real time basis as changes occurred. Access was through the local area network at Hammonds Barracks and remote access was available through the Defense Data Network (DDN). A diskette version was distributed monthly during the Force Modernization Guidance Committee meeting. In May 1990, additional features were added, such as a Hotline for questions, an electronic SB 700-20, and a Unit Identification cross reference.

Impact of Second Destination Transportation (SDT) Funding, CFE, and Desert Shield on New Equipment Fielding. During FY90, even though unprecedented numbers of items were handed off, the new equipment fielding effort was adversely affected by national and international events. In May 1990, HQDA imposed strict limits on the use of over-ocean second destination transportation funds to transport force modernization equipment. With the exception of some major systems, such as Apache, Patriot and MSE, the shipment of new equipment to USAREUR was interrupted or stopped. At about the same time,

planning for equipment and troop reductions under the impending CFE Treaty began to affect Force Modernization fielding schedules in USAREUR, with wholesale changes in quantities and delays or accelerations of fieldings to selected units resulting. Almost every new system fielding was affected by the changes caused by the budget decisions and the CFE negotiations.

In August 1990, as CFE impacts were still being defined, Operation Desert Shield was announced. From the beginning, this large-scale deployment of CONUS-based forces to SWA caused turmoil in the planning for materiel fielding in USAREUR. Selected items were held up in CONUS, diverted to SWA enroute, or shipped directly from central staging sites in USAREUR to Saudi Arabia. With isolated exceptions, TPFs stopped. The imminent deployment of USAREUR units to SWA produced even more uncertainty in the TPF arena.

Mobile Subscriber Equipment. In FY90, two division signal battalions were fielded with MSE. In August 1990, the 8th Signal Battalion signed the final DD 250s signifying final acceptance of its conversion to MSE. The 3rd Armored Division completed training and was prepared to sign the final DD 250s for MSE. During the period there were several misunderstandings at the division and corps commander levels as to what constituted fill of MSE Delta requirements. The commanders believed they would receive 100% of MSE Delta as authorized by the units' MTOEs. When lists of shortages were reviewed prior to MSE Delta fieldings, it was apparent this goal would not be met. After scrubbing the lists of shortages and erroneous entries and items enroute or to be provided through the Force Modernization process, the DCINC and/or CINC were briefed.

In response to concerns of the V Corps Commander, the CINC agreed to make MSE Delta shortages the first priority for CFE displaced equipment and to fill shortages to the extent possible from Theater Reserve and POMCUS stocks. The fielding of MSE Delta to V Corps was completed in September 1990. Also, as a result of the impact of CFE drawdowns of some VII Corps units, a decision was made to field MSE to the 32D Arm Air Defense Command after fielding to VII Corps. In September, when it was apparent some units scheduled to receive MSE might deploy to SWA prior to fielding, USAREUR began looking at other fielding strategies for the remaining Delta packages and MSE proper.

M9 Armored Combat Earthmover (ACE). Fielding of M9 ACEs to USAREUR scheduled for March 1990 was delayed until October 1990. A materiel release could not be approved until deficiencies identified during initial production testing were fixed and the fixes verified. A conditional release was approved in June 1990, and the first 26 vehicles were shipped to Mainz Army Depot for retrofit. These vehicles were fielded to 1st Armored Division during October 1990. The handoff went smoothly, and New Equipment Training was extremely successful. Due to Desert Shield operations, further fieldings in USAREUR were delayed. The PM will field M9 ACEs to USAREUR units deploying to SWA as vehicles become available.

Battalion Countermine Set (BCS). First unit equipped date (FUED) for the BCS slipped several times during 1990. The first delay was caused by failure of the Mine Clearing Roller Kit to pass First Article Test (FAT). FAT was successfully completed in July 1990, but shipment was delayed by the over ocean shipping funding shortfall in the fourth quarter of FY90. Further delay has been caused by DA direction to field BCS to support Desert Shield operations, as assets required for USAREUR fieldings were diverted to SWA. A schedule for handoff to USAREUR units has not been determined.

Regency Network. AMC-Europe hosted the Transition Cutover Working Group (TCWG) Meetings during March and November 1990. This forum provided an excellent opportunity for the PM, REGENCY NET to brief theater representatives from the U.S. Army, U.S. Air Force, and U.S. Navy on the current program status. It also allowed gaining unit personnel to address issues concerning the fielding schedule. Key topics for discussion included host nation frequency approval, host nation acquisition and support for

vehicles and generators, gaining unit site preparation requirements, fielding milestones and materiel release schedule, results of the Initial Operational Test and Evaluation (IOT&E), operator and maintainer New Equipment Training (NET) schedules, REGENCY NET accreditation process, proposed distribution system for classified software, and the Staff REGENCY NET Information Management System (SRIMS). AMC-Europe was to host a final TWCG during early spring 1991 to allow theater representatives an opportunity to address any open REGENCY NET issues. The current REGENCY NET fielding schedule will begin in mid-June 1991 to elements of South of the Alps (SOA).

M939A2 Truck, 5 Ton. The M939A2 was initially fielded with a conditional release which was subsequently upgraded to a full release. During the first quarter of FY90, TACOM held an Inprocessing Review (IPR) with all major commands in attendance. Status of fielding issues were presented and all outstanding problems were resolved. The First Unit Equipped Date of 30 April 1990 was met without any fielding problems. During follow-on fieldings, a problem was discovered with the 5-ton wrecker but it was resolved by TACOM.

Improved High Frequency Radio (IHFR), AN/GRC-193A and AN/GRC-213. After numerous delays, the IHFR fielding to the theater was started. Originally, 913 AN/GRC-193As and 691 AN/GRC-213s were scheduled to be fielded in November 1987. This fielding date and several subsequent fielding dates were not met because of a multitude of factors. First, force modernization vehicle fleet changes required hardware changes to the existing installation kits, purchase of additional hardware items and re-identification of the vehicles in which the IHFRs were to go. Then fielding was further delayed because of budget reductions to previous allocations, SDT funding constraints, CFE and Desert Shield. In each case the USAREUR IHFR distribution had to be revised and vehicles to be equipped with IHFR and installation kit requirements re-identified. Despite all this turmoil, fielding to USAREUR was underway.

Tri-service Technical Communications (Tri-Tac) Fielding. The Central Office Telephone Automatic, AN/TTC-39A(V)1; Tactical Digital Troposcatter Radio Terminal Set, AN/TRC-170 and Digital Group Multiplexer fieldings were completed. Considering the complexity of the Tri-Tac systems and the geographical dispersion of the units to which Tri-Tac was fielded, the fielding went extremely well. The major difficulty to overcome was changing of the fielding site for the Southern European Task Force from Germany to Italy. This change required extensive coordination and effort, especially by the CECOM-EFO and by CECOM, and was accomplished without major problems. The problems that did occur with the Tri-Tac fieldings in general were routine except for the M923A2 5-Ton Trucks, which were associated support items of equipment, not arriving in time. The fielding would have stopped if USAREUR had not issued its 5 Tons trucks to support Tri-Tac fielding with payback coming when the Tri-Tac trucks arrived.

Fielding of Night Vision Devices (NVD) To USAREUR. The fielding of NVDs to USAREUR in FY90 completed the second phase of fielding for the AN/AVS-6, Aviator's Night Vision Imaging System. The third phase was planned for the second quarter of FY92. In addition, nearly 2000 AN/PVS-7B Night Vision Goggles were fielded to USAREUR units. Continued fielding of the goggles in USAREUR will be delayed due to Operation Desert Shield.

Battlefield Communications Review (BCR) II Retrograde. The retrograde of displaced communications equipment, primarily resulting from the fielding of Tri-Tac and MSE to USAREUR, continued in FY90. The Geinsheim Staging Activity received 1,500 line items of BCR II retrograde materiel in FY90. At the end of the fiscal year, 845 line items had been shipped in accord with disposition instructions provided by CECOM. Part of the backlog of 655 line items was attributable to a dramatic slowdown in retrograde shipments in the final quarter of FY90 caused partly by SDT funding shortfalls and Desert Shield priorities.

M9 9mm Pistol. The M9 Beretta, which will replace the M1911A1 Calibre 45 Automatic and some 38 calibre revolvers, continued its history of having the FUED delayed. There is no longer a problem of reliability or in having the weapons available. It is now a matter of providing an accurate Distribution Plan which will match post CFE and budget requirements. The former requirement of approximately 38,000 pistols for USAREUR has now decreased to under 22,000. The FUED is now planned for December 1991 under TPF procedures.

Quiet Reliable Generators (QRG). The QRGs are a grouping of commercial diesel generators with outputs of 5, 15 and 30 kilowatts with the objective of providing quieter (maximum of 70 decibels versus 80-90 decibels for the Military Standard generators) generation with greater reliability (273-857 hours mean time between failures versus 250 for Military Standard generators) for Army Corps and Division Command Posts. The 97 QRG's planned for USAREUR began TPF handoff at Geinsheim Staging Activity in July 1990 following new equipment training. After 41 systems had been handed-off, fieldings were halted in early September 1990 due to a lack of safety chains. Fieldings resumed on 23 November 1990.

Army Tactical Missile Systems (ATACMS) Maintenance Facility. Progress continued throughout FY90 toward the construction of a Maintenance Facility for the ATACMS Missile in Europe. The project reached the 90% design phases and was the only Major Construction Army (MCA) project in Germany to be approved by Congress for FY91.

Directorate for Supply, Maintenance and Transportation

Procurement Policy Advisor. The Procurement Management Office (PMO) served as the procurement policy advisor to the CG on all issues related to AMC acquisition in Europe. Several policy letters were written during 1990 keeping the command, elements and subelements apprised of all current Federal, DOD, Army, HQ AMC and U.S. Army Europe procurement regulations applicable to the command. All changes to SOP #14, Local Procurement of Supplies and Services were provided to AMC elements and subelements to ensure timely execution of local procurements.

Contracting Officer Representative Training. It was an AMC and USAREUR requirement that all persons designated as a contracting officer representative (COR) receive formal training. HQ AMC Europe had personnel both at the Headquarters and in other units who were designated as CORs. The PMO provided a briefing and testing session to AMC personnel. The test administered was the standard ALMC test and it was scored electronically by ALMC, which issued the certificates. PMO maintained a database of all CORs for AMC contracts in theater. This was updated quarterly via the OCONUS Contracts Quarterly Report submitted by the Major Subordinate Commands and a review by the Senior Command Representatives.

Acquisition. The PMO advised the CG, AMC-Europe of all issues related to AMC acquisition in Europe to include those requiring interaction with U.S. Army Contracting Command-Europe. Issues during 1990 included End-of-Year Acquisitions, 20mm Field Cannon Machine Gun, Ammo Foreign Vendors-PM SANG, FUCH's NBC Reconnaissance Vehicles, and FUCH Training of Logisitics Assistance Representatives.

Database. PMO maintains a database of all AMC contracts in theater. Data was received from the MSCs, U.S. Army Contracting Center and Defense Contract Management Command-International (DCMCI). The database was upgraded during 1990. A query screen was added to provide a faster and more efficient method to retrieve total statistics on contracts. All MSCs were requested to determine the feasibility of implementing the database program at their command in order to transmit data electronically, thus decreasing the leadtime for receipt of quarterly reports. Two commands responded favorably. PMO

initiated a request for a new screen to track service contracts. The additional information will include number and location of contractor personnel, units supported, presence of a transition to war clause and contingency plan. Data concerning breakout of portions of AMC contracts in theater and contractor personnel in support of Operation Desert Shield was also included.

Wartime Essential Contracts. An action was initiated by PMO to identify essential contracts and those that did not include a transition to war clause or contingency plan. HQ AMC wrote a clause for inclusion in essential contracts. PMO was tasked to determine the enforceability of the clause. This was accomplished through coordination with U.S. Army Europe Staff Offices and U.S. Army Europe Contracting Command (USAREURCC). PMO also participated in the DOD Inspector General (IG) review of essential contracts. Through the efforts of HQ AMC Europe PMO, IG, DCSOPS and USAREURCC, the DOD IG established a proposed criteria for determination of essentiality. The data on essential contracts provided by the MSCs and USAREURCC is maintained by PMO in a file pending revision of the HQ AMC Europe OCONUS Contracts Data Base. This data was provided to the DOD IG, U.S. Army Europe Staff Offices and HQ AMC.

Contract Administration Support. All administration of AMC contracts in theater with the exception of Host Nation Support, Mainz Army Depot and Program Management for Saudi Arabia National Guard was transferred from U.S. Army Contracting Center to DCMCI 1 October 1990. Information regarding this transfer was provided to AMC Europe, its elements and subelements. PMO has established a working relationship with DCMCI offices to assure continued coordination of contract data and responsive administration of AMC contracts in Europe.

U.S. Army Criminal Investigation Command. PMO presented a block of instruction at the 1990 Second Region Economic Crime Advanced Acquisition Fraud Detection and Management course at Erding, West Germany. The instruction outlined the role and functions of the PMO, provided information on AMC contracts in theater and addressed detection of procurement fraud. This was the second year PMO was a guest instructor.

Modification Work Order (MWO) Program. In June, AMC-Europe chaired the annual MWO Coordinating/Scheduling Workshop held at 2OOth Theater Army Materiel Management Center (TAMMC), Zweibruecken, GE. This workshop brought together AMC MWO participants, 2OOth TAMMC, and USAREUR units. The proposed FY91 theater MWO program was presented, the current MWO program was reviewed, problem areas discussed, and issues identified which require further action. The workshop included review of the AMC/USAREUR Memorandum of Understanding (MOU) covering the MWO program in Europe. AMC-Europe continues to monitor MWO program execution in theater, providing interface between the AMC Community and USAREUR, and assisting with individual MWO programs as required.

Chemical Agent Resistant Coating (CARC). AMC-Europe continued assistance to USAREUR in further implementation of CARC paint within theater maintenance operations. CARC paint was the standard within USAREUR and several spray-paint facilities were authorized to use CARC. AMC-Europe supported this effort by providing technical information and by coordinating actions with HQ AMC, General Services Agency, Mainz Army Depot and USAREUR's Deputy Chief of Staff for Logistics (DCSLOG) to obtain further technical guidance and resolve problem areas.

Mainz Army Depot (MZAD) Workloading. FY90 saw continued reductions in the Mainz workforce and depot maintenance programs. The annual workloading conference normally held in Europe was cancelled due to funding constraints, with an abbreviated conference being instead conducted during a normally scheduled In-process Review at TACOM. The workload was down to two million manhours from 4.5

million manhours during the FY87/88 timeframe. HQ AMC directed DESCOM to conduct a study to determine if the depot should be closed. AMC supplemented the workload during the year by obligating $29.1 of P7M dollars to accomplish General Support overflow maintenance to avoid a RIF action by the operating contractor. There will be no overflow GS maintenance performed by MZAD in FY91.

Humanitarian Assistance. The Humanitarian Assistance program initiated by the Office of the Secretary of Defense, provided excess equipment to foreign countries for humanitarian reasons. This program has resulted in additional workload for Mainz Army Depot, most of which has been unprogrammed requirements. During FY90, the program was integrated within the normal workloading channels (DESCOM to MZAD), and subsequently AMC-Europe phased out its direct involvement in workloading the programs into MZAD. MZAD worked on equipment that ultimately went to Chad, Sierra Leone, and Afghanistan. The bulk of the equipment upgrade were Commercial Utility Cargo Vehicles (CUCVs) and Engineer Equipment.

517th Maintenance Battalion. The 517th continued to provide excellent TMDE support to all USAREUR units. When the 12th Combined Arms Battalion deployed to SWA the 517th deployed two teams to provide TMDE support. With the deployment of the VII Corp to SWA all the teams presently supporting the deploying units will deploy with its supported unit.

Selected Item Management System - Expanded (SIMS-X). AMC-Europe, in conjunction with USAREUR, AMC Senior Command Representatives and the LAO, conducted a validation of SIMS-X accuracy and procedures during the period of 13 July to 24 August 1990. Results indicated that the system operates as designed when SIMS-X data generated by the reporting units is received and processed by Commodity Command Standard System (CCSS). A key problem identified was the SIMS-X post date in CCSS. This date was not updated every time a SIMS-X transaction was received, making it appear that the CCSS had not been updated when in fact it was. This caused confusion in the field and was a contributor to the theaters lack of confidence in SIMS-X. SIMA corrected that problem as of 1 November 1990. Additional findings were that:

(a) DA had approved use of automated reject procedures in January 1990 and SIMX-X rejects had not increase within USAREUR after implementation of the automated procedures;

(b) The overall USAREUR reject rate was 5.7% and that of SIMS-X 10.8 percent;

(c) DZA documents (Asset Status Request documents reporting asset information on a specific NSN between Army activities) were routed through 200th TAMMC before being forwarded to National Inventory Control Points. This delayed the update of SIMS-X data and could result in distorted asset balances. TAMMC was in the process of correcting the routing.

ERF Theater Ownership Code (ETOC) Program. ETOC is the result of CINC USAREUR request to reduce the amount of Army Stock Fund Class IX excess turned in to the European Redistribution Facility (ERF) that was subsequently repurchased by USAREUR units. During FY90 AMC-Europe, in conjunction with DESCOM and the 200th TAMMC, designed, tested, and fully implemented the ETOC program. The initial system test commenced in November 1989 with 400 NSNs. ETOC retained OMA Class IX excess to a single theater-level record in Ownership Code 9, and stored the assets at the ERF for redistribution to USAREUR units. No credits were allowed for the assets turned-in and the same assets were redistributed at no cost to USAREUR units. The requisitions flow through the USAREUR Supply Support Activities (SSAs) and Materiel Management Center (MMCs) to the 200th TAMMC, the theater manager of the Ownership Code 9 assets. If a sufficient quantity was on hand at the ERF, the 200th TAMMC converted the requisition to a materiel release order directly to the ERF's host mainframe

computer at New Cumberland Army Depot, PA for subsequent release at the ERF. The test was successfully completed in March 1990, and during the fiscal year the data base was incrementally increased to its current level of 12,142 NSNs. During FY90, the program redistributed nearly $2.0M of serviceable assets to USAREUR units.

Materiel Returns Program (MRP). During FY90 AMC-Europe initiated several actions to improve the USAREUR return rate for unserviceable Depot Level Reparables (DLR). At the end of FY90, the USAREUR return rate stood at 73 percent compared to the 56 percent at the close of FY89. AMC-Europe pointed out that the Army Master Data File (AMDF) data used to qualify records for reporting was outdated and erroneous. Low dollar high demand expendable items were coded as depot reparables. AMC-Europe requested a program fix to these areas. HQ AMC tasked the Logistic Control Activity (LCA) and Catalog Data Activity (CDA) to implement the changes. AMC-Europe also pointed out that as a result of a procedural problem, USAREUR was not receiving credit for all Defense Reutilization Materiel Office (DRMO) turn-ins. As a result, DRMO changed their reporting system to allow USAREUR to receive proper credit for DRMO transactions. The change was effective October 1990. Previously, generic NSNs had been used to report DRMO turn-in of road wheels and track (eg 2510-01-wheels). This type of NSN did not equate to an NSN on the AMDF and thus had been rejected. Initiatives will continue to further improve the USAREUR return rate.

Depot Level Reparables Accountability. AMC-Europe identified an asset balance disconnect between the CCSS files, and the Standard Depot System at MZAD. The result was that the AMC wholesale system had serviceable DLRs on-hand at MZAD that it was unaware of and was not using to fill valid USAREUR requirements. It was determined that when MZAD reported a change of condition code (cc) from "M" (in maintenance) to "A" (serviceable), it was not always being received and processed by CCSS. After this was identified, complete transaction histories were sent to the MSCs to allow them to research and subsequently identify "lost" transactions and adjust their balances accordingly. As of October 1990, the on-hand balances of DLRs at MZAD as reported by CCSS and SDS are in agreement and internal controls were established to ensure continued accuracy.

USAREUR DSS/ALOC FY90 Performance Analysis. The total USAREUR requisition volume generated by its ALOC units averaged 121,000 submissions per month, while USAREUR DSS units accounted for more than 30,000 submissions for the first ten months of FY90. The average Air Line of Communications (ALOC) monthly order ship time (OST) for this period was 31.2 days. The Direct Support System (DSS) monthly average OST was 66.3 days. A shortage of funding to cover over-ocean second destination transportation costs resulted in the diversion of all routine USAREUR ALOC cargo from air to surface mode of transportation. As a result, OST for routine ALOC Materiel increased to 55 days in September 1990. The impact of the extended OST pipeline for USAREUR ALOC Supply Support Activities (SSA) was a concurrent increase in Authorized Stockage List (ASL) zero balances. Shipment of routine ALOC materiel was scheduled to return to air mode transport in early FY91.

Depot Level Reparable Management. During FY90, the initiative to transfer the management of all DLR repaired at Mainz Army Depot from the 200th TAMMC to AMC was completed. This marked the culmination of a limited test that commenced in February 1989. In June 1990, the final increment of 277 DLR stock numbers was added to the program, increasing it to its final level of 546 stock numbers. In conjunction with the increase, AMC-Europe modified the European Redistribution Facility logic to retain serviceable DLR in USAREUR to fill theater requirements prior to retrograding to New Cumberland Army Depot. A Letter of Instruction was signed by the HQ AMC Director of Supply, Maintenance and Transportation and the USAREUR DCSLOG on 20 July 1990 completing the last milestone of the DLR management transfer.

Directorate of Resource Management

AMC-Europe Goals Setting Conference. BG Brown hosted a senior leaders conference on 9 and 10 February 1990 to identify corporate-level goals for the AMC-Europe organization which will support seven AMC mission areas and ensure their accomplishment. The goals were:

(a) Provide timely supply and maintenance support to the Army in Europe.

(b) Field complete and sustainable systems through the Army Force Modernization Program.

(c) Achieve an integrated information system which supports the materiel readiness, sustainment, and force modernization missions of AMC-Europe.

(d) Institute a training program which maximizes the potential of the AMC-in-Europe military and civilian workforce.

(e) Maintain an effective AMC-in-Europe Transition-to-War Plan.

(f) Redefine AMC's role in theater in relation to Conventional Forces Europe.

(g) Improve the quality of life and working environment for the AMC-in-Europe military and civilian workforce.

(h) Improve and sustain the readiness of USAREUR equipment and units.

(i) Review and assess AMC services contracts in Europe to ensure efficient and effective use of resources.

There were 76 objectives identified to support these AMC-in-Europe goals. Progress toward goal accomplishment continued to be monitored through the Commander's Quarterly Review and Analysis process.

Agreements Program. A significant effort was expended to ensure that AMC-Europe's agreements program was responsive to customer needs. A database was developed which listed all known agreements for AMC activities in Europe. Active coordination with all AMC in Europe activities and USAREUR was increased. As much as possible, the coordination network was conducted via email.

The following Annexes to the Basic AMC/USAREUR Memorandum of Understanding were completed or updated during the year:

(1) Annex A, covering civilian personnel services to be provided by USAREUR;

(2) Annex B, delineating areas of responsibility for finance and accounting support between USAREUR and AMC;

(3) Annex J, establishing policies, procedures, and responsibilities between USAREUR, AMC, Europe, and LAO, Europe for the Logistics Assistance Program (LAP);

(4) Annex M, detailing the logistical support needed from USAREUR by the Army Tactical Missile Facility in Weilerbach;

(5) Annex P, providing for the functional firing of overhauled/repaired vehicles for Mainz Army Depot;

(6) Annex R, outlining policies and procedures to increase the AMC laboratory interactions between AMC and USAREUR through the Science Assistance (Advisor) Program, AMC-FAST;

(7) Annex S, describing the procurement support from Letterkenny Army Depot (LEAD) to USAREUR; and

(8) Annex T, establishing operating relationships between USAREUR, AMC-Europe, and ERF.

The following Annexes are currently being reviewed:

(1) Annex C, describing mutual responsibilities for the DA Modification Work Order Program (DAMWO);

(2) Annex D, outlining logistical support provided by USAREUR to Mainz Army Depot;

(3) Annex E, describing the logistical support required by the Theater Readiness Monitoring Facilities (TRMF) for the HAWK and PATRIOT Missiles at Weilerbach and Wertheim Army Depot; and

(4) Annex N, outlining the logistical relationship between AMC, Europe and USAREUR during mobilization and wartime.

FY90 AMC-Europe Operating Budget. The approved FY90 AMC-Europe operating budget of $5.451M was several million dollars below the requirement submitted by the command in the Budget Program Resource Review (BPRR). Compounding the problem of a reduced budget was the withholding of almost 8 percent of the approved budget figure until HQDA and Congressional reprogramming efforts in support of the Program 7S (Central Supply) account were completed in September 1990. AMC-Europe operated at the reduced level, however, by complying with Commander, AMC mandated spending reductions and through the use of locally initiated economies. The Commander, AMC reductions limited spending for TDY, premium pay (Overtime, Holiday Pay), supply purchases and contractual services. Intensive management of civilian personnel actions in AMC-Europe reduced manyears to 88 percent of the FY89 level. In addition, a review of automation maintenance requirements resulted in significant dollars savings. As a result, AMC-Europe was able to accomplish all primary missions despite inflationary costs driven by an unfavorable dollar rate in Europe.

Security, Plans, and Operations Office

Impact of Political Events. FY90 was a very significant year for the Security, Plans and Operations Office. Political and economic events within Europe brought about significant changes in planning and training within USAREUR and AMC-Europe.

The Plans and Operations Division moved their physical work location from the basement of building 974 into offices formerly occupied by LAO-Europe. A functional Emergency Operations Center (EOC) was established to be used as a Command Operations Center (COC) for exercises.

As political events unfolded during FY90, AMC-Europe participated in only three of four scheduled exercises: Proud Eagle in October 1989, REFORGER in January 1990, and LOGEX 90 in June 1990. The only exercise that AMC-Europe did not participate in was "CRESTED EAGLE," because of political events.

The fall of the Berlin Wall and unification of East and West Germany have been significant political events which have sensitized the way the U.S. Army conducts training within Europe.

European AVCRAD, Brussels, Belgium. The European AVCRAD at Brussels, Belgium continued its fine aviation maintenance support to the theater while providing outstanding Overseas Deployment Training (ODT) opportunities to the National Guard Bureau. A new messing contact improved the quality and quantity of food for the participating soldiers. Transportation assets, obtained from the local support facility, eased the previously experienced transportation problems. Additionally, because of the new transportation arrangements, soldiers now had opportunities to experience local culture.

Transition-to-War Plan. The Plans office has totally rewritten the Command's Transition-to-War plan. Detailed coordination with theater units has identified mobilization, transportation and other wartime requirements AMC-Europe will need in case of hostilities within Europe. This has resulted in a staffing MOU between AMC-Europe and USAREUR which specifies support requirements for AMC-Europe to ensure continued wartime mission accomplishment.

Training. The Operations office continued to manage all command-wide military training quotas for the 7th Army Combined Arms Training Center (7th CATC). Additionally, a Survival Skills Training Program was established for Emergency Essential Civilian (EEC) personnel assigned to HQ, AMC-Europe. The program was open for all military and EECs and was designed to train/refresh personnel in basic survival skills.

The Operations office has also drafted the plans for a HQ, AMC-Europe Fit to Win Program. In August 1990, a Health Risk Screening Appraisal was conducted for 136 AMC-Europe personnel. This analysis, which included cholesterol count and health life-style questions, will be used to establish the final Fit to Win Program. An Aerobic Program was established at Hammonds Barracks in August 1990 as a result of AMC-Europe efforts.

Activation of the Emergency Operations Center. One of the most significant activities AMC-Europe participated in during FY90 was as a supporting headquarters for Operation Desert Shield. The AMC-Europe SPO Division activated its EOC to provide 24-hour support to all AMC-in-Europe efforts to support the Southwest Asia Theater. Daily briefings on operational and logistical issues affecting Desert Shield support have been given to the AMC-Europe command structure.

Security Assistance Visits. Members of the Security, Plans and Operations Office conducted eleven assistance visits to AMC elements in theater during FY90. Upon completion of these visits, an active security program was established within each unit visited. Significant visits were to the 517th Maintenance Battalion's Berlin and Nuernberg Detachments. The Berlin Detachment did not have a working security program at the time of the visit. This was due to the unit being located in an old maintenance building with other units having access to the unit areas. The Nuernberg Detachment had an outstanding program.

Law Enforcement Program. On 18 June 1990, the Staff Judge Advocate for HQ, AMC-Europe was reassigned, leaving the headquarters without a Judge Advocate. The duties of processing German criminal and civil complaints (e.g., traffic tickets) was transferred to the Security and Intelligence office. These cases were consolidated into the existing law enforcement program, previously established to provide HQ AMC and the MSCs information on criminal offenses committed by AMC personnel assigned or TDY within the European Theater. Host nations complaints were now treated the same as U.S. forces complaints and forwarded to the commanders/supervisors concerned.

Cargo Customs Program. DOD Regulation 5030.49R, Customs Inspections, dated May 1977, required inspections/examinations of all CONUS bound cargo by Military Customs Inspectors (MCI). Several AMC elements in theater were not complying with this program. In August 1990, Mainz Army Depot initiated the MCI program. All AMC elements in theater were now meeting the requirements of the above regulation.

Publication of AMC-Europe Regulation 190-1, Physical Security Program. AMC-Europe Regulation 190-1, Physical Security Program, was written by the Security and Intelligence office to provide guidance to AMC elements within the European theater. In the past, units had identified problems when trying to meet both USAREUR and HQ AMC security requirements. These requirements sometimes conflicted, or one was more strenuous than the other. The AMC-Europe regulation cleared up the confusion and provided clear guidelines for unit in theater to follow.

Physical Security Inspection and Survey Program. On 11 September 1990, HQ AMC Command Provost Marshal requested that the AMC-Europe headquarters begin the physical security inspections and surveys required by AR 190-13, *The Army Physical Security Program.* These inspections have been accomplished in the past by the Security Support Activity every 18 months.

Quality Assurance Office

Quality Deficiency Reports (QDRs). The AMC-Europe Quality Assurance Office was directly responsible for the issuance of a new AMC policy that required all MSCs to use electronic mail to respond to QDRs that were received via electronic mail. In July 1990, the Quality Assurance Office issued a memorandum which stated "All Quality Deficiency Reports received via E-mail will be responded to in kind." Full implementation of this policy would substantially improve timeliness of responses, improve communications between the materiel user and the supplier, and, most importantly, reduce shipment of defective materiel through faster notification and issuance of disposition instructions.

Database for Army Items under Warranty. The AMC-Europe Quality Assurance Office developed a consolidated, accurate, up-to-date database of Army items under warranty for use by the Army in the Field. The need for the database was realized when it was discovered that warranty information contained in DA Pamphlet 738-750 was 12-18 months old by the time the pamphlet was received by the user. Special efforts were made to obtain current information from each of the AMC MSCs. That information was put on floppy diskettes which are being distributed to AMC in Europe and USAREUR personnel. The information was used with the ENABLE Database Management System and can be accessed by any PC using ENABLE software.

Public Affairs Office

AMC and the Chemical Weapons Retrograde. AMC-Europe Public Affairs developed extensive media strategy for responding to all U.S. and Host Nation press inquiries regarding AMC's involvement in Theater in the retrograde of chemical weapons from Europe. As a result, there was no premature or adverse media coverage.

In response to inquiries from major German news agencies, AMC-Europe Public Affairs obtained an expeditious response from Office of the Secretary of Defense Public Affairs regarding the May 1990 federal-budget linked delay in production of secondary steel containers (SSC) at MZAD. These SSCs were used in retrograde of chemical munitions from Europe. This expeditious providing of information obtained from Office of Secretary of Defense and Germany's Federal Ministry of Defense, defused a potential national issue with serious potential ramifications for the German and U.S. governments.

The AMC-Europe PAO, assisted by MZAD deputy PAO, took a complete set of color photographs of the production process at Mainz Army Depot of the secondary steel containers which were used to transport all of the chemical munitions out of Europe. The photos were for display in a Bonn, Germany VIP room on 7 March 1990, when German Minister of Defense Stoltenberg announced that all chemical munitions previously stored in West Germany would be removed by the fall of 1990.

AMC-Europe assisted HQ, VISE Media Detachment (Kaiserslautern, Germany) video team in filming the production process of SSCs at MZAD. Excerpts from this video material were included in an overall video production demonstrating how these chemical munitions would ultimately be removed from Europe. This video was provided to all of the international media attending a Media Day at Pirmasens, West Germany, on 8 March 1990. This major media event followed German Minister of Defense Stoltenberg's announcement of the upcoming removal of chemical munitions from Germany.

Network TV Pre-Disarmament Summit Coverage at AMC Facilities in Germany. AMC-Europe Public Affairs developed all press kit materials, escorted personnel from NBC and CBS, prepared Subject Matter Experts at the Equipment Maintenance Center-Hausen (the location where Pershing II erector launchers are being destroyed as part of INF Treaty), and at MZAD (one of the largest contractors in Germany, who's operations were scaled down as a result of federal budget cuts) - for national TV coverage by NBC and CBS. NBC filmed at Hausen, and CBS at MZAD, to obtain some material for inclusion in television stories which were aired during the June 1990 Disarmament Summit. News coverage at these facilities was set up by HQ, EUCOM PAO.

Major Feature Story in *Military Technology Magazine*. AMC-Europe Public Affairs co-developed a comprehensive magazine article on key facets of AMC-Europe operations in Theater. This was one of featured articles in March 1990 issue of *Military Technology Magazine*. This was an internationally circulated publication read by key U.S. and NATO military leaders and chief executive officers in industry. The publication's readership includes key opinion leaders who have a significant influence on expenditures for acquisition of military equipment.

Headquarters Detachment

Headquarters Detachment Change-of-Command. CPT Glennys H. Warsocki assumed command of Headquarters Detachment, HQ AMC-Europe from CPT Neil Heckman on 3 April 1990. CPT Warsocki also became the AMC-Europe Property Book Officer and the Hammonds Barracks Assistant Installation Coordinator at that time.

Energy Conservation Award. The Heidelberg military community presented CPT Warsocki with an energy conservation award check for $2000.00 in April 1990. This award was presented as commendation for Hammonds Barracks' selection as the most improved installation in the Heidelberg Military Community. The money was used to purchase park benches for Hammonds Barracks.

Property Accountability. Property accountability continued to improve at AMC-Europe. BG Brown emphasized the importance of an aggressive property accountability system by ensuring that all AMC-Europe personnel cooperated in the 100% physical inventory of items located on Hammonds Barracks, and hand receipt reconciliation of items at other locations, conducted prior to the HQ Detachment change-of-command. This was the first time that Hammonds Barracks had been subjected to a hands-on physical inventory, and many equipment items were reported "found on installation," and subsequently accounted for on the property book.

Completion of Construction of Building 973, Hammonds Barracks. Construction of building 973 was completed in May 90 and the new tenants moved in. The occupants of the building were LAO-Europe, AMCCOM Senior Command Representative, SIMA (CBS-X), and Contracting Command.

Physical Fitness. The AMC-Europe physical training program was reinstated and organized physical training was conducted by HQ Detachment twice weekly. The CG instituted a monthly fun run for all military personnel, with civilian personnel being invited to participate. Several new machines were purchased to improve the quality of the Hammonds Barracks gym, including additional nautilus equipment, a life step machine, and a rowing machine.

Arms Room. AMC-Europe weapons were moved to Patton Barracks for storage. The arms room at Hammonds Barracks was closed when the German Guard Force moved to Mannheim in August.

Chapter V

Security Assistance

U.S. Army Security Assistance Command (USASAC)

Manpower and Organization

The manpower authorizations for USASAC as of the start and the end of FY90 were as follows:

	Auth 1 Oct 89			Auth 30 Sept 90		
	TOTAL	**CIV**	**MIL**	**TOTAL**	**CIV**	**MIL**
USASAC	591	579	12	591	579	12
OPM SANG	167	122	45	167	122	45
Total	758	701	57	758	701	57

The U.S. Army Security Assistance Command (USASAC) was both a staff element of the Army Materiel Command and a major subordinate command. Major General Thomas G. Lightner, the Commanding General, was also AMC's Deputy Chief of Staff for International Security Partnerships. Brigadier General Robert L. Ruth serves as Deputy Commanding General (Mobilization Augmentation). The USASAC Deputy, a member of the Senior Executive Service, was Mr. Paul Donovan.[1] Permanent Order 16-2, 26 February 1990, redesignated the HQ U.S. Army Security Affairs Command (USASAC), XP W1VWAA, effective 1 April 1990, as the U.S. Army Security Assistance Command (USASAC).

The command was geographically divided among three locations: Alexandria, Virginia; New Cumberland, Pennsylvania; and Riyadh, Saudi Arabia. The Directorates and offices located in Alexandria include three regional directorates: Europe, Mideast/Africa, and Asia/Pacific/Americas; the Policy, Plans and Operational Support Directorate; the Directorate for Resource Management; the Office for International Industrial Cooperation; and the Office of the Program Manager for Security Assistance Automation, Army. Also in the Alexandria location were the Training and Doctrine Command (TRADOC) Security Assistance Training Washington Field Office, and the Washington Field Office of the Program Manager, Saudi Arabia National Guard (PM, SANG). There were 13 military and 159 civilian personnel assigned to USASAC in Alexandria.

The New Cumberland Element of USASAC, with one military and 369 assigned civilian employees, was headed by the Deputy for Operations, an O-6 position, currently occupied by COL William C. Brown. The New Cumberland organization did not directly parallel the organization in Alexandria. Directorates and offices include: Europe/Africa Directorate; Asia/Pacific/ Mideast/Americas Directorate; Directorate for

[1]Unless otherwise noted, the information in this section was taken from the USASAC historical submission for FY90.

Logistics Support; Directorate for Product Assurance; Security Assistance Support Directorate for Information Management; Egyptian Project Office; and some elements of the Resource Management Directorate reporting directly to Alexandria.

The element located in Saudi Arabia was the Program Manager, Saudi Arabia National Guard Modernization Program. The Chief, BG(P) J. B. Taylor, reported to the Commanding General of USASAC.

Command Group and Chief of Staff Organizations. The manpower authorization for the USASAC Command Group and Chief of Staff organizations, composed of the Command Group and Administrative and Security Division Organizations at HQ AMC, Alexandria, VA, the Internal Review and Audit Compliance Office and the Administrative and Security Branch at New Cumberland Army Depot, PA, was 27 civilian and five military positions at the beginning of FY90, and 22 civilian and five military positions at the end, a reduction of five positions.

MG Thomas G. Lightner elected to reduce the Internal Review and Audit Compliance Office by five positions to conserve resources. This left two auditors reporting to the Chief of Staff.

Mr. Donald B. Uber was assigned as Chief, Command Administrative Office in November 1989, replacing the Acting Chief, Mr. Robert Goodenow. The organization was subsequently renamed the Administration and Security division, with branches at Alexandria, VA, and New Cumberland, PA.

Directorate for Resource Management. The manpower authorizations for the Directorate for Resource Management were 90 at both the start and the end of the fiscal year. The key personnel included:

AMSAC-R	James Smith	Resource Manager
AMSAC-RD	Connie Murtomaki	Deputy
AMSAC-RB-S	Timothy Harpster	Chief, Financial Systems Office
AMSAC-RB-R	William Teagle	Chief, Security Assistance Resources (On Board Nov. 89 - Vice Gerald O'Donnell)
AMSAC-RE	Jack Anderson	Chief, Management & Productivity
AMSAC-RF	Ray Daws	Chief, Finance and Accounting
AMSAC-RP	Robert Gilman	Chief, Financial Procedures

USASAC Organizational Changes, FY90. The Customer Relations Team - Pacific was disestablished with the resultant workload absorbed by the Directorate for Asia/Pacific/Americas and the U.S. Army Materiel Command. One civilian space was transferred from USASAC to WESTCOM. Remaining spaces were utilized within USASAC-Alexandria.

Requirements and authorizations supporting the USASAC Command Group (CG, Deputy and two secretarial positions) were transferred from HQ AMC to USASAC in accordance with AMCMP-OM memorandum, 12 September 88, subject: Standardized Command Groups. The USASAC Commanding General continued to serve as the AMC Deputy Chief of Staff for International Security Partnerships.

Based on the results of a USASAC-directed automation study, the Security Assistance Support Directorate for Information Management was reassigned from the Deputy for Operations, USASAC, New Cumberland, PA, to the USASAC CG, Alexandria, VA, to provide one source of direction for command automation in support of CG goals and objectives.

A merger of the New Cumberland Army Depot and the Alexandria Administrative Offices resulted in the establishment of the USASAC Administrative and Security Division, thus achieving command-wide integration of administrative policies and standardization of administrative practices and procedures.

The USASAC Commanding General directed the transfer of the Security Assistance Publication functions and supporting resources from the Directorate for Logistics Support to the Deputy for Operations, specifically the Central Case Management Directorates, in order to support the Foreign Military Sales (FMS) Total Package approach.

With the publication of Army Regulation 37-60, *Pricing for Materiel and Services*, dated 3 April 1989, the Department of the Army designated USASAC as the focal point for maintaining the central database for controlling and monitoring the recoupment of non-recurring costs on commercial sales of defense products and technology. The non-recurring costs function, now centralized at USASAC, was previously performed on a decentralized basis by AMC major subordinate commands. The non-recurring cost function will be performed by the USASAC Directorate for Resource Management.

In 1982 a Congressional recommendation suggested assigning a case manager to have overall responsibility for both the logistical and financial portions of FMS cases. A uniform delivery reporting method to reconcile delivered values with disbursements was part of the original recommendation along with a new assurance that FMS customer order systems would be compatible with the systems maintained by the Security Assistance Accounting Center. To attain these objectives, and with cooperation and input from the U.S. Army Finance and Accounting Center (USAFAC), the USASAC directorate for Resource Management, Finance and Accounting Division was tasked with performing the financial case management function for Army Security Assistance. The branches within the Finance and Accounting Division were realigned in order to accomplish the new mission. The Financial Support Branch now encompasses original functions from the Obligation Authority Control Branch along with new financial case management function.

The Program Manager, Saudi Arabian National Guard (PM, SANG) directed that the Training Operations and Logistics Division be reorganized into two separate divisions: the Training and Operations Division and the Logistics and Force Development Division.

Directorate for Policy, Plans and Organizational Support. The Directorate for Policy, Plans and Operational Support was a principal directorate of USASAC. Its director was Mr. Raymond Lum, assisted by Mr. James C. Thomas, who is the Chief, Policy and Procedures Division and Mr. Eugene J. Carson, Chief, Plans and Operational Support Division. The remainder of the directorate was comprised of a staff of 21 action officers and clerical personnel.

Office for International Industrial Cooperation. The manpower authorization for the Office for International Industrial Cooperation (OIIC) at the beginning of FY90 was 11 spaces and remained unchanged throughout the year. Mr. Douglas E. Leach was the Chief of the Office.

Directorate for Mideast/Africa. Colonel Horace Worthy replaced Colonel Robert A. Goodwin as Director, Mideast/Africa Directorate in January 1990 and COL Goodwin was reassigned as Chief, International Cooperative Programs, AMC. Directorate staffing remained stable until the start of Operation Desert Shield in August. The Directorate assumed responsibility for staffing the USASAC desk in the AMC

Operations Center and the Arabian Peninsula Division staff added three Country Program Managers (CPMs) and a secretary. The Mideast/Africa Division added two CPMs as Pakistan was transferred into the Directorate from Asia/Pacific and Americas.

Directorate for Europe. The following personnel changes occurred in the Directorate:

Major Thomas Pigg was reassigned from AMSAC-ME/RA to AMSAC-ME/RB, and subsequently reassigned to Arabian Peninsula Division.

Alicia Waters was assigned to AMSAC-ME/RA as a Security Assistance Clerk, GS-303-05.

Michael Freeman was promoted to GS-13 and reassigned from AMSAC-ME/RA to AMSAC-ME/RB.

Mr. Harry Bryan, SELPO was promoted to GS-13 and remained in AMSAC-ME/RA.

Gordon Catt was transferred from AMSAC-ME/RB to the USASAC Deputy for Operations at New Cumberland, PA in November 1989, creating a GS-13 vacancy.

Ivan Young was selected to serve on a special task force in April 1990, established under the direction of the USASAC Deputy, Mr. Donovan.

Steven Jones left for a job in Israel and was replaced by Joan Buchanan from USASAC-NCAD.

Directorate for Asia/Pacific/Americas. During FY90, the Directorate for Asia/Pacific/Americas was authorized 33 manpower spaces, including two military spaces. The Director for Asia, Pacific & Latin Americas Directorate was COL Frederick F. Meyers, Jr. The Chief for Latin American Division was LTC Harry S. Truman. The Asia Division was headed by Mr. Philip Roman, GM-14, and Pacific Division by Ms. Linda K. Baish, GM-14, who was promoted to Chief upon the departure of Ms. Elsie Hickman in May.

SA3 Project Management Office. The Security Assistance Automation, Army (SA3) Product Management Office (PMO) was an organizational element of USASAC. Its manpower authorization remained constant at 10 in FY90. The Product Manager, Mr. Duane R. W. Murtomaki, had a staff of one, an Administrative Assistant. Mr. Chester J. Freedenthal, Chief of the Requirements and Planning Office, had a staff of two Logistics Management Specialists and one Computer Systems Analyst. Mr. Nathaniel Keeling, Chief of the Security Assistance Functional Support Office (SAFSO) in St. Louis, Missouri, also had a staff of three, two Logistics Management Specialists and one Computer Systems Analyst. The SAFSO Office, which was collocated with the Systems Integration Management Activity (SIMA), moved to a new location a few blocks south, concurrent with the move of SIMA to the same location. There were no organizational or personnel changes during the period.

USASAC-New Cumberland Army Depot (NCAD)-Deputy for Operations, Office of the Deputy for Operations and Civilian Executive for Operations (AMSAC-O). Colonel William C. Brown, the Deputy for Operations, and Mr. James L. Rutherford, the Civilian Executive for Operations, maintained one military and three civilian authorizations within their office in FY90. Total organizational strength, including the four directorates under the Deputy for Operations, totalled 243 civilians and one military. On board strength at the end of FY90 was 214.

Directorate for Logistics Support (AMSAC-OL). At the beginning of the fiscal year the directorate strength stood at 54 as follows: Cooperative Logistics Division (OL-C) - 16; Logistics System Support

Division (OL-S) - 29; Transportation Office (OL-T) - 7; and the Office of the Director (OL) - 2. During July 1990 several significant changes occurred within the directorate. Mr. Richard G. Alpaugh, Chief, Logistics System Support Division, was reassigned as the Director following the retirement of Mr. Daniel L. Zydorczyk. Mr. Jimmy V. Smith was reassigned as Chief, Systems/Procedures Branch after the position was vacated by Mr. Gregory J. Myers, who was reassigned as Chief, Asia/Pacific Division. Mr. Gary P. Bennett was reassigned as Chief, Evaluation Branch following the retirement of Mr. Franklin A. Hagen. Both Messrs. Smith and Bennett were reassigned from the Directorate for Product Assurance as a result of the Command Staff drawdown decision.

On 15 July 1990, three GS-09 Supply Specialists were transferred from the Cooperative Logistics Division to the Central Case Management (CCM) Directorates. The change was made to align the publication case writers with the case writers in the CCM Directorates. On 27 July 1990, the Transportation Office was reduced to two people. Five persons were transferred to the Administrative Office and the CCM Directorates. This reduction was part of the Command Staff decision to reduce the directorate strength. A draft TDA was submitted to AMSAC-RM. The new TDA will reassign the remaining Transportation Specialists to the directorate office and will change the Evaluation Branch and the Systems/Procedures Branch to divisions. The change will abolish the Logistics System Support Division and will reassign the GS-05 Secretary to a vacant position in the Systems/Procedures Division.

Directorate for Product Assurance (AMSAC-OQ). The authorized strength at the start of FY90 was 10 manpower spaces plus one encumbered over strength manpower space gained from reassignment due to the disestablishment of the Customer Relations Team Pacific in FY89. A Command Staff decision to drawdown directorate strength toward a final residual of two persons resulted in the following reassignments to existing vacancies:

a. Mr. Jimmy V. Smith, GS-13, to Chief, Systems/Procedures Branch, Directorate for Logistics Support.

b. Mr. Gary P. Bennett, GS-13, to Chief, Logistics Evaluation Branch, Directorate for Logistics Support.

c. Mr. Joseph P. Decker, GS-13, to Chief, Europe Division, CCM Directorate for Europe/Africa.

d. Mr. Adam W. Wysocki, Jr., GS-12, to Chief, Central Case Management Branch, CCM Directorate for Asia/Pacific/Mid-East/ Americas.

e. Mrs. Nancy R. McKay, GS-06, to Directorate Secretary, CCM Directorate for Asia/Pacific/Mid-East/Americas.

f. Mr. Edward J. Kriwonos, GS-13, (previously over strength) to authorized manpower space in Directorate for Product Assurance.

Central Case Management Directorate, Europe/Africa (AMSAC-OE). Authorized strength in the Europe/Africa Directorate remained at 83 for FY90. Key personnel in the directorate were Mr. Charles D. Odell, Director; Mr. Joseph P. Decker, Chief, Europe Division; and Mr. Russell E. Neydl, Chief, Africa Division. No organizational changes occurred.

Central Case Management Directorate, Asia/Pacific/Mideast/Americas (AMSAC-OX). Authorizations remained at 93 in FY90. Key personnel in the directorate were Mr. Victor J. Stasney, Director; Mr. Gregory J. Myers, Chief, Asia/Pacific Division; and Mr. James C. Johnson, Chief, Mideast/Americas Division.

Organizational changes were Mrs. Betty Kandes, AMSAC-OX-OB Branch Chief, and Mr. Adam Wysocki, AMSAC-OX-BB Branch Chief.

SANG Modernization Program. The following personnel changes occurred in the program. On 13 July BG(P) James B. Taylor arrived to assume duties as the Program Manager. He replaced MG Waldo Freeman who departed for SHAPE in Mons Belgium. Other turbulence among senior staff included the departure of the Chief of Staff, Mr. Roy Larsen, who had not been replaced at years end; COL John Noble, Assistant PM for Training and Operations; and COL (Dr.) Richard Williams, Chief of the Medical Management Division.

Significant and Command Management Issues

Command Group and Chief of Staff Organizations. Reducing negative impacts on mission performance resulting from resource reductions, while improving customer service, were the major issues in the Command Group and Chief of Staff organizations in FY90. Management initiatives, such as Managing Civilians to Budget (MCB), Total Quality Management (TQM), and continued emphasis on responsive service and automation significantly contributed to mitigating adverse factors and contributed to mission accomplishment.

MG Lightner personally directed and focused the organization on improving customer service in spite of resource shortfalls. His use of innovative MCB and TQM techniques, and emphasis on rapid implementation of automation capabilities throughout the organization provided the capability to do more with less.

Directorate for Resource Management

Financial Case Management System. The Financial Case Management System was devised by the USASAC as a means of meeting Congressionally mandated requirements to improve financial management of FMS case execution within the framework of Central Case Management.

On 2 December 1982, the Committee on Appropriations, U.S. Congress, recommended assigning a case manager to be responsible for the total financial and logistical aspects of FMS cases. In addition, they recommended uniform delivery reporting requiring reconciliation of delivered values with disbursements. Finally they wanted to ensure customer (foreign countries) order systems, for the defense services and Security Assistance Accounting Center (SAAC) were integrated and compatible.

Although efforts were made in the past to establish such a system, it was proven to be impractical, unworkable and costly. In December of 1988 USAFAC assigned USASAC the task of devising a system to meet the Congressional mandate. USAFAC required the new system to perform cash management, database reconciliations and accounting controls over all Army managed FMS cases. The cash management segment compared Army disbursements to performance data, obligational authority, obligations, and payment schedule analysis. The database reconciliations compared FMS program values in the USASAC SA3 database, USAFAC Program Budget Accounting System (PBAS), SAAC's Defense Integrated Financial System (DIFS) database, and in the future it would compare it with the AMC Commodity Command Standard System (CCSS) database. Finally, accounting controls compared Performance to Obligational Authority, Net Case Value to Obligational Authority, Abnormal balances, and Obligation Delays.

All of these enhanced financial and logistical controls over the FMS process were performed as required on a monthly or quarterly basis. They were reduced once a year to an Annual Feeder Report, the first of which was submitted as of 30 June 1990. This report contained a summary at country level of all

major data elements of the system listing variances, analysis of the variances, recommended solutions, etc. The individual country level reports were signed by the respective central case managers. These reports were summarized and forwarded to the Commanding General for signature as the Annual Feeder Report. This report was then forwarded to the Department of the Army.

Accounting Support. During the second quarter of FY91 the operational control for NCAD will be transferred from the AMC's Depot System Command to the Defense Logistic Agency (DLA). Because of this imminent transfer, the accounting support that USASAC received from NCAD through an intraservice support agreement will no longer be available. During FY90, the Directorate for Resource Management, Finance and Accounting Division began implementation of an effort to transition accounting support functions from NCAD to USASAC.

Implementation of Total Quality Management (TQM), Mission Oriented Oversight (MOO) and Zero Based Resourcing (ZBR). During FY90, the Directorate for Resource Management, Productivity and Management Division took an active role in implementing TQM, MOO, and ZBR in order to align USASAC's overall management philosophy with that of the AMC Commanding General.

An active program to implement the philosophy of TQM was undertaken in the form of introductory training for USASAC personnel along with the formation of a number of Process Action Teams (PATs) to address processes critical to the satisfaction of USASAC's FMS customers. Most notable was a PAT that addressed problems with the processing of FMS Reports of Discrepancy (RODs). This team was highly visible within the Security Assistance community and held a landmark meeting during FY90 with ROD representatives from DLA centers to resolve a number of long running ROD processing problems. In conjunction with the PAT effort, the Productivity and Management Division began an effort to develop and compile a Business Plan for Security Assistance. This living road map will chart the course for Security Assistance and USASAC in both the near and far term.

With the determination by the AMC Commanding General of the seven Mission Areas for AMC, the Directorate for Resource Management, Productivity and Management Division began an effort through ZBR to address workyears devoted to Mission Area #2, which was to "Provide Equipment and Services to Other Nations through the Security Assistance Program." Baseline data for ZBR functions and tasks were developed and submitted by all activities that support Mission #2. The status of MOO and ZBR was briefed quarterly to the AMC Commanding General by the USASAC Commanding General.

Directorate for Policy, Plans and Operational Support

DLA Contractor Operated Parts Depots. DLA's Contractor Operated Parts Depot (COPAD) was opened to FMS in January 1990. The Army served as the test military department and, in conjunction with AMSAC-O, worked out "bugs" with DLA. Order-ship times were around 16 days for many items. The Commanding General, AMC praised DLA for its contribution to FMS customers.

Simplified Nonstandard Acquisition Process. The directorate completed strategy for streamlining the acquisition of nonstandard support items. The U.S. Army Tank-Automotive Command developed a plan to use a series of master Blanket Purchase Agreements (BPAs) to buy nonstandard items, which was endorsed by AMC for implementation. The plan was known as the Simplified Nonstandard Acquisition Process (SNAP).

Direct Exchange. USASAC assisted the AMC Command Counsel in drafting a legislative proposal to authorize Direct Exchange (DX) of FMS materiel. This was a long-sought USASAC goal, since the

perceived lack of legal authority to acquire FMS articles blocked any DX. If enacted, this legislation would remedy the DX dilemma.

Elimination of Justification and Approval for FMS Sole Source Requests. USASAC, together with the AMC Command Counsel, initiated the legislative proposal which eliminated the statutory requirement for a Justification and Approval document explaining the basis for using other than full and open competition for procurement in support of certain international agreements or FMS. The procedure will expedite FMS sole source requests through the acquisition process.

Equipment Demonstrations. Based on input from USASAC, the Department of the Army published a draft regulation on mission and responsibilities for the conduct of equipment demonstrations. Comments and suggestions for changes were sent back to the Department of the Army. Execution of a demonstration of the Howitzer Improvement Program (HIP), 155mm, M109 Self-Propelled was conducted under the draft policy guidelines. Publication of a finalized policy on demonstrations was pending from HQDA.

Operation Desert Shield. The initial staffing to meet the Saudi Peninsula Countries requirements as a result of Iraq's invasion of Kuwait was achieved by this Directorate. The responsibility for coordination of additional assigned personnel to USASAC desk functions and to support AMC in the total Operations Center fell upon the Mobilization action officer. Procedures were developed and actions were summarized for general officer level briefings on a daily basis. The Mobilization action officer worked under the oversight of the USASAC Regional Director.

The Plans and Operational Support Division was involved as a key player in meeting Secretary of the Army requirements for materiel in the Tactical Wheeled Vehicle (TWV) asset reduction program. This program provided equipment for Southern Region Amendment (SRA), International Narcotics Control Act (INCA), Presidential Grant Programs, and for FMS customers. During 1990, 2,637 TWVs with an initial acquisition value of $27.5 million and current sale price of $1.7 million were allocated under SRA. During the same period, 1,350 TWV's with an acquisition value of $21.1 million and current sale price of $1.6 million were allocated under INCA provisions.

European Force Reduction. In support of Conventional Forces Europe treaty force reduction provisions, the Plans and Operational Support Division was significantly involved in displacement of main battle tank assets from Europe to security assistance customers elsewhere. Equipment with an initial value of $6.6 billion and current sale price of $161 million received Congressional approval for transfer. This included 900 M60A1 tanks for Egypt, 60 for Morocco, and 30 for Tunisia.

Drug Interdiction. The Special Defense Acquisition Fund (SDAF) initiated procurement for drug interdiction requirements, which include significant quantities of ammunition, machine guns, rifles, night vision equipment, and radios. This equipment was recommended to the Defense Security Assistance Agency (DSAA) as a package because of Public Law 101-231, International Narcotics Control Act of 1989. The SDAF funded the development of the FMS version of the new multiple launched rocket system software currently under development for the U.S. Army. The concurrent development of the FMS version will save considerable funds and leadtime. The refurbishment contract for the UH-1H Helicopter was awarded to Southern Aero of Ozark, AL. This highly contested contract, awarded to a small business, is worth approximately $250 million with its expected options over the next 5 years. The production line for the Hawk Missile was extended by the purchase of 188 each by SDAF. This permitted the Army to receive missiles for its advanced procurement funds, which would otherwise have been lost with the planned cancellation of the multi-year buy. Desert Shield requirements were filled by SDAF, preventing the diversion of Army stock, to include Stinger and TOW missiles, trucks, ammunition, radios, and night vision equipment.

Directorate for Mideast/Africa

Significant activities within the Directorate were primarily related to increased defense equipment sales to Egypt and the Middle East nations. Prior to Desert Shield, sales in these nations approached $9B; by the end of the fiscal year, projected sales approached $20B.

Directorate for Europe

The countries and programs assigned to the Directorate for Europe included:

Division RA: Programs assigned at the beginning and end of year were Austria, Finland, Germany, The Netherlands, Norway, Sweden, Patriot and Secure Electronic Procurement Office (SELPO).

Division RB: Programs assigned at the beginning and end of the year were France, Italy, Malta, Portugal, Spain, Switzerland, Turkey, Yugoslavia and NATO Maintenance and Supply Agency/Supreme HQ, Allied Powers, Europe NAMSA/SHAPE).

Division RC: Programs assigned at the beginning and end of the year were Israel, Canada, United Kingdom, Belgium, Greece, Denmark, Luxembourg and Ireland.

The following important actions took place:

Austria accepted and funded a Letter of Offer for 24 M109A5 155mm Howitzers. It also Requested a Letter of Offer for test and evaluation of the TOW 2A Missile System in Austria. Testing will be performed by Contractor personnel since the Austrian Neutrality Pact precluded uniformed military personnel from performing the test.

France acquired extensive Stinger support through FMS purchases in FY90. It resolved several issues with the Repair and Return Program for Stinger, including mis-shipped materiel and reconciliation of the country's inventory.

Germany requested several Letters of Offer for destruction of Pershing 1A Missiles at Longhorn Army Ammunition Plant, Texas, in connection with reductions agreed to under the Conventional Force Reduction Agreement in Europe (CFE).

Greece submitted a Letter of Request (LOR) for the upgrade of CH-47 aircraft and for 105mm ammunition.

Israel accepted a FMS case for Stinger (reprogrammable microprocessor less module) and had them delivered in September. It also accepted a FMS case for 18 AH-64 helicopters and deliveries began in August. Israel received Emergency Military Assistance under Section 506(a)(1) of the Foreign Assistance Act of up to $74 million in defense articles from stock, and defense services.

Malta received the first FMS case for country, 50 each M151A2 vehicles, during FY90.

NAMSA's request for automatic revisioning services for the TOW 2 AN/UAS-12A night sight was approved and processed.

The Netherlands and the U.S. Secretary of Defense agreed on 12 March 1990 to a lease of 20 AH-64A Apache Helicopters to the Royal Netherlands Air Force. Final outcome of the lease was predicated

on the results of a Defense White Paper which required a review of the Netherlands Armed Forces requirements.

Norway obtained permission from the United States to utilize NAMSA for support of its leased I-Hawk materiel. Two of the six leases of I-Hawk materiel were approved for an additional five years. The remaining four will be approved prior to the individual lease termination dates.

Several actions were taken with regard to the Patriot missile. The Italian Patriot Implementing Arrangement was signed in April 90, and production of the first 10 sets of Patriot equipment was initiated in May 1990. An audit of the Germany Patriot FMS Case WIA was initiated by the Army Audit Agency at the request of the German Air Force. Portugal's FMS cases for 67 each AN/PPS-5B ground surveillance radar systems were accepted and implemented during FY90. Shipment was scheduled to begin in the third quarter of FY91.

Sweden completed a test and evaluation during the period December 1989 to June 1990 of M1A1 Tanks in competition with the German Leopard II and Swedish Tanks.

Switzerland's acquisition of Stinger hardware and software valued at $80 million for coproduction, training and inventory was negotiated during FY90. In addition, Switzerland signed a FMS case for $12 million Research, Development, Test and Evaluation costs. Switzerland also requested additional production of 15,000 Dragon missiles and that the memorandum of understanding be extended to 1999. An additional sale of TOW 2 and TOW 2A missiles has been offered to Switzerland.

Turkey requested and has received approval to obtain five each attack helicopters. It also accepted a FMS case to acquire a "sanitized" version of special software which will allow for the firing of "smart" munitions from the Multiple Launch Rocket System (MLRS). Price and availability data for the Army Tactical Missile System was provided in conjunction with the MLRS.

The United Kingdom delayed its decision on the M1A2 tank until next fiscal year.

Country Management Reviews were conducted as follows:

Austria	May 90, Denver, CO	Luxembourg	Oct 89, Brussels, BE
Belgium	Oct 89, Brussels, BE	Mainz AD	Apr 90, MZAD, GY
Denmark	Sep 90, Copenhagen, DE	NAMSA	Oct 89, Capellen, LX
France	Oct 89, NCAD, PA	Netherlands	May 90, The Hague, NE
Germany	Jun 90, NCAD, PA	Norway	Sep 90, Oslo, NO
Israel AF	Oct 89, Huntsville, AL	Portugal	Nov 89, Lisbon, PT
	Jul 90, Tel Aviv, IS	Spain	Mar 90, NCAD, PA
Germany	Oct 89, Sharpe AD, CA	Turkey	May 90, NCAD, PA
	Jun 90, NCAD, PA	Switzerland	Sep 90, Bern, SZ
Italy	Jan 90, Wash, DC	UK	Oct 89, London, UK
	May 90, Rome, IT		

Directorate for Asia/Pacific/Americas

The two important actions during FY90, that will continue into FY91, involved the counternarcotics program and disaster relief for the Philippines.

506 A(2) Counternarcotics Program. The Foreign Assistance Act of 1961 was amended to add a new section referred to as 506 A(2). It authorized the transfer of up to $75M in defense articles and services

to support counternarcotics programs, refugee actions, and Disaster Relief. For example, support for the Philippine earthquake victims was a $10M part of this program.

The program was implemented based upon a signed Presidential Determination after a 15-day notification to the financial committees of both houses of Congress. This notification was completed on 9 August 1990. Transfers made under 506 A(2) were non-reimbursable draw downs of defense stocks; no funds were appropriated. Any action in support of the program must come out of the service's operating funds and on-hand stocks. The by country allocation of the 506 drawdown in FY90 was: Columbia - $20M, Mexico - $17M, Bolivia - $7.8M, Ecuador - $3M, Jamaica - $5M, and Belize - $500K.

The current 506 A(2) program was valued at $53.3M. The program was currently scheduled to end on 22 November 1990. There were, however, ongoing moves to extend this deadline by 60 days. Jamaica was authorized $5M in 506 A(2) drawdown. As of 5 November 1990, $763,928 in requisitions had been submitted on Jamaica's behalf. The items were mostly clothing, individual equipment, and vehicle sustainment. The larger dollar values were tied up in helicopter parts. As Jamaica had the last priority of the 506 A(2) countries, requisitions for helicopter parts for Jamaica must be held until all others have been submitted.

506 A(2) Disaster Relief Program for the Philippines. On 20 September 1990, the President notified the Congress of his intent to exercise his authority under Section 506 A(2) of the Foreign Assistance Act of 1961, as amended, on behalf of the Philippines. Presidential Determination Number 90-41 authorizing the draw down of $10M of Disaster Relief was signed on 30 September 1990. All materiel must be in the transportation pipeline no later than 18 January 1991.

Materiel requested includes approximately $8.5M of engineer-type equipment (i.e., road graters, scoop loaders, prime movers, electric generators, etc.). The remaining $1.5M will be used to cover transportation. Requisitions for these materiels were being processed by the responsible commands.

Security Assistance Automation, Army Project Management Office

Changes Impacting the SA3. While the SA3 PMO continued to be fielded substantially as envisioned, there have been many issues which resulted in required variances to meet policy changes and revised command priorities. During this period we encountered more issues than in the past. The most significant of these were:

Defense Management Report Decisions (DMRDs) that affect systems development and Security Assistance organization.

DOD Corporate Information Management (CIM) and Interim Standard Systems decisions and guidance.

AMC Vision 2000 Process Action Team decisions.

Project Vanguard manpower and organizational changes.

Strategic Logistic Program initiatives.

New FMS initiatives such as the Streamlined Letters Of Agreement as a result of Operation Desert Shield.

While not all of these issues directly effect the SA3 system development effort, they had to be and will continue to be considered in overall plans for new development and systems enhancements.

Operation Desert Shield. Support to Operation Desert Shield was accomplished using the SA3 system to develop and electronically transmit FMS cases on a high priority basis for the support of our allies. Some of these cases took less than 48 hours to prepare and transmit, a process that could normally take 40 days. SA3 allowed the MSCs to maximize resources and respond in record time. A consequence was the identification of some system shortfalls that were corrected on an urgent basis by SIMA with the assistance of the SAFSO. Correction of these deficiencies not only benefitted Operation Desert Shield but the SA3 system as a whole.

Report Of Discrepancy (ROD) Expert System. An ROD Expert System was developed to improve the processing of RODs. This effort included the recommendations of the ROD Process Action Team and will continue to be improved based on user requirements. This was a joint USASAC-SIMA effort and was USASAC's first foray into Artificial Intelligence.

International Logistics Supply Delivery Plan (ILSDP). As part of the CCSS Release 9030, significant changes were made to the automated ILSDP to allow MSCs preparing the ILSDP to review data and make changes prior to printing. Included in the release was a complete rewrite of the systems documentation. This effort also established the foundation for electronic transmission of ILSDP data from the MSCs to USASAC, which for the first time will have access to procurement data from the MSCs.

Counter Narcotics Activity. The office participated as a member of a DSAA sponsored DOD Team assisting the U.S. Army Southern Command (SOUTHCOM) Commander-in-Chief in Counter Narcotics activity. Working with the SOUTHCOM staff and the SOUTHCOM Support Center, the office established a Security Assistance information database that will be part of the overall SOUTHCOM Counter Narcotics/C3I Network. Data from USASAC and the other Military Departments was provided to a central database for access by SOUTHCOM activities.

Efforts began to convert the SA3 system from the current System 2000 (S2K) database management system to the Model 204 database management system. The new system will be prototyped at USASAC-NCAD. This will provide automated case development tools and will be the basis for proliferation of the revised database to all MSCs.

New Cumberland Army Depot - Deputy for Operations

The maintenance of Foreign Military Sales case and 506A (Presidential determination) execution and support for critical programs such as War on Drugs and Desert Shield in the face of significant resource reductions were the most significant and challenging issues facing the Deputy for Operations' organization in FY90, as was maintaining a high level of customer support in the face of a hiring freeze and reduced funds. Support for Foreign Military Sales customer countries included with Desert Shield was given special priority and support.

Due to diminishing resources and reduced out-year projected available Foreign Military Sales Administrative Funds, coupled with planning to reorganize AMC Security Assistance, management identified the Transportation Office and Product Assurance as duplicate functions performed by USASAC and by the various AMC MSCs. As a result, the Commanding General, USASAC, directed reductions in staffing for the Directorate for Product Assurance and the Transportation Office. In addition, reorganization studies and a hiring freeze were instituted for the entire organization by the Commander, USASAC.

SANG Modernization Program

The name of the organization officially changed to Program Manager, Saudi Arabian National Guard Modernization Program, from its previous designation as Project Manager, with the publication of HQ AMC permanent order 16-1 dated 26 February 1990. Other events in the year included: the change of most senior staff including the PM; an expansion of the program including scope, length, and dollar value; some notable firsts in the foreign military sales arena; and finally a splendid response to the invasion of Kuwait.

Program Expansion. The modernization program had for 17 years concentrated on two brigades in central Saudi Arabia and their support. Early in the year, the Crown Prince agreed to permit the expansion into the Eastern and Western Provinces. Three-man teams backed up by contractor personnel were immediately established in Dhahran and Jeddah. On 19 May, SANG accepted amendment 21 to the master case SI-B-ZAC, which extended the modernization program three years, until 31 December 1993. This was followed in September by two separate amendments, one for $300 million to fund the existing modernization program and a separate amendment for $2.9 billion to finance acquisition, fielding and support for 1,117 Light Armored Vehicles. These two amendments more than doubled the program value from $2.4 to 5.6 billion.

Customer Satisfaction Issues. Two longstanding customer satisfaction issues were resolved this year as well. First, the financial annex to our foreign military sales cases has now been tailored to the cash customer with the elimination of references to loans, grants and other assistance programs. The second improvement was the presentation of Letters of Offer in both English and Arabic, both of which were legally binding. These two changes emphasize the Security Assistance community's quest for customer satisfaction.

Operation Desert Shield. The year ended in a crisis that was soon to become a war. The Saudi Arabian National Guard was the first to respond to the invasion of Kuwait, with forces deployed within 24 hours. PM-SANG responded immediately to facilitate the arrival of U.S. forces, then by augmenting his staff to expand the depth and breadth of advice and assistance; filled crisis requirements for rations, chemical defense equipment, field medical items, TOW & Stinger missiles and a multitude of other supplies and equipment. Training programs were reinforced and accelerated. By year's end, the Saudi Arabian National Guard was infinitely better prepared to face the challenges of 1991.

Other Significant Issues

Command Group and Chief of Staff Organizations. In the Chief of Staff Organization (AMSAC-S), MG Lightner's management initiatives were undertaken by the Chief of Staff, COL W. W. Winslow and Administration and Security Division Chief Mr. Donald Uber, in the following areas:

TQM. The established Administration TQM Process Action Team (PAT) produced improvements ranging from internal administration automation to improved administration customer service.

MCB. They developed and established an automated MCB budget management monitoring system to track MCB expenditures in the AMSAC-S organization. They managed the work force within budget guidance which contained a 15 percent reduction from FY89 without adverse personnel actions or the loss of critical mission accomplishment.

Automation. The Chief of Staff and his subordinate supervisors accomplished training and utilization of automation by all organization employees in FY90. Training was provided in basic terminal operations and software applications. Major projects to automate administrative work, such as the Property

Book and a personnel data base Administrative Management Information System (AMIS) were initiated. ADP support equipment was planned, purchased and installed for all employees at USASAC, Alexandria, and purchase was completed for 40 percent of USASAC, New Cumberland. Automation provided more effective and efficient work accomplishment in the AMSAC-S organization and Command Group supporting the Foreign Military Sales mission.

Office for International Industrial Cooperation (OIIC)

The primary mission areas of the office were to manage the U.S. Army's munitions control and coproduction programs and to ensure that security assistance related technology disclosure decisions were in accordance with DOD and Army regulations and policies.

Munitions Control. In FY90, 6,023 export license requests were received, an increase of ten percent over FY89. Towards year-end, this increase was undoubtedly due in part to the Desert Shield Operation. The Department of State institutionalized "Project Accelerate," which was quite a success. By May, 92 percent of their licenses were issued or staffed out to the appropriate reviewing activity within ten days of receipt, a significant improvement over past performance. The High Technology Export Analysis and Control System (HI-TRAC 90), which was expected to enhance processing of export licenses and technology transfer, was cancelled by DOD. As a result, DOD was planning to strengthen the existing Foreign Disclosure and Technical Information System (FORDTIS).

Coproduction. Twelve agreements memorandums of understanding (MOU), amendments and implementing arrangements were concluded during the year. They included AH-1S Cobra and UH-60 Helicopters and Hawk and Patriot Missile Systems with Japan; Second Generation Image Intensifiers and TOW 2A Missiles with Pakistan; and M109A1B Howitzers, Dragon, Stinger (2), and TOW 2 (2) Missile Systems with Switzerland.

Agreements for the M1A1 Tank and M256 Cannon Chrome Plating with Egypt and MODFLIR with Germany were in the final stage of conclusion and should be signed early in FY91.

Other agreements in various stages of development and negotiation during the period included: Ammunition Production with Brazil; 120mm Ammunition with Egypt; Air-to-Air Stinger Subsystem Components with Germany; Hawk, MLRS, M483A1/M509A1 Projectiles and UH-60 Helicopter with Japan; M9 ACE and M109A2 Howitzers with Korea; AN/TSQ-73 Missile Minder with NATO; M109A2/A3 Howitzers, M483A1/M864 Projectiles, M577 MTSQ Fuze and MODFLIR with the Netherlands; AN/TPQ-36 Firefinder Radar, Second Generation Image Intensifiers and TOW 2A Missiles with Pakistan; and MLRS with Turkey.

Other coproduction requests being considered were: C-NITE, NR109 and Stinger IFF with Japan; M284 Cannon/M203A1 Prop Charge with Switzerland; and Army Tactical Missile System with Turkey.

Office coproduction personnel participated in several CONUS and OCONUS coproduction program review meetings for major weapon systems during the year. Coproduction Activity was included in the USASAC Review and Analysis for the first time for the fourth Quarter of FY90.

Technology Disclosure. Requisitions for 2,569 restricted and classified publications from 51 foreign countries were reviewed, involving coordination with twelve agencies and commands.

Ninety technical data package releases for twenty-two countries were processed by this Office. Twenty-four packages allowed production in foreign countries. Forty-seven were for operations and maintenance of systems previously sold. Nineteen requests were denied.

Army Industry Forums. During FY90, in addition to the three major mission areas discussed above, OIIC played an active role in a variety of U.S. Army/Industry forums, such as the Atlanta XVI, American Defense Preparedness Association (ADPA), Association of U.S. Army (AUSA) and AMC sponsored Army/Industry cooperation conferences which were designed to increase Army/Industry dialogue regarding issues in the areas of Security Assistance, Armaments Cooperation and Defense Trade. The office was instrumental in the preliminary stages of planning for these conferences, serving as the focal point for the development of agendas, speaker selection and speech writing, including active participation in either moderating or chairing of a conference, as required.

Operation Desert Shield. OIIC personnel were also very forthcoming in their support of Desert Shield. While not directly involved in the FMS aspects of the operation, the Office collectively served approximately three hundred hours since activation of the AMC Operations Center in early August.

Directorate for Mideast/Africa

In January, General Tuttle presented the $3.4B LOA for 315 M1A2 tanks to General Hammad, Chief of Staff, Saudi Arabia Ministry of Defense and Aviation. This case was amended later in the year for 150 additional tanks, thereby increasing the case value to $5.9B. The Saudi Arabian National Guard (SANG) finalized its requirements for the Light Armored Vehicle (LAV) towards year's end and were prepared to accept the case valued at $2.9B. In August, Egypt accepted an FMS case to purchase 24 Apache helicopters valued at $530M.

With the outbreak of hostilities in the Middle East, Saudi Arabia and the other Arabian Peninsula countries submitted extensive requests for military equipment. The Saudi Arabian request included Patriot, MLRS, M1A2, M2A2, M198 Howitzers, Apache, M60 tanks, M113, Stinger, and in excess of 8,000 trucks. The most urgent request from all countries was for chemical defense equipment (protective garments, masks, chemical alert and decontamination devices). In many instances, USASAC and the MSCs responded such that equipment was shipped to the requesting country in a matter of days.

During the year, significant shipments of defense equipment were made to Egypt and the Middle East from previously implemented or expedited agreements. Saudi Arabia received 12 Desert Hawk (UH-60) helicopters, 15 Bell 406 Combat Scout helicopters, additional Stinger missiles (SANG received its initial allocation) and depleted uranium ammunition. As a result of the Conventional Forces Europe negotiations, M60A1 tanks were made available to numerous countries in the Mideast. Egypt received 700 via the Southern Region Amendment, while other countries in the area purchased tanks: Saudi Arabia - 150, Oman - 43, Bahrain - 27 and Tunisia - 30.

Two important FMS administrative issues were initiated in the Directorate during the past year. First, SANG was successful in its endeavor to have an FMS case translated to Arabic and signed by U.S. officials and secondly, the initial M1A2 tank case (315 tanks) was the first case to use a streamlined approach. With this case as the model, USASAC developed three additional streamlined cases to serve as a test project to determine if the streamlined approach was effective.

Directorate for Asia/Pacific/Americas

Asia Division. The Asia Division had significant dealings with Japan, Korea, and Pakistan.

Japan. The program consisted mostly of coproduction of major systems with FMS cases to Support Annual Service Practice (ASP) for Nike, Hawk; and lot validation and ASP for Patriot. Several joint meetings were held concerning Japan's proposal for testing their 155mm Base Bleed Projectile. Engineering and operational tests will be conducted at Yuma Proving Ground in late CY91 and mid-CY92. Development of the MOU for coproduction of MLRS was postponed one year to CY91.

Korea. Twenty-six UH-1H helicopters "as is, where is" were requested and delivered to Korea in 1990. These helicopters will be refurbished by Korean Airlines and issued to active Korean Army Aviation units. The helicopters were issued without armament, therefore, the Ministry of National Defense (MND) has requested door mounts and M60 machine guns for all 26 aircraft. Two follow-on cases for spare parts and maintenance support equipment have also been issued, but have not yet been accepted by Korea.

The Korean MND requested that USASAC develop an FMS case for three each UH-60L Command and Control helicopters. The aircraft were to support the new Republic of Korea Army Headquarters (ROKH) in Taejun because it was separated from the MND and other service headquarters. The MND requested the aircraft be delivered by the end of December 1990. It was presently planned to have three UH-60L helicopters available for a December delivery. Pilots and maintenance personnel were being trained in Korea via Military Training Teams (MTT) and Technical Assistance Field Teams (TAFT) to facilitate the expedited delivery. Follow-on training was to take place in U.S. Army Training Centers.

Pakistan. All M48A5 parts were shipped to Pakistan in FY90 except engine blocks, housing assemblies and 31 items which were to be shipped if money was available. These items were at the port awaiting shipment. There was $270,000 left out of the $3.1M allocated for the M48A5 parts project. The Government of Pakistan (GOP) will provide a list of parts in priority sequence which will be requisitioned on a fill-or-kill basis.

The 100 AN/VS-12A Night Sights were delivered and accepted by the GOP. The GOP requested a Letter of Offer and Acceptance (LOA) for Mobile Subscriber equipment which will be used for the Pakistan Army Tactical Communications System (PATCOMS). Since the cost of the LOA was higher than anticipated by the GOP, the LOA will be reviewed to determine if the cost can be reduced.

Pacific Division. The Pacific Division oversaw agreements with Australia, Indonesia, Nepal, New Zealand, the Philippines, Singapore, Taiwan and Thailand.

Australia. Australia continued to be aligned with the United States both politically and strategically. Australia had requested 53 FMS cases during FY90, which included a variety of materiel at limited U.S. dollar value. Australia placed a major emphasis on an off-set arrangement in return for defense purchases. This objective will have an impact on any future FMS purchases. Recent world political change and the relaxation of tension between the East and West will also tend to influence their thinking about the type and amount of FMS materiel they will purchase. Significant cases for FY90 were:

FMS Case	Nomenclature	Remarks
AT-B-ZNR	Fuze M567	Requested diversion for Dec 90 delivery
AT-B-ZPA	Chemical Protection Equipment	Desert Shield Support
AT-B-ZPC	Radar Warning Sets, AN/APR 39(V) (3) and 44(V)	Desert Shield Support

Indonesia. A Bell 412 simulator delivered in September 1990 was the first major Army purchase since the early 1980s. It indicated a renewed interest in FMS on the part of the Government of Indonesia, especially on the part of the Army. The emphasis had been and remained on purchase of aircraft for the

Air Force. Renewed interest was demonstrated for 2-1/2-Ton and 5-Ton Trucks, communications equipment and the Hawk Weapon System.

Nepal. A second quantity of 120 PRC-77 Radios, as well as parts support was scheduled for shipment during December 1990. These purchases represented the first made via security assistance since the 1970's. An unused Military Assistance Program (MAP) allocation in the amount of 500K was made available to Nepal during August 1990. Nepal elected to use it to purchase more AN/PRC-77 Radios. The source of all radios was the Special Defense Acquisition Fund (SDAF).

New Zealand. As a result of its non-nuclear policy, New Zealand was no longer a member of the organization for Australia, New Zealand and United States (ANZUS). Despite changes in the security relationship with New Zealand, the U.S. continued to help New Zealand with their existing military equipment, air and naval surveillance capabilities, and the capability to play a role in the security of Southeast Asia and Pacific. New Zealand had a total of 46 active cases valued at $25M. Most of the FMS business consisted of publications, Cooperative Logistics Supply Support Arrangement (CLSSA) for helicopters, drawing and specifications for ammunition chute adapters, T-53 series engines and other various components. The helicopter program was very active. One major case was signed and awaiting implementation, FMS case NZ-B-VHO, for helicopter filter parts. New Zealand also expressed interest in purchasing the M119 Light Gun, 105mm and other U.S. equipment.

Philippines. The Philippine FMS program funding was changed from Military Assistance Program to FMS Credit (non-repayable) for FY90. Emphasis remained on improving existing assets through better maintenance and logistic support and a modest modernization effort to replace some aging equipment. The purchase of 28 McDonnell Douglas 520 MG helicopters was completed through FMS and will serve to modernize their helicopter fleet. The Philippine Navy requested five Logistic Support Vessels (LSVs). As a result of the earthquake, a Section 506 (A) (2) was initiated to supply certain engineering and/or construction equipment. Delivery of equipment will be completed by mid-January 1991. Significant deliveries during FY90 included:

Trucks, HMMWV, 1025 Armament Carrier	97
MD-520 MG Helicopters	10
M60D Machine Guns	60
Generators, 7.5. KVA	72
AN/PRC-77 Radios	200
T-53 Engines (Overhaul)	22
Grenade Launchers M203	740

Delivery of the MD-520 helicopters was delayed as all defense transportation had been diverted to support Desert Shield. Delivery was made by use of Southern Air, contracted by the Military Airlift Command (MAC), for four helicopters and Navy sealift for six. An excess equipment program was initiated to help enhance the shortfall in FMS funding but will not be completed until FY91.

Singapore. The three AN/TPQ-37 Radars purchased in 1989 were scheduled for delivery in January or February 1991 instead of March 1991. At the request of the Government of Singapore, delivery of the TOW 2A Missiles purchased in 1990 were scheduled for fourth quarter of FY91 and the first quarter of FY92. The government was considering the purchase of one additional AN/TPQ-37 Radar from the Special Defense Acquisiton Fund. The Government of Singapore's prime requirement was for UH-1H Helicopters, preferably "as-is, where-is," up to a quantity of 20. An LOA for a quantity of 12, refurbished from SDAF is in-country for acceptance. Enhancement of the I Hawk system is also in the discussion and briefing stage including the recent purchase of missiles.

Taiwan. Much of the emphasis of the FY90 FMS program with Taiwan (all cash, no credit, no MAP) was on the M48H Tank Program. This was largely a commercial program between Taiwan and General Dynamics Land Systems (GDLS). The M48H was comprised of an M60 tank chassis mated to a M48A5 turret and incorporated other nondevelopmental items - primarily in the fire control area. Four prototype M48H tanks were assembled by GDLS and provided to Aberdeen Proving Ground (APG) for performance testing by the U.S. Army Combat Systems Test Activity (CSTA). This testing was accomplished via an FMS case. The objective was to produce/assemble 450 of the M48Hs in Taiwan. Many of the fire control components, chassis and turret repair parts and miscellaneous items were being provided through FMS cases. Another FMS case provided funds for an intensive manager at TACOM, for the M48H Program.

During the testing done by CSTA, many Test Incident Reports (TIRs) were generated as a result of the test tanks not meeting the test criteria. The vast majority (96%) of these TIRs were resolved, with those remaining open relating to the fire control system/laser range finder. Other areas of emphasis were the Chaparral Missile System, Hawk Missile System including the Phase III Product Improvement Program, and version II software for the Battery Computer System which was used in conjunction with the AN/TPQ-37 Radar.

Thailand. During 1990, the Royal Thai Army's most significant delivery was four AH-1F Cobra Helicopters. The 22 September 1990 delivery was the result of a four-year total package effort which included pilot training, maintenance training, MTT, Technical Assistance Field Team, ammunition, publications, armament, and communications. The overall delivery and reassembly was a total success, encountering no major problems.

Also during 1990, the Royal Thai Army (RTA) requested a significant number of excess tanks to be overhauled at Anniston Army Depot. This buy was considered significant for two reasons: (1) It was a very large buy (300 M60A1 and 350 M48A5 tanks) for a country the size of Thailand, requiring Congressional approval because of the dollar amount involved; and (2) the overhauling process at Anniston would have a direct impact on the reduction in force (RIF) scheduled to occur at the depot. A total of 13 LOAs were written, each offering approximately 50 tanks. Although Thailand requested and Congress approved this purchase, it was doubtful that they will actually purchase all of these tanks. Thus far, the RTA had been offered 163 M60A1 tanks on separate LOAs. The first LOA for 53 tanks had been accepted and implemented. The two remaining LOAs were expected to be accepted by the RTA in 1991.

Latin America Division. This division oversaw FMS for Bolivia, Colombia, Equador, El Salvador, Panama, Peru, and Mexico.

Bolivia. The Bolivian Government was a recipient of Andean Plan Funding. As with Colombia, Bolivia waited until June 1990 before signing a Grant Aid Agreement. They received $30.8 million in non-repayable credit financing for FY90. In FY90, cases were prepared to provide training, small arms and small arms ammunition, individual clothing and equipment, plus major items such as six each UH-1H helicopters complete with concurrent spare parts packages and support equipment. As with Colombia, the Bolivian National Police (UMOPAR) was also an FMS recipient. One particular problem is the utilization/commitment of the Bolivian Army in counternarcotics operations. The inconsistency of the Bolivian Government to commit that force has resulted in withholding eight Army cases until the determination was made that the Bolivian Army was to be actively committed to counter-narcotics operations within their country.

Bolivia was also named as a 506 A(2) recipient of the drawdown operation formalized by the United States President's signing of the presidential determination on 19 August 1990. The drawdown ceiling

amount of $7.8 million was allocated for the country. Of significant note was the authorization to lease (no-cost lease) five each UH-1H helicopters as part of the drawdown ceiling.

Colombia. FY90 began with the continuation of the Colombian 506 A and 506 A(2) drawdowns. The U.S. Army provided over $35 million in goods and services to the government of Colombia in support of its counternarcotics operations. Subsequent to the 23 December 1989 conclusion, the American Ambassador to Colombia sent a personal thank you message to General Tuttle.

In May 90, planning began in earnest for a $53.3 million 506 A(2) draw down which included Colombia in the amount of $20 million. Congress was notified 25 July and the President of the United States signed the presidential determination on 19 August, but actual operations to get materiel requested and moving did not begin until late September. Delays were created by the competition for assets and transportation required to support Operation Desert Shield. As of October 1990, the start of FY91, the drawdown was in progress and requests were placed for all countries. This 506 A(2), code named Operation Port-Side, was extended beyond the normal 120-day limit.

In addition to 506 A drawdown operations, Colombia received $58 million in nonrepayable credit financing under the auspices of the Andean Plan. Although the funds were available in December 1989, the Government of Colombia delayed signing the Grant Aid Agreement until June 1990. The $58 million was provided through U.S. State Department channels to support the Colombian National Police. This marked the first time a law enforcement agency was allowed to use FMS channels without a 660 waiver.

Ecuador. Ninety-five HMMWVs were delivered into Ecuador in January 1990. Due to cross communication among the United States Military Group (USMILGP), the Government of Ecuador, and USASAC, the HMMWVs were delivered without the accompanying concurrent spare parts (CSP) (a documented request was made from USMILGP to USASAC for early delivery without CSP to avoid CONUS storage charges). During the period from February to March 1990, efforts were made to ship spare parts, tools and test equipment to Ecuador and to conduct the required training.

A change in U.S. legislation added section 517 to the Foreign Assistance Act of 1961, as amended. It authorized major illicit drug producing countries to obtain excess vehicles free under the Excess Defense Articles (EDA) program and required them to pay only packing, crating and handling (PC&H) plus transportation costs. Ecuador was one of the identified Section 517 countries and it took advantage of the program. The 477 vehicles they selected were located in storage sites in Europe. As a 506 A(2) recipient in the amount of $3M, Ecuador decided to use a significant portion of the draw down ceiling to cover the costs of PC&H and transporting the EDA vehicles into country.

El Salvador. Prior to the conclusion of the Colombian 506 A activity, insurgent activity flared in El Salvador and the Latin American Division had to focus its attention on support to the El Salvadoran government. Of particular note was the case preparation, implementation and shipment of medical supplies and munitions into country within 72 hours of notification. The timely assistance greatly assisted the government in turning back the insurgents and successfully dislodging them from the city of San Salvador. The murders of the Jesuit priests during the emergency resulted in substantive talks regarding human rights in El Salvador and in U.S. congressional actions which will reduce future El Salvadoran FMS. In August 1990, the State Department refused to approve new Letters of Offer to force the Government of El Salvador to enter into meaningful negotiation with the National Liberation Marti' Front.

Panama. Subsequent to the U.S. invasion of Panama to oust General Noriega, the FMS restrictions on Panama were lifted, and the Latin America Division was required to concentrate its efforts to support the newly formed government of Panama. In less than three months, the division was successful in obtaining critical communications equipment, uniforms, weapons and vehicles for the newly formed

Panamanian Public Forces. Later in the fiscal year, additional communications equipment and support packages for vehicles and weapons were obtained and sent into Panama.

Peru. Peru was one of the three countries included under the Andean Plan. In FY90, the country was programmed to receive $36.4 million; this did not happen as the Government of Peru refused to sign the Grant Aid Agreement. Peru was also identified to receive up to $5 million of the $53.3 million 506 A(2) draw down, but due to its failure to sign the Grant Aid Agreement, it could receive nothing. Despite a lack of cooperation with the Government of Peru, the military departments have continued to identify requirements and request development of Letters of Offer and Acceptance. Of the seventeen cases developed, all have been suspended and returned to the preparing MSC. When and if the President of Peru signs the Grant Aid Agreement, all cases will require major revisions regarding price and availability.

Mexico. The Government of Mexico continued to show increased interest in U.S. Army FMS. In January 1990, an additional 119 HMMWVs and two cases for excess vehicles were obtained through the Excess Defense Articles program. The 1990 legislation recognized that Mexico should play a stronger role in the ongoing war on drugs. Mexico's importance was clearly identified by its inclusion as one of the countries identified as a "major illicit drug producing nation" and one of the Section 517 countries. Status as a 517 country allowed that 819 plus vehicles obtained under EDA were offered at no cost to the Government of Mexico. Additionally, they were scheduled to receive up to $17 million in drawdown authority under the July-August initiated 506 A(2) operation for six Latin American/Caribbean Basin countries. Included in the 506 A(2) authorization was a no cost lease for nine UH-1H helicopters, plus support equipment and spare parts.

SA3 Project Management Office

A management study was completed by the Chan Computer Corporation that identified which of the remaining SA3 system applications to be developed would be good candidates for expert system development. Of these, the top priority was determined to be Case Tracking capability. A Section 8a (small business contract) set-aside was also awarded to Chan Computer Corporation to develop a prototype of Case Tracking and Decision Support capabilities. Additionally, using in-house USASAC and SIMA personnel, the development of the USASAC Report of Discrepancy Expert System was completed. However, a decision was made to delay fielding to the users until the mainframe computer at USASAC-NCAD was upgraded. All of the USASAC expert systems were developed using the AION Development System, which was procured by USASAC in 1989.

USASAC also completed the procurement of the Model 204 Data Base Management System (DBMS), which will be used to replace the Data Management Report data bases currently running at USASAC-NCAD. In addition, this moved USASAC into the same DBMS arena as the rest of the AMC major subordinate commands. Implementation of Model 204 will also be delayed until the completion of the mainframe upgrade at USASAC-NCAD.

Requirements were defined and contracts were awarded to provide support in several additional areas. A communications requirements analysis contract was awarded, providing expert assistance in determining and documenting existing communications configurations and capabilities at USASAC and within and among the MSC Security Assistance Management Directorates (SAMDs). This contract will also forecast, based on a complex communications simulation model using our actual configuration and usage data, communications requirements for the future. A contract to provide an analysis of SA3 project accomplishments, expenditures and trends and requirements for the future was also awarded. In addition, a contract was awarded to provide an interface between the AMC Standard Foreign Military Sales Pricing System (ASFPS) and the Security Assistance Case Management (SACM) module of SA3. During FY90,

USASAC also continued to refine its requirements for the full integration of SA3, the ASFPS and other user defined stand alone modules.

The SAFSO developed and prepared functional logic, including screen design, for migration of SACM System 2000 data base management system to the Model 204 database management system. Case development logic was also developed for Maintenance Support Arrangements which will be included in CCSS Release 9030. Analysis of existing logic was accomplished in preparation for the interface of the ASFPS and SACM. Plans were developed for re-installation of all SACM S2K program modules at the MSCs as a result of the numerous changes and enhancement that were proliferated during the period. Substantial technical and functional assistance was provided to the MSCs in support of urgent requirements for FMS cases for Operation Desert Shield. SAFSO also provided functional guidance to contractors developing SA3 application software.

The SA3 Army Logistics Management College-sponsored Accredited Off Campus Instruction (AOCI) training course completed its last class before being put on hiatus while it was revised. The course will be moved from the outmoded and difficult to manage INTEL 310 minicomputer to run on a personal computer (PC). The PC version will take full advantage of the color, graphics and speed capabilities of the PC and offer the student more options for taking the course. The content of the course will be revised to include SA3 system developments through CCSS Release 9030. It was expected to be fielded early in 1991.

New Cumberland Army Depot - Deputy for Operations

An extensive TQM Program and strong commitments to MCB were carried out in FY90 to mitigate the impact of reduced resources on operational mission accomplishment. The Deputy for Operations, Colonel Brown, was a member of the TQM Executive Steering Committee. The Civilian Executive for Operations, Mr. Rutherford, attended training on Hoshin Planning. Within the operations element of USASAC several very successful PATs have been established.

MCB and TQM were initiated to manage resources efficiently and effectively. A USASAC Report of Discrepancy PAT was established to identify specific problem areas and processes which have the highest potential for improvement and/or increase of customer satisfaction. The team was following a four-stage process improvement plan. Stage 1 of the plan involved developing flow charts, identifying customer needs and concerns, and developing a standard procedure. Stage 2 involved streamlining the process and removing any slack. Stage 3 included gathering meaningful data, looking for root causes of problem areas and developing solutions. The final stage included planning and making changes for continued improvement.

A USASAC/MSC PAT was established in May 1990 to look at ways to streamline the case closeout process. After reviewing the process, the PAT determined that it was necessary to maintain a formal closeout program in order to maintain visibility over cases eligible for closure. At the same time, the PAT recognized the need for a better method to identify cases eligible for closure. The current method bases eligibility for closure on the Estimated Closure Date. The team concluded that the case closure process should begin at the point in time when each line becomes logistically complete.

The USASAC Information Management Directorate has been working on System Change Requests to develop a USASAC database which would be accessible to all the MSCs. USASAC will identify all the supply complete lines in the database, and the MSCs will dial in, review the lines, show the line status using inhibitor codes, and in the final step, will certify the lines. Once all lines are certified, the system will generate a case certificate.

Program Manager, Saudi Arabian National Guard Modernization Program

Background

Origin of the Saudi Arabian National Guard. The Saudi Arabian National Guard (SANG) traces its roots to bedouin tribal levies known as the White Army because of their uniform, white thobes (long, unbelted shirts). For years these tribal levies constituted a paramilitary organization, but finally began to be formed, during the mid-1960s, into a more standardized structure. By 1975, SANG was organized into 20 regular battalions and 26 irregular battalions, consisting of about 26,000 men. Only the regular battalions, about 1,000 men each, were generally on active duty, stationed in the greater Riyadh area. The irregular battalions were seldom activated and existed primarily to ensure their loyalty and availability via the distribution of royal stipends.[2] SANG's mission was described in 1978 by one Saudi official as follows:

> The first and last objective of modernizing the SANG is the maintenance of security and stability (within Saudi Arabia) and the defense of the vital interests within the Kingdom such as the oil fields, pumping stations, refineries, tank farms, and others. The SANG will never, under any circumstances, become an aggressor force. At the same time, the SANG does not want anyone to aggress against it (or the Kingdom). If terrorists commit terroristic acts (or sabotage) within the Kingdom, the SANG will be committed to protect the Kingdom's interest.[3]

Due to SANG's tribal background, the organization was not comparable to the U.S. National Guard. Instead of being a reserve military element, it was a prestigious entity in the governmental hierarchy. The organization was apparently directly accountable to members of the royal family. This naturally affected the organization and command structure in a way that U.S. military advisors might find difficult to comprehend, much less to adapt to, when trying to introduce U.S.-style modernization plans, programs, and procurement.[4]

Origin of Program Manager, SANG Modernization Program (PM, SANG). The government of Saudi Arabia and the U.S. government signed a Memorandum of Understanding (MOU) on 19 March 1973 which committed the U.S. to assist the Saudis in a modernization program. A 27 April 1973 Delegation of Authority from the Adjutant General gave the AMC Commander responsibility for general management and execution of the SANG modernization program, and authorized the latter to appoint a U.S. SANG Program Manager, creating an Office of the Program Manager, SANG (OPM-SANG). Although the PM, SANG was established 1 May 1973, it was not until 9 April 1974 that the Secretary of the Army issued its charter. OPM-SANG did not begin helping SANG modernize and reorganize until 1975.

Mission

The mission of the PM, SANG was to update the Saudi Arabian National Guard in the areas of management, organization, training, equipment, maintenance, supply, procurement, medical care, and

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[2]Except where otherwise stated, this section is based on *AMC Annual Historical Review, FY75*, p. 320. (UNCLASSIFIED)

[3]*AMC Annual Historical Review, FY78*, p. 299-301. (UNCLASSIFIED)

[4]See also: Memorandum from MG Waldo D. Freeman, Jr., PM, SANG for Commander, USASAC, subj: Program Manager's End of Tour Report, 1 August 1988 through 27 June 1990, dtd 27 June 1990. FOUO - Info used is UNCLASSIFIED.

facilities commensurate with the standards of the U.S. Army and other accrediting U.S. professional organizations, as appropriately suited to the capabilities of the SANG. The PM exercised principal authority over the planning, direction, execution, and control of the modernization which covered all elements, missions, functions, and requirements of the SANG. OPM-SANG worked directly with SANG to first determine the requirements and then the means to address them. From this interaction, OPM-SANG identified both new initiatives and those actions required to sustain or enhance ongoing programs. This facilitated an increase of SANG participation in all aspects of the program. The goal was SANG's eventual capability to unilaterally initiate and sustain modern organizations and systems.[5]

PM, SANG's mission goals received an enormous boost beginning 2 August 1990 with the Iraqi invasion of Kuwait and the Saudi Arabian mobilization, as well as the 7 August U.S. initiation of Operation Desert Shield. The impact that the Saudi mobilization had on OPM-SANG may be gauged by comparing MG Waldo D. Freeman, Jr.'s conclusions in his June 1990 end of tour report with the assessment of the new PM, BG James B. Taylor, as presented in the latter's 27 August 1990 Situation Report. On 27 June, General Freeman pointed out that when he had come on board, it had seemed as though the OPM-SANG presence would dwindle away. While managing to avoid such a fate, he nonetheless stated,

> Some initiatives...will continue to be threatened by short-sighted obstructionists. And the perennial problems will be with us for some time to come. Despite all our plans, strategies, and constant fighting, SANG will continue to micromanage, training and logistics systems will likely remain under-resourced, and force development and PPBS (Planning, Programming and Budgeting System) will be alien concepts for some time to come. There is no doubt but that this array of challenges and problems will gain new additions in the years ahead. True modernization, with its ventures into new territory, will always surface new issues.[6]

In contrast, BG Taylor was able to state, "The [SANG] leadership is expressing a desire for OPM-SANG to increase the military advisory effort in the future modernization plan. There is an increased awareness of the need for more sustainment training and qualification firing for all weapons. In this regard they want more military advisors to assist them in meeting post-crisis training goals..." He continued, "The current crisis has caused the leadership to focus on areas where they now see a need for improvement. The appreciation of American support during the crisis will result in more requests for assistance in the future. We must be prepared to respond to these requests...This is not the time to even consider reducing our presence because our ability to respond to their plan for expansion will be carefully monitored after this crisis..."[7]

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[5]Memorandum from MG Waldo D. Freeman, Jr., PM, SANG for Commander, USASAC, subj: Program Manager's End of Tour Report, 1 August 1988 through 27 June 1990, dtd 27 June 1990. FOUO - Info used is UNCLASSIFIED.

[6]Memorandum from MAJ John D. Harris, G-1 Advisor, AMCPM-NGT-O to LTC Cassity, AMCHO, 5 May 1991, Encl 1: Briefing chart, Saudi Arabian National Guard, "Crisis Activity;" Chronology of Desert Shield/Desert Storm, n.d., prepared by LTC Michael Cassity, AMCHO. Copy in AMCHO files. Both UNCLASSIFIED. Memorandum from MG Waldo D. Freeman, Jr., PM, SANG, to Commander, USASAC, 27 June 1990, subj: Program Manager's End of Tour Report for the period 1 August 1988 through 27 June 1990, p. 24. FOUO - Info used is UNCLASSIFIED.

[7]Memorandum from BG Taylor, PM-SANG, to General Tuttle, Commander, USASAC, 10 Sep 1990, subj: PM SITREP #6 (06-10 Sep 90). UNCLASSIFIED.

Personnel

Personnel Changes Prior to the Saudi Mobilization. BG James B. Taylor assumed responsibilities as the 10th U.S. Army Program Manager for Saudi Arabian National Guard Modernization on 13 July 1990. It should be noted that this was a mere three weeks before Iraq invaded Kuwait. Within hours of that invasion, the new PM and his staff would be forced to assume full alert status with SANG's Eastern Province Headquarters, as advance elements of SANG deployed.[8]

General Taylor's predecessor, BG Waldo D. Freeman, Jr., had served as PM, SANG since August 1988. As indicated above, his tour ended 27 June 1990. In a ceremony hosted by Major General Thomas G. Lightner, Commander, U.S. Army Security Assistance Command, General Freeman was awarded the Distinguished Service Medal and "frocked" to Major General. On a separate occasion, Major General Freeman was awarded the King Abdul Aziz Medal by His Royal Highness Crown Prince Abdullah bin Abdul Aziz, Commander of the Saudi Arabian National Guard.[9]

Prior to and during the early stages of the Saudi mobilization, the assigned and authorized strength of OPM-SANG remained the same as had been reported on 30 September 1989, as shown below:

	OFFICER	ENLISTED	GS CIV	TSN*	TOTAL
Auth:	40	5	99	23	167
Assigned: 1 Oct 89	36	5	96	29	166
Assigned: 30 Sep 90	38	5	106	31	180

***TSN:** Third State National

Effect of Saudi Mobilization on Personnel, FY90. On 5 August 1990, when the King Abdul Aziz Mechanized Brigade (2d Bde) deployed, they were accompanied by U.S. advisors. This advisory element was soon thereafter augmented by contractor support personnel. As BG Taylor noted in his 18 August report to MG Lightner, all personnel were familiar with statutory prohibitions barring security assistance personnel from engaging in combat activities and were instructed to withdraw should SANG forces become engaged.

During the first week or so of Saudi mobilization, a number of dependents of private U.S. companies, employed by OPM SANG, were evacuated. This caused a large (about 70 percent) reduction in OPM's

[8]Ibid.; Conversation, K. Darius, AMCPM-NGW (SANG), with K. Lockwood, AMCHO, 5 August 1991; Memorandum from BG James G. Taylor, PM, SANG to MG Thomas G. Lightner, Cdr, USASAC, 11 August 1990, subj: Overview of OPM and SANG activities since the commencement of the current situation. All UNCLASSIFIED.

[9]Memorandum from MG Freeman, Jr., PM, SANG to Commander, USASAC, subj: Program Manager's Quarterly Report, 1 April 1990 through 30 June 1990, 28 June 1990. UNCLASSIFIED.

support staff, partly alleviated by the employment of OPM dependents. Only a few OPM sponsors elected to temporarily relocate their families.

By 7 August 1990, OPM had analyzed and transmitted its wartime personnel requirements. A 10-man augmentation mobile training team (MTT), arranged by TRADOC's Security Assistance Training Management Office (SATMO) in Fort Bragg, arrived in-country 19 August. The team consisted of former OPM-SANG officers who could easily transition back into advisory roles with their former Saudi counterparts, other technical experts in the ammunition and chemical fields, and selected members of a Special Forces operations team. A request for a second, similar group of 15 augmentees was forwarded to USASAC on 5 September. The team was to focus on training in fire support planning, flank coordination, passage of lines, engineer operations, and maintenance.

By 10 September, since President Bush had waived Congressional restrictions authorizing the release of Stinger missiles to SANG, OPM had identified Stinger training team requirements. This team was to consist of four augmentees. Before the end of the fiscal year, the OPM reported that it would shortly identify its Emergency Essential Civilians as well.[10]

Foreign Military Sales Prior to Saudi Mobilization

Crossleveling of Modernization Program Deposits. In early FY90, the State Department provided Embassy officials in Riyadh with guidance to re-initiate collection efforts on a SANG debt on behalf of the Corps of Engineers; however, U.S. Embassy officials decided to hold the matter temporarily in abeyance.

The background is as follows: During FY89, about $21 million deposited by the SANG for Modernization Program activities had been used to liquidate an unrelated SANG indebtedness to the U.S. Army Corps of Engineers. This action had been taken without prior notice to OPM-SANG or HQ SANG. At the behest of the CG, AMC, the Defense Security Assistance Agency (DSAA) and the Corps of Engineers had reopened this matter in an attempt to pursue collection actions through the State Department. The Embassy had intended to take up the question later in FY90, but the invasion of Kuwait and Saudi mobilization quickly became an overriding concern.[11]

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[10]Memorandum from BG James G. Taylor, PM-SANG to MG Thomas G. Lightner, Cdr, USASAC, 11 August 1990, subj: Overview of OPM and SANG activities since the commencement of the current situation; Memorandum from BG James G. Taylor to MG Thomas G. Lightner, 18 August 1990, subj: Overview of OPM and SANG activities - 11-17 August 90; Memorandum from BG James G. Taylor to MG Thomas G. Lightner, 27 August 1990, subj: PM SITREP #3 (18-25 Aug 90); Memorandum from BG James G. Taylor to MG Thomas G. Lightner, 5 September 1990, subj: PM SITREP #5 (31 Aug - 05 Sep 90); Memorandum from BG James G. Taylor, to MG Thomas G. Lightner, 10 September 1990, subj: PM SITREP #6 (06-10 Sep 90); Memorandum from MAJ John D. Harris, G-1 Advisor, AMCPM-NGT-O to LTC Cassity, AMCHO, 5 May 1991, Encl 1: Briefing chart, Saudi Arabian National Guard, "Crisis Activity." All UNCLASSIFIED.

[11]AMC Annual Historical Review, FY89, p. 322; Memorandum from MG W. D. Freeman, Jr., PM, SANG to Cdr, USASAC, subj: Program Manager's Quarterly Report, 1 October 1989 - 31 December 1989, dtd 2 January 1990; Memorandum, OPM-SANG to Cdr, USASAC, subj: Program Manager's Quarterly Report, 1 January 1990 - 31 March 1990, dtd 2 Apr 1990; Conversation, LTC H. Rollins, HQ, OPM-SANG, with Ms. K. Lockwood, AMCHO, 6 August 1990. All UNCLASSIFIED.

Reduction of Administrative Surcharge. In early FY90 Headquarters SANG declined to sign a FMS case amendment effectuating a reduction in the surcharge applied to PM SANG management cases. Their refusal stemmed both from dissatisfaction with the DD Form 1513 and objections to allowing the U.S. to reserve the right to change the level of surcharge (apparently on the principle that this meant that the U.S. could unilaterally raise the charge, as well lower it). PM SANG's solution was to seek to have the amendment reformulated as a Notice of Modification (DD Form 1513-2), which did not require SANG acceptance. The PM encountered further resistance from DSAA at that point. On the premise that this DD 1513-2 would result in a consistent application of existing security assistance policy, however, and since DSAA had previously approved such an action in another format, that agency had been expected to grant final approval to this method of handling the problem. The actual solution to the matter was a waiver of the surcharge on 60% of the managment cases.

The background to the case amendment provides a clearer picture of OPM-SANG's motives in proposing the document in the first place. In 1983, DSAA's policy of assessing an administrative surcharge on FMS case "management" lines had been determined to be inappropriate and such charges were discontinued. Essentially the charge constituted "overhead on overhead." The SANG Modernization Program had multiple cases and should have benefited from this change. However, instead of having a management line on each of the several related cases, "management" activities were provided for in a separate "sub-case" under the "master case." While DSAA immediately implemented the new policy on "management lines," relief was denied the SANG management sub-case. After prolonged review, DSAA agreed in 1989 to reverse its position and grant relief from the administrative fee on "management" expenses associated with the Modernization Program. While the policy change would not have been retroactive, it would have reduced current program administrative fees by approximately $160,000.[12]

Modification of "Letter of Offer and Acceptance," DD Form 1513. Over the years, SANG officials had raised several objections to the FMS process and the current version of the implementing form, DD Form 1513. SANG had asserted that the FMS process was one-sided and that no real negotiation occurred; the forms and procedures were inflexible; and despite paying full cost, they were treated no better than "grant aid" customers. In response, DSAA was asked to provide some accommodation on items that were subject only to administrative determination. Recommended changes included an optional DD Form 1513, restructured into a version applicable to "services" type cases, and a DSAA agreement to execute the form in English and Arabic. These changes would have little impact on DSAA operations, but would be accepted by the Saudis as substantial evidence that their sovereignty was recognized and that they were a valued FMS customer. The response from DSAA on these issues had initially been negative; in response USASAC and the Central Command had joined in asking DSAA to reconsider.

In mid-FY90, at the request of PM, SANG, the Commander, USASAC initiated a separate action to obtain authorization for FMS cases to be executed in dual languages. This was envisioned as a test case; ultimately, this courtesy would be extended to all cash customers.[13]

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[12]AMC AHR, FY89, pp. 322-323; Memorandum, MG W. D. Freeman, Jr. to Cdr, USASAC, subj: Program Manager's Quarterly Report, 1 October 1989-31 December 1989, 2 January 1990; Memorandum, OPM-SANG to Cdr, USASAC, subj: Program Manager's Quarterly Report, 1 January 1990 - 31 March 1990, 2 Apr 1990. All UNCLASSIFIED.

[13]*AMC Annual Historical Review, FY89*, p. 323; Memorandum from MG W.D. Freeman, Jr., OPM-SANG to Cdr, USASAC, subj: Program Manager's Quarterly Report, 1 October 1989 - 31 December 1989, dtd 2 January 1990; Memorandum, OPM-SANG to Cdr, USASAC, subj: Program Manager's Quarterly Report, 1 January 1990 - 31 March 1990, dtd 2 Apr 1990. All UNCLASSIFIED.

Program Manager's Master Plan (PMMP)

The PMMP was the single integrated document that guided OPM in its recommendations for modernization efforts within SANG. A "living document," the PMMP was updated to reflect accomplishments and changes in technology, manpower, doctrine and/or mission. It was designed to ensure that OPM-SANG advice and assistance was consistent over time and did not fluctuate with changes in personnel and PMs. The PMMP established the base to develop specific requirements for the 1990-1993 case and contract, and made possible several initiatives that went beyond both the contract and 1993.

At the beginning of FY90, the Crown Prince advised the PM that his government was requesting an extension through 1993 of the overall Modernization Program (to include the purchase of 155mm howitzers). In addition the Saudis planned to fund acquisition of the LAV through FMS, beginning in 1990. These actions reaffirmed SANG's satisfaction with the tangible products of the U.S. security assistance process. The PM expected that this would strengthen and extend the U.S. Army's relationship with this component of the Saudi force structure and government. The Program Manager also stated that these actions collectively constituted the largest U.S. security assistance transaction scheduled for FY90, and that it would underwrite a "robust and revitalized program for years to come." This was written at the end of June 1990. At the time, the PM had no way of knowing that a war would begin within the next few weeks.[14]

LAV Program. The acquisition of new combat vehicles had been under consideration at the highest levels of the Saudi Government since FY89. The initial proposal had been under development since the mid-1980s and had been delayed primarily because of financial constraints. By the second quarter of FY90, Congressional notification documentation for the LAV sale of $2.9 billion, together with program extension funding of $300 million, was submitted through DSAA to the State Department. To ensure funding availability, SANG officials requested that formal FMS LOAs be presented at the earliest possible time.

The combat vehicle acquisition involved total package fielding of 1,117 LAVs, including new doctrine and operational concepts, contractor transition and on-site tactical training, fully interactive simulators, concurrent spare parts, maintenance support and extended CLSSA, new facilities and multipurpose range complexes, and translation of publications. The LAV LOA was presented to SANG in July 1990. Fielding and training was to be done at the rate of about one battalion per year, to be completed by the year 2000.

When Iraq invaded Kuwait and the Saudis mobilized, the LAV Program was among those programs which gained new visibility. The PM, SANG reported in late August that he was "pressing for final quick approval of the LAV modernization program FMS case...presented on 15 July. SANG [was] concerned that their delay ha[d] caused a one year plus slippage in their modernization programs."[15]

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[14]*AMC Annual Historical Review, FY89*, p. 323; Memorandum, OPM-SANG to Cdr, USASAC, subj: Program Manager's Quarterly Report, 1 April 1990 through 30 June 1990, dtd 28 June 1990. Both UNCLASSIFIED. Memorandum from MG W.D. Freeman, Jr., PM, SANG for Cdr, USASAC, 27 June 1990, subj: Program Manager's End of Tour Report, 1 August 1988 through 27 June 1990. FOUO - Info used is UNCLASSIFIED.

[15]*AMC FY89 AHR*, p. 323; Memo, OPM-SANG to Cdr, USASAC, subj: Program Manager's Qtrly Report, 1 Oct 89-31 Dec 89, 2 Jan 90; Memo, OPM-SANG to Cdr, USASAC, subj: Program Manager's Qtrly Report, 1 Jan 90-31 Mar 90, 2 Apr 90; Memo, MG Freeman to Cdr, USASAC, subj: PM's Qtrly Report, 1 Apr-30 Jun 90, 27 Jun 90; Memo, BG James G. Taylor to MG Lightner, 27 Aug 90, subj: PM SITREP #3 (18-25 Aug 90). All UNCLASSIFIED. Memo, MG Freeman for Cdr, USASAC, 27 Jun 90, subj: Program Manager's End of Tour Report, 1 Aug 88-27 Jun 90. FOUO-Info used UNCLASSIFIED.

M198 155mm Howitzers. The FY90 program extension funds included a SANG request to acquire 27 additional M198 155mm howitzers for the 1st Brigade, at a cost of $27 million. The need to improve the First Brigade's fire power and to standardize artillery support to both brigades had been addressed for years to all levels of SANG, up to and including the Crown Prince. In September 1989 PM, SANG had continued the argument by giving SANG an artillery requirements package that included a comprehensive analysis of their fire support needs and a comparison of available 155mm howitzers. The 27 howitzers finally agreed upon in April 1990 consisted of four six-gun firing batteries and three guns for war reserves. The LOA was prepared and ready for SANG signature in July; meanwhile, PM, SANG identified the required TOE changes and began developing a training and logistics support plan.

The PM expected that delivery of the howitzers would occur about two years after the LOA was accepted. Again, he had no way of knowing that a war would shortly be a factor in delivery. By 5 September 1990, PM SANG had received copies of FMS case SI-B-JAM (M198 Howitzer, 27 each), which they expected would be signed by SANG in short order. However, the PM reported a week later that SANG had informally requested the OPM pursue the procurement of two battalions of French artillery through FMS. As a consequence, the M198 case was to be held in abeyance.[16]

Medical Modernization. During FY90, the Modernization Program encompassed medical units. This was a contination of a process begun in FY89 and represented a major advance in the modernization process. Saudi Arabian National Guard support for the establishment of field medical training, a vital but long delayed program, had been obtained during FY89 with a sound decision to integrate field medical training into the existing SANG school. OPM-SANG had finished all necessary planning, recruitment, facilities, and course development, to permit the beginning of instruction in the first quarter of FY90.

Formal training in the newly created Field Medical School began as scheduled on 3 December 1989. SANG formed the first of three medical companies in mid-1990, enabling SANG to receive the initial batch of graduates at the end of the fiscal year, and completed the initial Basic Aidman Course of the Field Medical Program. Shortfalls continued in non-medical TOE positions for both the medical school and the units. To maintain the required support, many of the school positions were temporarily supported by contractor personnel. The PMO also reported that as the Directorate of Medical Services (DMS) assumed the military medical school function, management and support problems increased.

Collective training for the First Medical Company was scheduled to culminate in a U.S. Government certification Training and Evaluation Program in the fall of 1991. The Medical Evacuation Company and the Second Medical Company were to be trained and fielded in the same manner. By the fall of 1993, each of the two modernized brigades were to have an organic medical company, and the headquarters was to have a medical evacuation company in general support. OPM-SANG intended to eventually reorganize the Headquarters DMS and to expand the Military Medical School, as well as providing medical refresher

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[16]*AMC Annual Historical Review, FY89*, p. 323; Memorandum, OPM-SANG to Cdr, USASAC, subj: Program Manager's Quarterly Report, 1 January 1990 - 31 March 1990, 2 Apr 1990; Memorandum, OPM-SANG to Cdr, USASAC, subj: Program Manager's Quarterly Report, 1 April - 30 June 1990, 27 June 1990; Memorandum, MAJ John D. Harris, G-1 Advisor, AMCPM-NGT-O to LTC Cassity, AMCHO, 5 May 1991, Encl 1: Briefing chart, Saudi Arabian National Guard, "Crisis Activity." All UNCLASSIFIED.

training, as required. Again, plans for medical modernization and training were to be affected by the Saudi mobilization beginning 2 August (see below under "Training").[17]

Materiel Support to SANG After the Invasion of Kuwait

Overview of the Initial Impact of Saudi Mobilization and Desert Shield on OPM-SANG Materiel Support. By 5 August 1990, HQ SANG activity had increased to full manning and 24 hour operations. OPM advisors were actively solicited for their advice and support of a wide range of matters, with emphasis on materiel shortages. Bottlenecks and delays practically disappeared. An OPM chemical update on 6 August 1990 resulted that very day in a firm order for needed protective equipment. BG Taylor reported,

> [A]lthough selected shortages and increased competition for stocks [were] being experienced, the security assistance system continue[d] to rapidly respond to many of SANG's requirements. Increased confidence in and reliance on FMS vice commercial sources ha[d] been expressed by SANG's military and civilian leadership. A continued high level of responsiveness during the...crisis [would] be expected to yield large dividends in the months and years ahead.[18]

Additional SANG materiel requirements were transmitted almost daily. Existing delivery schedules were moved up or rearranged (see LAVs and M198 howitzers discussed above). Other major areas of concern were medical equipment, TOW batteries, the afore mentioned chemical defense equipment, and MREs. Also, the SANG Deputy submitted a formal request on 20 August for a significant amount of other materiel. The requested items consisted of Man Portable Air Defense Systems (MANPADS), communications equipment, night vision devices, ammunition, camouflage nets, and major end items and ammunition of European manufacture. A secret message (DTG 211003Z), subject: Justification for Critical Requirements for the SANG, was sent, defining the operational conditions that generated SANG's

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[17]*AMC Annual Historical Review, FY89*, p. 323-324; Memorandum, OPM-SANG to Cdr, USASAC, subj: Program Manager's Quarterly Report, 1 October 1989 - 31 December 1990, dtd 2 Jan 1990; Memorandum, OPM-SANG to Cdr, USASAC, subj: Program Manager's Quarterly Report, 1 January - 31 March 1990, dtd 2 Apr 1990. Both UNCLASSIFIED. Memorandum from MG W. D. Freeman, Jr., PM-SANG for Cdr, USASAC, 27 Jun 1990, subj: Program Manager's End of Tour Report, 1 August 1988 through 27 June 1990. FOUO - Info used is UNCLASSIFIED.

[18]The remainder of this section, unless otherwise noted, is based on the following sources: Memorandum from BG James G. Taylor, PM, SANG to MG Thomas G. Lightner, Cdr, USASAC, 11 August 1990, subj: Overview of OPM and SANG activities since the commencement of the current situation; Memorandum from BG James G. Taylor, PM, SANG to MG Thomas G. Lightner, Cdr, USASAC, 18 August 1990, subj: Overview of OPM and SANG activities - 11-17 Aug 90; Memorandum from BG James G. Taylor, PM, SANG to MG Thomas G. Lightner, Cdr, USASAC, 27 August 1990, subj: PM SITREP #3 (18-25 Aug 90); Memorandum from BG James G. Taylor, PM, SANG to MG Thomas G. Lightner, Cdr, USASAC, 5 September 1990, subj: PM SITREP #5 (31 Aug - 05 Sep 90); Memorandum from BG James G. Taylor, PM, SANG to MG Thomas G. Lightner, Cdr, USASAC, 10 September 1990, subj: PM SITREP #4 (26-30 Sep 90); Memorandum from BG James G. Taylor, PM, SANG to MG Thomas G. Lightner, Cdr, USASAC, 10 September 1990, subj: PM SITREP #5 (31 Aug-05 Sep 90); Memorandum from BG James G. Taylor, PM, SANG to MG Thomas G. Lightner, Cdr, USASAC, 10 September 1990, subj: PM SITREP #6 (06-10 Sep 90); Memorandum from MAJ John D. Harris, G-1 Advisor, AMCPM-NGT-O to LTC Cassity, AMCHO, 5 May 1991, Encl 1: Briefing chart, Saudi Arabian National Guard, "Crisis Activity." All UNCLASSIFIED.

requirements. The LOR, in message form, was released on 22 August 1990 (DTG 221000Z). MSC taskings were immediately generated by USASAC and expedited case development began throughout AMC.

SANG's requirements involved the procurement of European weapon systems, ammunition, and communications gear, as previously mentioned. SANG requested that these items be procured through U.S. FMS procedures because vendors offering direct sales were stating exorbitant prices and extended periods before the items would be available.

By the end of FY90, OPM-SANG was handling orders for everything from ammunition to underwear. The amount of time required to process FMS cases dropped from months to weeks. In some cases, OPM-SANG was able to fill requests for materiel within days. The PM reported, "In the supply arena, significant streamlining has been accomplished and extremely byzantine bureaucratic procedures were swept away overnight." Below are details on the progress OPM-SANG made on fulfilling certain key requirements.

Medical Equipment After the Beginning of the Invasion of Kuwait. OPM-SANG documented the requirement 10 August 1990. The PM stated that consumables were initially requisitioned against existing parts cases. On 21 August 1990, the PM, SANG was already able to report that a case was being prepared to offer $2.2 million in field medical equipment. The PM stated that this process would delay case preparation for a few days, but would result in providing equipment to the customer in weeks rather than in years. However, despite previous advice that LOA for medical end items would be faxed for immediate SANG acceptance, it was not until 27 August that the Medical Management Agency in Fort Detrich, MD sent an LOA to SANG. BG Taylor stated that because a total of 50 items had procurement lead times of 18-24 months, SANG would attempt to divert U.S. held stock.

TOW Batteries Provided to SANG During Saudi Mobilization. OPM-SANG initiated the TOW batteries requirement 10 August 1990, but the only available TOW stock was under litigation at MICOM because the batteries did not meet all contract specifications. In view of the circumstances, the litigation was dropped. Although OPM-SANG had received advice that the items had been released, the warehouse initially denied issue because of the suit. SANG's batteries were finally released for shipment on 21 August.

By the 25th, a total of 118 TOW batteries had been received in Saudi Arabia. Twenty-seven of the batteries were charged and shipped to the King Abdul Aziz Brigade. The OPM also pursued the availability of additional TOW batteries in Switzerland, as well as TOW power conditioners in Canada and Switzerland. There was a question as to whether the Canadian TOW power conditioner was compatible with the U.S. V150 TOW, a type of armored vehicle equipped with TOW missiles. The PM noted that if the Canadian item proved compatible, a number of conditioners would be procured from Canada.

Chemical Defense Equipment Furnished to SANG During Saudi Mobilization and Desert Shield. Due to widespread speculation that Iraq would unleash chemical or biological weapons, one of the primary considerations during the early days of Saudi Mobilization and Operation Desert Shield was providing chemical defense equipment to SANG as soon as possible.

In a 7 September 1990 memo to General Carl E. Vuono, Army Chief of Staff, General Tuttle stated that OPM-SANG was able to provide chemical protection (MOPP4) gear to all U.S. military, civilians, and third country nationals employed by that office. On the other hand, the office was not able to fully protect the SANG's deployed force of 16,200. Although 15,000 overgarments were either on-hand or were in the process of being shipped, no nerve agent antidote had yet been released for the National Guard.

The initial order for 7,500 masks was issued by 21 August. The 2d Brigade, on duty at the Kuwait border, received 5,562 fully processed masks at that time. Another 7,200 masks and 7,500 MOPP suits were

released from European stocks; these were received 25 August, together with 10 M8A1 Chemical Alarm sets. SANG also received 60,000 combat filters and 10,000 decontamination kits. Training packages were issued with each set of MOPP equipment. SANG received another 7,500 MOPP suits without masks, 30,000 Atropine injectors, 30,000 2 Pam Chloride injectors, 15,000 decontamination kits, 15,000 canteens with caps, and M8 detection paper. In spite of all their effort, OPM-SANG still had to report that by the end of the fiscal year, SANG was only capable of placing 23 percent of its 16,200 man priority force in MOPP 4, and that batteries for the M8A1 Chemical alarms were not yet available.

Supply of Meals, Ready to Eat (MRE) During Initial Phase of Desert Shield. OPM-SANG ordered 20,000 cases (12 meals per case) on 8 August 1990. A total of 10,848 cases arrived in Riyadh on 14 August, and the rest followed. The PM noted that pork products were being pulled by the contractor. (These meals were designated for Moslem use and pork products were therefore unacceptable.) By 17 August, 49,500 meals had been dispatched to the 2d Brigade. The remainder of the MREs were delivered 20 August, so that the 1st and 2d Brigade had been issued their full allocation of MREs by 22 August.

SANG Communications Equipment, Desert Shield. The SANG Signal Corps Headquarters quickly identified tactical signal requirements under the impetus of Desert Shield. This resulted in two requests to OPM for possible purchase; one for U.S.-supplied end items, and another for RACAL radios. These were intended to meet Table of Organization and Equipment (TOE) requirements for the two modernized and four light infantry brigades. SANG's materiel fielding plans gave priority to the Prince Mohammed Brigade in the Eastern Province. By 5 September, SANG had also succeeded in adding telephone service to the field hospital and logistical elements supporting the King Abdul Aziz Brigade.

Training Initiatives

Formal training and formation of the SANG's Field Force Signal Unit was completed early in the year. The PM remarked that the latter "wholly successful two-year effort has significantly enhanced SANG's tactical communications capability." However, the PM also stated in his end of tour report, that "SANG does not have an integrated system for either training or logistics." He attributed this partly to an inability to properly articulate the need for training, a complex, seemingly less rewarding endeavor, compared to new weapon systems and units. Of course, this situation was shortly taken over by the event of the war.[19]

Provincial Training Initiative Prior to Saudi Mobilization. The SANG Provincial Commanders of the Eastern and Western provinces, in separate meetings with the program manager, had sought expansion of the Modernization Program into their commands. During FY89, a permanently stationed adviser, a major, was posted in each province. Advisory efforts were augmented both by TDY support and by mobile contractor teams. These efforts were designed to lay the basis for expanded training and to identify contractor support requirements.

During FY90, a directed military overstrength was approved, upgrading the senior adviser position in the Eastern and Western Provinces to Lieutenant Colonel. By late summer, the two provinces and stationed

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[19]*AMC Annual Historical Review, FY89*, p. 323; Memorandum, OPM-SANG to Cdr, USASAC, subj: Program Manager's Quarterly Report, 1 Oct 1989 through 31 Dec 1990, dtd 2 Jan 1990. Both UNCLASSIFIED. Memorandum from MG W.D. Freeman, Jr., PM, SANG for Cdr, USASAC, 27 June 1990, subj: Program Manager's End of Tour Report, 1 August 1988 through 27 June 1990. FOUO - Info used is UNCLASSIFIED.

light infantry brigades had three OPM advisors each. Thereafter, on a gradual basis, contractor technicians and advisors were to be added to increase the range and depth of support provided.[20]

Training After Saudi Mobilization. As BG Taylor remarked in his 18 August 1990 Situation Report, "The need for additional training at the lowest level is being recognized by the SANG leadership, and our advisors are taking this opportunity to drive home the importance of sustainment in both logistics and training." Under emergency conditions, OPM-SANG provided training teams and arranged for contracted training in a wide variety of areas. For example, noting that the SANG's Director of Medical Services for the Eastern Province had largely staffed its treatment facilities with civilians who were inadequately trained to operate a military medical facility (see section on Medical Modernization above), OPM-SANG directed its training contractor, the Vinnell Corporation, to dispatch a mobile training team.

With the encouragement of OPM-SANG, the SANG developed innovative methods to train new volunteers with high education levels and English proficiency in an accelerated specialty development program and then form them into a professional NCO Corps, in a "Stripes for Skills" Program. Contractor-trained SANG mobile training teams conducted on-site classes to teach the proper wear and use of the chemical protective suit. OPM's Assistant Program Manager for Training and Operations visited the Central Province Recruit Training Center in early September 1990 to offer OPM-SANG's assistance in training over 27,000 new applicants to the National Guard Military Schools. A Medical Training Team (MTT) began teaching basic lifesaving skills to medics of the Imam Mohammed Brigade on 8 September, and continued a separate MTT for the King Abdul Aziz Brigade.[21]

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[20]*AMC Annual Historical Review, FY89*, p. 323; Memorandum, OPM-SANG to Cdr, USASAC, subj: Program Manager's Quarterly Report, 1 January 1990 - 31 March 1990, dtd 2 Apr 1990.

[21]Memorandum from BG James G. Taylor, PM, SANG to MG Thomas G. Lightner, Cdr, USASAC, 11 August 1990, subj: Overview of OPM and SANG activities since the commencement of the current situation; Memorandum from BG James G. Taylor, PM, SANG to MG Thomas G. Lightner, Cdr, USASAC, 18 August 1990, subj: Overview of OPM and SANG activities - 11-17 Aug 90; Memorandum from BG James G. Taylor, PM, SANG to MG Thomas G. Lightner, Cdr, USASAC, 27 August 1990, subj: PM SITREP #3 (18-25 Aug 90); Memorandum from BG James G. Taylor, PM, SANG to MG Thomas G. Lightner, Cdr, USASAC, 5 September 1990, subj: PM SITREP #5 (31 Aug - 05 Sep 90); Memorandum from BG James G. Taylor, PM, SANG to MG Thomas G. Lightner, Cdr, USASAC, 10 September 1990, subj: PM SITREP #4 (26-30 Sep 90); Memorandum from BG James G. Taylor, PM, SANG to MG Thomas G. Lightner, Cdr, USASAC, 10 September 1990, subj: PM SITREP #5 (31 Aug-05 Sep 90); Memorandum from BG James G. Taylor, PM, SANG to MG Thomas G. Lightner, Cdr, USASAC, 10 September 1990, subj: PM SITREP #6 (06-10 Sep 90); Memorandum from MAJ John D. Harris, G-1 Advisor, AMCPM-NGT-O to LTC Cassity, AMCHO, 5 May 1991, Encl 1: Briefing chart, Saudi Arabian National Guard, "Crisis Activity." All UNCLASSIFIED.

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Acronym Glossary

AAA	Army Audit Agency
AAC	Army Acquisition Corps
AADCOM	Army Air Defense Command
AAE	Army Acquisition Executive
AAMMIS	AMC Automated Manpower Management Information System
AAMS	Army Acquisition Management System
AAP	Army Ammunition Plant
AAWS-M	Advanced Antitank Weapon System-Medium
ABCA	American, British, Canadian, Australian
AC	Analyst Consoles
ACCES	Army Civilian Career Evaluation System
ACE	Armored Combat Earthmover
ACOE	Army Communities of Excellence
ACP	Army Cost Position
ACPC	Arroyo Center Policy Committee
ACPERS	Army Civilian Personnel System
ACR	Army Cavalry Regiment
ACRMP	Automation Communication Resource Management Plan
ACRWG	Automation Communication Resource Working Group
ACTEDS	Army Civilian Training, Education and Development System
ADC	Area Data Centers
ADCCS	Air Defense Command and Control System
ADCS	Assistant Deputy Chief of Staff
ADCSIM	ADCS for Information Management
ADD	Application Development Division
ADM	Acquisition Decision Memorandum
ADMRU	Aviation Depot Maintenance Roundout Unit
ADPA	American Defense Preparedness Association
ADPE	Automatic Data Processing Equipment
ADPR	Automated Data Processing Resources
ADS	Automated Data System
ADTA	Aviation Development Test Activity
AEFA	Aviation Engineering Flight Activity
AEHA	Army Environmental Hygiene Agency
AEMO	Aviation Electronics Management Office
AERR	Army Environmental Requirements Report
AFAP	Artillery Fired Atomic Projectile
AFATDS	Advanced Field Artillery Tactical Data System
AFES	Automated Financial Entitlements System
AFLC	Air Force Logistics Command
AFPMB	Armed Forces Pest Management Board
AFSC	Air Force Systems Command
AGES II	Air Ground Engagement System II
AGS	Armored Gun System
AHR	Annual Historical Review
AI	Artificial Intelligence
AIEP	Army Ideas for Excellence Program
AIG	Acting Inspector General
AILSEC	Army Integrated Logistic Support Executive Committee
AIMI	Aviation Intensive Management Item
AIPC	Army Information Processing Center
AIR	Acquisition Improvement Review
AIS	Automated Information Systems
AITT	ASIMS Implementation Transition Team
ALMC	Army Logistics Management College
ALOC	Air Line of Communications
AMAS	Army Materiel Accounting System
AMC	Army Materiel Command
AMCCC	AMC Commanders' Conference
AMCCOM	Armament, Munitions & Chemical Cmd
AMCMEA	Army Materiel Command Management Engineering Activity
AMCPSCC	AMC Packaging, Storage, and Containerization Center
AMCSB	AMC Office of Small and Disadvantaged Business Utilization
AMCSS	AMC Standard System
AMDF	Army Master Data File
AMEC	Army Management Engineering College
AMHA	Army Management Headquarters Activity
AMMS	Acquisition Milestone Management System
AMPMOD	Army Materiel Plan Modernization
AMR	Army Management Review
AMRDA	Army Medical Research and Development Command
AMS	Army Management Structure
AMSAA	Army Materiel Systems Analysis Activity
AMTAS	Army Modernization Training Automation System
ANAD	Anniston Army Depot
ANVIS	Aviation Night Vision Imaging System
AOAP	Army Oil Analysis Program
AODM/S	Area Oriented Depot Modernization/Standardization
AODMOD	Area Oriented Depot Modernization
AOG	Army Occupational Guides
AOR	Area of Responsibility
AOW	Action Officers Workshop
APA	Army Procurement Appropriation
APG	Aberdeen Proving Ground
AQM	Acquisition Manager
ARCENT	Army Central Command
ARDEC	Armament Research, Development and Engineering Center
ARNG	Army National Guard
ARPMIS	Army Resource Planning Management Information System
ASA(FM)	Assistant Secretary of the Army (Financial Management)
ASA(I,L&E)	Assistant Secretary of the Army (Installations, Logistics and Environment)

ASA(RDA)	Assistant Secretary of the Army (Research, Development, and Acquisition)
ASAP	Army Streamlined Acquisition Program
ASAPP	Army System for Automation of Preparedness Planning
ASARC	Army Systems Acquisition Review Council
ASD	Assigned System Developer
ASD(P&L)	Assistant Secretary of Defense (Production & Logistics)
ASF	Army Stock Fund
ASG	Area Support Group
ASIMS	Army Standard Information Management System
ASL	Authorized Stockage List
ASM	Armored Systems Modernization
ASNET	Army Supercomputer Network
ASSIST	Automated Special Security Information Systems Terminal
ASSIST	Automated Specifications and Standards Information System
ASTM	American Society for Testing and Materiels
ATACMS	Army Tactical Missile System
ATAR	Advanced Technology Assessment Report
ATC	Air Traffic Control
ATCCS	Army Tactical Command and Control System
ATE	Automatic Test Equipment
ATIP	Ada Technology Insertion Program
ATRRS	Army Training Requirements and Resources System
ATTU	Atlantic to the Urals
AUSA	Association of the United States Army
AVCRAD	Aviation Classification Repair Activity Depot
AVIM	Aviation Intermediate Maintenance
AVSCOM	Aviation Systems Command
AVTA	Armored Vehicles Technologies Associated
B2C2	Battalion & Below Command & Control
BAFO	Best and Final Offers
BCR	Battlefield Communications Review
BCS	Battalion Countermine Set
BDU	Battle Dress Uniform
BEP	Black Employment Program
BES	Budget Estimate Submission
BFV	Bradley Fighting Vehicle
BFVS	Bradley Fighting Vehicle System
BIG	Blacks in Government
BMAR	Backlog of Maintenance and Repair
BOE	Blanket Open End
BOIP	Basis of Issue Plan
BPRR	Budget Program Resource Review
BRAC	Base Realignment and Closure
BRDEC	Belvoir Research, Development and Engineering Center
BRL	Ballistics Research Laboratory
C2	Command & Control
C3	Command, Control and Communications
CAA	Concepts Analysis Agency
CAA	Clean Air Act
CAAS	Contracted Advisory and Assistance Services
CACDA	Combined Arms Center Development Activity
CAI	Computer Aided Instruction
CAIG	Cost Analysis Improvement Group
CALS	Computer Aided Acquisition and Logistic System
CALS	Computer-Aided Acquisition and Logistic Support
CAM	Chemical Agent Monitor
CAMDS	Chemical Agent Munitions Disposal System
CAP	Contractor Access Point
CAPR	Capability Requirements
CARC	Chemical Agent Resistant Coating
CARC	Chemical Agent Resistent Coating
CATTB	Component Advanced Technology Test Bed
CAWCF	Conventional Ammunition Working Capital Fund
CBE	Command Budget Estimate
CBRS	Concept-Based Requirements System
CCAD	Corpus Christi Army Depot
CCATTD	Common Chassis Advanced Technology Transition Demonstrator
CCB	Configuration Control Board
CCF	Command and Control Facility
CCP	Consolidation Containerization Point
CCPU	Computer Communications for PC Users
CCSS	Commodity Command Standard System
CCTT	Close Combat Tactical Trainer
CDA	Catalog Data Activity
CDA	Catalog Data Activity
CDC	Central Distribution Center
CDR	Critical Design Review
CEAC	Cost and Economic Analysis Center
CECOM	Communications-Electronics Command
CENTCOM	Central Command
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CET	Continuing Education and Training
CEV	Combat Engineer Vehicle
CFE	Conventional Forces in Europe
CFR	Code of Federal Regulations
CHS	Common Hardware/Software
CI	Configuration Item
CICS	Customer Interface Control System
CIL	Critical Items List
CIM	Corporate Information Management
CINC	Commanders in Chief
CIPMS	Civilian Intelligence Personnel Management System
CIS	Contractor Information System
CIT	Consumable Item Transfer
CITIS	Contractor Integrated Technical Information Services
CLC	Computer Literacy Course

CLF	Civilian Labor Force
CLO	Counter-Low Observable
CLSSA	Cooperative Logistics Supply Support Arrangement
CM	Configuration Management
CMAG	Configuration Management Advisory Group
CMF	Consolidated Maintenance Facility
CMF	Consolidated Maintenance Facility
CMR	Country Management Review
CMRL	Combat Materiel Research Laboratory
C/NSI	Chemical/Nuclear Surety Inspections
CNVEO	Center for Night Vision and Electro-Optics
COC	Command Operations Center
COCO	Contractor Owned and Contractor Operated
COCP	Customer Order Control Point
COEA	Cost and Operational Effectiveness Analysis
COE-WES	Corps of Engineers Waterways Experimental Station
COMIS	Care of Materiel in Storage
COMSEC	Communications Security
CONSTOCKS	Contingency Stocks
COR	Contracting Officer Representative
CORPS SAM	Corps Surface to Air Missile
COSCOM	Corps Support Command
COSIS	Care of Supplies in Storage
COTR	Contracting Officer's Technical Representative
CP	Career Program
CP	Corrosion Protection
CP^2	Contractor Performance Certification Program
CPO	Civilian Personnel Office
CPP	Civilian Pay Plan
CPR	Cost Performance Report
CRM	Computer Resource Management
CRSA	Contractors Requiring Special Attention
CSC	Conventional Systems Committee
C/SCSC	Cost/Schedule Control Systems Criteria
CSDA	Central Systems Design Activity
CSDP	Chemical Stockpile Demilitarization Program
CSEPP	Chemical Stockpile Emergency Preparedness Program
CSI	Chemical Surety Inspection
CSP	Concurrent Spare Parts
CSS	Combat Systems Support
CSSCS	Combat Service Support Control System
CTC	Combat Training Center
CTMP	CONUS Telephone Modernization Program
CTX	Center for Technical Excellence
CUCV	Commercial Utility Cargo Vehicle
CUCV	Common Utility Cargo Vehicle
CUIL	Common User Item List
DA	Department of the Army
DAA	Designated Accreditation Authorities
DAAS	Defense Automatic Addressing System
DAB	Defense Acquisition Board
DAES	Defense Acquisition Executive Summary
DAIG	Department of the Army Inspector General
DBMS	Data Base Management System
DCA	Defense Communications Agency
DCG	Deputy Commanding General
DCGRDA	DCG for Research, Development and Acquisition
DCMCI	Defense Contract Management Command-International
DCS	Deputy Chief of Staff
DCSA	Deputy Chief of Staff for Ammunition
DCSLOG	Deputy Chief of Staff for Logistics
DCSOPS	Deputy Chief of Staff for Operations
DCSRM	Deputy Chief of Staff for Resource Management
DCT	Data Communications Terminal
DCTN	Defense Commercial Telecommunications Network
DDAL	Delegation of Disclosure Authority Letter
DDMC	Defense Depot Maintenance Council
DDN	Defense Data Network
DEA	Drug Enforcement Agency
DEH	Directorate for Engineering and Housing
DEMIS	Defense Environmental Management Information System
DEPMEDS	Deployable Medical Systems
DEPRA	Defense Excess Program for Reutilization of Assets
DERA	Defense Environmental Restoration Account
DESCOM	Depot System Command
DFARS	Defense Federal Acquisition Regulation Supplement
DGM	Digital Group Multiplexers
DIIP	Defense Inactive Item Program
DIMES	Defense Integrated Management Engineering System
DISC4	Director for Information Systems for Command, Control, Communications, and Computers
DISCAS	Defense Career Automated Referral System
DLA	Defense Logistics Agency
DLR	Depot Level Reparable
DLSIE	Defense Logistics Studies Information Exchange
DMDC	Defense Manpower Data Center
DMF	Director Material Fielding
DMI	Depot Maintenance Interservicing
DMISA	Depot Maintenance Interservice Support Agreements
DMR	Data Management Routine
DMR	Defense Management Review
DMR	Discharge Monitoring Report
DMRD	Defense Management Report Decision
DMRD	Defense Management Review Directive
DMS	Directorate of Medical Services
DMS-ARMY	Defense Message System-Army
DOD	Department of Defense

DODAAC	DOD Activity Address Code
DODIG	Department of Defense Inspector General
DODISS	DOD Index of Specifications and Standards
DODSASP	Department of Defense Small Arms Serialization Program
DOE	Department of Energy
DOIM	Director of Information Management
DPAS	Defense Priorities and Allocations System
DPI	Data Processing Installation
DPP	Development Production Proveout
DRMO	Defense Reutilization Materiel Office
DRMR	Defense Reutilization and Marketing Region
DS/GS	Direct Support/General Support
DSAA	Defense Security Assistance Agency
DSACS	Defense Standard Ammunition Computer System
DSARC	Defense System Acquisition Review Council
DSB	Defense Science Board
DSC	Development and Sustainment Command
DCSDEA	DCS for Development, Engineering, and Acquisition
DSP	Defense Standardization Program
DSREDS	Digital Storage and Retrieval of Engineering Data System
DSS	Direct Support System
DSS/ALOC	Direct Support System/Air Line of Communication
DTC	Design to Cost
DTIC	Defense Technical Information Center
DTS	Defense Telephone Service
DUSA(OR)	Deputy Undersecretary of the Army for Operation Research
EA	Economic Analysis
EA	Environmental Assessment
EAC	Echelons Above Corps
EAMTP	Environmentally Acceptable Materials Treatment Program
ECDS	Environmental Compliance Data System
ECIS	Electronic Corporate Information Systems
ECP	Engineering Change Proposal
ECR	Environmental Compliance Review
EDC	Eastern Distribution Center
EDCA	Executive Director for Conventional Ammunition
EDS	Electronic Data Systems
EEC	Emergency Essential Civilian
EEE or E^3	Electromagnetic Environmental Effects
EEO	Equal Employment Opportunity
EEOCCRA	Equal Employment Opportunity Compliance and Complaints Review Agency
EHSC	Engineering and Housing Support Center
EIS	Environmental Impact Statement
EMC	Environmental Management Committee
EMC	Equipment Maintenance Center
EO	Equal Opportunity
EOA	Equal Opportunity Adviser
EOC	Emergency Operations Center
EOQ/VSL	Economic Order Quantity/Variable Safety Level
EOR	Element of Resource
EPA	Environmental Protection Agency
EPG	Electronic Proving Ground
EPG	Engineer Proving Ground
EQD	Environmental Quality Division
ETCA	Enhanced Task Cost Analysis
ETOC	ERF Theater Ownership Code
EUE	Extended User Evaluation
EUSA	Eighth U.S. Army
EWVA	Electronic Warfare Vulnerability Assessment
EXCAP	Exercise Capability
EXP	Expansion
FAAD	Forward Area Air Defense
FAAR	Forward Area Alerting Radar
FACC	Ford Aerospace Communications Corporation
FAR	Federal Acquisition Regulation
FAT	First Article Test
FCFA	Foreign Currency Fluctuation Account
FCG	Functional Coordinating Groups
FCRC	Federally Contracted Research Center
FD	Functional Description
FDD	Force Development Division
FDTE	Force Development Test and Experimentation
FEMA	Federal Emergency Management Agency
FES	Factor Evaluation System
FEW	Federally Employed Women
FFCA	Federal Facility Compliance Agreement
FIFV	Future Infantry Fighting Vehicle
FIRST	Functionally Integrated Resource Support Team
FLRA	Federal Labor Relation Authority
FMS	Foreign Military Sales
FMSMFP	Foreign Military Sales Material Fielding Plans
FOG-M	Fiber Optic Guided-Missile
FORDTIS	Foreign Disclosure and Technical Information System
FORSCOM	Forces Command
FOTL	Follow-on-to-Lance
FPDS	Federal Procurement Data System
FRG	Federal Republic of Germany
FSA	Field Services Activity
FSD	Full Scale Development
FSM	Functional Systems Manager
FSR	Functional Support Report
FTMA	Future Tank Main Armament
FUE	First Unit Equipped
FUED	First Unit Equipped Date
FWP	Federal Women's Program
FY	Fiscal Year
GAO	Government Accounting Office
GBS	Ground Based Sensor
GDIP	General Defense Intelligence Program

GDLS	General Dynamics Land Systems
GFI	Government Furnished Items
GMC	Government Management Cost
GOCO	Government Owned-Contractor Operated
GOGO	Government-Owned, Government-Operated
GO/SES	General Officer/Senior Executive Service
GPCSC	General Purpose Computer Support Center
GPS	Global Positioning Satellite
GS	General Support
GSA	General Services Administration
GTI	Ground Target Intercept
GW	Ground Water
HA	Heavy Armor
HABS	Heavy Assault Bridge System
HAZMAT	Hazardous Materials
HAZMIN	Hazardous Waste Minimization
HBCU/MI	Historically Black Colleges and Universities/Minority Institutions
HEDI	HAWK Expanded Digital Interface
HEL	Human Engineering Laboratory
HEP	Hispanic Employment Program
HF	High Frequency
HHA	Hazard Assessment
HIP	Howitzer Improvement Program
HISA	Headquarters Installation Support Activity
HMMWV	High Mobility Multipurpose Wheeled Vehicle
HQDA	Headquarters, Department of the Army
HSC	Health Services Command
HW	Hazardous Waste
HWDMS	Hazardous Waste Data Base
I/FE	Installation/Field Element
I&SA	Installations and Services Activity
IAG	Interagency Agreement
ICAMP	Integrated Conventional Ammunition Maintenance Plan
ICAPP	Integrated Conventional Ammunition Procurement Plan
ICE	Inventory Control Effectiveness
ICOM	Integrated Communication Security
ICP	International Cooperative Programs
ICP	Inventory Control Point
ICUZ	Installation Compatible Use Zone
IEW	Intelligence and Electronic Warfare
IFF	Identification of Friend or Foe
IFLCS	Interim Force Level Control System
IFS-M	Integrated Facilities System-Micro/Minicomputer
IG	Inspector General
IGNET	Inspector General Network
IHFR	Improved High Frequency Radio
ILS	Integrated Logistics Support
ILSLRMP	Integrated Logistics Support Long Range Master Plan
IMA	Individual Mobilization Augmentee
IMA	Information Mission Area
IMAAP	Information Management Area Action Plan
IMACS	Interservice Materiel Accounting and Control System
IMB	Information Management Board
IMC	Information Management Council
IMDG	International Maritime Dangerous Goods
IMES	Integrated Management Engineering Schedule
IMET	International Military Education and Training
IMM	Integrated Materiel Management
IMP	Information Management Plan
IMSRC	Information Management Systems Review Committee
IMWRF	Installation Morale, Welfare and Recreation Fund
INF	Intermediate Range Nuclear Force
IOC	Industrial Operations Command
IOC	Initial Operational Capability
IOI	Interim Operating Instruction
IOT&E	Initial Operational Test and Evaluation
IOTE	Initial Operational Test and Evaluation
IPDS	Inland Petroleum Distribution System
IPF	Initial Production Facilities
IPP	Industrial Preparedness Planning
IPR	In Process Review
IPR	Inprocessing Review
IPR	Intelligence Production Requirement
IR&D	Independent Research and Development
IRAC	Internal Review and Audit Compliance
IRP	Inventory Reduction Plan
IRV	Improved Recovery Vehicle
ISC	Information Systems Command
ISDN	Integrated Services Digital Network
ISIO	Information Systems Integration Office
ISOR	Initial Statement of Requirement
ITV	Improved TOW Vehicle
ITV	In-Transit Visibility
IV&V	Independent Verification and Validation
JAB	Joint Advisory Board
JDEP	Joint Depot Environmental Panel
JDMAG	Joint Depot Maintenance Analysis Group
JFKSWCS	JFK Special Warfare Center and School
JLC	Joint Logistics Commanders
JLRC	Joint Logistics Review Committee
JMRP	Joint MILCON Review Panel
JOAP	Joint Oil Analysis Program
JPCG-DM	Joint Policy Coordinating Group on Depot Maintenance
JPO	Joint Program Office
JPO	Joint Projects Office
JTEG	Joint Technology Exchange Group
JTFP	Joint Tactical Fusion Program
JUSTIS	Joint Uniform Service Technical Information System
JWOD	Javits-Wagner-O'Day
LABCOM	Laboratory Command
LACV-30	Lighter Air Cushion Vehicle
LAN	Local Area Network
LAO	Logistic Assistance Office
LAP	Logistics Assistance Program

LAPA	Logistics Assistance Program Activity
LAR	Logistics Assistance Representative
LASE	Logistics Asset Systems Estimate
LAUE	Lightweight Army User Equipment
LAV	Light Armored Vehicle
LBAD	Lexington-Bluegrass Army Depot
LCA	Logistic Control Activity
LCAAP	Lake City Army Ammunition Plant
LCBPG	Lightweight Chemical and Biological Protective Garment
LCSE	Life Cycle Software Engineering
LCSEC	Life Cycle Software Engineering Center
LCU	Lightweight Computer Unit
LD	Leak Detection
LEA	Logistics Evaluation Agency
LEAD	Letterkenny Army Depot
LHAAP	Longhorn Army Ammunition Plant
LHX	Light Helicopter Experimental
LIMDIS	Limited Dissemination
LL	Lessons Learned
LO	Low Observable
LOA	Letter of Agreement
LOGC	Logistics Center
LOGCAP	Logistics Civil Augmentation Plan
LOGMARS	Logistics Applications of Marking and Reading Symbols
LOGPARS	Logistics Planning and Requirements Simplification System
LOGSA	Logistics Support Activity
LOI	Letter of Instruction
LOS-F-H	Line of Sight-Forward-Heavy
LOSF	Line Of Sight Forward
LOSR	Line Of Sight Rear
LPSA	Logistics Program Support Activity
LPU	Limited Procurement Urgent
LRAMRP	Long Range Army Materiel Requirements Plan
LRC	Learning Resource Center
LRU	Line Replaceable Unit
LSA	Logistic Support Analysis
LSD	Large Screen Display
LSDIS	Light Special Division Interim Sensor
LSPP	Large Screen Printer Plotters
LSRC	Logistics Systems Review Committee
LSSI	Limited Scope Surety Inspection
M&CS	Maintenance and Control System
MACE	Mobilization AVCRAD Control Element
MACOM	Major Command
MAISRC	Major Automated Information System Review
MAIT	Mission Area Integration Team
MAM	Mission Area Manager
MANPADS	Man Portable Air Defense System
MANTECH	Manufacturing Technology
MARB	Materiel Acquisition Review Board
MASS	Maintenance and Assembly Secure Storage
MCA	Military Construction, Army
MCB	Managing Civilians to Budget
MCCET	MACOM Child Care Evaluation Teams
MCI	Military Customs Inspector
MCM	Materiel Change Management
MCS	Maneuver Control System
MDD	Management Decision Document
MDEP	Management Decision Package
MEDCEN	Medical Center
MEDDAC	Medical Department Activity
MICOM	Missile Command
MICS	MVS Integrated Control System
MIL STD	Military Standard
MILES	Multiple Integrated Laser Engagement Simulation
MISMO	Maintenance Interservice Management Office
MISO	Maintenance Interservice Support Office
MLRS	Multiple Launch Rocket System
MLRS-TGW	MLRS with Terminal Guidance Warhead
MMA	Missile Main Assemblage
MMC	Materiel Management Center
MMMS	Martin Marietta Missile Systems
MMP	Mobilization Master Planning
MMT	Manufacturing Methods and Technology
MOA	Memorandum of Agreement
MOBDES	Mobilization Designee
MOBTDA	Mobilization TDA
MOC	Management of Change
MODELS	Modernization of Defense Logistics Standard Systems
MOI	Memorandum of Instruction
MOP	Maintenance Operation Procedure
MOPP	Mission Oriented Protective Posture
MOS	Military Occupational Specialty
MOU	Memorandum of Understanding
MP	Military Police
MPTT	Maintenance Parts Task Trainer
MRE	Meal, Ready to Eat
MRP	Materiel Returns Program
MRRB	Materiel Release Review Board
MRSA	Materiel Readiness Support Activity
MRT	Multi-Round Trainer
MS3	Manpower Staffing Standards System
MSC	Major Subordinate Command
MSE	Mobile Subscriber Equipment
MSR	Minimum Sustaining Rate
MTL	Materials Technology Laboratory
MTMC	Military Traffic Management Command
MTOES	Modification Table of Organization and Equipment
MTT	Manufacturing Test Technology
MTT	Medical Training Team
MTT	Mobile Training Team
MVS/VM	Multiple Visual Storage Virtual Machine
MWO	Modification Work Order
MZAD	Mainz Army Depot
NAACP	National Association for the Advancement of Colored People
NAIRA	Nuclear Accident and Incident Response and Assistance
NAMSA	NATO Maintenance and Supply Agency
NARDAC	Navy Regional Data Automation Center
NASS	National Association for Suggestion Systems

NBC	Nuclear, Biological, and Chemical
NBCRS	Nuclear, Biological, Chemical Reconnaissance System
NCAD	New Cumberland Army Depot
NCTC	Navy Computer and Telecommunications Command
NDI	Non Developmental Item
NEPA	National Environmental Policy Act
NET	New Equipment Training
NIB	National Industries for the Blind
NICP	National Inventory Control Point
NIPR	Non-Recurring Intelligence Production Requirement
NIS	NATO Identification System
NISH	National Industries for the Severely Handicapped
NLOS	Non Line Of Sight
NM	Nanometer
NOAA	National Oceanic and Atmospheric Administration
NOV	Notice of Violation
NPDES	National Pollutant Discharge Elimination System
NPL	National Priority List
NRC	Nuclear Regulatory Commission
NRDEC	Natick Research, Development, and Engineering Center
NSE	National Security Exemption
NSN	National Stock Number
NSNFS3	Non Strategic Nuclear Forces Survivability, Security and Safety
NVD	Night Vision Devices
NVG	Night Vision Goggle
NWTI	Nuclear Weapons Technical Inspection
O&O	Operational and Organizational
O&S	Operating and Support
OA	Obligation Authority
OB/OD	Open Burning/Open Detonation
OBCE	Operational Baseline Cost Estimate
ODCSINT	Office of the Deputy Chief of Staff for Intelligence
ODCSOPS	Office of the Deputy Chief of Staff for Operations
ODIS	Optical Digital Imaging System
ODISC4	Office of the Director for Information Systems for Command, Control, Communications, and Computers
ODP	Officer Distribution Plan
ODS	Operation Desert Shield
ODT	Overseas Deployment Training
OEO	Office of Equal Opportunity
OICP	Office for International Cooperative Programs
OM	Occupational Medicine
OMA	Operations and Maintenance, Army
OMB	Office of Management and Budget
ONDCP	Office of National Drug Control Policy
OPA	Other Procurement Army
OPM	Office of Personnel Management
OPSEC	Operations Security
OPTEC	Operational Test & Evaluation Cmd
ORSA	Operations Research System Analysis
OSD	Office of the Secretary of Defense
OSHA	Occupational Safety and Health Administration
OSS	Objective Supply System
OST	Order Ship Time
OTEA	Operational Test and Evaluation Agency
OTSG	Office of the Surgeon General
P&P	Preservation and Packing
P3I	Pre-Planned Product Improvement
PA-2	Procurement Appropriation-Spares
PAA	Procurement Ammunition, Army
PAC-2	PATRIOT Anti-Tactical Missile Capability
PACH	Patterson Army Community Hospital
PAG	Program Advisory Group
PAMUPS	Procurement Automated Manpower Utilization and Projection System
PARR	Program Analysis Resource Review
PAT	Process Action Team
PBD	Program Budget Decision
PBG	Program and Budget Guidance
PBIS	Productivity Based Incentive System
PBS	Production Base Support
PC	Personal Computer
PCBs	Polychlorinated Biphenyl
pCi/L	Picocuries Per Liter
PCIP	Productivity Capital Investment Program
PCR	Policy Compliance Review
PCS	Process Control System
PDB-3	Post Deployed Build
PDR	Preliminary Design Review
PE	Program Element
PECIP	Productivity Enhancing Capital Investment Program
PEER	Productivity Efficiencies, Enhancement and Rewards
PEO	Program Executive Officer
PEO IEW	PEO for Intelligence and Electronic Warfare
PEO STAMIS	PEO for Standard Army Management Information Systems
PERSCOM	Personnel Command
PGS	Program Gain Sharing
PICP	Physical Inventory Control Program
PII	Pershing II
PLGR	Precision Lightweight GPS Receiver
PLS	Palletized Load System
PM	Preventive Medicine
PM	Program/Project Manager
PM ITTS	PM Instrumentation Targets and Threat Simulators
PM/NCR	PM for Total Development of the National Capital Region
PM-OPTADS	PM-Operational Data Systems
PM SANG	PM, Saudi Arabian National Guard Modernization Program
PM, TRADE	PM, Training Devices
PMCD	PM Chemical Demilitarization
PMF-3	PATRIOT Maintenance Facility
PMMP	Program Manager's Master Plan
PMO	Procurement Management Office
PNVS	Pilot Night Vision System

POG	Project Officers Group
POM	Program Objective Memorandum
POMCUS	Prepositioning of Material Configured to Unit Sets
POP	Performance Oriented Packaging
POR	Preparation for Overseas Rotation
POSH	Prevention of Sexual Harassment
PPBES	Planning, Programming, Budgeting and Execution System
PPU	Prime Power Unit
PRG	PeaceKeeper Rail Garrison
PRP	Personnel Reliability Program
PSR	Production Support and Equipment Replacement
PSR	Provisioning Systemic Review
PSSK	Probability of Single Shot Kill
PUDA	Pueblo Depot Activity
PVT	Production Verification Test
QDR	Quality Deficiency Report
QMB	Quality Management Board
QMR	Quarterly Management Report
QQPRI	Qualitative and Quantitative Personnel Requirements Information
QRG	Quiet Reliable Generator
QRIP	Quick Return on Investment Program
QRR	Quick Reaction Requirement
QSTAG	Quadripartite Standardization Agreements
QUINN	Quarterly Intern News and Notes
R&A	Review and Analysis
R&D	Research and Development
R&R	Review and Revalidation
RAAWS	Ranger Anti-Armor/Anti-Personnel Weapon System
RAC	Resource Action Committee
RAC	Resources Allocation Committee
RAM	Reliability, Availability and Maintainability
RAMP	Review of Army Mobilization Planning
RBM	Readiness Based Maintenance
RC	Resources and Construction
RCRA	Resource Conservation Recovery Act
RDA	Research, Development and Acquisition
RDAISA	Research, Development, and Acquisition Information Systems Activity
RDB	Requirements Data Base
RDC	Regional Data Center
RDDS	Research and Development Descriptive Summaries
RDEC	Research, Development, and Engineering Center
RDTE	Research, Development, Test and Evaluation
REARM	Renovation of Armament Manufacturing
REMBASS	Remotely Monitored Battlefield Sensor System
RF	Radio Frequency
RFD/W	Request for Deviation Waiver
RFI	Reactor Facility Inspections
RFP	Request for Proposal
RIDB	Readiness Integrated Data Base
RIF	Reduction in Force
RMOO	Resource Management Operations Office
RMP	Reprogramammable Microprocessor Program
ROC	Required Operational Capability
ROD	Report of Discrepancy
ROWPU	Reverse Osmosis Water Purification Unit
RPMA	Real Property Maintenance Activities
RQM	Requirements Manager
RRAD	Red River Army Depot
RRCC	Realignments, Reductions, Closures and Consolidations
RRP	Radon Reduction Program
RT	Radio Transmitters
RTF	Realignment Task Force
RTTC	Redstone Technical Test Center
RWS	Rigid Wall Shelter
S&E	Scientist & Engineer
SA	Selective Availability
SA3	Security Assistance Automation, Army
SAAC	Security Assistance Accounting Center
SAAD	Sacramento Army Ammunition Depot
SACS	STU-III Access Control System
SADARM	Sense and Destroy Armor
SADBU	Small and Disadvantaged Business Utilization
SAFSO	Security Assistance Functional Support Office
SAG	Study Advisory Group
SAIG	Secretary of the Army IG
SAILS	Standard Army Intermediate Level Supply System
SAIMS	Selected Acquisition Information and Management
SANG	Saudi Arabian National Guard
SAP	Special Access Program
SAPSAT	Special Access Program Staff Assistance Team
SAR	Security Assistance Review
SAR	Selected Acquisition Report
SARA	Superfund Amendments and Reauthorization Act
SARDA	Secretary of the Army for Research, Development and Acquisition
SATMO	Strategic Management Support Office
SAVA	Standard Army Vetronics Architecture
SBIS	Sustaining Base Information System
SBNA	Sustaining Base Network Activity
SCANG	South Carolina Army National Guard
SCCR	Supplemental Contractor Cost Report
SCI	Sensitive Compartmented Information
SCR	Systems Change Request
SDR	System Design Review
SDS	Standard Data System
SDS	Standard Depot System
SDT	Second Destination Transportation
SEAD	Seneca Army Depot
SEI	Software Engineering Institute
SEMA	Special Electronic Mission Aircraft
SHAD	Sharpe Army Depot

SHAPE	Supreme Headquarters, Allied Powers Europe
SIA	Subordinate Intermediate Activity
SICPS	Standard Integrated Command Post System
SIF	Selective Identification Feature
SIMA	Systems Integration Management Activity
SIMS	Selected Item Management System
SINCGARS	Single Channel Ground and Airborne Radio System
SIO	Senior Intelligence Officers
SISOCS	Streamlining Information Service Operations Consolidation Study
SITF	Software Implementation Task Force
SLA	Strategic Logistics Agency
SLAAP	St. Louis Army Munition Plant
SLGR	Satellite GPS Receivers
SMCA	Single Manager for Conventional Ammunition
SMDB	Supply Management Data Base
SMMP	System MANPRINT Management Plan
SMO	Survivability Management Office
SMP	Soldier Modernization Plan
SMR	Surety Management Reviews
SOA	South of Alps
SOC	Survivability Overpack Container
SOF	Special Operations Forces
SOP	Spill/Overfill Prevention
SOP	Standard Operating Procedure
SPBS-R	Standard Property Book System - Redesign
SPO	System Project Office
SQL	Structured Query Language
SRA	Separate Reporting Activity
SRFX-90	Service Response Force Exercise
SRIMS	Staff REGENCY NET Information Management System
SRR	System Requirements Review
SRS	Sleep Restraint System
SRT	Special Reaction Teams
SSA	Supply Support Activity
SSC	Secondary Steel Container
SSF	Single Stock Fund
SSN	Standard Study Number
SSS	Secure Storage Structure
STAMIS	Standard Army Management Information System
STAMIS	Standard Mission Information System
STANAG	Standardization Agreement
STANFINS	Standard Financial Redesign Subsystem
STAR	System Threat Assessment Report
START	Strategic Arms Reduction Talks
STEPO-I	Self-Contained Toxic Environment Protective Outfit-Interim
STTWG	Security and Technology Transfer Working Group
STU-III	Secure Telephone Unit Third Generation
SWA	Southwest Asia
SWAPDOP	Southwest Asia Petroleum Distribution System Operational Project
SWQT	Software Qualification Test
SWS	Sniper Weapon System
T3	Train-the-Trainer
TAADS-R	Army Authorization Documents System - Redesign
TACOM	Tank-Automotive Command
TADS	Target Acquisition Designation System
TAG	Technical Assistance Group
TAMMC	Theater Army Materiel Management Ctr
TAMP	Theater Aviation Maintenance Program
TASC	The Analytical Sciences Corporation
TASS	Technical Analysis Support System
TAV	Total Asset Visibility
TBAG	Technology Base Advisory Group
TBB	Tailored Business Base
TC	Type Classification
TC-LPU	Type Classified-Limited Procurement Urgent
TCAAP	Twin Cities Army Ammunition Plant
TCC	Telecommunications Center
TCG	Technical Coordinating Group
TCP	Tactical Computer Processors
TCT	Tactical Computer Terminals
TCWG	Transition Cutover Working Group
TD/CMS	Technical Data/Configuration Management System
TDA	Table of Distribution and Allowances
TDP	Technical Data Package
TDR	Training Device Requirements
TDY	Temporary Duty
TEAD	Tooele Army Depot
TECOM	Test and Evaluation Command
TECRAS	Technical Reconnaissance and Surveillance
TEMP	Test and Evaluation Master Plan
Tent CP	Tent Command Post
TI	Technology Insertion
TLD	Thermoluminescent Dosimeter
TLE	Treaty Limited Equipment
TM	Technical Manual
TMCA	Transportation Management Control Activity
TMDE	Test, Measurement, and Diagnostic Equipment
TMMCT	Telephone Mobile Maintenance Contact Team
TOA	Trade Off Analysis
TOD	Trade Off Determination
TOE	Table of Organization and Equipment
TPD	Technical Data Package
TPF	Total Package Fielding
TPS	Test Program Set
TQM	Total Quality Management
TRAC	TRADOC Analysis Command
TRADOC	Training and Doctrine Command
TRMF	Theater Readiness Monitoring Facility
TROSCOM	Troop Support Command
TRW	Thompson Ramo Woolridge
TSC	TMDE Support Center
TSCA	Toxic Substance Control Act
TT	Technical Testing
TWG	TAGGANT Working Group

UBP	Usage Based Provisioning
UCR	Unit Cost Report
UGV	Unmanned Ground Vehicle
UIC	Unit Identification Code
ULCANS	Ultra Light Weight Camouflage Nets
USAAA	U.S. Army Audit Agency
USAATCA	U.S. Army Air Traffic Control Activity
USAAVNC	U.S. Army Aviation Center
USAEIGHT	Eighth Army in Korea
USAFAC	U.S. Army Finance and Accounting
USAGMPA	U.S. Army General Materiel and Petroleum Activity
USAISC	U.S. Army Information Systems Cmd
USAMMA	U.S. Army Medical Materiel Agency
USAPPC	U.S. Army Publications and Printing Command
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USAREUR	United States Army Europe
USAREURCC	U.S. Army Europe Contracting Cmd
USARSO	U.S. Army Southern Commaand
USASAC	U.S. Army Security Assistance Cmd
USASG	U.S. Army Support Group
USASPTAP	U.S. Army Support Activity, Philadelphia
USATHAMA	U.S. Army Toxic and Hazardous Materials Agency
USATSG	Test, Measurement and Diagnostic Equipment Support Group
USD(A)	Under Secretary of Defense (Acquisition)
UST	Underground Storage Tank
USUHS	Uniformed Services University of the Health Sciences
V&V	Verification and Validation
V2K	Vision 2000
VAL	Vulnerability Assessment Lab
VCOS	Vehicle Control and Operating System
VCSA	Vice Chief of Staff of the Army
VCT	Video Teleconference
VENUS	Video Enhanced Network User System
VERA	Voluntary Early Retirement Authority
VETRONICS	Vehicle Electronics
VMR	Voluntary Military Reduction
VTC	Video Teleconferencing
WADS	Weapons Access Delay System
WARM	Wartime Reserve Modes
WESTCOM	Western Command
WRMAG	Water Resources Management Action Group
WS/SPA	Weapon System Supply Performance Analyzer
WSMR	White Sands Missile Range
WSTA	Weapon System Technical Assessment
WTCV	Weapons and Track Combat Vehicles
WWMCCS	Worldwide Military Command and Control System
ZBR	Zero-Based Resourcing
ZBR-I	Zero-Based Resourcing Implementation
ZBTQM	Zero-Based Total Quality Management

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