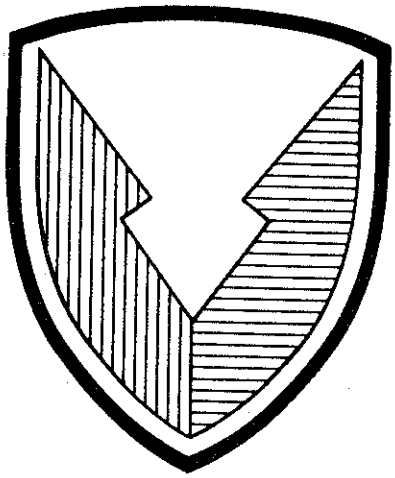
U.S. Army
Materiel Command

ANNUAL COMMAND HISTORY FY91



1993
Historical Office
Headquarters, U.S. Army Materiel Command

U.S. ARMY MATERIEL COMMAND

ANNUAL COMMAND HISTORY

FISCAL YEAR 1991

RCS-CSHIS-6(R3)

Prepared By

Historical Office
Headquarters, U.S. Army Materiel Command

1993

Approved for public release. Distribution is unlimited.

JOHNNIE E. WILSON
Major General, USA
Chief of Staff

Preface

This Annual Command History (ACH) of the Headquarters, U.S. Army Materiel Command (HQ AMC) covers fiscal year 1991, the twenty-ninth year of AMC's service as the Army major command dedicated to providing logistics support and sustainment to the soldier. This volume 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 respective staff elements. This volume could not have been completed if not for their reports and the efforts of Historical Office personnel.

The Annual Command History serves as a chronicle of the AMC Headquarters, making the past a means of managing the present and projecting the future. This ACH is a record of AMC's past, to be used in the future by AMC personnel and others interested in AMC's past.

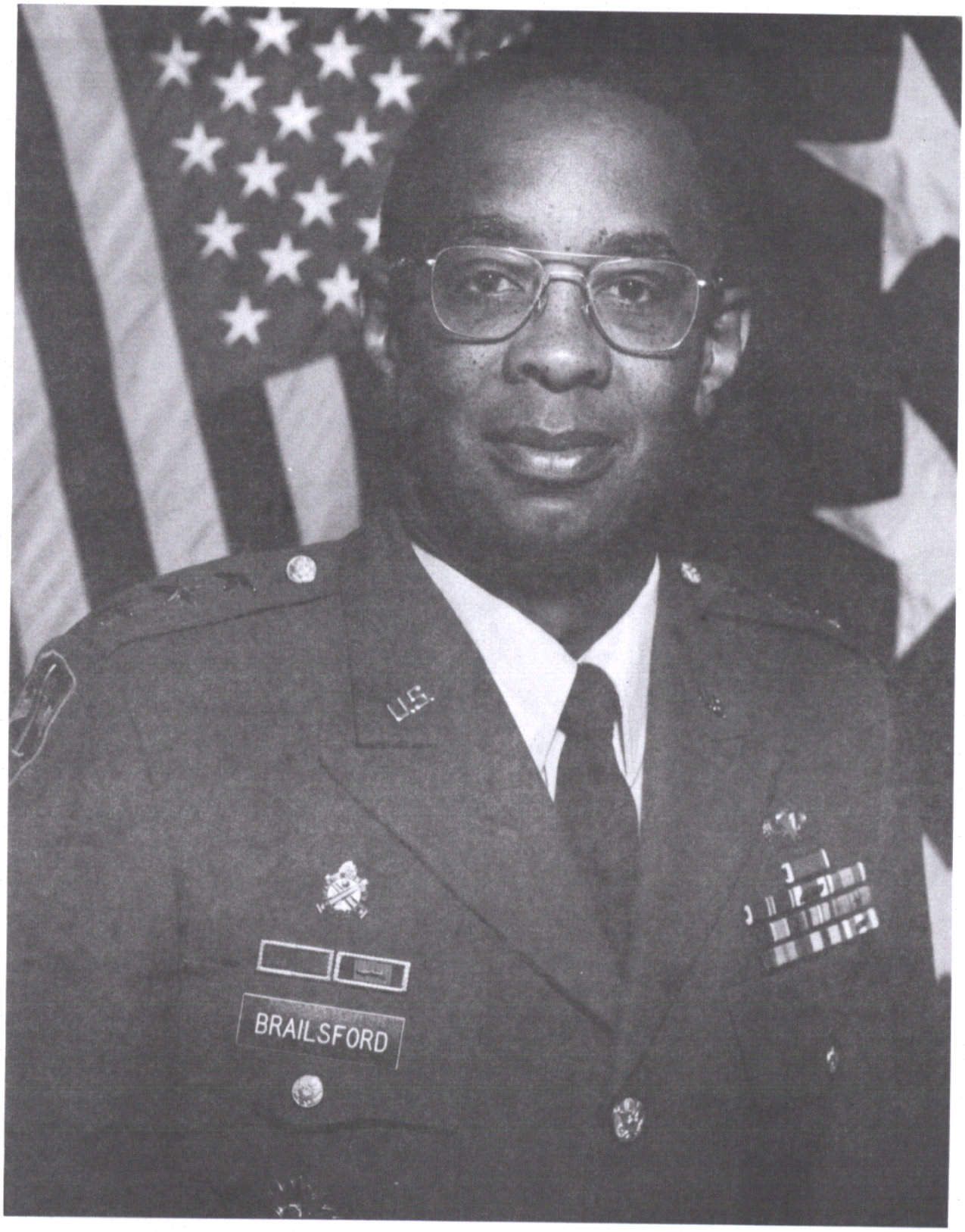
The soldiers and civilians of AMC, in the headquarters and in the field, support the soldier through the development, acquisition, fielding and sustaining of such items as the Patriot Missile System, as well as the provision of ammunition to all the services. AMC's dedication to the soldier was exemplified in its support of the decisive victory in Operation Desert Storm. This ACH includes a chapter on General William G. T. Tuttle, Jr.'s stewardship of the command in fiscal year 1991. The Headquarters ACH, however, no longer includes the U.S. Army Security Assistance Command, since that command is a major subordinate command, not a separate reporting activity. The Security Assistance Command and the Project Manager, Saudi Arabian National Guard Modernization, which have always been included as a separate chapter, will hereafter be covered in a separate volume published by that command.

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

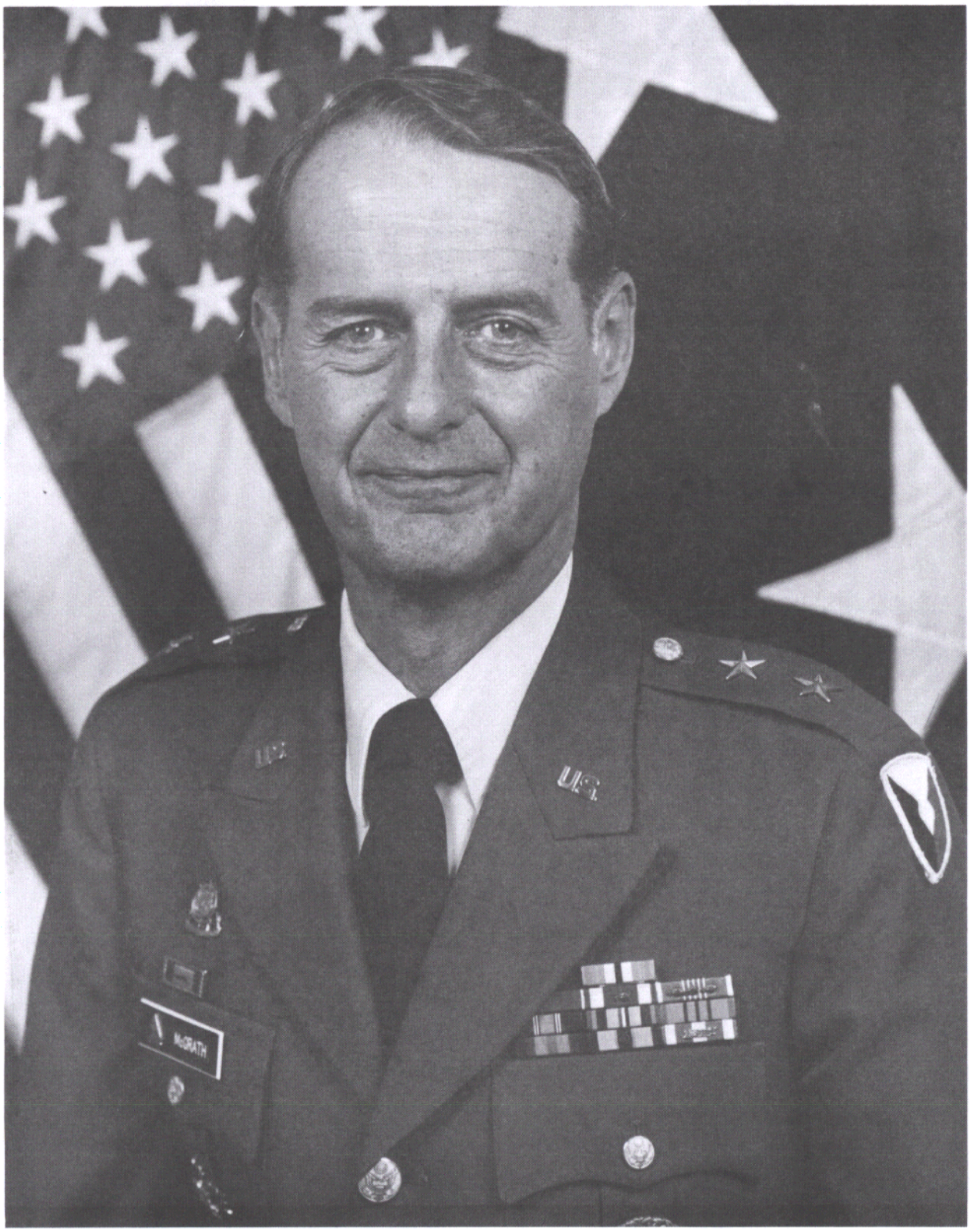
DR. ROBERT G. DARIUS
Command Historian

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

Lieutenant General Billy M. Thomas
Deputy Commanding General
For Research, Development and Acquisition



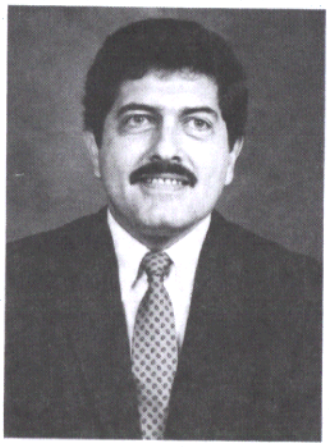
Lieutenant General Marvin D. Brailsford
Deputy Commanding General
For Materiel Readiness



Major General William B. McGrath
Chief of Staff

Dr. Richard Chait
Chief Scientist

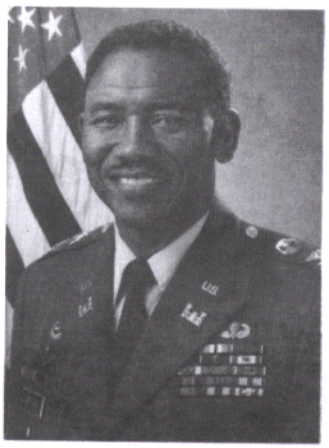
CSM Michael B. Pierce
Command Sergeant Major



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

MG Thomas B. Arwood
DCS for Readiness

COL Barry S. Baer
DCS for Resource Management
(from April 1991)



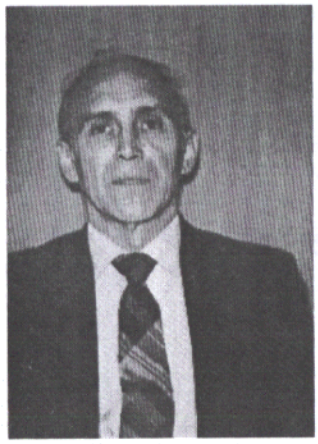
COL Joseph Briggs
DCS for Engineering, Housing,
Environment and
Installation Logistics

BG John G. Coburn
DCS for Procurement
(TDY to SWA, 5 April 1991)

Mr. Robert K. Dubois
Deputy Executive Director
for Test, Measurement
and Diagnostic Equipment

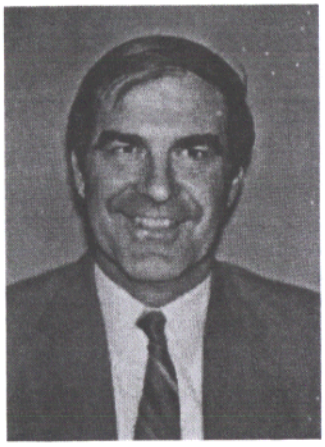
Mr. Michael Fisette
Asst. Deputy for International
Cooperative Programs

COL Donald Gover
Chaplain



Mr. Darold L. Griffin
Principal Assistant
Deputy for RDA

MG Raymond E. Haddock
Commander, U.S. Army
Security Assistance Command



Mr. Richard E. Heinbach
Assistant Deputy for
Materiel Readiness

Mr. James C. Hill
Director, Logistics Mgmt

Mr. George L. Jones
Acting DCS for Personnel
(from 9 August 1991)

Mr. Edward J. Korte
Command Counsel

MG Thomas G. Lightner
Commander, U.S. Army
Security Assistance Command
(to 25 January 1991)

Mr. Seymour J. Lorber
DCS for Concurrent Engineering
(1 Oct 90 - 1 Mar 91)

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

COL Robert T. McCarty
DCS for Intelligence
(from 19 August 1991)

Mrs. Maureen Miller
ADCS(DEA) for Acquisition
Policy and Resources
(Detailed to DMR)

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

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

COL Kenneth Pastore, USAF
Deputy Executive Director
for Conventional Ammunition

Mr. Joseph J. Pucilowski
DCS for Concurrent Engineering
(1 March - 3 August 1991)

BG Virgil A. Richard
DCS for Resource Management
(to March 1991)

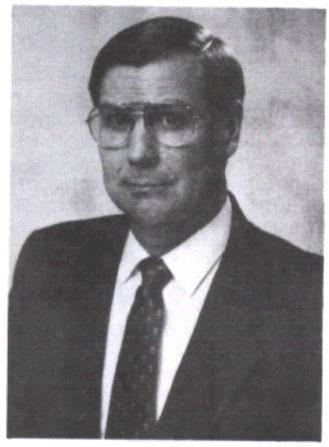
MG Joe W. Rigby
DCS for Development,
Engineering and Acquisition

Mr. Richard R. Rogowski
ADCS for Development,
Engineering and Acquisition
(from 7 April 1991)

Mr. Michael C. Sandusky
DCS for Management

Ms. Marilyn Scarbrough
Director, Office of
Equal Opportunity

BG William J. Schumacher
DCS for Ammunition



Mr. Wayne E. Studebaker
Acting ADCS(DEA) for
Acquisition Policy
and Resources

Mr. Gary Tagtmeyer
ADCS for Resource Managment
(Detailed to DSMC)

COL James L. Tierney
Inspector General
(to 30 April 1991)

Mr. Gary Tull
Acting DCS for Procurement
(from 8 April 1991)

Mr. Robert O. Weidenmuller
Acting ADCS for
Resource Management

MG Albin G. Wheeler
DCS for Personnel
(to 9 August 1991)

Key Personnel Not Pictured:

Mr. David S. Abdelnour	-- ADCS for Engineering, Housing and Installation Logistics
MG Edward R. Baldwin, Jr.	-- DCS for Procurement (from 5 September 1991)
Mr. H. R. Barnett	-- ADCS for Concurrent Engineering (4 August - 1 October 1991)
BG Harvey E. Brown	-- Commander, AMC-Europe (to 8 April 1991)
COL Donald L. Bullock	-- Commander, AMC-Far East (to 20 July 1991)
COL Ira M. Click	-- Commandant, HISA (disestablished 15 February 1991)
Dr. Robert G. Darius	-- Command Historian
COL Paul W. Dickinson	-- Inspector General (from 5 September 1991)
COL Hasko Eckel	-- Acting ADCS for Procurement (from 8 April 1991)
COL Gilbert H. Edmondson	-- Commander, AMC-Far East (from 30 September 1991)
COL Stephen Etzel	-- Commander, AMC-Europe (from 8 April 1991)
COL James C. Hardin	-- DCS for Intelligence (to 18 August 1991)
COL J. Hood, Acting	-- ADCS for Ammunition
Mr. Cleves H. Howell	-- ADCS for Intelligence - Foreign Intelligence
Mr. Harold E. Jarrell	-- Director of Information Management (from 30 June 1991)
Mr. R. Bruce Kutch	-- ADCS for Intelligence - Counterintelligence
Mr. Greg McIntosh	-- Special Assistant for Joint Activities
COL Manmohan V. Ranadive	-- Surgeon (to 31 August 1991)
Mr. John E. Rankin	-- Chief, Safety Office (from 15 April 1991)
COL Douglas H. Rogers	-- Chief of Public Affairs
Ms. Joyce Ruthven	-- Director of Information Management (to 29 June 1991)
Mr. Robert Simak	-- ADCS for Intelligence - Special Programs
Mr. Darwin N. Taras	-- Chief, Safety Office (to October 1990)
COL Dennis E. Welch	-- Inspector General (1 May - 4 September 1991)
COL W. L. Wheeler	-- ADCS for Concurrent Engineering (1 October 1990 - 12 December 1990)
COL Howard A. Wiener	-- Surgeon (from 16 September 1991)
Mr. Kurt E. Wussow	-- Chief, Office of Small and Disadvantaged Business Utilization
Mr. Maxwell E. Westmoreland	-- DCS for Concurrent Engineering (4 August - 1 October 1991)
	-- ADCS for Concurrent Engineering (12 December 1990 - 4 August 1991)

Table of Contents

Chapter I - Command Management 1

AMC's Role Within the Army's New Realities 1
Desert Storm Demonstrates AMC's Seven Missions 1
Organizational Data 4

Command Management Issues 7
New Management Approach for AMC 7

Other Significant Issues 10
Chaplain's Office 11
Deputy Chief of Staff for Resource Management 12
Deputy Chief of Staff for Personnel 14
Deputy Chief of Staff for Development, Engineering and Acquisition 15
Deputy Chief of Staff for Concurrent Engineering 21
Office of the Surgeon 22

Chapter II - Resource Managment 25

Deputy Chief of Staff for Resource Management 25

Mission and Organization 25

Cost Analysis Division 27
Operational Baseline Cost Estimate 27
Operating and Support Cost Reduction Initiative 27
National Airspace System 27
Close Combat Tactical Trainer Cost Analysis 28
LEGAL MIX VII 28
M1A2 Conversion Program 29
Baseline Cost Estimates, Cost and Operational Effectiveness
Analyis and Abbreviated Analysis Cost Information 29
Consolidated Maintenance Facility at Tooele Army Depot 30
Economic Analysis Projects 30
Cost Analysis Awards 31
AMC Cost Analysis Chiefs' Meeting 31
Resource Management Efficiencies for the Nineties 31
Automation 32
Cost Guidance 32
Business Planning 33
Reaction to Navy A-12 Administrative Inquiry 33
Process Action Team 34

Finance and Accounting Division 34
AMC Goals and Performance 34

Program Budget and Funding Policy Division 37

Force Management Division 37
Managing Civilians to Budget 37
Process Action Teams 37
Work Measurement 38
AMC Automated Manpower Management Information System 39
Base Realignment and Closure 39
Total Army Analysis 99 39
Operation Desert Shield/Storm 40
Voluntary Military Reduction 40
Defense Management Reviews and Program Budget Decisions 40
Description of Key Issues, PBD and DMR 43
Conventional Forces Europe Military Reduction 45
Force Structure Changes 45

Budget Division 48
End of Year Budget Summary 48
FY91-93 Budget and Program Resources Review Process/RIF Planning 48

Resource Management Special Operations Division 49
Reviews of Special Access Programs 49
Special Operations Forces Funding Transfer 49

Contract Cost Performance Division 49
Contractor Use of DOD Cost/Schedule Control Sytems Criteria 49
Cost Performance Report 49
Improvement of Contract Cost Performance Measurement,
Analysis and Reporting Processes 50
Cost Control of Special Access Programs 50

Deputy Chief of Staff for Management 50

Mission and Organization 50
Base Realignments and Closures 51
Zero Based Resourcing 52
Missions/Functions/Challenges 53
Operation Desert Shield/Storm 53
AMC's Strategic Long Range Plan 54
AMC Internal Controls Program 54
Review and Analysis 55
Arroyo Center Projects 55
Army Materiel Command Logistics 21 55
Gists 56
Programs to Promote Excellence 56
The Army Study Program 57
Productivity Measurement and Evaluation Program 57
Productivity Based Incentive System 58
AMC Logistics Lessons Learned Program 60
Defense Logistics Studies Information Exchange 61

Technical Library 61

Director of Information Management 62
Mission, Organization, and Manpower 62
Automation Issues 63
Communications 63
Visual Information 64
Printing and Publishing 64
Resourcing 65

Deputy Chief of Staff for Intelligence 66

Personnel and Organization 66
Most Significant Issues 66
Counterintelligence 67
Other Security Related Issues 72
Civilian Intelligence Personnel Management System 72
Foreign Intelligence 72
Special Programs 74

Deputy Chief of Staff for Engineering, Housing and Installation Logistics 75

Organization and Key Personnel 75
Command Management Issues 76

Engineering and Housing Division 77
Establishment 77
Organization 77
Process Action Teams 77
Most Significant Issues 77

Environmental Quality Division 80
Environmental Issues Related to Mobilization and ODS 80
Environmental Compliance Program Execution 81
Environmental Audit Program 83

Real Estate Division 94
Significant Issues 94

Headquarters Installation Support Activity 95

Office of Equal Opportunity 96

Mission and Personnel 96
Most Significant Issues 97
Civilian Programs 97
Military Equal Opportunity Issues 98
Community Affairs 100

Safety Office 100

Organization and Mission 100
Accidents and Incidents 101
Administration of the Safety Program 101
Safety Awards Program 102

Office of the Surgeon 103

Manpower and Personnel 103
Command Management Issues 103
Occupational Health 108
Child Development Program Evaluations 110
Medical Support for the AMC Chemical Surety Mission 110
DLA and Radiation Safety 110
M3 Bradley Crew Radiation Exposure 110
Supplement to AR 40-5 111

Office of the AMC Inspector General and AMC Inspector General Activity 111

Mission, Manpower and Personnel 112
Operation Desert Storm 112
Investigations/Assistance 113
Planning and Analysis 113
Inspections 113
Training 115
Automation 115

Internal Review and Audit Compliance Office 115

Organization and Mission 115
Command Management Issue 116
Internal Reviews 116
Reports on External Audits 118
Semi-Annual Report to the Congress 120
Training Requirements 120

Office of the Command Counsel 120

Mission, Organization and Personnel 120
Continuing Legal Education Program 120
1992-1996 Strategic Plan for the AMC Legal Organization 121
FY91 Review of AMC Patent Offices 121
1991-1992 AMC Ethics Program 122
AMC Bid Protest Handbook 122

Public Affairs Office 123

Personnel 123
Congressional and Media Interest 123
Support for the Association of the United States Army 124
AMC Image 124

MSC Support 124

Special Assistant for Total Quality Management 125

Organizational Structure 125
Brochure 125
Training 126
TQM Self Assessment Guide 126
TQM Definitions 126
Operation Desert Shield/Desert Storm 126
AMC TQM Display 126

Chapter III - Materiel Acquisition 127

Deputy Chief of Staff for Development, Engineering and Acquisition 127

Organization 127

Support Systems Division 128
Command Management Issues 128
Operation Desert Shield/Storm 130
Other Significant Issues 133

CCC/Intelligence and Weapons Systems Embedded Software Division 138
Most Significant Issues 138
Other Issues 139

Special Operations Division 145
Issues and Activities 145

Program Integration Division 145
Significant Issues 145

Appropriation Management Division 148
Issues and Activities 148

Army Counter-Drug Office 151
Army Science Board's 1990 Summer Study 151
Establishment of Army Counter-Drug RDA Office 151

Missiles and Weapons Division 152
Most Significant Issues 152
Other Issues 153

Aviation Division 160
Most Significant Issues 160

Acquisition Policy Division 162
Command Management Issues 162
Other Significant Issues 165

Deputy Chief of Staff for Concurrent Engineering 168

Organization and Manpower 168
Most Significant Issues 170

Assistant Deputy Chief of Staff for Product Assurance 171
Desert Storm Product Quality Issues (Defective Hardware) 171
Contractor Performance Certification Program 171
Corporate Information Management - Deficiency Reporting System 172
Corrosion Prevention 173
Quality Engineering 173
Reliability, Availability and Maintainability Computer Aided Design 173
Cost Effectiveness Analysis of Environmental Stress Screening 173
Assistant Deputy Chief of Staff for Production Support 174
Acquisition Improvement Reviews 174
DOD EF Program 174
Configuration Management 174
Data Management 175
DODD 5000.1, DODI 5000.2, and DOD 5000.2-M 175
Value Engineering Process Action Team 176
Computer Aided Acquisition and Logistic Support 176

Assistant Deputy Chief of Staff for Weapons Systems Production Management 178
Rapid Acquisition of Spare Parts 178
Industrial Base Resource Allocation Council 178
Charter for AMC/MSC Group on Depot, Arsenal, and
Government-Owned Facilities Work-Loading 178
Abrams and Bradley Plant Closures 179
Industrial Modernization Incentives Program 179
Long Lead Production Items in Support of ODS 179
Non-Developmental Item Program 180

Assistant Deputy Chief of Staff for Industrial Preparedness 180
Joint Group on the Industrial Base 180
Commercial Substitutes Used During ODS 180
Defense Priorities and Allocations System 181
Strategic and Critical Materials Stock Piling Act 182
Depleted Uranium for NDS 182
Defense Production Act, Title III 182
Army System for Automation of Preparedness Planning 182
Manufacturing Technology 183
Industrial Preparedness Operations 183
Production Base Support 183

Assistant Deputy Chief of Staff for Test and Evaluation 184
Test and Evaluation Policy 184
Process Action Teams 184
Materiel Release Program 184
Fielded System Reviews 185
Evaluations of AMC and PEO Managed Sytems 185

Test and Evaluation Engineering Intern Program 185

Deputy Chief of Staff for Procurement 186

Manpower, Organization and Personnel 186
Most Significant Issues 186
Other Issues 190

Deputy Chief of Staff for Ammunition 194

Organization and Key Personnel 194
Conventional Ammunition 194
Type Classification 195
Congressional Requirements 195
Conventional Ammunition Working Capital Fund 195
Kinetic Energy Penetrator Long Term Strategy Study 195
Ammunition Production Base Planning and Restructuring Study 196
Funding of Conventional Ammunition Demilitarization Operations 196
Chemical and Nuclear Issues 196

Office of the Chief Scientist 200

Organization and Personnel 200
Desert Shield and Desert Storm Chemical Defense Clothing 200
AMC - United States Military Academy Cadet/Faculty Summer Study Program 200
Technology Leveraging 201
Army Science Board Studies 202
Uniformed Army Scientist 203
1992 Army Technology Base Master Plan 203
Strategic Technologies for the Army 203
Organization of Senior Technical Personnel 203
Contract Dispute Mediator 204

Office of the Command Chaplain 204

Manpower and Personnel 204
Operation Desert Shield/Storm 204

Office for International Cooperative Programs 206

Mission, Organization and Key Personnel 206
Research, Development and Engineering Activities 207
International Standardization and Interoperability 209
International Materiel Fielding 214
U.S. Army Research, Development and Standardization Group - Germany 216
Head, Armaments Cooperation/Army 217
U.S. Army Research, Development and Standardization Group (UK) 218

Office of Small and Disadvantaged Business Utilization 219

Operation Desert Shield/Storm 219
"New Thinking" Conference 219
Outreach Program 219
Small and Disadvantaged Business Utilization Program Goals 219
Small Business Set-Asides 220

Chapter IV - Materiel Readiness 221

Deputy Chief of Staff for Readiness 221

Military Plans and Operations Division 221
Organization 221
Operation Desert Shield/Storm 221
Support of Intermediate Nuclear Forces Treaty 224
Logistics Data Network 225
HQ AMC Worldwide Military Command and Control System 225
High Frequency Radios 225
Prepositioned Ships 225
KL-43 Offline Encryption/Decryption Devices 225
Exercise Participation and Support 226
Exercise Management Conference 226
Reserve Components 226

Customer Support Division 226
Organization and Personnel 226
Aviation Resource Management Surveys 227
Operational Support Airlift 228
Cargo Aircraft 228
Monthly Readiness Briefing to the CG 228
Status of Resources and Training System 228
Unit Status Reporting 228
Readiness Integrated Data Base 229
Army Materiel Status System 229

Logistic Assistance Program Activity 229
Organization, Manpower and Personnel 229
Operation Desert Shield/Storm 230
Project Vanguard 230

Deputy Chief of Staff for Supply, Maintenance and Transportation 230

Organization and Personnel 230

Director for Logistics Management 231
Supply Division 231
Maintenance Division 233
Transportation and Equipping Division 237

Director for Logistics Support 243

Logistics Resources Division 243
Integrated Logistics Support Division 245
Logistics Systems Division 246
Special Programs Office 248

U.S. Army Test, Measurement, and Diagnostic Equipment Activity 251

Personnel Strength 251
Organizational Structure 252
Reorganization 252
Key Personnel 253
Productivity Enhancements, Efficiencies, and Rewards 255
Operation Desert Shield/Storm 257
Base Realignment and Closure 257
Assumption of the Program Manager, TMDE Mission 257
Logistics Support 258
Foreign Military Sales 258
USATA Publications Program 259

Executive Director for Conventional Ammunition 260

Mission 260
Significant Issues 260

Special Assistant for Joint Activities 262

AMC-Europe 262

Manpower and Organizational Changes 262
Key Personnel Changes 262
Command Management Issues 263
Command Group 264

Directorate for Readiness 265
LAO Readiness for ODS 265
Annual LAO-Europe Workshop 266

Directorate for Materiel Fielding 267
Conventional Forces Europe 267
Intermediate Nuclear Forces Treaty Verification 267
German Patriot Program 267
Mobile Subscriber Equipment 268
Provision of Disposition Instructions for Excess
Equipment Generated in Drawdown of USAREUR Units 268
New Equipment Fielding Effort 268
Corps Air Defense Artillery Brigade 270
CFE Treaty Limited Equipment 270

Directorate for Supply, Maintenance and Transportation 270
Operation Desert Shield/Storm 270

Directorate for Resource Management 272
Operation Desert Shield/Storm 272
Security, Plans and Operations Division 274
Quality Assurance Office 275
Public Affairs 276
Headquarters Detachment 276
Inspector General Office 276

AMC-Far East 277

Index 279

Acronym Glossary 301

Distribution List 313

Staff Directories . . . . . Endpiece

Chapter I

Command Management

AMC's Role Within the Army's New Realities

During FY91, it was clear that General Tuttle, as Commander of AMC, would have to continue guiding the agency through a time of unique challenges. The Army had faced shrinking budgets and reduced force structures before; however, in a high technology environment, logistical requirements increase rather than decrease. AMC would have to help maintain the Army's combat edge by concentrating on development and acquisition of new technologies, while ensuring that a complex logistical support structure would be available with the flexibility to support a wide range of possible contingencies anywhere in the world. As the 45th Kermit Roosevelt Lecturer, General Tuttle discussed some of the unique challenges the Army faced:

> [T]he United States, as well as most Western nations, is refocusing its efforts on the emerging new world order. General Colin Powell, the U.S. Chairman of the Joint Chiefs of Staff, addresses this new world order in terms of *Emerging* and *Enduring Realities*. *Emerging Realities* rise from the demise of the Cold War and the consequent declining western defense budgets. *Enduring Realities* relate to the continuing U.S. strategic interests in countries across the oceans, and the unchanging reality that the world holds unknown dangers, uncertainties and instability.
>
> Our U.S. military forces must be structured to meet these realities within our available resources. Our national security strategy focuses on a continuing forward presence, ground power projection and capability for military force reconstitution, when required. In all, the Army strives to meet these challenges with a force structure which embodies the fundamental qualities of versatility, deployability, lethality, and expansibility. These fundamentals are supported by competent soldiers and confident leaders; tough, realistic training; a modernization effort which ensures the Army's razor-edge war fighting capability; and, of course, a logistics structure capable of sustaining that force in any potential conflicts.[1]

Desert Storm Demonstrates AMC's Seven Missions

AMC's Vital Role. When General Tuttle took command of AMC, shortly before the beginning of FY90, he decreed that the future course of AMC would be steered by focusing on seven major missions. These missions were: equipping and sustaining a trained and ready Army; providing equipment and services to other nations through the Security Assistance Program; developing and acquiring non-major systems and equipment; providing development and acquisition support to Program Executive Officers (PEO) or Program Managers (PM); defining, developing and acquiring superior technologies; maintaining the mobilization capabilities necessary to support the Army; and improving productivity and quality of life.

---

[1]GEN William G. T. Tuttle, Jr., 45th Kermit Roosevelt Lecture, presented to the Joint Service Defense College, Greenwich, UK, et al., 13-15 May 1991 and 5-6 February 1992.

The importance of the seven AMC missions, and the process of analyzing and rebuilding AMC, was reinforced by Operation Desert Shield/Desert Storm (ODS). Although ODS began in the last quarter of 1990 and combat operations officially ended 28 February 1991, AMC operations related to Desert Storm continued for months. The impact on AMC reverberated for the remainder of the year and beyond.

The AMC article in the October 1991 issue of the Association of the U.S. Army's journal, *ARMY* ("Green Book"), dealt primarily with how AMC's seven missions and the key initiatives in each area illustrated AMC's framework of those seven missions. As General Tuttle pointed out,

> The capability to *sustain* our Army in these operations is crucial to deterrence, and when deterrence fails, flexible and responsive logistical support plays a crucial role in achieving a decisive and rapid end to hostilities. Events this past year in the Persian Gulf region have certainly borne this out and reinforced the priority that we in AMC accord to our first mission, *equip and sustain a trained, ready Army.*[2]

First Mission: To Equip and Sustain. General Tuttle wrote,

> Through all phases of ODS, AMC shipped more than 900,000 tons of equipment, supplies and ammunition. AMC also helped create a logistic infrastructure to support our high-technology Army in one of the harshest environments in the world. Our success in ODS validated and brought into focus our responsibility to invest in war-fighting logistics. We could not have executed ODS without trained soldiers, ready equipment and the capability to support them in high-tempo operations.[3]

Second Mission: Security Assistance Program. As mentioned earlier, the other missions grew out of the first. The first mission was particularly facilitated by the second, as was clearly shown during ODS. In his *ARMY* article, General Tuttle explained:

> A prime demonstration of the effectiveness of security assistance occurred during the early days of Desert Shield.
>
> The program manager for the Saudi Arabian National Guard modernization program (PM-SANG) reports through AMC's U.S. Army Security Assistance Command (USASAC).[4] PM-SANG -- a unique organization, chartered directly by the Secretary of the Army -- has responsibilities that go well beyond the scope of other security assistance organizations. Its mission is to "develop within the Saudi Arabian National Guard the capability to unilaterally initiate, sustain and operate modern military organizations and systems."

---

[2]GEN William G. T. Tuttle, Jr., "Operation Desert Storm Demonstrates AMC's Mission Framework," *ARMY*, October 1990, p. 80.

[3]Ibid.

[4]USASAC, now an AMC major subordinate command, has prepared its own Annual Historical Review (AHR) for FY91. For that reason, USASAC and PM-SANG will not be included (as a separate chapter) in this volume or in subsequent annual histories. The USASAC AHR for FY91 may be found in the HQ AMC Historical Office Archives.

... Years of effort by PM-SANG paid off on 3 August 1990. The Saudi Arabian National Guard demonstrated its military readiness and was the first Saudi unit to deploy to the northern border with Kuwait and stand toe-to-toe with the invading army of Saddam Hussein.[5]

USASAC was responsible for much of the success of the coalition forces during ODS and proved that the security of U.S. allies contributes to the security of the United States. As the Commander, USASAC wrote in the "Weapons Directory" portion of the *ARMY*,

> USASAC country program managers and central case managers worked closely with AMC MSCs, item managers, depots, and freight forwarders to ensure that materiel was released and rapidly shipped to members of the allied coalition.
>
> ... [E]lements of the SANG were the first allied coalition units to deploy to the Saudi Arabian-Kuwait border and take up defensive positions ... On 29 January 1991, again accompanied by their advisors, SANG forces were the first coalition ground units to fight in the war. SANG elements successfully counterattacked to retake Al Khafji and free trapped U.S. Marines.
>
> ... Security assistance complements the Army's Defense role and support national policy decisions. It provides a high return on U.S. government investments and helps augment military forward deployments.[6]

Third Mission: Develop and Acquire Nonmajor Systems and Equipment and Fourth Mission: Support to PEOs and PMs. The third mission concerned systems other than major end items and generally were those which benefitted or were used directly by the individual soldier, such as rations or training simulators. As General Tuttle had described in the previous year,

> 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.[7]

During ODS, the importance of the type of items covered by the third mission was illustrated with that of the fourth mission, to *provide development and acquisition support to the PEOs and their PMs* in a unique way. AMC program managers helped commanders in the field identify critical equipment shortages, in many cases, of items essential to desert survival. Then AMC mobilized the industrial base:

> Production surges encompassed items such as: aviation maintenance clam shell-type shelters essential to repair and maintain aircraft components in the harsh desert environment; water purification, storage and distribution systems; petroleum storage and transportation equipment; and chemical defense equipment. Soldier system support equipment was procured in record quantities

---

[5]Tuttle, "Operation Desert Storm Demonstrates AMC's Mission Framework," pp. 82-83.

[6]USASAC Commander's report under "Weapons Directory," *ARMY*, October 1991, pp. 291-292.

[7]GEN William G. T. Tuttle, Jr., "Seven Missions Power the AMC Contribution," *ARMY*, October 1990, pp. 77-78.

for Army, Air Force and Marine Corps forces. These items included the desert battle dress uniform; improved desert boots; Ballistic Laser Protective Spectacles (BLPS); and flameless ration heaters.[8]

Fifth Mission: Define, Develop and Acquire Superior Technologies. General Tuttle pointed out a number of technological solutions that were developed in response to the unique problems presented by ODS. For example, Harry Diamond Laboratories developed the technology that, combined with Raytheon's software, created the Patriot antitactical missile capability. The Human Engineering Laboratory designed a sleep restraint system for M1 tank crews, thereby increasing their ability to conduct continuous operations. Other developments included countermine technology and a helicopter terrain avoidance system.

Sixth Mission: Maintain Mobilization Capabilities. More than 1,000 civilians deployed in support of ODS. They maintained high tech equipment, sustained combat units, and performed essential supply and maintainence operations. In addition, about 1,780 reserve component soldiers were called to active duty with AMC in the continental United States and SWA.

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 was an on-going process:

> During ODS, tasks that usually take weeks were accomplished in days, and actions that usually take months were completed in weeks. We expedited production surges and accelerated the maintenance and repair of equipment. Process improvements during wartime must be institutionalized for use during peacetime as well. AMC will continually look for ways to improve productivity and quality of life.[9]

Organizational Data

Headquarters, AMC Process Action Team (PAT). Under the guidance of General Tuttle, and based on PAT results, HQ AMC began planning a total reorganization. This effort included development of a new (provisional) TDA to document changes. The following paragraphs describe how that TDA was conceived and how its development progressed.

Each new Deputy Chief of Staff (DCS) completed their portion of the provisional 1993 TDA in mid-October. (The new DCS's are Research, Development, and Engineering (RDE); Acquisition; Ammunition; Logistics; Resource Management; Personnel; Corporate Information Office (CIO), and Direct (which includes Engineers, EEO, CG, CS, Safety, Chaplain, etc.). The provisional TDA includes core (encumbered and vacant), and transitional (encumbered) positions. As incumbents leave transitional positions (either by moving to a core position, leaving the agency, or retiring), their positions will be eliminated.

A tracking data base will be used to monitor core and transitional positions and will be maintained by each new DCS Administrative Office. This data base will be based on the provisional 1993 TDA. The data base will be used to maintain the HQ AMC TDA. The CIO will provide the automation support for this system and AMCRM-M will manage the data base system.

DCS for Concurrent Engineering. Effective 1 October 1990 the DCS for Product Assurance and Testing (AMCQA) and the DCS for Production (AMCPD) merged, forming a single provisional organization, the DCS

---

[8]Tuttle, "Operation Desert Storm Demonstrates AMC's Mission Framework," p. 83.

[9]Ibid., p. 85.

for Concurrent Engineering. Mr. S. J. Lorber was named the DCS for Concurrent Engineering and COL W. L. Wheeler became the ADCS for Concurrent Engineering. In December 1990, COL Wheeler became the Executive Officer in the Office of the DCG for Research, Development and Acquisition and Mr. Maxwell E. Westmoreland became the Acting ADCS for Concurrent Engineering. Upon Mr. Lorber's retirement in March 1991, Mr. Joseph J. Pucilowski, Jr., was detailed from the Communications-Electronics Command (CECOM) to the position of Acting DCS for Concurrent Engineering, as directed by the DCG for Research, Development and Acquisition, for the period 1 March 1991 - 3 August 1991. Effective 4 August 1991, Mr. Westmoreland became the Acting DCS for Concurrent Engineering and Mr. H. R. Barnett became the Acting ADCS for Concurrent Engineering.

In April 1991, the DCG for Research, Development and Acquisition directed that the DCS for Concurrent Engineering would remain a provisional organization pending the reorganization of the Headquarters in October 1991.

DCS for Resource Management. COL Barry S. Baer was assigned April 1991 and replaced BG Virgil A. Richard, who retired in March 1991. The ADCSRM, Mr. Gary Tagtmeyer, was temporarily assigned to the Defense System Management College (DSMC) on 30 April 1990 to fill the Army Chair. The ADCS for Cost Analysis, Mr. Robert O. Weidenmuller, was temporarily detailed as the ADCSRM vice Mr. Tagtmeyer.[10]

Due to the disestablishment of the Headquarters Installation Support Activity (HISA) on 16 February 1991, the DCS for Resource Management was assigned the HISA Resources Division, consisting of Manpower and Budget functions. Nine budget spaces were transferred to DCSRM's Budget Division, of which seven were filled, and three manpower spaces (GS-345-12, GS-343-12, GS-343-09) were transferred to Operations and Analysis Branch of the Force Management Division.

DCS for Research, Development, and Acquisition. Mrs. Maureen Miller, ADCSDEA for Acquisition Policy and Resources, continued to be detailed to the Defense Management Review (DMR). Mr. Wayne E. Studebaker was detailed to her position in addition to serving as the Chief of the Research, Development, Test and Evaluation (RDTE) and Procurement Appropriation Management Divisions. Mr. Roger R. Rogowski continued to be detailed as the ADCSDEA until selected as the SES effective 7 April 1991.

To better utilize the reduced authorization of 180 civilian positions after implementation of the DMR directed losses of 47, LTG Billy M. Thomas approved the DCS realignment for implementation effective 2 December 1990. The realigned structure allowed the DCS to better perform its mission under the new "flat structure" concept. The new structure reduced the number of divisions from 12 to 9 and established the new drug office. The changes included disestablishing the Office of the ADCSDEA for Acquisition Management and utilizing the SES and secretarial position; establishing a Deputy SES with secretarial support under the Office of the DCS; straightlining the Aviation Division by deleting the Aviation Equipment Branch; renaming the Command, Control, Communications (CCC)/Intelligence Division to the CCC/Intelligence and Weapons Systems Embedded Software Division; merging the Command and Control Branch with the Communications Branch to form the CCC Branch; and disestablishing the Acquisition Software and Automation Division and merging as the Software Branch.

The DCS consolidated two branches in the Missiles and Weapons Division, Fire Support and Close Combat Light, to form the Light Weapons and Fire Support Branch; realigned the Support Systems Division under the ADCSDEA for Acquisition Policy and Resources, formerly known as the ADCSDEA for Program Management; established the Army Counter-Drug RDA Office, formerly the Special Programs under the

---

[10]This section is based on the historical submission, DCS for Resource Management, 15 November 1991.

Special Operations Division; realigned the Acquisition Policy Division under the ADCSDEA for Acquisition Policy and Resources; realigned the Integration and Analysis Division, formerly Acquisition Integration and Analysis Division, under the ADCSDEA for Acquisition Policy and Resources; established the Systems Integration and Analysis Branch and disestablished the Materiel Change and Technical Analysis Branch.

The DCS established the Program Integration and Analysis Branch by transferring the remaining spaces and mission from the Program Planning and Integration Division; established the RDA Appropriation Management Division under the ADCSDEA for Acquisition Policy and Resources by merging the RDTE Appropriation Management Division and the Procurement Appropriation Management Division; and established the RDA Control Branch by merging the Procure Control Branch and the Operations, Management and Control Branch.

DCS for Readiness. The Military Plans and Operations Division, consisting of three branches, consolidated into two branches in January 1991. The Contingency and Exercises Branch, less exercises, merged with the Mobilization and Reserve Components Branch and became the Command Operations Branch. The War Logistic Plans Branch absorbed the exercise portion of the old Contingency and Exercise Branch, less the Combined Arms Support Command (CASCOM)-hosted exercise LOGEX. LOGEX is the responsibility of the Command Operations Branch.

U.S. Army Test, Measurement and Diagnostic Equipment (TMDE) Support Group. The U.S. Army Test, Measurement, and Diagnostic Equipment Support Activity - CONUS (USATSAC) was redesignated the U.S. Army TMDE Support Group in October 1990. This redesignation effected a change in the reporting channels for the 517th and 74th Maintenance Battalions and moved the six Area TMDE Support Centers (ATSC) eight TMDE Support Centers (TSC) and forty-four TMDE Support Operations (TSO) into a 3-Regional concept. By the end of April 1991 the three Regions (Region 1 - Letterkenny; Region 2 - Redstone; and Region 3 - White Sands) were staffed and operational. To make these large regions manageable, ten District TMDE Support Offices were established at White Sands, Red River Army Deport, Sacramento Army Depot, Letterkenny Army Depot, Tobyhanna Army Depot, Lexington Army Depot, Anniston Army Depot, Picatinny Arsenal, Aberdeen Proving Ground and Redstone Arsenal. Under the guidance and direction of the Regions, the District Offices will manage a number of TSOs. Another significant factor in the reorganization was the placement of the 95th Maintenance Company under the command and control of the 74th Maintenance Battalion, now headquartered at Fort Lewis, Washington.

Disestablishment of Headquarters Installation Support Activity (HISA). Effective 15 February 1991, the HISA was disestablished. The Equal Employment Opportunity (EEO) section had been previously transferred to the AMC EEO Office and the Civilian Personnel Office had been transferred to the Civilian Personnel Division in ODCSPER. On 15 February, the Director of Information Management (DOIM) was transferred to the Deputy Chief of Staff for Management. The HISA Commandant, COL Ira M. Click, was transferred to the office of the Assistant Chief of Staff. The Security Office and the Top Secret Repository were transferred to the Provost Marshall in DCSPER. The Support/Equipment Management Officer, Administrative Officer, and the Commandant's secretary were transferred to the Deputy Chief of Staff for Engineering, Housing, Environment and Installation Logistics. The Military Personnel Service Center was transferred to the Military Personnel Division, ODCSPER. The CG's Mess and Motor Pool were transferred to the SGS Administrative Office. In addition, the Resources Division was transferred to the Deputy Chief of Staff for Resource Management.[11]

---

[11]Memorandum for Chief of Staff, AMC, from COL Ira M. Click, AMCIS-AM, subject: Disestablishment of Headquarters Installation Support Activity (HISA), 14 January 1991; Memorandum for DCS's and SOCs from COL Ira M. Click, AMCIS-O, subject as above, 24 January 1991.

Command Management Issues

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 ongoing in FY91. Final decisions and implementation would take at least another year. Some of the most important management initiatives under General Tuttle, which included Zero-Based Total Quality Management (ZBTQM), Defense Management Report Decisions, and Unit Cost Resourcing, are discussed below.

Zero-Based Total Quality Management. During FY91, General Tuttle continued to speak of 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. He then extended this principal to contractors who worked with AMC. As he stated during his speech before the AUSA Symposium of 9 July 1991,

> Another initiative, to which AMC is committed, is the process of Total Quality Management. Our contractor performance certification program and the Defense Logistics Agency's in-plant quality evaluation process exist to motivate our suppliers to achieve excellence in manufacturing and quality ... [S]trive to finely tune your processes toward this goal ... We put a lot of emphasis on improving the process and we think you should too. Quality is essential to survival in the coming decade.[12]

General Tuttle attended a TQM Symposium in Seattle, WA on 4 December 1991, in which he explained that AMC had been working toward implementation of TQM for three years. AMC had begun by sending both military and civilian executives to the University of Tennessee for awareness training, and had gone on to apply TQM first to AMC and then to procurement.

> TQM is causing us to rethink procurement practices, replacing bureaucratic behavior, and seeking new relationships with contractors. Industry is involved in the review of requirements documents and draft Requests for Proposals (RFP). AMC is constructing strategies to minimize "how to" specs and standards. [AMC is focusing on] value centered management, eliminating non-essential requirements, data items, contract clauses, etc.
>
> Best value contracting is where we are. [We] want suppliers who give us the best value and balance in terms of product, support services, warranties, data rights, and other factors. For new design we want cost-effective designs that are reliable and "manprinted" enough to reduce future O&S costs.

He added that AMC and OSD were discussing a new "past performance approach." They were considering adding the results of a contractor's continuous process improvement efforts to the factor of past performance in evaluating their performance risk. According to this reasoning, if a contractor already had a good track record, and was doing well with on-going process improvement efforts, then the "offeror" obviously had a good chance of doing well in future contracts.[13]

---

[12]Keynote Address, GEN William G. T. Tuttle, Jr., AUSA Symposium, 9 July 1991.

[13]GEN William G. T. Tuttle, Jr., speech, TQM Symposium, Seattle, Washington, 4 December 1991. Text of speech notes in AMCHO files.

In testimony before the Senate, General Tuttle explained that AMC had embraced TQM to increase quality, add value, and reduce cycle time in the acquisition process:

> Some process improvements have been highly successful in improving quality and customer satisfaction while saving thousands to missions of dollars and reducing cycle time. We have also extended this concept to our relationship with our contractors through a contractor performance certification program ... We are seeing an improvement in quality and delivery at the same time government costs for government plant personnel have decreased on the order of 50 percent. This has served as a model for the DOD wide exemplary facility program now under development. A tri-service regulation outlining the exemplary facility program has been drafted and is currently being staffed with the services. It is through these focused efforts of the total AMC team that the cumulative results of each new improvement will continue to make a significant and noticeable difference.[14]

In another speech, this time to a TQM Conference held at Hampton, VA in October 1991, General Tuttle explained how TQM had given AMC much greater insight into the importance of responding to the needs of the customer. In the case of AMC, the ultimate customer was the soldier in the field. Putting quality equipment into the hands of soldiers was "the most important act in acquisition."[15] Along those lines, he mentioned a project in which the U.S. Army Materiel Readiness Support Activity (MRSA) had been tasked by the U.S. Army Supply and Maintenance Assessment and Review Team (SMART) Council to find a method of improving Preventive Maintenance Checks and Services (PMCS). The U.S. Army Training and Doctrine Command (TRADOC) took the lead, while a General Officer Steering Committee was established to provide direction and guidance. The AMC Equipment Manuals Council, chaired by MRSA, formed the nucleus of a working level action group. The work group succeeded in establishing a single Army maintenance standard, developed a Precombat Checklist (PCL) for 22 systems, and completed DA Pamphlet 750-XX.[16]

Another initiative to improve stock availability, which ultimately benefited the soldier, was Low Density Systems Support. AMC established a wholesale stockage policy whereby stockage levels for critical low density systems were established without regard for demand, and without the need for DA waivers.[17]

Support of Intermediate-Range Nuclear Forces (INF) Treaty. The Operations Center continued to serve as the focal point between the Army Operations Center and AMC subordinate commands and installations for notification of INF Treaty inspections at AMC sites.

The treaty to eliminate Intermediate-Range Nuclear Forces, signed by the United States and the Soviet Union on 8 December 1987, directs the elimination of certain mid-range nuclear capable missile systems. The treaty mandates on-site inspectionsand over 35 inspections were conducted at AMC inspection sites. Longhorn Army Ammunition Plant, Texas; Redstone Arsenal, Alabama; Pueblo Depot Activity, Colorado; and Dugway Proving Ground, Utah make up the four AMC inspection sites for Pershing missiles. The final elimination

---

[14]GEN William G. T. Tuttle, Jr., testimony before the Senate Armed Services Committee, Subcommittee on Readiness, Sustainability, and Support, 17 April 1991.

[15]Speech, GEN William G. T. Tuttle, Jr., TQM Conference, Hampton, VA, 23 October 1991.

[16]Fact Sheet, AMCTQ, subject: Preventive Maintenance Checks and Services (PMCS), 23 October 1991.

[17]Fact Sheet, AMCTQ, subject: Low Density Systems Support, 23 October 1991.

inspection for Pershing missiles was conducted at Longhorn Army Ammunition Plant this year. Soviet inspection teams are now visiting each facility on an annual quota inspection basis.

HQ AMC Worldwide Military Command and Control System (WWMCCS) Facility Upgrade. Upgrade of the HQ AMC WWMCCS facility was completed during FY91. Equipment installed included work station desks, KG-84 crypto equipment and a multiplexer. One WWMCCS Information System (WIS) work station, consisting of a Honeywell-MacIntosh computer, capable of multi and concurrent Joint Operations, Planning and Execution System (JOPES) use, was received and will be installed during FY92. This work station includes a 19 inch color monitor, MacIIfx upgrade with 32mb, Low Insertion Force Adapter, Mintec Board, 3.5 and 5.25 drive, 150mb Tape Backup, System disk, two 239mb user data disks, Oracle, WingZ software, and a dot-matrix printer.

Logistics Data Network (LOGNET). LOGNET is an automated logistics planning system prototype that provides logistics planners with logistics information to accomplish crisis management planning in support of troop deployment. LOGNET can determine sustainment requirements for critical materiel, ascertain the current asset position, and calculate the time in the force deployment scenario at which these supplies will be exhausted.

Currently, HQDA (DCSLOG), Forces Command (J4), USA Logistics Evaluation Agency, Systems Integration Management Activity (SIMA) and HQ AMC all use LOGNET. Significant utilization of the LOGNET system occurred during ODS to determine sustainment requirements.

Army WWMCCS Information System (AWIS) Logistics Product Line. During FY91, PM AWIS began planning and implementing the Army portion of a modernized strategic WWMCCS. The Army's Logistics Product Line, the largest of 19 Army product lines, embodies the hardware, software, and communications needed to support the full spectrum of command and control logistical functions for action officers at the participating commands.

The LOGNET prototype is the basis for the AWIS Logistics (ALOG) software product line. ALOG includes 39 events from the existing LOGNET system and functional descriptions related to major end item redistribution and force sustainment from HQDA DCSLOG and Forces Command J4. The HQ AMC LOGNET/ALOG terminal is undergoing an upgrade that includes a Digital 3100 workstation, printer, and 9600 baud STU III crypto device.

Defense Management Report Decisions (DMRD). The DMR process had its inception in July 1989. The new administration, under the leadership of Secretary of Defense Richard B. Cheney, began a review of the DOD to improve its efficiency, especially in the areas of materiel development and acquisition.[18] During FY91, a number of decisions in the form of DMRDs impacted significantly upon AMC.

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 transferred in February 1991. In a statement before the Senate Armed Services Committee on Readiness, Sustainability and Support, General Tuttle explained,

> The distribution of supplies to our soldiers is provided primarily through our area oriented depots which we have now merged with the Defense Logistics Agency's (DLA) Defense Distribution Regions (DDR). The Army's program to modernize its area oriented depots with state of the art

---

[18]HQ AMC *Annual Historical Review*, FY89, pp. 6-7.

distribution centers was completed at Sharpe Army Depot in March 1989 and at New Cumberland Army Depot in March 1991. The $300 million investment will provide DOD with distribution faciities capable of sustaining a high level of support to the modern Army and the other services well into the next century. In support of the Defense Management Review Initiative the Army transferred Sharpe Army Depot to the DLA DDR-West in July 1990 and today (17 April 91) we have transferred New Cumberland Army Depot to the DLA DDR-East.

The Army supports transfer to DLA of the wholesale distribution mission performed by the Area Oriented Depots (AOD). We have already transferred 90 percent of the wholesale supply mission. We are now working with DLA, examining the feasibility, economics and readiness implication on a site-by-site basis of transferring the wholesale supply mission at our multi-mission maintenance and ammunition depots to DLA.

DMRD 926, to reduce National Inventory Control Point costs, had the Army transferring management of Army Stock Fund consumables to the DLA. This started on 1 October 1990 and was to 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 to take place from FY91 to FY95, when it would be fully centralized under Vision 2000.[19]

Unit Cost Resourcing. This was a new management concept developed under the guidance of General Tuttle. As he explained to the Senate Armed Services Committee on Readiness, Sustainability and Support,

... Unit Cost Resourcing will dramatically alter the way we do business in the management of end items, munitions, and secondary items. We will receive our program guidance in terms of cost per unit of output. We are already operating under this program for the management of secondary items in the stock fund in FY91. Essentially, we get a cost per dollar of sales and must "earn" our program by selling our inventory to retail customers. For the first time, the item managers have all of the resources for their program in a single management account and are responsible for the delivery of the product to the customer in the most efficient manner. When combined with the previous Defense Management Review initiatives to have the customer pay for both the depot level reparables and the wholesale logistics support of secondary items, it should provide a management tool to imbed productivity in our operation and pass lower prices on to the customer. This concept will be extended to end item and munitions management in FY92. This stock funding or unit costs resourcing technique should reduce the requirements for appropriated funds.[20]

Other Significant Issues

Due to the enormously broad scope of HQ AMC's activities and initiatives in which General Tuttle took the lead during the second full year of his tenure, these actions are discussed under the headings of the respective offices with primary responsibility.

---

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

[20]Statement by GEN William G. T. Tuttle, Jr. before the Senate Armed Services Committee, Subcommittee on Readiness, Sustainability and Support, 17 April 1991.

Chaplain's Office

Logistics Requirements for Chaplains in Wartime. During Operation Desert Shield, new and compelling logistical requirements were identified for Chaplains in the Theater of Operations. This requirement was identified on 24 August 1990 by the Central Command (CENTCOM) Chaplain. During the initial stages of ODS, the Combat Development Directorate of the U.S. Army Chaplain Center and School identified a crucial logistical shortfall relative to producing religious items and sacramental supplies to the Southwest Asia Theater. The Office of the Chief of Chaplains also cited this issue as a significant problem.[21]

This problem was exacerbated by the sensitive nature of the area of operations. Religious items, other than Muslim, were normally not permitted in areas where our chaplains were deployed. The Office of the Command Chaplain, HQ AMC, was asked to facilitate a process to define the requirements and serve as the branch proponent for the procurement of the required items and subsequent shipments to SWA.

On 7 September 1990, AMCCH was asked to help facilitate the process. AMCCH mobilized its resources to facilitate the development, funding, procurement and fielding of Chaplain Resupply Kits, Consumable (CRKC). General Officer support within AMC was a key element to the early success and quick implementation of this project. The Command Chaplain provided General Tuttle with a Point Paper ("Desert Shield Chaplain Ecclesiastical Supply Requirements") on 11 September 1990. On 12 September 1990, General Officer support for this project was granted. Subsequently, the Chaplain obtained a commitment for $275,000 to begin meeting the initial requirements.

During the development and fielding of the CRKC, General Tuttle commented that AMC and the Office of the Command Chaplain would continue to have the support of AMC in developing specifically identified religious support items to meet the needs of soldiers in a tactical environment.

By 1 November 1990, the first 1000 CRKCs were ordered and sent to SWA. This process, beginning with the development stage, took 10 weeks. The kits were assigned a National Stock Number (NSN) and contained a full range of ecclesiastical supplies to include complete communion supplies, Bibles, prayer books and religious medals. Each kit provided approximately one week's supply for a battalion-sized unit. When Operation Desert Storm commenced, an additional 2000 CRKCs were delivered to SWA.

There are several significant issues connected with this project. This was the first time that a comparable logistical item had been developed and deployed to support the religious and spiritual requirements of our soldiers as a part of the Army's logistical system. The speed of development and delivery is also significant. Feedback from Unit Ministry Teams in SWA indicates that without these CRKCs they would have been unable to meet the full religious requirements of our soldiers.

In addition to CRKCs, the Chaplain facilitated, managed and monitored the shipment of 1,140,767 ecclesiastical supplies through the Depot System Command (DESCOM) facilities to the SWA Theater. AMCCH created an audit trail procedure for each item that provided for establishing priorities for shipment, giving flight/manifest data, and tracing shipments to their destination. These shipments were initiated during the period 4 October 1990 through 15 May 1991.

---

[21]This section is based on the FY91 Historical Submission from the Office of the Chaplain, 13 November 1991.

Deputy Chief of Staff for Resource Management

Budget Division. AMC closed out FY91 with direct obligations totalling $5.299 billion, including $1.707 billion for ODS requirements. The actual FY91 non-Operation Desert Storm direct obligations were only $3.592 billion, or $1.558 billion lower than the FY90 level of $5.150 billion. The reduction is due primarily to Congressional and DA funding reductions and the transfer of secondary item support to the Army Stock Fund (ASF).[22]

Operation and Maintenance, Army (OMA). The AMC faced unique challenges in successfully executing the OMA appropriation in FY91, based on the FY91 President's budget submission to Congress, within its OMA guidance from HQDA. Final Congressional/DA actions resulted in an additional $150 million funding reduction (about 12 percent) to AMC's OMA. As this additional reduction was not planned for in AMC's original RIF calculation, only a combination of the following actions saw AMC successfully through FY91.

Operations Desert Shield and Desert Storm were supported by the DOD cooperative fund and allowed AMC to retain many people originally targeted under the RIF. The maximum amount of reimbursements were earned from the Army Stock Fund for services provided by OMA personnel. Internal reprogrammings between the major OMA subprograms were requested and approved by HQDA as necessary. There was a one-for-three hiring freeze replaced by a four percent attrition in FY91. The AMC plan is to maintain that attrition rate until the work force is drawn down, consistent with the overall downsizing of the Army.

OMA reimbursable customer funding totalled $1,298 million or 108 percent above prior year customer funding of $625 million. The major increase occurred from the transfer of secondary item support from direct funding to reimbursable funding. This was the first year for this method of funding for secondary support on a reimbursable basis and over the year it created many problems on the direct program. Over $595 million was transferred to ASF customers from AMC's direct OMA P7S. AMC would be reimbursed by the ASF from cash generated by sales from these customers to pay for all secondary item support costs including pay-of-people. As the year progressed, it became clear that less and less could be legitimately charged to ASF and required AMC to seek alternative methods to pay for the costs that remained in P7S.

AMC's FY91 OMA execution performance was highly commendable, despite major delays by DA in releasing funds to support the midyear unfinanced requirements and the continuing Operation Desert Storm requirements of $1,707 million. ODS funding was provided on a monthly basis as requirements continued to change. AMC was able to execute its missions substantially as planned and to fully support unplanned Desert Storm requirements.

Conventional Forces Europe (CFE) Military Reduction. Congress directed the services to reduce military strength ceilings in Europe. The HQDA designated the Commander-in-Chief, U.S. Army Europe as executive agent for CFE cuts. Based on negotiations between USAREUR and other MACOMs in Europe, the Army would have executed the CFE reduction in three "levels" to achieve a CFE end state strength of 92,200 troops by FY95. The CFE end state strength which USAREUR and AMC negotiated for AMC elements in Europe is 148. However, the Vice Chief of Staff, Army (VCSA) has directed the Army to achieve the CFE end state strength by FY94. The CFE reduction will result in an 80 percent cut to AMC elements in Europe versus a 56 percent cut to the Army.

---

[22]This section is based on Historical Submission, FY91, DCS for Resource Management, 15 November 1991.

In advance of the negotiated agreement with USAREUR, the HQDA Deputy Chief of Staff for Operations (DCSOPS) included a CFE reduction for AMC in the DA October 1990 Program and Budget Guidance (PBG):

FY93	FY94	FY95-97
-121	-306	-293

This reduction was undistributed (i.e., in a management unit identification code or "wedge") and AMC spread this reduction to real units in the FY92-97 Resource Management Update/Command Plan submission to HQDA. AMC submitted a reclama because the "wedge" did not conform to the negotiated position and because some spaces in the Europe drawdown were applied to other reductions (for example, about 121 TMDE Support Group spaces in Germany were given up in a VCSA directed force structure reduction). As of the end of FY91, HQDA was inclined to permit counting CFE spaces for other reductions, but would not reverse the premature "wedge."

Total Army Analysis (TAA) 99. Normally, the TAA process consists of four phases spread over two years. Through TAA, the Army determines the program force for the Program Objective Memorandum (POM). Dramatic changes in the strategic environment and threat in 1990 forced the Army to "restart" TAA 99 in January 1991. The Army completed TAA 99 in September 1991.

The Army's challenge in TAA 99 was balancing a much smaller force in the POM years (FY96-FY99). The Army adjusted the total force from 5 corps and 28 divisions in 1990 to 4 corps and 20 divisions, including 2 cadre divisions, by the end of FY95. The Active Army will reduce its size by a third, from 781K to 535K personnel. The TAA 99 process scarcely affected AMC because AMC military strength had already been reduced by more than 40 percent over the same period due to Defense Management Reviews, Program Budget Decisions, Army Force Structure Initiatives, and GEN Tuttle's voluntary "Brigade give-up."

Significantly, however, HQDA directed AMC to convert four non-deployable Military Police (MP) companies from Table of Organization and Equipment (TOE) units to Table of Distribution and Allowance (TDA) organizations. Inexplicably, Program Budget Decision P60F eliminated all 157 military spaces from the 523rd MP Company, one of the four units, beginning in FY95. AMC expected the mission of the 523rd MP CO to continue.

Tracking ODS Work Hours. In January 1991, the Force Management Division assumed responsibility for tracking civilian workhours in support of ODS from the Finance and Accounting Division (AMCRM-F). The requirement to track workhours resulted from the Under Secretary of the Army's approval, in October 1990, of 2,000 "buyback" spaces (i.e., spaces exempted from the AMC Reduction-in-Force) to support ODS. The Army instituted civilian workhour tracking to assure manpower justified for ODS work was being used for ODS workload. The requirement was expanded to include an additional 3,918 temporary spaces authorized by the Assistant Secretary of the Army for Manpower and Reserve Affairs and through a blanket authority granted AMC in December 1990.

In March 1991, the Under Secretary approved General Tuttle's request to account for ODS support on an equivalent workforce basis rather than by individual positions. The Army Audit Agency (AAA) and AMC agreed that this method reflects ODS support without reducing the commander's flexibility to adapt the workforce to changing requirements. AMC's subordinate organizations reported actual ODS hours monthly, which were converted to man-months and compared to authorized or onboard figures. A man-month figure greater than authorized or onboard was evidence that ODS manpower was properly used. The AAA did not suggest any actions on actual workload "because the workhours associated with Desert Shield and Desert Storm justified the buyback and temporary positions authorized."

Voluntary Military Reduction. General Tuttle made a commitment to HQDA in FY90 to turn in military authorizations equal to a brigade's strength for redistribution within the active Army. The give-up target at the end of FY91 is 3,971 military spaces based on the adjusted FY90 baseline of 7,929. The Phase I give-up of 1,042 spaces, coupled with an additional 2,929 spaces, would have achieved this goal. In the interim, however, HQDA-directed reductions of 2,819 authorizations impacted the project. Crediting 2,819 against the goal leaves a balance of 1,152 to be given up. Projected CFE reductions of 584 will further reduce the balance of 569 spaces. However, General Tuttle wanted to ensure that planned voluntary and Program Budget Guidance reductions do not impair AMC mission capabilities. During the latter portion of the fiscal year, he conducted zero-based reviews of AMC military requirements in the MSCs. Upon completion of these reviews, the Commander will determine the feasibility of completing the voluntary military program.

Deputy Chief of Staff for Personnel

Benefits for Civilians Deploying to SWA. To attract, recruit, and retain civilian employees to SWA, HQ AMC actively pursued additional benefits. HQ AMC requested that the Department of State modify their regulation to eliminate the 42 day waiting period for Foreign Post Differential, which they changed effective 24 February 1991. Since processing procedures were not in place for civilians at the beginning of the operation, HQ AMC established a CONUS Replacement Center (CRC) to process civilian and contractor personnel at Aberdeen Proving Ground (APG). The CRC provided employee orientation and training, issued chemical defense equipment and necessary clothing (e.g., battle uniforms) and Geneva Convention Cards. APG also arranged military and/or commercial transportation to SWA.

The deployment of AMC civilians to SWA was essential to the success of Operation Desert Shield/Storm. AMC civilians were overwhelming in their cooperation and support during the operation. There were minimal complaints of poor performance or failing to get the job done and there were many success stories as illustrated by the modification of the M1A1 Rollover Program, the depot level maintenance and supply function, and the Logistics Assistance Program.

This Headquarters identified the requirements (number/type of Army civilian personnel) necessary to effectively support an operation such as ODS. In addition to AMC employees on world-wide mobility agreements, HQ AMC established an organizational unit in SWA designated as AMC Forward which consisted of military and civilians. HQ AMC recruited and staffed these positions with volunteers from AMC activities. In December 1990, HQ AMC developed policies for civilian employees assigned TDY to SWA, which provided necessary guidance and ensured that procedures were consistent AMC-wide.

HQ AMC also developed and published an information/benefits booklet for civilian employees interested in going to SWA. This booklet assisted AMC employees in deciding whether or not to volunteer for SWA and provided information on the benefits authorized, status of employee entitlements, and the type of support the family is eligible to receive. In addition, as a means of providing AMC employees assigned to SWA information on current and future personnel programs, policies and procedures, AMC published a bi-weekly civilian personnel bulletin. All AMC civilians who went to SWA plus those back here who provided invaluable direct support to ODS have been accorded proper recognition.[23]

Commander's Guide for Civilian Survivor Assistance. The CG recognized the need to develop and issue guidance on assistance to the next of kin of possible civilian casualties. Policy guidance was issued to subordinate activities, which in effect provided for the same compassionate courtesies that are provided to family members of military personnel. A Commander's Guide for Civilian Survivor Assistance was developed.

---

[23]This section is based on Historical Submission, DCS for Personnel, 8 November 1991.

The guide outlined the casualty reporting and notification procedures for DA civilian employees supporting Operation Desert Shield/Storm. A Survivor Assistance Kit for Civilians/Family members was also developed.

Reduction in Force and Other Downsizing Initiatives. AMC, the Army's largest employer, experienced an FY91 shortfall in pay-of-people, due to projected force structure changes, cuts in AMC programs, projected funded workload and budget cuts. In anticipation of the shortfall, General Tuttle made the decision to commence with RIF planning in February 1990. To achieve the necessary reductions, the command implemented a wide variety of personnel strategies for trimming the work force: imposed a one-for-three hiring restriction; reduced overtime and travel expenses; released non-critical temporary employees; requested RIF authority and Voluntary Early Retirement Authority (VERA); and established a comprehensive outplacement assistance program.

AMC eliminated 6,650 civilian jobs at its installations across the country in connection with the DOD cutbacks. In May 1990, the command submitted 60 Requests for RIF Authority to DA and in August 1990 the authority was granted to conduct the RIFs. Notices were issued to affected employees on 8 August 1990 with a RIF effective date of 12 October 1990. The projected separations were minimized by the comprehensive outplacement assistance program, VERA, and the requirements of Desert Storm/Shield. During the notice period, General Tuttle requested and received permission to buy back approximately 2,000 positions which were being eliminated. Therefore, 2,000 RIF notices were cancelled, reducing the number of involuntary separations. The turbulence created by the RIFs directly affected 4,894 employees, of which 3,398 were reassignments, 1,302 were downgrades, and only 194 were separations. In addition, the command released 1,457 temporary employees.

One of the most successful strategies in the build-down was the variety of efforts to accelerate attrition. AMC activities implemented a comprehensive outplacement assistance program. The outplacement teams conducted informative and useful career workshops to assist targeted employees with their job search. Recognizing the labor market has changed considerably during the past five to ten years, the teams gained insight into the current approach to job seeking. Among the many workshops sponsored were Resume Preparation, Application for Federal Employment (SF-171) Completion, Interview Techniques, etc. Many "job fairs" were conducted on-site where employees met with a wide variety of employers including other Federal agencies, local and state government, and the private sectors. Through the outplacement assistance program and normal attrition, 4,217 employees voluntarily left the command (500 employees were placed through the DOD Priority Placement Program).

To further accelerate the attrition, General Tuttle received approval of VERA for 41 installations involved in the RIF. The offer of VERA provided opportunities to retain recently trained employees for the future. Of the 7,034 employees eligible for VERA, 992 employees or 14 percent of the eligibles elected to retire. AMC's attrition rate for this period was 7.5 percent. The command also implemented another Defense Management Review initiative transferring three AMC activities to the Defense Logistics Agency. This constituted the lost of an additional 2,811 employees. Through the strategies discussed above, the Command reduced its on-board strength of 105,274 as of 31 March 1990 to 95,603 as of 30 October 1990 (post RIF).

Deputy Chief of Staff for Development, Engineering, and Acquisition (DCSDEA)

DCSDEA in ODS. Operation Desert Shield/Storm was the first action since the Vietnam War to place significant requirements on the U.S. Industrial Base. On 17 August, new procedures were put in place to manage the process of surge planning. Overall responsibility for surge planning and decision papers was given to DCSDEA with support from Production and Product Assurance and Testing as required. Surge candidates

were to be selected jointly by the DCS's for Development, Engineering and Acquisition, Supply, Maintenance, and Transportation, and Readiness based on validating field requirements against supplies on hand.[24]

Life Cycle Software Engineering (LCSE). FY91 was an important year for the LCSE program. The core dollars were moved from the automation MDEP (PE 738619) to Depot Maintenance MDEP (PE 732207). Additionally, two point accounts were established, ".AN" for Core and ".AP" for System Specific. This will allow better tracking and identification of LCSE dollars. Program Managers, for the first time, were required to reimburse AMC for LCSE support provided to them under matrix support. This effort saved over $31M in System Specific dollars for FY92. Greater savings can be expected in the coming years. The LCSE System Specific account was fully funded for the third straight year. Education of the HQDA staff continued and support for the LCSE program increased. Efforts continued to establish Master programs in Software Engineering at the University of Alabama, Huntsville, AL and the University of Missouri, Saint Louis, MO.

Satellite Systems Engineering. The Director of Information Systems for Command, Control, Communications and Computers (SAIS-PPX), DA memorandum of 22 January 1991 requested HQ AMC (DCGRDA) help in fixing a long standing problem regarding the Army's ability to provide systems engineering and analysis for Satellite Communications (SATCOM). DA noted that the Army has always been responsive to the Department of Defense when it comes to building satellite ground terminals and control systems. In the past, the development of the most important element, the satellite payload, was left to the other services, often to the detriment of the operational commander. Weighing the operational performance of the space segment against the ground component generally results in an engineering compromise that unfairly burdens the ground system. DA proposed that the CECOM Center for Space Systems (C2S2) become our SATCOM systems engineers and proposed giving them the needed assets and responsibility.

An AMC memorandum of 1 February 1991 requested C2S2 to provide information on the additional resources, charter authority, and responsibilities (tasking) needed to accomplish this mission. A C2S2 memorandum of 12 March 1991 submitted requirements for additional resources along with a copy of their current mission and functions which they felt were in consonance with the DA system engineering and architecture mission. C2S2 also forwarded a proposed statement of DA-level tasking. These inputs were forwarded to DA with the request that the proposed statement of DA-level tasking be formalized as a charter.

A memorandum response of 17 April 1991 advised that no major changes are needed to the C2S2 charter but requested an increase in the scope of responsibilities for C2S2 to include engineering support for HQDA staff and for TRADOC in the development of Required Operational Capabilities, Operational Organizational Plans, and technical training efforts. HQ AMC requested C2S2 to revise their mission and function statements to reflect these changes and forward them to HQ AMC for submission to DA for approval. A first draft of the revised mission and functions has been coordinated and a second draft is under review at C2S2.

AMC continues to serve as the principal secretariat supporting the Army Executive Agent for Program System Evaluation (PSE). In October 1989, General Tuttle appointed DCSDEA, AMC, as the Army Executive Agent for PSE in response to a request from the Assistant Secretary of the Army for Research, Development and Acquisition (ASARDA). Accordingly, DCSDEA, AMC, is the Army single point of contact and central manager for the planning, acquisition, deployment, installation and support of PSE, including conventional, nuclear and chemical. A corporate body, named the Army PSE Action Group (APSEAG), was established to advise and support DCSDEA in the discharge of his executive agent responsibilities. The APSEAG includes all Army PSE principals and is chaired by this division. AMC also represents the Army

[24]This section is based on the Historical Submission, DCS for Research, Development and Acquisition, 1 November 1991.

at the DOD PSE Action Group (PSEAG) established to coordinate DOD PSE RDA efforts and disburse DOD PSE RDT&E funds.

During FY90, the APSEAG convened three times to find solutions on PSE issues and establish Army positions for the DOD PSEAG. One major accomplishment was the resolution of the resourcing dilemma of the DOD Security Operational Test Site (SOTS) at Fort McClellan, AL and the subsequent transition of this facility from TRADOC to AMC. The continued operation of the SOTS was in jeopardy, due to its unfunded status for FY92. This problem was raised at the DOD PSEAG, which eventually authorized funding from the DOD PSE RDT&E allocation for the continued operation of this facility. In addition, under this division's auspices, a consolidation of the fragmented Army PSE RDA programs under the Product Manager, PSE was accomplished. This enabled this division to properly address the frequent concerns and questions raised on duplication of PSE RDA effort at the DOD PSEAG. As part of this effort, the lost PM, PSE position was also restored.

RAH-66 Comanche. The RAH-66 (previously known as the Light Helicopter) will be a lightweight, low cost, twin engine advanced technology helicopter that will replace the current light fleet of tactically obsolete AH-1, OH-6, and OH-58A/C helicopters for the primary missions of armed reconnaissance and attack, with air combat capability imbedded in each of these missions.

General Tuttle served as chairman of the Source Selection Advisory Council (SSAC), which met twice during FY91. SSAC II was held on 17 December 1990 to review the results of the initial proposal evaluations and SSAC III was held on 27 March 1991 to address the results of the final proposal evaluations. Based on the results of the Source Selection Evaluation Board, and with unanimous SSAC approval, it was determined that the Boeing/Sikorsky proposal provided the optimum approach for attainment of the program objectives and provides the best value for the government.

The winner was announced on 5 April 1991 and a contract was awarded for a 91-month RDT&E program. The first 43 months will be the DEM/VAL Prototype phase and the remaining 48 months will be the FSD phase. This schedule is in accordance with Congressional direction to fly-before-buy. The Aviation Division continues to monitor and provide matrix support to the program. Hawk Phase III equipment was type classified standard in May 1991. In June 1991, the CG, AMC approved conditional release of Block IV software upgrade. In August 1991, the CG approved the conditional release of the Phase III Product Improvement to USAREUR and fielding of Phase III equipment and Block IV software to two battalions in Europe began immediately.

Patriot Antitactical Missile (Patriot ATM). Production was surged during ODS to increase the number of Patriot ATM missiles. Patriot was fielded to Israel, Saudi Arabia and Turkey under a series of agreements in response to the Iraqi aggression of August 1990. Thirty-five software changes were introduced into the Patriot system during ODS. Patriot was operationally successful over 70 percent of the time in Southwest Asia.

Optics for Light Weapons. In February 1991, General Tuttle approved the proposal to modify the M16 series Rifle and M249 Squad Automatic Weapon (SAW) to incorporate an optical scope. The Type Classification - Generic In-Process Review was conducted in March 1991 and the systems designated the M16A3 and M249A1. To accomplish this effort, which was funded under the Soldier Enhancement Program, several Non-Developmental Item candidates were analyzed against the Infantry School requirement. Technical and user testing commenced on three competitively selected items. Technical testing began in early August 1991, a safety release for the candidate systems was issued by the Combat Systems Test Activity and operational testing was initiated in September. Both Technical and Operational testing are nearing completion with a final report expected in December 1991 to support type classification and source selection actions.

The Optics will permit engagement of hostile forces by the individual rifleman at greater ranges. Additionally, it provides a significant increase in capability during periods of decreased visibility, such as dawn and evening twilight. This program was conducted using an aggressive schedule to provide needed hardware to Infantry soldiers expeditiously.

INF Certification. Under the provision of the 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 INF Treaty. HQDA tasked the 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 responsibility, as indicated in the plan, are in compliance. In response to this, General Tuttle issued two letters to HQDA in April and October 1991, verifying AMC's compliance with the INF Treaty.

FY94-2008 Long Range Army Materiel Plan (LRAMRP). The LRAMRP is the long term plan to develop and produce technology and equipment in response to Army-wide combat developer requirements as well as a RDA strategy for modernization. LRAMRP brings requirements, programs and players together at all levels and disciplines for interaction, intensive analysis and decision making. It focuses on a 15 year period, from fiscal year 1994 to 2008. LRAMRP is the primary vehicle for program building for RDTE and Procurement appropriations and serves as the starting point for the Army POM development cycle. The Combat Developers (Training and Doctrine Command, Combined Arms Command, Training Centers and Schools) oversee eventually building the LRAMRP into a "1 to N" priority listing. MACOMs and Materiel Developers provide management and business-sense input. Programs, constructed in Management Decision Packages (MDEP), and increments are developed jointly. AMC has specific responsibility for infrastructure mission areas which support warfighting: Science and Technology Base; Test and Evaluation; Ammunition; Base Support and Training. AMC develops program data and explanatory narratives and sets priorities for infrastructure mission areas. AMC also assists other managers in their functions and reviews.

The Infrastructure Mission Area Integration Team (IMAIT), chaired by MG Rigby, met in formal sessions throughout the LRAMRP cycle and approved AMC actions and input. LTG Thomas and General Tuttle were thoroughly briefed and they provided input throughout the LRAMRP cycle. The LRAMRP cycle began in November with a CAC-issued Letter of Instruction, which outlined the process and roles of the participants. A schedule of reviews and other milestones were given, as well as available program and fiscal guidance.

In January, after release of the President's Budget, CAC hosted a workshop to discuss and coordinate guidance and events for the upcoming cycle. Projected Total Obligation Authority (TOA) was provided. Programmatic development occurred during the February to April timeframe. The President's Budget database was converted to a detailed format and released as a start point. Materiel Requirements and recommended solutions were applied to produce MDEP increments. Dollars and quantities were reflected in detail for all systems and programs. From late April until 20 June 1991, MDEPs and increments were prioritized to reflect the best overall programs within the imposed fiscal constraints. Infrastructure lists were merged with the warfighting list to form an integrated, prioritized draft LRAMRP. Mission Area Managers conducted intensive branch reviews in July to assess the impact of the draft LRAMRP on their programs and validate priorities and programmatics. During the first week in August, MG Rigby represented AMC at a CAC-conducted integration review. Recommendations were evaluated in each mission area and decisions were made on priorities and how the overall draft LRAMRP responded to the Army's total modernization strategy.

A one-day force assessment review was conducted 16 August 1991 at CAC to review the draft LRAMRP and ensure that CINC and DA level priorities had been addressed. LTG Thomas represented AMC. CAC made changes and adjustments to the database and submitted the proposed LRAMRP to HQ TRADOC the

first week in September. The CG, TRADOC conducted a final LRAMRP review on 17 September 1991, attended by MG Rigby, and the approved LRAMRP, developed from top to bottom, was sent to HQDA on 8 October 1991.

Operating and Support Cost Reduction (OSCR). Operating and support costs of Army systems consume almost one half of the Army's budget each year. Additionally, the Army's budget is declining while inflation and pay raises further reduce purchasing power. This puts a "squeeze" on the investment funds of research, development and acquisition, resulting in an inability to invest in the Army's future systems. General Tuttle, as AMC Commander, and the CASCOM realized that action must be taken immediately to reduce operating and support costs. Each command established an OSCR task force to develop programs and plans for implementing OSCR. AMC's task force became permanent in April with the assignment of three people.

Much has been accomplished in FY91 to institutionalize OSCR. Generic cost drivers have been identified and the tech base will focus its future efforts on research and development to reduce the effects of the generic cost drivers, Army-wide. Tech base workshops were held at each Research and Development Laboratory to promote OSCR and to develop the Tech Base Investment Strategy. The stock fund is prepared to engineer/redesign specific, currently stocked items with state-of-the-art, mature technologies to realize savings in increased reliability and durability. Procedures are in place for these stock fund investments, and the first use should be in early FY92. In materiel change management, OSCR is to be given equal consideration with performance after safety requirements are met. A value engineering working group has developed a plan that will give industry incentives to develop OSCR projects with the same zeal as the acquisition reduction projects. This plan should be almost fully implemented in FY92. The data and reporting working group is well underway on developing the tools, processes and procedures that will be used to validate, justify, and support each OSCR initiative/project that is submitted or implemented.

The Chief of Staff, Army (CSA) and most of the Army Staff principles were briefed on OSCR at the 4-Star Requirements Review Committee (RRC) meeting on 28 August 1991. The CSA wholeheartedly endorsed OSCR at this briefing, which was also attended by General Tuttle and the TRADOC CG. As of the RRC briefing, over 600 Army officials from the top Army leadership to action officer level have been briefed on OSCR. The Army Acquisition Executive and the Vice Chief of Staff, Army signed an OSCR overarching policy, which has been staffed throughout the Army Staff and Secretariat; all issues have been resolved. A memorandum endorsing the OSCR concept by the CSA and Secretary of the Army has also been staffed throughout the Army and is ready for signature. The HQDA proponent for OSCR is the Deputy Chief of Staff for Operations (DCSOPS), Force Development. The proponent will form a task force in FY92 to develop the implementing plan for OSCR. HQ AMC will be an integral part of this task force and will continue to set the pace for the Army.

Soldier Modernization Plan (SMP). The jointly developed AMC/TRADOC Soldier Modernization Plan was approved by both AMC's and TRADOC's Commanding Generals and forwarded to HQDA for approval. In July 1991, the SMP was briefed to the CSA, who directed that the plan be updated based on ODS input. The plan will be staffed Army-wide. The Army Science Board (ASB) also reviewed the SMP, as well as the entire Research, Development, and Acquisition (RDA) process of soldier items. The ASB concluded that the soldier should be treated as a major system. To support the soldier system, the ASB agreed with the recommendation in the SMP for the creation of a single focal point within the RDA process for the soldier system.

Initiative to Establish Program Manager - Soldier (PM-S). To implement the concept of a single focal point for the tactical soldier system, as recommended by the SMP and the ASB study, General Tuttle requested the establishment of a Program Manager - Soldier in May 1991. When approved by the ASARDA, the PM-S will be created from existing resources at Project Office for Army Field Feeding (PO AFF) and

Project Manager for Clothing and Individual Equipment (PM CIE). A Transition Plan is being developed by TROSCOM and PM CIE to ensure an orderly transfer of responsibilities. The system management responsibilities of PM-S will be for all items worn, carried or consumed by the tactical soldier. PM-S will be responsible for the complete life cycle development and management of the over 180 different soldier system components. In addition, PM-S will be designated the Executive Agent for the Soldier Enhancement Program (SEP). The PM-S will also play an important role as the system integrator for other soldier system components not directly managed, such as individual communications, personal weapons, NBC Mask and decontamination kits and night vision devices.

Engineer Equipment Management Study. On 14 December 1990, MG Schroeder, Commandant of the U.S. Army Engineer School (USAES), voiced concerns to General Tuttle regarding the multitude of agencies and activities that the USAES combat developers were forced to interface with, regarding non-PEO managed Engineer Equipment. General Tuttle directed that a study be conducted to determine possible solutions to MG Schroeder's concern. On 28 May 1991, a briefing was presented to the DCGRDA with the recommendation that there be no change to the present process and management structure with the exception that the DCSDEA be the integration point within AMC for the resolution of engineer equipment problems. The recommendation was supported by the Armament, Munitions and Chemical Command (AMCCOM), the Tank-Automotive Command (TACOM), Troop Support Command (TROSCOM), USAES, TRADOC, PM-Combat Mobility Vehicle (CMV), PM-Mines, Countermine and Demolitions (MCD), the DCS for Ammunition and DCSDEA, HQ AMC. LTG Thomas accepted the recommendation and forwarded a memorandum to the Commandant, USAES, stating this position.

Combat Engineer Vehicle (CEV) Mine Clearing Rake. The mine clearing rake, an attachment for the M728 CEV, was designed to breach a full vehicle width path for follow-on M1 and M60 tanks. The 4,300 pound mine rake cleared both surface-laid and buried anti-tank mines in the sandy soil of Southwest Asia. The mine clearing rake was quickly developed and produced by the Belvoir Research, Development and Engineering Center (BRDEC), at the direction of DCSOPS. Two prototypes were produced for testing at Fort Dix, NJ and Yuma Proving Grounds, AZ during November and December 1990. Rakes were tested using inert and live mines. Forty-three mine clearing rakes were co-produced by BRDEC and Letterkenny Army Depot in December 1990 and January 1991. An additional sixteen mine clearing rakes were produced for the Marine Corps for use with the M60/M9 Dozer kit. All mine clearing rakes were fielded to SWA by a combined BRDEC/USAES team. The mine rake is Type Classified-Limited Procurement Urgent (TC-LPU). Actions are underway to Type Classify-Standard the mine rake by March 1992.

T9 Bulldozer Mine Clearing Armor Protection (MCAP). Caterpillar, Inc. produced 22 MCAP kits for D7G bulldozers to be used in SWA. The kit is designed to improve a dozer's survivability during mine clearing operations. It would be used to widen breaches already established by the full width CEV mine rake. The armor package weighs 3084 kg and protects the operator, engine, radiator, fuel, hydraulic tanks and batteries. It provides operator protection from small arms up to 7.62mm rounds, artillery shell fragments and land mines. Mounted at the front of the vehicle is the hydraulically operated, angled mine rake that allows material to flow through the rake while sidecasting anti-personnel and anti-tank mines to the right side of the vehicle. The rake has replaceable tines and automatic flotation and can be installed in 10 minutes by two personnel. The MCAP was successfully demonstrated in Arizona, clearing both surface-laid and buried anti-tank and anti-personnel mines of various types. It will clear mines laid to a depth of 0.30 meters and to a width of 3.66 meters. Trials were conducted in wet and dry sand. The T9 MCAP is TC-LPU. Type Classification-Standard by is expected by March 1992.

Soldier Support Items for ODS. The commencement of operations in SWA resulted in HQDA's expedited geographic and climatic review of the area of operation. As a result of this combined AMC/ODCSLOG/ODCSOPS review, eleven new desert specific CIE items were quickly identified for fielding.

The following items were quickly provided to SWA by changing the woodland fabric to the desert camouflage pattern: Desert Battledress Overgarments, Desert Field Jackets, Desert Combat Vehicle Crew Uniform, Aircrew Battledress Uniform, and the Desert Aircrew Uniform Integrated Battledress (Chemical Flightsuit). Other CIE items were accelerated from development into production: Suit Chemical Avoidance Liquid Protective (SCALP), Desert Boots, Ballistic Laser Eye Protection for ground troops, and Ballistic Laser Visor for Aviators. The SEP also provided the soldiers deployed to SWA with numerous improved items. During the operation, recently type classified items and test items from the SEP were deployed. The test items that were deployed included the Five Soldier Crew Tent, the 100 Round Assault Packs for the M249 Squad Automatic Weapon, Improved Desert Battledress Uniforms, Lightweight Flashlights, Improved Operational Ration items and Flameless Ration Heaters.

Deputy Chief of Staff for Concurrent Engineering

Atlanta XVIII Conference. The Atlanta Conference, sponsored by the American Defense Preparedness Association (ADPA), is AMC's premier acquisition conference, setting the forum for AMC throughout the entire year. The Atlanta XVIII Conference was held on 22-24 April 1991 at the Doubletree Hotel, Atlanta, GA, with the theme, "Adjusting to a Changing World." There were four panels covering topics such as Army Modernization Strategy, Enhancing Readiness Through Technology, Procurement Actions Needing Cures, and Defense Industrial Competition in an International Environment. The panels identified issues on acquisition policy and procedures, the industrial base, operating and support cost reductions and international sales. Each panel was assigned responsibility to work toward resolving the issues identified in their area to report at the Atlanta XVIII conference. The Atlanta XVIII agenda also included two separate presentations covering lessons learned in Desert Storm and the PEO/AMC Team.[25]

Desert Storm Product Quality Issues (Defective Hardware). The DCS for Concurrent Engineering received ten separate requests from DA to investigate allegations of defective hardware that had potential safety or readiness implications for Operation Desert Storm. Each report was immediately and thoroughly investigated by the appropriate MSC and actions were taken to assure the quality of the materiel, to include repair or replacement. DA was advised of actions taken within 48 to 96 hours after notification was received at HQ AMC.

Contractor Performance Certification Program (CP^2). The CP^2, operational since 1986, motivates and recognizes contractors who consistently deliver good products and demonstrate continuous improvements in both their management and production processes. The following contractors were CP^2-certified during 1991:

General Dynamics, Sterling, MI in November 1990 by AMCCOM and TACOM
ITT, Fort Wayne, IN in January 1991 by CECOM
Martin Marietta, Milan Army Ammunition Plant, TN in January 1991 by AMCCOM
Motorola, Scottsdale, AZ in January 1991 by AMCCOM
General Dynamics, Scranton, PA in May 1991 by TACOM
Detroit Diesel, Detroit, MI in June 1991 by TACOM
General Dynamics, Lima, OH in June 1991 by TACOM
Rockwell, Duluth, GA in September 1991 by the Missile Command (MICOM)

[25]This section is based on Historical Submission, FY91, DCS for Concurrent Engineering, 30 November 1991.

There are 33 contractors actively pursuing certification and an additional 9 prospective candidates. In November 1990, General Tuttle directed that the major subordinate commands stop accepting new candidates into the CP^2 program. AMC has committed to participating in the DOD Exemplary Facility Program.

Corporate Information Management (CIM) - Deficiency Reporting System (DRS). The DOD Materiel Management Board chartered a working group to identify selected automated data systems to be designated as DOD standard systems. The primary objective of the initiative was to eliminate duplicate systems and the development of further duplicate systems by the several DOD components. The working group identified five basic functional areas: Acquisition Materiel Management, Item Introduction, Requirements, Asset Management, and Distribution. They asked each services' Central Design Activity to submit automation systems they considered appropriate for DOD standards. Each service was to establish an Executive Agent Office to develop standard automation systems within one of the five areas. A report outlining the systems selected and the responsible service for each was published in 1990.

One of the systems selected as the baseline database for a DOD standard was the Army DRS. This system was selected under the area of Acquisition Materiel Management, which was headed by the Navy Executive Agent. As the office responsible for the DRS, AMCCE worked closely with the Navy EA to explain the DRS and assist the Navy in "selling" the DRS to the other services. In mid-1991, the Navy EA office selected the Army Central Design Activity, Systems Integration and Management Activity (SIMA), St. Louis, MO to redesign DRS into a DOD standard. Funding was budgeted for the effort and SIMA has begun the redesign work. The project will be a two phase process.

Phase one will be a redesign of the current DRS into an on-line data base incorporating all of the Army data requirements for Quality Deficiency Reviews (QDR), Equipment Improvement Recommendations (EIR), Reports of Discrepancy (ROD), and Warranties and is far more user friendly than the current DRS. A DRS Functional Coordinating Group (FCG) meeting was held in August 1991, with representatives from all MSCs and all functional areas, to review and revise Army DRS requirements. The participants drafted a requirements document for each functional area along with proposed screens for the automated system. SIMA established a DRS team, consisting of two functionals and five programmers, to take the draft functional requirements and come up with a prototype database by August 1992.

The second phase of the DRS redesign is the incorporation of other services' requirements into the DRS. This phase is estimated for completion in about two years. The Navy has hired a contractor to conduct research through site visits to all services' design activities and primary functional areas.

Corrosion Prevention. The Materials Technology Laboratory (MTL) continues to provide support as the Corrosion Prevention and Control Center for Technical Excellence (CPC-CTX). CPC-CTX has been identified to move with other MTL functions to the Combat Materiel Research Laboratory (CMRL) in FY97. Routine problems in shipment of materiel overseas were encountered. Many issues were identified as a result of operation in areas of high humidity and salinity. Returning equipment experienced problems due to lack of fresh water for cleaning prior to shipping. Battle Damage Assessment (BDA) was provided by MTL on aviation and other equipment. MTL was tasked by the Principal Assistant Deputy for Research, Development and Acquisition (PADRDA) to examine a production facility and determine if corrosion protection can be affected by production processes. As a result of the production survey, a follow-on study was conducted on depot processes.

Office of the Surgeon

Compliance with OSHA Standards for Nitroglycerin Exposure. In a 17 October 1990 memorandum to the Deputy Assistant Secretary of the Army (Environment, Safety and Occupational Health), MG McGrath

provided AMC comments concerning the draft Occupational Safety and Health Administration (OSHA) final rule granting partial stay for compliance with the nitroglycerin standard. The issues raised were the different treatment of the public sector versus the private sector, mandatory wearing of respirators before all questions of safe application are answered, expenditure of funds for engineering controls before OSHA's reconsideration of the permissible exposure level is accomplished (scheduled between 1 January 1992 and 1 December 1994), and consideration of budgetary and design restraints.

Adequacy of Industrial Hygiene Programs. On 5 December 1990, MG McGrath, acknowledging correspondence from MSCs to HQ AMC and HQ Health Services Command (HSC) expressing concerns over the adequacy of Industrial Hygiene (IH) programs at installations, reported in a memorandum to the MSCs the results of his tasking to the AMC Surgeon. HSC and AMC jointly recognized the deficiencies of the program; proposed indicators to allow tracking of the program; set IH program priorities, proposed interim solutions; and created a process action team, composed of representatives of the supplier of services (HQ HSC, Medical Department Activity and the Health Clinic) and the customer (HQ AMC, MSCs and installations). On 19 July 1991, a follow-up memorandum from MG McGrath reported that the PAT, after visiting targeted installations and speaking to HSC Health Clinic industrial hygienists, concluded that the present mechanism for providing IH support to AMC installations was broken and needed replacement. General Tuttle and MG Lanoue, Commander, HSC, conducted a review of medical support to AMC installations and initiated a test program to begin in FY93. Elements of HSC and AMC continue to prepare these programs.

Hearing Conservation Program. In a memorandum dated 17 January 1991, MG McGrath advised all MSCs that, while AMC continued to lead the Army in the program participation aspects of the hearing conservation program, a large number of AMC employees were suffering from hearing loss. Lack of enforcement in the use of hearing protection devices was identified as a major contributor to the problem. MSCs were tasked to develop countermeasures to resolve this problem.

Potential Exposure to Propellants. On 4 September 1991, LTG Brailsford sent a memorandum to LTG Ledford, the Surgeon General, expressing concern for the safety of soldiers potentially exposed to M-1 and M-6 propellants. Soldiers are potentially exposed to Dinitrotoluene (DNT) in the residue of open-burned M-1/M-6 propellant and while handling the raw propellant. Recent studies have indicated potential health hazards due to exposure to DNT. DuPont, the Army's sole supplier of DNT, controls DNT as potential carcinogens. DuPont's acceptable exposure limit is 0.5 mg/m3, when the product contains no more than 5 percent 2.6-DNT, one-third of OSHA's permissible exposure level. LTG Brailsford's concern was the existence and effectiveness of the mechanism used to inform soldiers of the potential health hazards and the appropriate measures to counter the health threat. He requested of the Surgeon General an assessment of recommended actions provided to DA civilians and their applicability to soldiers, as well as a review of the military hazard communication system.

Chapter II

Resource Management

Deputy Chief of Staff for Resource Management

Mission and Organization

Mission. The mission of the Deputy Chief of Staff for Resource Management (DCSRM) was to provide direction, supervision, and management of the command's financial management, cost and economic analysis, force development, and committee management programs.

Personnel. As of 1 October 1990, the DCS was authorized 6 officers and 200 civilians. The actual strength beginning 1 October 1990 was 7 military and 192 civilians. During the fiscal year, 3 manpower spaces and 9 budget spaces were transferred from the abolished Headquarters Installation Support Activity (HISA) (see below). Authorized strength as of 30 September 1991 was 6 military and 212 civilians. There was a net gain of 2 military and a net loss of 21 civilians due to retirement or reassignment (63 left the office and 42 new personnel were acquired, reflecting the massive reorganizations which HQ AMC had been enduring. As a result, the actual military strength at the end of the fiscal year was 9, while the civilian strength was 171.[1]

New to the headquarters was COL Barry S. Baer, assigned as the DCS in April 1991. He replaced BG Virgil A. Richard, who had retired in March 1991. Other key personnel of the DCSRM were as follows:

ADCSRM - Gary Tagtmeyer (Temporarily assigned to the Defense Systems Management College [DSMC] on 30 April 1990 to fill Army Chair)

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

Executive Officer - MAJ Jimmy D. Stephens (In September 1991 replaced MAJ C. B. Williams, who is on long term training)

Chief, Administrative Office - Maxine Elbon

Chief, Cost Analysis Division - Robert O. Weidenmuller (dual-hatted -- see above)

Chief, Budget Division - Edgar J. Henley

Chief, Contract Cost Performance Division - Laurence Stone

---

[1]DCS for Resource Management Historical Submission, FY91. Hereafter all information for this section is from that source, supplemented as noted in subsequent footnotes.

Chief, Program Budget and Funding Policy Division - Douglas Loomer

Chief, Force Management Division - David Blount (Replaced Mr. Peters in August 1991)

Chief, Finance and Accounting Division - Thomas Gajda (Assigned January 1991)

Chief, Resource Management Special Operations Division - Barbara Pate, Acting Chief

Reorganization. Due to the disestablishment of HISA on 16 February 1991, the DCS for Resource Management was assigned the Resources Division, consisting of Manpower and Budget functions. Nine budget spaces were transferred to DCSRM's Budget Division (of which seven were filled). In addition, three manpower spaces (of which two were filled) were transferred to the Operations and Analysis Branch "C" of the Force Management Division.

The Finance and Accounting Division reorganized, effective 15 October 1991. The Resource Management Systems Division became part of this division as a result of the reorganization. As a result of the Reduction in Force (RIF) that had been effective on 1 October 1990, the Force Development Division reorganized into a more efficient organization. The division was redesignated as the Force Management Division, and began implementing the Command Manager Concept.

Under the old Force Development Division, each branch had performed specific functions for all of AMC (e.g., Allocations performed manpower allocation functions and the Requirements Section performed requirements functions for all Major Subordinate Commands (MSC) and Separate Reporting Activities (SRA). The division chief decided to implement the Command Manager Concept, which was a birth-to-grave concept of operation, with one analyst responsible for all functions or actions for an entire MSC. For example, the command manager for U.S. Army Test and Evaluation Command (TECOM) would be responsible for documenting requirements, developing the Program Budget Guidance (PBG), processing the Budget Program Resource Review (BPRR), documenting the TDA, and answering all requests from TECOM.

There were several advantages to this method of operation. It provided each analyst with more in-depth experience in all areas of Force Management; created a better rapport with MSC representatives; allowed action officers to develop a feel for the previous history and past actions of an MSC and made each analyst more competitive in the Army Civilian Career Evaluation System (ACCES) promotion systems (CP-26 and CP-11).

By the end of the fiscal year, the division was able to report that application of the concept had been fully successful. Force Management counterparts at the MSC liked it and were able to establish a good working relationship with their command managers.

The Force Development Division had three branches, each of which had two or more sections. Although the new division added a branch, it decreased layering by eliminating sections and some section supervisors.

The Resource Integration Branch was responsible for key inputs, e.g., Resource Management Update (RMU), Command Plan, TAADS, and manpower reports, that crossed command lines and integrated outputs from all MSCs or SRAs to consolidate AMC's input to the Department of the Army (DA). The Operations Analysis Branch dealt with individual MSCs and SRAs. The action officers in these branches operated according to the new "command manager concept."

The new organization also incorporated the U.S. Army Materiel Command Management Engineering Activity (AMCMEA) personnel into the Operations Analysis and Resource Integration branches. This allowed

MEA personnel to become proficient in other Force Management functions and allowed other Force Management personnel to become familiar with MEA functions.

Cost Analysis Division

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 Deputy Chief of Staff for Resource Management, HQ AMC, was the functional proponent of this project to benefit the AMC MSCs, program executive officers (PEO), and program managers (PM). 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 FY91, LTG McCall, Comptroller of the Army, and LTG Cianciolo, Military Deputy ASA(RDA) officially endorsed OBCE. Additionally, LTG Thomas, HQ AMC DCG for RDA, established OBCE as a standardized system for the Army Materiel Command and urged improvements in user friendliness. Following that action, DCSRM hosted a workshop of MSC OBCE users to ascertain user friendliness problems in using OBCE, ranking the changes and planning for their implementation. The OBCE releases for FY91 included thirty-eight of the changes which resulted from the workshop, along with developmental enhancements provided by the support contractor, CALIBRE Systems, Inc.

A new task order contract for OBCE was awarded to CALIBRE Systems, Inc. for a base year and four option years on 27 March 1991. Software development work continued throughout the year, and three major new tasks were started: inclusion of the new DA Pamphlet 11-1 changes; development of an Automated Information Systems (AIS) Economic Analysis Module; and a PC prototype of the OBCE System.

In addition to briefing the above individuals and the PM for Automated Information Management (AIM), the OBCE office held a PEO Conference to acquaint the PEO/PM community and other MACOMs with OBCE's capabilities, to answer questions and to encourage the participation of PEO representatives to serve on the Study Advisory Group (SAG) for OBCE.

At year's end, Mr. Bob Young, Director of the U.S. Army Cost and Economic Analysis Center (CEAC), indicated that he supported the OBCE System and wanted to transition it from AMC to his organization in order to expand it as a standard Army system.

Operating and Support Cost Reduction (OSCR) Initiative

The Cost Analysis Division supported the HQ AMC OSCR initiative by coordinating the development of automated models to perform the economic analyses required by the decision maker for evaluating and ranking alternatives. The division provided guidance and counsel to the OSCR task force to insure cost and economic analysis related issues and requirements were fully addressed.

National Airspace System (NAS)

The NAS was a Department of Defense (DOD) program to upgrade the equipment at selected DOD air traffic control (ATC) sites. These sites, called NAS Core, were those DOD ATC sites which interfaced with the Federal Aviation Administration. In November 1989 the CEAC assigned cost management responsibility for the NAS to the AMC Cost Analysis Division. An Assistant Secretary of Defense Memorandum, dated 29 January 1990, tasked the Air Force to prepare a Cost and Operational Effectiveness Analysis (COEA) to

support a Milestone I Defense Acquisition Board (DAB) review, which was tentatively scheduled for March 1992. Dr. Chu, OSD PA&E, directed the Air Force to examine the following alternatives in the COEA: 1) New Development; 2) Current DOD Program; 3) Minimum Cost Option; and 4) FAA Take Over.

The NAS Joint Program Office (JPO) at Hanscom Air Force Base was in the process of preparing the COEA as of the end of the fiscal year. Air Force Systems Command had the lead for preparation of the life cycle cost evaluations (LCCE) for the COEA alternatives with support from the Army and Navy. The LCCEs were to be briefed to a Cost Analysis Improvement Group (CAIG) in January 1991. HQ AMC Cost Analysis was to provide O&S cost for the current Army program and will validate the other alternatives which contain Army requirements. AMC expected to attend all tri-service planning and review meetings. The Cost Analysis Division regularly provided information on the NAS COEA to the Director, USACEAC in the form of memoranda and information briefings. The division also provided information briefings to the DCSRM and the Chief, Aviation Division, Deputy Chief of Staff for Development, Engineering and Acquisition (DCSDEA).

The Army portion of the NAS COEA was limited to 43 of the 146 ATC sites. During the approval process and preparation of the Army position on the COEA, the Product Manager, Air Traffic Control (PM ATC) anticipated that the Army leadership will request the cost to operate and sustain the total Army ATC program. He requested that HQ AMC Cost Analysis support him in estimating the total program. The DCSRM agreed that they should provide this support and the division expected to complete the estimate in November 1991.

Close Combat Tactical Trainer (CCTT) Cost Analysis

The CCTT program was to be a simulator system to train collective tasks up to company level. The simulators were to be a fully interactive and networked operating system on a simulated real-time battlefield.

CCTT was managed by the Program Manager, Training Devices (PM TRADE), an AMC PM. The CCTT program had a Milestone I/II Army System Acquisition Review Council (ASARC) in June 1991. The PM sought a decision to release the Development and Low-Rate Production Option contract. To support the ASARC, AMC Cost Analysis conducted In-Process Reviews of the Program Manager's Baseline Cost Estimate (BCE). The office further reviewed and modified the BCE to incorporate proper cost estimating methodology and guidance. AMC Cost Analysis also prepared an Independent Cost Assessment (ICA) as requested by the Cost and Economic Analysis Center (CEAC). The BCE and the ICA were used by AMC Cost Analysis to prepare the Army Cost Position (ACP). The ACP was accepted by CEAC as briefed by AMC Cost Analysis. AMC Cost Analysis also briefed the Principal Deputy, Assistant Secretary of the Army for Financial Management, the Comptroller of the Army, and the Director of the Army Budget.

LEGAL MIX VII

During FY91, the Artillery School through TRADOC-TRAC at White Sands Missile Range (WSMR) began conducting studies to determine force structure planning in the out years. One significant effort in this area involved analysis of and decision upon weapon system candidates. The particular study which addresses these issues was called LEGAL MIX VII. In January 1991, WSMR tasked HQ AMC to develop cost data for 21 systems. This tasking required involvement of 24 activities (MSCs, PEOs, etc.). Complicating the project in many cases was the lack of system definition. For instance, defining the COLT system required contact with 7 different organizations. AMC participation in the cost area enabled TRADOC to proceed with their evaluation of future artillery force structure.

M1A2 Conversion Program

In July 1991, Mr. Conver directed his Deputy for Procurement to chair an independent government cost assessment of the M1A2 tank program from 1994 to 2003. Six working members of a SARDA Special Study Group were convened to establish costs for two options. The first option was procurement of 360 new M1A2's per year for nine years. The second option over the same nine years involved a combination program of 120 new production tanks per year plus 240 M1/IPM1 (Improved M1s) tanks converted to M1A2s. AMCRM-EV provided an action officer to be one of the Group's six working members with the responsibility of costing the conversion option (both Anniston Army Depot and General Dynamics participation), the Government Furnished Equipment (GFE) for both options, and five of the seven excursions examined by the Group. In September 1991, the Group briefed Mr. Conver on the study results. Mr. Conver then scheduled the study for presentation to the Secretary of the Army.

Baseline Cost Estimates, Cost and Operational Effectiveness Analysis and Abbreviated Analysis Cost Information (AACI)

During FY91, the AMC Cost Analysis Division participated in the development and validation of the following BCEs, COEAs and AACIs:

Baseline Cost Estimates:

Stingray
Global Positioning System
Family Medium Tactical Vehicle
Advanced Field Artillery Tactical Data System
Single Channel Objective Tactical Terminal
All Source Analysis System
Combat Service Support Control System
Close Combat Tactical Trainer
Forward Area Air Defense Command and Control
Mobile Subscriber Equipment
Maneuver Control System
Sense and Destroy Armor
Army Data Distribution System
Brigade Battalion Simulator
Tank Weapon Gunnery Simulation System
Precision Range Integrated Maneuver Exercise
Apache Longbow
Black Hawk
Line of Sight - Rear
Line of Sight - Forward - Heavy
Hellfire
Multiple Launch Rocket System
Tube Launched, Optically Tracked, Wire Guided Missile System
Army Tactical Missile System
TOW Sight Improvement Program
Advanced Anti-Tank Weapon System - Medium
Bat

Cost and Operational Effectiveness Analysis and Abbreviated Analysis Cost Information:

LEGAL MIX VII
Armored Gun System
National Airspace System
Armored Maintenance Vehicle
Arapaho
Automated Nuclear, Biological and Chemical Information Advanced Airborne Radiac System
Long Range Surveillance Unit Base Radio Station
TOW Sight Improve Program/Line of Sight Anti-Tank Training Device Acoustic Detection System
Tank Precision Gunnery In-Bore Device
Longbow Apache
Utility Aircraft Requirements
Airborne Radiac System
Apache Automatic Test Equipment
Line of Sight Anti-Tank
Infantry Anti-Armor
Comanche
High Altitude Missile Defense
Patriot Advanced Capability - 3
Standoff Minefield Detection System

Consolidated Maintenance Facility (CMF) at Tooele Army Depot (TEAD)

In 1984, TEAD prepared an Economic Analysis (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 an arbitrator, the Assistant Secretary of the Army (Financial Management) (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.

In February 1991, the USAAA issued their final report on the CMF, recommending that the HQ AMC DCS for Resource Management develop and document procedures to review the adequacy of MSC-prepared EAs pertaining to major investments. In response, HQ AMC's Cost Analysis Division provided the Internal Review Office with a copy of its Memorandum of Instruction (MOI) for the application of EA. The MOI, published after the audit, delineated responsibilities and procedures that provided for an EA review process that AMC considered responsive to the USAAA recommendation.

Economic Analysis Projects

The Cost Analysis 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. The Production Base Support review conducted during May and June 1991 consisted of 237 projects with a total value of $370 million. Of these, 145 contained adequate EA application, while the balance lacked either an acceptable EA/exemption or evidence of validation. The division provided its review comments to the HQ program proponent, the DCS for Concurrent Engineering, for resolution, and to each of the MSC Cost Analysis Offices as a form of feedback. It also provided policy and procedural guidance to HQ AMC elements and subordinate activities when required.

Streamlining Information Service Operations Consolidation Study (SISOCS). The division provided cost and economic analysis technical support to the Deputy Chief of Staff for Information Management (DCSIM), who prepared this study in response to General Tuttle's request to determine whether or not a two-site SISOCS alternative was cost effective. Based upon DCSIM's analysis, the cost of the two-site alternative did not outweigh its risks. The division reviewed the study and concurred in its findings.

Army Materiel Accounting System (AMAS). The AMC Cost Analysis Division was the economic analysis technical advisor to a DA-required update of the AMAS 1987 Economic Analysis. The AMAS Program Manager selected Science Applications International Corporation (SAIC) to perform the update and prepare the results for a MAISRC review planned for mid-FY92. We are providing guidance and coordinating with CEAC and OSD. The cost community will review and validate the completed economic analysis.

TACOM Enhanced Voluntary Early Retirement Authority (VERA). During FY90, the TACOM Cost Analysis Office prepared a study for their Personnel Office examining the costs and benefits of an enhanced

VERA versus a RIF. The enhancement related to adding five years to service time or age for annuity computation purposes. The AMC Cost Analysis Division reviewed the study and, subsequent to some modification by TACOM, concurred that the methodology and data was reasonable. AMC forwarded the study to HQDA DCSPER in September 1990. In July 1991, TACOM completed an FY92 update of the analysis which PERSCOM briefed to the Assistant Deputy ASA for Resource Analysis and Business Practices. Although the division did not receive the update for review prior to presentation to the DA staff, a subsequent comparison to the original study showed the basic methodology and rationale to be unchanged.

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 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 AMC Cost Analysis Division collected, summarized, and presented a command assessment of the data as of 1 October 1990 for the personnel profile, and 1 October 1989 through 30 September 1990 for the workload report. The division provided the reports to each MSC by memorandum dated 28 November 1990.

Cost Analysis Awards

Annually, the AMC Commanding General awarded the AMC Cost Analysis Awards for outstanding individual or group accomplishment in Cost Analysis to deserving AMC personnel and personnel within PEO and PM offices. Those selected for awards in FY91 were: Mr. Gerald D. Carson, U.S. Army White Sands Missile Range, in the category of Research, Methodology, and Data for his accomplishments in developing and documenting a methodology for costing service contracts; Ms. Jessica S. Arcidiacono, HQ AMC, in the category Selected Acquisitions Information and Management for her accomplishments in testing and evaluating the OBCE Contract Cost Performance Module and her efforts on a joint government/industry Total Quality Management review of the Cost Management process; and Messrs. Robert A. McLure and John M. Karas, U.S. Army Tank-Automotive Command, in the category Economic Analysis for their accomplishments in developing the economic analysis of the Armored Systems Modernization.

AMC Cost Analysis Chiefs' Meetings

During FY91, there were two AMC Cost Analysis Chiefs' Meetings. The first met at the Officers' Club, Fort Belvoir, Virginia, 15-16 November 1990. Topics discussed included AMC Management Emphasis and Trends, Validation Streamlining, Cost per Output, Funding Policy Changes, O&S Cost Reduction, EA, Operational Baseline Cost Estimate (OBCE), Organization, Staffing, and Functional Support Considerations for each MSC, Contract Cost Performance, and ACCES. TACOM hosted the second, mid-year meeting on 9-10 May 1991 at the Officer's Club, Selfridge Air National Guard Base, Michigan. Topics covered included TACOM Cost Analysis Overview and Projects, AMC Management Issues, Presentations and General Discussions of issues at each MSC, OBCE, Contract Cost Performance, O&S Cost Reduction, and Training and Career Development. The meeting concluded with a tour of the Detroit Tank Plant.

Resource Management Efficiencies for the Nineties

As part of a Commanding General, AMC, initiative to improve the efficiency of AMC activities, "RM Efficiencies for the 90s," came into being. The initiative resulted in 55 ideas from the MSCs, of which four dealt with cost analysis.

Reduce EA Requirements. DESCOM 03 proposed that investments of less than $50,000 be automatically exempted from the requirement to perform an EA. The proposal was sent to the Comptroller of the Army, where it was disapproved because of the increased reliance on EA to promote informed decision making.

Pre-Review Visits to Contractors. TACOM 03, proposed that soon after signing a contract the government C/SCSC team visit the contractor to develop a cooperative dialog early in the formal review process. This proposal was approved for implementation on a local option basis.

Standardize Work Breakdown Structure (WBS) Across Different Cost Reporting/Estimating Documents. CECOM 07 proposed aligning the cost reporting and estimating definitions for WBS in MIL-STD-881A and DCA-P-92(R) to allow *crosswalking*[2] between estimated and actual costs. Early in FY92, this idea was to go to the U.S. Army Cost and Economic Analysis Center for consideration.

Streamlined Inflation Indices. MICOM 05 proposed re-formatting inflation tables prepared by the HQ AMC Cost Analysis Division by fusing three tables into one. Early in FY92, the Cost Analysis Division was to determine if there was value added which outweighed its cost of implementation.

Automation

OBCE Ad Hoc Query Software. The AMC Cost Analysis Division started development of a set of programs to support OBCE Ad Hoc Query development and distribution in January 1991. This collection of programs and utilities was called the Snoop System. Snoop programs were initially distributed as Snoop Release 1.1 with OBCE Release 1.1 in June. The second Snoop Release tape will be Release 1.2 in October 1991. Release 1.2 will include 5 menus with a total of 98 menu options.

DA Letter of Instruction on Automated Information Systems. The U.S. Army CEAC issued the Letter of Instruction (LOI) for Performing Economic Analysis (EA) and Cost Requirements for AIS on 6 December 1990. This LOI superseded January 1988 guidance on this topic. The updated LOI eliminated the program and budget development guidance, strengthened the definition of the economic analysis process, and redefined the cost elements. HQ AMC Cost Analysis Division transmitted the LOI to MSCs and other affected activities on 31 December 1990. On 9 April 1991 the HQ AMC DCS for Information Management issued an LOI which contained the policies and procedures for Life Cycle Management of Information Systems within AMC. The DCSIM LOI contained several documents significant to cost analysis.

Cost Guidance

Guidance on Military Pay Rates. On 24 September 1990, the AMC Cost Analysis Division issued the Composite Standard Rates for Costing Military Personnel Services, Army for FY91 and guidance on costing military personnel services in BCEs. The DA Budget Office was responsible for developing these rates, which in FY91 were constant dollars. On 18 April 1991, the office distributed new rates, revised to reflect the President's Budget. The AMC Cost Analysis Division issued the rates for FY92 on 16 September 1991.

Inflation Guidance. The Office of Management and Budget (OMB) developed inflation rate guidance which OSD then refined for Defense application by the Services. HQDA prepared the Army's inflation indices and disseminated them to the major commands. AMC Cost Analysis Division served as the HQ AMC focal point for inflation and provided the indices to its MSCs, Project Manager Offices, and other installations and activities having a need for them. The AMC community used the indices in pricing the BCEs, Selected Acquisition Reports, Program Objective Memoranda, budget submissions, and other cost estimates. The division distributed inflation indices by memorandum dated 7 January 1991, which replaced those issued in December 1989.

---

[2]*Crosswalking*: Alignment/relating the WBS elements with the cost reporting/estimating elements for identification, tracking or *crosswalking* a WBS element to a cost reporting/estimating element.

Draft DA PAM 11-1, *Guide for Cost Analysis.* The AMC Cost Analysis Division reviewed and commented upon the Draft DA PAM 11-1, developed by the CEAC. The guide replaced the 1984 DA *Instructions for Reformatting the BCE/ICE*, DCA-P-92(R) and the 1976 DA Cost Pamphlets 11-2 through 11-5. The pamphlet provided a framework for the development, documentation and presentation of materiel systems life cycle cost estimates for all programs and/or projects that require baseline and/or independent cost estimates or other costing documentation. The pamphlet incorporated all the costing guidance set forth in the OSD Acquisition Guidance of DODD 5000.1, DODI 5000.2, and DOD 5000.2M and the Army's Regulation 11-18, *The Cost and Economic Analysis Program*. CEAC expected publication early next year.

Draft DA PAM 11-2, *Economic Analysis.* The AMC Cost Analysis Division reviewed and commented upon the Draft DA PAM 11-2, also developed by CEAC. This pamphlet provided guidance for the development, documentation, and presentation of all programs and projects requiring an economic analysis. It expanded upon the guidance in the Army Regulation 11-18, *The Cost and Economic Analysis Program*. It replaced the DA Letter of Instruction for Automated Information Systems and incorporated the requirements for presentations at Major Automated Information System Review Council (MAISRC) reviews. CEAC expected publication early next year.

Business Planning

During FY91, AMC began instituting significant changes to ensure the organization meets the needs of its customers. One mechanism for identifying opportunities as a result of these changes is through business planning. The Cost Analysis Division included members of the AMC Business Planning Working Group (BPWG) established by the DCGRDA for the purpose of designing a business planning process for the Research and Development community. The BPWG completed the process and presented to the R&D community during May. The division then prepared a vision for AMC. During July 1991, the R&D community began implementation of the plan. Each participating activity prepared a plan which included a vision of the activity's future, an identification of its customers, a description of its near term market objectives and use of resources, and its strategic approach to an evolving market. That summer, the AMC Materiel Readiness community began formulating its approach to business planning.

Reaction to Navy A-12 Administrative Inquiry

In November 1990, a Navy Inspector General Administrative Inquiry on the A-12 program identified several causes for cost and schedule overrun including a culture of proponency, lack of independence in estimating, failure to use the cost analyst's best professional judgement, and lack of management oversight. Since AMC provides matrix support to Army PEOs, The AMC Cost Analysis Division needed to assure that no similar problem occurred within the Army.

The division prepared an integrated package of four memoranda to address the issue. The first went from the DCSRM to cost analysis offices at each of AMC's MSCs, delineating specific steps they should take to assure emphasis and clarify policy. Other memos were addressed to various levels within the acquisition community and were signed by the DCGRDA. The memo to MSC Commanders stressed the need for them to provide professional, objective advice to PMs, conduct a rigorous cost analysis program, monitor special access programs, and provide appropriate oversight. The memo to PEOs identified the services available from this HQ to support their cost analysis needs. A final memo to the Assistant Secretarys of the Army for Research, Development and Acquisition (RDA) and Financial Management (FM) identified actions taken and solicited assistance in four areas.

Process Action Team

Ms. Dominiak represented the Cost Analysis community on the Resources Process Action Team. Mr. Wayne A. Wesson represented the DCS for Resource Management on the Acquire Process Action Team.

Finance and Accounting Division (FAD)

AMC Goals and Performance

The following table represents the FY91 goals established by AMC and the actual September performance.

Table II - 1: AMC Goals and Performance, FY91

DESCRIPTION	FY91 BASELINE	ACTUAL (SEP 91)
Delinquent Public Debt	1,139,038	860,121
Delinquent NAF (SC 915)*	25,220	23,199
Delinquent AAFES (SC 918)*	218,823	219,482
Uncleared TBO over 180 days old	7720	2,165
Uncleared IF over 210 days old	399	749
Prior Year Travel Advances By 30 Sep 91	10,314,134	1,625,030
"M" Year Travel Advances By 30 Sep 91	204,023	10,052

* Delinquent NAF Receivables

AMC Accountant Awards Program

This was the ninth consecutive year in which AMC recognized outstanding people in the finance and accounting area. As in prior years, the FAD gave out five awards. FAD presented awards to Samuel W. Neff - Most Outstanding Accountant of the Year ("Tom Gerety Award"), Richard C. Ross - Outstanding Systems Accountant of the Year, Gary M. Snay - Outstanding Operating Accountant, Jeffrey L. Greenwood - Outstanding Staff Accountant, and Barbara E. Lensen - Outstanding Non-Accountant in a Support Role.

Yearend Reporting

The Servicing Accounts Office successfully consolidated the FY91 end of year certified reports. In each of the five years of existence, the accounts office had ensured the unqualified acceptance of AMC's Status Reports. This year AMC had ten additional activities for which to report; i.e., PEO activities.

Program Execution

The AMC FY91 obligations for APA, RDTE, OMA, CAWCF, Wholesale ASF and Army Family Housing were $19.7 billion against an obligation plan of $19.8 billion. AMC's annual program was $20.6 billion. AMC exceeded the plan in APA, CAWCF and RDTE. AMC obligated $2.6 billion or 87 percent of the $3.0 billion Program Year 1991 Procurement Appropriations. The $.4 billion carryover balance was available for execution in FY92. There was $15 million unexecuted program in expiring year APA. The FY92 execution data was for AMC-managed programs and did not include PEO programs.

AMC obligated $1745.3 million in OMA funds to support Operation Desert Shield/Storm (ODS). AMC received $1571.6 million from HQDA and $173.7 million was diverted from missions accounts to support ODS.

AMC Wholesale Army Stock Fund (ASF) Operating Cash

In FY91, AMC's operating cash balance improved from $149 million to $476 million. Operation Desert Shield/Storm resulted in increased sales of stock fund materiel and a positive cash flow. On 1 October 1991 ASF was incorporated into the Defense Business Operations Fund (DBOF). After that date, OSD had cash accountability.

Foreign Military Sales (FMS) Case Cash Reconciliation

During FY91, AMC completed the transition to the performance of the FMS reconciliation as a part of normal operations. The DODIG, in a draft report, *Foreign Military Sales Trust Fund Disbursement Reporting*, noted that the Military Departments and the Security Assistance Accounting Center (SAAC) had implemented internal controls to ensure prompt and accurate reporting of FMS Trust Fund disbursements. Effective 30 September 1991, the SAAC completed a restructure of the FMS unreconciled account to allow reporting and processing of FY92 transactions to a single SAAC "equity" unreconciled account. This constituted the final formal phase of the reconciliation.

FY89/90 Operation and Maintenance, Army (OMA) Unliquidated Obligations Scrub

During FY91, AMC returned to DA $32.0 million FY91 and $10.0 million FY90 funds to finance the 1991 foreign currency requirement. The shortage in the Foreign Currency Fluctuation Account (FCFA) was caused by the difference between the budget and execution rates. Use of expired year OMA funds minimized the requirement to direct current year funds for these purposes.

Automated Financial Entitlements Systems (AFES)

During FY91 AMC fielded AFES for prototype and completed deployment of the system to all installation Finance and Accounting Officers responsible for entitlement functions. AFES consisted of three modules, travel, commercial accounts, and disbursing, which provided the automation to support the day-to-day financial operations in these offices. The system was subsequently deployed to 22 additional Finance and Accounting Offices.

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

In AMC's accounting system (AMAS), the SOMARDS completed its second successful yearend for September 1991 at AVSCOM, AMCCOM, CECOM, MICOM, and TACOM, DESCOM's Letterkenny Army Depot and LABCOM. The first, second, and third level reviews required by the Federal Managers Financial Integrity Act were completely redocumented. It was again concluded that SOMARDS met the GAO standards

and that the system will perform satisfactory accounting and reporting at the allotment level. The DBOF was implemented in SOMARDS for FY91 execution.

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 MSCs/Separate Reporting Activities (SRA), and its Installation/Field Elements (I/FE). This system will be capable of evolving over a period of years 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:

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

Allocations - Allocation of manpower spaces through AMC Program and Budget Guidance (PBG) allows 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 serves as a basis for the AMC Command Plan.

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

Requirements - Requirements determination for peacetime workload; Manpower Staffing Standards System (MS3); and non-MS3.

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

Functional Integration - This module will serve as an informational bridge between all the modules and consists of three parts: Position Control, Ratio Management, and Organization Management.

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

Contract Manpower Management - This module will consist of a Contract Manpower Utilization Report.

By the end of FY91, all life cycle documentation for AAMMIS had been completed to include three 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, PA. 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. A documentation module would be deployed to all AMC sites on 25 October 1991. Deployment of the Program/Budget/ Allocation Module was to commence 13-30 December 1991.

Program Budget and Funding Policy Division

Cost Per Output Concept

The secondary item product line operated under the Cost Per Output concept during FY91. This involved expansion of the Army Stock Fund to include integrated materiel management functions and a portion of depot maintenance in addition to the purchase of secondary items. Resources to purchase these outputs were transferred to stock fund customer accounts, and customer orders included a surcharge in addition to the cost of the item to cover the additional operations. Obligation authority was based on a unit cost goal (percent of gross stock fund sales) provided by OSD.

During FY91, plans were laid for establishment of a DBOF incorporating Army Stock Fund and Army Industrial Fund businesses. The division also studied expansion of the Cost Per Output concept, to include Integrated Materiel Management (IMM) for end items and ammunition, and research, development, test and evaluation. Automated Data Processing was studied as well.[3]

On 18 September 1991, Major General William B. McGrath, AMC Chief of Staff transferred the lead for unit cost responsibilities from the DCSMM to the DCSRM as part of the streamlining process which was continuing throughout Headquarters, AMC. General McGrath also reorganized the existing Unit Cost Working Group as an executive steering committee. It was to meet at the request of the DCSRM, or one of the designated product line managers, to provide advice and direction on significant issues.[4]

Force Management Division

Managing Civilians to Budget (MCB)

In FY91, the Army implemented MCB (previously known as *Managing The Civilian Work Force To Budget*). The Force Management Division (FMD) provided written and oral guidance and conducted a video conference to assist the AMC MSCs/SRAs in achieving full implementation; assisted in training and delegation of responsibilities at HQ AMC; and reviewed systems for development and tracking of Civilian Pay Plans.

Process Action Teams (PAT)

AMC Vision 2000 Resource Management Process Action Team. A PAT was established to provide the Resource Management conceptual structure and operation in support of AMC Vision 2000 at each level of command. The AMC Vision 2000 Resource Management PAT defined Resource Management as the process by which AMC plans, programs, estimates, budgets, accounts for and executes resources in accordance with assigned missions and command objectives. These objectives include identification, analysis, prioritization and integration of AMC financial and manpower requirements; validation, documentation and defense of AMC resource requirements; allocation of AMC resources according to assigned missions and command priorities; accounting for utilization of resources; evaluation of command performance to provide analysis of mission and program accomplishment.

---

[3]Memorandum, AMCMM-D, MG William B. McGrath, AMCCS to Distribution, Subject: Implementation of Cost Per Output Initiatives, 11 February 1991.

[4]Memorandum, AMCRM-P (5-4a), MG McGrath, AMCCS to DCS's/SOCs, Subject: Transfer of Unit Cost Responsibilities, 18 September 1991.

DCSRM objectives included providing management analysis of organizations and management systems to improve management within the command and providing cost and economic analysis capability and contract cost/schedule management.

As part of the PAT process, the team identified the following imperatives required for implementation of a sound organizational concept and to provide effective resource management services at least cost: One AMC DRM per command level (where an installation is collocated with an MSC, consolidation will be considered); Resource Management will integrate and provide management of all AMC appropriations and funds; functional program managers will determine requirement and perform initial prioritization through all phases. Program management offices at HQ AMC, MSCs and subordinate centers were envisioned. Organizationally, Resource Management will be one level below the command group. There was to be no more than one Finance and Accounting Division for each MSC with a small financial service organization at installations of any size.

Also, as part of the PAT process, the team identified Resource Management conceptual precepts: the majority of savings would result from projected reduced workload and increased direct to indirect worker ratios from consolidation; workload will decrease including that in support of PEO's; to a lesser degree, savings come from internal restructuring and mission realignment; and administrative control of internal budget and manpower would not be impacted. Finally, the impact of DMRDs would be considered.

HQ AMC Process Action Team. Based on Process Action Team results, HQ AMC began planning a total reorganization. This effort included development of a new (provisional) TDA to document changes. The following paragraphs describe how that TDA was conceived and how its development progressed.

Each new DCS completed a portion of the provisional 1993 TDA in mid-October. (The new DCS's were: Research, Development, and Engineering (RDE); Acquisition; Ammunition; Logistics; Resource; Personnel; Corporate Information Office (CIO), and Direct (which includes Engineers, the Office of Equal Opportunity, the Commanding General, Chief Scientist, Safety, Chaplain, etc.). The provisional TDA included both encumbered and vacant core positions, and encumbered "transitional" positions.[5]

A tracking data base was to be used to monitor core and transitional positions, maintained by each new DCS Administrative Office. This data base was to be based on the provisional 1993 TDA, and used to maintain the HQ AMC TDA. The Corporate Information Office (CIO) was to provide the automation support for this system and AMCRM-M was to manage the data base system.

Work Measurement

DOD established a Task Group on Work Measurement and Application of Standards. The Director of the Defense Productivity Program Office headed the group, which included representatives from OSD, Army, Navy, Air Force, and the Defense Logistics Agency. The objective was to integrate the services' measurement systems into a common work measurement system that allowed interagency communication. Each agency presented its work measurement system and explained how its system compared to others. The DOD Budget

---

[5]To streamline the headquarters, efforts were made to reduce the number of employees without resorting to a RIF. A provisional TDA specified *core* employees (who would be retained under the new organizational structure) and *transitional* employees (whose positions were no longer authorized on the new TDA, who were considered to be in transition to new positions in the core or outside AMC). As incumbents left transitional positions (either by moving to a core position, leaving the agency, or retiring), their positions were to be eliminated.

staff indicated that changes in the budgetary process, such as implementation of the DBOF, would have an impact on work measurement and its uses. As of the end of FY91, the group was deciding how to proceed.

AMC Automated Manpower Management Information System (AAMMIS)

Within the DCS for Resource Management's organization, the Systems Division was the lead element for tracking development of the AAMMIS. However, in FY91, the FMD performed a significant role in the development of AAMMIS. As the functional proponent for manpower, FMD expressed AMC's automation needs and AAMMIS expectations to the Systems Integration Management Activity's (SIMA) software programmers, the Project Manager for the AAMMIS, and the Systems Division of the DCS for Resource Management. Software engineering for AAMMIS was SIMA's obligation.

Throughout the year, FMD's manpower experts worked closely with SIMA's facilitators and programmers, as well as with manpower experts from subordinate organizations, to test software and assess the capabilities of AAMMIS modules in well-planned Software Qualification Tests. FMD also participated in training for the AAMMIS TAADS module. At the end of FY91, an SQT for the Program and Budget Module was in progress and prototype testing of that module was scheduled to begin in October 1991.

Base Realignment and Closures (BRAC)

In FY91, the DCS for Management (Organizational Management Division) was the focal point for all BRAC actions (including manpower reductions and transfer issues). FMD staff discussed manpower changes with the DCS for Management's BRAC office, but received no new manpower reductions for BRAC 91.

Total Army Analysis (TAA) 99

Normally, the TAA process consisted of four phases spread over two years. Through TAA the Army determined the program force for the Program Objective Memorandum (POM). Dramatic changes in the strategic environment and threat in 1990 forced the Army to "restart" TAA 99 in January 1991. The Army completed TAA 99 in September 1991.

The Army's challenge in TAA 99 lay in balancing a much smaller force in the POM years (FY96-FY99). The Army adjusted the total force from 5 corps and 28 divisions in 1990 to 4 corps and 20 divisions, including 2 cadre divisions, by the end of FY95. The Active Army was to reduce its size by a third, from 781,000 to 535,000 personnel. The TAA 99 process scarcely affected AMC because AMC military strength had already been reduced by more than 40 percent over the same period due to Defense Management Reviews, Program Budget Decisions, Army Force Structure Initiatives, and General Tuttle's voluntary "Brigade Give-up".[6]

However, HQDA directed AMC to convert four non-deployable Military Police (MP) companies from Table of Organization and Equipment (TOE) units to Table of Distribution and Allowance (TDA)

---

[6]In the first phase of a Voluntary Military Reduction (VMR), AMC had 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 that fiscal year, AMC had identified 2,400 military savings or a 27 percent reduction, in the Defense Management Review initiatives, Quicksilver, Program Budget Decisions 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 had hoped to meet the goal of identifying approximately 4,000 military authorizations "or a brigade worth of savings" within AMC through these initiatives. *See AMC AHR, FY90.*

organizations. Inexplicably, Program Budget Decision P60F eliminated all 157 military spaces from the 523d MP Company, one of the four units, beginning in FY95. AMC expected the mission of the 523rd MP Company to continue, however.

Operation Desert Shield/Storm

The Force Management Division (AMCRM-MC) assumed responsibility for tracking civilian work hours in support of ODS from the Finance and Accounting Division in January 1991. The requirement to track work hours resulted from the Under Secretary of the Army's approval, in October 1990, of 2,000 "buy back" spaces (i.e., spaces exempted from the AMC RIF to support ODS. The Army instituted civilian work hour tracking to assure manpower justified for ODS work was being used for that purpose. The requirement was expanded to include an additional 3,918 temporary spaces authorized by the Assistant Secretary of the Army for Manpower and Reserve Affairs and through a blanket authority granted AMC in December 1990.

In March 1991, the Under Secretary approved the AMC Commander's request to account for ODS support on an equivalent work force basis rather than by individual positions. The Army Audit Agency (AAA) and AMC agreed that this method reflected ODS support without reducing a commanders's flexibility to adapt the work force to changing requirements. AMC's subordinate organizations reported actual ODS hours monthly, which were converted to man-months and compared to authorized or on-board figures. A man-month figure greater than authorized or on-board was evidence that ODS manpower was properly used. The AAA did not suggest any actions on actual workload "because the work hours associated with Desert Shield and Desert Storm justified the buy back and temporary positions authorized."[7]

Voluntary Military Reduction

The AMC Commander had made a commitment to HQDA in FY90 to turn in military authorizations equal to a brigade's strength for redistribution within the active Army. The give-up target at the end of FY91 was 3,971 military spaces based on the adjusted FY90 baseline of 7,929. The Phase I give-up of 1,042 spaces, coupled with an additional 2,929, would have achieved this goal. In the interim, HQDA directed reductions of 2,819 authorizations, which impacted on the project. Crediting 2,819 against the goal left a balance of 1,152 to be given up. Projected Conventional Forces Europe (CFE) reductions of 584 will further reduce the balance of 569 spaces. However, General Tuttle wanted to ensure that planned voluntary and Program Budget Guidance reductions did not impair AMC mission capabilities. At the end of FY91, AMC was conducting zero-based reviews of AMC military requirements in the MSCs. Upon completion of these reviews the Commander was to determine the feasibility of completing the voluntary military program.

Defense Management Reviews (DMR) and Program Budget Decisions (PBD)

In FY91, AMC lost civilian and military authorizations due to the effect of numerous DMRs and PBDs. For FY91, AMC lost 7,028 civilian and 50 military authorizations of which the largest reductions were in PBD 620, PBD 009, and PBD 426 transfers to the Defense Logistics Agency (DLA). The command also spread deep DMR and PBD reductions for FY 92-97 in the summer Resource Management Update (RMU) and Command Plan (CPLAN). The Force Management Division's Operations Analysis Branches A, B, and C worked with AMC field elements and with the Resource Integration Branch Planning and Programming Team to spread reductions and prepare the FY92-97 Resource Management Update/Command Plan for submission to HQDA. The following table shows the impact of each PBD or DMR.

---

[7]See AAA Report HQ 92-700, 16 Oct 91.

Table II - 2: Effect of Defense Management Reviews/Program Budget Decisions on AMC Civilian Manpower, FY91 TO FY97

CIVILIAN	FY91	FY92	FY93	FY94	FY95	FY96	FY97
DA PBG							
(Oct 90)	95,910	91,763	88,229	85,682	85,682	85,680	85,680
			Reductions/Increases				
PBD/Issue							
009	-924	-924	-924	-924	-924	-924	-924
000 CIV	-78	0	0	0	0	0	0
P60 R&D	0	-68	-125	-108	-99	-115	-209
VA 7600	0	138	138	138	138	138	138
056	-59	-71	-60	-60	-60	-54	-54
113	10	103	0	0	0	0	0
620	-16	-16	-16	-16	-16	-16	-16
670	-3,077	0	0	0	0	0	0
725	0	-1,944	-1,944	-1,944	-1,944	-1,944	-1,944
725 (000001)	-1	-1	-1	-1	-1	-1	-1
DMR							
910	-26	-28	-31	-32	-32	-32	-32
941C	0	-14	-47	-87	-115	-135	-143
945F	0	-2	-4	-4	-4	-4	-4
945I	0	-94	-102	-109	-114	-132	-132
945M	0	0	-10	-10	-10	-10	-10
945N	0	-5	-5	-5	-5	-5	-5
945	0	-3	-3	-3	-3	-3	-3
945Q	0	-24	-37	-38	-38	-38	-38
945T	-10	-10	-10	-10	-10	-10	-10
945V1	0	-2	-2	-2	-2	-2	-2
945V3	0	-3	-3	-3	-3	-3	-3
945W	0	-86	-86	-86	-86	-86	-86
998	0	-2	-2	-2	-2	-2	-2
			Transfers				
PBD							
076C	2	52	52	52	52	52	52
331	0	1	1	1	1	1	1
426	-3,030	-3,176	-3,084	-3,194	-3,324	-3,324	-3,324
DMR							
945U	0	-345	-345	-345	-345	-345	-345
972R	0	10	10	10	10	10	10
DA PBG							
END (Mar 91)	88,702	85,249	81,589	78,901	78,740	78,696	78,594

Table II - 3: Effect of Defense Management Reviews/Program Budget Decisions on AMC Military Manpower, FY91 TO FY97

MILITARY	FY91	FY92	FY93	FY94	FY95	FY96	FY97
PBG START	8,017	7,724	7,415	7,215	7,227	7,227	7,227
			Reductions/Increases				
PBD/ISSUE							
P60E	0	0	0	-19	-19	-19	-19
CTC BILL	0	-5	-5	-5	-5	-5	-5
60F	0	0	0	0	-157	-157	-157
60J	0	0	0	19	0	0	0
R&D FS	0	-3	-3	-14	-14	-14	-14
VCSA DIR FS	-2	-92	-135	-751	-1,043	-1,051	-1,053
113	0	0	2	2	3	3	
DMR							
945A	0	0	-3	-5	-6	-6	-6
945	0	0	-2	-2	-2	-4	-4
945V3	0	-1	-1	-1	-1	-1	-1
998	0	-2	-2	-2	-2	-2	-2
			Transfers				
PBD							
076C	0	4	4	4	4	4	4
331	0	25	25	25	25	25	25
426	-48	-48	-48	-48	-48	-48	-48
945U	0	-111	-111	-111	-111	-111	-111
972R2	0	1	1	1	1	1	1
DA PBG (Mar 91)	7,967	7,492	7,137	6,308	5,851	5,842	5,840

Note: In addition to the above DMR/PBD and DA directed issues, AMC had to make the following adjustments in the military Command Plan:

KOREA QSI	-21	-21	-21	-21	-21	-21	-21
			Transfers				
MDW to HQ AMC	4	4	4	4	4	4	4
AAE to PM TRADE	1	1	1	1	1	1	1
ALMC to TRADOC	-64	-64	-64	-64	-64	-64	-62

Description of Key Issues, PBD, and DMR

Issue 00001: Realigns PBD 725 by -1 civilian space to clean-up a negative condition for FY92-FY97.

Issue 00002: AMC's share of the Army's Combat Training Center (CTC) bill.

Issue AMMO01: Realigns military (3 MICOM spaces and up to 127 LAPA spaces) from a logistics support activities AMS code (728012) to the new conventional ammunition AMS code (728041), with no loss of spaces to AMC.

Issue RDTE01: Realigns up to 3 military in CECOM R&D from AMS code 612270 to AMS code 623270 to comply with PBD 912, with no loss of spaces to AMC.

Issue RDT002: Realigns up to 9 officers, 1 warrant officer, and 4 enlisted spaces to dollars (between CECOM R&D subprograms), with no loss of spaces to AMC.

PBD 009 (Army Command, Control, and Communications; other Logistics Support): Reduced AMC manpower as a result of non-compliance with last year's cuts. Last year HQDA directed AMC to reduce OMA, but AMC reduced various appropriations. As a result, PBD 009 reduced AMC by 924 civilian spaces in all years and reduced workyears by 462 for FY91, 1,157 for FY92, and 1,099 for FY93.

PBD 056 (Base Operations): Reduces OMA support tail in P7S and P7M.

PBD P60E (Korea Reductions): Takes 19 military spaces from the 2nd TMDE Maintenance Company unit in Korea for FY 94-97. (This PBD was nullified by adjustments in Issue OOVCSA and PBD P60J.)

PBD P60F: Eliminates the 523rd MP Company in FY95.

PBD P60J (Korea Adjustment): Restores 19 military spaces to the 2nd TMDE Maintenance Company in FY94.

PBD P60R&D (R&D Force Structure Decision): Reduces tactical R&D at MICOM and TACOM.

PBD 076/076C (Defense Logistics Agency): Recognizes savings in transfer of wholesale subsistence from DLA. AMC received 2 civilian spaces for FY91 and 52 spaces for FY92 through FY97. AMC also received 4 officer spaces for FY92-97.

PBD 113 (DMR/PBD Adjustments): Affects up to 3 enlisted spaces in the base operations V account (planning, reserve training, and mobilization).

PBD 331 (SSO Transfer): Pursuant to an Intelligence and Security Command (INSCOM) study, AMC received 1 civilian and 25 military spaces in intelligence for decentralization of Special Security Offices (SSO).

PBD 426 (Transfer Sharpe Army Depot and New Cumberland Army Depot to DLA): This issue transfers manpower for two depots to DLA. Additionally, the PBD involves consolidation of Inventory Control Points (ICP), revolving fund costs of operation, surcharges, and customer prices.

PBD 427 (Army Stock Fund): This PBD did not result in any net gain or loss to AMC manpower; however, it realigned civilian manpower from 728040 to 738017 and 728012 and military manpower spaces from 728040 to 7B0073 and 758040.

PBD 620 (Congressional Action - Operations): Reduced AMC by 16 civilians in FY91 through FY97 to align last year's OMA appropriation budget with the FY91 appropriation bill.

PBD 670 (Operations Financing Adjustments): Reduction to align FY91 end strength with FY91 funding levels.

PBD 725 (Secretary of Defense Program Decisions): The Secretary of Defense approved a reduction of 10,000 civilian spaces in FY92-97 for the services. AMC's share was -1,944. (This figure was later adjusted to -1,945 by Issue 000001).

DMR 910 (Consolidation of DOD Accounting and Finance Operations): Relates to standardization of accounting and finance procedures in the services and directs the establishment of a Defense Financial Services Center (DFSC). Impacts AMC civilians: -26 in FY91; -28 in FY92; -31 in FY93; -32 in FY94-97.

DMR 941 (Electronic Data Interchange [EDI]): Relates to savings in overhead costs as a result of automated exchange of electronic forms. The Defense Logistics Agency will implement and manage a DOD standard EDI system.

DMR 972R2 (Transfer Residual Resources): Restores one enlisted space to the Troop Support Command for FY92-97 in OMA P7S.

DMR 998 (Printing and Publications): Reduces two enlisted from AMC base operations for FY 92-97.

DMR 945 (Army DMR Proposals): This PBD had 23 discrete parts, of which four relate to military (Parts A, F, V3, and U).

A - Consolidates reenlistment at installation level.
F - Consolidates CONUS aircraft hubs and achieves savings for increased aircraft scheduling efficiencies.
I - Transfers TAADS, MS3, and Survey to USAFISA.
M - Reduces EEO.
N - Reduces base operations budget functions.
P - Reduces audiovisual functions.
Q - Consolidates official and personal mail services.
T - Reduces base operations publications.
U - Reductions for software engineering.
V1 - Physical security.
V3 - Restructures crime prevention activities.
W - Reduces Army Industrial Fund (AIF).

ISSUE OOVCSA (VCSA Directed Force Structure Reduction): Pursuant to a briefing of the Vice Chief of Staff, Army on 25 February 1991, HQDA gave AMC an undistributed reduction of 1,072 military spaces by FY97 and an increase of 19 spaces in FY95-97 for a maintenance unit in Korea, for a net reduction of 1,053 within the issue. The increase for the Korea unit was actually an adjustment which zeroed-out a like decrease for the same unit in PBD P60E.

Conventional Forces Europe (CFE) Military Reduction

Congress directed the services to reduce military strength ceilings in Europe. HQDA designated the Commander-in-Chief, U.S. Army Europe (USAREUR) as executive agent for CFE cuts.

Based on negotiations between USAREUR and other major commands in Europe, the Army would have executed the CFE reduction in three levels to achieve a CFE end state strength of 92,200 troops by FY95. USAREUR and AMC negotiated for a CFE end state strength of 148 for AMC elements in Europe. The following figures reflect the negotiated position:

	AUTH BASE	LEVEL 1	LEVEL 2	LEVEL 3	END STATE STRENGTH
Total Army	212,000	-54,000	-38,000	-27,800	92,200
AMC Share	732	-117	-428	-40	148

However, the VCSA has directed the Army to achieve the CFE end state strength by FY94. The CFE reduction will result in an 80 percent cut to AMC elements in Europe versus a 56 percent cut to the Army.

In advance of the negotiated agreement with USAREUR, the HQDA Deputy Chief of Staff for Operations included a CFE reduction for AMC in the DA October 1990 PBG:

FY93	FY94	FY95-97
-121	-306	-293

This reduction was undistributed (i.e., in a management unit identification code [UIC] or "wedge") and AMC spread this reduction to real units in the FY92-97 Resource Management Update/Command Plan submission to HQDA. AMC submitted a reclama because the "wedge" did not conform to the negotiated position and because some spaces in the Europe drawdown were applied to other reductions (for example, about 121 TMDE Support Group spaces in Germany were given up in a VCSA directed force structure reduction). As of the end of FY91, HQDA was inclined to permit counting CFE spaces for other reductions, but would not reverse the premature "wedge."

Force Structure Changes

The following Permanent Orders (PO) reflect units organized, reorganized, redesignated, amended, inactivated, discontinued, or with functions or missions added.

Units Provisionally Organized. PO 37-1, 2 May 1991, provisionally organized the U.S. Army Project Manager Tactical Soldier Systems (PM TSS), XL (WBMODL), effective 1 May 1991, established provisionally from the disestablishment of PM CIE and PM AFF, U.S. Army Troop Support Command (TROSCOM).

PO 31-1, 18 April 1991, provisionally organized the U.S. Army Office of the Executive Agent for DOD Asset Management, XB (WTMODL), effective 1 May 1991.

PO 14-1, 20 February 1991, provisionally organized the U.S. Army Materiel Command - South West Asia (USAMC-SWA), XX (WAMODL), effective 1 February 1991, unit established to provide a single focal point for command and control of all AMC personnel and organization in SWA.

AMC Units Organized. PO 52-1, 11 June 1991, organized the U.S. Army Military Police Unit - Seneca, XW (W47NAA), effective 1 October 1991. The unit was converted from MTOE 19097HX103 to above TDA.

PO 52-1, 11 June 1991, organized the U.S. Army Military Police Unit - Sierra, XW (W47PAA), effective 1 October 1991. The unit was converted from MTOE 19097HX101 to above TDA.

PO 41-2, 16 May 1991, organized the U.S. Army Test, Measurement, and Diagnostic Equipment Support Group - Region 1, XX (W459AA), effective 1 May 1991. The unit was established to direct and manage the measurement, traceability and maintenance of TMDE in the Continental United States (CONUS), Alaska, Central America, and the Caribbean basin, the Army National Guard (ARNG), other DOD activities, and other government agencies.

PO 41-2, 16 May 1991, organized the U.S. Army Test, Measurement, and Diagnostic Equipment Support Group - Region 3, XX (W46AAA), effective 1 May 1991. The unit was established to direct and manage the measurement, traceability and maintenance of TMDE in CONUS, Alaska, Central America, and the Caribbean basin, the ARNG, other DOD activities, and other government agencies.

PO 41-2, 16 May 1991, organized the U.S. Army TMDE Support Group - Region 4, XX (W46BAA), effective 1 May 1991, unit established to direct and manage the measurement, traceability and maintenance of TMDE in CONUS, Alaska, Central America, and the Caribbean basin, the ARNG, other DOD activities, and other government agencies.

PO 27-1, 8 April 1991, organized the U.S. Army Project Manager, Instrumentation, Targets and Threat Simulators (PM ITTS), XL (W457AA), effective 1 October 1990. The unit was established to ensure that the Army has the major instrumentation, targets and threat simulators needed for technical and operational testing and evaluation by managing development, acquisition, fielding, modification and capability accounting of such equipment. The unit was to develop, consolidate, refine, coordinate and present to the Army Instrumentation, Threat Simulator/Targets General Officer Staffing Council (GOSC), a prioritized long-range plan for test instrumentation, targets and threat simulator design, development and acquisition that fully supports required test and evaluation of Army materiel. In addition, the unit was to ensure the approved plan is executed in accordance with Army policy; and provide planning, direction and control over funding and execution for major instrumentation, target and threat simulators projects.

PO 9-1, 31 January 1991, organized the U.S. Army Redstone Technical Center, XM (W1HTAA), effective 1 October 1990. Resources and 156 civilian authorized spaces were transferred from MICOM to TECOM.

AMC Units Reorganized. PO 14-3, 20 February 1991, reorganized the U.S. Army Combat Systems Test Activity (CSTA), XM (W4QUAA), effective 1 October 1990. CSTA gained workload, facilities and resources associated with small caliber armament systems testing from the U.S. Army Armament Research, Development and Engineering Center.

PO 14-2, 20 February 1991, reorganized HQ TECOM, effective 1 October 1990. HQ TECOM assumed meteorological support of testing throughout its command. The functions, facilities, equipment, and civilian strength were gained from the U.S. Army Atmospheric Sciences Laboratory (ASL), XD (W1N2AA).

PO 9-1, 31 January 1991, reorganized the U.S. Army Aviation Technical Test Center, effective 1 October 1990. AQTD was assigned authorized strength transferred from the Aviation Engineering Flight Activity (AEFA), XB (W043AA).

AMC Units Redesignated. PO 58-1, 1 July 1991, redesignated the U.S. Army Materiel Command Liaison Officer, TRADOC Test and Experimentation Command (TEXCOM) to U.S. Army Materiel Command Liaison Office - Fort Hood, effective 14 March 1991.

PO 41-2, 16 May 1991, redesignated the U.S. Army Test, Measurement, and Diagnostic Equipment Support Group to the U.S. Army TMDE Activity (USATA), effective 1 May 1991.

PO 41-2, 16 May 1991, redesignated the U.S. Army TMDE Support Activity - CONUS to the U.S. Army TMDE Support Group -Region 2, effective 1 May 1991.

Amended AMC Permanent Orders. PO 31-2, 18 March 1991, amended PO 18-1 dated 14 March 1991, pertaining to the U.S. Army Depot Letterkenny. The change reads, "Mission: To repair, modify, fabricate, and perform inspection of textiles/textile components for airdrop equipment, to include parachutes. Fabricates aircraft sound-proofing blankets and other rotary-wing textile components."

PO 18-2, 14 March 1991, amended PO 90-2, dated 19 October 1990, pertaining to:

(1) 65th Military Police Company, added "Additional instructions: All assigned MTOE equipment will be reported through excess distribution channels."

(2) 241st Military Police Company, added "Additional instructions: Assigned MTOE equipment to accommodate Military Police, and investigative positions, may be transferred to TDA X8W0WCAA. The balance of equipment will be reported through excess distribution channels."

AMC MTOE Inactivations. PO 58-2, 1 July 1991, inactivated the 291st Military Police Service MTOE 19500HX104, X6 (WCUQAA), effective 31 May 1991.

PO 52-1, 11 June 1991, inactivated the following MTOEs:

(1) 295th Military Police Co MTOE 19097HX103, XW (WCWBAA), effective 1 October 1991. MTOE converted to TDA XW (W47NAA).

(2) 980th Military Policy Co MTOE 19097HX101, XW (WFH4AA), effective 1 October 1991. MTOE converted to TDA XW (W47PAA).

AMC Unit Discontinued. PO 9-2, 31 January 1991, discontinued the U.S. Army Aviation Engineering Flight Activity (AEFA), XB (W043AA), effective 1 October 1990.

AMC Unit Functions or Missions Added. PO 46-1, 31 May 1991, pertaining to the U.S. Army Materiel Command Catalog Data Activity (USACDA), XX (W3THAA). Order consolidated cataloging functions transferred from the U.S. Army General Materiel and Petroleum Activity (GMPA) and the U.S. Army Support Activity (ASA), effective 1 May 1991.

PO 41-1, 16 May 1991, pertaining to Headquarters, U.S. Army Communications and Electronics Command (CECOM), X8 (W4GVAA), added the mission, "To provide an emergency response capability for Radiological Control (RADCON) in the event of an accident/incident involving the Army's nuclear weapons, effective 1 October 1990."

PO 18-1, 14 March 1991, pertaining to Mainz Army Depot (MZAD), XW (W109AA), added the missions, "To plan, direct and exercise staff responsibility for operation of the European Redistribution Facility and two turn-in points in the Federal Republic of Germany. To serve as Contracting Officer Representative for the administration of a contract between MZAD and the contractor for the receipt, storage, packing, preservation and packaging, inspection, shipping, inventory, and transportation of serviceable/unserviceable excess materiel in USAREUR, effective 1 April 1991."

PO 18-1, 14 March 1991, pertaining to Letterkenny Army Depot (LEAD), XW (W0L6AA), added the missions, "To receive, store, select, unpack, examine, inspect, repair and repack air delivery materiel. To perform fabrication and repair of textile materiel to include parachutes and other aerial delivery items. To manage, coordinate and execute inspection of the receiving, preservation, packaging, packing, assembly and shipping of Air Delivery materiel (contingency stock, parachutes), and the repair and fabrication of textiles/textile components, and the refurbishment of aircraft interiors, effective 1 April 1991."

Budget Division

End of Year Budget Summary

AMC closed out FY91 with direct obligations totalling $5.299 billion, including $1.707 billion for ODS requirements. The actual FY91 non-ODS direct obligations were only $3.592 billion or $1.558 billion lower than the FY90 level of $5.150 billion. The reduction was due primarily to Congressional and DA funding reductions and the transfer of secondary item support to the Army Stock Fund (ASF).

AMC faced unique challenges in successfully executing the OMA appropriation in FY91, based on the FY91 President's Budget submission to Congress, within its OMA guidance from HQDA. Final Congressional and DA actions resulted in an additional $150 million funding reduction (about 12 percent) to AMC's OMA.

As this additional reduction was not planned for in AMC's original RIF calculation, only a combination of the following actions saw AMC successfully through FY91. First, Operations Desert Shield and Desert Storm were supported by the DOD cooperative fund and allowed AMC to retain many people originally targeted under the RIF. Second, the maximum amount of reimbursements were earned from the ASF for services provided by OMA personnel. Third, internal reprogrammings between the major OMA subprograms were requested of and approved by HQDA as necessary. Finally, there was a one-for-three hiring freeze replaced by a four percent attrition in FY91. AMC planned to maintain that attrition rate until the work force was drawn down consistent with the overall downsizing of the Army.

OMA reimbursable customer funding totalled $1,298 million or 108 percent above prior year customer funding of $625 million. The major increase occurred from the transfer of secondary item support from direct to reimbursable funding. This was the first year for this method of funding for secondary support on a reimbursable basis and over the year created many problems in the direct program. Over $595 million was transferred to ASF customers from AMC's direct OMA P7S. AMC would be reimbursed by the ASF from cash generated by sales from these customers to pay for all secondary item support costs including pay-of-people. As the year progressed, it became clear that less and less could be legitimately charged to ASF. This required AMC to seek alternative methods to pay for the costs that remained in P7S.

AMC's FY91 OMA execution performance was highly commendable despite major delays by DA in releasing funds to support the midyear unfinanced requirements and the continuing ODS requirements of $1,707 million. The ODS funding was provided on a monthly basis as requirements continued to change. AMC was able to execute its missions substantially as planned and still fully support unplanned requirements.

FY91-93 Budget and Program Resources Review Process/RIF Planning

The purpose of the BPRR was to specify the concepts, instructions, staff responsibilities, and schedule of events for the preparation, review, and subsequent submission of the FY92-93 Resource Management Update (RMU). The RMU was submitted to HQDA on 31 May 1991.

Resource Management Special Operations Division

Reviews of Special Access Programs (SAP)

During FY91, the HQ AMC Special Access Program Staff Assistance Team (SAPSAT) conducted reviews of SAPs managed by MICOM, TROSCOM, AMCCOM, and LABCOM. The headquarters would supervise SAP programs and to assist MSCs/SRAs in identifying program weaknesses and providing recommendations for corrective actions to strengthen the overall management of SAP programs. The reviews were conducted in accordance with AMC-R 37-59. In all, thirteen programs were reviewed during the fiscal year. The reviews included such functional areas as program management, resource management, finance and accounting support, security, contract cost performance reviews, internal review, and secure environment contracting. The HQ AMC Chief of Staff was briefed on the results of each SAPSAT review and signed out a written report to the Commander of each reviewed MACOM, which listed the team's observations and recommendations.

Special Operations Forces (SOF) Funding Transfer

The transfer of SOF, Major Force Program 11 (MFP 11), funding from the services to DOD began with in FY91. Army SOF programs previously funded within Army appropriations transitioned to funding under Defense Agency appropriations with the Commander, U.S. Special Operations Command (USSOCOM) as the appropriation sponsor. The U.S. Army Special Operations Command (USASOC) was delegated responsibility by USSOCOM for management of Army SOF programs. The relationship between the Army and USSOCOM was defined by the HQDA/USSOCOM memorandum of understanding, signed in FY90.

The transition was difficult from both an administrative and a technical standpoint. The lack of specific USSOCOM guidance in the PBG form resulted in substantial problems preparing and defending the Budget Estimate Submission (BES) and in identifying funding priorities once funding was provided. In addition, specialized financial reporting requirements levied by DOD and USSOCOM could not be satisfied within the framework of the current AMC accounting system, which resulted in substantial manual reporting.

Contract Cost Performance Division (CCPD)

Contractor Use of DOD Cost/Schedule Control Systems Criteria (C/SCSC)

DODI 7000.2 was superseded in January 1991 by DODI 5000.2, Part 11, Section B, which broadens the requirement that, on major acquisition contracts, contractors must use cost schedule control systems that meet the DOD C/SCSC. The Contract Cost Performance Division is responsible for ensuring that the systems comply with the C/SCSC. The requirement applies to non-firm-fixed-price contracts larger than $60 million for development, or $250 million for production. (These thresholds are in FY90 dollars.) During FY91 CCPD conducted 64 in-plant reviews on contracts with a total value of over $2.6 billion.

Cost Performance Report (CPR)

DODI 7000.10 was superseded in January 1991 by DOD 5000.2M, which calls for cost performance reports on non firm-fixed-price contracts over $5 million. CCPD reviewed all acquisition plans furnished by the DCS for Procurement to ensure they provided for proper contract cost performance reporting, as well as compliance with the C/SCSC, when applicable. However, AMC ceased reviewing acquisition plans in January.

CCPD was expected to receive a copy of each monthly Cost Performance Report from contractors required to apply C/SCSC, and to conduct an independent analysis of cost and schedule status and of estimated

final cost. During FY91, the division received 264 CPRs on contracts having a total value of $3.4 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, CCPD provided information to the Director for Program Evaluation in the Office of the Assistant Secretary of the Army (RDA) and 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 "A-12 incident" caused a substantial increase at all levels of management in awareness of the utility of and need for valid Cost Performance Reports from contractors, and the importance of developing and communicating valid estimates of projected contract final cost to the highest level acquisition executives. This resulted in an increase in the support needed from the division by the DA Director for Program Evaluation in the Army Acquisition Executive's office. It also increased the emphasis placed by that office on the division-led C/SCSC Reviews of contractor cost schedule control systems.

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

The division has been responsible for substantial improvements in the computerized cost performance analysis module called "Performance Analyzer (PA)." As a result of a CCPD briefing, the DCGRDA directed the use of PA throughout AMC, and PA-based analysis of contracts in AMC-managed programs in the AMC Quarterly Management Review. As a result of the division's briefing of the Army Acquisition Executive (ASA[RDA]), he directed that the PA be used by all PMs and PEOs.

A comprehensive joint DOD/industry report documented the year-long TQM effort to identify customer needs and areas needing improvement in the cost/schedule management process. The CCPD played a major part in this effort. Division representatives served on the Executive Committee, Steering Committee, and the process action teams which reviewed the DOD process and the industry process. Division representatives also led information-gathering teams to visit government and industry customers of the process. They chaired three of the six teams that analyzed the data collected and prepared recommendations for improvements.

Cost Control of Special Access Programs

CCPD considered the proper management and cost control of special access programs to be essential, and believed that it should be equivalent to that of other acquisition programs. AMC had a policy to this effect, and CCPD was able to report as of the end of FY91 that AMC was making progress in implementation.

Deputy Chief of Staff for Management

Mission and Organization

Effective 1 October 1990, the DCS for Management and Productivity was reorganized and merged with the DCS for Program Analysis and Evaluation (PA&E) to become the DCS for Management.[8] The new DCS, headed by Mr. Michael C. Sandusky, was authorized seven military and 110 civilians.

---

[8]DCS for Management Historical Submission, FY91. Hereafter, all information is from this source unless otherwise noted.

The DCS for Management inherited the missions of both the DCS for Management and Productivity and the DCS for Program Analysis and Evaluation. The mission inherited from 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 (AMCMEA). 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.[9]

The missions which the DCS for Management inherited from the DCS for PA&E included: ensuring proper integration and balance of resources across all phases of the Programming, Planning, Budgeting and Execution System; coordinating AMC's programming efforts; and providing AMC liaison with the HQDA Director for Program Analysis and Evaluation and with other commands, offices and agencies in programming. The DCS was the AMC Commander's direct technical representative to the Deputy Under Secretary of the Army for Operations Research. The DCS also had operational control, oversight and direction over the U.S. Army Materiel Systems Analysis Agency (AMSAA).

Base Realignments and Closures (BRAC)

During General William G. T. Tuttle, Jr.'s Command, many base realignments and closures were approved for implementation. The effect will be to streamline AMC's base structure. AMC's base structure will not only be less costly to operate, but also more attuned to the high technology focus for future research efforts as well as a much stronger weapon system orientation for the command's materiel development and sustainment mission. Approved base closures and realignments are listed below.

Closures:

Materials Technology Laboratory
Jefferson Proving Ground
Lexington Facility of Lexington
Blue Grass Army Depot
Fort Wingate Army Depot
Navajo Depot Activity
Pontiac Storage Facility
Alabama Ammunition Plant
Coosa River Annex of Anniston Army Depot
Manassas Family Housing
Nike Site at Aberdeen Proving Ground
Wherry Housing at St. Louis Support Center
Sacramento Army Depot

Realignments:

Merge AVSCOM and TROSCOM to form the Aviation and Troop Command (ATCOM).
Merge armament and chemical functions with MICOM.
Merge LABCOM and other research elements to form a flagship lab complex, the Army Research Laboratory.
Merge DESCOM and munitions functions of AMCCOM to the Industrial Operations Command (IOC).
Consolidate missile maintenance at Letterkenny Army Depot.
Consolidate artillery maintenance at Red River Army Depot.
Consolidate tactical vehicle maintenance at Tooele Army Depot.

---

[9]Draft AMCR 10-2, Organization and Functions, 1 July 1988.

BRAC I. Major BRAC I actions accomplished during FY90 were based on the publication of the HQDA Base Closure Execution Plan (March 1990), and the submission of military construction projects required to implement the commission's recommendations and submission of BRAC I budget estimates to Congress. In-Process Reviews (IPR) with the DA Staff were conducted to review environmental impact statements for the majority of BRAC I installations. All National Environmental Policy Act (NEPA) documentation must 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.

BRAC II. On 29 January 1990 the Secretary of Defense proposed additional realignment and closure actions as part of the FY91 Budget submission. These proposals are categorized as BRAC II actions. A total of 12 AMC activities will be affected under BRAC II proposals.

Table II - 4: Summary of BRAC II Actions

Proposal	Action Completion Date
Close Sacramento	Became BRAC 91
Transfer AOD from Red River	No action
Eliminate TROSCOM	Became BRAC 92
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 and environmental and socioeconomic considerations may cause modification of the original list.

Zero Based Resourcing (ZBR)

In the Fall of 1989, General Tuttle had identified as one of his important initiatives the development and implementation of a ZBR system across the command. His objectives were to define AMC's overall missions and functions to enhance understanding of the command by non-AMC personnel and use the ZBR mission and function framework as a basis for managing total AMC resources. During the ensuing period, an interdisciplinary team, comprised of representatives from the headquarters and all MSCs, achieved the following results:

Gained consensus among AMC senior leaders on seven mission and 51 function statements which capture the essence of AMC's role in the Army and National Security.

Constructed, maintained, and updated a ZBR corporate data base for total AMC resources stratified across the different missions and functions, which has been used extensively to support AMC briefings to private industry, Congress, OSD, and HQDA, as well as internal budget and management reviews.

Designed, developed, and are now proliferating a ZBR Standard System across the command to collect AMC resources and workload data stratified across the missions and functions during budget execution.

The AMC ZBR system is designed to directly link AMC resources with the performance of a specific mission and/or output, thus enhancing AMC's ability to defend AMC resource requirements. Feedback from non-AMC personnel was very positive to this approach to defining AMC resource requirements, with many professing a much better understanding of AMC as a whole.

Missions/Functions/Challenges

Soon after taking command, General Tuttle clarified the AMC responsibilities into seven mission areas, each of which were then more succinctly defined into specific functions. Every mission area has a senior ranking official, designated as the mission leader, with the responsibility to oversee that mission, AMC-wide. Structure provides a cohesive framework for programming, funding, defending and reviewing AMC mission requirements and accomplishments. The Commander then identified "challenges" for AMC management to accomplish specific opportunities for improvement of the mission processes. These "challenges" (117 in all) provide AMC with the framework for a set of time-phased stepping stones to accomplish the improvements to the AMC mission and structure, necessary to maintain the high level of support to the Army in spite of a shrinking workforce and budget. Management officials responsible for these "challenges" refined milestones leading to their accomplishment.

During 1991, the seven missions and mission leaders were incorporated into the Review and Analysis system and further refinements were suggested by the Chief of Staff, Army, and adopted by the Commander, AMC.

Flat Structure. During the 1990 time frame, the Commanding General, AMC, adopted and soon became an ardent advocate of an organizational concept that is now known within AMC as the *Flat Structure*. The concept targets the layers of supervision that are the predominant characteristics of the typical organizational pyramid. Taking a cue from private industry, the AMC Command Group adopted the logic of eliminating middle management layers as a means of reducing overhead and increasing organizational responsiveness to customer needs. As a result, the new structure also expanded supervisory ratios in the decision making process. By 1991, the flat structure became not only the cornerstone of the reorganization of HQ AMC, but also an objective of other reorganizations of the Command scheduled for implementation during the 1990s.

Operation Desert Shield/Storm

As a result of AMC's efforts during ODS, the largest, fastest and most dynamic logistics operation of modern times challenged the combat service support doctrine of the Army. AMC responded with the formation of new structures to respond to the challenges. General Tuttle sharply increased the size of AMC's presence in the combat theater of operations both during and after ODS. He provided a forward presence of almost 4000 AMC civilian, military, and contractor personnel in Southwest Asia. AMC-Southwest Asia and the U.S. Army Support Group formed the focal points for forward logistics in the theater.

The traditional AMC role of CONUS-based supply and maintenance was transformed into a massive support apparatus for depot-like supply and maintenance operations and special repair activities much closer to the combat troops. In addition, the role of AMC Logistics Assistance Officers (LAO) and Logistics Assistance Representatives (LAR) was closely discussed with the combat troops preparing to go into battle. Both government and contractor civilians wore desert combat uniforms, drove military vehicles and, in some cases, were armed for self protection. They went where the high tech equipment was and performed their jobs along side the troops that would have to use the equipment. AMC's direct involvement in theater combat operations has set the stage for the future.

AMC's Strategic Long Range Plan (SLRP)

During FY91, GEN Tuttle requested that AMC's new SLRP be structured according to the command's seven missions. Teams representing these missions identified influencing factors and recommended long-range goals and objectives for the approval of the Command. GEN Tuttle signed the new SLRP and approved it for publication in July of 1991. Coupled with that action was a requirement from the AMC RDT&E community for a description of the command's vision for the 1990s. The purpose of this white paper, prepared under the direction of the Deputy Commanding General for Research, Development, and Acquisition, was to provide common direction and guidance for the 30-step business planning process used by AMC's laboratories, test activities, and RDECs to develop business plans. This paper, "AMC Vision, Strategy and Environment: AMC "Chapter 1" was published 30 August 1991.

AMC Internal Controls Program

During the year, AMC continued full support of the Army's Internal Management Control Program. The command has continued to build on the administrative foundation of the program. AMC continued an aggressive training and information program with primary objectives to ensure that every manager understands the General Accounting Office Standards and how to apply them in daily operations. The DCS for Management made widespread notification of the distribution of Army's Management Control Plan, republished as DA Circular 11-90-3 on 1 October 1990, to ensure all managers are aware of available checklists and applicable scheduled requirements for formal use.

The 83 candidate material weaknesses reported to MSCs and SRAs resulted in 22 weaknesses being certified for reporting to the CG. An additional four weaknesses were also reported by the MSCs and SRAs. Of the 26 reported weaknesses, 20 were in the process of correction at year's end.

Also, HQ AMC detected eight internal management control weaknesses during the year. At year's end, one was corrected and seven were in the process of being corrected. Of these material weaknesses, two were certified for reporting to the Secretary of the Army.

The DCS for Management made distribution of the electronic versions of Army's Management Control Plan, provided by the Army Internal Control Office. This ensured AMC Internal Management Control Administrators had this tool available for their use. The DCS also developed and distributed training view-graphs in the Harvard Graphics file format to subordinate commands. Subject matter included a program overview, the GAO standards, the Army Management Control Plan, checklists, and material weaknesses. By request, the AMC Internal Management Control Officer briefed U.S. Army Corp of Engineers' Inspector General personnel on the Internal Management Control Program.

Review and Analysis

The U.S. Army Material Command Review and Analysis (R&A) system continued an extensive revision begun in 1990 to improve its usefulness to management at all levels. The system has been changed from an organizationally oriented one to a mission oriented oversight system. The basic concept of mission oriented oversight is to monitor the AMC's performance without regard to internal organizational structures or boundaries. Performance monitoring has been aligned with AMC missions and functions to facilitate process improvement under Total Quality Management (TQM).

Mission leaders were appointed by the Commanding General for each of the seven missions defined under ZBR. The mission leaders are responsible for monitoring performance throughout AMC in their mission. Mission leaders report performance problems and successes to the Commanding General on an exception basis. The mission leaders are responsible for the development of performance indicators for their missions. The emphasis under mission oriented oversight is to develop performance indicators that relate AMC command-wide performance to the products and services delivered to the soldier in the field.

Responsibility for review and analysis was to be transferred from the Deputy Chief of Staff for Management to the Deputy Chief of Staff for Resource Management in the November 1991 headquarters realignment.

Arroyo Center Projects

The Arroyo Center is the Army's Federally Contracted Research Center (FCRC) for studies at the Rand Corporation. Its mission is 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.

Army Materiel Command Logistics (AMCLOG) 21

During FY91 the DCS for Management undertook an effort to merge the AMCLOG 21 and Strategic Long Range Plan (SLRP) programs. The office developed a draft AMC-R and AMC-P and staffed the manuscript with all AMC activities.

Since an AMCLOG 21 Mission Area Analysis (MAA) is accomplished in concert with the budget preparation, an MAA was not required during FY91. Efforts continued to resolve open AMCLOG issues and keep the database current. In August, the CG directed that the AMC mission leaders, using the AMCLOG methodology, take action to develop plan(s) of action to achieve the SLRP objectives. To assist the mission

leaders, the office initiated a data call to identify all on-going or planned actions relating to the SLRP objectives; all AMC activities responded with the exception of AVSCOM. A total of 455 actions were identified and aligned to the SLRP objectives. These on-going actions and appropriate AMCLOG issues will be provided to the mission leaders to assist them in the development of their plan(s) of action.

Gists

A *gist* is an informal one-page summation of completed studies and analytical efforts. Its purpose is to keep the CG informed of existing AMC studies, analyses, and Contracted Advisory and Assistance Services (CAAS) efforts -- their quality and their impact on the management of AMC. Policy and procedures for preparing gists are in AMC Circular 5-4. AMC study proponents are required to prepare a gist for every analytical effort (AR 5-5) that results in a briefing or written report that is either sponsored by or performed within AMC, except scientific research and routine or recurring reports. AMC sponsors of contracted efforts are required to prepare a gist for every completed CAAS effort. The gist format includes principal findings, assumptions, limitations, scope of effort, reason for performing the study or analysis, and the impact of the study. Gists are 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 decision makers. There were 85 gists received in FY91.

Programs to Promote Excellence

Army Communities of Excellence (ACOE). This is an Army-wide effort established in 1988 to enhance pride by fostering excellence in Army facilities and the services they provide. It capitalizes on programs already in operation and focuses community resources. ACOE stresses local initiative and getting the total Army community involved in improvement. ACOE contributes to Army readiness by strengthening the commitment to excellence throughout the Army. It is an installation commander's effort and installations set their own standards and develop their own projects. Higher levels, Army, AMC, and MSCs set general guidelines for services and installation design and insure the general exchange of information. In AMC, implementation of ACOE has stressed the use of TQM techniques in achieving installation excellence.

An important part of the ACOE effort is the recognition of achievement in obtaining excellence in installation operations and facilities. DA recognizes the top installations with the Chief of Staff's and Commander in Chief's awards. In 1989, the first year of competition, AMC installations won two of the three CONUS awards: Fort Monmouth in the large category and Sacramento Army Depot in the small category. 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 Deputy Chief of Staff for Personnel award for the best Civilian Personnel Office in the Army. In 1991, the achievements were even greater: Yuma Proving Ground won the small installation category and the U.S. Army Tank-Automotive Command Support Activity - Selfridge was the runner up. Sierra Army Depot was the runner up in the most improved installation category. Prize money won by AMC installations in 1991 was over $1.25 million.

In the November 1991 headquarters realignment, responsibility for Army Communities of Excellence was to be transferred from the Chief of Staff for Management to the Deputy Chief of Staff for Personnel.

Army Ideas for Excellence Program (AIEP). The Army Materiel Command's AIEP achieved more than $26 million in tangible savings in FY91. One major subordinate command increased its tangible savings from $11 million in FY90 to more than $16 million in FY91.

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 won for submitting an idea that saved the government $489,257. These same employees were the second runners-up for the National Association for Suggestion Systems (NASS) Suggester of the Year Award.

Several AMC MSCs 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 1st place award.

AMC generated approximately 2600 fewer ideas in the civilian and military categories during FY91 than in FY90. This was partly attributable to down-sizing and base realignments and closures. However, the adoption rate for civilian ideas increased slightly this year (1 percent) to 32 percent while the military adoption rate decreased slightly. Throughout the command, emphasis is being placed on closing ideas over one year old. A significant number of aged ideas, both internal and external to this command, have been closed.

Through downsizing, AMC is continuing its efforts to promote program awareness and participation by holding workshops and training sessions. Evaluator recognition/motivation is being emphasized as they are an integral part of the evaluation process.

The new regulation for the program, AR 5-17, *Army Ideas for Excellence Program*, was published with an effective date of 19 November 1990. AMC is continuing its efforts to promote program awareness and participation. Most of the MSCs distributed handbooks for suggesters and evaluators and held workshops and training sessions. Various ways to recognize evaluators are being planned and/or are already in place.

The Army Study Program (TASP)

Studies and Analyses were analytical examinations made to assist AMC and Army decision makers. These studies contributed to a greater understanding of relevant issues and lead to conclusions and recommendations used by decision makers. 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 is summarized below:

FY91 Study Program	**Number of Studies**
In-house	17
Contract	5

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 in April 1988, HQDA has tasked AMC to provide productivity improvement measurement data for seven of forty-one selected Army-wide functions for input into the program. To date AMC has reported against Supply Depot Operations, Depot Maintenance, Inventory Control, and Munitions and Weapons Development/Production. Data has also been provided to HQDA for FY91 reporting on Intermediate Base Maintenance (Direct Support/General Support [DS/GS] of Non-Tactical Equipment, Installation Supply [Base Level] Operations, and Industrial Preparedness). Additionally, logistical related functions such as Motor Vehicle Maintenance, Motor Vehicle Operations, Other Base Operating Support, and AMC-sponsored Professional Education/Training will require AMC input by FY92. Related improvements were to reflect an annual productivity increase of 3 percent.

Other Management Engineering scheduled efforts include input to various high-yield management engineering studies conducted by the AMCMEA in support of management improvement initiatives such as ZBR, Managing Civilians to Budget (MCB), and TQM. The office provided input 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 office also provided technical assistance and guidance on productivity-related matters to the MSCs and SRAs, as well as HQ AMC staff elements.

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, which outlined Policy, Program Assessment, Coverage Determination, Measurement Plan, Plan Development, and Plan Approval procedures. Their plan addresses Methods of Behavior 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 AMC. HQDA has delayed the implementation of any Gainsharing Program associated with MCB without their prior approval. These actions have caused AMC's Productivity Gainsharing Program to be halted and no action has continued through FY91.

Productivity Enhancements, Efficiencies, and Rewards (PEER) Test Study. Pine Bluff Arsenal is the first installation in the AMC to implement the command's PEER program. Under PEER, both the Pine Bluff installation and its employees are earning significant cash rewards for their commitment to the complementary goals of quality and productivity.

During a relatively short study period of 3 months, Pine Bluff developed a structured plan to improve quality management and to reduce its operating costs for a constant level of work. Specific enhancements were established in the plan for all elements of the Pine Bluff organization. Proposed efficiencies will be phased in over 3 years to limit personnel dislocations. The plan consolidates all quality and productivity efforts of the Arsenal into a focused effort to achieve specific savings goals.

PEER employs a concept of hard dollar savings. That is, money for awards can only be generated by reduced expenditures. Baselines for workload, personnel costs, and non-personnel costs must be established prior to each fiscal year. These baselines are compared with actual production and expenses after the conclusion of the fiscal year. If the baseline workload has been performed but not all of the baseline budget spent, then monies are available for PEER rewards. To ensure proper management of the program, Pine Bluff's Commander entered into a written contract with AMC Chief of Staff to execute the approved PEER plan. As an additional control, the Internal Review and Audit Compliance organization of Pine Bluff's headquarters has the responsibility to audit the entire process from the development of baselines to the calculation of awards.

PEER provides for the creation of an employee award pool composed of 50 percent of the personnel-related savings. The installation commander retains control of 50 percent of the non-personnel savings for

installation investments or to supplement the employee award pool. The balance of the savings is normally to be returned to HQ AMC.

Civilian employees earn a share in the award pool for each full month of employment during the fiscal year in which hard dollar savings are generated. The dollar value of each share is the same, regardless of an employee's pay grade. This equal or peer-type relationship for the sharing of PEER savings has motivated many Pine Bluff employees to show extraordinary initiative to improve Arsenal operations.

Pine Bluff's PEER plan specifies aggregate budget reductions of 14 percent for the FY89 through FY91 period. The audited results for FY89 are impressive. Fifty-nine full-time positions were permanently eliminated, yet production quality has been maintained at very high standards. Over $2.4 million in non-personnel savings were achieved by reduction of purchased services, overtime, travel, supplies, and equipment. Total savings of $3,991,932 were divided as follows: (a) $1,995,966 (50 percent of total) refunded to HQ for application against a FY90 budget reduction; (b) $816,020 retained by the Pine Bluff Commander for installation investments; (c) $1,179,946 distributed to the arsenal work force. Full-time employees, who worked all 12 months in FY89, received PEER awards of $874 each.

PEER permits installations an opportunity to focus on a philosophy of total quality management during this period of declining budgets. Employees participate in and are rewarded for working together to systematically reduce operating costs.

Secretary of Defense Productivity Excellence Awards Program. The Secretary of Defense Productivity Excellence Awards Program was established to recognize individuals and/or groups who made substantial contributions to productivity improvement. The program has two levels of recognition: OSD Productivity Excellence Awards, which validated savings resulting in at least a first year savings of $1 million; and OSD Letters of Commendation, for first year savings of at least $250,000.

AMC nominated one group for the FY91 Productivity Excellence Award and two individuals and five groups for Letters of Commendation. The Productivity Excellence Award nomination (from LABCOM) was rejected at the DOD level. All Letters of Commendation nominations were approved. The resulting first year dollar benefit from the Letters of Commendation totalled $2.27 million.

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.

In response to requests for productivity displays in support of the annual DOD Productivity and Quality Month (January), AMC provided four nominations - two each from DESCOM and one each from LABCOM and MICOM. All were used. In addition, two other displays from the command were submitted directly to the HQDA coordinator and used in the display.

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 24 January 1990. AMC had 12 productivity exhibits on display at the Pentagon during the month of January as part of Productivity Month. 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.

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

PCIP funding for FY91 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). Total funding of $19.4 million is expected to generate $35.7 million in benefits from 66 funded PCIP projects.

AMC Logistics Lessons Learned (LL) Program

During the fiscal year, a new LL program manager was designated. One of his first actions was to analyze the organizational placement of the program as well as to determine if it was providing a benefit to the various parties involved--AMC, the Army, and DOD--through the LL medium. The conclusion was that the program would be better served if it were consolidated with the operations and exercises LL effort managed by the Readiness organization. A study was prepared and presented and its results are pending.

There were 45 total logistics (as opposed to operations/exercises lessons) LL submitted during the year by the AMC family, of which 40 were from the Materiel Readiness Support Activity at Lexington-Bluegrass Army Depot. All LL from ODS were directed to be part of the LL data base operated by DCSRE.

The Joint Logistics Commanders (JLC) LL working group met at Wright-Patterson AFB in the spring of 1991 to attempt to resolve the interoperability issue. Each JLC representative organization uses a different method of capturing LL data and disseminating it to authorized parties. This precludes the ready exchange of information central to the formation of this group by the JLC.

Contract Advisory and Assistance Services

CAAS is managed under the provisions of AR 5-14 and consists of four categories: *Category A*, Individual Experts and Consultants (Chapter 304, AR 690-300); *B*, Studies, Analyses, and Evaluations (AR 5-5); *C*, Management Support Services (AR 5-14); and *D*, Engineering and Technical Services (AR 700-4). A continually 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 FY90. These planned CAAS efforts included efforts planned by Program Managers that are now part of the PEO. End of fiscal year AMC CAAS efforts (including reported PEO efforts) were approximately $40 million under the imposed ceiling of $104 million. AMC Circular was published 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 FY91 AMC CAAS program consisted of:

	Sole Source	**Competitive**	**Total**
Management Decision Documents (MDD)	20	25	45
Dollar Values ($K)	$32,013	$157,020	$189,033

Defense Logistics Studies Information Exchange

The DLSIE is the 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 on-going 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) responsibility for the operational direction and control of DLSIE. AMC input 960 studies and 15 models in FY91.

Technical Library

Automation. The library staff, directed by Ms. Ann Parham, continued the implementation of the LS/2000 automated library system and its sub-systems, Serials Control (SC350) and Acquisitions (ACQ350), 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. Approximately 90% of the collection has been linked to the database. However, the loss of three positions (Chief, Technical Library, Reference Librarian, and Information Support Clerk) due to the RIF has had a severe impact on library productivity resulting in the failure to complete the linking project as scheduled; a growing backlog of new materials not accessible to users; and insufficient time to complete preliminary work required to utilize the acquisitions sub-systems.

CD-ROM Database. In September 1990, a subscription to the National Technical Information Service database on CD-ROM began. 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 also received many new titles in CD-ROM. *Defense Technical Information Center (DTIC)* provides access to and transfer of scientific and technical information for DOD personnel, DOD contractors and potential contractors, and other U.S. Government agency personnel and their contractors. *Computer Select* has information on virtually every computer-related product and topic, including product specifications, reviews, technical tips, manufacturers' profiles, and industry news. *Microsoft Bookshelf* is a library of reference tools, including the *American Heritage Dictionary, Roget's II: Electronic Thesaurus, World Almanac, Bartlett's Familiar Quotations, Chicago Manual of Style*, and Houghton Mifflin *Spelling Writer and Corrector. Facts on File News Digest* has 12 full years of weekly news stories, 12 full years of cumulative indexes, and more than 300 maps of the U.S., Canada, and the rest of the world. *Corporate Text* provides a full-text database of Securities and Exchange Commission filings. *Dataworld Infodisk* covers systems, peripherals, hardware, software, and communications products. *Microdata Infodisk* covers PC systems, peripherals, PC-based applications software, and PC communications products. *Communications Infodisk* covers communications hardware, software, services, and emerging technologies.

Current Awareness Service. The Current Awareness Service for senior HQ directors, initiated in FY89, continued in FY91. 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 as well as 5 or 6 other senior executives. Due to this favorable response, the service will continue into FY92.

Director of Information Management

Mission, Organization, and Manpower

Throughout much of the 1980's, individual Headquarters organizations, attempting to accomplish their ever-increasing missions, had established and maintained local "clusters" of automation expertise/capability. Over the past several years many of these local systems expanded to provide service to other organizations throughout the headquarters. To better manage this rapidly diversifying capability, the Command Group established an Information Management Board (IMB). The IMB was chartered to survey, evaluate, and direct the establishment and delivery of Headquarters-wide information services. Membership was limited to the principle Headquarters decision makers.[10]

The year of FY91 was one of transition for the Headquarters, Director of Information Management (DOIM). During the IMB's 3 January 1991 meeting, the Headquarters DOIM was directed to closely explore consolidation options to better manage and support the growing headquarters information requirements. The headquarters also began to explore the potential personnel and dollar savings available through conscientious application of TQM principles. Together, these two separate but related thrusts were used to propose a new hybrid organization structure to service all six Information Management Area (IMA) disciplines. This new structure provisionally formed the Corporate Information Office at the end of the fiscal year.

Manpower Authorization:

	OFF	CIV	OH	TOTAL
Beginning FY91	0	112	0	112
Direct	0	50	0	50
Reimbursable	0	62	0	62
Ending FY91	0	105	0	105
Direct	0	50	0	50
Reimbursable	0	55	0	55

Key Personnel:

Director of Information Management
Ms. Joyce Ruthven — 17 June 1990 - 29 June 1991
Mr. Harold E. Jarrell — 30 June 1991 - Present

Deputy Director of Information Management
Mr. Robert D. Bolonde — 3 January 1989 - Present

Chief, Application Development Division
(changed to: Software Technology Division - 1 March 1991)
Mr. Edward Goldstein — 6 November 1989 - Present

Chief, Operations and Systems Integration Division
(changed to: Operations and Support Division - 1 March 1991)
Mr. Thomas H. Dolan — 17 March 1989 - Present

---

[10]This section is based on the FY91 historical submission from DOIM furnished 23 June 1992. Copy in AMCHO Archives.

Chief, Resources Management, Plans and Logistics Division
(changed to: Planning, Logistics, Information
and Network Division - 1 March 1991)
Ms. Linda L. Pierpoint — 12 March 1989 - August 1991
Ms. Susan M. Ginnetti — August 1991 - Present

Automation Issues

Easy Access of Congressional Description Summaries and RD5s. The Applications Software Branch, along with the Systems Integration and Management Agency (SIMA), was involved in the development of software that would provide the Commanding General, Deputy Commanding Generals, and Chief of Staff with the capability of viewing the unclassified Congressional Descriptive Summaries on-line. The menu-driven system would allow the user to select specific program elements, projects or key words for selecting specific records or groups of records for examination.

HQ AMC Local Area Network (LAN). In July 1991, the IMB selected the AMCRM/AMCMM 3COMM MS DOS-based LAN as the standard to be extended throughout the Headquarters and enhanced to allow easier external communications with the MSCs and with higher Headquarters. Through quick operations, and with little advanced planning, funds were obligated to procure hardware and software sufficient to extend the 3COMM LAN to all major headquarters organizations through the installation of an additional 700 LAN node connections. Accordingly, the Headquarters LAN menu substructure was re-worked to provide a more robust and friendly user interface.

Minicomputer Consolidation. During FY91, plans were implemented to significantly reduce the both the number and the diversity of HQ AMC minicomputers. The office successfully reduced the number of minicomputers from 46 to 34 by the end of the fiscal year. The number of vendors dropped from 7 to 6. The DOIM staff expected to further reduce the number of minicomputers in the headquarters by a substantial margin during the following year.

HQ AMC Command and Control Facility IMA Planning. The Applications Software Branch was involved in the development of IMA requirements for the planned relocation of HQ AMC to Fort Belvoir West during FY91. The project involved preparing an Information Systems Architecture Plan (ISAP) and keeping it updated to properly reflect current advancing technology demands and the evolution of HQ AMC IMA requirements.

Acquiring IMA resources for HQ AMC. The Plans Branch processed approximately $2.8 million in requests for IMA resources for HQ AMC in FY91. Requested resources would replace ADP, network, and communications hardware and software which was no longer cost effective to repair or did not have the capacity to satisfy current information processing demands.

Communications

Telecommunications Service. As FY91 came to an end, HQ AMC was beginning a massive internal administrative reorganization and physical relocation. To help ensure continuous telecommunications support through this difficult period, the Headquarters DOIM processed in excess of over 600 work orders to accomplish telephone relocations, service modifications, and line termination. This work was processed through the Defense Telecommunications Service-Washington (DTS-W).

AUTODIN Mail Server (AMS). The AMS allowed unclassified AUTODIN messages to be redirected electronically to the user's local PC or terminal, which obviated the need to pick up messages from the

Telecommunications Center. Although service was limited to selected organizations, work was underway to extend this service throughout the headquarters at the end of the fiscal year.

Communications Security. The U.S. Army COMSEC Support Logistics Agency, Fort Huachuca, Arizona, audited the Communications Security (COMSEC) Account. This was a 100 percent accountability reckoning, with no deficiencies being found. Two gateways were installed: one for the DOIM and the second for USASAC. This allowed expanded access and the ability to TELNET remotely into other systems and to FTP file transfer to and from other systems. TCC Communications Security Personnel installed in excess of 300 Secure Telephone Units (STU III) in HQ AMC and selected General Officer's quarters.

Visual Information

Paperless Conference. The first Paperless AMC Commanders' Conference was held in August. Prior to the August conference, commanders were provided a "take home" book containing copies of each presentation. Beginning with this conference, presentations were prepared with standardized PC graphics software and placed in a central repository for access by attendees.

Video Teleconferencing. Upgrades to the DOD Video Teleconferencing (VTC) service provided full interoperability with all 83 DOD studios. Video, voice and control circuits were removed from satellite to fiber optic cable, reducing audio delays, and allowing future conferences to operate at lower transmission speeds to reduce costs. One VENUS studio, DTS-W, moved to the Forces Command (FORSCOM) Network. The VENUS network then had a total of 15 studios. Usage of the AMC VENUS teleconferencing facility increased by over 20 percent, making AMC the top DOD VENUS user.

Video Teleconferencing Scheduling System (VTSS). In response to user requests, a significant upgrade was implemented in June 1991. The scheduling software was upgraded to allow tracking of 83 studios. The VTC network itself also went through a major hardware upgrade, utilizing a fiber optic communications link, in late May. This upgrade allowed connection to any DOD studio.

AMC offered holiday visits to AMC family members via Video Teleconferencing. Fifty studios, located in over 20 states, offered employees the opportunity to talk to family members at distant locations. Out of 51 holiday calls, two were to family members in Germany.[11]

Printing and Publishing

Printing Contract. To reduce costs, AMC contracted out printing through the Government Printing Office (GPO) for six cents a page. This was compared to the eight cents per page cost for in-house work.

Approximately 6 million units were printed in-house during FY91. The total in-house cost for printing was $50,000 for administration plus the production cost of $43,669, for a total of $93,785. Three hundred fifty-five thousand, seven hundred and seventy-one printing units were produced at GPO. GPO costs totalled $50,118, which represented production cost only, as AMC was not charged for administrative costs. During FY91 the total printing production reported was 16,465,397 units. However, this figure included production from the three copier centers. Copier costs were not included in the in-house printing costs provided above.

---

[11]There were no suitable studio facilities in-theater during Operation Desert Shield/Desert Storm, so no calls were made to that area. Per conversation, Ms. Lockwood, AMCHO, with Mr. Tom Hayes, DOIM, 20 July 1992.

In-house Printing. AMC was scheduled to transfer printing functions along with two personnel to the Navy by 1 October 1992. However, the Congressional Joint Committee on Printing placed a moratorium on the action until the committee could verify a projected cost saving of $26 million.

Form Revisions. During the 4th quarter of FY91, DOIM found that a total of 34 forms were obsolete by reviewing prescribed directives to detect those which had been rescinded, by reviewing the forms to determine those which were outdated, and meeting with proponents to discuss the use or non-use) of forms for which they were responsible. DOIM completed a total of 34 form revision actions (28 command-wide, 3 at HQ AMC, 1 local and 2 labels). DOIM also established 29 new forms (12 command-wide, 3 HQ AMC, 9 local and 5 form letters). The office completed a total of 160 actions on specific forms. Near the close of FY91, DOIM began planning for multi-user automated forms.

Postal. AMC's FY91 postage expenditure target for the mailroom was $204,000. The actual expenditure was $205,104.43, which was an overage of $1,104.43. DOIM atributed the overage to the special projects that the mailroom accomplished for ARI.

Libraries. During FY91, AMC accomplished its plans to bring the library into the Headquarters DOIM organization. DOIM expected implementation to commence on 1 November 1992.

Resourcing

Funding. AMC reduced funding for FY91 by $3.5 million. The agency minimized the impact of the reduction through savings realized as a result of strong central management of IMA resources. DOIM also undertook initiatives to reduce hardware/software maintenance costs, reduce telephone equipment inventories, reduce/consolidate copier support and to improve coordination/consolidation of hardware/software and supply requirements. To encourage better, more consistent planning and procurement of IMA-related products and services, AMC consolidated the distribution of headquarters IMA funds, which the command then assigned to the headquarters DOIM.

Revalidating HQ AMC Requirement Statement (RS). Revalidation of RS's for HQ AMC IMA requirements (specifically Workplace Automation, LAN, Visual Information, Communications and the DPI Upgrade) required dedication of the majority of Plans Branch personnel resources from October 1990 through September 1991. These RS's represent HQ AMC requirements for IMA resources funded in the "1-N" funding prioritization drills. Approved funding for requirements referenced by these RS's could not be executed until the revalidation was completed. Personnel from the Deputy Chief of Staff for Management (DCSMM) supplemented DOIM staff from April to June 1991 in order to accomplish the revalidation in sufficient time to expend FY91 resources. Revalidation of the remaining HQ AMC RS's was to continue in FY92.

Establishing Life Cycle Managemment (LCM) Documentation. Each of the areas identified in the preceeding paragraph required development of appropriate LCM documentation to manage the system through its life cycle. To assist the Headquarters DOIM, both the Deputy Chief of Staff for Information Management (DCSIM) and the DCSMM detailed additional support personnel in order to accomplish this task, beginning July 1991. Using government-provided information, AMC-employed contractor personnel were to prepare Economic Analyses (EA) for Workplace Automation, DPI Upgrade, Visual Information and the Local Area Network. Evaluation of the alternatives presented in the EAs will provide the basis for decisions concerning the direction of Headquarters AMC IMA modernization efforts. DOIM expected to continue preparation of LCM documentation to support other HQ AMC Information Systems in FY92.

Deputy Chief of Staff for Intelligence

Personnel and Organization

The Office of the Deputy Chief of Staff for Intelligence (ODCSINT) began FY91 with an authorized strength of 28 civilians and 1 military. In addition, 2 military spaces assigned to the Intelligence Materiel Activity (IMA) had a duty station at HQ AMC. As a result of the transfer of IMA from a headquarters separate reporting activity to an element subordinate to the Communications-Electronics Command, the TDA at the end of the fiscal year was 1 military (none "borrowed") and 28 civilians.

Colonel James C. Hardin, the DCS, retired at the end of August 1991. Colonel Robert T. McCarty replaced him, effective 19 August 1991. Other key personnel in ODCSINT at the end of the fiscal year were the Assistant DCS for Intelligence - Foreign Intelligence, Mr. Cleves H. Howell, the Assistant DCS for Intelligence - Counterintelligence, Mr. R. Bruce Kutch, and the Assistant DCS for Intelligence - Special Programs, Mr. Robert Simak.[12]

Most Significant Issues

Redefining the Army, AMC, and ODCSINT. FY91 saw the most massive changes in the world threat environment since the close of World War II. In August 1991, reactionary elements in the Soviet Union attempted a coup to overthrow Gorbachev and prevent the passage of a new All Union treaty that would have reduced the power of Moscow over the Republics. The coup failed and, as a result, the 70-year old USSR essentially ceased to exist. The U.S. reaction and the reverberations throughout the Federal government, especially in the American military, was only beginning to be felt by the end of the fiscal year.

ODCSINT spent a significant amount of time and manpower in preparing for the downsizing of AMC and the Army. The office placed emphasis on process improvement and identification of those procedures which had limited value. AMC continued to perform its obligations under the Intermediate Range Nucledar Forces Treaty in an outstanding manner, hosting all visits without incident. Another significant initiative during the year was the preparation for decentralization of the Special Security Office system and the consolidation of functions and personnel into the AMC family. ODCSINT originally planned to decentralize the SSO system at the beginning of FY91, but found it necessary to delay the action until the beginning of FY92. The postponement allowed AMC personnel to iron out details, establish audit trails, and ensure that personnel and funding issues were resolved.

Personnel Shortfalls. The Foreign Intelligence element continued to be critically undermanned. The element had lost three people and associated spaces, as well as two additional personnel who had been on the TDA of the Intelligence Materiel Activity, but were assigned to AMC. For all practical purposes, the element had become unable to perform substantial portions of Threat Management by the end of the fiscal year.

Despite inadequate staffing, AMCMI-F presented daily intelligence briefings throughout ODS, providing daily intelligence support to the AMC Operations Center. Individual Mobilization Augmentees (IMA) provided critical support. The augmentation of two Military Intelligence lieutenant colonels was absolutely crucial. Their presence permitted ODCSINT to continue other essential services during ODS and enabled AMCMI-F to provide high quality support not only to the daily briefings, but to the more extensive questions raised throughout the operation. ODS proved the worth of the IMA program.

---

[12]This section is based partially on a draft FY90 annual history prepared by HQ AMC ODCSINT, submitted in February 1991.

Policy Changes in the Special Access Program (SAP). In spite of changes in Special Access Program policies directed by HQDA in the past year, AMC SAPs continued to receive matrix support and headquarters oversight. The most significant policy change dictated that PEO-managed SAPs were no longer required to submit to headquarters review. In response to this and other challenges, AMC restructured its SAP review process to meet the changing conditions.

Counterintelligence (AMCMI-C)

Intermediate Range Nuclear Forces (INF) Treaty. The INF Treaty was entered into force on 1 June 1988. The four AMC sites involved, i.e., 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. Fifteen inspections were completed in FY91. With the final elimination of Pershing assets completed in May 1991, inspections are limited to short notice and will continue for the remaining ten years of the treaty.

Chemical Initiatives. The U.S. and USSR MOU for a bilateral verification experiment and data exchange had been signed in September 1989. As of the end of FY91, work involved familiarization visits to chemical facilities and the initial development of an implementation plan to host on-site inspections. Visits included walk-throughs of each site and discussions of proposed inspection regime, expected site responsibilities, and INF Operations Security (OPSEC) lessons learned. AMC conducted National Trial Inspections (NTI) in preparation for a future multilateral chemical treaty. The purpose of the NTI was to develop policies and procedures for actual challenge inspections. At the end of the fiscal year, planning continued.

Operations Security. The publication of DODI 500.2, *Defense Acquisition Management Policies and Procedures*, and the subsequent development of the Acquisition Systems Protection Program (ASPP), have reinforced the need for OPSEC in the research and development environment. AMC is a member of the newly created DOD Acquisition System Protection Working Group, which was established to help the services implement the ASPP. Work to date has involved the conduct of OPSEC surveys at White Sands Missile Range and the Ballistic Research Laboratory and the development of the draft Acquisition Systems Protection Master Plan.

A quarterly memorandum entitled "OPSEC News" was developed to keep the field abreast of developments in the OPSEC arena. Time-sensitive information is passed separately.

Countering Terrorism. ODCSINT continued to develop trip papers for general officer and senior executive service travel outside the Continental United States. 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 CONUS. The office also provided specific briefings tailored to the needs of those transferring to AMC overseas facilities, or traveling in groups.

Foreign Disclosure Program. New procedures were 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 an MOU allowing Australia, Belgium, Canada, Denmark, France, Germany, Israel, Italy, the Netherlands, Norway, Spain, Sweden,

Switzerland, and the United Kingdom to send visit requests directly to HQDA through an automated data system. Requests are transferred to AMC or its MSCs for action via the automated system or are automatically reformatted and staffed via standard general service message. As of the end of the fiscal year, MICOM was on line, LABCOM was partially on line, and installation at HQ AMC was pending.

To assist in the downsizing of HQ AMC and the decentralization of appropriate authorities, Delegation of Disclosure Authority Letters (DDAL) are being implemented within the AMC Office for International Cooperative Programs for each Data Exchange Agreement (DEA). AMCMI-C is assisting in providing disclosure guidance in accordance with the National Disclosure Policy (NDP). HQDA intended for each DDAL to authorize the Technical Project Officer (TPO) and the MSC Foreign Disclosure Officer (FDO) to release Classified Military Information (CMI) directly to the foreign embassy.

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.[13] Foreign nationals made about 1,600 visits to AMC installations during FY91. The multitude of requests received to date from foreign nationals for AMC information included 339 requests in FY91 alone.

AMC conducted reviews of all assigned foreign Exchange Integrated Officers (EIO) and Liaison Officers (LNO) assigned within the command. Reviews of EIO job descriptions verified that only duties outlined were being performed. Reviews of LNO terms of accreditation verified that access was only to information authorized in appropriate international programs or agreements which authorized the position.

AMC Supplement to AR 380-19-1. The new AMC Supplement to the confidential AR 380-19-1, *Control of Compromising Emanations (U)*, was revised, edited, and published. It replaced AMC Supplement 1 to AR 530-4.

Operational Accreditations for Automated Information Systems. AR 380-19, *Information Systems Security*, provides two types of accreditations for automated information systems: generic and operational. Generic accreditations are developed for fielded systems to reduce duplication of effort and paperwork for systems with like characteristics.

To reduce the number of accreditations accomplished throughout the command, additional "generic" accreditations have been approved. These cover both single user systems and multi-user systems. Accreditations are separated by sensitivity level of processing; i.e., unclassified and classified. The approved generic accreditation document is not complete, as each site that desires to operate under one of these documents must add site-specific information, such as standing operating procedures and Information Systems Security Officer appointment orders.

As of the end of the fiscal year, ODCSINT noted that it had issued generic accreditation packages for the following types of configurations: personal computers connected to a local area network, personal computers processing SECRET special access program data, personal computers processing TOP SECRET special access program data, and multi-user computer systems processing SECRET data.

Elimination of Automated Systems Security Course. In FY90, the U.S. Army Logistics Management College had discontinued a course in automatic systems security as a result of a reduction in resource availability. The elimination of the course, "Security in Automated Information Systems," previously taught by the U.S. Army Management Engineering College, left a void in automation security training requirements

[13]Two hundred and five foreign officers were accredited to the command in FY90. See AMC FY90 AHR.

by the U.S. Army Management Engineering College, left a void in automation security training requirements throughout the Army. In an effort to provide training materials to Army computer users, HQDA hosted a workshop on the topic in May. The attendees discussed methods of training as well as training aids. HQDA also established a central point of contact, and began working with TRADOC to take over training in this area. As of the end of the fiscal year, AMC was discussing the possibility of reinstating the ALMC course at the engineering college.

Automated Bulletin Boards. Under AR 380-19, approval must be obtained prior to operation of an automated bulletin board. Certain protective measures must be in place to reduce possible misuse of the bulletin board.

As of the end of the fiscal year, two AMC-operated boards had been approved. One was operated by AVSCOM, called the Army Aviation Support Bulletin Board. The purpose of the board is to enhance real time electronic transfer of maintenance data and general information to and from AVSCOM and their aviation field units. The second was operated by the Command and Control Microcomputer Users Group (C2MUG) at Fort Leavenworth, Kansas. The purpose of this board is to provide the free exchange of public domain, shareware, and user-developed software to broaden the scope, quality, and quanitity of programs which it can share with microcomputer users within DOD.

Publications. AMC-P 380-3, *Caring for Your Personal Computer*, May 1991, provides the end user with a common sense approach to protecting the computer and the data. It discusses care of personal computers, software, and data files, and the need for virus protection.

AMC-P 380-4, *Information Systems Security Program Guide*, July 1991, targets the Information Systems Security Officer. The pamphlet describes the accreditation process and provides guidance on the use of privately owned computers, security concerns of laptop computers, and password management.

Information Security. The Information Security Oversight Office (ISOO), an executive agency reporting directly to the President, inspected Belvoir Research, Development and Engineering Center and the Center for Night Vision and Electro-Optics during the fiscal year. Both activities were found to be in compliance with Executive Order 12356, National Security Information, and the various implementing directives.

Classified Conferences. AMC reached an agreement with the Office of the Deputy Chief of Staff for Intelligence (DAMI-CIS), HQDA, that allows AMC, in certain instances, to approve classified conferences. The new procedure has reduced the processing time required for classified conferences and made the process more responsive to field activities.

Preliminary Inquiries. AR 380-5 required a person with equal or higher grade to conduct a preliminary inquiry into a security violation. This requirement proved difficult with personnel in the field due to grade structure in the various security offices. A request for relief of this requirement, fowarded to DAMI-CIS, was approved. Preliminary inquiries may now be conducted by security specialists regardless of grade, provided that the inquiries are conclusive and the findings and recommendations are approved at the chief of staff or equivalent level.

Shipment of Classified Documents. Shipment of classified information up to and including SECRET may now be made via U.S. Postal Service Express Mail. However, APO/FPO services are excluded from this type of shipment.

Security Violations. Violations declined for the third year in a row. There were 129 violations in FY91, compared to 157 in FY90 and 164 in FY89. ODCSINT considered this to be a sign that command emphasis

had successfully reversed the previously existing upward trend. Due to the success of program to lower the incident rate, ODCSINT expected the new positive trend would continue.

Reporting of Credible Derogatory Information by Supervisors. During FY91, AMC conducted a survey to determine if supervisors understand their responsibility to report credible derogatory information. AMCMI provided an information packet on the responsibilities and procedures for reporting such information to each MSC/SRA, to be used in annual awareness programs. All MSCs/SRAs have ensured that supervisors are aware of their responsibilities under this program.

New SECRET Periodic Reinvestigation Program. During FY91, HQDA announced new policy regarding Periodic Reinvestigations (PR) to support SECRET clearances. In the past, reinvestigations were conducted at 20 year intervals. That interval has been reduced to 15 years, with 1 December 1991 as the target date for compliance by all Army activities. Some AMC commands have a large number of personnel that fall in the new PR category, which may result in problems in meeting the deadline. AMC has requested extensions for those organizations.

New Requirement at the Investigative Records Repository (IRR). The IRR at the Central Clearance Facility (CCF) maintains records of all personnel security investigation cases in the Defense Central Investigative Index (DCII). Only certain individuals are authorized to access these files. During FY91, the records of each account holder were revalidated and updated to include a certificate of understanding on how to handle and safeguard IRR information. All AMC organizations with IRR accounts are in compliance.

National Security Check (NAC) for Unescorted Access not Involving Classified Information. The requirement for a NAC for unescorted access to restricted areas not involving classified information remains basically the same. Recent response from the Deputy Under Secretary of Defense (Policy) provides for exceptions when other measures are more burdensome than the NAC. AMC continues to seek relief.

Changes to AR 380-67, *Personnel Security*. The provisions of paragraph 9-102d of AR 380-67, 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.

Sensitive Compartmented Information (SCI) Billet Management. Decentralization of the Special Security Office required a total redesignation of each SCI billet to denote the MACOM and organization to which the individual billet was assigned. AMC operations required an audit trail showing new and old billet numbers. AMCMI developed and implemented this new numbering system.

Weapon System Technical Assessment (WSTA). The ODCSINT reported that work continued during FY91 in the development of WSTAs. Within that year, the office finalized three additional systems, while 11 were in technical staffing, and three more were in draft form. As of the end of the fiscal year, a total of 47

weapon systems had been completed.[14] ODCSINT established a two year cycle for updating WSTAs, which began in FY91. As of the end of the fiscal year, eight had been completed and 24 were in staffing.

Advanced Technology Assessment Report (ATAR). During FY91, AMCMI emphasized the he ATAR program effort. As of the end of the fiscal year, three additional ATARs had been completed, with six in technical staffing. Since priorities changed as rapidly as technologies, the ODCSINT stated that only six technologies will be assessed at any given point to ensure a timely completion.

International Armaments Cooperative Strategy. During the last quarter of FY91, AMCMI provided support to the International Armaments Cooperative Strategy. The Intelligence support was derived primarily from the methodology and contents of the WSTA/ATAR (Advanced Technology Assessment Report) program, and served as the foundation of the program. The DCS for MI provided support to the three "pillars" as follows: Production Pillar, provided to militarily critical technology associated with specific weapon systems in order to identify significant critical skills associated with the production base capacity; the Cooperative Development Pillar, which focused upon significant country capabilities identified with specific militarily critical technologies and potential cooperative opportunities; and the Technology Base, which focused on countries and technologies, and the identification of technical oppportunities for sharing. Additionally, the DCSMI identified country assessments from a security perspective and foreign disclosure policy issues.

Security and Technology Transfer Working Group (STTWG). The STTWG, established under the MOU for the Multiple Launch Rocket System, Terminal Guidance Warhead (MLRS-TGW), continues to develop security procedures for multiple country co-development programs. Plans call for these procedures to be incorporated into a Program Security Instruction (PSI) for the MLRS-TGW program. That document will serve as the security guide for each of the partner nations in this program.

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 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 INF Treaty. ODCSINT also identified additional locations as 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, due to Desert Shield events, which was therefore unavoidable.

---

[14]Compare to FY90, where 42 had been completed. See AMC AHR for FY90.

Other Security Related Issues

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 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.[15]

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. AR 690-13, *Civilian Intelligence Personnel Management System (CIPMS) Policies and Procedures*, and CIPMS Qualification Standards were issued. AR 690-13 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).

Foreign Intelligence (AMCMI-F)

Requirements Management. Thanks to the Requirements Data Base (RDB), finalized in FY89, the Requirements Manager could readily monitor the status of AMC Intelligence Production Requirements (IPR), Non-Recurring Intelligence Production Requirements (NIPR), Quick Reaction Requirements (QRR), 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.

---

[15]See also HQ AMC *Annual Historical Review, FY89*, pp. 138-139.

Requirements management continued to be the real core of the foreign intelligence mission. During FY91, 24 QRRs and 29 NIPRs were processed. The overall satisfaction rate (by close of the reporting period) was 100 percent for QRRs and 98 percent for NIPRs. Forty-one IPRs for long term production were forwarded to the Army Intelligence Agency. Regrettably, the response to IPRs has been very poor to date. As this situation became apparent, a major study was initiated to investigate and determine the status of all AMC FY90 and FY91 IPRs.

In addition to the "routine" requirements, AMCMI-F handled several hundred special queries and short fuze requirements in support of HQ AMC operations during ODS. In general, the intelligence community responded very well to AMC's requirements, with the exception of some problems obtaining data on U.S. and other free world systems used by Iraq or captured by Iraq from Kuwait. It is apparent that as the Cold War melts, policies and procedures must be developed to handle the questions posed by "friendly" systems in the hands of potential adversaries.

During FY91, AMCMI-F completed the update of what is commonly called the "FIO Register," a roster of Intelligence and Counterintelligence points of contact. This easy reference guide provides fingertip information on all AMC subordinate Intelligence and Counterintelligence offices. It includes such items as personnel rosters, phone numbers, and mailing/message addresses. Information on HQDA, INSCOM, U.S. Marine Corps Intelligence Center, Armed Forces Medical Center, U.S. Army Medical Research and Development Command and the U.S. Army Training and Doctrine Command can also be found in this register.

Separate Reporting Activity 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 MSCs 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 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 AMC, HQ AMC review of the TECRAS Budget, and participation in the GDIP program development for TECRAS. Unfortunately, DCSINT participation in the Army and AMC redesign of the management structure for targets and threat simulators was neglected because of the need to focus on TECRAS.

AMCMI-F was instrumental in pulling the TECRAS program together during FY91. The office provided policy and guidance to AMC elements participating in the TECRAS program, which was incorporated into AR 381-X, *Measurement and Signature Intelligence*. AMCMI-F also assisted INSCOM in instituting the proper Materiel Requirments Documentation (e.g., Operation and Organization Plans, Essential System Capabilities Documents, etc.). This helped give the TECRAS Program the structure it needed. AMCMI-F also ensured that in-Army expertise was being considered when it came to satisfying Materiel Requirment Documentation instead of first resorting to contracting. AMCMI-F coordinated participation and support (personnel and equipment) to three INSCOM Ceiling Zone Missions.

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 to have 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 FY91. ODCSINT believed that the new system might result in further delegation of visit authority within AMC.

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 operate 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.

Current Intelligence. Support to Operations Desert Shield/Storm, Provide Comfort and Poised Hammer dominated current intelligence activity throughout the fiscal year. In varying degrees, all Foreign Intelligence personnel shared the burden. Two reservists were called to active duty. Both LTC Natalini (3 September - 3 December 1990) and LTC Donarum (19 December 1990 - 7 July 1991) served as as the primary AMCMI representative to the AMC Emergency Operations Center and as intelligence briefers. Several personnel provided input to the briefings and produced the scripts and visual aids needed. Special one-time requests for information, to be gathered through liaison with Washington area intelligence agencies, were numerous and labor intensive. From the earliest stages of these operations and continuing today, Foreign Intelligence has been regarded as a reliable and productive partner in HQ AMC efforts to support contingency operations.

The coming of ODS caused the suspension, after 3 August 1990, of the long accustomed AMCMI "Black Book," a weekly selection of code word material for HQ AMC general officers and civilian equivalents. Although the book was resumed from 28 March to 20 August 1991, continuing personnel cuts made its special handling requirements unsupportable, and it was discontinued after the latter date. In its place, a non-code word Weekly Intelligence Digest (WIDGET) was established and has been well received.

Foreign Intelligence has also continued to provide classified trip books in support of the foreign travels of the HQ AMC Command Group. Ten of these projects reached fruition in FY91.

Foreign Materiel Program (FMP). During FY91, the FMP effort remained active. Twenty-two new projects were approved for acquisition and exploitation and 38 on-going exploitations were continued. The DCS for Intelligence has continued managment involvement in approximately 40 other classified exploitation projects. The DCS has also been actively working with HQDA; the Army DCS for Intelligence; the AMC DCS's for Development, Engineering and Acquisition and Supply, Maintenance and Transportation; and the Project Manager, Instrumentation, Targets and Threat Simulators to develop a management and usage plan for the approximately 100 foreign vehicles made available by ODS and the German reunification.

Office Relocation. The only really happy news to affect AMCMI-F was the successful evacuation from the plainly unsatisfactory quarters in the basement of the HQ AMC building. While the office moved to room 1S58, the current intelligence officer retained facilities and equipment in the vault in room G2C63 to accomodate SCI materials and work. In addition, the general use data base, which includes SCI references, remained in room G2C63.

Personnel Losses. During FY91, AMCMI-F lost three people and two additional spaces. Moreover, AMCMI-F lost the services of two personnel who worked with the office, but were carried on the IMA TDA. The office ended fiscal year with two vacancies, for which job descriptions are to be rewritten to reflect the new realities of the "flat" organizational structure mandated by the CG.

Special Programs (AMCMI-P)

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.

Limited Dissemination (LIMDIS). AMCMI-P drafted a policy on LIMDIS programs which implemented 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 Special Access Program (SAP) billets and program access rosters.

AMC Special Access Program Oversight Committee (SAPOC). To reduce redundancies and more efficiently manage SAPs, the AMC Working SAPOC was consolidated with the Technical Oversight Board to form the AMC SAPOC. The committee is chaired by the Principal Assistant Deputy for Research, Development and Acquisition and consists of representation from all the appropriate functional areas as well as several technical members. A separate Technical Subcommittee was also formed to address any technical issues deemed appropriate by the chairman.

PEO-Managed Special Access Programs. Based on Army Acquisition Executive (AAE) Policy Memorandum 91-2, HQ AMC's role with respect to PEO-managed SAPs has significantly changed. The headquarters' oversight role has been reduced to the extent that PEO SAP actions or issues are only reviewed when specifically directed by HQDA or requested by the PEO. Matrix supporting the functional areas continues at the MSCs and HQ AMC.

Special Access Program Staff Assistance Team (SAPSAT). During FY91, ten AMC SAP programs, managed by MICOM, TROSCOM, AMCCOM and LABCOM, were reviewed by the SAPSAT. Team members are required to review AMC SAPs to ensure compliance with AR 380-381 as well as other applicable functional area regulations. The SAPSAT review includes the functional areas of resource management, security, program management, internal review and audit compliance, secure environment contracting and contract cost performance. In addition, HQ AMC offered to perform courtesy reviews of PEO-managed SAPs in conjunction with the AMC scheduled reviews. None were requested by the PEOs in FY91.

Deputy Chief of Staff for Engineering, Housing, Environment and Installation Logistics

Organization and Key Personnel

The DCS was headed by Colonel Joseph Briggs, who had assumed the position 15 August 1990. His key subordinates included David S. Abdelnour, the Assistant Deputy Chief of Staff for Engineering, Housing, Environment and Installation Logistics; Andres Talts, Chief of the Environmental Quality Division; Herbert J. Louque, Chief, Engineering and Housing Division; Stanley H. Fried, Chief, Real Estate Division; Hillard Hayes, Chief, HQ Support/Equipment and Facility Management Office; and COL John D. Knowles, Commander, AMC Installations and Services Activity (AMC I&SA), Rock Island, IL.[16]

In October 1990 the Chief, Plans and Programs Office, secretarial and Administrative Office positions were abolished and the duties of the incumbents re-delegated within the AMCEN Executive Office. Effective

[16]Unless otherwise noted, this section was taken from the DCS for Engineering, Housing, Environment and Installation Logistics historical submission for FY91, submitted 5 Nov 91 by USAMC Installations and Services Activity (AMC I&SA), Rock Island, IL.

16 February 1991, HISA was disestablished and the Headquarters Equipment Facilities Management Office was transferred to AMCEN. This resulted in an increase of 14 full-time permanent spaces to the latter's TDA.

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 FY91. However, because of the overall AMC reductions in force and hiring freeze, only 9 professional staff members were on board for most of the year.[17]

Command Management Issues

Support to the Emergency Operations Center (EOC) During ODS. AMCEN provided both general and specialized support to ODS. In addition to the direct support of two individuals as detailed below, AMCEN also provided administrative and secretarial support in the HQ AMC Operations Center from the beginning to the end of ODS.

The EQD provided five personnel to serve as shift leaders in the EOC. These individuals usually worked 8 1/2 hour shifts for five day periods, totalling 1,020 man-hours from August 1990 through January 1991. The shift leader was responsible for processing all incoming and outgoing messages, monitoring the preparation of daily briefing charts, and ensuring the EOC director was apprised of any significant actions of concern to the AMC Command Group. The shift leader also monitored daily AMC situation reports, significant actions and tasking actions.

The EQD also provided one person to serve as the EOC Engineer Desk Officer. The desk officer received situation reports, messages, and taskings from the EOC, coordinated this information with representatives from the Facilities, Housing, and Real Estate Divisions, and provided replies to the shift leader. He served as the senior representative for the DCSEN at the daily Command Group's EOC update briefing and coordinated deployment of a Test, Measurement, and Diagnostic Equipment (TMDE) Support Group task force to Saudi Arabia to support ODS requirements for clean TMDE maintenance facilities.

The Environmental Quality Division served as the AMC focal point in dealing with Federal and State regulatory officials, HQDA, other Army and DOD agencies, and AMC MSCs on environmental laws, regulations, and permits affecting ODS-related production at AMC installations.

Realty Support for ODS. During September 1990, AMC-Southwest Asia had requested that a Real Estate Specialist be sent to assist in the acquisition of real estate interests necessary to accomplish the AMC-SWA mission. On 1 October 1990, Mr. Harold Duck, Realty Specialist, departed HQ AMC for processing and deployment. Upon his arrival in Saudi Arabia, he reviewed the acquisition process, identified problems, devised a systematic procedure for acquisition requests, and served as a liaison with the Corps of Engineers Mid-East Asia Project Office (MEAPO). In addition, he surveyed existing available properties and maintained a portfolio of those properties and property owners. After the system was in place, he briefed and trained a permanent real estate representative and returned to HQ AMC, where he managed the real estate program throughout the remaining months of ODS.

Mr. William O. Miller, Jr., of the Vicksburg District, Corps of Engineers, was detailed to HQ AMC and served as the AMC-SWA Reality Specialist after Mr. Duck's departure. As such, he continued to identify real

---

[17]The FY90 AMC AHR contained an error, as the reporting activity submitted strength data effective 1 October 1990, rather than 30 September 1990. That carried data into the new fiscal year. During FY90 there were 11 authorized positions, with 9 on-board.

estate requirements of AMC-SWA, and processed those requirements within the framework of the system placed in effect. He worked closely with the AMC-SWA Commander and served as his representative to property owners and agents, other AMC-SWA departments and the CE MEAPO office until he returned from SWA in April 1991.

It was the opinion of AMCEN that a great deal of confusion, expense, and competition for properties could have been avoided by deploying an expert Realty Specialist at an earlier date. Instead, various untrained individuals in each division of AMC-SWA attempted to handle the real estate program.

Engineering and Housing Division

Establishment

FY91 was a turbulent year for manpower and organizational changes within HQ AMC. The build-down of the Army was reflected in plans to significantly reduce the resources and structure of the headquarters. The concept of Total Quality Management by Process Action Teams (PAT) was applied to define the future role of HQ AMC and to develop the streamlined organizational structure required to meet the challenge. The result of this extensive effort led to the planned formation of an organization oriented around seven major processes. The Engineering and Housing Division, as an element of AMCEN, was to become a key organization of the "infrastructure" process.

Organization

The infrastructure PAT proposed a streamlined organization for AMCEN, which was approved by the AMC Commanding General. On 1 August 1991 the approved new structure merged the former Facilities and Housing Divisions into the Engineering and Housing Division. This new division was authorized 18 spaces and had 14 on hand at the end of FY91. The merger eliminated one GM-14 Supervisory General Engineer (Chief, Housing Division) and one GS-5 clerical position. A hiring freeze prevented filling the vacant positions. The permanent loss of two positions and the shortage of personnel at the action office level put a strain on accomplishment of the assigned mission. The BRAC actions, Defense Management Report Decision initiatives, and Desert Shield/Storm support added to the workload of the division.

Process Action Teams

The division organized into four teams, with specific functional responsibilities, each headed by a senior person. The *Planning Team* was primarily responsible for master planning, mobilization master planning, and related programs. The *Programming Team* was responsible for the Military Construction, Army (MCA) program, including interfacing with BRAC actions. The *Management Team* supervised the energy program and Real Property Maintenance Activity (RPMA) functions, including project administrative reviews and the Engineers and Scientists career program support. The *Housing Team* was responsible for centralized management of AMC family housing, bachelor housing, transient quarters, guest houses, furniture and equipment, and associated programs, including housing referral services, funding control and construction/alteration requirements.

Most Significant Issues

The most significant issues handled by the Engineering and Housing Division included the MCA, RPMA funding shortfalls, the Base Realignment and Closure (BRAC) Act's impact on AMC, and the headquarters relocation. This and other significant issues are discussed below.

RPMA funding Shortfalls. RPMA funding shortfalls, an immense and growing Backlog of Maintenance and Repair (BMAR), ODS support, partial implementation of the Cost per Unit Output initiative, and an often-extended moratorium on selected MCA projects all had serious long-term implications for the maintenance and modernization of the AMC industrial complex, environmental compliance and quality of life programs. The value of projects identified as BMAR grew from $408 million in FY90 to $482 million in FY91. One step toward mitigating the situation was the reprogramming of $3.4 million of AMC's Research, Development, Test and Evaluation (RDTE) funds from research programs to RPMA accounts, to fund critically needed maintenance, repair and minor construction projects. The downsizing of AMC and a year-long hiring freeze had an adverse effect on AMCEN's ability to effectively manage RPMA programs.

Base Realignment and Closure Act. The BRAC Act (Public Law 100-526) affected numerous AMC installations and generated substantial workload in the Engineering and Housing Division, the Real Estate Management Division, and the 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 FY91 MCA Authorization and Appropriation acts made provisions for 11 AMC construction projects totaling $144,650,000.[18] Subsequently, an additional project for a second electric feeder at Picatinny Arsenal, totaling $920,000, was funded by HQDA through the Unspecified Minor MCA program. This raised the total construction to 12 projects and $145,570,000. This included four chemical demilitarization projects, totaling $76,300,000, which constituted 53 percent of the entire AMC program. This left 8 projects, totaling $68,270,000, the smallest MCA mission program for AMC since the mid 1970s.

HQDA further amended construction programming procedures and initiated new interactions between the MACOMs and the Corps of Engineer field activities through *Quickstart*. This program was designed to expedite and enhance the design and execution of construction projects. This will first impact on the FY95 program. Quickstart requires MACOM certification that all planning for a specific MCA project has been accomplished. The Corps of Engineers will certify that adequate data is available to commence concept design.

HQDA implemented a new Facilities Reduction Program, with the purpose to reduce our real property infrastructure commensurate with a reduction in the force structure. A principle focus of the program is the elimination of World War II wooden structures. The program requires the demolition of one square foot of existing floor space for each square foot of new construction. AMC was also assigned the following reduction goals (over and above the one-for-one new construction), expressed in millions of square footage:

FY92	FY93	FY94	FY95	FY96	TOTAL
1.56	1.081	.621	.590	.561	4.41

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

[18]By way of comparison, the FY90 MCA Authorization and Appropriation acts made provisions for 16 AMC construction projects totaling $125,490,000.

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 essentially lost.

At the beginning of FY90, AMC's new Commander received several briefings on the status of AMC's relocation efforts, including 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 essentially included providing information to the EPG Program Manager's office at Fort Belvoir. Many meetings were held 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-reimbursable 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 had brought severe cuts Army-wide to the non-reimbursable program and during FY91, no central funding for master planning was provided by either HQDA or AMC. As a result, no new Master Plan updates were initiated at any AMC installation.

During the fourth quarter of FY91, HQDA established a new component of the Master Plan, the Capital Investment Strategy (CIS). The CIS, as its name suggests, provides the facility manager with a strategy for meeting his facility requirements. The CIS is resource (funding) constrained and provides detailed analysis for determining facility requirements. Maintenance and repair actions, as well as new construction, are included in the analysis. The CIS requires installations to optimize use of their existing real property assets before turning to new facilities. Guidance from HQDA requested a partial CIS be prepared in-house at installations having MCA projects in the FY95 MCA program. AMC modified this guidance by selecting 10 installations to prepare partial CIS's and participated in developing a training seminar for preparation of the CIS. All of these 10 AMC installations took part in the two seminars and began to prepare the partial CIS's, which would be due during the first quarter of FY92.

Mobilization Master Planning (MMP) Non-Reimbursable Funds. While the non-reimbursable funds for Peacetime Master Planning were being cut drastically, the MMP non-reimbursable program enjoyed continued funding support during 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. In addition, a new initiative was to be piloted in FY91. Two environmental studies were being developed (one at Lone Star AAP and the other at Radford AAP) to 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 FY91 compared to FY90. Facility energy costs in FY91 totalled over $212 million, a 13 percent increase

from FY90. This increase was a result of Defense Fuel Supply Center raising petroleum prices approximately 84 percent due to the volatile oil market at the start of Operation Desert Storm. In FY91, Congress appropriated $10 million to revitalize the Energy Conservation Investment Program. AMC had four projects approved for FY91 totalling $1,075 million. Five installations excelled in energy management and conservation, as evidenced by the "exceptional" ratings given by AMC's I&SA during their staff visits. New Cumberland Army Depot was the second place winner of the Thirteenth Annual Secretary of the Army Energy Conservation Award - only the second AMC installation since FY86. At year's end, AMC was on a glidepath to meet and possibly exceed the Army's CY2000 facility energy goal.

Directorate for Engineering and Housing (DEH) Automation. The Facilities Division and AMC I&SA continued to oversee efforts 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 U.S. Army Engineering and Housing Support Center (EHSC), the DA Project Manager for ISF-M, is assisting in developing software interfaces which should be able to communicate between AMC systems and ISF-M. Initial efforts in this area have concentrated on the TEAMUP system, which is used by TECOM.

Housing Workload Increases. Workload continued to increase as a result of BRAC; deployment of Homes Furnishing Module; CG-directed centralized control of maintenance and repair projects; and budget reprogramming. The Homes Furnishings Module software continued to cause problems for installation, MSC, and MACOM housing managers as a result of incorrect pricing and inventory control problems. The division expected that debugging problems would diminish after this, the first year of implementation. Centralized control of maintenance and repair projects and the priority of these projects equate to one full work year of effort for the Engineers. Installations were requesting nearly $20 million annually for maintenance and repair revitalization projects through the end of this decade as a result of the aging inventory. Reprogramming of funds continued to require full time MACOM control because only 5 of the 42 installations had the necessary software to accomplish this task. Efforts were underway as of the end of the fiscal year for payment of MACOM/MSC housing staff salaries from the Housing Appropriation rather than from OMA. This proposed change would save scarce OMA resources, but would increase the workload in terms of maintaining program/budget records.

Environmental Quality Division

Environmental Issues Related to Mobilization and ODS

Painting Operations at Letterkenny. In addition to supporting the EOC, the DCS took action on environmental issues which potentially could have prevented AMC from supporting the soldier. The most

critical issue involved the requirement to repaint vehicles from woodland camouflage to desert sand color, which resulted in air pollution permit violations at Letterkenny Army Depot. Early coordination with Pennsylvania environmental regulators enabled the painting operations to continue. 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.

Hazardous Waste at Radford Army Ammunition Plant (RAAP). Other important issues centered around the treatment, storage, or disposal of hazardous wastes generated at Army installations. In September 1990, Virginia environmental officials had determined that sludges produced at RAAP nitrocellulose acidic wastewater treatment plant were hazardous. Since the facilities were not permitted for hazardous waste treatment, this decision could have restricted or shut down nitrocellulose production at RAAP. State officials agreed during FY91 to give the installation up to 4 years to install appropriate treatment equipment and granted RAAP an opportunity to challenge the ruling. The Environmental Quality Division provided recommendations to RAAP for minimizing the waste, monitored negotiations with the State, and provided status reports to the AMC Command Group.

Trinitrotoluene (TNT) Production at RAAP. To prepare for possible reactivation of TNT production at RAAP, the Environmental Quality Division participated in discussions involving the Defense Department, the U.S. Environmental Protection Agency (EPA), and Virginia regulatory agencies to ensure that any TNT-generated wastewater, air emissions, and hazardous wastes could be effectively and legally processed. The division worked to resolve possible environmental restrictions to TNT production by ensuring that proper permits were in place, existing treatment facilities could meet the permit discharge limits, and off-site commercial hazardous waste disposal facilities were available.

Environmental Protection Issues in SWA. The EQD reviewed and commented on the draft DOD environmental protection policy for Army forces deployed to SWA. They also provided the DOD/CENTCOM policy regarding disposal of hazardous waste generated by U.S. forces during ODS to CECOM.

Environmental Compliance Program Execution

Overall Environmental Status. Environmental compliance ratings at AMC installations continued to worsen as installations were subjected to more frequent and more intensive inspections by Federal and State regulators. The low environmental management staffing levels at AMC installations continued to be a root cause of the problem. Principal shortfalls were related to the management of hazardous waste.

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. Hazardous waste site cleanup at BRAC installations and at active installations was worsened by regulatory agency and public citizens' priorities for action. 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 minimizing 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 underwent further radical changes. Major steps continued to be taken in the automation of reporting requirements during FY91.

Environmental Compliance Program Execution. The Clean Air Act (CAA) and Clean Water Act (CWA) were the extensive driving laws of the 1970s. However, during FY88-91, the command's environmental status was greatly impacted by 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.

TSCA regulated the manufacture, 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 Superfund Amendments and Reauthorization Act (SARA), which amended CERCLA, more hazardous waste requirements were forthcoming on AMC installations.

At the beginning of FY91, AMC had 41 noncomplying installations including 5 air noncomplying sources, 27 wastewater noncomplying sources, 38 hazardous waste sources, 4 drinking water, 18 groundwater, 2 toxic substances, 2 underground storage tanks, 1 spill, and 3 solid waste sources, for a total of 105 sources. At the close of FY91, the total number of noncomplying installations increased to 45, and due to increased attention and regulatory emphasis by Federal and State regulators, the number of noncomplying sources increased to 130. This included 14 air noncomplying sources, 31 wastewater, 11 groundwater noncomplying sources, 46 hazardous waste, 8 drinking water, 9 toxic substances, 4 underground storage tanks and 7 solid waste problem areas. The net AMC compliance posture became considerably worse during the fiscal year in the areas of air, wastewater pollution and hazardous waste sources.

Groundwater Contamination. A very serious environmental problem within AMC was groundwater contamination from past Army operations. This issue 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 close of FY91, 23 AMC installations were on the NPL. The installations listed on the NPL had to enter into Interagency Agreements (IAG) with federal and state regulatory agencies for clean-up actions. All AMC installations in the NPL signed an AIG.

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 U.S. Army Toxic and Hazardous Materials Agency (USATHAMA) located at the Edgewood Area of Aberdeen Proving Ground (APG). USATHAMA developed protocol for each groundwater (GW) problem, gave press releases, and provided technical expertise to installation commanders to help with these GW problems.

Tracking of Regulatory Inspections. The EQD initiated a new environmental compliance program management indicator in FY90, which continued in FY91. This 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 with a goal to pass at least 65 percent. In FY91 there were 245 such inspections at AMC installations with a pass rate of 47 percent, 57 percent, 56 percent, and 26 percent for the first through fourth quarters, respectively. For the year, the average pass rate was 51 percent, falling significantly below the overall goal. Thus, AMC's installation pass rate on such regulatory inspections was much worse in FY91 than in FY90, which had been 64 percent.

Army Environmental Requirements Report (AERR). The Army Environmental Requirements Report (RCS-1383) was the multi-year environmental master plan which summarized pollution control actions and solutions consistent with all applicable standards. The AERR informed the EPA of Army actions to comply with environmental laws.

USATHAMA had revised the automated data collection in the AERR reporting system and the Spring 1991 submission of the RCS-1383 Report 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. The report data was used as a basis for preparing the Budget Planning Resource Requirements Schedule (BPRRS) 11 for each appropriation.

Environmental Audit Program

Environmental Audit Program Description. From 1985-1987, AMC had conducted the largest, most aggressive environmental audit program within DOD. This $1.2 million program reviewed the compliance status of 64 installations in 34 states in the more than 1,000 applicable federal, state and local environmental laws and regulations. The ten pollution areas covered were: air, water, solid waste, hazardous waste, toxic substances, pesticides, noise, drinking water, spill plans, and environmental management.

In-House Visits. 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 a 4-year cycle. Twelve multi-media ECRs were scheduled each year from FY88 through FY90, with 34 being completed. In FY91, 11 ECRs were completed at the following installations:

Holston Army Ammunition Plant (AAP)	Milan AAP
Corpus Christi Army Depot	Joliet AAP
Yuma Proving Ground	Watervliet Arsenal
Umatilla Depot Activity	Indiana AAP
Fort Monmouth	Newport AAP
Tooele Army Depot	

The ECR at New Cumberland Army Depot (NCAD) was cancelled since this installation was transferred from AMC to the Defense Logistics Agency (DLA).

The AMC Chief of Staff signs each ECR report through the MSCs to the installations and requests a report on the schedule of correction of special attention item deficiencies within 180 days. AMC installation commanders were required to review their resources and implement corrective actions on a priority basis.

After each ECR, I&SA provides 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. By a February 1989 CG AMC policy directive, each installation commander is required to personally attend the ECR in-briefings and out-briefings at their installations.

Two-Year, Installation Self Audit Program. On 29 November 1990, AMC issued policy guidance to fully implement the 2-year, self-audit program by installations and to provide feedback on external audit findings. A reminder memorandum is sent to each installation 30 days prior to the due date of the self-audit, and requires 90 days to respond on self-audit results. The policy requires a review of environmentally significant operations, a look at new environmentally affected missions, and a current status of corrective actions on all findings in the last ECR report. In addition, AMC installations are required to update their Management Plans annually to identify corrective actions to findings on their external and internal audit reports.

Third Phase of the Installation Audit Program. During the latter portion of FY91, AMC reviewed its follow-on ECR program and initiated a third phase of its audit program--an accelerated ECR "Plus" Program.

The ECR-Plus Implementation of the HQDA Environmental Compliance Assessment System (ECAS) will proivde for an increase to 16 full multi-media audits per year and expand coverage from 10 to 17 environmental media. It will also allow the Command to conduct 25-30 special attention visits annually to environmentally high-rish installations and to expand the technical help from HQ AMC to installations. This program has been approved by the AMC Commander, with an addition to the TDA of 10 additional spaces for personnel to conduct the ECRs. These spaces will be fully funded in FY92-93 and are not subject to any AMC imposed hiring constraints.

As AMCEN pointed out, the AMC environmental audit program provided valuable information, including a "snapshot" of an installation's present compliance picture, an identification of the problem's scope, a definition of management trends, a comprehensive audit protocol tailored to the AMC mission, an elaborate data base framework, and a priority for future site evaluations. The approach of the follow-on ECR and ECR-Plus audit phases is to provide technical assistance as well as determine the current compliance posture at each installation. Results of this AMC effort will significantly enhance the environmental management program. Productivity improvement is realized through assurance of compliance with regulatory requirements, establishment of more cost-effective environmental programs and prevention of costly regulatory proceedings, which may include fines.

The proactive AMC environmental audits received positive exposure in FY91 when a briefing outlining the program was presented to the U.S. Army Logistics Management College (ALMC), HQDA Environmental Ofice, the CE Inspector General, DAIG, the AMC Field Safety Office, the national conference of the National Association of Environmental Professionals, and the Air Waste Management Associations national symposium and exhibition.

As stated in the briefing, AMC had learned a number of specific lessons. Some of the highlights follow:

The greatest number and most significant findings are RCRA related; however, significant deficiencies have also been noted in spill control and wastewater treatment.

Twenty-one percent of issues are administrative in nature.

Air and water programs are generally improving.[19]

Installation Restoration Program. AMC demonstrated initiative and leadership in remedying contamination from past activities at its installations. William H. Parker, Deputy Assistant Secretary of Defense (Environment), issued guidance on 29 September 1989 that had been supplemented by the Deputy Assistant Secretary of the Army for Environment, Safety and Occupational Health. The Army's FY91 Installation Restoration Program spent $314.506 million to remedy contamination at Army installations in CONUS, Hawaii, and Alaska. Approximately 38 percent of this figure was spent on AMC installations.[20] A goal of the program was to complete the current phase of Remedial Investigation/Feasibility Study by the end of FY92.

---

[19]Briefing package, AMC Environmental Auditing Program, presented to the 84th annual meeting and exhibition, Air and Waste Management Association, 16-21 June 1991, Vancouver, B.C. Copy available in AMCHO Archives.

[20]By comparison, the Army's FY90 Installation Restoration Program spent $210M to remedy contamination at 1,391 separate sites on Army installations in CONUS, Hawaii, and Alaska.

Section 105(e) of CERCLA required that the EPA maintain a national inventory of hazardous waste sites, the National Priority List (NPL). Contaminated sites were first proposed for, and later added to, the NPL. At 22 AMC installations, 25 sites were listed on the NPL for FY91[21]:

Aberdeen PG	Lone Star AAP
Michaelsville Landfill	Longhorn AAP
Edgewood Area	Louisiana AAP
Alabama AAP	Milan AAP
Anniston AD	Picatinny Arsenal
Cornhusker AAP	Riverbank AAP
Iowa AAP	Rocky Mountain Arsenal
Joliet AAP	Sacramento AD
LAP Area	Savanna AD
Manufacturing Area	Seneca AD
Lake City AAP	Tobyhanna AD
Letterkenny AD	Tooele AD
PDO Area	Twin Cities AAP
Southeast Area	Umatilla ADA

The 1986 SARA required, in Section 120(e), the development of 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 FY91, IAGs were in place at the following installations:

Aberdeen PG	Lone Star AAP
*Michaelsville Landfill	Longhorn AAP
*Edgewood Area	Louisiana AAP
Alabama AAP	Milan AAP
Anniston AD	Picatinny Arsenal
Cornhusker AAP	Riverbank AAP
Iowa AAP	Rocky Mountain Arsenal
Joliet AAP	Sacramento AD
*LAP Area	Savanna AD
*Manufacturing Area	Seneca AD
Lake City AAP	Tobyhanna AD
Letterkenny AD	Tooele AD
*PDO Area	Twin Cities AAP
*Southeast Area	Umatilla ADA

* Indicates separate sites belonging to the installation above.

A Federal Facilities Site Remediation Agreement for Sierra AD was also signed during FY91; however, please note that Sierra AD is not an NPL site. A similar agreement was being planned as of the end of the fiscal year for Volunteer AAP.

[21]In FY90, the list included 23 installations with 26 sites, but this included Sharpe Army Depot (SHAD), previously an AMC installation, which was transferred to DLA.

During FY91, $221.688 million in Installation Restoration Funds was used in remedying environmental conditions[22] at the AMC installations shown below:

Aberdeen PG	Alabama AAP*
Anniston AD	Badger AAP
Blossom Point FTA	Cornhusker AAP
Dugway PG	Iowa AAP
Joliet AAP	Lake City AAP
Letterkenny AD	Lone Star AAP
Longhorn AAP	Louisiana AAP
Materials Technology Lab	Milan AAP
Navajo ADA	New Cumberland AD (to DLA)
Picatinny Arsenal	Pueblo ADA
Radford AAP	Red River AD
Redstone Arsenal	Riverbank AAP
Rock Island Arsenal	Rocky Mountain Arsenal
Sacramento AD	Savanna ADA
Seneca AD	Sharpe AD (to DLA)
Tobyhanna AD	Tooele AD
Twin Cities AAP	Umatilla ADA
Volunteer AAP	Watervliet Arsenal
White Sands Missile Range	Yuma Proving Ground

In FY91, Installation Restoration funding was not adequate to meet identified requirements. The total requirements (based upon Defense Environmental Restoration Account [DERA] RCS 1383 submission) for AMC installations were $308.336 million. The total DERA funded for AMC was only $221.688 million, which represented a DERA shortfall of 28.1 percent. The total Army DERA shortfall was approximately 55.30 percent. 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 Army Compliance Tracking System (ACTS). ACTS is the new name for last year's Defense Environmental Management Information System (DEMIS). ACTS contains DOD environmental compliance information that can be tracked by state as well as by installation. This system has been expanded to improve or enhance installation level environmental compliance tracking, and contains HQDA compliance tracking information as well as DOD compliance information.

The main purpose of the ACTS is to provide the installation environmental coordinator with a management tool to track environmental programs at the installation. This system will be used as a daily management tool for installation level coordinators and will be provided up the chain of command. Use of this system will reduce the time an installation environmental coordinator needs to research compliance trends, track suspense actions, and respond to out-of-cycle queries or reports. The ACTS also provides consolidation of reporting requirements from MACOM to HQDA to DOD level.

There are approximately 27 tables in the ACTS, covering each of the major environmental laws and program areas. These tables include permits, enforcement actions, inspections, audits, natural resources, pest management, RCRA, Clean Water Act, Hazardous Waste, and so forth. The AMC MSCs and installations

---

[22]By comparison, during FY90, $115M in Installation Restoration Funds was used in remedying environmental conditions at 52 sites.

have been trained on this software. According to the division, the new system was still in its infancy as of the end of FY91. However, the division predicted that the ACTS would be improved and enhanced to include all those program/regulatory areas that an environmental installation coordinator must manage and monitor. Eventually, it will be used for real-time information, consolidation of reporting requirements, and providing historical data for not only the environmental coordinator, but also the EPA, State, and upper level Army echelons. This system will be continually updated and expanded based on input from the user level, which is the installation level environmental coordinator. Estimated fielding date for ACTS is mid-November 1991, with a reporting requirement date of mid-January 1992.

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 those regulated), AMC awaited the final enactment of overdue amendments to the Clean Air Act. There were no significant air pollution source problems in 1991.

The Clean Air Act 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 had granted a conditional National Security Exemption (NSE) for 31 different tactical vehicles and replacement engines. In 1991, 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. As of the end of the fiscal year, there had been no feedback to HQ AMC.

Water Resources Management. The CWA instituted the National Pollutant Discharge Elimination System (NPDES), requiring all Army installations with point sources discharging directly to U.S. waters to possess a discharge permit. An NPDES permit specified site specific pollutant discharge limits, various other conditions, and required monthly Discharge Monitoring Reports (DMR) be filed with the applicable regulatory agency. During FY91, AMC installations were issued 28 Notices of Violation (NOV) for failing to comply with a permit condition or effluent limit. At the end of the fiscal year, while 17 NOVs had been resolved, 32 violations remained to be resolved, either through project upgrades or operational modifications.[23]

To control pollution from storm water discharges, EPA issued regulations in the Federal Register on 16 November 1990 (55FR 47990, Final Rule, NPDES Permit Application Regulations for Storm Water Discharges), requiring industrial activities to file for storm water discharge permit applications by 18 November 1991. Almost all AMC installations fall under these new requirements, and have been working with the appropriate regulatory agencies to obtain the required permits.

Supply, storage, and distribution of safe drinking water supplies at AMC installations are governed by the Safe Drinking Water Act (SDWA), and directives from the Army Surgeon General. During FY91, AMC installations were issued three NOVs for failing to comply with drinking water standards or regulations. One NOV was resolved during FY91, and 8 remained to be resolved as of the end of the fiscal year, either through project upgrades or operational modifications.

In FY91, EPA promulgated two rules that will have significant impact on the operation of installation drinking water systems. The Phase II rules published on 30 January 1991 (56FR 3525), with an effective date of 30 July 1992, established new drinking water standards and monitoring requirements for previously

---

[23]By comparison, as of the end of FY90 there had been nearly 50 NOVs and 18 that remained to be resolved.

unregulated contaminants. Guidance to MSCs on implementation of this rule was forwarded by an AMCEN-A memorandum dated 22 May 1991. The other significant drinking water rule, promulgated by EPA (published in 56 FR 26460, 7 June 1991), established new standards for lead and copper in drinking water. AMC's EQD forwarded guidance to MSCs on this rule by an endorsement dated 28 August 1991.

On 20 April 1990, Secretary of Defense Richard Cheney and EPA Administrator William Reilly signed a DOD-EPA Cooperative Agreement on Chesapeake Bay activities. The agreement's purpose 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. Six AMC installations were located within the Chesapeake Bay watershed: Aberdeen Proving Ground, Letterkenny AD, Vint Hill Farms Station, and the Adelphi, Blossom Point, and Woodbridge facilities of LABCOM. New Cumberland Army Depot, which had been the seventh AMC installation within the Chesapeake Bay watershed, was transferred to DLA. The AMC Chesapeake Bay installations have undertaken various projects in the areas of Living Resources, Water Quality, Population Growth, 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 FY91, 49 AMC installations had been identified as needing complete noise contour maps and 48 installations had completed this requirement. Fort Monmouth was added as requiring a noise contour map.[24] It had also been determined that an additional 20 installations generated no significant environmental noise and that they did not require noise contours or an ICUZ analysis study.

Compliance with the ICUZ requirements (i.e., revising initial ICUZ studies and conducting public programs) will be an ongoing requirement for the next several fiscal years. At the close of FY91, 8 AMC installations required on-site noise monitoring and a fifth installation, Yuma Proving Ground, completed this requirement during FY91. 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.

A major noise initiative by AMCEN during FY91 was to prepare a poster exhibit of the total Army ICUZ program. This display shows the Army's environmental noise problem and a solution as covered by the Army ICUZ program. The 10 poster exhibit was displayed at the last conference of the National Association of Environmental Professionals and at HQ AMC.

A second initiative of AMCEN was to nominate 3 AMC installations to the FY91 Joint Land Use Studies (JLUS) Program. In priority order, Aberdeen Proving Ground, McAlester Army Ammunition Plant (MCAAP), and Sierra Army Depot (SIAD), were nominated based on the potential for adverse encroachment due to their noise generators and history of noise complaints by neighbors. In addition, AMC asked that Milan AAP and SHAD also be considered for the JLUS program if funding became available.

---

[24]By comparison, at the end of FY90, 47 AMC installations had been identified as needing complete noise contour maps and 44 installations had completed this requirement. Information on Fort Monmouth provided by OPSEC Review, 7 December 1992 by AMCEN.

Environmental Training. The Army has had a very comprehensive and up-to-date environmental training program, offered by AMC's Army Logistic Management College. Among the environmental offerings were: Basic Environmental Coordinator's Course (10 days); NEPA Implementation Course (5 days); Manager's Environmental Course (4 days); Defense Hazardous Materials/Waste Workshop (3 days on-site and learning center); Defense Hazardous Materials/Waste Handling Course (5 days) in residence, on-site, satellite, correspondence and accredited off-campus instruction modes; Environmental Coordinators Seminar (4 days resident and on-site); Executive Environmental and Hazardous Material Seminar (8 hours via satellite, correspondence, and AOCI); and Executive Environmental and Hazardous Material Course (3 1/2 days resident, on-site, and Satellite Education Program).

For FY91, the Environmental Management Committee (EMC) at ALMC was authorized a chief, six professional instructors and a secretary. This included two instructors from the Historically Black Colleges and Universities Program. Mr. William Hamilton was chief of the EMC.

The Defense Hazardous Material/Waste Handling Course was originally developed and presented by ALMC 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 FY86-91 brought about flexibility in course material, modernization of generalized blocks of instruction, separation of target audiences and variability in modes offered. The modes in which courses were offered included resident, on-site, satellite, and accredited off-campus instructor modes.

During FY91, the ALMC EMC taught 6,454 students (excluding correspondence) in its 8 environmental courses by conducting 184 classes. Of special merit was the fact that EMC added 111 unprogrammed classes to the FY91 schedule. This excluded additional offerings by correspondence. Of the total attendees, 24.9 percent were from AMC.[25] AMC personnel are taking advantage of ALMC's management, logistics, and environmental offerings. This was largely due to the proactive publicity given their courses by AMCEN through teletypes, memos, and the Army Training Requirements and Resources System.

A major proactive initiative of AMCEN in FY90 had been the design, printing, and distribution of a pamphlet listing all 8 ALMC environmental courses and telling interested parties how they could register for each. Initial printing and distribution was 4,000 copies and in FY91 AMC acquired a second printing of this pamphlet and continued distribution to Army organizations.

Resource Conservation and Recovery Act. Hazardous waste management was regulated by RCRA and the Hazardous and Solid Waste Amendments of 1984. The EPA placed increased emphasis on monitoring Federal facility compliance with RCRA. EPA policies developed enforcement strategies that would seek to enter into Federal Facility Compliance Agreements (FFCA) within 120 days of any RCRA violation. The EPA accessed RCRA compliances with the Hazardous Waste Data Management System (HWDMS). In FY91, 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

---

[25]By comparison, during FY90 the ALMC EMC conducted 159 classes (excluding correspondence) and taught 4,778 students in its eight environmental courses. EMC also had added 59 unprogrammed classes to the FY90 schedule (excluding additional offerings by correspondence). AMC attendees represented 33 percent.

applied was Open Burning/Open Detonation (OB/OD) operations. The submittal of the application allowed the continued operation under interim status until October 1992, or until a final determination was made on the permits. The discharges from OB/OD operations were a concern, because of the requirements of both RCRA and the CAA. Facilities not given permits were to cease operations by October 1992.

In FY91, deactivation furnaces and explosive waste incinerators were being upgraded to meet RCRA 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. Ten of the 17 furnaces had either been worked on or were being worked on as of the end of the fiscal year; all were scheduled to be done by the end of FY93.

Toxic Substance and Control Act. 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 (RRP). The Army established the RRP on 21 March 1988 with the publication of HQDA Letter 40-88-3. The program required that buildings owned or 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 Radon test instruments, which were Alpha Track Monitors (ATM), and analytical services purchased through centrally awarded and managed contracts by the EHSC. It should be noted at as of the end of the fiscal year, AMCEN estimated that it needed to purchase an additional 11,000 ATMs.

In the chart below, P1 structures are those with the highest priority and include day care centers, hospitals, schools, and living areas. P2 structures were areas having 24-hour operations, such as operation centers and RDTE facilities. P3 structures were all other routinely occupied structures, such as offices and shops.

Table II - 5: AMC Preliminary Testing Progress - Plan

	1QTR91	FY91	FY92	FY93
P1 Structures	85% Complete	97% Complete	100%	
No. structures	6644	7292	8103	
No. ATMs used	11373	12980	13381	
P2 Structures	52% Complete	82% Complete	94%	100%
No. structures	592	933	1070	1158
No. ATMs used	1908	3008	3449	3669
P3 Structures	76% Complete	90% Complete	95%	100%
No. structures	9821	11631	12277	12923
No. ATMs used	9897	11876	12536	13196

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 - 6: Underground Storage Tank Requirement Schedule

TANK/PIPING	LD	CP	SOP
New Tanks	when installed	same	same
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	N/A
Suction	same as existing	22 Dec 1998	N/A

To comply with the above mentioned deadlines, AMC installations identified and requested funding for various UST studies and corrective projects. In FY91, the funding requirements amounted to $29.9 million, for which 21 projects (amounting to $4.2 million) were DERA eligibles. An additional 115 Environmental Compliance Achievement Program (ECAP) projects amounted to $25.7 million. The FY92 figures were projected as $4.9 million for DERA projects and $23.9 million for ECAP projects.[26]

HQ AMC 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. During FY91, AMCEN negotiated with Georgia Institute of Technology to conduct a UST training course for DA personnel from 29 October to 1 November 1991. AMC was allocated 12 slots for this event. Nominations for this training course had been received from several MSCs (DESCOM-2, AMCCOM-5, LABCOM-1, TECOM-1, CECOM-1). AMCEN believed that this training course will enhance AMC's efforts to achieve 100 percent compliance with UST regulations.

National Environmental Policy Act. NEPA documentation (Environmental Impact Statement [EIS], Environmental Assessment [EA] or Record of Consideration [REC]) was required for all significant Federal

[26]By way of comparison, FY89 funding level requests had amounted to approximately $23 million. As of March 1990, the 1983 Execution Status List for USTs indicated a total of $17.789 million. This reduction in funding level had been due to the fact that AMC installations had already expended approximately $5.2 million for the UST Program.

actions. The majority of NEPA documentation was done to support BRAC; other actions requiring NEPA documentation included real estate, master planning, construction, and materiel operations/developments. Follow up studies/cleanup actions due to BRAC were required by RCRA and CERCLA.

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 to address the environmental impacts of BRAC at affected installations. All BRAC I Reports of Discrepancy (ROD) and Findings of No Significant Impact (FNSI) were signed by 30 September 1991 and included 4 EAs and 5 EISe's. Under BRAC II, six EAs were completed and two were under final review as of the end of the fiscal year. Under BRAC 91, 7 EAs and 3 EIS's were initiated on 1 October 1991, on which RODs and FNSIs were to be signed by 10 July 1993.[27]

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. Due to the unique mission/function of some AMC installations, large amounts of contamination were revealed at AMC installations scheduled for closure or realignment. RCRA and CERLA (Super Fund) required environmental studies/cleanup of hazardous waste sites and CERLA required environmental restoration of past contaminated sites. Preliminary Assessment Screening (PAS) will determine the nature and extent of contamination, as well as those installations where remedial investigations/feasibility studies are needed. These studies, when completed, will serve as NEPA documents, per AR 200-2. Requisite cleanup efforts were anticipated to be lengthy and costly, and will require completion prior to the excessing of properties.

Other significant actions included the release for public review and comments of the Draft EIS for Aerial Cable Test Capabilities Program at White Sands Missile Range. Also, Downwinders, Inc. filed a law suit against the Army, alleging that the Army at Dugway Proving Ground had not adequately analyzed the environmental impacts of renovating the Baker Laboratory.

The Environmental Quality Division, as well as the Engineering and Housing 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 RCRA 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 had 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

[27]The BRAC actions, depending on the fiscal year they were initiated, were designated as BRAC I, BRAC II and BRAC 91.

HW already generated. The goal was to reduce the 1985 HW generation level 50 percent by 1992.[28] By the end of CY90, AMC had reduced its industrial generations by 49.3 percent.[29]

Responsibility for reduction efforts was not given to HW generators alone in AMC's HAZMIN Plan, but rather to all parties who could affect AMC hazardous waste reduction efforts. The HQ AMC HAZMIN Board had been established 1 June 1986. This interdisciplinary group had been formed from HQ AMC DCS's and separate office chiefs and was chaired by the AMC Chief of Staff. The Board 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. Because of the activities in support of ODS, the first meeting of 1991 was held on 31 May and the second was scheduled for 1 November.

During FY91, AMC installations were implementing a number of R&D demonstration projects either through their own initiative 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. During the past fiscal year, the team has been 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. The AMCMEA study was completed in September 1991 and briefed to the Chief of Staff.

Also in September, AMC held an AMC Lessons Learned HAZMIN workshop. Over 170 attended from installations, MSCs, HQ AMC, DA, DLA, Navy, Air Force, EPA, and the Department of Energy (DOE). AMC also actively participated in the joint Depot Environmental Panel in coordinating R&D between the services.

In July 1991, AMCEN published the 1985-89 AMC HAZMIN progress report, containing a summary of each installation's efforts in reducing its hazardous waste and outlining the monetary savings resulting from the use of DERA and non-DERA dollars for HAZMIN projects.[30] The 1990 progress report was due for publication in October 1991.

---

[28]By way of indicating progress, as of the end of CY89, AMC had reduced its generations by 42 percent.

[29]More recent data was not available at the time this was written, as there is a lag in the production of the data.

[30]Details of this complex program can be found in the progress report, a copy of which is on file in the AMCHO Archives.

Table II - 7: HAZMIN Projects[31]

FY	DERA Project Costs ($)	Non-DERA Project Costs ($)	Annual Savings (Cum. $)
85	292,905	4,409,321	2,740,480
86	159,280	190,000	4,737,323
87	1,740,600	459,500	6,563,690
88	1,753,271	4,016,916	8,501,413
89	2,805,651	2,366,356	10,438,846
90	450,640	2,398,810	11,541,457
TOTAL	7,202,347	13,840,903	44,523,209

AMCEN noted that both the Production Base Modernization Activity and the Idaho National Engineering Laboratory initiated waste minimization audits on 19 AMC installations. Headquarters, Department of the Army approved $1.9 million for this effort.

Secretary of the Army Environmental Quality Awards. Outstanding achievements of installations and individuals through excellence in environmental programs and superior leadership are recognized annually via the Secretary of Defense and Secretary of the Army Environmental Quality Awards Program. Competition in this program is voluntary and requires substantial effort on the part of all nominees. In FY91 AMC received eight installation and eight individual entry narratives for the competition. DA award winners were Yuma Proving Ground and Mr. Dinkerrai Desai, Fort Monmouth. Louisiana Army Ammunition Plant was selected as the runner up for the installation competition.

Installation nominees from AMC were Aberdeen Proving Ground, Anniston AD, Dugway PG, Iowa AAP, Louisiana AAP, Twin Cities AAP, and Yuma Proving Ground. Individual nominees besides Mr. Desai were Kaushik Joshi, Jefferson PG and Joseph P. Ondek and five other individuals from Aberdeen PG. The latter included Sharon L. Holbrook, Edward L. Newell Jr., Gerald M. Pollis, Robert Solyam, and Kenneth P. Stachiw.

Real Estate Division

Significant Issues

The most significant issue handled by the division was real estate support for ODS, 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/Storm. Support consisted of two persons, one in Saudi Arabia and one at 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 consisted

[31]This chart is taken from *AMC HAZIM Program, Progress Report, 1985-1990*, dated July 1991, p. 3.

of insuring that proper pay and other support was available to on-site personnel, coordinating as required with other HQ elements to assist the on-site personnel and insuring that their families were kept informed.

Environmental Baseline Survey. Environmental Baseline Surveys and their predecessor, Preliminary Assessment Screening, establish baseline data relating to the degree of contamination of real estate, to establish 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. HQDA is still studying this area.

Base Realignment and Closure. The Base Realignment and Closure operation again took a central position. Problems arose relative to finding the required funding for legislated cultural resource actions[32] required to carry out Congressionally mandated closure actions. The anticipated funds from property sales did not materialize. As a result, DCSEN found it necessary to make repeated requests to both AMC and HQDA for funds to start the process. The Real Estate Division predicted that the same problem would occur in FY92. Substantial portions of funds were diverted to the base closure program from other projects.

Headquarters Installation Support Activity

Since 1988, AMC had consolidated several of its staff support activities for the headquarters, such as equal opportunity, civilian personnel, security, equipment management, and information management, in the HISA.[33] These HISA offices did not provide command wide oversight, rather they performed the day-to-day support activities that the headquarters needed to function. By early October 1990, discussions involving the Commanding General, the Chief and the Assistant Chief of Staff, and COL Ira M. Click, the CG's Executive Officer (who was slated to take over as Commandant of HISA), had made it clear that the reduced headquarters anticipated under Vision 2000 required either a substantial reduction in HISA or its complete elimination.

On 10 October, COL Click, then HISA Commandant, recommended that HISA be disestablished effective 1 October 1991, the date that the Commandant's position was scheduled to be abolished.[34] The plan was rapidly moved forward, and by 3 January 1991 the Commandant recommended that HISA be disestablished as of 15 February 1991.[35] On 24 January 1991, a plan to disestablish HISA was formally announced to the

---

[32]Cultural resource actions are significant archeological and architectural resources.

[33]From its inception in 1962 through 1984, HQ AMC had an office devoted to administrative support of the headquarters, although its name and exact functions changed over time. With the establishment of HISA in FY88 this structure was recreated, only to be abolished again in FY91 with the dissolution of HISA. See the U.S. Army Materiel Command, *Army Materiel Command Evolution, 1962-1989* (AMC Historical Office, 1991), pp. 26-27.

[34]Memorandum for Chief of Staff, Subject: Abolishment of Headquarters, Installation Support Activity, 10 October 1990, in Headquarters Installation Support Activity: Disestablishment, 15 February 1991, AMC Historical Office Archives.

[35]Memorandum for Chief of Staff, Subject: Disestablishment of Headquarters Installation Support Activity, in Headquarters Installation Support Activity: Disestablishment, 15 February 1991, AMC Historical Office Archives.

headquarters. Effective 16 February 1991, HISA was to be disestablished and its offices, personnel, and functions were to be distributed as follows:

HQ Security Office and the Top Secret Repository were transferred to the Office of the Provost Marshall, DCS for Personnel.

Support/Equipment Management Office was transferred to the DCS for Engineering, Housing, Environment and Installation Logistics.

The Military Personnel Service Center was transferred to the Military Personnel Division of the DCS for Personnel.

The Resources Division was transferred to the DCS for Resource Management.

The Motor Pool and CG's Mess were transferred to the Office of the Secretary of the General Staff (SGS).

Three changes were made prior to the 16 February 1991 formal disestablishment of HISA. On 1 February 1991, the DOIM was transferred to the DCS for Management.[36] The HQ Equal Employment Opportunity Office had already transferred to the AMC Office of Equal Opportunity in November 1990 and the HQ Civilian Personnel Office had transferred to the DCS for Personnel on 1 January 1991.[37]

Office of Equal Opportunity

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.[38]

After a significant loss of personnel in late FY90 and early FY91, a major effort was initiated to attain the required staffing level for the newly merged operational and staff offices. In the second and third quarters an Affirmative Employment Program Manager, a Special Emphasis Program Manager and a Complaints Specialist were brought on board. Attempts to reach full authorized strength were curtailed by plans to downsize the headquarters. The Process Action Team deliberations (attendant to the downsizing) resulted

---

[36]Memorandum for Deputy Chiefs of Staff and Separate Office Chiefs (SOC), Subject: Disestablishment of the Headquarters Installation Support Activity, 24 January 1991, in Headquarters Installation Support Activity: Disestablishment, 15 February 1991, AMC Historical Office Archives.

[37]Memorandum for Chief of Staff, Subject: Disestablishment of Headquarters Installation Support Activity, 14 January 1991, in Headquarters Installation Support Activity: Disestablishment, 15 February 1991, in AMC Historical Office Archives, DCS for Personnel historical submission for FY91 and Office of Equal Employment Opportunity historical submission for FY91.

[38]Unless otherwise noted, the information in this section was taken from the Office of Equal Opportunity historical submission for FY91.

in a loss of three positions for the Office of Equal Opportunity. Under the new HQ AMC TDA, OEO will be authorized one military position (E-7) and twelve civilian positions -- the latter consisting of the Chief of the office, seven equal employment professionals, two Equal Opportunity Assistants, a Resource Specialist and a secretary. At the end of FY91, the office was fully staffed at this level.

Most Significant Issues

Affirmative Employment Programs. AMC has completed the fourth year of the current five-year Affirmative Employment Program Plan for minorities and women. An annual update and accomplishment reports were prepared and forwarded to DA for submission to the EEO Commission. AMC achieved most of its major employment objectives.

Equal Employment Automation System. The Army Civilian Personnel System was deployed to most AMC installations during FY91. Some activities were experiencing difficulty in retrieving EEO statistical data, including employment information and a complaint tracking system. Initial or refresher training was provided for most of AMC's activities this fiscal year. During FY91, AMC activities began to load pre-complaint data into the Complaints Appeals Tracking System (CATS), beginning with those filed in FY88. As of the end of the fiscal year, there were more than one thousand pre-complaint records on file.

Civilian Programs

Work Force Analysis. Between 30 September 1990 and 30 September 1991, AMC went from 98,093 to 91,328 employees, a loss of 6,776 (7.0 percent). The groups most impacted were Black men (11.7 percent), Black women (7.7 percent), and White women (7.7 percent). The remaining target groups each had losses of less than 7.0 percent. *Note: The transfer of supply functions from New Cumberland, Sacramento and Red River Army Depots to the Defense Logistics Agency (DLA) accounts for 2,543 of the total decrease in strength and the disproportionate decrease in Black men.*

Within the white collar work force the strength went from 70,190 to 66,304, a loss of 3,885 (5.5 percent). The only group adversely impacted in this category were White women, with a loss of 1,839 (7.6 percent). Of that number, 726 were at the GS 1-4 grade levels; 988 at the GS 5-8 grade levels; and 249 at the GS 9-12 levels. At the GS/GM 13-15 levels, White women actually increased by 129. The increase of positions at GS/GM 13-15 grades was minimal in AMC, going from 13,346 to 13,385 for a gain of 39 positions (+.3%). At these grade levels, the number of White men decreased by 220; the gains were all in target group members with Asian and Native American men achieving parity. At the SES level, total employment increased from 126 to 130; White men increased from 118 to 121; Black men from 3 to 4; all other groups remained stable.

During FY91, the blue collar work force declined from 27,806 to 24,916, a loss of 2,890 (10.0 percent). The groups most impacted were Black women (27.8 percent), Asian men (22.0 percent), Black men (20.5 percent), and Native American and Hispanic women (13.8 percent each). The majority of the AMC blue collar losses (2,890 employees) were included in the transfer to DLA (2,543 employees). Of the 900 minority men and women decrease in blue collar jobs throughout AMC, 754 (83.8 percent) were included in the transfer.

EO/EEO Program Evaluations. The Office of Equal Opportunity conducted two comprehensive program evaluations during the year: in April at HQ MICOM and in May at HQ TACOM. This was a significant accomplishment in light of the recent absence of such evaluations because of severe understaffing. No major program deficiencies were uncovered, and several program strong points and initiatives were identified.

Complaint Processing. Available data for FY91 showed that the amount of time expended to process individual complaints of discrimination was continuing to decline. On the average, complaints were accepted

or rejected within 6 days; investigators were requested within 3 days; and proposed dispositions were issued within 17 days.

Federal Women's Program (FWP). Ms. Scarbrough, Director, Office of Equal Opportunity, and Ms. Earnest, Federal Women's Program Manager (FWPM), represented AMC at the Federally Employed Women's (FEW) National Training Program in Denver, Colorado in July 1991. Ms. Earnest was a member of the Department of Army (DA) panel and gave a presentation on a Decade of Progress for the Federal Women's Program in AMC. She also served as a DA facilitator for a workshop on "Strengthening the Federal Women's Program." Her two sessions were attended by more than 200 representatives from agencies throughout the government. Ms. Earnest also conducted an AMC Forum where FWPMs "showcased" successful programs. There were more than 50 AMC attendees and this provided an excellent opportunity to share experiences and improve working relationships among AMC FWPMs.

In March 1991, Ms. Scarbrough was the keynote speaker during a Women's History Month presentation at the Troop Support Command, St. Louis, MO. Ms. Earnest was the keynote speaker at a Women's Equality Day program at Natick Labs, Massachusetts in August 1991.

Black Employment Program (BEP). In April 1991, the AMC BEP assisted HQDA with conducting a formal five-day training session for collateral duty Black Employment Program Managers (BEPM) in Hampton, Virginia. During August 1991, a similar workshop for full-time BEPMs was conducted in conjunction with the Blacks In Government (BIG) National Training Conference in Washington, DC. As a part of the agenda in the latter training session, BEPMs were given a presentation on AMC career programs as a means of developing skills in career counseling for their constituency.

Complaint Processing. During FY91, there were 13 complaints filed in the headquarters, compared to 12 complaints in FY90. The predominate bases continue to be race and gender. There was an increase in complaints based on gender, from 3 in FY90 to 6 in FY91. There were slight decreases in complaints of sexual harassment from 2 to 1, and race from 7 to 3. Complaints on other bases were 1 on reprisal and 3 handicap. All but two of the complaints (84.6 percent) were resolved within the chain of command.

Military Equal Opportunity Issues

Force Content. The FY91 breakout of AMC force content was as follows. Women were 8.2 percent of the commissioned officer strength, an increase of 0.4 percent from FY90 when women were 7.9 percent of AMC's commissioned officers. The number of female warrant officers assigned remained at 3, or 1.9 percent of the warrant officers. Women were 13.1 percent of the enlisted strength, a decrease of 0.2 percent from FY90. In the enlisted grades (E1-E5), women were 15.9 percent, down 0.9 percent from FY90. Minorities were 15.4 percent of the commissioned officers, 13.3 percent of the warrant officers, and 35.7 percent of the enlisted strength. Of the soldiers in grades E1 - E5, 32.8 percent were minorities; 28.3 percent were Black, 3.2 percent were Hispanic, 0.3 percent were Native Americans, 1.2 percent were Asian/Pacific Islanders and 2.7 percent were classified other/unknown.

Equal Opportunity Military Program. During FY91, the overall command's 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 objectives within AMC. The responses from soldiers, civilians and family members assessed at all levels of command, and from EO reports indicated that the chain of command throughout AMC supported the EO program and the EO climate continued to remain positive. The FY91 ethnic observance events were very successful; participation by various representative groups enhanced cultural awareness.

Staffing. The authorization for Equal Opportunity Advisor (EOA) positions was reduced from 19 in FY90 to 17 in FY91. Seventeen school-trained NCOs were on board. Most depots, activities, and installations were staffed with collateral-duty personnel because of the small military populations.

Impact of ODS. During FY91, ODS had an impact on the AMC EO program in the areas of training and EO complaints. Because so many soldiers were involved in ODS, fewer soldiers were available to undergo training. There were fewer complaints as well, due to the relative absence of soldiers.

Justice Actions. During FY91, Article 15's, Unfavorable Discharges and Courts Martial, remained at the same levels as in FY90. There were no trends that indicated a disproportionate representation of females or minorities. The breakout for FY91 was as follows:

Table II - 8: Justice Actions, FY91

	WHITE	BLACK	HISPANIC	NAT. AM.	ASIAN	OTHER	TOTAL
MALE	190	99	8	1	2	1	301
FEMALE	8	20	1	0	0	0	29
TOTAL	198	119	9	1	2	1	330

Note: "Asian" includes Pacific Islander and "Other" includes unknown.

Complaints. Complaints decreased from 12 in FY90 to 10 in FY91. By comparison, there had been 9 cases reported in FY89 (see table). All complaints were resolved by the chain of command. AMC EOAs were tasked to provide assistance with several complaints involving reserve component units.[39] The assistance provided by the AMC EOAs helped to resolve issues arising within those assigned reserve units.

Table II - 9: Complaints

	FY90		FY91	
	Reported	Confirmed	Reported	Confirmed
Race Related	7	1	3	1
Sexual Harassment	2	1	7	3
Gender	3	1	0	0
Religion	1	1	0	0
TOTALS	12	4	10	4

Information as to whether cases were confirmed was not maintained prior to FY91.

[39]Information on the number of cases is not available, since the program was the responsibility of the commander. Equal Opportunity Advisors provided assistance to these units when requested. See Memorandum, AMCPE-AH, SFC John M. Rouse, EOA, to EEOO, Subject: Input from the Equal Opportunity Office for the Annual Historical Review (AHR) FY91, 30 July 1992. Copy in AMCHO files.

Majority/Minority Selection Rates. Enlisted promotions showed parity throughout the fiscal year.

Equal Opportunity Training. As in the previous year, training goals for FY91 (95 percent for both military and civilian) were not met. This was due to the deployment of large numbers of assigned soldiers and civilians to ODS. However, the EO Office expected that all training goals would be reached in FY92.

Community Affairs

AMC subordinate commands continue to report active involvement in community activities such as Blacks in Government, Community outreach, public affairs, Red Cross, Boy/Girl Scouts, and celebrating ethnic observances. Activities varied according to geographical location. Community involvement in ethnic observances appears to be making the greatest contribution to better understanding between the military and civilian populations throughout the command.

Safety Office

Organization and Mission

Organization. The HQ AMC Safety Office had a manpower authorization of 8 civilians as of the end of FY91. This number represented a decrease of 5 from the previous year; however, the impact had been minimized because the previous year had ended with five vacancies. The latter had been allowed to develop because personnel authorization levels were to be reduced over the next few years in all areas of AMC, including the headquarters.

Key personnel changes during the year included the retirement of the Safety Director, Mr. Darwin N. Taras, in October and the subsequent selection of Mr. John E. Rankin from DESCOM in April. Ms. Patricia Elker departed her duties as the Command's health physicist in June and her replacement, Mr. John Manfre, assumed his duties in July. In July, Ms. Susan Jervis joined the office as a systems safety engineer from LABCOM, following the March departure of Mr. Fernando Fuentes to PM, Training Devices. Individual assignments at the end of the fiscal year were as follows:[40]

Chief, Safety Office - Mr. John E. Rankin
Secretary - Ms. Sandra E. Clawson
Chief, Aviation Safety - Mr. Loren L. Becker
Chief, Occupational Safety - Mr. Clyde L. McCorkle
Chief, Chemical Safety - Mr. John E. Rodriguez
Chief, Health Physics - Mr. John G. Manfre
Chief, Systems Safety - Mr. Mark A. Peterson
Systems Safety Engineer - Ms. Susan S. Jervis

Mission. The mission of the Safety Office was the direction and staff supervision of the AMC Safety Program. The program included provision of maximum safety, consistent with operational requirements, in the design of Army materiel; prevention of injuries to military, civilian and contractor personnel; and prevention of damage to Government property and interruption of essential operations.

A key element in the prevention of 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

[40]Except where otherwise noted, this section is based on a draft FY91 Annual Command History prepared by the Safety Office, HQ AMC, submitted 8 November 1991.

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 91-596, Executive Order 12196, and Code of Federal Regulations (CFR) 1960. It also had responsibility for the direction and control of the AMC Field Safety Activity.[41]

Accidents and Incidents

Aircraft Accident Rate. For the seventh year in a row, the Command completed the year without experiencing a chargeable Class A accident. Although the total number of hours flown (35,252) was down considerably from previous years, the challenging spectrum of AMC flight operations necessitated the highest degree of professionalism from air crews. AMC did experience two Class C accidents during the fiscal year. A Beech B-100 was damaged during a landing sequence at Fort Eustis, VA in April and a JUH-1H helicopter sustained rotor blade damage during a low-level flight test in January. This resulted in a command-wide A through C accident rate of 1.76 overall, which compared very favorably with the FY89 A through C accident rate of 2.85 and especially the FY90 rate of 5.6 per 100,000 flying hours.[42]

Reduction of Accidents and Injuries in All Categories. FY91 was another safe year for civilians and military within AMC. Civilian lost time injuries were down from the previous fiscal year as was the rate. In fact, the Command realized a 6 percent reduction in the number of lost time claims from the previous fiscal year. The resultant rate equated to AMC exceeding its DA Civilian Resource Conservation Program safety goal by 3 percent.

Army motor vehicle accidents were reduced by 49 percent and personnel ground accidents by 43 percent. The Safety Office noted that overall military injuries continued to decrease for the sixth consecutive year. Injury rates to AMC military personnel were down by 32 percent. Material failure accidents involving ground vehicles were reduced by 21.5 percent from FY90. Material related accidents represented only 3.1 percent of all those reported for the period.

Administration of the Safety Program

During FY91, 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.

Chemical Issues. The Safety Office reactivated the Chemical Agents Protective Clothing Equipment Steering Committee. Consisting of chemical agent related MACOMs, centers and depots/activities, the committee coordinates major chemical actions and tracks taskings. The office also participated in the development of the Chemical Weapons Treaty Safety Annex for a U.S./Soviet Union Treaty. During the fiscal year, the Chief of Chemical Safety, HQ AMC Safety Office, made a Pre-Chemical Surety Inspection assistance visit to the U.S. Army Chemical Activity - Pacific on Johnston Island.

Conferences and Workshops. During the fiscal year, Safety Office staffers participated in a Desert Shield/Desert Storm Lessons Learned Workshop at the U.S. Army Safety Center and a Desert Shield Lessons

---

[41]This section is based on AMC Organizations and Functions, HQ AMC (AMC-R 10-2).

[42]Telephone conversation: Mr. Loren Becker, AMCSF, with Ms. Lockwood, AMCHO, 27 January 1992.

Learned Conference at HQ TRADOC. They also participated in the Tenth International System Safety Conference in Dallas, TX.

Safety Training. During FY91, the AMC Safety Office sponsored three different health physics training courses at the U.S. Army Belvoir Research, Development and Engineering Center. The "Industrial X-Ray and Gamma Radiation Protection Course," held 6-10 May 1991, was designed to provide a working knowledge of industrial x- and gamma radiation protection. The "New 10 CFR Part 20 and Internal Dosimetry Course," held 18-21 June 1991, was designed to acquaint students with the revised 10 CFR 20, Standards for Protection Against Radiation, due to be implemented by the Army in FY93. The course was also designed to familiarize students with an internal radiation dosimetry program developed by BRDEC. The "Environmental Radiation Monitoring Course" provided an overview of environmental radiation monitoring methodologies. The course covered radiation survey equipment, dosimetry, calculations and regulations governing these processes.

Documentation. In FY91, the Safety Office established the AMC System Safety Risk Assessment Staffing Policy and Procedures document, which outlines the requirement of AR 385-16 that materiel developers make recommendations for system safety risk assessments.

Radioactive Material Licensing. During the fiscal year, the Safety Office processed more than 100 Army and Federal Agency radioactive material licensing requests.

Transfer of Functions. In FY91, the Safety Office continued the process of transferring selected Army depot health physics functions to the Defense Logistics Agency. The New Cumberland Army Depot transferred to DLA control in April 1991. The supply and distribution functions of Sacramento Army Depot transferred to DLA in the same month.

The AMC Command Group approved a Project Vanguard recommendation to disestablish the AMC Field Safety Activity (FSA) in FY93. During FY91, the Safety Office participated in the Army Safety Structure Study Group, appointed by the Vice Chief of Staff of the Army (VCSA) to examine the transfer of FSA missions and spaces. The VCSA approved the group's recommendations for the following distribution of spaces:

3 - HQDA Safety Office
2 - U.S. Army Safety Center (Industrial Training)
5 - U.S. Army Defense Ammunition Center and School (Explosives Safety Training)
6 - HQ AMC Safety Office (Data Management, Site Plan Evaluation, Program Evaluations, Hazard Classification)

Compliance Inspections. During the fiscal year, the Safety Office participated in 10 unannounced Military Child Care Act compliance inspections of AMC Child Care Centers.

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 implementing special emphasis programs. FY91 was the fourth 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. AMC also presented the FY90

Department of the Army System Safety Professional of the Year Award to Mr. Richard Shipe, U.S. Army Combat Systems Test Activity, Aberdeen Proving Ground.

Office of the Surgeon

Manpower and Personnel

The Office of the Surgeon's manpower authorization remained unchanged at nine throughout FY91; however, the projected loss of one space given up in the HQ reorganization will be reflected in the FY93 Table of Distribution and Allowances. The AMC Surgeon, COL Manmohan V. Ranadive, went on terminal leave in August 1991[43] and was replaced in September 1991 by COL Howard A. Wiener. Other personnel who departed during the fiscal year included LTC Hershell E. Wolfe, who transferred in April 1991; LTC Eric T. Evenson, who transferred in July 1991; and MAJ Gerald M. Connock, who retired in July 1991.

Two Individual Mobilization Augmentees (IMA) performed two-week active duty tours during the period: LTC Bruce B. Dicey, Nuclear Medicine Science Officer (68B) and MAJ Lewis R. Boobar, Entomologist (68G). MAJ Boobar was extended on active duty until July 1991 as part of Operation Desert Storm. Personnel assigned at the end of FY91 were:

COL Howard A. Wiener, MC	Surgeon	September 1991
LTC Thomas V. Borkowski, MS	Chief, Environmental Science	February 1988
LTC John C. Johnson, MS	Chief, Medical Physics	June 1991
MAJ Gary L. Shrum, MS	Chief, Health Hazard Assessment	April 1991
MAJ Gary J. Fortune, MC	Chief, Occupational Medicine	September 1991
VACANT	Chief, Medical Entomology	
Mr. John S. Svalina, GS-14	Industrial Hygienist	June 1982
Ms. Judi Bowles, GS-8	Secretary	December 1974[44]

A leader development program was prepared for the office. It stressed as a primary limitation the shortage of technical resources available in-house for the staff.[45]

Command Management Issues

Several of the issues dealt with by the Office of the Surgeon either required action at higher levels or were of sufficient significance that members of the command group became directly involved. These issues included discriminatory implementation of a nitroglycerin standard, inadequate industrial hygiene programs at AMC installations, problems in the implementation of the AMC hearing conservation program, and a health threat for soldiers exposed to M-1 and M-6 propellants. These and other significant issues handled by the Office of the Surgeon during FY91 are discussed below.

---

[43]COL Ranadive's retirement was prompted by a proposed headquarters reorganization that would have placed the Office of the Surgeon under the projected DCS for Base Operations Support.

[44]Unless otherwise noted, the data in this section was taken from the Office of the Surgeon historical submission for FY91.

[45]See Memorandum for AMCPE-MT, Subject: Leader Development Program Assessment Report, 7 August 1991.

Nitroglycerin Standard. AMC was concerned about a draft Occupational Safety and Health Administration (OSHA) final rule concerning a nitroglycerin exposure standard. AMC specifically objected to the fact that public and private institutions were being treated differently, at a significant cost to the public institutions. In a letter to GEN Tuttle signed by MG McGrath, AMC Chief of Staff, AMC noted that "while OSHA reconsiders and reissues a limit for civilian manufacturers, DOD will be well along the way in complying with a questionable standard with estimated costs for engineering controls at Radford Army Ammunition Plant alone at over $35 Million. . ." AMC recommended that since OSHA was to reconsider its recommended exposure limits, that there be "no expenditure of funds until this reconsideration of the permissible exposure level is completed." AMC also protested the proposed required use of respirators since the issue of its safety in a manufacturing environment had not been solved. AMC further stated that if the OSHA requirements had to be followed, that a more realistic time table for implemention had to be developed.[46]

In November OSHA issued a change to its regulation, meeting the AMC requirement that a more realistic time table be established. Specifically, OSHA made partial stays in two of its requirements. It changed the 1 September 1989 deadline for reducing the NG exposure limit from 2mg per cubic meter to .1mg per cubic meter and instead required that this standard be phased in with a completion date of March 1992. The requirement that this target be met, where feasible, by engineering controls rather than the use of respirators was changed from a target of 21 December 1992 to a phased-in program with a completion date of 31 December 1998.[47]

Industrial Hygiene Program. Several of the MSC Commanders wrote to either General Tuttle or to the Commander of the Health Services Command (HSC) to express their concerns about "the inadequacy of Industrial Hygiene (IH) support" at their installations. In early December 1990, the AMC Chief of Staff reported to the MSC Commanders on what action had been taken. HSC and AMC jointly recognized the deficiencies of the program, proposed indicators to allow tracking of the program, set IH program priorities, proposed interim solutions, and created a Process Action Team (PAT) composed of representatives of the supplier of services (HQ HSC, Medical Department Activity and the Health Clinic) and the customer (HQ AMC, MSCs, and installations).[48]

On 19 July 1991, a follow-up memorandum from MG McGrath reported that the PAT, after visiting targeted installations and speaking to HSC Health Clinic industrial hygienists, concluded that the present mechanism for providing IH support to AMC installations was broken and needed replacement. GEN Tuttle and MG Alcide M. Lanoue, Commander, HSC, conducted a review of medical support to AMC installations and initiated a test program scheduled to begin in FY93. Appropriate elements of HSC and AMC continued to work on developing the remedial programs through the end of FY91.

Hearing Conservation Program. On 17 January 1991, MG McGrath sent a memorandum to all MSC Commanders, dealing with AMC's hearing conservation program. It noted that AMC had "continued

---

[46]Memorandum, AMCCG (signed by MG McGrath), to the Deputy Assistant Secretary of the Army (Environment, Safety and Occupational Health), Subject: Nitroglycerine (NG) Standard Stay, 17 October 1990, enclosed in the Office of the Surgeon historical submission for FY91.

[47]*Occupational Safety and Health Reporter*, 11-14-90, appendix to Office of the Surgeon OPSEC review of FY91 Annual Command History.

[48]Memorandum, Chief of Staff, AMC, Subject: Industrial Hygiene Programs for AMC Installations, 5 December 1990, enclosed in Office of the Surgeon historical submission for FY91.

leadership in the program participation aspects of the hearing conservation program" but noted some areas in which improvement was required. They included establishing a baseline audiogram within 30 days after exposure to hazardous noise and conducting annual audiograms. The most significant problem, however, was that large numbers of AMC employees suffered hearing loss and that a significant cause was attributed to a failure to enforce the use of hearing protective devices. "Not only does hearing loss cause personal anguish and social difficulties, it also imposes a monetary penalty on AMC in the form of compensation cost, soon to be borne by individual installations."

The MSC Commanders were tasked to come up with a plan of action to deal with these issues. The memorandum closed with the reminder to the MSC Commanders that "efficient scheduling of employees for audiograms and effective enforcement of the hearing conservation program's mandatory requirements can greatly reduce both the human and monetary loss to this command, and allow it to spend those compensation dollars on the equipment needs of the American soldier."[49]

M-6 Propellant Health Hazards. Near the end of FY91, LTG Marvin D. Brailsford, AMC's Deputy Commanding General for Materiel Readiness, sent a memorandum to LTG Frank F. Ledford, Jr., the Surgeon General, expressing concern for the safety of soldiers potentially exposed to M-1 and M-6 propellants. Soldiers were potentially exposed to dinitrotoluene (DNT) in the residue of open-burned M-1/M-6, a component of the bagged propellant used by howitzers, as well as while handling the raw propellant. The memorandum noted that recent studies had indicated potential health hazards due to exposure to DNT, and noted that DuPont, the Army's sole supplier of DNT, controlled it as a potential carcinogen. DuPont's acceptable exposure limit was 0.5 mg/m3, when the product contains no more than 5 percent 2,6-DNT, 1/3 of the Occupational Safety and Health Administration permissible exposure level. LTG Brailsford's memorandum stated that he was not concerned about AMC employees, "since protective measures to minimize exposure and an effective Hazard Communication Program (HCP) are in place at effected AMC installations," but that his concern was for

> the ultimate user of these propellants, the soldier. What mechanism mirrors the HCP required by the Occupational Safety and Health Administration in order to inform the soldier of the potential health hazards and the appropriate measures to counter the threat?

General Brailsford asked the Office of the Surgeon General, which had the responsibility for providing medical guidance on exposure to hazardous chemicals, to look into this issue.[50]

Operation Desert Shield/Storm. In keeping with its mission, the Office of the Surgeon provided evaluation and consultative advice of Medical, Industrial Hygiene, Health Hazard Assessment, Preventive Medicine, Entomological and Radiological Hygiene programs in support of numerous AMC ODS programs.[51]

---

[49]Memorandum, MG McGrath, Subject: Hearing Conservation Data Profile, No. 51-34-0138-90, Army Materiel Command, July 1990, 17 January 1990, enclosed in the Office of the Surgeon historical submission for FY91.

[50]Memorandum, LTG Marvin D. Brailsford, to LTG Frank F. Ledford, Jr., Subject: M-6 Propellant, 4 September 1991, enclosed in Office of the Surgeon historical submission for FY91.

[51]This section makes heavy use of the Office of the Surgeon historical submission on ODS as well as the Office of the Surgeon Annual Command History submission for FY91.

The Office of the Surgeon noted a lack of coordination for industrial hygiene support for the AMC Support Group in SWA and coordinated with the HQDA Office of the Surgeon General (OTSG) to have arrangements made to provide the necessary support in theater.[52] During the early stages of ODS, the office identified a lack of guidance concerning civilians deployed into the theater of operations. There was delay and confusion concerning their medical processing. Some repetitive processing took place and in other cases civilian personnel had to be returned from SWA after it was found that they were not medically supportable. The AMC Office of the Surgeon identified this problem to OTSG and recommended that all medical facilities involved in processing civilians for travel to SWA receive guidance, coordination, resources and logistical help. In addition, the Office of the Surgeon recommended that this issue be covered in AR 612-2, *Preparation of Replacements (POR) for Oversea Movement.*

A similar lack of guidance was found in screening civilian personnel returning home from SWA. The Office of the Surgeon, in coordination with the U.S. Army Health Services Command and the AMC Civilian Personnel Office, issued specific guidance and policy for tracking and screening AMC civilian returnees.

An Army wide shortage of entomologists resulted in AMC filling its vacant medical entomologist position on the Surgeon's staff with a reservist. He worked and resolved problem areas and ensured that war reserve pesticides were adequate in quantity and quality. A number of significant problem areas existed in this field. The Air Force and Navy both drew down the Army's war reserve of pesticides since neither of them had a reserve stock. This issue was briefed to the Armed Forces Pest Management Board, which was asked to examine the other service's war reserve requirements. Rotation of the war reserve stock of pesticide to insure that the chemicals remained fresh (i.e., using the war reserve stock before it got too old and replacing it with fresh chemical pesticides) was less than desirable because the Defense Logistics Agency (DLA) controlled all pesticides used by the Army, other than War Reserve stocks. This problem, however, was placed in abeyance because the management of war reserve pesticides was being considered for transfer to DLA.

It was found that some of the pesticide storage facilities at the eight depots that stored them were not in full compliance with Environmental Protection Agency and OSHA regulations. DESCOM corrected some of the deficiencies, although full rectification of the situation was deferred due to the pending transfer of the depots to DLA. In the later stages of ODS, when delousing equipment for Iraqi prisoners of war became a major issue, the entomologist coordinated with various DOD and DA agencies on pest control equipment availability and substitution. This was a problem because TROSCOM had not purchased modern delousing equipment over the past two decades, leaving the Army with World War II era delousing equipment. By the end of the year, TROSCOM was in the process of obtaining more modern equipment.[53]

Following the conclusion of fighting, the Office of the Surgeon, especially its Chief of Medical Physics, was involved in providing guidance for AMC actions on a number of issues concerning depleted uranium, which was used in some armor piercing ammunition. The office provided a list of possible options for health physics augmentation of an AMCCOM response team, which was to respond to a fire at the depot in Doha, Kuwait. The options ranged from simple reliance on the AMCCOM health physicist who would be part of the AMCCOM team, use of a CECOM Army Radiation Control (RADCON) team, use of a Europe-based

---

[52]See 1st Endorsement, AMCSG-S to HQDA (SGPS-PSP-E), Subject: Industrial Hygiene Support, U.S. Army Support Group, 5 November 1990, enclosed in Office of the Surgeon historical submission for FY91.

[53]Memorandum for Chief of Staff, Subject: Entomology Support During Desert Shield/Storm, 15 April 1991, enclosed in the Office of the Surgeon historical submission for FY91.

Radiological Advisory Team, or obtaining support from the Army Environmental Hygiene Agency.[54] The eventual decision was to deploy the Army RADCON team to assist the resources already in Kuwait.

The Office of the Surgeon also provided an extensive, albeit preliminary, analysis of the hazards for personnel exposed to depleted uranium (primarily heavy metal poisoning of the kidneys rather than radiation hazards), the types of documentation and medical follow-up that such personnel should receive, and a fact sheet to be given to the exposed personnel. This had been initiated when the 144th Supply and Services Company demobilized at Fort Dix, NJ. The unit had been involved in the ground transport of vehicles contaminated by depleted uranium and, before AMCCOM had begun technical supervision of the operation, some of the personnel had entered the contaminated vehicles.[55]

In a somewhat related matter, the Chief of Medical Physics in the Office of the AMC Surgeon, at the request of the OTSG, provided a block of instruction on the health physics of depleted uranium at the Army Medical Department Radiological Hygiene Course, Aberdeen, MD on 29 November 1991.

Preventive Medicine Support to AMC. Direct, nonreimbursable, consultative support of approximately $1.5M was provided by the U.S. Army Environmental Hygiene Agency to AMC installations and to PEOs and PMs in the areas of industrial hygiene, occupational health, pest management, environmental compliance, and ionizing and nonionizing radiation control in order to comply with environmental and occupational health laws and regulations. The Office of the Surgeon planned and initiated the requests for these services, evaluated recommendations for adequacy and appropriateness, and required responses from the requesting subordinate command on those issues affecting regulatory compliance. In addition, significant indirect support was obtained in the areas of Health Hazard Assessment and cleanup of contamination from past operations.

Health Hazard Assessment (HHA) Program. The HHA Program, as a component of the Manpower and Personnel Integration (MANPRINT) Program, was the mechanism by which the Army Medical Department prevented operator/maintainer health hazards during research, development, test and evaluation of new Army weapon systems and support equipment. Health hazard assessments were integrated throughout all phases of the materiel acquisition process to ensure health hazards were identified, evaluated, and eliminated or controlled, thereby protecting soldiers' health to the extent feasible within wartime mission requirements.

Before and during the conflict in Southwest Asia, significant HHA support was provided to the Lightweight Chemical/Biological Protective Garment Program and the Chemical Defense Equipment Process Action Team, directly impacting the Army's warfighting capability during ODS.

In addition, the Chief, Health Hazard Assessment, participated in the Army Science Board's summer study of the Soldier as a System. The AMC Health Hazard Assessment Officer represented the health hazard community at sessions conducted at Natick, MA, and Fort Detrick, MD, where he helped define for the Army Science Board the HHA players and processes which evaluated the health implications of soldier support items.

---

[54]Memorandum Through COL Griggs for MG Arwood, Subject: Medical Health Physics Support to Doha Incident, 12 July 1991, enclosed in the Office of the Surgeon historical submission for FY91.

[55]Memorandum to Commander, AMCCOM; Commander, ARDEC; and HQDA (SGPS-PSP), Subject: Documentation of Exposure Potential for 144th S&S Personnel, 13 August 1991, and enclosures, enclosed in the Office of the Surgeon historical submission for FY91.

The AMC HHA Program also coordinated and monitored over 180 requests for medical and HHA support to provide medical input that would be used to control and eliminate health hazards for PEO-managed as well as for AMC-managed systems. The recommendations provided in the HHA Reports established health hazard data requirements, in addition to system specific administrative and engineering controls, that reduced or eliminated the potential adverse health impacts to operators and maintainers. The program continued to coordinate key information to support the medical assessment of the Armored Systems Modernization Program. For example, it provided technical support to the Cannon Artillery Propulsion Evaluation Board, which was involved in the process of selecting a propulsion technology for the Advanced Field Artillery System-Cannon. The systems and issues evaluated covered the entire spectrum of weapon systems and included the Advanced Antitank Weapon System-Medium, Armed OH-58D, 120mm Battalion Mortar System, Chemical Protective Undergarment and the Theater High Altitude Area Defense System.

Influenza Immunization Program. The Office of the Surgeon provided direct medical oversight for the influenza immunization program at HQ AMC on 5, 7 and 19 November 1991.

Command Health Report (CHR). The Office of the Surgeon identified the need for a standard format for the CHR, which documented the health of military and civilian personnel at AMC installations. It was prepared monthly, in accordance with AR 40-5, *Preventive Medicine*, and was forwarded through the installation commander to the Office of the AMC Surgeon and to HSC; however, the information on the CHR was incomplete and seldom useful. The AMC Office of the Surgeon was working with HSC and AEHA to develop a report format to better assess the health of AMC personnel.

Contract Clinics. A meeting of AMC Family Action Plan delegates targeted "inadequate health care for Total Army families at [AMC's] remote and small installations" as their number one issue. The AMC Surgeon recommended, and General Tuttle supported in a memorandum to the HSC Commander, that contract clinics be established at such AMC facilities. These facilities would provide primary care for all eligible personnel (military, military dependents and retirees) and would also provide occupational health services to civilian personnel, with a special emphasis on treating injured employees. The Surgeon noted that 70 to 75 percent of all such injuries involved strains and sprains that could be treated by such a clinic.

Funding for such a clinic could be obtained from three sources: the money invested in already existing clinic facilities, the medical care portion of AMC's workers compensation costs, and the outpatient (CHAMPUS) dollars spent by eligible beneficiaries in the local areas that would be serviced by these clinics. In addition, if the contracting was done for a group of clinics rather than clinic by clinic, the administrative contract overhead costs would be reduced. This concept was concurred to by the Assistant Secretary of the Army for Financial Management and then recommended by General Tuttle to the HSC in late August 1991.[56]

Occupational Health

Carpal Tunnel Syndrome. In October 1990, the Office of the Surgeon directed the start of a command wide review of the incidence of carpal tunnel syndrome, nerve damage in the wrist caused by repetitive motion. This survey was sparked by a trip report from the AMC Surgeon which noted that one depot had, over a 28 month period, a total of 31 cases of carpal tunnel syndrome referred to the Office of Workmans Compensation Program for treatment and/or surgery. General Tuttle, after reading this, directed the Office of the Surgeon

[56]Memorandum for MG Alcide M. Lanoue, Commander, U.S. Army Health Services Command, Subject: AMC Medical Support, 26 August 1991, enclosed the in Office of the Surgeon historical submission for FY91.

to conduct a survey of repetitive motion/cumulative trauma disorders at other installations. The study found that this was a growing problem throughout AMC.[57]

Asbestos. In November 1990, the Office of the Surgeon alerted the field that OSHA was proposing to reduce its permissible exposure limit to asbestos from .2 to .1 fibers per cubic centimeter for all employees, as well as imposing several more specific requirements to limit the exposure of personnel to asbestos. The Office of the Surgeon also sent to the field copies of an article on "Control of Asbestos Exposure During Brake Drum Service" as well as some advertising literature from a company that manufactured brake cleaning equipment. Although noting that HQ AMC was not endorsing that equipment, the memorandum did note that an AMC installation, which had previously been cited by OSHA for inadequate industrial hygiene during vehicle maintenance on parts containing asbestos, had purchased this equipment and that both management and mechanics were satisfied with it.[58]

Chemical Hygiene Plan. In January 1991, the Office of the Surgeon provided the MSCs with guidance on developing a chemical hygiene plan. On 31 January 1990, OSHA had promulgated a new standard, 29 CFR 1910.1450, Occupational Exposures to Hazardous Chemicals in Laboratories, which became effective on 1 May 1990. The standard applied to each installation engaged in the laboratory use of hazardous chemicals. Installation compliance with the standard was achieved by developing and implementing a Chemical Hygiene Plan (CHP). The CHP had to include the necessary work practices, procedures and policies to ensure that employees were protected from all potentially hazardous chemicals used in their work area. The CHP had to be operational by 31 January 1991. To assist installations in their compliance efforts, a technical assistance packet, prepared by the U.S. Army Environmental Hygiene Agency, was also sent to the MSCs. The Office of the Surgeon's memorandum ended with the exhortation that, "without the enthusiastic participation of the installation commander, division supervisor, laboratory supervisor, and laboratory worker, compliance with the standard will not be achieved."[59]

OSHA Inspections. At the direction of the Chief of Staff, the Office of the Surgeon sent its industrial hygienist to participate in OSHA targeted inspections. Three such inspections were discontinued by OSHA after the opening conference, due to the intervention of higher priority missions.

At one depot inspection, during the opening conference with management and the union representatives, it became apparent that the OSHA compliance officers were unaware of the ground rules for accomplishing the targeted inspection (that such inspections were limited to specific programs such as hazard communication, asbestos, noise, laboratory safety, and blood-born diseases). The depot management and AMC representatives explained to the OSHA officials the depot's munition and chemical agent storage missions and the parameters of OSHA's jurisdiction. After reviewing the depot's lost-time injury records, they initiated the inspection. The next morning, in order to eliminate their confusion concerning their proper roles, the compliance officers participated in a teleconference with personnel from their Area Office, Regional Office and the Director, Office of Federal Agency Programs, OSHA HQ. They were instructed to abide by AMC's previous

---

[57]Memorandum FOR SEE DISTRIBUTION, Subject: Carpal Tunnel Syndrome, 4 October 1990.

[58]Memorandum for SEE DISTRIBUTION, Subject: Proposed Occupational Safety and Health Administration (OSHA) Amendment to the Asbestos Standard, 2 November 1990, enclosed in the Office of the Surgeon historical submission for FY91.

[59]Memorandum for SEE DISTRIBUTION, Subject: Guidance for Developing a Chemical Hygiene Plan, 22 January 1991, enclosed in the Office of the Surgeon historical submission for FY91.

jurisdictional guidance. The inspection was resumed and a few minor safety violations and violations of the respirator standard were noted.

At an arsenal inspection, during the opening conference with the arsenal management, it again became apparent that the OSHA compliance officer was unaware of the ground rules for accomplishing the targeted inspection; he also indicated that he was professionally unprepared to implement a programmatic inspection. He then proceeded to conduct a routine wall-to-wall OSHA inspection.

The AMC Chief of Staff was advised that, although professional inspections were conducted by the OSHA compliance officers, their failure to follow the protocol agreed upon by OSHA and DA resulted in OSHA Targeted Inspections being accomplished without any evaluation of the installation's occupational safety and health program and its implementation, which had been the stated objective of the inspection program.

Child Development Program Evaluations

Medical augmentation was provided to the MACOM Child Care Evaluation Team (MCCET) for inspections mandated by the Military Child Care Act of 1989. Major health and sanitation deficiencies were found at several locations and corrective action plans were coordinated with supporting Preventive Medicine organizations.

Medical Support for the AMC Chemical Surety Mission

The Office of the Surgeon asked that the U.S. Army Medical Research Institute for Chemical Defense (USAMRICD) and the HSC ensure that AMC personnel with a surety mission be given priority for attending two courses: the Medical Management of Chemical Casualties given at USAMRICD and the Toxic Chemical Training for Medical Support Personnel Courses given at the U.S. Army Defense Ammunition Center and School (USADACS). AMC also asked that Medical Department Activities (MEDDAC) and Medical Centers (MEDCEN) with an external medical support role for AMC's chemical surety mission be given this priority. In addition, AMC requested that HSC apply command emphasis to ensure that such units were designated an adequate number of trained individuals for their Medical Augmentation Teams (MAT).[60]

DLA and Radiation Safety

The Office of the Surgeon identified a problem with accountability for radiation safety in depot operations. This problem arose because depot functions were being consolidated under DLA. The first incident took place at the Lima Army Tank Plant where recommendations for improvements in radiation safety (made by AEHA) were not instituted because of confused lines of responsibility for safety (Army versus DLA versus Contractor). The Office of the Surgeon was working with the DLA radiation safety officer to resolve the problem.

M3 Bradley Crew Radiation Exposure

In August, ARDEC raised an issue about the radiation level in M3 Bradley Cavalry Fighting Vehicles. A 1991 revision by the Nuclear Regulatory Commission (NRC) had significantly lowered its standard for allowable exposure to radiation by members of the general public (that is, non-radiation workers). It was possible that crew members of the M3 Bradley Cavalry Fighting Vehicle would be exposed to radiation from

---

[60]Memorandum for Distribution, Subject: External Medical Support Issues for the Chemical Surety Mission, 30 September 1991, enclosed in the Office of the Surgeon historical submission for FY91.

the depleted uranium rounds of ammunition loaded in the vehicle[61] that would exceed the new NRC public limits. In turn, AR 40-14, *Control and Recording Procedures for Exposure to Ionizing Radiation and Radioactive Materials*, might require that these crew members be classified as radiation workers. The AMC Office of the Surgeon was working with the Medical Department to develop new medical policy on such exposures.[62]

Supplement to AR 40-5

AMC Supplement 1 to AR 40-5 was drafted. It required subordinate commands to reply by endorsement to the Office of the Surgeon within 90 days on regulatory deficiencies identified during AEHA surveys. The reply would include corrective actions taken or planned and their projected completion date.

Office of the AMC Inspector General and AMC Inspector General Activity

Mission, Manpower and Personnel

The missions of the AMC Inspector General (IG) and AMC Inspector General Activity were to inquire into and report upon matters pertaining 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 HQ AMC staff and as the Chief of the AMC IG Activity, which was a separate reporting activity.[63]

A number of plans had been developed in FY90, as a result of HQDA realignment initiatives regarding downsizing that impacted the AMC IG and the AMC IG Activity in FY91. These included the Defense Management Review (DMR), the Officer Distribution Plan (ODP) Elimination/Commander's Brigade Give-Up, and the Project Vanguard initiative. The latter had resulted in the identification of 18 more authorizations--7 military and 11 civilian--for gradual reduction over the Program Objective Memorandum (POM) cycle (FY 92-97). 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) had been projected to be implemented in FY97.

As a result of these initiatives, the AMC IG Activity reorganized effective 15 October 1990. The Inspections Division and the Policy, Followup and Analysis Division combined. The new division, Inspections and Support Division, was composed of three branches: Plans, Analysis and Followup Branch; Procurement

---

[61]The M3 would store twice as many rounds for its 25mm gun than the externally identical M2 Bradley Infantry Fighting Vehicle stored. "ARMY WEAPONRY," *Army*, vol. 41, no. 10 (October 1991), page 298.

[62]See also Memorandum for HQDA (SGPS-PSP) and Commander, U.S. Army Environmental Hygiene Agency, Subject: Final Ruling on Revision to NRC standard 10 CFR 20 (Standards for Protection Against Radiation) - Implications Related to Projected Radiation Doses to Crew Members of the M3 Bradley Fighting Vehicle from XM919 DU Rounds, 13 August 1991, enclosed in the Office of the Surgeon historical submission for FY91.

[63]Except where otherwise noted, the section is based on the AMXIG submission for the Annual Command History, 26 November 1991.

Inspections Branch; and Policy, Administration and Coordination Branch. The Systemic Inspection personnel (composed of three teams) report directly to the Chief of the Inspections and Support Division. This change was required due to the loss of a colonel position (the former Chief, Inspections Division) and of five civilian spaces as a result of a Defense Management Review Directive and potential impact of Project Vanguard and Commander's Brigade Give-up. Personnel authorization changes are shown below:

MILITARY:

Rank	Previously Authorized	Currently Authorized
COL	5	2
LTC	10	10
MAJ	5	2
CPT	0	5
WO	1	1
Enl	3	2
TOTAL	24	22

CIVILIAN:

Rank	Previously Authorized	Currently Authorized
GM-15	1	1
GS/GM-14	8	8
GS-13	25	25
GS-12	2	0
GS-11	4	4
Other	12	9
	52	47

Previously, the personnel authorizations (military and civilian) totaled 76; currently, the total authorization is reduced to 69. The key personnel in the Office and Activity were:

Inspector General
Colonel James L. Tierney (1 October 1990 - 30 April 1991)
Colonel Dennis E. Welch (1 May - 4 September 1991)
Colonel Paul W. Dickinson (5 September 1991 - Present)

Chief, Investigations and Assistance Division
Colonel Dennis E. Welch

Chief, Technical Inspection Division
Colonel Herman Jones (1 October 1990 - 12 July 1991)
Major Joseph W. Albright, Acting Chief (13 July - 15 August 1991)
Colonel Ray A. Gross, Jr. (15 August 1991 - Present)

Chief, Inspections and Support Division
Ms. Billie M. Labhart, GM-15

The actual budget figures for FY91 totalled $2,509,000. By way of comparison, the FY90 figure was $2,575,000.

AMC IG Relocations. AMC accomplished the following geographic relocations for command and control purposes: Systemic and Procurement inspection personnel were relocated from Fort Belvoir, VA to the HQ AMC Building; and Technical Inspections Division personnel were relocated from Picatinny Arsenal, NJ to HQ AMC. In addition to improving command and control, these relocations will provide required interface between inspections and planning personnel within the IG Activity and the HQ AMC staff.

Operation Desert Storm

The IG Activity deployed one Investigator (LTC) to the combat theater of operations, 1-13 February 1991, in response to requests for assistance from employees in AMC organizations in Southwest Asia. He

examined various issues raised by the employees, who alleged various instances of misconduct by management officials and pointed out apparent systemic issues regarding the support structure of deployed AMC organizations. A number of other ODS-related cases were processed locally by the Investigations and Assistance Division. In addition to assistance and investigation support, the IG Activity provided 120 hours administrative support, 463 hours clerical support and 41 hours action officer support.

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 FY91. 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. During this fiscal year, the AMC IG Assistance and Soldier Support Program had visited 48 organizations/activities at 19 locations, where over 35,000 soldiers, civilians and their family members were assigned.

IG Trends and Hints. The FY91 trends for Inspector General Action Requests reflected only minor changes from FY90, with 50 percent of these cases in the assistance category and 50 percent of the cases classified as allegations. The functional case categories at the top of the complaints chart were: Civilian Personnel Management (30 percent); Personal Conduct (21 percent); Acquisition (9 percent); Command/Management of Organizations (9 percent); Finance and Accounting (5 percent); Engineer/Facilities (5 percent), Military Personnel Management (4 percent); and Community/Installation Support (4 percent).

In order to take advantage of lessons learned from various cases, the IG Activity continued to use the concept of "IG HINTS." They took actual cases and generically published the circumstances of wrongdoing or violations of regulations in the HQ AMC Monthly Bulletin. The idea was to provide 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 FY92. The following were recommended to, and approved by, the CG: Non-Major Systems, Ammunition Management, Real Property Maintenance, Security Management, Aviation Management, Publications, Property Accountability, Handicapped Individuals Program, Report of Discrepancy, and Travel System Procedures.

Inspections

The AMC Inspector General Activity completed 27 inspections throughout AMC during FY91. They fell into four categories: (1) systemic inspections; (2) procurement inspections of a compliance nature; (3) surety technical inspections and (4) special inspections/assessments.

Surety Technical Inspections. There were four types of surety technical inspections: Nuclear Weapons Technical Inspections (NWTI), Chemical Surety Inspections (CSI), Limited Scope Surety Inspections (LSSI), and Reactor Facility Inspections (RFI). There were 14 technical inspections conducted at 12 AMC activities in FY91. Deficiencies resulting in failure were in the areas of security, external support, and safety. The failure rate for this fiscal year was the lowest since the creation of the Technical Inspection Division in FY89. during FY91, the Technical Inspection Division participated in the first joint inspection with the DAIG.[64]

Systemic Inspections. Three systemic issue inspections were completed during FY91. The significant weaknesses for each of these inspections are shown below.

Army Price Challenge Program. Initiators of price challenges or past requisitioners were not routinely provided guidance on obtaining credits or refunds; there were no procedures to ensure the unit price was reviewed when changes were made to unit of issue/unit of measure cataloging data; termination of the Point of Contact Working Conferences negatively impacted on the program; and some savings/cost avoidances were not being reported to the Catalog Data Activity.

Army Industrial Fund (AIF). There was no centralized management of the budget requirements documents that support AIF activities within AMC; the automated systems supporting maintenance workloading was redundant, time consuming and inaccurate; funding practices and costing techniques for the application of materiel changes at AMC depots were incorrect; project orders supporting the AIF activities were not being properly managed; and current methods used to establish stabilized rates and implement rate reductions within AMC were inconsistent.

Alcohol and Drug Abuse Prevention and Control Program (ADAPCP). There are insufficient permanent personnel resources to meet AMC's ADAPCP requirement for in-house treatment counseling; regulatory guidance does not adequately address the civilian aspects of the ADAPCP; and the ADAPCP Remote Site Counselors are not adequately supported or managed.

Started. Three systemic inspections began during FY91 but will not be completed until FY92. These were Materiel Returns Program, Army Ideas for Excellence Program, and Managing Civilians to Budget.

Special Inspection/Assessment. The Activity conducted a special assessment of the Program Manager for Rocky Mountain Arsenal (PM RMA). The most significant problems found were in the property accountability and contracting areas.

Procurement Inspections. The Activity conducted seven procurement inspections covering the areas of procurement management, acquisition planning, contract administration, 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, and nonappropriated fund contracting, as well as other topics relevant to ensuring that AMC procurement offices were complying with applicable regulatory requirements.

In general, procurement activities provided quality acquisition services and maintained a commendable level of support to requiring activities. Deficiencies were identified: the Advance Acquisition Planning and Tracking System was not implemented; Procurement Management Reviews were not conducted in a "Management Consultant" mode; contract offloading occurred under questionable circumstances; Delegations

---

[64]See correction to number of inspections per Memorandum, Nina Brown AMXIG-IS-PC to Chief, Historical Office, Subject: AMC Annual Historical Review, FY91, 3 January 1992.

of Procurement Authority, from the General Services Administration, were not being monitored to ensure their limits were not exceeded on the contracts; Letters of Intent were improperly issued to secure contractor services in lieu of proper contractual instruments. Task Order Contracts were found to have overly broad scopes of work, be excessively reliant on the time and materials type of contract, receive inadequate administration, erode the competitive base, be generally inefficient, and generate higher costs to the Government.

Training

Acting Inspector General (AIG) Course. The AMC IG conducted the annual Acting Inspector General (AIG) Course from 7-8 August 1991. For the first time, the course was conducted away from HQ AMC. This year it was held in Chambersburg, PA and wa co-hosted by the DESCOM IG. Fifteen AIGs from throughout the command attended. MG McGrath, AMC Chief of Staff, and MG Bean, Deputy Inspector General, HQDA, were keynote speakers. Other instructors came from the HQDA IG Legal Office; LABCOM's Office of Equal Employment Opportunity; AMC's Ethics Officer, Office of Command Counsel; AMC DCS for Personnel; and personnel from the TECOM, DESCOM and AVSCOM IG offices.

Oversight/Information Sharing. A biannual "IG Tips" was published and distributed throughout AMC. It featured items of command-wide interest, such as problem areas uncovered during inspections, practical tips, scheduled IG events, and other informative articles. Quarterly video conferences were conducted with all MSC IGs, except during the fourth quarter.

Other Training. Thirty-six staff members received formal training in management courses related to their positions. Five attended the DAIG course.

Automation

The Inspector General Network (IGNET) was upgraded to enhance the mail capabilities. Automation equipment, other than the IGNET System, was connected to the HQ AMC Broadband Cable Network, allowing users to connect to all AMC IG systems. Equipment was purchased to replace the Intel multi-user systems. The Activity will be operating the an MS-DOS operating environment, as opposed to Xenix.

Internal Review and Audit Compliance Office

Organization and Mission

Mission. The Internal Review and Audit Compliance (IRAC) Office was a separate organization reporting directly to the Chief of Staff. This office developed and issued major policies, plans, and programs for conducting internal review activities throughout the command. The office directed AMC nonappropriated fund audit activities, including the performance of audits and the review and disposition of audit reports. The office served as the focal point within AMC for all external audit agencies/offices such as the General Accounting Office (GAO), DOD Inspector General (DODIG) and Army Audit Agency (AAA). The office also developed and issued guidance for AMC actions regarding audits and reviews by external audit agencies, including the assignment of action responsibility and control of the command reply process.[65]

[65]AMC-R 10-2, 15 October 1989, *Headquarters, AMC, Organization, Mission, and Functions*, para 19-3a-b.

The HQ AMC IRAC office and the IRAC staffs from several AMC activities supported ODS in several ways. Multi-location audits were performed on tracking ODS workload and costs, and to assess compliance with the Food and Forage Act, 41 U.S.C. 11 (Revised Statute 3732). In addition, IRAC attempted to gather information on CAAS; audits of implementation of the test program for Managing Civilians to Budget (MCB) for AMC; and internal management control material weaknesses shown in the FY90 AMC Annual Assurance Statement on Internal Controls. Significant external audits dealt with thefts at two AMC depots, the restructuring of the military services, and the Army's financial management practices and procedures. The Audit Alert Network facilitated informing AMC activities of possible problems at their activity. The semi-annual follow-up status report identified audit-related achievements. The HQ AMC IRAC office allocated U.S. Army Audit Agency (USAAA) auditor training spaces to command IRAC activities.[66]

Personnel. The IRAC Office began FY91 with an authorized personnel level of eight spaces. This represented a loss of two spaces from the previous fiscal year. The on-board strength during FY91 was nine (the eight authorized spaces plus an overhire position). During the second quarter, however, IRAC's authorized strength increased to nine. The new space was established for auditing command sensitive activities (i.e., Special Access Program [SAP]). The overhire auditor performing these duties was subsequently selected for the new position. Mr. Leonard H. Maguire continued to serve as the Office Chief, as he had since FY89.

Command Management Issue

The AMC Commander met with senior GAO officials during November 1990 to discuss ongoing and planned audits. GAO focused discussions on items of high interest to Congressional committees and to General Tuttle. The auditors discussed their reviews of the chemical protective gear, envisioned Army logistical problems, and the Apache Helicopter. A news article based on their report on the Apache was carried in several national newspapers. The article highlighted GAO's criticism of the cost of weapon systems, but did not reflect favorable characteristics and capabilities reported. The auditors asked General Tuttle for an opportunity to publish articles in Army magazines which would render a more balanced reporting on the reviewed weapon systems. The first of the articles appeared in the September/October 1991 issue of the *Logistician*, titled, "Responsive Logistics." Another appeared in the November/December 1991 issue, titled, "Sustaining DESERT STORM: A Life Test of Flexible Readiness."

Internal Reviews

Tracking ODS Workload and Costs. In December 1990, the AMC Commander directed IRAC personnel to validate the controls and associated workload and cost reporting mechanisms for ODS. Between January and April 1991, HQ AMC IRAC personnel participated with DESCOM in reviews of ODS reporting at three depots; visited the TACOM to review ODS workload tracking and fund requirements; visited AVSCOM, MICOM, and TROSCOM to review ODS workload tracking; and worked with the IRAC staff from ten AMC activities to determine the adequacy and soundness of procedures and controls to identify, account, and report all costs supporting ODS.

AMC activities had established procedures to identify and report labor hours as well as associated workload indicators and other costs. Equivalent work year efforts in support of ODS significantly exceeded the number of approved buy back positions at each AMC activity. Workload indicators were identified to appropriately reflect ODS efforts. With the establishment of modifier codes, existing time reporting systems were used to track hours worked in support of ODS. Although ODS costs were being identified, there may

[66]The remainder of this section is based on a draft annual historical report prepared by IRAC and submitted to AMCHO 6 December 1991. Additional sources are as noted in subsequent footnotes.

have been under-reporting initially. The HQ AMC IRAC Office issued a summary report on the results of the audits by AMC activities on tracking and reporting ODS workload and costs. Internal review recommendations keyed positive actions to ensure that all costs associated with ODS would be reported and supportable.[67]

Food and Forage Act (FFA). To ensure the funding necessary for ODS, the Secretary of Defense invoked the Food and Forage Act, 41 U.S.C. 11 (Revised Statute 3732). Specifically, the Secretary authorized the military departments to incur obligations exceeding appropriated funds for the period 24 August to 30 September 1990. The FFA statute authorizes the obligation of funds for clothing, subsistence, forage, fuel, quarters, transportation, and medical and hospital supplies provided the obligations do not exceed the current year necessities.

The HQ AMC Deputy Chief of Staff for Procurement requested that IRAC perform a review to assess compliance with the FFA. At the direction of the HQ AMC IRAC, the IRAC staffs from five major subordinate commands performed such reviews during March and April 1991. The auditors found that AMC did not exceed the FFA obligation authority; the FFA obligation authority was identified in funding documents and contracts; the obligations were within the guidance provided; procedures were in place to coordinate the requirements, procurement actions, and financial reporting of obligations; and accounting records accurately reflected the obligations.

The reviews showed a need to strengthen internal controls over recording obligations and obligating funds under the FFA. For example, the auditors recommended that future invocation of 3732 authority should include instructions to organizations about the specific wording that must appear on obligating documents, since some requisitions had improper working and lacked justification for using the authority. At TROSCOM, the auditors found a need for improvements in the internal controls of the use of Miscellaneous Obligation Documents (MOD). One problem was the $275,000 MOD for Chaplain Kits was de-obligated from the accountable financial records without responsible program manager approval. Such actions could result in a violation of the Anti-Deficiency Act. Nine recommendations were made to help improve MOD controls.[68]

Contracted Advisory and Assistance Services. In recent years, DOD and DA have received severe criticism from Congress and different audit agencies (i.e., GAO, DODIG, AAA, etc.) on their management and under-reporting of CAAS. This criticism has resulted in significant budget reductions. In December 1990, the Deputy Under Secretary of the Army (Operations Research) sent a request to the AMC Commander asking for information on 412 selected AMC contracts involving the use of CAAS. The U.S. Army Model Improvement and Study Management Agency (MISMA) was to use the requested information in a review of CAAS. The requested information was gathered by the IRAC at HQ AMC and at 16 other AMC locations. Due to the volume of the request the information was subsequently provided directly to MISMA.[69]

---

[67]Memorandum, Leonard H. Maguire, AMCIR to AMCCS, Subject: Summary Sheet - Internal Review Report #6-91, Tracking Operation Desert Shield/Desert Storm Workload/Costs, 15 July 1991, and Attachment, HQ AMC IRAC, Report Number 6-91, "Tracking Operation Desert Shield/Desert Storm Workload/Costs," issued 19 July 1991. Copies on file in AMCHO Archives.

[68]Memorandum, Leonard H. Maguire, AMCIR, to AMCCS, Subject: Summary Sheet, Internal Review Report #9-91, AMC Compliance with the Food and Forage Act (FFA), 22 October 1991, and Attachment, Report #9-91, n.d. Copy on file in AMCHO Archives.

[69]Memorandum, Leonard H. Maguire, AMCIR-I to AMCCG, Subject: Summary Sheet - Contracted Advisory and Assistance Services (CAAS), 12 February 1991. Copy on file in AMCHO Archives.

Managing Civilians to Budget (MCB). As directed by HQDA, the HQ AMC IRAC had the primary responsibility to evaluate the test program for MCB throughout AMC. Between January and March 1991, personnel from HQ AMC and nine AMC activities performed evaluations to assess the progress after the first year of implementing MCB.

The evaluations revealed that each of the nine activities had taken positive steps to implement MCB; however, they needed improvements to make the program effective. IRAC committed to making oversight visits to determine the amount of emphasis the evaluation teams placed on the areas of accuracy in position classification and supervisory accountability for development and execution of work center budgets. The overall assessment, based on the evaluations, was that personnel at most of the reviewed activities believed in MCB and its potential to improve the management of civilians. However, the IRAC reported that managers commonly felt that MCB cannot work successfully in a restricted environment. They have not been able to take full advantage of the potential benefits of MCB in a time of "declining resources and dynamic changes regarding closure and reorganization."[70] IRAC predicted that the success of MCB would be jeopardized if this continued.

Internal Management Control Material Weaknesses. During FY91, as in previous years, the IRAC Office performed an audit to verify actions taken to correct material weaknesses shown in the previous year's Annual Assurance Statement on Internal Controls to the Secretary of the Army. The FY90 statement contained 36 material internal control weaknesses. Of these, IRAC selected 24 for review because those corrective actions had been reported as complete or expected to be complete by 30 September 1991. Information and documentation were obtained from eight Deputy Chiefs of Staff/Separate Offices and CECOM. Of the 24 weaknesses, IRAC found that 14 were complete, while seven were the subject of on-going action. In three cases IRAC was unable to render an opinion on their status due to a lack of documentation.[71]

Additional Internal Reviews. Additional reviews performed during the period included a review of the AMC Chaplain's fund; assistance reviews associated with special access programs; follow-on of IG Inspection of Army Price Challenge Program; and Quarterly Fund Verifications of Class B Agent(s), both regular operating and Intelligence Contingency Funds.

AR 165-1, *Chaplain Activities in the United States Army*, requires audits on Chaplains' funds. AMCIR found that management of the fund was sound and appropriate internal controls were in place. However, AMCIR made some observations and recommendations, which the Chaplain's Office agreed to implement.[72]

Reports on External Audits

GAO Reports on Depot Theft. GAO issued two reports on theft at two AMC depots. In the first report, GAO reported that Operation Punchout, initiated by the Federal Bureau of Investigation, identified and

---

[70]Point Paper, David A. Hodge, AMCIR, "Managing the Civilian Work Force to Budget (MCB) Evaluation Results," 4 June 1991. Copy on file in AMCHO Archives.

[71]Memorandum, AMCIR-I, Leonard H. Maguire, AMCIR, to AMCCS, Subject: Summary Sheet - Internal Review Report No. 20-91, Audit Follow-up on Internal Management Control Material Weaknesses, 21 October 1991. Copy on file in AMCHO Archives.

[72]Memorandum, AMCIR-I, Leonard H. Maguire, AMCIR-I, to AMCCS, Subject: Summary Sheet - Audit of AMC Chaplain's Fund with enclosure, "Internal Review Report No. 2-91, Audit of AMC Chaplains Fund." Copy on file in AMCHO Archives.

apprehended surplus dealers who bought and sold stolen government property from DOD facilities in Utah. The items included ammunition, clothing, ready-to-eat meals, fishing kits, backpacks, helmets, boots, and F-16 jet engines. According to GAO, internal control weaknesses (lax supervision and physical security inadequacies) allowed the thefts. The facilities immediately began efforts to strengthen the internal controls.

In the second report, GAO recounted the theft of small arms parts at the Red River Army Depot. As was the case in Utah, internal control weakness over the inventory items contributed to the problems encountered. Officials at Red River Army Depot, DESCOM, and HQ AMC acknowledged that the auditors had uncovered serious shortcomings at the depot. Red River immediately began required improvements to its inventory and physical security, based on GAO's findings.

Audit Reports on Base Realignment and Closure. There were several reports issued during FY91 on the restructuring of the Military Services. The IRAC office received reports from both the GAO and the USAAA. GAO found the Army's process well documented, enabling the auditors to perform a thorough analysis. GAO concluded that the Army's recommendations for closure were well supported. Air Force documentation, although not as good as the Army's, was sufficient to allow GAO to conclude that the Air Force was justified in their base closure determination. The Navy did not adequately document their selection process and GAO recommended the Navy provide specific details to the Defense Base Closure and Realignment on their selections. GAO also found that OSD did not provide specific written guidance to the Services on how to select bases as candidates for closure and realignment. As a result, none of the Services selected candidate bases using a process as comprehensive and well documented as the one followed by the 1988 Commission on Base Realignment and Closure. Each Service used different criteria for base selections.

Since the Army requested that USAAA perform a review of the quantitative data used for selections, GAO relied on much of USAAA's results. USAAA assessed the values that the Army assigned to rank the depots. Their review resulted in a few adjustments and some minor changes in the ranking. In evaluating the adequacy of the decision trail for the return on investment calculations, USAAA recommended adjustments to the return on investment calculations and that AMC reconcile and establish a decision trail to support personnel spaces eliminated as a result of these actions.

GAO Initiates Audit of Army Financial Management. In response to the requirements written in the Chief Financial Officers Act of 1990, GAO initiated an audit of the Army's financial management practices and procedures. Army inventory accounts (physical counts and evaluation methods) are major concerns expressed by the auditors. GAO issued two management letters that reported several conditions which could prevent the development of acceptable Army financial statements for FY91. As of the end of the fiscal year, command managers and DOD personnel were working in concert to resolve conditions which could preclude the development of acceptable financial statements.

Audit Alert Network (AAN). The Audit Alert Network was used to inform AMC activities of possible problems at their activities. During FY91, HQ AMC IRAC issued four Audit Alerts. Nine activities reported that they experienced similar problems in several audit alert areas. For example, employees non-exempt from FLSA were often not paid overtime as required. Inadequate guidance for handling simultaneous obligations of consumer funds caused erroneous obligations and funding violations at one command. IRAC found that substantial costs could be avoided by "downscoping" the outyear requirements for equipment and services.[73]

---

[73]"Downscoping" means reducing the size of projected outyear requirements for equipment and services to more accurately reflect probable needs. By reducing the size of the requirements, substantial savings can be achieved (Enclosure 1 to Memorandum, AMCIR, to AMCHO, Subject: AMCIR Comments on its Operations Security Review of Draft Annual Historical Review for FY91, 15 June 1992).

Required samples of bulk petroleum products were not being submitted for testing. Samples that were taken were not always being shipped to the General Materiel Petroleum Activity (GMPA) for testing.

Semi-Annual Report to the Congress

Requirement for Semi-Annual Report to Congress. The IRAC Office reported to the Congress semi-annually, under a requirement established by the Inspector General Act of 1978. As the office had stated in its report for 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, Audit Alert Network, in use since 1985, continued to be highly rewarding.[74]

Yearly Summary of Operations. For FY91, AMC had 84 USAAA reports and 498 IRAC reports that required management actions. Monetary benefits associated with those reports totaled $115.7 million and $86 million, respectively. Effective actions by management allowed AMC to realize potential savings of $115.6 million by closing 41 of the USAAA reports and $ 71.1 million by closing 359 IRAC reports.

Training Requirements

The HQ AMC IRAC was responsible for coordinating USAAA training with HQDA and for allocating spaces to Command activities. The USAAA is a principal source of training courses for IRAC personnel. During FY91, the number of USAAA training spaces provided to AMC was limited, with only 25 of 91 requirements being filled.

Office of the Command Counsel

Mission, Organization, and Personnel

The Office of the Command Counsel served as the legal advisor to the Commanding General, AMC and to his staff. The office also served as the principal legal advisor to the AMC MSCs, installations, and field activities in the areas of law and patents. The office had two divisions, Procurement Law and General Law. Mr. Edward J. Korte served as the Command Counsel, having held that position since December 1987.

At the end of FY91 the office was authorized a total of 27 civilian and 5 military spaces, unchanged from FY90. However, the on-board strength consisted of 25 civilians and 5 military personnel.[75]

Continuing Legal Education Program

The Office conducted its Annual Continuing Legal Education Program from 26 to 30 November 1990 in Baltimore, Maryland. Over 150 attorneys from AMC, HQDA, and other organizations attended the program and it was deemed to be a complete success.

---

[74]See HQ AMC *Annual Historical Review, FY90,* Chapter 2.

[75]Unless otherwise noted, the information in this section was taken from the Office of the Command Counsel historical submission for FY91. Specific cases and legal decisions made by the Office of the Command Counsel are not discussed in this ACH.

1992-1996 Strategic Plan for the AMC Legal Organization

The Office of the Command Counsel developed a Strategic Plan, called *1992-1996 Strategic Plan for the AMC Legal Organization.*[76] The first strategic objective of the plan was to "Project the mission, resources, and operational circumstances most likely to be encountered during the period 1992-1996. This projection is based upon trends, resources, operational, environmental and other events affecting the Army and AMC missions." The second strategic objective was to "Identify appropriate 'anticipatory actions' to be taken that will prepare the AMC Legal Organization to successfully accomplish its support mission to AMC and the Army during the 1992-1996 time frame."

The *1992-1996 Strategic Plan for the AMC Legal Organization* contained a number of significant assumptions about future changes in AMC's operational environment, most of which were based on the "recent worldwide political, economic and military changes." The Office predicted continuing trends toward a smaller Army and smaller civilian work force, increased centralization and consolidation of activities and installations, and a leaner budget. This would significantly affect AMC's legal "clients." The *1992-96 Plan* stated, "AMC contractor protests, claims and litigation will increase; grievances, appeals, ULPs [Unfair Labor Practices cases], EEO [Equal Employment Opportunity] cases and related litigation will increase as downsizing plans are executed. Environmental issues will be a major factor in the consolidation and closure of installations and activities." The office accordingly expected the demand for legal services to exceed available legal resources. The planners also assumed that the office itself would be affected by work force and budget reductions.

Given the predictions contained in the *1992-96 Plan*, the Office of the Command Counsel developed a number of guidelines for managing the change by maintaining an efficient organization structure and a highly professional work force. This included cross-training of legal counsel, increased use of automation, and continued emphasis on the AMC Preventive Law Program.[77]

FY91 Review of AMC Patent Offices

During FY91, a team of attorneys conducted a thorough review of each Patent Office in AMC. The issues raised in the review were addressed first in a draft action plan developed during an April 1991 workshop at Fort Monmouth, NJ. In May 1991, this draft action plan was presented to the AMC Chief Counsels workshop in St. Louis. After some refinements, the Command Counsel and the Chief Counsels agreed to support its initiatives and implementation.

The final *AMC Intellectual Property [IP] Law Review and Plan of Action* covered issues pertaining to personnel and management. Many of the problems and issues were similar to those reported by other government offices, such as under-staffing and morale problems. Relatively low compensation for IP attorneys within AMC compared to other agencies and the private sector contributed to retention difficulties.

Mr. Korte, the Command Counsel, pointed out the increasing workload requirement for IP professionals and corresponding personnel and management issues as follows:

> During the past decade more IP legislation has included laws to govern technical data rights in Government contracts, to curtail export of militarily critical technology, to ensure that foreign

---

[76]The first such plan was developed in 1988.

[77]See the *1992-96 Strategic Plan for the AMC Legal Organization*, undated, enclosed in the Office of the Command Counsel historical submission for FY91.

competitors provide fair treatment of intellectual property, and to encourage technology transfer from Federal laboratories to the private sector. Additional legislation, including the international harmonization of IP rights and laws to extend copyright protection for Government-developed computer software, is on the way.

The underlying reason behind these legislative initiatives is that IP law has assumed an increasingly important role in our industry, our economy and our national defense. Ironically, while IP law has been growing in importance, IP staffing has been diminishing for a variety of reasons. The legal talent necessary to implement these legislative initiatives and to defend the Government against charges of misuse of patents, copyrights and technical data has become scarce due to inadequacy of the Government's pay scale.

The *Action Plan* portion of the review provided a number of positive responses to these problems and issues which were to be initiated within AMC and its subordinate commands during the following fiscal year. These included upgrades of positions, pay incentives, keeping the duties of IP attorney within their recognized specialty, and more central oversight for the AMC IP function.[78]

1991-1992 AMC Ethics Program

In September 1991, the Office of Command Counsel published its *1991-1992 AMC Ethics Program*. This was designed for AMC supervisors and managers as a guide in training all AMC employees. Mr. Korte pointed out the timeliness of this program in his transmittal memorandum of 10 September 1991: "The Office of Government Ethics recently published new ethics regulations implementing new laws passed by Congress. These new laws and regulations require Government employees to adhere to the highest ethical standards. I encourage each of you to be personally involved in our command's implementation of this program."

The program included interesting information taken from a recent AMC preventive law survey. The survey showed that employees misused Government resources; for example, by playing video games on Government computers or conducting personal business on Government time. There were time and attendance violations, post employment violations, and miscellaneous problems such as participating in lotteries or sports pools.[79]

AMC Bid Protest Handbook

During FY91, the Office of the Command Counsel devised a very detailed handbook entitled, *AMC Bid Protest Handbook: Tactical Operations in the Face of GAO Protests* to assist all legal and procurement offices in submitting protests. The handbook stated,

> The GAO has been reviewing complaints by disappointed "bidders" (in the sense of any offerors) alleging improper or inappropriate agency procurement actions since 1925. . .The current GAO protest environment presents significant challenges to attorneys and is more complex and difficult than it has been in the past. This complexity has been increased by new GAO rules of

---

[78]See *AMC Intellectual Property Law Review and Plan of Action,* May 1991, enclosed in the Command Counsel historical submission for FY91.

[79]See *HQ AMC Ethics Program for 1991-1992,* 10 September 1991, published by the Office of the Command Counsel enclosed in the Command Counsel historical submission for FY91.

procedure. . .This handbook is intended to help you achieve the decisive edge -- to successfully resolve the protest.

Successful resolution of a protest does not necessarily mean the protest is dismissed or denied because of some failure by the protestor. You need to closely examine the protest and the command's actions to determine whether the protest is valid. If the protest is valid, "resolution" may mean the Command will have to take some timely remedial action. Such remedial action will make the protest academic. . .

Remedial action is often far more supportive of the mission than pursuing a protest defense that is likely to fail.[80]

Public Affairs Office

Personnel

The Public Affairs Office's personnel authorization remained the same as during the previous fiscal year. One officer, one enlisted and 13 civilians were carried on the TDA.[81] During FY91, Mr. Gerald D. Hill, Chief of Community Relations, retired and was replaced by Mr. John M. Gorgas, the former Chief of Command Information. Mrs. Nancy Dunn, a Media Relations action officer, was promoted and assumed the duties of Chief of Command Information. The vacancy created by Mrs. Dunn's promotion was not filled. The position of editor, *AMC NEWS*, was lost due to Reduction in Force, and the incumbent, Mr. Kenneth S. Spalding, accepted a public affairs position with the U.S. Army Security Assistance Command (USASAC). Major Sherrel W. Mock, who served as the Public Affairs Executive Officer in an overhire position for a period of two years, was reassigned by DA to the Department of Defense On-Site Inspection Agency. The vacancy created by MAJ Mock's departure was not filled.

Congressional and Media Interest

Congressional and national information media interest focused on several issues during FY91, including ODS; Defense Management Review; Vision 2000; base realignments at AMC Headquarters, subordinate installations and activities; and environmental matters. Public Affairs personnel also coordinated numerous requests from reporters for interviews with AMC subject matter experts during the fiscal year, and assisted to arrange interviews with subject matter experts at MSCs, installations, and activities.

ODS Media Relations Effort. ODS dramatically increased the workload in the Media Relations area. The volume of media inquiries necessitated adjustments in the staff and three IMAs were called up for duty. LTC Ruth L. W. Davis served in the Media Relations area from 23 January to 7 May 1991. MAJ Janice M. Manning served as editor of the *AMC NEWS* from 25 February to 29 April 1991, and MAJ Larry E. Kinsland served in the Media Relations area from 28 January to 15 April 1991.

---

[80]See *AMC Bid Protest Handbook, Tactical Operations in the Face of GAO Protests,* May 1991, enclosed in the Command Counsel historical submission for FY91.

[81]Unless otherwise noted, the information in this section came from the Public Affairs Office historical submission for FY91.

During the same time frame, Ms. Janis M. Finegan, an action officer from the Media Relations area, accepted a four-month temporary assignment to Saudi Arabia, where she developed a command information program that highlighted AMC's efforts and accomplishments in the Southwest Asian conflict. She also produced public service announcements for the Armed Forces Radio and Television Service (AFRTS), dealing with AMC equipment. The photographs she shot during that time were distributed through DOD and DA public affairs channels and were seen worldwide.

Support for the Association of the United States Army

Public Affairs personnel provided substantial support to the Association of the United States Army (AUSA). Marketing Branch personnel provided support for an exhibit at the AUSA Annual Meeting, 15 to 17 October 1990. The exhibit featured new items of equipment that the soldier might use in the field, photos and a video showing AMC products used by soldiers. Input for the weapons directory for the October ("Green Book")[82] issue of AUSA's *ARMY* Magazine was supplied by Media Relations Branch personnel.

AMC Image

During the fiscal year, Public Affairs used video and still photographs to document the successful logistical support that AMC provided during ODS, dependent upon the right people with the right skills, in place and ready to support the soldiers. The material was collected to educated the public about AMC's mission, boost morale and improve the image of AMC and the Army.

Public Affairs personnel continued marketing efforts to improve the AMC image in terms of the perception of the quality of materiel and the people responsible for its development and distribution. This included several video spots intended for release over Armed Forces Radio and Television Service, which conveyed the message that AMC cares about its ultimate customer--the soldier.

MSC Support

HQ AMC Public Affairs is responsible in for managing and monitoring the activities of the major subordinate commands and their subordinate installations. As part of this process, the Public Affairs Office held its annual Public Affairs Symposium, 9 to 13 September 1990, at Kansas City, Missouri. Among the topics discussed were the AVSCOM/TROSCOM merger, base closures and realignments, formation of the Industrial Operations Command and the Missile, Armament and Chemical Command and a host of other topics of particular interest to those in attendance. AMC's Chief of Public Affairs, as well as the branch chiefs from the Headquarters Public Affairs Office all made presentations and conducted discussions concerning current matters in their areas of expertise. These symposiums permit face to face interaction between public affairs officers/specialists and discussion of current problems.

In June 1991, personnel from Public Affairs participated in the Service Response Force Exercise at Tooele Army Depot, Utah. As in previous years, the AMC Surety Field Activity, Dover, New Jersey, conducted the exercise. The exercise's purpose is to train a U.S. Army augmentation team to assist emergency forces at a chemical storage site and contend with a major disaster surrounding the chemical stockpile.

---

[82]The "Green Book" weapons directory is an annual compilation of weapons systems, with a narrative highlighting new developments.

Special Assistant for Total Quality Management

TQM was not a specific program or project, but a cultural change that would not be successfully accomplished until it was integrated into normal daily activities. Basically, it involved a change from the "if it ain't broken, don't fix it" attitude to the assumption that the process could always use some improvement and that the people involved in the process should always be looking for ways to improve it.[83]

Organizational Structure

As part of the overall DOD TQM effort, AMC started a top-down, process oriented, customer satisfaction driven effort. Quality Management Boards were established and eight cross functional processes were chartered. The members of the Quality Management Board included the AMC Commanding General, MSC commanders and the eight process owners. The processes and their owners were:

1. Acquire - DCS for Research, Development and Engineering (AMCRD);

2. Select, Procure, Produce, Accept - DCS for Procurement (AMCPP);

3. Stock, Store, Issue, Sustain - DCS for Supply, Maintenance, and Transportation (AMCSM);

4. Resources - DCS for Resource Management (AMCRM);

5. Technology Generation - AMCRD;

6. People - DCS for Personnel (AMCPE);

7. Infrastructure - DCS for Engineering, Housing, Environment and Installation Logistics; (AMCEN)

8. Information - DCS for Information Management (AMCIM).

The TQM office expanded, adding in FY91 a Program Management Specialist position, transferred from the DCS for Management. At the end of FY91, the Table of Distribution and Allowances for the office consisted of 6 spaces: 1 Special Assistant for TQM, 1 Quality Management Specialist, 2 Program Management Specialists, 1 Secretary, and 1 Logistics and Acquisition Management Program candidate (who supplemented the office staff while receiving developmental training).

Brochure

An AMC TQM Brochure was distributed in October 1990. It served as a public statement of the CG's vision for AMC, AMC's mission challenges, and the plan to use TQM to accomplish that mission.[84]

---

[83]Unless otherwise noted, information in this chapter was taken from the Office of the Special Assistant for TQM historical submission for FY91.

[84]A copy of the TQM Brochure, "Quality," is enclosed with the Office of the Special Assistant for Total Quality Management FY91 Historical submission, AMCHO Archives.

Training

A training strategy was developed, and extensive in-house training was conducted on an on-going basis. By the end of FY91, over 80 percent of the executives, managers and supervisors in the headquarters had received TQM training. In addition, training was also provided for the eight PATs chartered in FY91. TQM training was also institutionalized at AMC's Army Management Engineering College (AMEC). AMEC developed the model training courses used at HQ AMC and some MSCs.

The MSCs were encouraged to implement their own training programs. Examples of successful training programs include those established at CECOM and AVSCOM. CECOM established a TQM "University" with three "colleges." This arrangement had the advantage of offering a variety of classes and workshops at various times, thus providing flexibility. It also formalized and professionalized TQM training, saved money by having the training done in-house without a need for contractor fees or TDY costs for CECOM personnel, and it tailored TQM training to CECOM's specific needs.

AVSCOM completed a Train-the-Trainer course book, graduated 100 Train-the-Trainers, trained 140 senior and mid-level managers, and published the Continuous Improvement Guidebook, a desk top reference for completing continuous improvement projects.

TQM Self Assessment Guide

The *TQM Self Assessment Guide* was presented for discussion during the AMC Commanders' Conference. It was defined as a tool for the Commander to use to assess his command's progress towards the goals of TQM and to highlight the strong and weak points of his TQM program. The Guide was to be used to bridge the gap between where we were and where we wanted to be, not to be used as a report card.

TQM Definitions

A total of 17 TQM terms were defined and presented to the TQM Executive Steering Committee, which adopted them for use throughout AMC.[85]

Operation Desert Shield/Desert Storm

A problem with building Reverse Osmosis Water Purification Units (ROWPU) for Southwest Asia was solved, at least in part, through the use of TQM techniques. There was a lack of trust between the government and industry, and industry had not previously produced the ROWPUs, which were hand built, in high volume. This was solved by stationing production engineers at Fort Belvoir and TROSCOM and by providing TQM training to all ROWPU operations personnel.

AMC TQM Display

A TQM display was being built by the AMC Public Affairs Exhibit Division, based at Aberdeen Proving Ground. It would be used to exhibit good news stories and process improvements that were the result of TQM principles and practices. These exhibits would be shown at conferences and AMC facilities. Its first use was scheduled to be at the Association of the United States Army (AUSA) Conference in October 1991 in Washington, DC.

---

[85]A list and definitions are given in the HQ AMC Annual Historical Review, FY90.

Chapter III
Materiel Acquisition

Deputy Chief of Staff for Development, Engineering and Acquisition

Organization

Effective 1 October 1990, the Office of the DCS for Development, Engineering and Acquisition's TDA authorization was 38 military and 227 civilians, for a total of 265 positions. Effective 30 September 1991, the TDA authorization decreased to 38 military and 180 civilians, for a total of 218 positions.[1]

To better utilize the reduced authorization of civilians after implementation of the DMR directed losses of 47, the DCS realignment was approved by LTG Billy M. Thomas, AMC Deputy Commanding General for Research, Development and Acquisition (DCGRDA), for implementation effective 2 December 1990. The realigned structure allowed the DCS to better perform its mission under the new flat structure concept. The new structure reduced the number of divisions from 12 to 9 and established the new drug office. This included disestablishment of the Office of the ADCSDEA for Acquisition Management and establishment of a Deputy SES under the Office of the DCS. The new organization straightlined the Aviation Division by deleting the Aviation Equipment Branch. The DCS also renamed the Command, Control, Communications/Intelligence Division as the CCC/Intelligence and Weapons Systems Embedded Software Division. He merged the Command and Control Branch with the Communications Branch to form the CCC Branch, disestablished the Acquisition Software and Automation Division and merged personnel into a Software Branch.

The reorganization consolidated two branches in the Missiles and Weapons Division, Fire Support and Close Combat Light, and renamed it the Light Weapons and Fire Support Branch. The DCS realigned the Support Systems Division under the ADCSDEA for Acquisition Policy and Resources, formerly known as the ADCSDEA for Program Management. The DCS also established the Army, Counter-Drug Research, Development, and Acquisition (RDA) Office, formerly known as Special Programs, under the Special Operations Division, and realigned the Acquisition Policy Division under the ADCSDEA for Acquisition Policy and Resources. The Integration and Analysis Division, formerly the Acquisition Integration and Analysis Division, was realigned under the ADCSDEA for Acquisition Policy and Resources. The new organization established the Systems Integration and Analysis Branch and disestablished the Materiel Change and Technical Analysis Branch, then established the Program Integration and Analysis Branch by transferring the remaining spaces and mission from the Program Planning and Integration Division.

Under the new organization, the DCS established the RDA Appropriation Management Division, under the ADCSDEA for Acquisition Policy and Resources, by merging the Research, Development Test and Evaluation (RDTE) Appropriation Management Division and the Procurement Appropriation Management

---

[1]Unless otherwise noted, information for this section was taken from the DCS for Development, Engineering and Acquisition submission for FY91.

Division, and established the RDA Control Branch by merging the Procurement Control Branch and the Operations, Management and Control Branch.

The DCGRDA directed that one space, a GS-801-14 General Engineer, and the incumbent be transferred from the DCS for Concurrent Engineering to the DCGRDA, effective 8 February 1991. The transfer more logically aligned the function, since the Project Manager, Instrumentation, Targets and Threat Simulators (PM ITTS) is performing a materiel developer function rather than a test function. This increased the civilian authorization by one space.

In line with the reduction of military spaces, the DCS was directed to identify 12 spaces as lost effective 1 October 1991, in addition to the downgrading of seven military positions. Personnel losses in critical positions (FY91) were as follows:

Mr. Joel Mathis: Chief, Acquisition Software and Automation Division, 12 October 1990
Mr. Robert Shephard: Chief, Software Branch, 12 October 1990
Mr. Phillip Falcone: Chief, Technical Management Branch, 20 October 1990
Mr. Ronald Linthicum: Chief, PPBES/AMP MOD Branch, 12 October 1990
Mr. James Bass: Chief, Fire Support Branch, 3 November 1990
Mr. Richard Zigler: Chief, Technical Analysis Branch, 10 February 1991
Mr. Richard Bishop: Chief, RDTE Appropriation Management Division, 31 July 1991
Colonel Johnson: Chief, Support Systems Division, 18 December 1990
Colonel Rodgers: Chief, Program Planning and Integration Division, 1 November 1990
LTC Starr: Chief, Technical Management Branch, 1 November 1990
Major Moore: Chief, Armored Systems Modernization Branch, 16 September 1991

Personnel Gains in Critical Positions (FY91) were as follows:

Mr. Manfred Lynch: Chief, Procurement Program and Budget Branch, 31 October 1990
Colonel Kiefer: Chief, Support Systems Division, 14 January 1991
Colonel Lunsford: Chief, Army, Counter-Drug RDA Office, 21 December 1990
Mr. Abram Leff: Chief, Systems Integration and Analysis Branch, 5 May 1991

Mrs. Miller, ADCSDEA for Acquisition Policy and Resources, continued to be detailed to the DMR. Mr. Wayne E. Studebaker was detailed to her position, in addition to serving as the Chief of the RDTE and Procurement Appropriation Management Divisions. Mr. Richard R. Rogowski continued to be detailed as the ADCSDEA until selected as the SES effective 7 April 1991.

Support Systems Division

Command Management Issues

Soldier Modernization Plan (SMP). The jointly developed AMC/Training and Doctrine Command (TRADOC) SMP was approved by both GEN William G. T. Tuttle, Jr., CG, AMC, and GEN Frederick M. Franks, Jr., CG, TRADOC, and forwarded to HQDA for approval. The SMP was briefed to GEN Gordon R. Sullivan, Chief of Staff, Army (CSA) in July 1991. He directed that the plan be updated based upon input from ODS. The plan was to be staffed Army-wide. The Army Science Board (ASB) also reviewed the SMP, as well as the entire RDA process of soldier items and concluded that the soldier should be treated as a major system. To support the soldier system, the ASB agreed with the recommendation in the SMP for the creation of a single focal point within the RDA process for the soldier system.

Initiative to Establish Program Manager - Soldier (PM-S). To implement the concept of a single focal point for the tactical soldier system, as recommended by the SMP and the ASB study, General Tuttle requested the establishment of the PM-S in May 1991. When approved by the ASA(RDA), the PM-S was to be created from existing resources at Project Office for Army Field Feeding (PO AFF) and Project Manager for Clothing and Individual Equipment (PM CIE). General Tuttle also made a highly practical recommendation: "In addition, request you approve retention of a board selected Colonel as the PM-S. The PM-S should have an infantry background. The infantry background would add invaluable user experience to the materiel development life cycle for soldier items."[2]

As of the end of the fiscal year, a Transition Plan was being developed by TROSCOM and PM-CIE to ensure an orderly transfer of responsibilities. The system management responsibilities of PM-S were to be for all items worn, carried or consumed by the tactical soldier. PM-S was to be responsible for the complete life cycle development and management of the over 180 different soldier system components. In addition, PM-S was to be designated the Executive Agent for the Soldier Enhancement Program (SEP). The PM-S would also act as the system integrator for other soldier system components not directly managed, such as individual communications, personal weapons, NBC Mask and decontamination kits and night vision devices.

Initiative to Establish PM-Countermine. On 28 May 1991, the DCGRDA directed a relook of the study to establish one PM for Mines, Countermine and Demolitions to determine if two PMs were appropriate. On 12 August 1991, the results of the 1984 study were briefed with a recommendation that a single PM be maintained and a Military Product Manager (LTC) be appointed to head Countermine Operations. LTG Thomas decided to request the establishment of two military (COL) Project Managers: one for Mines and Demolitions and another for Countermine. LTG Thomas forwarded a memorandum to the Assistant Secretary of the Army (Research, Development and Acquisition), Mr. Stephen K. Conver, requesting the establishment of a PM Countermine. The proposal was discussed during the 22 August 1991 Army Executive Review Council. LTG August M. Cianciolo, the Military Deputy to Mr. Conver, directed that AMC and SARDA prepare a joint issue paper on how PM Mines/Demolitions and PM Countermine should be structured. LTG Thomas requested a decision briefing be presented to himself and MG Richard D. Beltson, the Deputy for Systems Management in SARDA. A proposal was to be presented to General Tuttle and Mr. Conver based on the decisions reached at this briefing. The decision briefing was scheduled for 12 November 1991.

Establishment of the PM ITTS. PM ITTS was officially established 1 October 1990, and chartered 21 November 1990, by LTG Thomas. COL Douglas R. Baker served as the first PM and began his tour 1 October 1990. PM ITTS's mission was to be the Army "one-stop-shop" (single manager and proponent) for targets, threat simulators and major instrumentation for technical and operational testing. In its first year, the PM overcame many obstacles in disciplining Army activities that had historically developed targets, threat simulators and test instrumentation in relative isolation. Funds for major projects in budget project element 65603 were transferred from the Operational Test and Evaluation Command (OPTEC) to PM ITTS through AMC. Management of a portion of the Threat Simulator Project Office, under the Army Intelligence Agency, was also transferred to PM ITTS. In the words of Mr. Hollis (DUSA-OR): "PM ITTS will be the closest watched Army PM." The long range challenge for the PM was to spearhead the Army's effort to refurbish its test facilities infrastructure, and coordinate the use of captured foreign equipment to be used for testing.

Engineer Equipment Management Study. On 14 December 1990, MG Daniel R. Schroeder, Commandant, U.S. Army Engineer School (USAES), voiced concerns to GEN Tuttle regarding the multitude of agencies/activities that the USAES combat developers were forced to interface with, regarding non-PEO

---

[2]Memorandum, GEN W. G. T. Tuttle, Jr., CG, AMC to Honorable S. K. Conver, Assistant Secretary of the Army (RDA), Subject: Establishment of Project Manager-Soldier, 13 May 1992.

managed Engineer equipment. GEN Tuttle directed that a study be conducted to determine possible solutions to MG Schroeder's issue. On 28 May 1991, a briefing was presented to the DCGRDA with the recommendation that there be no change to the present process and management structure with the exception that the DCSDEA be the integration point within AMC for the resolution of engineer equipment problems. The recommendation was supported by the Armament, Munitions and Chemical Command (AMCCOM), the Tank-Automotive Command (TACOM), the Troop Support Command (TROSCOM), USAES, TRADOC, PM-CMV, PM-MCD, DCS Ammo and the DCSDEA, HQ AMC. LTG Thomas accepted the recommendation and forwarded a memorandum to the Commandant, USAES, stating this position.

Operation Desert Shield/Storm (ODS)

Nuclear, Biological, Chemical Reconnaissance System (NBCRS). The NBCRS was an 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 FY91 program continued the Congressionally directed non-developmental item approach and awarded the first option of 15 additional systems. The team of General Dynamics Land System (GDLS) and Thyssen Henschel of Kassel, Germany were the main contractors for the NBCRS. During FY91, ODS created 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 for the Marines) to support this requirement. These systems were used by U.S. forces during ODS and performed superbly. Commanders had high praise for the vehicles since they enhanced the confidence of their soldiers to survive in an NBC environment. Following the end of ODS, these systems were redeployed with their units and were thereafter to be used for training. Seven systems remained in Saudi Arabia in Prepositioned Material Configured to Unit Sets (POMCUS) as of the end of the fiscal year.

During FY91, the Office of the Secretary of Defense (OSD) approved for release to the Germans an End-User Certificate (EUC) for the 48 systems on contract and the 60 systems received as gifts. The EUC was an area of contention since Thyssen Henschel could not receive an export license without this certificate. OSD approved the release of the EUC and it was signed by Mr. Conver in September 1991.

M40/M42 NBC Protective Masks. During FY91, Mine Safety Appliances (MSA) and ILC Dover, Inc. continued to progress toward full production of the M40 field protective mask and the M42 armored vehicle crewman's protective mask. A limited number of preproduction M40 masks were fielded to support ODS, to be issued to personnel who were hard to fit with the M17 mask. MSA made their first delivery of production M40 masks in May 1991 and ILC Dover began deliveries in September 1991. In September 1991, an additional contract for 60,000 M40 masks was awarded to ILC Dover, Inc. to fill U.S. Marine Corps requirements.

M43 Aviation NBC Protective Mask. MSA began delivery of the M43 aviator's protective mask in FY91. The M43 mask was specifically designed to enable the Apache helicopter crew to operate their aircraft while masked. The M43 was fully compatible with the Apache weapons sighting systems and night vision devices. Production of the M43 mask was surged and deliveries were significantly accelerated as part of support to Operation Desert Shield. By the beginning of Operation Desert Storm, all Apache crews were equipped with M43 masks. Pre-production M43 masks were tested, refurbished and sent to Southwest Asia. MSA began deliveries from their production line in December 1990 and these masks were also immediately sent to Southwest Asia. With the success of Operation Desert Storm, M43 mask production continued at a slower rate throughout FY91. In August 1991, MSA was awarded the initial production contract to produce the M43A1 mask, a product improved M43 mask designed to be issued to all aviation crews throughout the Army.

Combat Engineer Vehicle (CEV) Mine Rake. The mine clearing rake, an attachment for the M728 CEV, was designed to breach a full vehicle width path for follow-on M1 and M60 tanks. The 4,300 pound mine rake

cleared both surface laid and buried anti-tank mines in the sandy soil of SWA. The rake was quickly developed and produced by the Belvoir Research, Development and Engineering Center (BRDEC), at the direction of DCSOPS, in support of ODS. Two prototypes were produced for testing at Fort Dix, NJ and Yuma Proving Grounds, AZ during November and December 1990. Rakes were tested using inert and live mines. Forty-three mine clearing rakes were co-produced by BRDEC and Letterkenny Army Depot in December 1990 and January 1991. An additional sixteen mine clearing rakes were produced for the Marine Corps for use with the M60/M9 Dozer kit. All mine clearing rakes were fielded to SWA by a combined BRDEC/USAES team. The mine rake was Type Classified Limited Procurement - Urgent. At the end of the fiscal year, actions were underway to Type Classify - Standard the mine rake by March 1992.

T9 Bulldozer Mine Clearing Armor Protection (MCAP). Although it was never deployed to SWA, Caterpillar, Inc. produced 22 MCAP kits for D7G bulldozers. The kit was designed to improve a dozer's survivability during mine clearing operations. It was to have been used to widen breaches already established by the full width CEV mine rake. The armor package weighed 3,084 kg and protected the operator, engine, radiator, fuel, hydraulic tanks and batteries. It provided operator protection from small arms up to 7.62 mm rounds and land mines. Mounted at the front of the vehicle was the hydraulically operated angled mine rake that allowed material to flow through the rake while sidecasting anti-personnel and anti-tank mines to the right side of the vehicle. The rake had replaceable tines, automatic flotation and could be installed in 10 minutes by two personnel.

The MCAP was successfully demonstrated in Arizona, clearing both surface-laid and buried anti-tank and anti-personnel mines of various types. It could clear mines laid to a depth of 0.30 meters and to a width of 3.66 meters. Trials were conducted in wet and dry sand. The T9 MCAP was Type Classified Limited Procurement - Urgent and placed in storage at Letterkenny Army Depot. As of the end of the fiscal year, actions were underway to Type Classify - Contingent by October 1992.

5,000 Gallon Water Tanker. In mid-November 1990, ARCENT established the need for one hundred and fifty 5,000 gallon water tankers in support of ODS. The Tank-Automotive Command (TACOM) had explored criteria for converting 5,000 gallon fuel tankers to transport drinking water. The primary problem area encountered was with the welded seams. The welds could not be cleaned adequately to carry drinking water without contamination. On 29 November 1991, the DCSOPS directed the procurement of 230 of the 5,000 gallon water tankers under Type Classification - Limited Production Urgent (TC-LPU) to support ODS. TACOM awarded a Letter Contract to Eastern Technologies, LTD, Andover, MA, on 14 December 1990, for 150 of the 5,000 gallon water tankers. The quantity was later increased to 230 tankers. The contract required deliveries to start within 14 days and completion of deliveries within 135 days.

In January 1991, the U.S. Army Environmental Hygiene Agency, Aberdeen Proving Ground, MD, conducted an evaluation of the prototype tanker. They found no adverse effects on water quality attributable to the tanker. Due to the short duration of ODS, only 5 of the 230 water procured tankers reached SWA before the operation ended. TACOM was in the process of type classifing the tanker as Standard as of the end of FY91. ODCSOPS directed the shipment of the tankers as follows: QM School -1; National Training Center - 6; Fort Carson - 6; Kwajalein - 2; and the balance to Sierra Army Depot, CA. In addition, ODCSOPS directed TRADOC to establish a Basis of Issue Plan (BOIP) for the 5,000 gallon water tanker.

Refuel on the Move (ROM) System. The ROM system was comprised of an eight point refueling kit coupled to a 5,000 gallon tanker. The ROM kit consisted of hoses, couplings and nozzles in sufficient quantity to allow refueling of eight vehicles during convoy operations. The system used the on-board fuel pump and filter/separator of a 5,000 gallon tanker. The ROM kit began at the discharge of the tanker and terminated at eight open port refueling nozzles located fifty feet apart. The components of the ROM kit were also common parts of other fielded refueling systems and were fully supportable by the DOD supply system. The

FY91 ROM program consisted of an emergency procurement of 189 kits to support ODS, which was accomplished in two months by Red River Army Depot.

Reverse Osmosis Water Purification Unit (ROWPU). During FY91, considerable engineering effort was spent in support of surging production of ROWPUs, spare/repair parts and consumables for ODS and in resolving problems associated with operating these units under the unusual conditions (high temperature, high salinity, etc.) found in SWA. There were 136 Army and 192 USMC 600 Gallons Per Hour (GPH) ROWPUs, three 3,000 GPH ROWPUs, twenty-one 150,000 Gallons Per Day ROWPUs and two 300,000 Gallons Per Day Barge Mounted ROWPUs deployed to SWA. All units performed exceptionally well.

Procurement of the Inland Petroleum Distribution System (IPDS). The IPDS provided a bulk petroleum distribution network including storage facility, pipeline, pump station and fuel dispensing equipment from an offshore terminal to any worldwide undeveloped theater of operation, except for extreme cold regions. During FY91, BRDEC provided engineering support for a large quantity procurement of 6-inch aluminum assault pipe with heavy grooved ends (19 feet long), as well as snap-joint couplings. An additional contract was awarded to a systems integrator for ODS prepositioning, wartime contingency and recovery of the IPDS. During ODS, the IPDS was very effective in transporting fuel from the storage sites in SWA to the front lines (Border of Iraq and Kuwait). Approximately 160 miles of pipeline and 10 of the Tactical Petroleum Terminal systems, capable of storing 38 million gallons of fuel, were deployed. IPDS performed extremely well and utilization of petroleum pipeline was available for all wartime situations.

Soldier Support Items for ODS. The commencement of operations in Southwest Asia resulted in an expedited geographic and climatic review of the area of operation by HQDA. As a result of this combined AMC/ODCSLOG/ODCSOPS review, eleven new desert specific CIE items were quickly identified for fielding. The following items were provided quickly to SWA by changing the woodland fabric to the desert camouflage pattern: Desert Battledress Overgarments, Desert Field Jackets, Desert Combat Vehicle Crew Uniform, Aircrew Battledress Uniform, and the Desert Aircrew Uniform Integrated Battledress (Chemical Flightsuit).

Other CIE items were accelerated from development into production. Items accelerated were: Suit Chemical Avoidance Liquid Protective (SCALP), Desert Boots, Ballistic Laser Eye Protection for ground troops, and Ballistic Laser Visor for Aviators. The SEP also provided the soldiers deployed to SWA with numerous improved items. During the operation, recently type classified items and test items from the SEP were deployed. The deployed test items included: the Five Soldier Crew Tent, the 100 Round Assault Packs for the M249 Squad Automatic Weapon, Improved Desert Battledress Uniforms, Lightweight Flashlights, Improved Operational Ration items and Flameless Ration Heaters.

M85 Laundry Support for ODS. The primary means of providing laundry support to the deployed troop units and field hospitals was the M85 laundry. On 30 November 1990, HQDA approved AMC's request to surge the current production contract of the M85 Laundry. The delivery rate was doubled from twenty to forty a month. The increased production rate was achieved in less than three weeks. Approximately 250 M85 laundries were sent to SWA. To ensure that the laundry units remained at the highest operational rate, AMC established and deployed a maintenance contact team to Southwest Asia. During ODS the overall operational rate for the M85 Laundry was over 90 percent.

Tank Turret Camouflage Nets for ODS. At the request of ARCENT, in late November 1990, AMC was tasked by HQDA ODSCOPS to develop and field a Tank Turret Camouflage (TTC) system no later than the end of January 1991. The TTC was required to provide signature reduction for the M1A1 Tank turret and gun tube in the visual, radar, and near-Infra Red, and on-the-move, equal to the standard camouflage nets used for stationary purposes. ODCSOPS directed a Limited Procurement Urgent (LPU) of 1,000 nets on 18

December 1990. The design work was quickly completed by Natick and production contracts were signed on 21 December 1990. All of the required TTCs were received by ARCENT units prior to the end of 1991.

Threat Target Acquisition from ODS. The PM ITTS served as the focal point for all Army requirements for captured foreign materiel from Operation Desert Storm and East Germany to be used for operational and technical test and evaluation. Much valuable equipment was delivered to the Combat Service Test Activity, Aberdeen Proving Ground, MD and Yuma Proving Ground, AZ. DCGRDA made a recommendation to HQDA concerning how these assets could best be utilized for testing. The Foreign Materiel Review Board convened to address this issue and recommended that AMC become the National Inventory Control Point for all foreign assets, including assets to be used for testing. Interim policy guidance from DA gave AMC the authority to establish relevant maintenance, training, safety, storage, and configuration management policy.

Heavy Equipment Transport System (HETS). During ODS, the Commander in Chief, Central Command (CENTCOM), expressed an urgent need for HETS to support his operational deployment. Assets were provided in several different ways: 48 Commercial HETS were purchased from MACK Truck, Inc., 134 HETS were leased from U.S. commercial trucking firms, 60 HETS were donated from the Italian Army, 40 HETS were purchased from Czechoslavakia, and 292 others were donated from Germany and Egypt. The additional HETS ensured CENTCOM the capability to make the circle flanking movement that won the ground war.

FY91 ODS Supplemental OPA 1/3. AMC played a major role during ODS in procuring hardware for the soldier. AMC/MSCs diverted $48.1 million of OPA 1 and $102.4M of OPA 3 funding for items used in ODS. Examples of OPA 1 items that were procured included: 5,000 Gallon tankers used to transport both water and fuel, ROM, and trailers/dolly sets. Examples of OPA 3 items included maintenance shelters for helicopters and tracked vehicles, mine rakes, combat support equipment (i.e., air conditioners, laundry units), water equipment (i.e., 3K ROWPU), medical support equipment, and chemical equipment (i.e., M43 NBC mask). AMC received ODS supplemental funds in May 1991 for countermine equipment ($11.3 million), and received $79.3 million in August 1991 for an assortment of items including: water equipment, combat support equipment, base level commercial equipment, and first destination transportation.

Other Significant Issues

Family of Medium Tactical Vehicles (FMTV). Modernization of the Army's medium truck fleet consists of three initiatives: retirement of over-aged vehicles, production of the "next generation" FMTV and the Service Life Extension Program (SLEP) to reduce Operation and Support (O&S) costs for existing vehicles remaining in the fleet. During FY91, production continued for the M939A2 Series 5-ton trucks. The supplier, BMY, manufactured the trucks at a rate of 40 per day in Marysville, Ohio. Fielding of the trucks continued throughout the year.

In support of ODS, the production line was converted to provide Desert Tan painted vehicles which were fielded to SWA. The vehicles, equipped with a Central Tire Inflation System (CTIS) for enhanced off-road mobility, performed admirably in ODS.

In June 1991, the next generation FMTV completed an ASARC IIIA Milestone Decision Review authorizing the program to proceed to production contract award and Low Rate Initial Production (LRIP). The production contract for 11,000 vehicles was awarded on 11 October 1991 to Stewart and Stevenson, Inc. Production was limited to the LRIP quantity of 200 per month until initial production testing was completed.

A product manager was established in the PEO for Combat Support to manage the SLEP prototype development of 2 1/2 ton SLEP vehicles. Up to three contracts were planned for award. Each contractor was

to rebuild 8 trucks for competitive testing. The Army planned to rebuild a total of up to 13,000 2 1/2 ton trucks under SLEP.

High Mobility Trailer (HMT). The HMT Milestone I/IIIA In-Process Review (IPR) was held 29 August 1991 at TACOM. This was a companion trailer for the HMMWV with increased payload (cube and weight) and mobility when compared to the present M101 trailers. Three models were to be produced: Light Cargo, Heavy Cargo and Heavy Chassis. Generic type classification of the performance specifications was approved at the IPR. Low-rate production was from authorization through the first two budget years for a quantity of 842 vehicles. An MS III decision for TC standard was required prior to full-rate production. Supporting documentation was also reviewed and approved. A General Officer review was planned for October 1991 to decide whether the Army would proceed with this NDI program or with a program to upgrade the M101A3. If the decision was made to proceed with this program, the production Request for Proposal (RFP) was to be released in late October 1991.

Transfer of Acquisition Authority for Commercial Vehicles. In July 1991, the Administrator of the General Services Administration (GSA) proposed to amend the current OSD/GSA Agreement which authorized GSA acquisition responsibility for commercial vehicles for the Army up to 10,000 lbs. GSA requested unlimited weight acquisition authority. GSA cited that in support of non-DOD requirements GSA had established requirements contracts for a wide range of state-of-the-art commercial vehicles exceeding 10,000 lbs. On 27 September 1991, the Assistant Secretary of Defense (Procurement and Logistics) and the GSA Administrator signed an amendment to the 1971 DOD/GSA Agreement on Supply Management Relationships which removed the 10,000 lbs limitation on GSA's procurement of Non-Tactical Vehicles (NTV). To insure an orderly transition from TACOM to GSA, TACOM began meeting with GSA personnel to address all areas that needed clarification.

Establishment of Product Manager - Trailer. Approval to establish PM-Trailer was received in July 1991. The PM position was established as a GM-15 civilian. The office was to be located at TACOM, utilizing existing resources. PM Trailer was to manage the majority of the active TACOM-managed trailer programs, minus the Palletized Load System (PLS), Heavy Equipment Transport (HET) and High Mobility Trailer (HMT) programs under PEO management.

Close Combat Tactical Trainer (CCTT) Army Systems Acquisition Review Council (ASARC) I/II. The CCTT was a proposed system of computer driven, interactive combat vehicle simulators for the M1 Tank and M2/3 BFV, emulator workstations representing combat support and combat service support units and Semi-Automated Forces (SAFOR) replicating OPFOR and adjacent units connected by Local Area Network (LAN). It was to provide maneuver command and control training for the tank and BFV crews at the company/team level. CCTT met the criteria for an ACAT II program and had Congressional interest. On 12 June 1991, the CCTT program was reviewed by the ASARC and given a provisional approval for MS I/II. On 17 July 1991, the Quickstart (QS) plan briefed by OPTEC was approved. During August and September many discussions were held in regard to the Army Science Board's recommendation to expand CCTT to a battalion level trainer. The RFP was expected to be authorized for release by the AAE once all outstanding issues are resolved.

Simulated Area Weapons Effects (SAWE) MS IIIA IPR. SAWE/MILES II was a command and control system to be used in tactical engagement simulations and training at the combat training centers. This system was to simulate in real time the effects of indirect fire weapons (field artillery, mortars, mines and chemical munitions) and incorporate a variable probability of kill into the MILES system. MG Joe W. Rigby, the DCSDEA, chaired a Milestone IIIA IPR on 19 August 1991. The U.S. Army Test and Experimentation Command (TEXCOM) and U.S. Army Test and Evaluation Command (TECOM) presented results of the user and technical tests. The IPR decision was deferred for TRADOC to look into the impact of fielding SAWE at the Combat Maneuver Training Center (CMTC) and for PM-TRADE to report out on a corrective action

plan with risk assessment on the deficiencies identified during the tests. MG Rigby gave MS IIIA approval on 24 August 1991. On 6 September 1991, the SAWE contract was awarded to LORAL Electro Optical Systems for $35.8 million.

Termination of the Binary Chemical Weapons Program. During FY91, the Army was producing the M687 155mm binary chemical projectile and developing a binary chemical warhead for the Multiple Launch Rocket System. The Army was also building production facilities for the Bigeye binary chemical bomb. Due to the bilateral chemical weapons destruction agreement between the U.S. and Soviet Union and Congressional action deleting funding for the MLRS-BCW program in FY91, DOD directed the Army to terminate all binary chemical programs. Additionally, AMC formally deactivated the Office of the Project Manager for Binary Munitions on 30 September 1991.

Report to Congress on NBC Protection for Armored Systems. The FY91 Joint Appropriations Conference Report 101-983, dated 24 October 1990, requested that the Army report on requirements for Nuclear, Biological and Chemical (NBC) protection for armored systems. The Army's report, provided to Congress in June 1991, detailed the balance between personnel and equipment survivability when NBC protection and materiel survivability capabilities are incorporated into armored systems. The report identified the status of 47 current armored vehicles and the direction the Army was pursuing to protect armored systems from NBC hazards.

Armored Vehicle Launched Bridge (AVLB) MLS 70 Upgrade. In June 1991, ODCSOPS directed AMC to upgrade the AVLB to Military Load Class (MLC) 70 due to the increased weight of the M1 Abrams tank. AMC initiated a Materiel Change (MC) to replace the center sections of the bridge with strengthened sections capable of holding MLC 70 loads. The initial requirement was to upgrade approximately 800 bridges but was later changed to only 175 AVLB bridges. Under the MC plan, no changes to the AVLB tank chassis or AVLB launcher were required.

Mine Clearing Line Charge (MICLIC) Tracked M200 Trailers. During ODS the combat engineers determined that the wheeled trailer for the MICLIC was unsatisfactory. The wheeled MICLIC trailer was incapable of being towed at reasonable combat speeds over rough terrain without damaging or overturning the trailer. TACOM sought an immediate nondevelopmental item (NDI) fix from industry and found that a track system offered by Caterpillar, Inc. was ideal. The modified M200 tracked trailer passed all tests. In August 1991, ODCSOPS directed the procurement of 250 track kits and modification of 250 M200 wheeled trailers in the Army inventory to replace the current MICLIC wheeled trailers. The contract was awarded for the purchase of the modification kits in September 1991. The tracked trailers allow MICLIC to be towed at combat speeds over the roughest of terrain without difficulty.

Countermine Modernization Plan (CMP). Language in the FY92 House Armed Services Committee (HASC) Mark directed HQDA to submit a CMP to Congress by February 1992. The effort began in May 1991, with the first draft produced by August 1991. BRDEC worked very closely with ODCSOPS, the U.S. Army Engineer School and other agencies in preparing the CMP. It included threat, doctrine, current capabilities, RDTE plans, training, leadership, organization, force structure, joint/allied considerations and distribution plans. As the Executive Summary to the plan stated,

> Given their effectiveness, low cost and applicability to any level of conflict, we have seen an ever increasing proliferation of mines. . .The requirements and current deficiencies of our countermine capability has been the focus of numerous distinguished forums, to include the Defense Science Board. Each of these groups has recognized the enormity of the problem, its complexity, and the fact that there will not be a 'Silver Bullet Solution' to the countermine problem.

This plan. . .does provide a realistic, cohesive, and structured strategy for addressing the future countermine threat.[3]

The CMP was being staffed through DA as of the end of the fiscal year.. The division expected that the final version would be presented to Congress in February 1992.

Soldier Enhancement Program (SEP). The Soldier Enhancement Program was begun in 1990 with the intent to quickly test and evaluate improved soldier items. The second year of the SEP development efforts continued through 1991 on thirty-five different projects. The projects were in the following areas: Food/Water/Shelter, Communications, Combat Clothing and Individual Equipment, and Weapons and Munitions. In 1991, nine SEP items were type classified: Desert Boots, Flameless Ration Heaters, Lightweight Flashlights, Alternate Fabric for the Cold Weather Clothing System, improvements to the Operational Rations, MK-19 Machine Gun Lubricants, M-4 Carbine and the Intermediate Cold/Wet Glove.

Implementation of the Central Funding and Fielding Policy for Clothing and Individual Equipment. During FY91, AMC implemented the policy of Central Funding and Fielding for CIE items as directed by HQDA. This policy was directed to ensure that improved soldier items were quickly fielded to the soldier. AMC purchased and fielded twenty-four CIE items totalling $255 million dollars to priority units. The Central Funding and Fielding policy alleviated the need for unit Commanders to choose between spending funds for CIE or for other mission items. During the year, nineteen different CIE items were type classified for use by the soldier. Several of the items were developed and type classified in direct support of ODS.

Food Irradiation Program. During 1991, Natick Research, Development and Engineering Center reentered the research arena of Food Irradiation at the request of General Tuttle. The Army is interested in exploring the full spectrum of Food Irradiation and is part of a joint development effort with USDA, NASA, FDA and the commercial sector. The Army's current R&D program includes a cooperative R&D agreement with Vindicator, Inc., a food irradiation company located in Florida. The focus of the program is on evaluating soldier responses to and the logistical and health and safety advantages of specific irradiated food items for application in improving the full range of field rations. This includes higher dose irradiated food products with a 10-15 year shelf life without controlled temperature storage and low dose rate food products for short term storage of perishable items.

Incorporating low dose rate irradiated food items, such as perishable meats, fruits and vegetables into the Army Field Feeding System (AFFS) provides the mechanism to implement recent Army leadership guidance to feed one "A" ration meal in the field per day. The benefits of the irradiation process are expected to be reducing storage and operational costs, while providing a broader range of improved, highly acceptable and desired food items to deployed soldiers.

Standardized Integrated Command Post System (SICPS). The second of the four command post variants of SICPS, the Rigid Wall Shelter (for use on light wheeled vehicles), was Type Classified-Limited Procurement Urgent (TC-LPU) on 16 August 1991. AMC awarded a contract to Gitchner Systems Group Inc., Dallastown, PA on 23 August 1991, to produce 251 SICPS shelters. The SICPS shelter would provide the housing, power unit, and environmental control for the Army Tactical Command and Control System (ATCCS). The first element of the ATCCS to be fielded with the SICPS shelter is to be the Maneuver Control System. Efforts were also begun to have a generic version (minus the power unit and environmental control system) of the

---

[3]Executive Summary to draft *Army Countermine Modernization Plan*, 18 September 1991 (Unclassified), attachment to Memorandum, DAMO-FDD, COL Robert M. Tesdahl, Chief, Combat Maneuver Division, DCS Ops & Plans, DA, to Distribution, Subject: Draft Countermine Modernization Plan Staffing, nd.

shelter, the Lightweight Multi-Purpose Shelter (LMS) Type Classified-Standard. The LMS will replace the S-250 shelter which was designed in the 1970s.

Advanced Aviation Forward Area Refueling System (AAFARS). The introduction of the AH-64 helicopter significantly amplified the need for rapid refueling requirements in forward locations. The AAFARS provided a minimum of 55 gallons per minute to each of four refueling points simultaneously, could be transported inside a UH-60 helicopter, and could be carried and deployed by four personnel. During FY91, a performance purchase description for a four point refueling system was approved for production and Type Classified Generic. AMC transitioned the system to production during the third quarter of FY91 with a production contract award planned in early FY93.

Water Quality Analysis Unit: Purification (WQAU-P). The Water Quality Analysis Set: Purification (WQAS-P) was a portable water quality monitoring system for use in testing raw and purified waters in support of field reconnaissance and ROWPU operations. The WQAS-P improved the capability of soldiers to effectively and efficiently monitor drinking water to ensure that the ROWPU units were operating properly. The WQAS-P consisted of a case containing commercially available hand-held devices which measured temperature, Ph, total dissolved solids, and turbidity; standardization chemicals; technical manuals; abbreviated instructions; M272 Water Testing Kit - Chemical Agents and the DPD (N,N-diethyl-p-phenylenediamine) residual chlorine color comparator. AMC successfully completed the Pre-Production Qualification Test (PPQT) for the WQAS-P at Aberdeen Proving Ground, MD during the third quarter of FY91. A Milestone III IPR was convened 20 August 1991, where the WQAS-P was type classified generic. Production contract award is planned for the 4th quarter of FY92 and fielding is scheduled for the 3rd quarter, FY93.

The Mobile Automated Instrumentation Test Suite (MAIS). MAIS was to be the Army's premier operational testing instrumentation system. It was a mobile instrumentation suite to support the conduct of Army and OSD operational testing as well as force development testing and evaluation on tactical equipment. This enabled the Army to assess tactical equipment as it affected doctrine, tactics, organization structure and training methods. MAIS was to provide data collection, test exercise control, combat simulation and real time casualty assessment for this testing.

MAIS player units were to be mounted on combat equipment including weapon systems, aircraft, and individual soldiers. They were to be capable of supporting an instrumented test exercise as large as a U.S. Heavy Task Force, with support, against a doctrinal threat, a total of 1830 individual weapon systems. The engagements were to be real up to the point of firing ordnance. Once ordnance was triggered, MAIS player units were to interact electronically, replacing actual battle engagements with computer-modeled weapons effects based upon conditions that prevail during the engagement. A central MAIS command, communication and control node was to be staffed by personnel to monitor, referee and resurrect players as required.

The MAIS Milestone I/II decision occurred in September 1990. The Request for Proposal for the MAIS development effort was released on 5 October 1990. The contract was awarded to LORAL Space and Range Systems of Sunnyvale, CA on 18 June 1991. The Office of the DCSRDA expected Operational capability to occur in October 1994.

Congressional Testimony for OPA 1 & 3. Congressional testimony for the FY 92/93 Budget Request for Other Procurement, Army, Activities 1 and 3 was given by the Army principal witness (MG Rigby) before the House Appropriations Committee on 13 March 1991 and the prepared testimony text was incorporated into the Congressional Record. Extensive research was conducted during the preparation to ensure that the testimony was in agreement with other DA/OSD testimony and the Army Posture Statement. This prepared statement provided the details/rationale of the Army's FY 92/93 Budget request for Tactical and Support Vehicles (Activity 1) and Other Support Equipment (Activity 3).

DOD FY91 Omnibus Reprogramming. DOD submitted the Defense Omnibus reprogramming actions to the appropriate Congressional committees on 24 May 1991. One of the many bills approved by Congress as part of this action was the Automated Storage and Retrieval System (ASRS) for $8.5 million. The ASRS replaced the existing storage retrieval machines (procured in 1972) at Red River Army Depot. This system was required to support the maintenance mission which was to be retained at Red River.

CCC/Intelligence and Weapons Systems Embedded Software Division (AMCDE-C)

Most Significant Issues

Life Cycle Software Engineering (LCSE). FY91 was an important year for the LCSE program. The Core dollars were moved from the automation MDEP (PE 738619) to Depot Maintenance MDEP (PE 732207). Two point accounts were established, ".AN" for Core and ".AP" for System Specific. This was to allow better tracking and identification of LCSE dollars. Program Managers, for the first time, were required to reimburse AMC for LCSE support provided to them under matrix support. This effort saved over $31 million in System Specific dollars for FY92 and greater savings could be expected in the coming years. The LCSE System Specific account satisfied minimum sustainment requirements for the third straight year. Education of the HQDA staff continued and support of the LCSE program increased. Efforts continued to establish Master programs in Software Engineering at the University of Alabama and the University of Missouri.

Satellite Systems Engineering. The Director of Information Systems for Command, Control, Communications and Computers (SAIS-PPX), Department of the Army (DA) memorandum of 22 January 1991 requested HQ AMC (DCGRDA) help in fixing a long standing problem regarding the Army's ability to provide systems engineering and analysis for Satellite Communications (SATCOM). DA noted that the Army has always been responsive to the DOD when it comes to building satellite ground terminals and control systems. In the past, the development of the most important element, the satellite payload, was left to the other services, often to the detriment of the operational commander. Weighing the operational performance of the space segment against the ground component generally resulted in an engineering compromise that unfairly burdened the ground system. DA proposed that the CECOM Center for Space Systems (C2S2) become AMC's SATCOM systems engineers and proposed giving them the needed assets and responsibility.

An AMC memorandum of 1 February 1991 requested C2S2 to provide information on the additional resources, charter authority, and responsibilities (tasking) needed to accomplish this mission. The C2S2 memorandum of 12 March 1991 submitted requirements for additional resources with a copy of their current mission and functions, which they felt were in consonance with the DA system engineering and architecture mission. C2S2 also forwarded a proposed statement of DA-level tasking. These inputs were forwarded to DA with the request that the proposed statement of DA-level tasking be formalized as a charter. A DA memorandum response of 17 April 1991 advised that no major changes were needed to the C2S2 charter but requested an increase in the scope of responsibilities for C2S2 to include engineering support for HQDA staff and for TRADOC in the development of Required Operational Capabilities, Operational Organizational Plans, and technical training efforts. In an HQ AMC memorandum of 20 May 1991, AMC requested C2S2 to revise their mission and function statements to reflect these changes and forward them to HQ AMC for submission to DA for approval. A first draft of the revised mission and functions was coordinated and a second draft was under review at C2S2 as of the end of the fiscal year.

Army Executive Agent for Physical Security Equipment (PSE). During the fiscal year, AMCDE-C continued to serve as the principal secretariat supporting the Army Executive Agent for PSE. In October 1989, the CG had appointed DCSDEA, AMC, as the Army Executive Agent for PSE in response to a request

from the Assistant Secretary of the Army for Research, Development and Acquisition. Accordingly, the AMC DCSDEA was the Army single point of contact and central manager for the planning, acquisition, deployment, installation and support of PSE, including conventional, nuclear and chemical. A corporate body named the Army PSE Action Group (PSEAG) was established to advise and support DCSDEA in the discharge of his executive agent responsibilities. The Army PSEAG included all Army PSE principals and was chaired by AMCDE-C. The division also represented the Army at the DOD PSE Action Group, which was established to coordinate DOD PSE RDA efforts and disburse DOD PSE RDT&E funds.

During FY91, the Army PSEAG convened three times to find solutions on PSE issues and establish Army positions for the DOD PSEAG. One major accomplishment was the resolution of the resourcing dilemma of the DOD Security Operational Test Site (SOTS) at Fort McClellan, AL and the subsequent transition of this facility from TRADOC to AMC. The continued operation of the SOTS was in jeopardy due to its unfunded status in FY92. This problem was raised at the DOD PSEAG which eventually authorized funding from the DOD PSE RDT&E allocation for the continued operation of this facility. In addition, under the auspices of AMCDE-C, a consolidation of the fragmented Army PSE RDA programs under the Product Manager, PSE was accomplished. This enabled the division to properly address the frequent concerns and questions raised on duplication of PSE RDA effort at the DOD PSEAG. As part of this effort, the lost PM PSE position was also restored.

Policy and Guidance on Preparation of Computer Resources Life Cycle Management Plans (CRLCMP). As of the end of FY91, the Army did not have a HQDA-level document to provide guidance to the Program Executive Officers/Program Managers (PEO/PM) for preparing CRLCMPs, despite the fact that both DODI 5000.2 and AR 70-1 mandated the use of a CRLCMP as the vehicle for planning and management of computer resources in weapon systems. Such guidance did exist as Appendix B to AMC R 70-16. However, PEOs/PMs were not bound to the requirements of an AMC regulation. To ensure that such guidance was applicable to the PEOs/PMs, AMCDE-C recommended to the office of the Assistant Secretary of the Army (RDA) that Appendix B of AMC R-70-16 be incorporated into AR 70-1 or into its companion DA Pamphlet. AMC was tasked to prepare an Interim Operating Instruction (IOI) for preparing CRLCMPs and an IOI was prepared and staffed. An updated draft was forwarded to HQDA (DISC4) for final review and concurrence, which was expected in FY92. The IOI was to then be forwarded to SARDA for publication.

AMC Regulation 700-83, Batteries and Battery Chargers. In response to recommendations contained in USAAA Audit Report NE 86-204, Audit of Batteries and Battery Chargers, AMC Reg 700-83 was in the process of being revised during FY91. Several draft versions of the revised regulation were coordinated within HQ AMC, the MSCs and other AMC activities. During this coordination process, it became apparent that Program Executive Officers (PEO) could not be adequately covered by an AMC regulation; therefore, this requirement was being incorporated into the newly revised AR 70-1, Systems Acquisition Policy, to be published in December 1991. The implementation procedures were to be detailed in a new DA Pamphlet on Materiel Acquisition Procedures. A first draft was due out in November 1991. These measures were to eliminate the need for AMCR 700-83.[4]

Other Issues

Single Channel Ground and Airborne Radio System (SINCGARS). SINCGARS was 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 approximately 24,000 SINCGARS radios delivered at the

[4]Memorandum, U.S. Army Laboratory Command (AMSLC-CT), Subject: AMC-R 700-83, Batteries and Battery Chargers, 29 March 1991.

end of FY91. There were 4,810 ground radios and 55 airborne radios fielded to TRADOC at the end of FY91. The Eighth U.S. Army (EUSA) in Korea fielded 6,949 ground radios and 472 airborne radios by the end of FY91. The U.S. Army Pacific fielded 4,459 ground radios and 339 airborne radios by the end of FY91. By the end of FY91, ground radios were also fielded to the Marine Corps (334), the U.S. Southern Command (104), the U.S. Navy (127), the U.S. Air Force (99), and the First Cavalry (353). Approximately 1,000 SINCGARS ground radios were deployed in Southwest Asia during Desert Shield/Storm operations. The radios performed well and demonstrated high reliability.

Second Source for the SINCGARS. 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 12,650 ground radios. The basic contract was for 550 radios. The first option was awarded in March 1991 for 1,725 radios. ASARC and Defense Acquisition Board (DAB) reviews were scheduled for May and June 1992 respectively. The purpose of the reviews was to approve transition into full rate production.

Combat Service Support Control System (CSSCS). CSSCS was one of five Army Tactical Command and Control System (ATCCS) nodes and provided logistics information on operational readiness, combat sustainability and projects shortages. It utilized inputs from a variety of Standard Mission Information Systems (STAMIS) to provide data on the status of medical, ammunition, maintenance, personnel, supply and property book information. It provided Army commanders command and control of assets from Echelons Above Corps (EAC) down to the battalion level. CSSCS was composed of five blocks of software. The proof of principle for versions one and two was completed in FY90. CSSCS was approved to enter into Full Scale Development (FSD) at a December 1990 ASARC. TRW was awarded the FSD contract in FY91.

Forward Area Air Defense (FAAD) Command and Control (C2). FAAD C2 was another of the five Army Tactical Command and Control System (ATCCS) nodes which provided command and control of air defense assets from EAC to the battalion level. It provided commanders with targeting information and control 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 Ground Based Sensor (GBS), and funding cuts, the AAE directed the Program Manager, Air Defense Command and Control System (PM ADCCS) to restructure FAAD C2. Consequently, FAAD C2 was planned to be implemented in the light divisions first with GBS and then with a heavy division capability in later years. The Light and Special Division Interim Sensor (LSDIS), which began pre-production testing in FY91, was to be a two-dimensional manportable radar which was to be fielded in the light divisions to partially fill the void until GBS was fielded. FAAD C2 Initial Operational Test and Evaluation (IOT&E) was scheduled for late 1993.

Common Hardware/Software (CHS) for Application in the ATCCS. In 1986, the Under Secretary of the Army (USofA) and the Vice Chief of Staff, Army (VCSA) directed the acquisition of Non Developmental Items (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 was the most effective and economic means of achieving integration and interoperability of the five battlefield functional areas to provide the commander with full Command, Control and Communications (C3) wherever he may be on the battlefield.

The Program Manager, Common Hardware/Software (PM CHS) awarded the initial contract for ATCCS CHS to Miltope in August 1988. 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 Command and Control (FAAD C2) System, Advanced Field Artillery Tactical Data System (AFATDS), Maneuver Control System (MCS) and Combat Service Support Control System (CSSCS) began delivery in FY89. The ATCCS Systems Engineering and Integration (SE&I) contract was awarded to General Electric in August 1989. The contract for a Lightweight

Computer Unit (LCU) for ATCCS Common Hardware was awarded to Science Applications International Corporation (SAIC) in April 1991.

Magnavox, Zenith, Loral and Command System, Inc. were members of the SAIC LCU Strategic Alliance. As of the end of the fiscal year, CACDA was preparing requirements for procurement of second generation ATCCS CHS, with both Large Screen Displays (LSD) and Large Screen Printer Plotters (LSPP), to achieve technology insertion and continued production after the initial CHS contract expires in 1993. ATCCS CHS was deployed in SWA during ODS in Combat Service Support, Maneuver Control and at EAC.

Global Positioning Satellite (GPS) Receivers for U.S. Army Use in ODS. GPS was a Tri-Service network of satellites that enabled the use of a radio receiver for passive precision location on land, at sea and in the air. To deny access by non-secure receivers in wartime, GPS incorporated a Selective Availability (SA) function. As of the end of FY91, the Army foresaw an ultimate need for 68,000 or more Lightweight Army User Equipment (LAUE) secure receivers. For Tri-Service applications, the GPS Joint Project Office (JPO) defined LAUE as the Precision Lightweight GPS Receiver (PLGR). SA capability in PLGR would 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 would not enter production until FY93/94.

During Desert Shield/Storm operations, the Army Deputy Chief of Staff for Operations and Plans (DCSOPS) forecast the Army need for LAUE equipment to be about 8500 units, enough to extend the GPS capability down to every squad leader. The Army had 506 Small Lightweight GPS Receivers (SLGR), purchased from Trimble Navigation Limited of Sunnyvale, CA, for field demonstration of GPS location capability. This Trimble equipment demonstrated an Operational Readiness (OR) of 96 percent in extensive field use with the Army and Marine Corps. No formal tests were recorded. SLGR did not have SA capability. With SA distortion of zero percent, the location accuracy of SLGR was 25 meters. In standard peacetime SA operation, SLGR was capable of location accuracies of 100 meters; however, as SA distortion was increased, the location accuracy of SLGR was further degraded. Available equipment from the original 506 Trimble SLGRS was fielded to Army troops in Southwest Asia and the Army ordered another 7643 SLGRs from Trimble in FY90/91. During ODS, SLGR receivers from Trimble performed exceptionally well in units at all levels throughout the Army.

Maneuver Control System (MCS). In evolution from a full militarized command and control system to a diversified NDI system, built around a small core of militarized Tactical Computer Terminals (TCT), MCS became the prototype for the ATCCS. Current MCS operational software, containing the Interim Force Level Control System (IFLCS), was the proof of principle for ATCCS. Thomson Ramo Woolridge (TRW) was the system integration contractor for MCS.

MCS NDI equipment, Tactical Computer Processors (TCP) and Analyst Consoles (AC), were ruggedized applications of commercial Hewlett Packard computers. FACC completed production of TCPs and ACs in 1990. The Program Manager, Operational and Tactical Data Systems (PM OPTADS) fielded MCS NDI equipment to USAREUR and the rest of the Army. The TCTs were being retired during the fiscal year.

The ATCCS Common Hardware System, which used ruggedized versions of similar Hewlett Packard computers, was deployed to Southwest Asia for integration with MCS NDI equipment during ODS. The VII Corps Headquarters and the First Infantry Division experienced successful MCS operation with Version 10.03.1G of MCS operational software. With either MCS or CHS NDI equipment, V10.03.1G provided 20 megabytes of continuous graphic data base capability; enough to accomodate four standard map sections in 1/50,000 or 1/250,000 scale. This allowed the display of seamless map graphics of the combat zone, enlarged details of local areas and overlays of related information on the cathode ray tube displays.

Mobile Subscriber Equipment (MSE). MSE was an advanced, secure and survivable telephone system with data and facsimile capability, enabling 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. It was fielded a corps at a time, in the sequence of III, V, VII, XVIII and I Corps. III Corps fielding took place February 1988 through February 1990. V Corps fielding, which began in December 1989, continued into FY91.

Due to U.S. Army, Europe (USAREUR) force structure reductions and ODS impacts, the MSE fielding schedule was altered in FY91. VII Corps fieldings in Europe, originally scheduled to commence in FY91, did not occur; VII Corps Continental U.S. (CONUS) fieldings did occur. Two I Corps signal battalions (10th and 29th) were fielded early in FY91, instead of in FY93. CONUS VII Corps and accelerated I Corps fieldings were to continue in FY92, as well as previously scheduled XVIII Corps fieldings. Five signal battalions providing twenty MSE nodes were deployed to Southwest Asia in FY91 to support MSE-equipped III and V Corps units during ODS. MSE performed superbly and was a major command and control tool. The MSE signal battalions kept pace with the maneuver units and provided uninterrupted service throughout the entire desert march. A team of twenty GTE personnel deployed in Southwest Asia with the troops provided in-country logistic and engineering support. No major MSE hardware failures were reported. During ODS, MSE's worldwide readiness rate remained at 94 percent.

Battlefield Deception Elements (BAT-DE). Battlefield Deception Elements were trained and activated Army wide. The deception elements had nineteen soldiers at division level and twelve at corps level. BAT-DEs had organic equipment to conduct deceptive operations that included Logistic Base/Critical None (LBCN) deception devices and Communication Deception Devices (CDD). Eighteen divisions and five corps had operational BAT-DEs which were being fielded in FY88-92.

BAT-DEs at XVIII Airborne Corps and three divisions (82nd Airborne, 101st Airborne and 24th Mechanized) conducted very successful deceptive operations during ODS to create a decoy XVIII Airborne Corps Tactical Operations Center (TOC) prior to the ground war starting, then moved to a new location after the ground war started. On several occasions Iraqi armor units re-positioned on their side of the border to line up an assault heading to the decoy TOC and brought in artillery fire on the decoy TOC. Limited quantities of Multispectral Close Combat Decoys and Low Cost Hull Defilade M1 tank decoys were issued to the 24th Mechanized Division with feedback that some Iraqi anti-armor fires were directed at the decoys.

QUICKFIX EH-60A Countermeasures System. The QUICKFIX EH-60A was a Communications Jamming Emitter Intercept/Locating System carried in the Blackhawk Helicopter. In FY91, a Direction Finding (DF) calibration enhancement study produced software tools enabling the selection of optimum calibration frequencies with little degradation in system accuracy. The software tools were expected to reduce cost and decrease the time required to perform system calibration. Twenty-seven EH-60As were deployed in support of ODS. Lessons learned from deployment were: need a larger capacity fuel system for extended range deployment; need improved environmental control for cooling and keeping out water and sand; require Global Positioning System (GPS) update to Inertial Navigation System (INS) to keep it from degrading in accuracy; and require greater than line-of-sight communications to report and receive taskings from the Technical Control and Analysis Center (TCAE).

Some of the lessons learned were to be incorporated into the Advanced QUICKFIX, which was to consist of state-of-the-art Intelligence and Electronic Warfare (IEW) systems. Research and development was scheduled during FY92 and FY95, and production for FY95. The AAE signed the Materiel Change for Advanced QUICKFIX on 6 September 1991. This gave formal authorization to proceed into Engineering and Manufacturing development of the system. The Operational Requirements Document (ORD) was still being drafted by the Combat Developer at Fort Huachuca, AZ as of the end of the fiscal year.

TACJAM AN/MLQ-34 Countermeasures System. The AN/MLQ-34 Tactical Communications Jamming (TACJAM) System was a ground-based electronic warfare system carried in the M1015 Tracked Vehicle. The system began its development in October 1973 with an approved Required Operational Capability (ROC). The system was produced through three production contracts, the first awarded in April 1979, the second in May 1983 and the final in March 1987. The only product improvement planned for the system was the addition of a Net Radio Protocol (NRP) data link using the host interface unit, under development by the end of the fiscal year.

TACJAM was found in all armored and mechanized divisions. The system was type classified standard on 20 July 1979. The total number of systems produced was 103. The total number of systems fielded as of the end of the fiscal year was 63.

TRAFFIC JAM AN/TLQ-17A(V)3 Countermeasures System. JAM AN/TLQ-17A(V)3 was a High Power Communications Jamming System initially carried on the Common Utility Cargo Vehicle (CUCV). The CUCV was being replaced by the High Mobility Multipurpose Wheeled Vehicle (HMMWV). Twenty-three HMMWV replacement systems were fielded in FY91 to bring the total to 57. Twenty of the HMMWV replacement systems were deployed to Southwest Asia for ODS. Of the 23 HMMWV replacement systems fielded, 16 went to Forces Command and the remainder to Europe. Systems deployed to ODS were with units from Forts Hood, Bragg, Campbell and Stewart. The systems performed successfully when configured for involvement in a special mission called SANDCRAB. Two systems remained deployed in Southwest Asia at the end of the fiscal year, while four more were planned for deployment.

Joint Surveillance Target Attack Radar System (JSTARS). The JSTARS was an Air Force/Army program consisting of an E-8A aircraft being developed by the Air Force and Ground Station Modules (GSM) being developed by the Army. JSTARS was a near real-time, wide-area surveillance system designed to provide battle management and targeting information to airborne and groundbased weapons systems for the engagement of enemy mobile and stationary targets. In FY91, the Joint Chiefs of Staff ordered JSTARS to ODS. JSTARS gave field commanders an extraordinary reconnaissance and battlefield management capability.

All Source Analysis System (ASAS). The ASAS was a tactically deployable automated data processing system that was to provide the Army with the capability for targeting, intelligence fusion and intelligence electronic warfare command and control. The ASAS program was redirected to integrate increased functionality by the infusion of an Office of Secretary of Defense (OSD)-sponsored Balanced Technology Initiative (BTI), Artificial Intelligence Module Test Bed - Hawkeye, which was successfully implemented to meet the operational needs during ODS.

The Program Executive Officer, Command and Control Systems (PEO CCS) and the U.S. Army Intelligence Center and School (USAICS) recommended a change to the Block I ASAS acquisition strategy that would allow for the incorporation of this increased functionality and the early fielding of intelligence fusion systems to priority units and test and institutional training sites at a significant cost savings. This redirection would result in the integration of advanced hardware and software technology with already fielded equipment into the Combat Electronics Warfare and Intelligence (CEWI) Battalion. The revised acquisition strategy responded well to the Army Chief of Staff's direction to provide a near-term capability to the priority units as early as possible. The redirection also allowed for a change to the test and evaluation strategy that was to move its Independent Operational Test and Evaluation (IOT&E) into a more realistic schedule.

The addition of the Hawkeye and acquisition strategy changes did not affect the ASAS Evolutionary Acquisition Plan for transitioning to the ATCCS CHS, the addition of previously planned objective systems functionality or improved battlefield survivability. This revised acquisition strategy was approved by the ASARC on 3 June 1991 and the Army Acquisition Executive on 3 July 1991.

Wartime Reserve Modes (WARM). The WARM was a frequency, pulse repetition interval, pulse width and/or some other system parameter/operating characteristic that was used only in a wartime situation. It was seldom, if ever, emitted in testing and/or training. The HQDA Special Study Group established to institutionalize WARM within the Army has developed an Army Plan for countering WARM and an Army Regulation on WARM policy and program. This plan and regulation assigned three specific tasks to AMC: to develop a central repository for friendly WARM parametric data; long term technology development of generic and multi-sensor self protection systems; and development of a rapid software reprogramming capability. These efforts by various AMC components were ongoing during FY91.

Army Reprogramming Analysis Team (ARAT). The ARAT was activated during ODS and demonstrated that it supported the system manager's ability to update the critical mission data of Target Sensing System (TSS) equipments such as radar warning, surveillance, self protection, and smart munitions systems. These systems incorporated software algorithms to make threat identification based on embedded pre-programmed threat parameter data. As threat capabilities changed, or as new threats become operational in the future, there is a risk that these systems would not correctly identify the threats. To the extent that the threat is misidentified, incorrect countermeasures may be implanted, putting friendly forces at risk. The ARAT ensured that the reprogramming of equipment data was an essential option available to system managers and tactical field units to counter the effects of threat parameter changes. ARAT was an AMC and TRADOC matrix supported organization responsible for providing timely impact statements on TSS systems. The ARAT was collocated at Elgin Air Force Base with an Air Force facility that determined threat impact for Air Force equipments. AMC support to ARAT was ongoing in FY91.

Database Design and Development Effort. This effort, aimed at improving the management of mission critical computer resources, continued in FY91. However, a major change was made in pursuing this objective. In lieu of trying to obtain FY91 and out-year funding to support this effort, it was decided to ask the Program Manager, Acquisition Information Management (PM AIM) to support AMC by including AMCDE's database as an integral part of PM AIM's database. Such an approach, if agreed to by PM AIM, would avoid duplication of effort and allow full advantage of resources (i.e, data/information, system architecture, user interface module, hardware, software, communications equipment, etc.) that was to be available from PM AIM's database.

The overall system design for the PM AIM data base was to automatically include the design for the AMC database. Two meetings were held with PM AIM during March and May 1991 to discuss this possibility. As a result, PM AIM agreed in principle to cooperate with and support AMCDE and requested the office to develop a Functional Description (FD) (i.e., a specification) for its database and forward it to PM AIM for analysis. The in-house effort began in May 1991, on a part-time and on as time available basis, to prepare the FD as stated. The first draft was expected to be available for staffing by mid-November 1991.

Army Software Implementation Task Force (SITF). As Army systems increase their reliance on computers, software complexity increases and its criticality grows. Although progress was made in recent years, as of the beginning of FY91, the Army still did not have a cogent software acquisition and support policy nor did it have a strategy for insertion of new technology in a controlled, purposeful manner. As a result, the CECOM Center for Software Development compiled a report which addressed these problems and provided recommendations/actions needed to correct them. LTG Bunyard, DCGRDA, formed the SITF in October 1989 to implement the recommendations of the report. The activities of the AMC SITF have continued throughout FY90-91. Of the 17 high priority tasks, 5 have been completed and a number of the other high priority tasks are approaching finalization. In March 1990, the SITF was transitioned to the HQ AMC DCSDEA Software Branch. SITF was to continue to function and address the high priority recommendations, as well as the 45 lower priority recommendations and their respective subtasks, totalling 177 subtasks in the future. The SITF was to be transferred to HQDA (DISC4) in October 1991.

Special Operations Division (AMCDE-F)

Issues and Activities

Transfer of Anti-Drug Mission from AMCDE-F. In January 1991, an Army Counter-Drug RDA office (AMCDE-N) was established under the AMC Deputy Chief of Staff for Development, Engineering and Acquisition (AMCDE). The Anti-Drug RDA Mission previously assigned to AMCDE-F and four AMCDE-F Special Programs Team personnel were transferred to the new AMCDE-N office.

Management of USSOCOM SOF Unique RDA Programs. During FY91, AMCDE-F provided RDA management for a Baseline list of 50 SOF Unique Programs, to which the U.S. Special Operations Command (USSOCOM) concurred. Management included review, staffing and comments or recommendations on Program Requirements Documents, Integrated Logistic Support Plans (ILSP), Test and Evaluation Master Plans (TEMP), System MANPRINT Management Plans (SMMP), Program Baseline Documents, In-Process Review packages and Memoranda of Agreement (MOA). Management also included providing Acquisition Policy Guidance, executing funds, distribution/reprogramming actions and DA directed and TC-LPU materiel acquisitions.

Fielding of SOF Unique Systems. Five of the 50 SOF unique programs were fielded during the past year. Systems fielded were the Pursuit Deterrent Munition (PDM), Portable Loudspeaker (PLS), Desert Mobility Vehicle System (DMVS), CRYPTO CHIP (KYV2A) and Mobile Television Broadcast Station (TVT-5).

Support to Desert Storm Operations. DA Directed Procurement, Testing, TC-LPU and shipment of 35 each Desert Operations Motorcycles and 53 each Desert Operations Trailers was expedited to support ODS. Two Leaflet Rolling Machine Prototypes were provided to the troops in support of PSYOPS units.

Recovery and Distribution of Foreign Weapons. In September 1991, the Under Secretary of the Army approved an AMCDE-F request for approximately 500 weapons identified from a list of those captured in Panama during Operation Just Cause. These weapons were to be used to satisfy a SOF Foreign Weapons for Training requirement. By obtaining these weapons, AMCDE-F could realize a cost avoidance of approximately $700,000. The office also identified other potential free sources of weapons. AMCDE-F actions in obtaining or transferring those weapons continued into FY92. The office expected to realize additional cost avoidance.

Transfer of Authority and Responsibility for MFP-11 PPBES Functions. In FY91, the transition of PPBES responsibilities for MFP-11 from the U.S. Army to USSOCOM was completed. AMCDE-F assisted USSOCOM in the preparation of Research and Development Descriptive Summaries (RDDS) and Procurement Exhibits (P-Forms). The office collected inputs from AMC MSCs (materiel developers), which were reviewed, consolidated and provided to USSOCOM. Inputs covered the areas of Programming, budgeting and Execution of MFP-11 Funds.

Program Integration Division (AMCDE-PR)

Significant Issues

Materiel Change Management (MCM). Significant developments in MCM during FY91 included policy input to Draft AR 70-1 and Draft DA Pamphlet 70-2, the expanded use of the Materiel Change Information System (MCIS) as a tool for decision making, and the utilization of MCM to support Operation and Support Cost Reduction (OSCR) initiatives. The Army's basic policy guidance for MCM was contained in Interim Operating Instructions for U.S. Army Materiel Change Management, 6 September 1990. The IOI was to be

superceded by AR 70-1, *Systems Acquisition Policy*, and by DA Pamphlet 70-XX, *Materiel Acquisition Handbook*, upon publication. Initial drafts of these documents included MCM policy and procedural guidance. The MCIS Database contained basic information, including funding requirements, for all Army materiel changes in process.

Prior to FY91, a general update of MCIS was performed at semi-annual intervals. During FY91, MCIS users were instructed to update information in MCIS as changes occurred. The result was an on-line database which could be used as a vehicle for preparing reports and for making funding decisions based on latest available data. Also in FY91, MCM was identified as a key factor in Army's OSCR program. In coordination with TRADOC, AMC initiated efforts to place greater emphasis on cost reduction in the materiel change prioritization process.

Quarterly Management Report (QMR) on AMC-Managed Systems. As the Commanding General of AMC, General Tuttle had established seven HQ AMC missions, which included "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 Report related to management of non-major systems, DCGRDA directed the establishment of the QMR. This report's objective was to provide the HQ AMC Command Group a tool with which to review events that impacted the execution of acquisition programs; identified problems or issues for submission to HQDA; identified where assistance from HQ AMC can be provided; and assisted in the performance of the oversight function. The number of systems managed averaged about 300.

PEO/PM Evaluation Program for Matrix Support Activities. The monthly Functional Support Report (FSR), established in March 1991, was replaced in the third quarter by the PEO Support Quarterly Evaluation Report (QER). The QER was prepared by all MSCs supporting PEOs/PMs. Status was rated using color codes, based on PEO/PM-prepared ratings, on the quality of matrix support they received from MSCs for the quarter. The reporting period changed from monthly to quarterly, based on stabilized PEO/PM support mission by MSCs and a requirement to simplify a reporting system within limited Army resources. The QER was a component of the quarterly command Review and Analysis (R&A) for AMC Mission 4.

Command R&A for AMC Missions 3 and 4. General Tuttle directed that R&A be organized along AMC mission lines. The DCGRDA and DCSDEA were designated mission leaders for AMC Missions 3 and 4. AMCDE-PR coordinated all DCS's and offices participating in Mission 3 and 4, and conducted a quarterly IPR and briefing to DCSDEA and DCGRDA respectively. Approved briefing materials were submitted to AMCMM-M for publication.

Industry Visits to Army Units. Due to ODS, this program was tailored to rapidly provide unfiltered feedback on the performance of deployed equipment to prime and key subcontractors. Two trips were organized for this purpose. The first was a set of two day visits from 21-25 July 1991 at Fort Hood, attended by 74 defense contractor representatives and 11 PEO structure representatives. This visit covered the Aviation, Fire Support, Combat Service Support and Communications/IEW Mission Areas. A second visit was to Fort Bliss from 18-20 August 1991. Representatives from 41 defense firms as well as eight PEO structure representatives attended the visit, which covered the Maneuver Armor/Maneuver Infantry and Air Defense Mission Areas. Feedback from the contractors on both of these visits was extremely positive.

FY94-08 Long Range Army Materiel Plan (LRAMRP). The LRAMRP was the long term plan to develop and produce technology and equipment in response to Army-wide combat developer requirements as well as a RDA strategy for modernization. LRAMRP brought requirements, programs and players together at all levels and disciplines for interaction, intensive analysis and decision making. It focused on a 15 year period, from fiscal year 1994 to 2008. LRAMRP was the primary vehicle for program building for RDTE and Procurement appropriations and served as the starting point for the Army POM development cycle. The

Combat Developers (TRADOC, Combined Arms Command, Training Centers and Schools) oversee eventually building the LRAMRP into a "1 to N" priority listing. MACOMs and Materiel Developers provided management and business-sense input. Programs, constructed in Management Decision Packages (MDEP) and increments, were developed jointly. AMC had specific responsibility for infrastructure mission areas which supported warfighting: Science and Technology Base, Test and Evaluation, Ammunition, Base Support and Training. AMC developed program data, explanatory narratives and sets priorities for infrastructure mission areas. AMC also assisted other managers in their functions and reviews.

The Infrastructure Mission Area Integration Team (IMAIT), chaired by MG Rigby, met in formal sessions throughout the LRAMRP cycle and approved AMC actions and input. GEN Tuttle and LTG Thomas were thoroughly briefed and they provided input throughout the LRAMRP cycle. The LRAMRP cycle began in November with a CAC-issued Letter of Instruction. This document outlined the process and roles of the participants. A schedule of reviews and other milestones, as well as available program and fiscal guidance, were given. In January, after release of the President's Budget, CAC hosted a workshop to discuss and coordinate guidance and events for the upcoming cycle. Projected Total Obligation Authority (TOA) was provided. Programmatic development occurred during the February to April timeframe. The President's Budget database was converted to a detailed format and released as a start point. Materiel Requirements and recommended solutions were applied to produce MDEP increments. Dollars and quantities were reflected in detail for all systems and programs.

From late April until 20 June 1991, MDEPs and increments were prioritized to reflect the best overall programs within the fiscal constraints that had been imposed. Infrastructure lists were merged with the warfighting list to form an integrated, prioritized draft LRAMRP. Mission Area Managers conducted intensive branch reviews in July to assess the impact of the draft LRAMRP on their programs and validate priorities and programmatics. During the first week in August, CAC conducted an integration review, with MG Rigby representing AMC. Recommendations were evaluated in each mission area and decisions were made on priorities and how the overall draft LRAMRP responded to the Army's total modernization strategy. A one day force assessment review was conducted 16 August 1991 at CAC to review the draft LRAMRP and ensure that CINC and DA level priorities had been addressed. LTG Thomas represented AMC. CAC made changes and adjustments to the database and submitted the proposed LRAMRP to HQ TRADOC the first week in September. The CG, TRADOC conducted a final LRAMRP review 17 September 1991, attended by MG Rigby. The approved LRAMRP, developed from top to bottom, was sent to HQDA on 8 October 1991.

LRAMRP/LRRDAP/RDA Automation. TIER III training was initiated during FY91 at the Research, Development and Acquisition Information System Activity (RDAISA) on the use of TIER III/AMC Executive Tool. Training was provided to AMC MSCs, HQ TRADOC and Schools, and HQDA staffs involved in developing the TRADOC LRAMRP and DA Long Range Research, Development and Acquisition Plan (LRRDAP). These software tools were extensively used during the FY94-08 LRAMRP and LRRDAP processes. The standard AMC Research, Development and Acquisition (RDA) software was converted from Informix 3.2 to Informix 4GL relational database software and tested at HQ AMC. Additional field testing at selected MSC sites was to be concluded in FY92. Hardware conversion from the Sperry mini-computer to a 386, 33 MHZ PC environment for the RDA standard database system was delayed due to work efforts, schedule and priority changes within the contract that was to be used to purchase this hardware. Hardware conversion was then set for February 1992. In addition, a decision was made to eliminate the Mission Area Materiel Plan (MAMP) database, since most of its functional need was now accomplished through TRADOC's Concepts Based Requirements System (CBRS). RDA was to be slightly expanded in FY92 to include the linkage of RDT&E workpackage efforts to TRADOC Battlefield Development Plan Capability Issues.

Operating and Support Cost Reduction. Operating and support costs of Army systems consumed almost one half of the Army's budget each year. Additionally, the Army's budget was declining while inflation and

pay raises further reduced purchasing power. This put a "squeeze" on the investment funds of research, development and acquisition. The result was an inability to invest in the Army's future systems. HQ AMC and the Combined Arms Support Command (CASCOM) realized that action had to be taken immediately to reduce operating and support costs. Each command established an OSCR task force to develop programs and plans for implementing OSCR. AMC's task force became permanent in April with the assignment of 3 people.

AMCDE-P accomplished a great deal in FY91 toward institutionalizing OSCR. The office identified generic cost drivers and the tech base was to focus its future efforts on research and development to reduce the effects of the generic cost drivers, Army-wide. Tech base workshops were held at each Research and Development Laboratory to promote OSCR and to develop the Tech Base Investment Strategy. Stock fund was prepared to reengineer/redesign specific, currently stocked items with state-of-the-art, mature technologies to realize savings in increased reliability and durability. Procedures were in place by the end of the fiscal year for these stock fund investments, and the first use should be in early FY92. In materiel change management, OSCR was to be given equal consideration with performance after safety requirements are met.

A Value Engineering Working Group developed a plan that would give industry incentives to develop OSCR projects with the same zeal as the acquisition reduction projects. This plan should be almost fully implemented in FY92. The data and reporting working group was well underway on developing the tools, processes and procedures that were to be used to validate, justify, and support each OSCR initiative/project that was submitted or implemented. The CSA and most of the ARSTAF principles were briefed on OSCR at the 4-Star Requirements Review Committee (RRC) meeting on 28 August 1991. The CSA wholeheartedly endorsed OSCR at this briefing, which was also attended by the AMC and TRADOC CGs.

As of the RRC briefing, over 600 Army officials from the top Army leadership to action officer level had been briefed on OSCR. OSCR overarching policy signed by the Army Acquisition Executive and Vice Chief of Staff, Army was staffed throughout the ARSTAF and Secretariat, and all issues were resolved. A memorandum endorsing the OSCR concept by the CSA and Secretary of the Army was also staffed throughout the Army and was ready for signature at the end of the fiscal year. The HQDA proponent for OSCR was DCSOPS Force Development (DAMO-FDR). The proponent was to form a task force in FY92 to develop the implementing plan for OSCR. HQ AMC was to be an integral part of this task force and was to continue to set the pace for the Army.

Materiel for Winning. This biennial publication was initiated in 1985 at the request of General Thompson, the CG of AMC at that time. The publication would provide an unclassified overview of the AMC and TRADOC Research, Development and Acquisition program for private industry. The publication was designed to provide information to assist industry in determining where to expend their R&D funds. It was published four times after 1985 following the LRAMRP and the Army LRRDAP. Although initially developed for industry, *Materiel for Winning* was used by Congress, DOD, DA, and throughout the Army as a reference guide and training manual. In FY91, 12,000 copies were received and distributed. Funds were programmed for the 1992 edition as well.

Appropriation Management Division (AMCDE-PB)

Issues and Activities

Summer Budget Review. The Procurement Appropriation Summer Review of the FY93 Budget was a joint effort of ASA(FM), ASA(RDA), and HQ AMC to review all Procurement Appropriations for defensibility, executability and pricing. ODCSOPS also participated in the review. Separate on-site reviews were held at the MSCs during June and August 1991.

Desert Shield/Desert Storm PA and RDTE Surge and Other Unfinanced Requirements. Issue Sheets/Surge Packages in support of ODS unfinanced requirements were consolidated, coordinated and presented to an AMC GO Surge Committee for approval. Approved proposals/requirements were forwarded to ODCSOPS for approval and funding or inclusion in Congressional Reprogramming Actions and FY91 Supplemental Budget Request. Supplemental funds were received in the amount of $36.9 million.

FY91 RDTE Program Reviews. In March 1991, AMC conducted a review to determine AMC's FY91 unfinanced requirements. The AMC Execution review covered all FY90 and FY91 programs which did not meet the HQDA execution goals as of 28 February 1991. Each MSC/SRA briefed all qualifying projects to the AMC staff. As a result of in-depth analyses of these projects, AMC's unfunded requirements were reduced from $43 million to $26 million. The results of the review were briefed to OASA(RDA) on 10 April 1991. AMC made recommendations to fund $11 million itself, that OASA(RDA) fund $3 million, and that the remaining bills were beyond the ability of this command to effect. OASA(RDA) concurred with all AMC's recommendations and promised their full support to fund all requirements beyond the scope of AMC.

In July 1991, a second AMC Execution review was conducted, covering all FY91 programs which did not meet the HQDA execution goals as of 30 June 1991. This review did not provide any new billpayers for FY91 unfunded requirements.

FY93 RDA Budget Adjustments. In August 1991, AMC submitted the FY93 RDA Budget adjustments package to OASA(RDA). The package contained a total of 24 budget issue sheets for adjustments to the FY93-FY94 RDT&E program. AMC recommended two budget issues with funding offsets and twenty two budget issues with unfunded programs.

In accordance with HQDA guidance, emphasis was placed on limiting changes to only FY93/FY94 adjustments which could not be accommodated with below threshold reprogrammings, while ensuring that associated FY95-FY97 tails were worked concurrently through the LRAMRP process. The formal presentation of AMC's RDT&E issues was made on 22 August 1991. The results of this exercise culminated in the forwarding of the AMC portion of the Army's Amended Budget Submission to OSD in October 1991.

The Amended Budget Submission to OSD contained the two funded budget issues and the Environmental Compliance - AMC Test Ranges issue paid by other AMC programs. There were several unfunded issues that could be accomplished by below threshold reprogramming actions during the year of execution.

Environmental/Real Property Maintenance Activities/Backlog of Maintenance and Repair. Historical underfunding of the RDTE Real Property Maintenance Activity (RPMA) program led to severe deterioration of buildings, utility systems, and road networks throughout the facilities. The FY91 RDTE RPMA President's budget request of $218 million was reduced by $43 million by Congressional action. This reduction affected the basic RPMA funding for Annual Recurring Requirements (ARR), which enabled RDTE installations to meet safety and health needs, testing and mission readiness requirements, and improved quality of life. At this level, there were no funds for critical and urgent infrastructure repair projects and projected Backlog of Maintenance and Repair (BMAR) which would exceed $246.5 million by the end of FY91.

A $43.0 Congressional reprogramming request for FY91 RPMA funds was not supported at HQDA for the following reasons: Congress reduced the funding in the FY91 budget and the Army should not commit additional funding to RDTE RPMA through reprogramming; AMC did not deem the requirement to be of sufficient priority to identify lower priority FY91 RDTE billpayers; and the Army should spend energy to defend increased funding in the FY92/93 budget.

The LRAMRP increased funding for environmental projects and raised the level of RPMA funding to meet ARR to prevent further facility erosion. Beginning in FY92, environmental compliance requirements were to be funded in PE 30605856A. Also effective in FY92, the cost of utilities and other engineering support, including fire prevention, refuse collection, and custodial services were to be funded in PE 0605896A, Base Operations. (These were zero sum transfers within the Army). Effective FY93, a DOD policy change realigned RDTE funded major repair of real property and minor construction to substantially prolong the useful life of the facility, and were all actually facility investments. This realignment was to place all related facility investments into the construction investment accounts.

FY91 Procurement Obligation Plan. AMC was required to submit an annual obligation plan for the Procurement Appropriations to the Department of the Army. The plan submitted in January 1991 reflected a strategy to obligate a total of $1.512 billion. Actual obligations were $1.527 billion. This actual obligation amount surpassed the OSD goal of $1.513 billion.

FY91 RDTE Obligation Plan. The FY91 RDTE Obligation Plan was submitted to HQDA based on 96 percent of AMC's total program. This plan was used to prepare and present detailed monthly briefings to senior leadership at HQ AMC on the obligation and disbursement execution of RDTE programs. These in-depth briefings supported by detailed analyses provided early identification of execution problems, which allowed corrective actions to be implemented early in the year. This would avoid, to the maximum extent possible, large year end unobligated balances. AMC exceeded both OSD and AMC goals of 96 percent by obligating 97 percent of their FY91 program.

Delegation of RDTE/Procurement Below Threshold Reprogramming Authority. As directed by the 3 April 1991 AMC Commanders' Conference, AMC delegated RDTE below threshold reprogramming authority to the MSC commanders, allowing them greater flexibility in the management of their resources. In addition, the scope of previously granted Procurement reprogramming authority was expanded.

FY91 RDTE Hiring Policy. The FY91 Defense Authorization Act directed a 4 percent annual reduction from FY91-FY95 in the onboard strength of the Defense Acquisition Work Force. As a result of this mandate and taking into account projected sharp decreases in civilian pay funding levels in FY93 and beyond, HQ AMC imposed attrition targets by appropriation for FY91-FY95. For RDTE funded spaces, the MSCs were directed to develop and implement plans for a 1.5 percent annual manpower reduction, to be realized primarily from efficiency improvements. While attrition goals for several appropriations were subsequently revised during the course of FY91, the RDTE goal remained the same.

Managing Civilians to Budget (MCB) Program. MCB was the first step in U.S. Army transition to a modernized personnel system, delegating a greater share of personnel decision making to local commanders/line managers. Implemented Army-wide in October 1991, MCB delegated accountability, responsibility and authority for budget execution, position management, and classification to the lowest practical management level. At a minimum, authority was delegated to the MSC/Activity directorate level or equivalent, outside the command group. The CG, AMC expressed support of MCB and directed the AMC staff to provide all assistance to insure its successful implementation. Within AMC HQs, an MCB working group was established. This group, composed of representatives from various DCS offices, had the task of facilitating MCB implementation and operation within the AMC community.

Army Counter-Drug Office

Army Science Board's (ASB) 1990 Summer Study

The ASB conducted an extensive investigation on "The Use of Army Systems and Technologies in Counter-Narcotics (CN) Efforts." The purposes of this study were to assess the Army's technical capabilities in the CD effort, examine the Army's role and mission in the effort, and make recommendations for the Army's current and future involvement. A total of 19 recommendations resulted from the ASB Study. Several offices within DA were involved in responding to those recommendations. The Army CD RDA Office assumed the lead in ensuring that the appropriate offices within DA were tasked. An IPR of implementation of the recommendations was conducted 5 September 1991. Principal attendees were the VCSA, the Deputy Under Secretary for Operations Research, the ASA(RDA), and the Deputy Chief of Staff for Personnel. The briefing was well received and no further IPRs were to be held.

Major decisions as a result of the briefing were to: establish a CD RDA line in the Army budget to give visibility to Army efforts; incorporate CD applications of Army systems under development into descriptive summaries and other budgetary documents; and incorporate CD acquisition policy guidance into the current revision of AR 70-1.

Establishment of Army Counter-Drug (CD) RDA Office

The ASB 1990 Summer Study recommended that the Army develop management strategies to make effective use of its extensive technology base and systems applicable to the CD effort. This resulted in a 31 December 1990 ASA(RDA) memorandum designating MG Joe W. Rigby as the ASA(RDA) point of contact for all CD RDA activities. This put MG Rigby in the position of being both the ASA(RDA) POC and the AMC focal point for all CD efforts. He redesignated the Support Programs Team, Special Operations Division, as the Army CD RDA Office with responsibility for: taking the lead in developing and staffing an Army/National CD RDA strategy and plan to satisfy Army CD requirements; developing and implementing a plan to establish technical liaison with Law Enforcement Agencies (LEA); developing and offering to the CD community a CD R&D program utilizing Army labs and centers; and establishing a "Quick Reaction" simplified CD RDA process to provide accelerated support to LEA requirements.

Army CD RDA Planning Conferences. During FY91, the office sponsored two CD RDA Planning Conferences, which promoted a sharing of information between Drug Law Enforcement Agencies (DLEA) and the developer community. One of the desired outcomes of the conferences was a cohesive CD RDA Program to integrate CD requirements with current and emerging technologies. Attendees included representatives from TRADOC, FORSCOM, SOUTHCOM, PEOs, Air Force, Navy, AMC Subordinate Commands, laboratories, Research, Development and Engineering Centers, and various DLEAs. The conferences were successful in developing stronger ties between the developer and user communities.

CD RDA Program. In May 1991, the office participated in the OSD Technology Review of all services' proposed CD R&D projects. This review determined the ranking for CD R&D project funding in FY92 and 93. The Army submitted 14 out of the 80 total projects. Of those submitted, six were given high enough priority for potential funding: Terrain Analysis, Chemical Monitor, Chemical Taggant, Covert Tracking Radar, Acoustic Detection, and the Joint Task Force-Six (JTF-6) Command and Control System. Some of these projects were to be combined with similar undertakings from other Services to avoid duplication. Additionally, four projects were to be funded through the Defense Advanced Research Projects Agency (DARPA): Barringer Chemical Detector, Light Detection and Ranging (LIDAR), Polyspectroradiometric Imaging System, and the Mobile Non-Invasive Acoustic Detection System. A total of 46 Army RDA projects were proposed

for the FY94-99 CD Program Objective Memorandum (POM) submission. As of the end of the fiscal year, the office was reviewing these projects to determine applicability to CD requirements and technical feasibility.

Missiles and Weapons Division

Most Significant Issues

Hawk Missile. Hawk Anti-Tactical Ballistic Missile Demonstrations in November 1990 and May 1991 were successful. During the May 1991 test, the Hawk achieved a warhead kill of a tactical ballistic missile target. The FY91 option of the FY88-91 multiyear contract was awarded in December 1990 for 358 missiles. A value engineering savings of over $30 million was credited to PM HAWK for the FY91 missile buy. The FY91 Phase III production contract was awarded in March 1991 for the last 13 kits. The FY91 Hawk Advanced Training Simulator (HATS) contract was awarded in April 1991 for an additional 13 trainers. The first HATS was fielded to the U.S. Army Air Defense School in May 1991. Phase III equipment was type classified standard in May 1991. Conditional release of Block IV software upgrade was approved by the CG, AMC in June 1991. In August 1991, the CG, AMC approved conditional release of the Phase III Product Improvement to USAREUR and fielding of Phase III equipment and Block IV software to two battalions in Europe began immediately.

The field maintenance equipment upgrade program continued with production of Shops #20 and #21 and 47 test program sets. Eighty-seven additional test program sets are in development. The near term mobility improvement, a modification of the current loader transporter to allow it to carry missiles while being transported on the back of a truck, was being fielded at that time. The second, or far term, part of the mobility program included mechanical, hydraulic, and digital electronic upgrades to the launcher and the addition of a North Finding System to the Hawk major end items. The far term program was in various stages of development and test. Hawk was deployed during ODS to support Allied forces.

Patriot Anti-Tactical Missile (ATM). The FY91 option of the FY87-91 multiyear missile production contract was awarded in November 90 for 817 missiles. To meet requirements, production was surged during ODS to increase the number of Patriot ATM missiles. Patriot was fielded to Israel, Saudi Arabia and Turkey under a series of agreements in response to the Iraqi aggression of August 1990. Thirty-five software changes were introduced into the Patriot system during ODS. Patriot was operationally successful over 70 percent of the time in SWA. Development continued for the multimode seeker, remote launch, emplacement enhancement, radar and communications upgrades.

Optics for Light Weapons. The proposal to modify the M16 series Rifle and M249 Squad Automatic Weapon (SAW) to incorporate an optical scope was approved by the CG, AMC in February 1991. The Type Classification - Generic IPR was conducted in March 1991 and the systems were designated as the M16A3 and M249A1. To accomplish this effort, funded under the SEP, several Non-Developmental Item candidates were analyzed against the Infantry School requirement. Technical and user testing commenced on three competitively selected items. Technical testing began in early August 1991, a safety release for the candidate systems was issued by the Combat Systems Test Activity, and operational testing was initiated in September 1991. Both Technical and Operational testing were nearing completion as of the end of the fiscal year with a final report expected in December 1991 to support type classification and source selection actions.

The Optics would permit engagement of hostile forces by the individual rifleman at greater ranges. Additionally, it provided a significant increase in capability during periods of decreased visibility such as dawn and evening twilight. This program was conducted using an aggressive schedule to provide needed hardware to Infantry soldiers expeditiously.

Intermediate-range Nuclear Forces (INF) Treaty Compliance Certification. Under the provision of the 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 was in violation of the INF Treaty. HQDA tasked the commanders of AMC, TRADOC, SDC and OTEA to certify, by letter, that all existing or contemplated Army missile programs had been reviewed and that their areas of responsibility as indicated in the plan were in compliance. In response to this, HQ AMC issued two letters to HQDA, in April and October 1991, stating AMC compliance with the INF Treaty.

Other Issues

Corps Surface-to-Air Missile (Corps SAM). MICOM conducted an Industry briefing on 11 October 1990 to inform potential contractors of the program requirements and strategy. Congress placed Corps SAM FY91 funding of $6.9 in an OSD tactical ballistic missile (TBMD) funding line and directed OSD to centrally manage TBMD programs. The Strategic Defense Initiative Organization (SDIO) was designated to manage TBMD programs. The FY92-97 funding of $335 million was transferred from the Army to SDIO by an OSD Program Budget Decision in November 1990. The System Threat Assessment Report was validated on 15 May 1991. The System Operational Description was approved 14 August 1991. Another industry briefing was held on 29 August 1991, to update potential contractors about the program and the release of a Request for Information in October 1991. As of the end of the fiscal year, efforts were continuing to determine the scope of Allied participation and cost sharing ratios.

Chaparral Project Management. The Chaparral Air Defense Guided Missile System continued its effectiveness against rotary-winged, propeller and high speed jet aircraft at low to medium altitudes during visual and adverse weather conditions. 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 infantry (mechanized) divisions and to rear area air defense artillery organizations for defense of critical air bases, supply depots, and bridges. The Improved Chaparral Missile is supersonic, "fire and forget," with an all aspect passive infrared homing guidance system permitting immediate re-engagement of multiple targets after launch of each missile (up to four). In support of Operation Dessert Storm, 48 Chaparral fire units and 26 Forward Area Alerting Radar (FAAR) were successfully deployed to SWA.

On 13 September 1991, the Chaparral/FAAR Project Office presented a surveillance and tracking demonstration of the drug interdiction capabilities of the Chaparral FLIR and ALLSTAR radar in West Palm Beach, Florida. The demonstration utilized the improved FAAR radar (MOD B80) and the Chaparral Integrated Weapons Display (IWD). A variety of law enforcement, civilian, and military personnel were in attendance at the demonstration. Typical drug trafficking aircraft and boats were utilized in scenarios that simulated drug ingress paths. All demonstration objectives were successfully met.

Forward Area Alerting Radar. The FAAR, a D-band pulse doppler radar, is used to detect low flying aircraft and provide alerting and tentative identification to Chaparral and VULCAN fire units and MANPAD teams. The FAAR section consisted of three men and one vehicle and trailer. The radar had a range of about 20 kilometers, and contained the Mark XII IFF/SIF System. In March 1990, DA/ODCSOPS directed that the FAAR systems be removed from the Army inventory and offered to Foreign Military Sales (FMS). Forward observer teams (soldiers with binoculars) were to provide early warning for short range air defense artillery systems until fielding of Ground Based Sensor in the 1996/1997 timeframe. As directed, the Chaparral/FAAR Project Office, U.S. Army Missile Command, deactivated all FAAR systems in USAREUR, EUSA, and USAPAC. FORSCOM FAARs were being deactivated when Desert Shield Operations began. FORSCOM deactivation was suspended by DA/ODCSOPS based upon the desire of Air Defense Artillery Commanders

to deploy with their FAAR systems. The FAAR was the only system in the Army's inventory that could meet the need for a low altitude early warning sensor in SWA.

The Chaparral/FAAR Project Office was tasked to upgrade the FAAR to meet Desert Storm environmental conditions in SWA. Because of the M561 GAMA Goat carrier problems, 22 FAARs were modified for SWA by mounting the AN/TPQ-32 radar on a robust carrier (M923A2 - 5 ton) and providing an upgraded diesel generator and a 9000 BTU air conditioner. During handoff of six systems to the First Infantry Division, 2nd Battalion, 3rd Air Defense Artillery, the Commander commented, "Finally, they have mounted an excellent radar on a carrier that meets transportability requirements. Ninety to 95 percent non-mission-capable time was attributed to the old M-561 GAMA Goat carrier and the 5 kilowatt generator. This system can perform its mission." Because of these modifications, the 5 ton FAAR was considered as a highly reliable, mobile, and survivable ADA asset in SWA. Operational readiness reports on FAAR during ODS revealed a 98 percent mission capability. Through the concerted, coordinated efforts of the MICOM Chaparral/FAAR Project Office and Lockheed Sanders, Inc., the mission was accomplished. True to form, MICOM supported the soldiers' need in time of crisis.

Stinger-RMP. On 7 December 1990, Raytheon submitted a Request for Equitable Adjustment (RFEA) for the FY87 Stinger contract. The RFEA was for adjustment to the schedule and for Technical Data Package (TDP) deficiencies. On 4 February 1991, Mr. Conver assigned BG Nicholas R. Hurst, Director for Contracting, as chairman of an equitable adjustment evaluation board for the purpose of reviewing the RFEA FY87 Stinger Contract letter. BG Hurst established a team to review and evaluate the RFEA. On 18 March, the second source contractor (Raytheon) agreed to a Government offer of $1,000,000 and a 60-day schedule adjustment. On 19 March, Mr. Conver directed the Stinger PM to implement the Government offer to Raytheon and negotiate a missile delivery schedule which was attainable by the second source contractor.

On 4-6 March 1991 the Army Materiel Systems Analysis Activity (AMSAA) attended a Stinger Reprogrammable Microprocessor (RMP) Simulation Working Group (SWG) meeting at the General Dynamics field office in El Paso, TX. General Dynamics, MICOM Research Development and Engineering Center (RDEC), and the Vulnerability Assessment Laboratory (VAL) presented their post-flight analysis of GTV-16, a live fire contractor qualification test conducted at White Sands Missile Range (WSMR) on 2 June 1990 against the *Hind* surrogate with jammer (QS-55). On 8 March 1991, Raytheon began the Pilot Lot Flight Test (PLFT) Program. Nine missiles had completed PLFT by the end of the fiscal year. A total of 28 missiles were to be fired in the PLFT program. The VAL conducted Stinger-RMP Performance Assessment (PA), which consisted of 250 simulated flights. The VAL PA was completed during June 1991.

On 23 April 1991, Mr. Conver signed a decision memorandum awarding General Dynamics, the prime contractor, the unawarded portion (1354 missiles) of the previously competed FY90 Stinger buy. The AAE's decision was based on the uncertainty in Raytheon's capability to meet the overall delivery schedule then in place to support Army fielding requirements. The AAE's decision minimized schedule risk without compromising Raytheon's capability to compete for the FY91 contract.

During April 1991, Raytheon produced 197 missiles. The best estimate at that time was that Raytheon would complete the FY87 contract (400 missiles) by July 1991. General Dynamics delivered 1075 missiles during April 1991 and resolved the administrative problem which caused the delinquency to schedule. Pilot lot and limited pilot flight testing were completed. Stinger-RMP assets continued to remain suspended in Condition Code (CC) N (suspended from issue except for emergency use only) due to the safety connector wire being ejected into the gunner's face or body. Modification to the production contract in August 1990 eliminated the ejection hazard. The PEO, Air Defense proposed that all missiles be returned to CONUS depots for rework. As of the end of the fiscal year, PEO Air Defense estimated that rework would take two years to complete at a projected cost of $12 million.

General Dynamics delivered 1,823 missiles during May 1991 and was ahead of schedule. Raytheon was in the process of negotiating a revised delivery schedule with the Army. General Dynamics remained ahead of schedule and delivered 1,407 missiles during June 1991. The Army negotiated a delivery schedule with Raytheon which was attainable. Modification of the delivery schedule for Raytheon was in process. During July 1991, Raytheon continued conduct of pilot lot flight and limited pilot lot flight tests. Ten missiles were flight tested resulting in eight successful firings, one close miss, and one failure (eject only). During July 1991, Raytheon continued to conduct pilot lot flight and limited pilot lot flight tests.

On 29 August 1991, AMCDE concurred to the Conditional Release of Stinger-RMP and Stinger Tracking Head Trainer (THT) to the Eighth U.S. Army (EUSA). General Dynamics remained ahead of schedule during September by delivering 1251 missiles. Raytheon successfully completed pilot lot and limited pilot lot flight tests, and competed in the FY91 Stinger contract. Raytheon negative cost variance continued. Raytheon was 100 percent liable for FY87 contract cost overruns, and funds to cover the FY86 production contract cost overrun were identified. The Government's liability was limited to the contract target/ceiling price.

Low Cost Motor (LCM) Safety Hazard Problem Identified on Stinger. When the missile round was fired and the flight motor was ignited, ribbon wire was ejected from the missile in the backblast. Incidents occurred in which the gunner was struck in the face, hands or arms by the ribbon wire, which caused cuts, bruises or swelling. Atlantic Research Corporation modified the flight motor to prevent the ribbon wire from being ejected until later in the missile's flight. Testing indicates that this modification prevented the ribbon wire from reaching the gunner. Since all Stinger-RMP missiles in the Army inventory were not retrofitted with the new modification, the safety hazard remained, and Man Portable Air Defense Stinger (MANPADS) missile firings had to follow the following precautions as well as precautions listed in the safety assessment report and technical manuals: use existing face shield on weapon; wear long sleeve shirt; and wear leather gloves.

Avenger, Line of Sight - Rear. A letter contract was awarded on 21 December 1990 for an interim Environmental Control Unit (ECU)/Prime Power Unit (PPU) for fire units deployed with ODS. Funds were identified and placed on a the list of reprogramming actions at HQDA. Of the 58 ECU/PPU units planned for delivery during March 1991, 48 were shipped to SWA and installed by military personnel with technical supervision provided by MICOM. The remaining 10 ECU/PPU units were installed on U.S. Army Air Defense Artillery School (USAADASCH) and U.S. Army Ordnance Missile Munitions Center School (OMMCS) Avenger fire units for training operator and maintaining military personnel going to SWA designated units.

On 15 January 1991, PM Stinger requested deployment authorization to release four Avenger fire units to TRADOC. TRADOC's request to field the remaining twenty-two Avenger fire units to OMMCS and USAADASCH was approved with delivery of the fire units due no later than August 1991. Government acceptance of the interim ECU/PPU initial delivery schedule was accomplished in April 1991. 140 ECU/PPU units and an additional 42 spares were procured on letter contract with a Not-to-Exceed cost of $3.88 million. The delivery schedule supported validating the installation plan, retrofitting the Avengers in SWA by 1 April 1991, and matching the Avenger fire unit deliveries through November 1991. The Marine Corps purchased two Avenger fire units from the Army depot stocks for test and evaluation purposes. The Marine Corps purchase of the fire units did not affect the fielding of the Avenger to the U.S. Army.

On 7-8 May 1991, the Army Materiel Test and Evaluation (ARMTE) Directorate monitored safety testing and demonstrations conducted by the U.S. Army Redstone Technical Test Center. On 12 June, TECOM authorized a limited safety release of the Avenger interim ECU/PPU for training operators and maintainers. Conditional Release of Avenger systems and Stinger-RMP Captive Flight Trainers to EUSA was approved.

Air Defense Anti-Tank System (ADATS). On 28 March 1991, an IPR was conducted regarding LOS-F-H status. Missile production was re-established at the Martin Marietta (MM) production facility in Ocala,

Florida. Exit Point A, Phase II "For Record" testing began in June 1991. On 20 June 1991, an IPR was held to provide the current status of the LOS-F-H FAADS. On 27-28 June 1991, the Reliability, Availability and Maintainability (RAM) Steering Committee held a LOS-F-H Exit Point A Test Interim Review to determine status and corrective action. In July 1991, the AAE approved the start of testing for Exit Point B.

Squad Automatic Weapons (SAW) for the 75th Ranger Regiment. Due to the Ranger rapid deployment mission the SAW was initially fielded to the Regiment in 1984. Because the Rangers had very limited heavy weapons, the SAW provided the majority of their ground suppressive fires and the weapons were extensively operated. The 75th Ranger Regiment requested replacement of the higher usage and older SAW. After coordination between the regiment and AMCCOM the criteria for identifying weapons to be replaced was established. Approximately 70% of the weapons were replaced with new production items. The remaining were modified to new production items. The entire process from identification of the affected weapons to receipt of weapons and modification kits by the 75th Ranger Regiment was conducted in less than three weeks.

Supplemental Medium Anti-Tank System (SIMATS). During FY91, Technical Testing (TT) and Operational Testing (OT) of the two remaining SIMATS candidates, the Bofors BILL and the DRAGON II, were conducted. The Milan 2T was dropped from the program in April after the manufacturer failed to come to an agreement with the Army on the quantity of missiles that would be purchased and used for gunner training. AMC was tasked by DA to prepare the SIMATS Capstone Report for Congress. The SIMATS Capstone Report was to document the Army's selection rationale. In order to avoid any perception of bias and assure best value for the Army, the DCGRDA for AMC directed that the SIMATS selection be conducted along the lines of the Source Selection Process. The SIMATS Capstone Report was on schedule and was to be presented to Congress not later than 15 January 1992.

Infra-Red Focal Plane Arrays (IRFPA). During FY91, quality and producibility difficulties associated with the IRFPA technology used in the development of the Javelin (AAWS-M) missile seeker had a significant adverse impact on the program. The Army was planning to acquire several advanced weapons systems that would also require high quality producible IRFPA. As a result, the DCGRDA for AMC tasked the DCS's for Concurrent Engineering (CE) and Development, Engineering and Acquisition (DEA) to prepare a briefing for the AAE on the overall status and critical issues associated with the IRFPA technology area. DEA, in consultation with CE and DARPA, assisted the CECOM Center for Night Vision and Electro-Optics in preparing a briefing given to the Military Deputy to the AAE on 27 September 1991. The briefing described a path for assuring that affordable IRFPA assemblies are available when needed for the Army's future system requirements. The Military Deputy to the AAE agreed to support all of the requested efforts.

Javelin Advanced Anti-Tank Weapon System - Medium. During FY91, the Javelin experienced significant cost growth and schedule slippage, primarily as a result of quality and producibility problems associated with the IRFPA technology being developed for the missile seeker. In addition, the weight of the system increased from 45 to 49.5 lbs. First production for Javelin was scheduled to begin in June 1994.

2X Extender Lens Assembly (ELA) for Scout Optics. In August 1990, the Commander in Chief, U.S. Army, Europe proposed that the Army improve the optics for Scout Vehicles by issuing AN/TAS-6's with 2X ELA. This proposal was based on field testing conducted in Europe. Funding for the acquisition of the 2X ELA was made available in mid-January 1991 under a Desert Shield Priority. In February 1991, a letter contract in the amount of $3.7 million was awarded to Texas Instruments to procure 222 ELAs. AMCDE assisted by expediting the award of contract. Of the 222 ELAs, 198 had been delivered to Europe for operational training as of the end of the fiscal year.

Study of Artillery Effects. Previously called "Soviet Artillery Effects," this study was initiated by the Office of the Deputy Chief of Staff for Operations, HQDA, and tasked to the U.S. Army Field Artillery School

through HQ TRADOC. The original purpose of the study, conceived at a meeting at Fort Leavenworth in July 1987, was to conduct a series of experiments to investigate Soviet suppression capabilities and their effect on our ability to fight, as well as to develop improved U.S. doctrine and tactics for suppression. This study has evolved into a series of experiments designed to answer these questions:

Can U.S. artillery survive when engaged by the Soviet 152mm Howitzer?

Can Soviet artillery and vehicles survive when engaged by the U.S. 155mm Howitzer?

How effective was the Soviet M74/75 120mm mortar?

During FY91, a test series was conducted using a Soviet 152mm Howitzer against the U.S. M109 self propelled Howitzer, the M992 Field Artillery Ammunition Support Vehicle (FAASV), and the Multiple Launch Rocket System (MLRS), to assess the affects of Soviet artillery on U.S. artillery. The test data was to be analyzed during FY92. Previous results of simulated Soviet artillery fire on U.S. vehicles were also analyzed during FY91. In general, the results showed that Soviet-style artillery attacks using standard fragmentation - high explosive projectiles were clearly more lethal against armored vehicles than would have been predicted using tactical simulations or published U.S. effectiveness data estimates.

Stingray. Risk reduction efforts on Stingray components continued through FY91. Funds were programmed from FY92 thru FY99 to complete the Engineering and Manufacturing Development (E&MD) and limited quantity production. In February 1991, two development models were deployed to ODS but were never activated. On 19 July 1991, the ASARC approved the STINGRAY program for entry into E&MD. The ASARC also enhanced the acquisition objective from 48 systems to 164 systems, and requested that all bidder proposals include a solution that employs a diode pump laser. Preliminary contract award efforts for E&MD were ongoing as of the end of FY91, for an early FY92 award.

Multiple Launch Rocket System - Terminal Guidance Warhead (MLRS-TGW). This was an international program based on an MOU between the United Kingdom, France, Germany, and the U.S. The Component Demonstration Substage was completed in February 1989. The U.S. entered in the 36-month System Demonstration Substage (SDS) program in July 1989 after European funding issues were resolved. The U.S. share during FY91 was $47.2 million (40 percent of total funding). The Army had to reprogram an additional $25M after congressional decrements in FY91. The Army decided to complete the SDS phase to avoid approximately $36 million in termination costs.

Pershing. The Pershing II (PII), an intermediate-range surface-to-surface missile, provided the U.S. Army with a capability to deliver nuclear fires at preselected targets within the Soviet Union, with significant accuracy. The INF Treaty, effective June 1988, required the elimination of all existing, surface-to-surface, intermediate-range (1,000 to 5,500 kilometers), shorter-range (500 to 1,000 kilometers) ground-launched ballistic missiles, as well as ground-launched cruise missiles of these types. In accordance with the provisions of the INF Treaty, all Treaty Controlled PII and U.S. owned Pershing 1a (P1a) assets were eliminated by 31 May 1991. The final INF Pershing II elimination was conducted at Longhorn Army Ammunition Plant Site, Marshall, Texas on 6 May 1991. The schedule to eliminate both P1a and PII assets was met as planned. All U.S. owned tactical Pla rocket motor stages were eliminated by July 1989. The Longhorn Army Ammunition Plant was the P1a elimination site. PII rocket motor stages were disposed of at both Longhorn and Pueblo Depot Activities.

In addition to providing staff support for the execution of the retrograde/elimination implementing plan for the Pershing missiles, HQ AMC is required to certify to DA on a bi-annual basis that all existing or contemplated Army research, development, test and production programs within the purview of AMC were

in compliance with the INF Treaty. Certification was initiated in October 1988 and would continue for at least 13 years following 1988. DCSDEA was responsible for this effort.

During the execution phase of the INF Treaty retrograde/elimination implementing 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, including monitoring and reporting of the reliability and maintainability status, as addressed in AR 702-3. Efforts continued to implement the Pershing Re-use program which promoted the reutilization of hardware and technology (not controlled by the INF Treaty). DCSSMT retained the responsibility for the Reuse program.

Unmanned Ground Vehicle (UGV). The UGV consisted 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 was to be capable of employing other mission modules, e.g., weapons modules, NBC modules, etc. Following approval of a joint Memorandum of Agreement (MOA) on 25 April 1990, a JPO was formed at MICOM on 1 October 1990 with a USMC Lieutenant Colonel as Project Manager. The Army was the lead service for the program. As stated in the MOA, the purpose of this office was to serve as the materiel developer of all Army and Marine Corps UGV systems. The Project Manager was subsequently chartered at MICOM on 1 November 1990. In November 1990, in conjunction with the Unmanned Aerial Vehicle Joint Program Office, the UGV JPO conducted the first combined UAV/UGV Tactical Demonstration at Quantico, Virginia. This demonstration highlighted the tremendous benefit and advantages of combined UAV/UGV operations. In July 1991 the UGV JPO successfully completed a Milestone 0 review. Under a "grandfathering" arrangement, this decision constituted formal program initiation.

The contract to build 14 Surrogate Tele-operated Vehicles (STV) was awarded to Robotic Systems Technology (RST) on 1 April 1991. These "Fieldable Brassboards" were to be used primarily by the user to formalize his concepts of employment. The office expected that all systems would be delivered by January 1992. The UGV JPO planned an ambitious schedule of demonstrations and user testing through 1992. These exercises were to include Marines and soldiers from the Infantry school, the Armor school, the Field Artillery school, the Military Police school, and JTF6 (operated along the Southwestern border of the United States).

Armored Gun System (AGS). ODS proved the need for a readily deployable armored vehicle with the characteristics of the AGS, plus the need to replace the aging SHERIDAN NM551. As a result, Army leadership maintained a keen interest in the program during FY91. Between October 1990 and March 1991, HQ AMC staff supported the PEO ASM/PM AGS development and AAE approval process of the AGS acquisition strategy, acquisition plan and Justification and Approval (J&A) document. During May 1991, HQ AMC participated in the senior level review of the AGS Request for Proposal (RFP). This review scrubbed the proposal to ensure that only the minimum requirement was issued for bids. From January to September 1991, this headquarters played a key role in the development of the AGS COEA by coordinating the overall AMC efforts in support of TRADOC.

Reliability Modeling Project. After obtaining concurrence from AMC and CASCOM, two officers attending the Colorado School of Mines began work to develop a replacement to the Combat Vehicle Reliability Simulation (COVERS). A capabilities analysis of the COVERS model was accomplished to determine: Was the model mathematically accurate? Where could the code be improved? Where could the user interface be improved? Was it feasible to make several required changes (scenario related)? How long would it take for the recommended changes to be implemented? How much would this cost using government vs. contractor personnel?

This work was completed in September 1991 and the final report was delivered to CASCOM for all further action. In brief, while the model was mathematically correct, a number of improvements were

identified which could improve the runtime of the model, and it would take about two man-months to implement the code changes. The user interface required a complete overhaul, which could take up to 3-4 months of effort. The next generation model to computerize the process and address the cost-benefit analysis issue was being developed and a working model was expected in July 1992.

M113 Family of Vehicles (FOV). During FY91, M113 FOV was the object of multiple programs which involved new production, depot conversion activities and development. Between September 1990 and March 1991, 128 new M113A3s were produced by FMC for the ANG. The final new production M113A3s from FMC were fielded to the ANG in 4Q FY91. Total new production (1987-1991) M113A3 fielded as of September 1991 was 1,668 to 28 different ANG, AR, and Active Army locations. FMC also produced new M577A2s in FY91; 11 for the USAR and 135 for the ANG.

During FY91, major depot activities at RRAD, MZAD, and DSAFE were: conversion of M113A2s to M113A3s, M981 FISTV equipment integrations with fielding to ANG, conversion of the M730A2 Chaparral carrier, and modification of the M1015 EWC to the M1015A1. Principal development activities during FY91 addressed new variants and the upgrade of the existing FOV. The OPFOR Surrogate Vehicle and the LAMPSS Carrier were new variants under development. Improvement programs in FY91 (to include those to correct Desert Storm deficiencies) focused on the XM1068 SICPS, XM1064 120mm mortar conversion kits, engineering development for the XM1068 SICPS, the M1015A1 PIP, and M901A1/M981 systems upgrades.

Improved Recovery Vehicle (IRV). In the 1990 Appropriations Act, Congress mandated completion of technical testing and user testing and acquisition of a TDP for the M88A1E1. BMY Combat Systems was awarded two contracts for these purposes. A 90-day performance period contract was awarded in March 1991 to tear down five M88A1E1 prototypes, determine technical fixes and establish refurbishment costs. The second contact with BMY Combat Systems was awarded September 1991 to technically fix and refurbish the prototypes, complete technical and user testing and deliver a TDP. The office expected that the testing program would begin in June 1992 with Milestone IIIA scheduled for October 1993. From ODS experiences, the user community in FY91 sought a second version of the IRV, designated the M88A1(+), as a lower cost way to address recovery deficiencies. The M88A1(+) was a partial improvement of the M88A1, focusing on those upgrades which would provide safe and effective towing of the 70-ton M1 series tanks as well as enhanced armor which provided 30mm protection. This version of the IRV retains the capabilities of the M88A1 for lift and winch. In August 1991, HQ TRADOC advised ODCSOPS of the position of the user community, which favors the M88A1(+) because of funding limitations.

M60 FOV. M60 series tanks no longer serve as a combat vehicle in the Active Army; however, the M60A3 was still used extensively by the ANG and current plans project this use into the next century. Current plans are to rework the 105mm main tank gun so that the M456A2 and M900 rounds can be fired with greater reliability and safety. The other members of the FOV, the M60A1/M48A5 Armored Vehicle Launch Bridge (AVLB) and the M728 Combat Engineer Vehicle (CEV), were deployed during ODS with the Active Army. Noted deficiencies of the CEV and AVLB relative to the M1 Abrams tank systems from operations in SWA are low readiness rate, lack of M1 mobility, lack of M1 survivability, and lack of commonality with M1 FOV.

During FY91, user requirements were explored and technical fixes were identified. An AVLB/CEV Performance Upgrade Program was developed and costed. To improve readiness, Reliability Centered-Inspect and Repair Only as Necessary (RC-IRONS) was developed. To improve AVLB capability, an upgrade program was developed and approved to meet the requirement for a MLC 70 rated launch bridge to support the M1A1 tank. Additionally, this upgrade program would correct the operational limitation of a 50-foot span and would eliminate the need for safety markings on the bridge, which required egress from the vehicle to determine lay.

M551 Sheridan. Delivery of M-551s equipped with M60A3 Tank Thermal Sight and Bradley Driver's Night Viewer to SWA for swap-out was completed by December 1990. After ODS, return of swap out and reserve Sheridans from SWA commenced and would continue into FY92. Return of these vehicles was low priority--most would go into depot storage. During FY91, two upgrades were planned for FY92 for the Sheridans at Fort Bragg. The first was installation of the Missiles Countermeasures Device (MCD), managed by PM-Survivability; the second was installation of SINCGARS system, managed by PM-SINCGARS.

Aviation Division (AMCDE-H)

Most Significant Issues

Army Aviation Dehumidification System (AADS). The tri-service program (Navy lead) for the Foreign Weapons Evaluation (FWE) of dehumidification equipment was interrupted by ODS. After ODS, the Army established its own evaluation program. A rigorously controlled evaluation was begun with the Florida National Guard at Craig Field, Jacksonville, FL. Several aircraft employed the AADS when on the ground and another group did not. Records were being kept on operational availability and Line Replaceable Unit (LRU) failures during FY91. The result was to be a definitive answer on O&S cost savings. The evaluation would conclude in FY92.

Ultra Lightweight Camouflage Net System (ULCANS). The ULCANS was a non-developmental item, lightweight, fine mesh net system that was easy to install, did not exhibit the snagging characteristics of conventional nets, and would effectively conceal the aircraft. The 1,000 nets procured for ODS were adequate but had some shortcomings. An RFP was prepared and issued for what was to be the Army standard ULCANS. Upon receipt of the proposals, a source selection was to be made and procurement initiated.

Air Traffic Control Transfer. The Army's Air Traffic Control (ATC) system consists of fixed base facilities and tactical ATC. Fixed based equipment and facilities were generally procured to support permanent or semi-permanent Army air fields and traffic management, and tactical ATC was primarily employed in the combat environment. In December 1990, HQDA approved a Final Transfer Implementation Plan of Action which created a Program Management Office for ATC at AVSCOM and transferred thirteen spaces, salaries and program dollars to AVSCOM. Phase I, the actual transfer, was completed March 1991. Phase II, which began June 1991, was a study of the ATC Maintenance and Supply System worldwide to see if life cycle support, managed by TRADOC, should be transferred to AMC. In August, a Maintenance Process Action Team (PAT) provided initial recommendations to the Army community. In September and October, the Maintenance Council of Colonels provided guidance on the recommendations. A Worldwide staffing of maintenance alignment recommendations was scheduled to begin in December.

Aviation Cockpit Compatible Lighting Program. Compatible cockpit lighting was achieved by changing the spectrum of light in the cockpit as seen by the Aviation Night Vision Imaging System (ANVIS) used by aviators. ANVIS was a passive, helmet mounted, binocular image intensification device that utilized 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, therefore reducing the capability of the pilot to see objects outside.

The technical fix required blue-green light energy, instead of red, in fielded inventories, systems in-production and future systems. A technical specification, MIL-L 85762, was the standard specification for producing compatible aircraft lighting components and equipment. In 1990, PM Avionics was designated the

Army focal point for integrating aviation electronics, including aviation night vision compatible lighting. Aircraft were prototyped by AVSCOM and PM Avionics. The results were supplied to program and acquisition managers for implementation of materiel and engineering changes.

In 1990 and 1991, the Army's senior leadership continued to focus on issues of aircraft safety/night vision operations. Priorities were raised for procurement of altimeters, altimeter audio warning, Heads-Up displays, and NVG compatible lighting. During this period, goals and timelines were established to achieve these requirements.

In January 1991, HQ AMC developed a draft policy for MIL-L 85762A and staffed it worldwide. This policy would, at a minimum, require all aviation cockpit avionics/electronics systems be Night Vision Goggle acceptable/safe by the mid-1990s. Waivers were required for any new development aircraft with a Milestone IIIA failing to implement MIL-L 85762A for interior lighting; aircraft undergoing block upgrade/modification failing to implement MIL-L 85762A for interior lighting; and all aviation interior cockpit replacement avionics/electronics systems or subsystems installed in the aircraft after FY95 which fail to implement MIL-L 85762A. HQ AMC submitted the draft policy to HQDA for staffing and approval by the Army Acquisition Executive before the end of the fiscal year.

New Training Helicopter (NTH). The objective of the NTH program was to reduce pilot training cost at Fort Rucker for the core Initial Entry Rotary Wing (IERW) course by displacing the UH-1 with a lower operating cost commercial helicopter. The FY91 appropriations bill included Congressional authorization for the Army to enter into a contract for a five-year lease (using TRADOC Operations and Maintenance, Army [OMA] dollars) of the NTH. A draft Request for Proposal (RFP) was reviewed by a joint AMC and DA team on 24 July 1991 and by the Army Acquisition Executive on 7 August 1991. Major issues included:

Free and Open vs. Limited Competition
Lease vs. Buy Acquisition Strategy
NTH Contractor vs. Fort Rucker Contractor Maintenance Support

Savings from lease and from buy were essentially the same over 20 year period; however, leasing was more costly than direct purchase. Congress authorized the lease option as method to utilize existing TRADOC OMA funds. As of the end of the fiscal year, the Senate Appropriations Committee (SAC) language proposed the repeal of lease authority and provided $23.5M in FY92 for partial NTH procurement. Savings from an early retirement of UH-1's was being investigated as a means to provide additional funding. A draft RFP was released for industry comments on 9 September 1991. The RFP provided for free and open competition, and lease agreement with purchase price proposal option. The NTH contractor was to provide parts, special test equipment, and perform airframe and component overhaul. The existing Fort Rucker maintenance contractor was to provide non-depot level maintenance support. Comments on the proposal were due by 25 October.

RAH-66 Comanche. The RAH-66 (previously known as the Light Helicopter) was to be a lightweight, low cost, twin engine advanced technology helicopter to replace the current light fleet of tactically obsolete AH-1, OH-6, and OH-58A/C helicopters for the primary missions of armed reconnaissance and attack, with air combat capability imbedded in each of these missions. General Tuttle served as chairman of the Source Selection Advisory Council (SSAC), which met twice during FY91. SSAC II was held on 17 December 1991 to review the results of the initial proposal evaluations, and SSAC III was held on 27 March 1991 to address the results of the final proposal evaluation. Based on the results of the Source Selection Evaluation Board, and with unanimous SSAC approval, it was determined that the Boeing/Sikorsky proposal provided the optimum approach for attainment of the program objectives and provided the best value for the government. The winner was announced on 5 April 1991 and a contract was awarded for a 91-month RDTE program. The

first 43-month period was to be the DEM/VAL Prototype phase and the remaining 48-month period was to be the FSD phase. This schedule was in accordance with Congressional direction to fly-before-buy.

ODS Support. Aviation Division personnel supported Operation Desert Shield/Desert Storm from the beginning. Personnel worked day, night, and weekend shifts in the AMC Emergency Operations Center (EOC) on numerous occasions. Initially, three of the division's eight personnel were devoted full time to the EOC duty in support of AMCRE. Full time personnel were eventually relieved from full time support when AMC received Individual Mobilization Augmentees (IMA) to perform EOC duties. Aviation Division personnel reviewed more than 80 surge proposals from AVSCOM and CECOM. Seventeen recommended/validated programs, valued at $54.4M, were included in the FY91 Supplemental Budget Request.

Acquisition Policy Division

Command Management Issues

Defense Science Board (DSB) Acquisition Streamlining Task Force (ASTF) Follow-on. In the Spring of 1990 a task force was established by the Under Secretary of Defense (Acquisition) under the auspices of the Defense Science Board (DSB). The DSB Task Force on Acquisition Streamlining was chartered to recommend a streamlined acquisition process which would 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. Phase 1 was to characterize and "timeline" the current acquisition process and to identify best practices and impediments to implementing recommendations of previous studies. Phase 2 was to develop specific streamlining proposals to improve the process. Phase 3 was to have focused 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.

The current effort began as a follow-on to the prior year's effort. The work being done by the DSB was terminated prior to meeting its objectives. OSD took over the assets and data base of the project and ended the effort. The Services individually picked up salvageable products and continued the effort. The Acquisition Policy Division was continuing the work effort for the Army as of the end of the fiscal year. The only usable product from the DSB effort was the process charts that had been developed. The division's first task was to update these charts to match the new acquisition guidance as expressed in DODD 5000.1. The process charts were then electronically coded into PERT software using the Marine Corps Systems Acquisition Model (MCSAM). The updated process charts were used to help define the Headquarters PATs. Each PERT activity was tagged to indicate which PAT either "owned" (had control over) or had some interest or involvement in the process represented by that activity. By the end of September 1991, level 1 (summary level) and level 2 (intermediate detail) of the PAT processes had been completed. The work would continue through the next year to further define and detail the processes at level 3 (highest level of detail).

PEO/PM Matrix Support. Working jointly with the office of the ASA(RDA), the Acquisition Policy Division prepared an AAE policy memorandum clarifying the roles and functions of the Program Executive Officers/Project Managers and the Materiel Commands/Major Subordinate Commands. After a number of "give and take" negotiations with SARD and strategic intervention by AMC's Deputy Commanding General for Research, Development and Acquisition (DCGRDA), a mutually acceptable policy memorandum was presented to the AAE. The AAE signed the memorandum on 28 February 1991. General Tuttle's

implementation guidance of AAE Policy Memorandum 91-4 was sent to AMC's subordinate commands and field activities on 28 March 1991.[5]

Program Manager Core - Major Subordinate Command TDA Model. Led by AMC's DCGRDA, the Acquisition Policy Division was working with SARD to initiate a process to implement a standard TDA model for the PM Core - MSC relationship. This initiative primarily revolved around a standard TDA model postulated by the DCGRDA, depicting TDA allocations against PM and matrix support functions. The Military Deputy (MILDEP) to the ASA(RDA) and the DCGRDA agreed that SARD would coordinate the standard model within HQDA and among the PEOs and the Materiel Commands (AMC/ISC/SDC). Although PEOs voiced strong disagreement with the standard TDA model, the MILDEP recognized the need for a standard TDA model to assist in rational trimming of the acquisition workforce as the total Army scales down.

Program Management Criteria. During FY91, the Acquisition Policy Division was working with SARD to establish a set of definitive PM criteria. Criteria covered establishing/disestablishing Program Management Offices (PMO), determining level (rank/grade) of management, and transition of systems and PMOs. In July 1991, SARD prepared draft PM criteria that left little room for PM transitions from the PEO structure to AMC oversight. After recognition of logical arguments, SARD addressed the need for intermediate transition of PMs from the PEO structure to non-executive oversight, i.e., prior to transition to functional management and PM termination. In August, the AMC command position and primary areas of concern were briefed to the AMC Acquisition Executive Review Council, chaired by the DCGRDA. At the end of FY91, SARD was reviewing comments to the draft criteria sent by HQDA elements, AMC and the other materiel commands.

Materiel Release Process Action Team. The Acquisition Policy Division provided representation on the HQ AMC Materiel Release (Improvement) PAT. The PAT kick-off meeting was held at Picatinny Arsenal, 25-27 September 1991. PAT membership was drawn from HQDA (DCSLOG, DCSOPS), SARD, the Army Materiel Systems Analysis Activity and various AMC/MSC functional representatives. Initial PAT recommendations supported materiel release authority remaining with the CG, AMC (vice SARD/PEO). FY92 actions were to be briefed to the PAT's Quality Management Board and review results of taskers to major subordinate commands providing materiel release historical data.

Update to Non-Developmental Items Chapter of Draft Materiel Acquisition Handbook 70-XX. The Acquisition Policy Division undertook a comprehensive update of the NDI chapter to be included in DA Pamphlet 70-XX. The update was initiated in the summer of 1991, but was delayed awaiting completion of draft AR 70-1, *Systems Acquisition*. Following stabilization of draft AR 70-1 in September 1991, HQ AMC functional offices that needed to participate in the NDI chapter review were identified and requested to update areas for which they have proponency. The division also requested that TRADOC assist with the update of the NDI requirements process and user interfaces. The plan was to integrate functional inputs by the end of October 1991 and hold a functional integrating meeting in early November 1991. The completed draft chapter was due to HQDA in mid November 1991.

RFP/TDP Process Review. The Acquisition Policy Division provided staff support to AMC's Principal Assistant Deputy for Research, Development and Acquisition (PADRDA) in conducting a Functionally Integrated Resource Support Team (FIRST) visit, planned as of the end of the fiscal year for 15 November 1991 to the Natick Research, Development and Engineering Center. The team was led by the PADRDA and

---

[5](1) SARD-RP, Stephen K. Conver, AAE Policy Memorandum, 91-4, Matrix Support Policy for Program Executive Officer Managed Systems, 28 January 1991. (2) Memorandum, AMCDE-PQ (70-1), GEN W. G. T. Tuttle, Jr., CG, AMC, to Distribution, Subject: Implementation of Army Acquisition Executive Policy Memorandum 91-4, "Matrix Suport Policy for Program Executive Office Managed Systems," 28 March 1991.

was to focus on configuration management support to procurement contracting officers and the overall process used to manage technical data packages. The overall team approach was one of total quality management, looking at the total process to identify problem areas and propose broad corrective actions.

AMC Guidance on Reimbursable Matrix Support. The DCGRDA tasked DCSDEA develop guidance for the definition of reimbursable matrix support to PEOs/PMs. The Acquisition Policy Division developed the guidance, consisting of a funding profile on how the reimbursable services are funded and a set of services definitions based on regulations, operating instructions, and other factors. The first edition of the AMC guidance was distributed AMC-wide for comments in April 1991. The second edition was distributed in August 1991 for use by the MSCs in drawing up matrix support agreements with the PEOs. The AMC guidance was to undergo a Red Team review, consisting of members from HQ AMC, the MSCs and the PEOs, on 5-6 November 1991. After review of the FY92 Defense Appropriations Act, changes were to be made and the final edition of the AMC guidance document was to be published.[6]

Army Electromagnetic Environmental Effects (E^3) Program. According to the Army's E^3 *Criteria Development and Assessment Handbook*, developed by LABCOM, "The Army Electromagnetic Environmental Effects (E^3) Program was established to ensure that Army materiel would accomplish its intended mission in the electromagnetic environment (EME). . .The goal of the program was to identify and quantify probable system limitations in the system's expected electromagnetic environment. Early identification of potential system limitations will allow the appropriate acquisition personnel to make informed tradeoffs that support system design or modification decisions."[7]

In early FY91, when the E^3 Branch was dissolved by the DCSDEA realignment, a single E^3 "focal point" remained in the Acquisition Policy Division to provide for the development of policy and oversight management of the Army E^3 program. The focal point also served as the E^3 program advisor to the ASA(RDA) and as the chairman of the AMC E^3 Technical Advisory Committee, composed of members from MSCs, proving grounds, Research, Development and Engineering (RD&E) centers, and laboratories.

As a result of the dissolution of the E^3 Branch, many tasks were delegated to other activities. The E^3 focal point formalized a matrix management structure within the AMC E^3 community to accomplish the tasks and milestones previously assigned to HQ AMC. The HQ AMC DCSCE was asked to manage AMC's current efforts to draft E^3 test and evaluation guidelines for the new DA PAM 73-XX, *Test and Evaluation Procedures Guide*. Design and revision of the Technical Analysis Support System (TASS) was assigned to TECOM's Electronic Proving Grounds. (TASS was a computer tool which assists in developing E^3 criteria.) The latest addition to TASS was the Power Density Evaluation Tool, incorporating a battlefield E^3 wargaming module. LABCOM was assigned management over the contractual effort to develop the Army's E^3 *Criteria Development and Assessment Handbook*. The handbook provided instructions for the development of E^3 criteria, assistance in planning for analysis and testing and suggested methods for conducting E^3 criteria assessments.

CECOM was tasked to investigate the feasibility and desirability of establishing an Army certification process for E^3 engineers. Recommendations were to include the design of Army technical certification procedures or the adoption of existing industry procedures. Under contract to LABCOM, ERC Inc. developed

---

[6]Memo, AMCDE-PQ (70-1) LTG Billy M. Thomas, DCGRDA, to Distribution, Subject: Definitions of Reimbursable Matrix Support to Program Executive Officers/Program Managers, 13 August 1991.

[7]DA, Office of the Assistant Secretary (Research, Development and Acquisition), *Electromagnetic Environmental Effects (E^3): Criteria Development and Assessment Handbook*, September 1991. Copy on file in AMCHO Archives.

a draft E^3 assessment methodology to expedite the 31 December 1991 E^3 milestone faced by more than 30 systems. The methodology "enables the PM to conduct a first-order E^3 assessment of a system by analyzing its component subsystems prior to extensive E^3 testing. It is not a substitute, nor does it eliminate the necessity for testing and independent evaluation."[8]

By 31 December 1991, all systems which had passed Milestone II before 31 December 1990 were to be required by ASA(RDA) to develop E^3 criteria, perform an assessment of their system against those criteria, and develop a plan to address E^3 issues in the development and fielding of their system.

Other Significant Issues

International Cooperative Developments. The Acquisition Policy Division provided assistance to the DCS DEA in preparing a plan for identifying codevelopment (6.3/6.4 RDTE categories) opportunities as part of an overall international armaments strategy. AMC's Office for International Cooperative Programs was integrating DCS DEA's plan into the overall strategy. The effort was to continue through FY92.

Manpower and Personnel Integration (MANPRINT). The MANPRINT program sought to ensure Soldier-In-The-Loop considerations through judicious use of the human integration aspects into materiel design. High level emphasis continued on the application of MANPRINT within the materiel acquisition process. The program was being institutionalized through publication of DODD 5000.1 and DODI 5000.2 and updates to AR 70-1, AR 602-2, and DA PAM 70-XX.

The Acquisition Policy Division's active participation continued during 1991 on the MANPRINT Steering Committee for revisions to the SMMP, oversight of the Army Logistics Management College's MANPRINT training program of instruction, and interface with the Materiel Readiness Support Activity on the MANPRINT data base.

The Acquisition Policy Division participated in two seminars in 1991, one hosted by HQ TRADOC and the second hosted by DA DCSPER. Presentations centered around the HARDMAN III analyses techniques and other tools applicable for use in the MANPRINT program. The sessions were well received and the need for continued involvement in this important program was heartily endorsed. Interest by the international community in the MANPRINT Program continued, with visits from the UK to assess how best to institutionalize their MANPRINT program. In addition, in April 1991, Ms. Roscille Nelson, from the Acquisition Policy Division, participated in the U.S./French Staff talks in Paris and presented a two-hour briefing on how MANPRINT plays into the materiel acquisition process in this country.

Design to Cost (DTC). DTC is a program management tool for controlling production and operating/support costs through the judicious use of optimal design considerations. During FY91, high level emphasis continued to be placed on the application of DTC within the materiel acquisition process, especially with the current trend to use cost plus contracts in the development of materiel solutions to Army requirements. The new DODI 5000.2 required DTC to be applied to the development of ACAT I systems/programs. The implementation of the new DODD 5000.1 cancels DODD 4245.3, "Design to Cost." When the updated AR 70-1, based on DODD 5000.1, was to be published in early FY92, AR 70-64, Design to Cost was also to be cancelled. This was all in the interest of reducing the number of regulatory documents. A chapter was to be provided on DTC in the draft DA PAM 70-XX to replace the AMC-TRADOC PAM 70-2. The division anticipated that the AMC-P 70-19, *Design to Cost*, could then be cancelled.

---

[8]DA, Electromagnetic Environmental Effects Program, *Electromagnetic Environmental Effects (E3) Asssessment Methodology*, September 1991. Copy in AMCHO Archives.

The automated DTC tracking application developed by the Systems Integration and Management Activity (SIMA) was selected by the Navy Executive Agent for DOD Acquisition Materiel Management (AMM) systems as a DOD standard AMM system. A survey of the MSCs indicated that the number of programs with DTC applications would probably double in the next year or two.

DTC awareness training was provided to the MSCs during FY91. Because DTC was a DOD mandated program, the division began establishing a one week course at the Defense Systems Management College (DSMC) regional centers. The first offering was scheduled for December 1991 at the Southern Region, Huntsville, AL, and the division planned a second offering for March 1992 at the Central Region, St. Louis, MO. A text on DTC was published by Wiley-Interscience and can be used for reference. Continuing effort was involved in the training and improvement of the automated DTC quarterly status reporting system. Moreover, coordination was ongoing with SARD to ensure the acquisition concerns of HQDA relating to oversight of the system are met and field command activity in the DTC program meets this requirements and all other aspects of the process.

Publication of new DOD Directive 5000.1, DOD Instruction 5000.2 and DOD 5000.2 Manual. During FY91, the Acquisition Policy Division was responsible for formulating and providing to ASA(RDA) the AMC position on DODD 5000.1/DODI 5000.2. The revised DOD Directive 5000.1 (Defense Acquisition), DOD Instruction 5000.2 (Defense Acquisition Management Policies and Procedures) and a new publication DOD 5000.1-M (Defense Acquisition Management Documentation and Reports) were published on 23 February 1991. According to Acquisition Division staff, "while the 1987 version dealt with acquisition management in terms of life cycle (milestones and phases), the new documents establish an events-oriented "Integrated Management Framework," which focuses on integrating efforts and products of three systems: Requirements Generation System; Acquisition Management System; and the Planning, Programming, Budgeting and Executing System (PPBES)."[9]

For the first time, the DOD 5000 series documents were intended for direct implementation at the field operating level. They apply to the management of major and non-major defense acquisition programs and highly sensitive classified programs. The directive and instruction rank first and second in order of precedence for providing policies and procedures for managing acquisition programs, except when statutory requirements override. The new review procedures and documentation requirements in DODI 5000.2 were effective for defense acquisition programs scheduled for milestone reviews after 23 August 1991. However, programs past Milestone II by 23 August 1991 were not required to rewrite existing approved or validated requirements documents to comply with the new formats.

AR 70-1, *Systems Acquisition Policy*. AR 70-1 was being updated to implement new DOD guidance. The Acquisition Policy Division assisted SARD in the revision to AR 70-1 and provided the consolidated AMC position during numerous Army-wide staffings. The office also provided a member to the Acquisition Policy Task Force, chaired by SARD, which was established to finalize AR 70-1, develop DA Pamphlet 70-XX, *Materiel Acquisition Procedures*, and review the overall Army regulatory structure. The revised AR 70-1 was to contain only Army-unique policy; procedures were to be included in the new DA Pamphlet 70-XX. The structure of AR 70-1 was aligned with DODI 5000.2 and it must be used in conjunction with the DOD 5000 series documents. AR 70-1 was first in order of precedence for managing Army acquisition programs, after DOD guidance, Federal Acquisition Regulation/Defense and Army Federal Acquisition Regulation

---

[9]Executive Summary, Subject: DODD.1, DODI 5000.2 and DOD 5000.2-M Pre-Publication Copies, 23 February 1991. See Memorandum, AMCDE-PQP MG Joe W. Rigby, DCS DEA to Distribution, Subject: Executive Summary - DODD.1, DODI 5000.2 and DOD 5000.2-M, 18 April 1991.

supplements, and statutory requirements. AR 70-1 consolidated and canceled six Army regulations and numerous Army Acquisition Executive policy memoranda.

DA Pamphlet 70-XX, *Materiel Acquisition Procedures*. DA Pamphlet 70-XX was being developed as a companion publication to AR 70-1 and the new DOD 5000 series documents. It was to provide procedural guidance in functional areas and was to supersede AMC-TRADOC Pamphlet 70-2. The DA Pamphlet was to be parallel in layout to DODI 5000.2 to provide easy interaction between the DOD 5000 series, AR 70-1 and the DA Pamphlet.

Acquisition Policy Briefings. With the approval of DODD 5000.1, DODI 5000.2, and DOD 5000.2-M on 23 February 1991, and the pending final publication of AR 70-1, a briefing was developed to provide an overview of revised policy and proposed new Army guidance. It was being presented to HQ AMC, AMC MSCs, RDE Centers, and selected separate reporting activities. The briefing covered changes to milestone phases and reviews, new acquisition category definitions and associated milestone decision authorities, requirements documentation, acquisition program baselines, primary documents for milestone reviews, major changes to AR 70-1, and future planned actions for the publication of a new DA Pamphlet on Materiel Acquisition Procedures.

Popular Names for Major Items of Equipment. The Acquisition Policy Division was the point of contact for processing requests for assignment of popular names to Army major items of equipment. During 1991, the following popular names were assigned: JAVELIN for the Advanced Antitank Weapon System-Medium (AAWS-M), KIOWA WARRIOR for the OH-58D Armed Helicopter, and COMANCHE for the RAH-66A (Light Helicopter Program).

Total Quality Management (TQM). This division's continued support of TQM principles and methods was evidenced by participation in TQM activities during this reporting period. Division activities included assistance in TQM training course development, assistance to DEA trainers, attendance at DCSDEA TQM overview training and Army Management Engineering College on-site TQM courses, participation in Process Action Teams (as members and facilitators), participation (as required) in Quality Management Board (QMB) meetings, support to the QMB chairman and initiation and development of TQM newsletter and contest concept for DCSDEA.

Type Classification. A draft chapter containing procedures for type classification of Army equipment has been prepared and was to be included in the forthcoming DA Pamphlet 70-XX, *Materiel Acquisition Procedures*. Field recommended revisions have been incorporated into the proposed chapter. Army-wide staffing was to be accomplished prior to finalization.

Acquisition Streamlining. In February 1991, primarily due to efforts of the Acquisition Policy Division, DOD acquisition policy DODD 5000.1 and DODI 5000.2 incorporated the principles and the fundamental features of the Army's acquisition streamlining program. The treatment of acquisition streamlining in the current policy differs significantly from previous policy in that streamlining was not treated as extraordinary but rather was considered fundamental to the way acquisition activities are to be accomplished.

In April 1991, the PADRDA, HQ AMC, in a memorandum to the Deputy Assistant Secretary of Defense (Production Resources) (DASD[PR]) stressed the need to remain sharply focused on developing specific ways to support program managers and the need to obtain industry's active participation in effecting the cultural change necessary to fully institutionalize acquisition streamlining. As Mr. Darold L. Griffin stated, "acquisition streamlining continues to offer excellent opportunities to reduce the time and cost of Defense acquisitions."

He continued, "The integration of acquisition streamlining policy with overall Defense acquisition policy actually moves us closer to our goal of institutionalizing streamlining."[10]

The DASD(PR) responded by establishing the Defense Standardization and Acquisition Streamlining Council (DSASC) to provide senior management oversight and direction for acquisition support programs under his purview, including standardization, NDI, and streamlining. Mr. Torelli explained that the council would "integrate management oversight responsibilities for several key acquisition improvement programs, such as commercial acquisition, standardization, and acquisition streamlining. . .[T]here is a strong interrelationship between these programs, and having one. . .council would create a beneficial synergistic effect."[11] However, in the context of this council, acquisition streamlining did not relate to the entire acquisition process, rather, only to the acquisition process functions referred to in Part 10, Section C of DODI 5000.2.

Deputy Chief of Staff for Concurrent Engineering

Organization and Manpower

Effective 1 October 1990, the DCS for Product Assurance and Testing (AMCQA) and the DCS for Production (AMCPD) merged, forming a single provisional organization, the DCS for Concurrent Engineering. Mr. S. J. Lorber was named the DCS for Concurrent Engineering and COL W. L. Wheeler was named the ADCS for Concurrent Engineering. In December 1990, COL Wheeler became the Executive Officer in the Office of the DCG for Research, Development and Acquisition and Mr. Maxwell E. Westmoreland became the Acting ADCS for Concurrent Engineering. Upon Mr. Lorber's retirement in March 1991, Mr. Joseph J. Pucilowski, Jr., was detailed from CECOM to the position of Acting DCS for Concurrent Engineering, as directed by the DCG for Research, Development and Acquisition, from 1 March - 3 August 1991.

In April 1991 the Deputy Commanding General for Research, Development and Acquisition directed that the Deputy Chief of Staff for Concurrent Engineering would remain a provisional organization pending the reorganization of HQ AMC in October 1991. In the meantime, effective 4 August 1991, Mr. Westmoreland became the Acting DCS for Concurrent Engineering and Mr. H. R. Barnett became the Acting ADCS for Concurrent Engineering.

The DCS was divided into five Assistant DCS's: Product Assurance; Production Support; Weapons Systems Production Management; Industrial Preparedness; and Test and Evaluation. In addition, there was a small organization called the Production Base Advocate.

At the beginning of FY91, the Deputy Chief of Staff for Concurrent Engineering was authorized 112 civilians and 7 military spaces for a total of 119.[12] By the end of the fiscal year, the authorized strength was

---

[10]Memorandum, Mr. Darold L. Griffin, PADRDA to DASD(PR), Subject: Acquisition Streamlining, 9 April 1991.

[11]Memorandum, Mr. Nicholas M. Torelli, Jr., DAS(PR) to PADRDA AMC, Subject: Acquisition Streamlining, 1 May 1991. Copy on file in AMCHO Archives.

[12]The DCS for Product Assurance and Testing had been authorized 41 civilians and 2 military and the DCS for Production had been authorized 76 civilians and 6 military. The sub-total of the two offices was 117 civilians and 8 military for a grand total of 125. As can be seen, the overall authorization was nearly the same as before the merger.

down to 99 civilians and 5 military, for a total of 104. This reflected the on-going overall reorganization and downsizing of AMC which continued throughout the fiscal year.[13] Key personnel within the DCS included:

DCS for Concurrent Engineering	Mr. S. J. Lorber (1 Oct 90-1 Mar 91) Mr. J. J. Pucilowski, Jr. (1 Mar 91-3 Aug 91) Mr. M. E. Westmoreland (4 Aug 91-1 Oct 91)
ADCS for Concurrent Engineering	COL W. L. Wheeler (1 Oct 90-12 Dec 90) Mr. M. E. Westmoreland (12 Dec 90-4 Aug 91) Mr. H. R. Barnett (4 Aug 91-1 Oct 91)
Executive Officer	MAJ J. V. Ulans (1 Oct 90-29 Jul 91) MAJ S. J. Larouche (29 Jul 91-1 Oct 91)
Production Base Advocate	Ms. B. J. Byrnes
ADCS for Production Support	Mr. J. H. Sullivan
Chief, Production Assessment Division	Mr. R. A. Hersam
Chief, Engineering and Production Support Division	Mr. J. H. Sullivan
ADCS for Weapon Systems Production Management	Mr. S. V. Balint
Chief, Aircraft and Depot Operations Division	Dr. B. E. Sumner
Chief, Missile, Communications & Electronic Division	Mr. R. R. Keenan
Chief, Weapons and Tracked Combat Vehicles Division	Mr. A. O. Elkins
ADCS for Industrial Preparedness	Mr. G. B. Langford
Chief, Program Formulation Division	Mr. R. H. Crooks
Chief, Industrial Mobilization & Planning Division	Mr. R. Burton
ADCS for Product Assurance	Mr. J. L. Stahl[14]
Chief, Product Quality Division	Mr. E. H. Lesser
Chief, Engineering Division	Mr. J. E. Byers

[13]Except where additional sources are noted, this section is based on the FY91 historical submission from the DCS for Concurrent Engineering.

[14]Mr. John Byers (Acting ADCS) replaced Mr. Jerry Stahl on 6 May 1991 (Mr. Stahl was detailed to the Pentagon). On 10 June 1991, Mr. John Byers (Acting Chief) replaced Mr. Eli Lesser, who was detailed to the Electronics Industry Association during the fiscal year.

ADCS for Test and Evaluation	Mr. W. Gooley, Jr.
ADCS for Industrial Engineering	Mr. J. E. Holvoet
Chief, Army Acquisition Pollution Prevention Support Office	Mr. C. Digiandomenico

Most Significant Issues

The four most significant issues handled by the DCS in FY91, all of which had a significant degree of command interest, were the Atlanta XVII Conference, defense standardization program automation, support for the Javits-Wagner-O'Day program, and the Specifications and Standards Working Group Defense Management Review.

Atlanta XVII Conference. The Atlanta Conference, sponsored by the American Defense Preparedness Association (ADPA), was the U.S. Army Materiel Command's premier acquisition conference, setting the forum for AMC throughout the entire year. The Atlanta XVII Conference was held on 22-24 April 1991 at the Doubletree Hotel, Atlanta, Georgia. The theme was "Adjusting to a Changing World." Four panels covered topics such as: Army Modernization Strategy, Enhancing Readiness Through Technology, Procurement Actions Needing Cures, and Defense Industrial Competition in an International Environment. The panels identified issues on acquisition policy/procedures, the industrial base, operating and support cost reductions and international sales. Each panel had the responsibility to work toward resolving the issues identified in their area and provide a report at the Atlanta XVIII Conference. The Atlanta XVII agenda also included two separate presentations covering lessons learned in Desert Storm and the AMC/PEO Team. ADPA published the conference proceedings.

Defense Standardization Program Automation. As the Army Departmental Standardization Office, the DCS had initiated a project in FY90 to give all Army standardization activities access to the on-line OASD Automated Specifications and Standards Information System (ASSIST) data base. The Systems Integration and Management Activity (SIMA) was tasked to initiate the project. The DCS had 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 had developed and recommended a comprehensive approach to an OSD-wide automation of the Defense Standardization Program (DSP).

In FY91, the ASSIST was acquired, installed, documented, and made available for access by the Army standardization community. The information briefing was presented at the Standardization Improvement Working Group's VENUS conference on 16 January 1991. To guide the development and enhancements of the system, the Standardization Management Systems (SMS) Functional Coordinating Group (FCG) was chartered and established in February 1991. The system was documented and initial training was held on 2-3 April 1991 at SIMA, Chambersburg, PA. As of the end of FY91, ASSIST was available by on-line access at SIMA, offering both pre-written menu-driven selections and user-developed ad hoc query capability.

Javits-Wagner-O'Day (JWOD) Program. AMC supported the 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.[15]

During FY91, AMC conducted three video conferences, with NIB and NISH participating. These allowed for responses to questions from the field and for presentations by the Presidential Committee, NIB and NISH concerning the purpose, value and capabilities of these organizations. The program was of a continuing nature, with video conferences and literature dissemination to promote and educate field activities planned. Responsibility for this action was to be transferred to the DCS for Acquisition in FY92, however.

Specifications and Standards Working Group Defense Management Review (DMR). The DMR Working Group on Specifications and Standards did not formally meet in 1991. However, the Defense Standardization Council (DSC) was created and chartered in September 1991. It was to oversee and guide the Defense Standardization Program, in general, and oversee the implementation of the WG-9 actions and recommendations. As part of the DMR WG-9 actions, the adoption and use of Non-Government Standards (NGS) has been selected as a major Army initiative. With declining resources, the use of commercial practices was a fundamental keystone of the Army's new acquisition strategy. In this regard, the Army initiated two projects to further these goals. One was to convert existing military documents to commercial ones, in cases where the commercial ones do not exist. This was to be an expansion of the TACOM/Society of Automotive Engineers (SAE) effort. Another effort underway at the end of the fiscal year was the joint Army/ASTM[16] pilot effort to develop procedures that will facilitate adoption and use of ASTM standards at the working technical committee levels.

Assistant Deputy Chief of Staff for Product Assurance

Desert Storm Product Quality Issues (Defective Hardware)

AMCCE-QP received ten separate requests from DA to investigate allegations of defective hardware that had potential safety or readiness implications for ODS. Each report was thoroughly investigated immediately by the appropriate MSC and actions necessary to assure the quality of the materiel were taken, to include repair/replacement. DA was advised of actions taken within 48-96 hours after HQ AMC received notification.

Contractor Performance Certification Program $(CP)^2$

The $(CP)^2$ program, operational since 1986, motivated and recognized contractors who consistently deliver good products and demonstrate continuous improvements in both their management and production processes. In November 1990, AMC directed that the major subordinate commands stop accepting new candidates into the $(CP)^2$ program. AMC, however, was committed to participating in the DOD Exemplary Facility (EF) program. (See separate paragraph on DOD EF program, under the ADCS for Production Support.) As of the end of the fiscal year, there were 33 contractors actively pursuing certification and an additional 9 prospective candidates. The following contractors were $(CP)^2$ certified during 1991:

---

[15]Reference AMCPD-SE Memorandum, Subject: Support for Javits-Wagner-O'Day Program, 21 August 1990, signed by GEN Tuttle.

[16]ASTM is an industry association that sets standards.

Table III - 1: CP^2 CERTIFIED CONTRACTORS

Contractor and Location	Certified By	Date
Detroit Diesel, Detroit, MI	TACOM	June 1991
General Dynamics, Sterling, MI	AMCCOM/TACOM	November 1990
General Dynamics, Scranton, PA	TACOM	May 1991
General Dynamics, Lima, OH	TACOM	June 1991
ITT, Fort Wayne, IN	CECOM	January 1991
Martin Marietta, Milan AAP*, TN	AMCCOM	January 1991
Motorola, Scottsdale, AZ	AMCCOM	January 1991
Rockwell, Duluth, GA	MICOM	September 1991

** AAP = Army Ammo Plant*

Corporate Information Management (CIM) - Deficiency Reporting System (DRS)

The DOD Materiel Management Board, chaired by the DASD (Logistics), chartered a working group to identify selected automated data systems to be designated as DOD standard systems. The primary objective of the initiative was to eliminate duplicate systems and eliminate development of further duplicate systems by the several DOD components. The working group identified five basic functional areas: Acquisition Materiel Management; Item Introduction; Requirements; Asset Management; and Distribution. They asked each services' Central Design Activity to submit automation systems they considered appropriate for DOD standards. Each service was to establish an Executive Agent Office to develop standard automation systems within one of the five areas. A report outlining the systems selected and the responsible service for each had been published in 1990.

One of the systems selected as the baseline database for a DOD standard was the Army Deficiency Reporting System, selected under the area of Acquisition Materiel Management which was headed by the Navy EA. As the office responsible for the DRS, AMCCE-QP worked closely with the Navy EA to explain the DRS and assist the Navy in "selling" the DRS to the other services. In mid-1991, the Navy EA office selected the Army Central Design Activity, SIMA, to redesign DRS into a DOD standard. Funding was budgeted for the effort and SIMA began the redesign work.

The project was to be a two phase process. Phase One would be a redesign of the current DRS into an on-line database that incorporated all of the Army data requirements for QDRs, Equipment Improvement Recommendations, Reports of Discrepancy, and Warranties and was far more user friendly that the current DRS. A DRS Functional Coordinating Group meeting was held in August 1991, with representatives from all MSCs and all functional areas, to review and revise Army DRS requirements. The participants drafted a requirements document for each functional area with proposed screens for the automated system. SIMA established a DRS team, consisting of two functionals and five programmers to take the draft functional requirements and develop a prototype database by August 1992.

The second phase of the DRS redesign was to be the incorporation of other services' requirements. This phase was projected for completion in about two years. The Navy hired a contractor to conduct research, through site visits to all services' design activities and primary functional areas.

Corrosion Prevention

The Materials Technology Laboratory (MTL) continues to provide support as the Corrosion Prevention and Control Center for Technical Excellence (CPC-CTX). CPC-CTX has been identified to move with other MTL functions to the Combat Material Research Laboratory (CMRL) in FY97. Routine problems in shipping materiel overseas were encountered. Many issues were identified as a result of operation in areas of high humidity and high salinity. Those using returning equipment experienced problems, due to a lack of fresh water for cleaning prior to shipping.

Battle Damage Assessment (BDA) was provided by MTL on aviation and other equipment. MTL was tasked by the Principal Assistant Deputy for Research, Development and Acquisition (PADRDA) to examine a production facility to determine if corrosion protection can be affected by production processes. This survey provided insight into the impact of production processes. As a result of the production survey, a follow-on study was conducted on depot processes.

Quality Engineering

AR 702-3, *Army Materiel Systems Reliability, Availability and Maintainability (RAM)*, was last officially published in May 1982. Since that time, two interim revisions have been issued for use without publication, and numerous improvements have been coordinated among working levels within the RAM community. The major objection to these interim revisions are that they contain not only RAM policy, but also RAM philosophy and methodology. A decision has been made 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. A decision was expected in November as to whether a stand alone AR 702-3 was to be issued. If the decision was to issue the regulation, the office estimated that it will be issued by the end of the first quarter of FY92. The DA Pam 702-3 will be finalized approximately one year later.

Reliability, Availability and Maintainability Computer Aided Design (RAMCAD)

A joint effort between the U.S. Air Force and the U.S. Army to allow design engineers to obtain real-time RAM analysis of electrical, mechanical and structural designs was developed. The system automatically drew information from data bases and the design, then utilized this information to run commercially available RAM computer tools. In early FY92, the system will be installed at design activities within ARDEC. After approximately a year of validation and testing, the plan was to make the system available to industry and other government facilities. A follow-on effect was planned, to allow interactions between multiple concurrent engineering computer analysis tools to allow for an up-front optimum design.

Cost Effectiveness Analysis of Environmental Stress Screening (ESS)

The result of a two-year field study of ESS radios verses non-ESS radios overhauled at Tobyhanna Army Depot projected a 30 percent cost savings per year when radios were screened. This saving resulted from eliminating poor workmanship and defective parts while the radios were still in the depot. The study indicated that a sufficient number of defects can be discovered and corrected in the depot before the equipment is shipped, to make it more cost effective than waiting until problems are detected in the field. The study looked only at cost effectiveness of depot screening of overhauled equipment and did not consider the other positive results from screening, such as improved readiness.

Assistant Deputy Chief of Staff for Production Support

Acquisition Improvement Reviews (AIR)

Production AIRs 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. The office expected to accomplish 4 to 6 AIRs during the coming fiscal year.

DOD EF Program

A Continuous Process Improvement (CPI) Task Force was established at HQ AMC (May 1991 - January 1992), to manage the development of a new performance-based contractor assessment program. The objectives of the CPI program were to improve performance of participating contractors and to establish a DOD core of world-class facilities. The program entailed contractor self-assessment and application, followed by Government assessment, and included defined performance standards, metrics and validation methodology, process capability assessment and CPI. Other features included Certified Government evaluators, product/process orientation vs. functions/procedures, and included the contractor's supplier/vendor base.

During FY91, several initial training sessions were conducted for Government and contractor personnel at selected contractor facilities. A formal training class at the Army Management Engineering College was scheduled for January 1992. Later in FY91, AMC became a participant and supporter of the DOD Exemplary Facility Program, and the CPI Task Force's (later renamed the EF Task Force) efforts were focused to support the DOD EF Program. The DOD EF Program's objective was to improve the performance of participating contractors, and reduce the Government resources required to administer and monitor contractor performance. Participants include AMC, DA, DLA, Air Force, Marine Corps, and Navy. HQ AMC worked with DLA and the other Services to incorporate our Continuous Process Improvement, Acquisition Improvement Reviews, and Contractor Performance Certification Program $(CP)^2$ lessons learned into the EF program.

Configuration Management

The office of the ADCS for Production Support provided the Army's representative to the Configuration Management Advisory Group (CMAG) at the Computer-aided Acquisition and Logistic Support (CALS) Evaluation and Integration Office, Program Management Division. The CMAG sought to establish uniform practices between all U.S. services and agencies and was made up of representatives from each of its members.

Preparation of the draft MIL-STD-973, entitled "Configuration Management," and staffing throughout the services was completed during FY91. Final resolution of the more than 1500 comments received was in process as of the end of the fiscal year and the completed document was scheduled to be sent to the printer in December 1991 or January 1992. Completion of the associated handbook, MIL-HDBK-61, was deferred until FY92. Inputs continued to be provided to NATO STANAGs; the most recent submission consisted of representative Engineering Change Proposals (ECP). Update of AR 70-37, *Configuration Management*, for DA-wide policy was overtaken by streamlining of the acquisition procedures and issuance by DOD of the 5000.1 series of documents. AR 70-37 was replaced by the Interim Operating Instructions (IOI) for Configuration Management, issued under a SARD-RP Memorandum for Distribution, dated 15 March 1991, Subject: "Configuration Management."

As of the end of the fiscal year, promoting the use of electronic media for exchange of CM data to the maximum extent practical, and consistent with sound CM principles, continued as did participation in the formation of CM policies for the Industry/Government CALS initiative.

Data Management

Acquisition Policy on Zero Base Requirements. As part of the effort to streamline the acquisition process, this office developed a zero based requirements policy, which was approved by General Tuttle on 10 June 1991. This policy required all management, functional discipline, and data requirements be justified as essential and cost-effective prior to use in a solicitation or contract. Specifically, management requirements specified how a contractor was to manage the contractual effort; functional discipline requirements specified how a contractor was to perform functional tasks within disciplines (such as quality, reliability, and maintainability); and data requirements specified what data a contractor was to generate and deliver. This policy assigned responsibility to the Head of the Contracting Activity (HCA) for ensuring requirements were justified prior to their use. This policy was applicable to all AMC managed systems.

Technical Data Packages (TPD). The update of AMC-R 70-46, *Technical Data Packages*, was initiated in FY90. 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. The update of AMC-R 70-46 continued during FY91. The draft document was prepared, staffing throughout AMC and resolution of comments by the Industrial Engineering Activity (IEA) were completed, and the document submitted to AMC for final review and comment. This document was to be briefed to the AMC Acquisition Executive Review Council (AERC) during the first quarter of FY92, accompanied by the recommendation that, in the interests of assuring a uniform policy throughout DA, it be elevated to the status of an Army Regulation. The office expected to replace MIL-STD-47500 with MIL-T-31000 in new design efforts for the acquisition of Technical Data Packages on all new contracts.

Technical Data/Configuration Management System (TD/CMS). A total of 10 TD/CMS(E) systems were installed throughout AMC to include two program manager offices (HIP PM and TOW PM). These systems experienced 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 Work Group. However, this selection was by the Executive Agent for Acquisition Materiel Management. The Navy's Configuration and Logistics Information program (CLIP) was to be the DOD standard system.

Digital Storage and Retrieval of Engineering Data System (DSREDS). The DSREDS program, which had been successfully installed with the final system acceptance at Belvoir Research, Development and Engineering Center in January 1989, completed testing for compliance with CALS standards which were adopted after DSREDS was developed and fielded. Fielding of the CALS compliancy upgrade for all sites was expected to be completed by the end of the first quarter, FY92. Additional plans were being formulated for DSREDS expansion to provide DSREDS capability at the maintenance depots and for total system upgrade in FY94-95.

By the end of the fiscal year, initial testing was completed. Total system replacement, with the DOD standard system (Engineering Data Management Information Computer System), was expected in the FY97-99 time frame. Additionally, testing of on-line digital data transfer was successfully completed. Initial efforts were underway by the end of the fiscal year to establish a mechanism for international data exchange.

DODD 5000.1, DODI 5000.2, and DOD 5000.2-M

These documents were finally published 23 February 1991 after intensive and extensive reviews by AMC staff. This office's repeated comments contributed to the inclusion of the service components' authority to

issue implementing guidance. This office was in the process of providing input to the minimum essential supporting guidance to implement the revised system acquisition policies established by the revised documents above as of the end of the fiscal year.

Value Engineering Process Action Team

The Functional Coordination Group for the Value Engineering Management Information System (VEMIS)/Value Engineering Automated Reporting System (VEARS) and the Value Engineering Program Managers met twice during FY91. VEMIS was fully operational during the first quarter of FY91. VEMIS/VEARS was selected to be the DOD standard reporting system for value engineering.

For FY91, AMC reported to HQDA the following Value Engineering Program accomplishments:

Hard Dollar Savings	$198,517,000
Cost Avoidance Savings	$91,685,000
TOTAL SAVINGS	$290,202,000
Approved Value Engineering Proposals	395
Settled Value Engineering Change Proposals	146
Average VECP Processing Time in Days	340
Number of Full-Time Personnel	50
Number of Part-Time Equivalents	31
Number of Persons Trained in PAVE	151
Number of Persons Trained in CAVE	134

As part of the HQ AMC total quality management program, a Value Engineering Change Proposal (VECP) Processing PAT was chartered by General Tuttle in May 1991 to reduce the VECP cycle time. The team owner was the DCS for Concurrent Engineering, the team facilitator was the HQ AMC VEPM, and the team leader was the U.S. Army Missile Command. The team met the first week of June 1991 in St. Louis and was trained by an instructor from the U.S. Army Management and Engineering College. In June 1991, the PAT was rolled into the Operations and Support Cost Reduction (OSCR) Task Force as the Value Engineering Sub-Working Group.

Computer-Aided Acquisition and Logistic Support

During the first quarter of FY91, the CALS contractual competitive Phase I was nearing completion. Contracts had been awarded to BDM, Computer Sciences Corporation, TRW and Xerox on 31 August 1989. The scheduled thirteen-month effort was concluded by the announcement in November 1990 that only Computer Sciences Corporation and Xerox would be awarded options to continue into the next phase.

On 11 January 1991, the Army CALS program was reviewed by the OSD Major Automated Information System Review Committee (MAISRC). The resulting System Decision Memorandum (SDM) recognized the Department's commitment to Corporate Information Management and the DOD CALS program. The MAISRC concluded that it is essential to position Army CALS as a joint program as early as possible. The SDM states that the Assistant Secretary of Defense for Production and Logistics (ASD[P&L]) will ensure that the minimum essential joint requirements are identified and provided to the Army in time to: (1) integrate the joint requirements into the design activities; (2) solicit proposals to support the joint requirements; (3) consider such proposals in the source selection of the Army CALS Phase 3 contractor.

The Army was directed to take the necessary actions to include these requirements and provide the design, development, acquisition and implementation options for a joint program at Milestone II. The Army CALS program should be structured to permit proceeding with immediate execution as a joint program after Milestone II approval.

During the winter months, GEN Tuttle had taken a very active role in the CALS program within AMC. He called for a CALS Seminar, which was held on 29 January 1991. The seminar's purpose was to share information about CALS with AMC subordinate commanders and directors.

A joint CALS Management Office (JCMO) had been established earlier during the year. The Army portion of that office was initially staffed with three detailed civilians, one from AMC one from PEO STAMIS and one from the HQDA Office of the Deputy Chief of Staff for Logistics. In May 1991, The HQ AMC slot was officially transferred from AMC. Army staffing of that office remained constant at three people throughout the year. Staffing to support the CALS effort within AMC remained at a reduced level throughout the year; resources were not made available to replace the civilian space transferred to JCMO.

The JCMO, comprised of representatives from each of the services and DLA, was led by a Navy Captain. The office played a key role throughout the year in initiating and coordinating efforts among the services, contributing to the identification of "minimum essential joint requirements" (in accordance with MAISRC guidance) and formalization of a DOD architecture for CALS. Both efforts were successful. Joint requirements were approved by OSD and forwarded to the Army CALS contractors. The contractors' proposals in responding to the joint requirements will be a factor in determining which contractor will be selected to continue CALS development work.

The identification of a DOD CALS architecture resulted from an intensive four-month effort with participation from all the services and DLA. Among a peak total of 80 people working toward defining the functional and technical areas, seventeen Army people worked nearly full time to support the architectural effort. The resulting architecture will be a useful tool in structuring a cohesive joint CALS program.

For the majority of the calendar year, the CALS contractors were involved in Phase II activities, culminating in a two-week demonstration of specified technical and functional requirements to Source Selection personnel. At the conclusion of the official demonstration, each contractor held a two-hour executive demonstraton for key service and OSD personnel. GEN Tuttle arranged and hosted these sessions as a means of furthering the understanding of CALS capabilities which the Army will implement.

The CALS mission responsibility within the headquarters was transferred from the DCS for Readiness to the DCS for Concurrent Engineering. A memorandum approving the transfer was signed jointly by DCGRDA and the DCGMR on 21 July 1991. The physical move for the three civilian employees occurred on 12 August 1991.

Over the course of the fiscal year, key CALS players in the OSD arena changed. Much discussion occurred over the summer, regarding the OSD structure to support CALS within ASD(P&L) and the relationship of CALS to the ongoing CIM program. In early September 1991, as key personnel and positions were still being finalized, MG Edwin R. Baldwin, Jr. reported for duty in OSD as the Defense CALS Executive. He reports directly to Mr. Colin McMillan, ASD(P&L). MG Baldwin is detailed to that position for approximately one year from a general officer billet within HQ AMC. When he returns to AMC, he will be the Deputy Chief of Staff for Acquisition.

Assistant Deputy Chief of Staff for Weapon Systems Production Management

Rapid Acquisition of Spare Parts (RASP)

The Army's RASP program was a counterpart to the Navy's Rapid Acquisition of Manufactured Parts (RAMP) program. The purpose of the RASP program was to produce parts on demand at reduced cost by modifying the ordering and manufacturing processes using a system called Product Data Exchange Standard (PDES), under development by the National Institute of Standards and Technology (NIST). The RASP program would enable the manufacture of parts on demand, using digitalized ordering and manufacturing instructions. When fully implemented, the process would be completely paperless with electronic data transfer from order site to manufacturing site to machines on the shop floor. The Army had piggy-backed on the Navy RAMP program since 1989 with a pilot program to digitalize TDPs and manufacture parts. Thirty-five parts were submitted for the program with ten selected for production.

The Army depots and arsenals are gearing up to become RASP facilities as requirements and funding allow. Letterkenny Army Depot received $3.2 million in FY91 Manufacturing Technology (MANTECH) funds to begin implementing a RASP facility for Small Mechanical Parts (SMP) and Anniston Army Depot received $900,000 in Production Base Support (PBS) funds to conduct a detailed design to implement a RASP facility for SMP. Watervliet and Rock Island Arsenals were also candidates for RASP SMP facilities. Tobyhanna Army Depot was in the process of conducting a feasibility assessment to implement RASP for electronics parts at the end of the fiscal year. The RASP concept was one of the elements included in the Army Flexible Computer Integrated Manufacturing (FCIM) program, managed by a program office at IEA. Future progress on the program was to be in concert with developments and decisions within the joint FCIM community.

Industrial Base Resource Allocation Council (IBRAC)

In September 1991, LTG Thomas was briefed on the plan to integrate flexible computer integrated manufacturing into Army depots and arsenals. He directed that AMCCE conduct a review of the industrial base investment programs for FY92 that could assist in implementing an industrial base strategy. The strategy was defined in a White Paper, which described the need to take smart steps to reduce the size of the industrial base without loosing the ability to obtain critical materiel or perform critical processes.

To execute this task, AMCCE established an IBRAC that would review the investment programs. Beginning with the FY92 and future President's budget lines as baselines, the two programs were to be reviewed and their project funding approvals were to be made by an IBRAC chaired by the DCGRDA and consisting of the MSC commanders, the DCS for Development, Engineering, and Acquisition, and the DCS for Ammunition. The Executive Secretariat was the DCS for Concurrent Engineering.

The first IBRAC was scheduled for 31 October 1991. Due to the limited time for the first meeting, review of industrial base investment programs was restricted to Production Base Support (PBS) and MANTECH. Future allocations were to be made by the IBRAC, based upon its agreed upon "Industrial Base (Manufacturing Excellence) Vision," the plans and direction of which were to be discussed and determined at the second IBRAC meeting in February 1992. This vision was to be the vehicle by which all the industrial base programs, including MANTECH and PBS, were to be rationalized, defined, integrated, and justified to higher headquarters to guarantee a robust industrial base in this period of dwindling defense resources.

Charter for AMC/MSC Group on Depot, Arsenal, and Government-Owned Facilities Work-Loading

The draft charter was distributed for final staffing and review at HQ AMC and the MSCs. Comments received were addressed at an HQ AMC meeting on 24 and 25 September 1991, and a finalized charter was

agreed to by all in attendance. As of the end of the fiscal year, the charter was being staffed within HQ AMC prior to being distributed to the MSCs for Commander approval.

Abrams and Bradley Plant Closures

As directed by HQ AMC, TACOM began several tank industrial base cost studies in FY91. Among them was a study to develop a plan for tank conversion and a further study of a tank plant closure. However, these studies were delayed by ODS and not concluded until near the end of the fiscal year. TACOM completed the Abrams Conversion Program study in December 1990 and briefed results to HQ AMC in February 1991. A further study of tank plant closure, to develop more austere closing costs, was delayed until May 1991. The latter study was completed and briefed to HQ AMC on 13 August 1991. It showed a reduction of closure costs of approximately 38 percent. This study was validated by HQ AMC Cost Analysis and forwarded to SARDA in September 1991.

Layaway of the Detroit Arsenal Tank Plant (DATP) was underway as of the end of FY91. Assembly of M1A1 tanks at DATP terminated in August 1991, but component machining at DATP was to continue in support of LATP production until it was no longer required. Funding in the amount of $10.5 million was provided in February 1991 for accomplishing layaway efforts. As of the end of the fiscal year, $1.6 million had been awarded to maintain the unoccupied portion of DATP, $200,000 was obligated for removal of some production equipment from Allison Transmission Division (ATD) and a $3.1 million cost proposal was being negotiated for layaway of assembly equipment (IPE, OPE and ST/STE) located at DATP.

The Bradley Program Closure study was underway at the end of the fiscal year. Funding in the amount of $950,000 was provided by HQ AMC in October 1990. TACOM received a proposal from FMC Corporation for $999,000. This proposal was being reviewed by the Bradley PM Office and the TACOM legal office at the end of FY91. After review, it was to be sent to HQ AMC and SARDA for final approval. Approval was expected by the end of November 1991 and the study would then begin in December 1991.

Industrial Modernization Incentives Program (IMIP)

In FY91, IMIP (with a budget of only $3.5 million) supported a variety of new industrial modernization projects. Funding for IMIP was under the Other Procurement, Army (OPA) account. The focus of these modernization projects was to encourage contractor capital investments at contractor owned facilities. The goals for undertaking these projects were to improve productivity, bolster production flexibility and to enhance product quality. Ultimately, these projects were expected to promote a strong industrial base. Modernization projects funded to achieve these goals were at contractor owned facilities: Allison Gas Turbine Division of General Motors, Indianapolis, IN; Garrett Engine Division of Allied Signal Aerospace, Phoenix, AZ; Allison Transmission Division of General Motors, Indianapolis, IN; and United States Optics Industry. The year's accomplishments included the continued modernization efforts at various contractor owned facilities that were initiated the previous fiscal year.

Long Lead Production Items in Support of ODS

Long lead production items, in particular castings, forgings, and super precision bearings, can take as much as 12 months to produce. AMCPP-SA conducted a study for the DCGMR, where the U.S. industrial base was reviewed in order to determine if domestic sources of these items can support surges in production to offset unexpected, large losses in combat. Ultimately, it had to be determined whether or not relief from import policies restricting foreign sources should be sought. It was determined that relief from policy would not help industrial mobilization to surge the production of these items. The U.S. capacity for casting and forging was operating at approximately 60 percent and super precision bearing production was operating at

approximately 70 percent. In general, the U.S. industrial base for these products appeared to be able to meet foreseeable surges, barring total replacement of assets. However, this determination was made recognizing that the U.S. industrial base in these areas was marginal. As of the end of FY91, domestic growth in these areas was very slow and not competing well with foreign suppliers. For the long term, it was decided that the contractors will stockpile long lead time items for contingencies.

Non-Developmental Item (NDI) Program

In FY91, the NDI Program (with a budget of $6.179 million) supported a total of 45 tasks, comprised of ongoing and new tasks. Funding of the NDI Program was under the Research, Development, Test and Evaluation (RDTE) account. The main focus of these tasks was to identify and evaluate existing commercial, modified commercial or other Service, country, or Government agency materiel that meet established Army criteria. These tasks facilitated the fielding of materiel, usually non-major systems, to Army users.

Two types of NDI tasks were funded: market investigation and operational testing. In FY91, market investigation tasks accounted for 26 percent of funded tasks and dealt with the investigation and analysis of state-of-the-art commercial items to determine how closely they satisfied the Army's requirements. Operational testing tasks accounted for 74 percent of funded tasks and dealt with the modification of the state-of-the-art commercial items and the testing of these modified items to ensure that they satisfied the Army's requirements. TACOM, TROSCOM, CECOM, and LABCOM managed these tasks for the Army. TACOM and TROSCOM, however, managed 96 percent of all funded tasks.

Assistant Deputy Chief of Staff for Industrial Preparedness

Joint Group on the Industrial Base (JGIB)

The JGIB was chartered by the Joint Logistics Commanders (JLC) to address industrial base issues. The JGIB met quarterly and reported biannually, or more often if deemed necessary, to the JLC. The JGIB was comprised of a principal representative for each service, and attendees included personnel from each Service as well as the Department of Commerce (DOC), the Defense Logistics Agency (DLA), and any other activities with an interest in the industrial base. Chairmanship of the JGIB was rotated among the Services. During FY91, Mr. Gil Langford, Office of the Deputy Chief of Staff for Concurrent Engineering, represented the Army as the JGIB Chairman.

During the Army tenure of the Chairmanship, the JGIB initiated or completed several significant taskings. In conjunction with the DOC, the JGIB reported to the JLC on foreign dependency, gears, robotics, and semiconductors. The JGIB addressed the issue of developing common data elements among the services to ensure uniformity of data collection forms and consistency of definitions. The Army developed a new Multi-Service Production Planning Feasibility Study, endorsed by the OSD with the Army as the lead service. The JLC subsequently expressed a keen interest in that study and assumed an oversight role. The JLC tasked the JGIB to formulate a process for an industrial base assessment and to recommend an item for study. The concept was approved and organic composites were selected for the initial effort. A multi-service task force was established with each service providing both participating members and the funding for contractual support. Before the end of FY91, additional items had been selected for future horizontal studies.

Commercial Substitutes Used During ODS

The Army used commercial substitutes to augment military standard items during the rapid mobilization required for ODS. The Heavy Equipment Transporter (HET) is an example. Commercial trailers designed

to haul 70 tons were built in two weeks. Tractors were moved from dealerships throughout the United States. Tank transporters and trailers were built in record time, using multiple shifts and overtime. Steel manufacturers expedited orders for special dimension requirements. Failure to procure these items expeditiously would have forced tanks and personnel carriers to travel as much as 200 miles across the desert. Excessive wear on engines/transmissions could have seriously hampered the preparedness of these combat items. Reports from the field indicated that the trucks performed well, but the trailers experienced axel breakage. Other commercial examples were: Ruggedized global positioning receivers (hand held or for vehicles); clam shell buildings (for helicopters); and sand grids for temporary roads.

Defense Priorities and Allocations System (DPAS)

Under Title I of the Defense Production Act (DPA), the President is authorized to require that contracts or orders on certain approved Defense programs be accepted and performed on a preferential basis, and to allocate materials and facilities in such a manner as to promote approved programs. The DPA of 1950 (50 U.S.C. app 2061 et seq) expired on 20 October 1990. Historically, the Act has been renewed every 2 years and, on those occasions where it has lapsed, Congress has renewed it retroactively. When Congress reconvened in January 1991, no action on renewal of the Act was actively pursued. On 8 January 1991, the President signed Executive Order 12742, utilizing Section 469 of the Selective Service Act to implement the expired DPAS under Title I of the DPA. Ultimately, Congress extended the DPA to 1 March 1992, and made it retroactive to 20 October 1990. In the event of future lapses, however, DOD, DOC and associated agencies will continue to use EO 12742.

DPAS Support of Operation Desert Shield/Storm. During 1990-91, the DA DPAS Group at HQ AMC was extremely active in support of ODS. The operating field and MSCs were advised to identify and prioritize ODS contracts. Formal and informal requests for Special Priorities Assistance (SPA) increased significantly for accelerated deliveries and contract placement. There were over 200 formal cases versus 10 to 15 cases during peacetime. There were a number of instances where the Army allocated the total production of an item from the private sector. One example included the total allocation of carbon from Calgon Carbon Corporation for support of gas masks and filter elements for nuclear, biological and chemical protection. The Army allocated the entire monthly production of 300,000 lbs. to the other Services and our allies in support of ODS. Significant amounts were allocated to the British Ministry of Defense, Israel, and Saudi Arabia.

DPAS Orientation and Training. A significant number of calls were received during ODS, requesting further clarification of the DPAS system and how it worked. It became evident that general familiarity with DPAS was extremely low, and that there was a need for increased contractor orientation and training development for Army contract and production personnel. During 1990-91, the DPAS Office at HQ AMC completed a video tape that has been duplicated and distributed throughout the Army DPAS officer chain. The DPAS office also initiated a DPAS officer registry and instructional elements pertinent to completing and processing DPAS oriented tasks. An automated SPA record action file was in the process of being created at the end of FY91 to facilitate on-line actions with major subordinate commands' DPAS SPA case input. DPAS training briefings were given throughout the AMC/Army community. The Corps of Engineers was briefed and DPAS assistance was offered during the rebuilding of Kuwait.

DPA/DPAS Regulatory Guidance. The Office of the Assistant Secretary of Defense, Production and Logistics, Production Resources/Production Base directed the Army POC for DPAS, Mr. Clark Winner, to complete DODI 4410.1-M (AR 715-5), *DOD Priorities and Allocations Manual (PAM)*, which was intended to provide comprehensive guidance in the DPA/DPAS arena. Mr. Winner anticipated that publication of the new manual would take place by 1 January 1992.

Strategic and Critical Materials (SACM) Stock Piling Act

The SACM Program was developed as a result of the Strategic and Critical Materials Stock Piling Act (50 U.S.C. 98 et seq), which mandated that a stock of strategic and critical materials be maintained to decrease (and preclude, where possible) dependence upon foreign sources during a national emergency. As a result of the Act, a National Defense Stockpile (NDS) was developed and maintained. During ODS, a supportive thrust was undertaken to provide critical materials to the Services and industry. The Army was initially interested in the possibility of an NDS release of Germanium, utilized on night vision devices, and for tungsten, which was used in 20mm and 25mm armor penetrators. Hostilities ceased prior to any significant action being taken.

Depleted Uranium (DU) for NDS

During 1990-91, the Army requested that the Office of the Assistant Secretary of Defense, Production and Logistics for Strategic and Critical Defense Materials (S&CDM), the NDS manager, address the possible inclusion of DU into the NDS. DU was utilized in anti-tank penetrators and armor. The request, predicated on an in-depth study initiated during the Cold War era, was denied due to lessened tensions in Eastern Europe and new mobilization scenarios.

Defense Production Act, Title III

The Title III Program was an ongoing Federal activity that encouraged private industry to invest in needed production capacity by providing incentives of Government purchases and purchase commitments. This was done to assure private investors of an initial market for the new industrial output. Title III Projects begin with the identification of a shortfall in domestic capacity. In August 1991, Congress appropriated $50 million for previously approved projects, such as Gallium Arsenide, Nicalon, and Garnet Epitaxial Wafers. During 1990-91, OASD solicited proposals for potential Title III projects for FY 1993-94. The Army proposed the following projects: Standardized Open System Architecture Controllers; Expansion of Butyl Rubber Coated Cloth Fabrication; Ultra High Strength Steel for Tank Cannon; Domestic Manufacture of Superactivated Carbon; Domestic Manufacture of Babbington Burner.

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 through 1980, mini-studies were conducted on automating the IPP process. The major problem was the availability of state-of-the-art equipment.

The ASAPP planners envisioned a classified central data base for IPP input and remote personal computers 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 included a classified network with a PC at each MSC and at the IPP office in HQ AMC. By the end of FY91, the ASAPP was completely installed and operational. The MSC IPP staff inputs their data into their MSC AMPMOD data base and has the responsibility for maintaining it. They also have the

capability to extract any data in the AMC AMPMOD data base and manipulate it for their own analysis. The HQ has the same capability except for input responsibility.

Manufacturing Technology

In FY91, the MANTECH Program supported research into Manufacturing (MFG) process improvements important to Army systems production. Several new thrusts were financed by the $30.3 million of FY91 budget authority.[17] In addition, AMC continued investments in existing technology thrust areas, including single issues, chemical processes, electronics MFG, MFG process control, environmentally acceptable processes, optics/electro-optics, and non-metallic materials. Investments were also made in new missile seeker and RASP thrusts/projects. Manufacturing processes, established by prior MANTECH investments, no doubt enhanced production of systems utilized in ODS.

Industrial Preparedness Operations (IPO)

In FY91, the IPO Program provided $37.4 million to support industrial preparedness planning, which included the production base support program, administration and project management and industrial base management. This account was primarily for people-associated costs; however, funds in the amount of $890,600 were provided in support of the Acquisition Process Improvement through the Contractor Certification Project, which formed the framework for the future organization structure of the Army acquisition process. During ODS, work years for manning AMC operations centers and conducting special "what if" drills (concerning potential mobilizations of plants/alternate solutions to depletion of stockpiles) were funded by the IPO account. Even though hours were tracked/reimbursed with ODS funds, personnel trained with IPO account resources were ready to handle the challenges presented.

Production Base Support

A portion of PBS funds, $30.7 million, was provided to begin layaway of M1 tank production facilities, including Detroit Arsenal Tank Plant. Funding from the PBS program was also provided to various depots in support of ODS operations. Congress approved a reprogramming action to provide equipment to enhance Automated Storage and Retrieval System (ASRS) for the maintenance workload at Red River Army Depot.

Production Base Support for the Defense Food Program. PBS for the DOD Food Program (PE 728012.19) provided $2.8 million in FY91 for operation and maintenance of food/rations/equipment procured for DOD. This effort included providing technical support to Defense Personnel Support Center (DPSC), the ration procurement agency, and on-site support to its contractors; investigating vendor production problems; determining applicability of new food processing methods/ingredients proposed for military rations by other government agencies and commercial vendors; and other support requests for food/food service systems, including monitoring ration quality during production contracts for fielded items. Efforts accomplished with these resources were extremely instrumental in the Army's successful support of ODS.

The U.S. Army Natick RD&E Center staff, performing the above functions, sustained this demanding workload by efficiently directing its resources. Their expertise is invaluable; therefore, funding in this area should be sufficient to maintain the program during peacetime and ensure that similar challenges during future emergency situations can be met as they were during ODS. Specific examples of ODS accomplishments include design of the Meal, Ordered, Ready-to-Eat, Contingency Test {MORE(CT)}, a ration consisting solely of available commercial components; designing and fielding Hybrid T/B Meal Module, (i.e., Tray, flat

[17]Compare with budget authority of $23.4 million during FY90. See FY90 AMC AHR.

pre-prepared for heat and serve/Bulk items, as canned), which permitted the use of selected, available commercial items, increasing total T ration production capability by over 20 percent; and responding to over 450 engineering support requests, due to production increases, to meet a 1,200 percent increase in demand for operational rations. This ensured an uninterrupted flow of high quality rations to our combat forces.

Assistant Deputy Chief of Staff for Test and Evaluation

Test and Evaluation Policy

The DCS for Concurrent Engineering worked in conjunction with the Operational Test and Evaluation Command (OPTEC), TRADOC, the U.S. Army Information Systems Command (ISC), DA, and other organizations to prepare DA PAM 73-XX (Test and Evaluation Procedures Guide) to support AR 73-XX. The guide consisted of a "capstone" DA Pamphlet with 10 separate and distinct volumes. Teams were assigned to prepare each volume. Responsibility for Volume 10 and the capstone pamphlet was given to DCSCE. The former was in the staffing process as of the end of the fiscal year, while the latter was still in initial draft form.

Process Action Teams

Critical Operational Issues and Criteria PAT. During FY91, a PAT to examine the Critical Operational Issues and Criteria (COIC) preparation, staffing, and approval process was formed, which generated proposed changes to enhance the process. Participants included the Test and Evaluation Division of the DCS for Concurrent Engineering, DA DCSOPS, OPTEC, TRADOC, and PEO Communications. The PAT-proposed changes included the elimination of COIC for all nonmajor programs and replacement with "exit criteria,"[18] the concurrent preparation and staffing of COIC for major programs with the requirement document, and the orientation of COIC for major programs toward the Milestone III (Production) decision only. The proposals were to be briefed to the PAT General Officer Steering Committee (GOSC) on 15 November 1991.

Chemical Defense Equipment (CDE) PAT. In July 1991, the CDE PAT presented a briefing to Mr. Walter W. Hollis, Deputy Undersecretary of the Army for Operations Research, and LTG Billy M. Thomas, AMC's Deputy Commanding General for Research, Development and Acquisition. The briefing identified seven tasks of major concern to the Chemical community. Mr. Hollis and LTG Thomas directed the Chemical community to rearrange their current program priorities to reflect the recommendations of the PAT and to identify the testing and evaluation standards for all commodity areas and across the acquisition cycle. This was to be used until new information, with which to modify the standards, became available. LTG Thomas directed that quarterly reviews be held, in addition to the PAT's planned semi-annual reviews of the Chemical community's progress in addressing various tasks. Tasking documents, signed by Mr. Hollis and LTG Thomas, were forwarded to the appropriate DA and AMC activities, indicating the responsibilities of each activity in support of the CDE PAT's efforts.

Materiel Release Program

Materiel release improvement efforts continued during FY91, including further development of the final draft of AR 700-142, *Materiel Release, Fielding, and Transfer*. When the suggested changes were adopted, the office of the ADCS for Test and Evaluation expected that they would significantly reduce the required amount of supportive documentation, as well as reduce the preparation and staffing time for each release package.

---

[18]"Exit criteria" differ for each system. These criteria are the basis for deciding whether a system progresses from one milestone to another.

Additionally, the ADCS established a materiel release PAT during the third quarter of FY91 to conduct a complete review of the materiel release process. AMCCOM was designated as the lead agency, although all AMC MSCs, the Army Materiel Systems Analysis Agency, TRADOC, and DA were involved.

Fielded System Reviews (FSR)

The office of the ADCS for Test and Evaluation cancelled efforts to update DARCOM-R 702-13, *Fielded System Reviews*, due to plans to consolidate post-fielded reviews. AMC-C 702-2, *FSR Five-Year Schedule/System Operational Readiness Review (SORR) Annual Schedule*, was updated and published in July 1991. DCSCE significantly contributed to the preparation of a draft regulation covering post-fielded reviews. The office expected to submit the document to DA DCSLOG during the second quarter of FY92.

Evaluations of AMC and PEO Managed Systems

In early 1990, LTG Thomas had tasked the DCSCE and the Army Materiel Systems Analysis Activity (AMSAA) to develop a process whereby AMSAA would provide periodic evaluations of systems for which they were the technical evaluator. As the AMC focal point for the effort, DCSCE had developed the initial evaluation design and implementation policy. LTG Thomas had provided guidance to the MSCs and PEOs during the August and September 1990. AMSAA initial evaluations were coordinated with the MSCs and PEOs during 1QFY91. AMSAA also provided subsequent evaluations in February, June and September 1991.

This process promoted an early dialogue between AMSAA and the respective program or project offices. It was a continuous evaluation mechanism which helped ensure that all concerned were aware of the most current system or program risk and status factors. The risk evaluation represented an assessment of the likelihood that the program could be successfully conducted within the programmed time, funding resources and acquisition strategy, for example. The status evaluation represented the progress of the program along the approved plan. The AMSAA evaluation process helped preclude unwanted surprises and schedule interruptions, which might otherwise occur late in the program.

Test Investment Planning and Programming Process

The DCSCE directed the establishment of a steering committee of developer or tester representatives to identify existing test and evaluation capabilities, to determine the best approach to convince the OSD and Congress to fund AMC's existing test and evaluation needs. During FY91, this committee, with contract support, began reviewing existing documents to determine the optimum test investment planning and programming process. This process should aid in convincing OSD and Congress to keep the Army's test facility base technologically current with the newest advanced weapon systems.

Test and Evaluation Engineering Intern Program

August 1991 marked the graduation of the second Test and Evaluation Intern class from the "formal classroom training" portion of the Intern program. The AMC predecessor organization to the DCSCE had established the program in 1988, and the first intern class began their training in January 1989. The DCS's staff worked with the School of Engineering and Logistics 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 Undersecretary of the Army for Operations Research, who was accompanied by DCSCE personnel.

Deputy Chief of Staff for Procurement

Manpower, Organization and Personnel

On 5 April 1991, Brigadier General Coburn, the Deputy Chief of Staff for Procurement, departed on a Temporary Duty (TDY) assignment to SWA. Effective 8 April 1991, Mr. Gary Tull, whose appointment as a Senior Executive Service member had been approved on 26 October 1990, became Acting DCS for Procurement. On that same day, Colonel Hasko Eckel became Acting Assistant Deputy Chief of Staff (ADCS) for Procurement. On 5 September 1991, MG Edward R. Baldwin, Jr., became the Deputy Chief of Staff for Procurement. However, he was still working in the CALS task force at the Pentagon, therefore Mr. Tull and Colonel Eckel continued in their acting positions. In addition, effective 19 September 1991, LTC William Stramm, Executive Officer, was detailed to this task force, and was replaced by LTC Raymond Ogilvie, who was detailed to serve as the DCS Executive Officer. Also effective 19 September 1991, Mrs. Cynthia Lester, secretary to the DCS, was detailed to this special task force for a period not to exceed 120 days.[19] Effective 21 April 1991, the Integrated Procurement Systems (IPS) Office at Fort Belvoir, with a staff of six, was incorporated into the DCS. This action is discussed in more detail below.

Most Significant Issues

The four most significant issues dealt with by the DCS for Procurement during FY91 were depot maintenance workload competition, a review of business clearance review policy, Vision 2000, and Operation Desert Shield/Storm (ODS).

Depot Maintenance Public/Private Workload Competition. The FY91 Appropriation Act, Section 8072, permitted the Secretary of Defense to acquire various services through competition between DOD depot maintenance activities and private firms. Section 922 permitted the Secretary of Defense to conduct a depot maintenance workload competition pilot program at one Army and one Air Force maintenance depot. Through extensive discussions between key Congressmen and the Assistant Secretary of Defense (Production and Logistics), they reached an agreement regarding a modified pilot program that would involve relatively small competitions at each of the Air Force's Air Logistics Centers (ALC) and the seven major Army depots during FY91. HQ AMC managed this one-year pilot program, which involved competing projects from four of AMC's major subordinate commands and from the Military Traffic Management Command (MTMC).

AMCPP provided significant procurement advice to AMCSM, DESCOM and to the MSC Contracting Officers involved. The program was expected to be greatly expanded in FY92. A special project office was under consideration to provide procedures and policy guidance. Of the seven competed programs, 4 of the 5 whose current maintenance was provided by AMC depots remained with those depots, while one switched to industry. The remaining two programs included one currently supported by industry that switched to depot support and one new program won by private industry (GENCO Service Center).[20]

Business Clearance Review (BCR). Army Federal Acquisition Regulation (AFAR) 1.691 required HQ AMC to conduct an on-site review of Program Executive Officer-managed and AMC-managed programs and items within the established dollar thresholds. The Business Clearance Memorandum, which was the outcome

---

[19]Unless otherwise noted, materiel in this chapter was taken from the DCS for Procurement historical submission for FY91.

[20]Chart, Army FY91 Depot Maintenance Competition Program, 2 Oct 91, in AMCPP historical submission for FY91.

of such on-site reviews, would document that a proposed contractual action represented good business judgement; conformed to Federal, DOD and Army acquisition/procurement policies; and that the price established was fair and reasonable. It served as the historical record of the business and pricing aspects of a contract action, documented the significant facts that were considered in reaching an agreement, and showed how these facts influenced the judgement of the contracting officer.

In FY91, HQ AMC conducted a total of 76 BCRs, 55 on sole source procurements and 21 on competitive procurements, with 7 of the latter being formal source selection acquisitions. Of the total 76 contract awards, 45 were Firm Fixed Price (FFP); 8 were Cost Plus Award Fee (CPAF); 16 were Cost Plus Fixed Fee (CPFF); 4 were Cost Plus Incentive Fee (CPIF); and 3 were Time and Materials (T&M). Looked at another way, 49 were supply acquisition, 25 were services acquisition and 2 were R&D acquisitions. The breakout for the contracting activities involved are shown below:

Table III - 2: Business Clearance Reviews

CONTRACTING ACTIVITY	NO. OF BCRs
AMCCOM	21
AVSCOM	4
CECOM	10
DESCOM	1
LABCOM	3
MICOM	9
TACOM	11
TECOM	7
TROSCOM	3
PM-SANG	1
AFRTS*	3
USMA**	3
	76

* Armed Forced Radio and Television Service-Broadcast Center
** United States Military Academy[21]

In FY91, General Tuttle expressed an interest in the BCR process and was briefed on how the process worked by personnel of the Business Management Division of the DCS for Procurement. As a result of that briefing, a BCR Process Action Team was established to review problems and promote better ways of doing business. The team participants included members from each of the MSCs. It started its review the week of 4 November 1991 with Total Quality Management (TQM) training, and its BCM process review was scheduled to be completed by 30 April 1992.

[21]AMC served as the Head of the Contract Activity (HCA) for USMA and, in that capacity, provided procurement oversight to USMA. See Memorandum, AMCAQ-PP (715), Mr. Gary A. Tull, Acting DCS for Acquisition, to AMCHO, Subject: Operations Security (OPSEC) Review of Draft Annual Historical Review (AHR) for FY91, 7 August 1992. Copy in AMCHO files.

Acquisition Center. As part of *Vision 2000*, a long range effort to streamline AMC, a standard Acquisition Center (AC) was developed and put in place at the major commodity commands. It was designed to provide a high degree of customer satisfaction through horizontal integration with customer elements, with minimal overhead and vertical layering. The AC incorporated contracting, production and quality assurance personnel under one roof for "one-stop" service to customers. By 30 September 1991, an AC-type organization had been installed at AVSCOM, TROSCOM, TACOM, MICOM, AND CECOM. AMCCOM did not implement this structure because of its impending reorganization in which part of the organization would be incorporated into the Industrial Operations Command, whose orientation would be less contract-focused, while the remainder was to be combined with MICOM into a new MSC, called the Missiles, Armaments, and Chemical Command, which would use the MICOM AC.

Operation Desert Shield/Storm. Operation Desert Shield/Storm was, of course, the highest priority mission of AMC in FY91. The Deputy Chief of Staff for Procurement supported AMC ODS operations in a number of ways, including manning the Procurement desk on a full time basis and giving all ODS procurement requirements first priority. On three separate periods the DCS also had the responsibility to provide a Shift Leader for the AMC Emergency Operations Center (EOC), a requirement which was rotated among the DCS's.

There were several aspects of the DCS for Procurement's normal course of business which took on an increased emphasis during ODS. The Justification and Approval (J&A) for contracts that AMC processed, made without full and formal opened competition, were often based on urgent requirements related to ODS. The DCS expected to be processing J&As for actions and awards that cited urgency in support of ODS well into FY92, as the paperwork would take time to be cleaned up.

Protest overrides, that is, decisions to keep a contract in place even though protests were made by competitors that it had not been properly granted, also cited the need to continue work in the face of a protest in order to support the effort in SWA. Further, the DCS saw renewed interest in the notifications of work stoppages that were submitted for our information, especially when the items were specifically ODS related.

The DCS answered questions that surfaced as problems developed in SWA. These included questions and requests for information on such TROSCOM items as desert boots, Reverse Osmosis Water Purification Units (ROWPU), and tents; and such CECOM items as night vision equipment and survival radios. In all cases, the concerns were for expedited delivery, surge production, or contractor support of the equipment. The DCS was basically a middle man in such cases, obtaining the required information from the appropriate MSC (either from the requirements side of the house or the contracting side), from the appropriate PM, or from the Defense Personnel Support Center, and providing it to the requestor.

Tents became an issue during the drawdown phase of the operation. There were some "scissors" tents located in units that could not be turned in because there was no record of them. The DCS got Natick Laboratories involved, trying to determine if the tents in question had been purchased by a deploying unit "off line" or had been provided by an ally without going through the supply system.

Representatives solved the minor mystery, through conversations with AMC representatives in Southwest Asia, U.S. Central Command (CENTCOM) representatives at MacDill Air Force Base, Sprung Instant Structures in Canada (the manufacturer of the tents), DCSOPS and Natick Laboratories. The tents had been bought by U.S. CENTCOM using the Gulf Peace Fund and DCSOPS and AMC were unaware of their

existence in Southwest Asia. DCSOPS was interested in using the tents, including those still enroute, for Prepositioning of Materiel Configured to Unit Sets (POMCUS).[22]

The DCS also dealt with non-MSC specific requests for information dealing with such subjects as information on the "Contracting Forward" organization in SWA and the availability of freon. The freon question came very early in the deployment phase, as might be expected. Again, the effort required telephone work to locate the right people with the answers and provide feedback to the person asking the question. The DCS also reviewed two letters from contractors, one from Kollsman and the other from Northrop, offering equipment or services for the SWA effort. In neither case was a positive response recommended, since Kollsman was offering older models of night sights that the Army was no longer interested in and Northrop was essentially on a marketing expedition.

The DCS had a number of special projects, such as writing an SOP for the Procurement desk at the Emergency Operations Center and preparing charts and information to be used during the ODS obligation reviews held periodically in the EOC. The latter involved extensive coordination with the MSCs and the DCS for Resource Management, who actually had the lead in the review. The actual data was submitted by the commands and was put in chart form to compare the actual contract obligation numbers to the obligation numbers presented by Resource Management, which were taken from a different database.

Another special project was to collect and coordinate information from all the AMC subordinate commands on contractors that made a significant contribution to the ODS effort. General Tuttle desired to provide some recognition for special efforts to deserving companies. Again, a data call was made to the MSCs, requesting their input to include a list of their proposed contractors with a synopsis of their contributions to the effort. This information was collected and the consolidated list was provided to the Public Affairs Office. At least one command, TROSCOM, presented certificates to companies deserving recognition.[23]

As a result of a briefing the Command Counsel gave General Tuttle on the Food and Forage Act (FFA), put into effect by the Secretary of Defense for the period 24 August 1990 to 30 September 1990, General Tuttle asked several questions which were divided among Command Counsel, Resource Management and Procurement. The DCS for Procurement's part was to request an audit of AMC's compliance with the Act. This request was made to the Internal Review and Audit Compliance Office on 6 February 1991. Although in some of the MSCs some technical difficulties were found that resulted in recommendations for improved internal controls, the audit found that in all instances the MSCs had properly used FFA current year funding for ODS requirements and for items or work that fell within the categories covered by the FFA.[24]

---

[22]Ibid.

[23]In a memorandum provided to AMCHO on 25 June 1992, Subject: Release of Desert Shield/Storm Historical Information, para. 2a stated "Special recognition was given to contractors through the Major Subordinate Commands (MSCs) and the Commanding General of AMC. However, the list has never been published." According to the office of the DCS for Procurement, "It is not in the best interest of the Army to publish such a list because of the possibility of offending some contractors who may not have been given special recognition." See Memorandum, AMCAQ-PP (715), Mr. Gary A. Tull, Acting DCS for Acquisition, to AMCHO, Subject: Operations Security (OPSEC) Review of Draft Annual Historical Review (AHR) for FY91, 7 August 1992.

[24]AMC Internal Review and Audit Compliance Office: AMC Compliance with the Food and Forage Act (FFA), Internal Review Report No. 0-91, 30 October 1991.

A major weakness in the DCS's support of the EOC seemed to be the lack of preparation. The Procurement desk at the Emergency Operations Center had to be built from scratch, since there were no supplies or procedures in place when support started. Of course, this same problem seemed to permeate the whole EOC as procedures, physical layout, and staffing changed almost daily. Many of the desks seemed unprepared for the duration of support needed.

There was also a problem with the support that this DCS was required to provide. While no one failed to provide support that was required or to research any question that arose, it quickly became apparent that the Procurement Desk was not the hub of activity, and the decision to staff it on a 24-hour basis quickly lost its rationale. A quicker decision to go on-call for the late shifts would have made more sense. It also became evident as time went on that the supervisors needed to be more involved in this effort, not only to better understand what was involved, but also to relieve the strain on the action officers as the rotating shift work continued and special projects and TDY reduced the available pool of people.

For the future, the DCS should attempt to have the Procurement desk in a ready to go, stand-by condition. The duty roster should include everyone in the DCS. The DCS should have a discussion with the Principal Assistants Responsible for Contracting (PARC) to clarify their perception of the problems posed by ODS since many of the questions and waiver requests submitted by the MSCs appeared to be issues that could have been handled locally. The Procurement SOP needs to be published as soon as it is verified with the DCS for Readiness as being in consonance with the Operations Center SOP.

Other Issues

Installation Contracting 2000. This study was initiated by the Secretary of the Army for Research, Development, and Acquisition (SARDA) and chartered by the Vice Chief of Staff and the Assistant Secretary of the Army (Research, Development, and Acquisition) (ASA[RDA]) on 22 March 1991. The study was completed on 28 June 1991. AMC's DCS for Procurement participated as a member along with the U.S. Army Contracting Support Agency, FORSCOM, TRADOC and U.S. Army Corps of Engineers (USACE). The team's mission was to identify the best methods to provide installation support procurement. They visited 25 installations and contracting activities throughout the Army, Air Force and Navy.

The most significant and far reaching recommendation resulting from the study was a two-phased course of action to improve the installation contracting process. In Phase I, beginning FY93, FORSCOM, TRADOC, AMC's new Industrial Operations Command, Health Services Command (HSC) and the Military District of Washington (MDW) would consolidate common commodities and the more complex type of contracting in central contracting offices with the goal of reducing, by at least 10 percent, the overall installation workload of award actions over $25,000. Another facet of Phase I was the regionalization of installation contracting in the Virginia Tidewater Region by FY93/94. The contracting offices at Fort Lee and Fort Monroe would consolidate all of their contracting requirements over $25,000 at the Fort Eustis Region Contracting Office.

Phase II was a proposed consolidation and regionalization of contracting within FORSCOM, TRADOC, and HSC into contracting commands beginning in FY96. This would follow a feasibility study and evaluation of the regionalization of the Tidewater Region.

Non-Conforming Materiel Notifications. During the period April to May 1991, the Deputy Commanding General for Materiel Readiness transferred management and oversight of Non-Conforming Materiel, that is, materiel that did not meet the required military standards, from the DCS for Concurrent Engineering to the DCS for Procurement. The basic responsibilities of the program were to provide interagency notice of any allegedly defective materiel, and thus either prevent it from entering the Army supply system or remove it as soon as possible, and to provide information to the agency investigating the alleged deficiency.

The DCS for Procurement developed a standing operating procedure, which formalized procedures within HQ AMC and established points of contact in the procurement organization for each MSC. The procedures had the DCS for Procurement receiving information on deficient materiel from the Office of the SARDA, maintaining a log and tracking records on it, and notifying AMC staff elements and MSC procurement offices. The MSC procurement office(s) would, in turn, investigate the issue and prepare and coordinate a response which the HQ AMC DCS for Procurement would review, coordinate, and send to SARDA.

A Non-Conforming Materiel Oversight Committee was formed with participation from the DCS for Procurement, which chaired the Committee; the Office of the Command Counsel; the Safety Office; the DCS for Concurrent Engineering; the DCS for Development, Engineering, and Acquisition; and the DCS for Supply, Maintenance and Transportation. The committee met every month and coordinated on notifications, monitored and improved the overall process, alerted management officials to potential problems, and provided quarterly briefings to the Deputy Commanding General for Materiel Readiness.[25]

Protests/Requests for Protest Overrides. The AMC Office of the Command Counsel was the designated proponent office for the review, analysis and defense of all protests received from our MSCs. It prepared the rebuttal to protests, which were filed with the General Accounting Office. The Deputy Chief of Staff for Procurement was responsible for the review, analysis, coordination and approval of all requests for protest overrides. That is, the DCS for Procurement was responsible for preparing the response to MSCs requesting approval to award a contract or continue work on a contract in the face of a protest. Documents supporting these two important actions were submitted directly from the MSCs to the AMC Legal Office for processing. The DCS for Procurement was often requested by the Office of the Command Counsel to provide evaluation assistance on protests identified as having critical procurement issues.

In September 1990, a Protest Point of Contact was established in the DCS for Procurement's Acquisition/Procurement Management Division for the purpose of interfacing with AMC Legal on these two significant actions affecting the procurement process. As a result, the DCS for Procurement was kept fully informed of all highly sensitive protests/requests for protest overrides which required his attention. Additionally, a procurement tracking mechanism was implemented to note specific MSC problems and to detect/resolve any undesirable trends.

Electronic Data Interchange (EDI). In recent years, the question arose as to whether DOD could convert existing hardcopy forms and documents to all-digital procedures, using standard EDI systems and procedures. One study stated that DOD could achieve a 10-year direct cost savings of $418 million for an investment of $80 million by digitally converting 16 of the 2,100 hardcopy forms and documents, a relatively conservative estimate. The Electronic Commerce/Electronic Data Interchange (EC/EDI) pilot project, Army Wholesale Logistics (AWL), embraces procurement documents and builds on the efforts of Modernization of the Defense Logistics Standard Systems (MODELS), Finance and the CALS. A proposal was developed and submitted to the EDI Executive Agent selection panel with verbal approval received from OSD and DA. FY92 funding is expected to initiate the pilot project. The AWL pilot project is to be implemented at TACOM and, once approved, proliferated to the remaining five Inventory Control Points. The project is a basic step toward meeting the requirements of Defense Management Review Decision (DMRD) 941.

---

[25]Information about the Non-Conforming Materiel process can be found in the following documents, which were included in the DCS for Procurement historical submission for FY91: Read-Ahead, DCS for Procurement, Subject: Processing Notifications of Non-Conforming Materiel, 23 May 1991; DCS for Procurement Briefing Charts, Subject: As Above, 29 May 1991; Memorandum from DCGMR to DCS for Development, Engineering, and Acquisition, et al, Subject: As Above, 18 June 1991, and attachments.

Contractor Information System (CIS). Performance risk assessment answers the question, "Will a contractor do the job successfully?" It is an integral part of the source selection process. The Performance Risk Analysis Group (PRAG) evaluated an offeror's past performance on federal contracts by gathering information from government sources through a structured interview process with key government employees who dealt with the offeror on past government contracts. The PRAG's report was submitted to the source selection authority and expresses the relative confidence levels of the evaluators in the offerors.

The PRAGs obtain Government sources for obtaining past performance information from the offeror's proposal and from the Contractor Information System, which was an automated databank. The databank provided the name of the Procuring Contracting Officer, the Administrative Contracting Officer, and key technical personnel for each contract in the databank. The databank contains reports on contracts awarded by AMC components. Along with the names of knowledgeable technical personnel, the databank provides such information as the date of award, relevant contracting office and the item nomenclature.[26]

Testing of the concept was completed in late 1990 and February 1991. AMC then established a policy which required that the contractor's past performance be evaluated in competitively negotiated procurements of $10 million or more. Twenty-four inquiries, totalling 1,023 contract records, were processed by the CIS during the balance of FY91. All requests were from AMC contracting offices except for one from Wright Patterson Air Force Base, which utilized a PRAG on one of their procurements.

Commodity Command Standard System (CCSS). The CCSS was an AMC automated integrated business system designed to accomplish stock control, supply management, physical inventory, financial management, and procurement functions. The system was one of the world's largest integrated business systems, with over 450 subsystems and 1,900 separate programs. AMC, through CCSS, supported the Army's total force including the active Army, Army National Guard, and Army Reserve, in addition to the sister services and our allies.

CCSS was fully extended to all six AMC commodity commands in 1977. Major changes have occurred since then, as new missions and functions were brought under the automation umbrella of CCSS. FY91 accomplishments included conversion of files in CCSS to Model 204, the functional analysis of processes that are to be incorporated under the Corporate Information Management (CIM) concept (for more on CIM, see below), and the remote data screen entry of manual DD Form 350s.[27] The latter allowed the six commodity commands to directly input all manual 350s into the AMC data base at the Systems Integration and Management Activity (SIMA), for consolidation prior to transmission to HQDA.

---

[26]According to the DCS for Procurement, "The contractor information system only contains information on contracts placed by contracting offices managed by AMC. Information on contracts placed by the Navy and Air Force may be obtained through a network maintained with these agencies. Copies of Contractor Information Reports are occasionally requested by other offices within the Department of Defense. The Contractor Information Report is available to all Federal agencies." See Memorandum, Mr. Tull to AMCHO, 7 August 1992, previously cited.

[27]According to the Office of the DCS for Procurement, "The DD Form 350, Individual Contracting Action Report, is utilized for all contracting actions that obligate more than $25K. It is also used for all contracting actions that obligate or deobligate $25K or less if the action is a designated industry group under small business competitiveness demonstration program. The data reported for these actions for all Army Contracting Activities are centrally collected at the U.S. Army Contract Support Agency. The data is then provided to the Directorate for Information, Operation, and Reports (DIOR) of the Washington Headquarters Services which transmits required DOD information to the Federal Procurement Data System." See Memorandum, Mr. Tull to AMCHO, 7 August 1992, cited above.

Corporate Information Management. In November 1989, DMRD 925 mandated all Service and DLA automated systems be replaced by DOD systems to eliminate duplication. To bring this about, several CIM working groups were established, including Materiel Management, of which procurement was a subset. The Materiel Management group chartered Executive Agents (one for each Service) responsible for selecting and fielding interim standard systems, pending the long-term fielding of the CIM systems. The system selected for wholesale procurement was Navy's Purchase Early Development (PED) System.

The transfer of the Project Manager, Integrated Procurement Systems to the DCS was also a direct result of the CIM initiative. Prior to the issuance of DMRD 925, all military services and DLA had automated procurement systems. These systems were either in a developmental or operational phase having varying degrees of functionality, utilizing different equipment, architecture, and operating systems. Under the CIM initiative, a candidate system (the PED System) was chosen as the interim standard. Based on this decision, the Director for Contracting, U.S. Army Contract Support Agency, directed that all work on the Integrated Procurement System (IPS) cease. Subsequently, the Deputy Assistant Secretary for Plans and Programs, Mr. Keith Charles, directed the transfer of the IPS from the Program Executive Office, Standard Army Management Information Systems (PEO STAMIS) to HQ AMC, effective 21 April 1991.

The Integrated Procurement Systems Office serves as the Army functional Requirements Manager for DOD Corporate Information Management and the AMC Functional Coordinator for Major Item, Wholesale, and Retail Acquisition systems and applications. As the Army Functional Requirements Manager, the IPS Office interfaces with the DOD Procurement CIM Council to ensure the Navy, as the materiel developer of the interim CIM procurement system, satisfies all of the Army's acquisition requirements. As the AMC Functional Coordinator, the IPS Office maintains surveillance of current applications software to ensure that engineering changes are effected to meet the changing regulatory and statutory needs of the AMC acquisition community. As of the end of FY91, there had been no impact on the existing AMC systems as a result of the CIM initiative.

During the FY91, significant changes were made in addressing functional requirements under the CIM and Executive Agent concepts. Concerned over lack of participation by the DOD procurement community in the CIM process, Ms. Eleanor Spector, Director of Defense Procurement, Office of the Under Secretary of Defense (Acquisition), established a DOD CIM Procurement Council. While the details are sketchy, the Council will clearly provide functional oversight, direction and control of CIM activities involving procurement.

Model Solicitation for Best Value Contracting for Secondary Items. The Model Solicitation project was begun in January 1991. General Tuttle commissioned the project in response to the perception that we need to derive more benefit from each procurement dollar to cope with the downsizing of the Army. The project was an attempt to extend the Best Value concept to procurement of secondary items, a concept that had already been in use for some time in the procurement of major systems. Under this concept, efforts would be made to select a contractor based not only on low cost but also on previous track record and the ability to improve the product and reduce operating and support costs over the product's life cycle.

The model was developed by a team of representatives from each commodity command and the headquarters. After development, it underwent a rigorous staffing process throughout the Command and in industry. The CG approved the model on 24 July 1991. As of 1 August 1991, each of the commodity commands began pilot procurements to validate the model. Lessons Learned and a Best Value Handbook will be generated from the experience gained in the pilot program.

Development of a Contingency Contracting Plan for Future Conflicts. Following ODS, the CG gave the DCS for Procurement the lead on improving surge capability. Issues include establishing surge contract commitments, obtaining waivers for procedures which delayed contract awards, identifying surge items,

providing quick solutions to technical problems through use of commercial items and modifications, and training government and contractor personnel in methods of accelerating contract awards, deliveries, and solutions. Based on ODS experience, few waivers would be required. A handbook on procedures for expediting contact awards was being prepared. Procedures developed on the above issues will be tested and practiced in the Logistics Exercise (LOGEX), Prime Directive or other exercises.

Deputy Chief of Staff for Ammunition

Organization and Key Personnel

The DCS for Ammunition undertook significant organizational changes in FY91. Early in the year, as part of the overall HQ AMC restructuring effort, a structured and comprehensive process analysis of the organization was completed. This led to a proposed flat organization and a reduction of nine spaces based on reduced work load. The proposed structure included the establishment of an Operations Office to consolidate many of the staff support functions of the DCS. The DCS would retain its Department of the Army mission intact, which would account for over 60 percent of its total efforts. These DA missions included acting as the Army staff ammunition executive, the Army staff focal point for the Single Manager for Conventional Ammunition, and the appropriation director for ammunition hardware and production base. The downsized organization was to be implemented in early FY92. The total number of spaces authorized for the DCS thus declined from 79 in October 1990 to 70 in September 1991.[28] Key DCS personnel were:

DCS for Ammunition	BG W. Schumacher	1 June 1990
Assistant DCS	COL J. Hood (acting)	30 January 1990
Executive Officer	MAJ E. Ehlinger	30 January 1990
Director, Pentagon Core	Mr. J. Lawson (acting)	30 January 1990
Chief, Program Management Division	LTC W. Wright	26 January 1991
Chief, Logistics Supply and Storage Division	Mr. F. Fahy	12 November 1991
Chief, Logistics Troop Support Division	Mr. F. Blanchard	12 November 1991
Chief, Logistics Policy Division	Mr. L. Gulledge	12 November 1991
Chief, Operations Division	Dr. L. Starr	12 November 1991
Chief, Plans and Budget Division	LTC J. Kleager	26 July 1991
Chief, Production Division	Mr. J. Mytryshyn	30 January 1990
Chief, Chemical/Nuclear Division	Col I. Licata	30 January 1990

Conventional Ammunition

Operation Desert Shield/Storm. The focus of the Ammunition Programs Management Division for the first six months of the fiscal year was continued support for ODS. The decision to make the M1A1 constitute the entire in theater tank force caused the division to place much of its emphasis on getting sufficient 120mm tank ammunition to Southwest Asia (SWA). M829A1 (KE) and M830 (HEAT-MP)[29] rounds were both surged and, to compensate for a shortfall in M830 rounds, the DCS worked through international channels to borrow from Germany 32,000 rounds of DM12A1, the equivalent of the M830.

---

[28]Unless otherwise noted, the data in this section was taken from the DCS for Ammunition historical submission for FY91.

[29]M928A1 (KE) is a "kinetic energy" round used in the Abrams, while M830 (HEAT-MP) is a "high energy anti-tank" round.

The 25mm armor piercing (AP) rounds for the Bradley Fighting Vehicle System were also surged. Additional supplies of the first generation AP round, the M791, were delivered within one month after contracts were signed with two contractors. The first deliveries of the new M919 rounds, an Armor Piercing Fin-Stabilized Discarding Sabot-Tracer (APFSDS-T) round, were also accelerated, although none were shipped to the troops in SWA.

The division prepared the ammunition portion of the ODS Supplemental Authorization/Appropriation Bill for Congress. This bill resulted in over $700 million being made available to replace ODS ammunition expenditures and losses and to cover production gaps caused by accelerated production. This influx of Desert Storm funds, as well as significant planned force structure changes, resulted in the division spending much of the fourth quarter of FY91 preparing an amended budget for FY93.[30]

Type Classification

In FY91 the Ammunition Programs Management Division was involved in the type classification of two high explosive cartridges for the 120mm mortar round and the start of first article testing on the M762/767 new electronic time fuzes. Deliveries of the fuzes were scheduled to start in the first quarter of FY92.

Congressional Requirements

BG Schumacher, Deputy Chief of Staff for Ammunition, testified during a joint hearing before the Senate Armed Services Committee and the House Appropriations Committee on environmental issues dealing with the Federal Facilities Compliance Act. Following the hearings, members of the DCS were asked to participate in briefings to several subcommittees. The DCS provided the response to numerous questions for the Congressional record dealing with ammunition appropriations and responded with information papers and personal briefings to many requests for information from members of Congress and their staffs.

Conventional Ammunition Working Capital Fund (CAWCF)

The CAWCF was a revolving fund established in 1982, used to manage and report the procurement of all Single Manager for Conventional Ammunition (SMCA) items and the assembly of these components into conventional munitions. Since March 1989 the Army had taken aggressive action to ensure that over-aged CAWCF orders were resolved and that procedures were refined to reduce backlogs in the future.

Defense Management Report Decision (DMRD) 936E, which had been issued in November 1989, had directed a "stabilized rate policy" for CAWCF pricing. This DMRD policy was fully implemented on 1 October 1991 for all DOD orders. Any requests for price changes now had to be submitted through the CAWCF Management Council to the Office of the Secretary of Defense for approval.

Kinetic Energy Penetrator Long Term Strategy Study

The Deputy Assistant Secretary of the Army for Research, Development and Acquisition directed that a study be undertaken to address the perceived problems associated with the use of depleted uranium versus tungsten alloys for kinetic energy penetrators. The study demonstrated that depleted uranium out-performed tungsten alloys by a significant margin in penetrating both rolled homogeneous armor and range targets.

---

[30]For more information about the DCS's role in ODS, including the critical role to coordinate the shipment of ammunition to SWA, see the AMC ODS study.

The study also recommended further development of tungsten alloy penetrators for small caliber weapons. Although the peacetime materiel availability and industrial base for both types of penetrators was adequate, there was no excess capacity available for mobilization. The overall health risks and environmental hazards for both materials was rather low when appropriate controls were used. Life cycle costs favored depleted uranium by a significant amount for large caliber weapon systems. However, for small caliber weapons the difference was minimal and depending upon manufacturing costs could actually favor tungsten alloys.

Ammunition Production Base Planning and Restructuring Study

This study, initiated in response to the decreasing threat and the reduction in force structure, was designed to determine the future ammunition requirements and to develop a plan for restructuring the current 27 government owned ammunition plants into highly flexible facilities. During the eight year period of plan coverage, from FY90 to FY97, the facilities mix would change as follows:

	Start	**End**
Active	16	8
Inactive	8	11
New Missions	--	2
Excess	3	6

This orderly consolidation would provide a production base that was smaller, less costly to maintain, more responsive to emergencies, and possessed greater flexibility to produce a variety of ammunition items. The inactive plants would be retained and maintained for use in emergencies and mobilization, but the Army would try to sell or lease the excess facilities. This plan placed maximum reliance on the commercial sector for supplies, even though it recognized that the government sector was essential for hazardous operations and for rapid expansion in the event of war.

Funding of Conventional Ammunition Demilitarization Operations

There was an increased need for demilitarization funding. This was due, at least in part, to the fact that the open burning and open detonation methods of demilitarization were coming under increasingly restrictive environmental requirements, while the substitute methods being developed to meet those requirements were more expensive. Starting in FY92, the demilitarization of munitions would be funded by the Procurement Ammunition, Army (PAA) appropriation. To help with this, $15 million was shifted from the Operations and Maintenance, Army (OMA) appropriation to FY92 PAA funds. An increase in funding, in addition to the establishment of a separate funding line for demilitarization under PAA, gave it greater visibility and the flexibility offered by a three-year appropriation. It permitted ammunition managers to prioritize demilitarization and would allow them to maintain no-growth in tonnage of ammunition stocks awaiting demilitarization. This would in turn also help to free up storage space needed for the retrograde from both Europe and SWA as well as that needed to implement the Strategic Arms Reduction Treaty (START).

Chemical and Nuclear Issues

Chemical Agents and Munitions Stockpile. The Army's Chemical Weapons (CW) stockpile maintenance program included a combination of visual inspections, storage, monitoring inspections (leakage testing), and laboratory analysis. The program entailed frequent entry into storage facilities and both visual inspections and air monitoring of a statistically valid sample. The air monitoring allowed for early detection of leaking munitions. They were usually detected at extremely low levels and were overpacked or containerized without any hazard to workers or the public. Overpacked munitions were stored separately and frequently monitored.

Chemical Stockpile Demilitarization Program (CSDP). In accordance with Public Laws 99-145 and 101-510, the Department of the Army, as Executive Agent for the Chemical Stockpile Disposal Program (CSDP), is responsible for providing an annual program report to the Congress. The report describes the program accomplishments in FY91 and those activities planned for FY92 which support the program to destroy the United States stockpile of chemical agents and munitions. Some accomplishments during FY91 are:

Safe destruction of over 7,500 GB-filled M55 rockets and 77,000 pounds of GB agent by the Johnston Atoll Chemical Agent Disposal System (JACADS).

Completion of the construction of the Chemical Demilitarization Training Facility at Aberdeen Proving Ground, Maryland.

Completion of the first chemical disposal facility within the United States is continuing at Tooele Army Depot, Utah.

Cryofracture testing continued at the General Atomics Plant at La Jolla, California. Agent incineration tests started at the Chemical Agent Munitions Disposal system (CAMDS) and fracturing tests were started at Dugway Proving Ground, Utah.

Two Congressionally mandated studies were completed. The first discussed the feasibility and desirability of future uses of the chemical disposal facilities and the second concerned a re-evaluation of the requirements of an on-site overpack container.

The Program and Integration Support contract was awarded to Science Applications International Corporation (SAIC). The contractor will provide management and technical integration services for a number of activities related to the operation of the disposal facilities.

A draft proposal for the Anniston Chemical Agent Disposal Facility was submitted for industry review and comments. Meanwhile, process design efforts continued throughout the year in order to incorporate the changes stemming from the JACADS OVT.

In the coming year, the following major program efforts will continue or occur:

The JACADS OVT will continue with the destruction of VX-filled M55 rockets, mustard-filled bulk containers, and later, mustard-filled artillery projectiles. Environmental test burns will also be conducted.

Construction efforts will continue at the TOCDF. Interior work to install equipment and utilities in the Munitions Demilitarization Building (MDB) will continue during the winter months.

Because of changes caused by the JACADS Operational Verification Test and construction of the Tooele facility, the Army will revise the program schedule and life cycle cost estimates early in FY92. The revised schedules and cost estimate will be provided to Congress in the spring of 1992.

The cyrofracture/incineration program will continue research and development testing at three sites. Additional critical testing has been identified in the cyrofracture program and will be carried out in the coming year.

Support will be provided to the United Nations Special Commission to advise on the methods and requirements for destroying Iraq's chemical weapons and their associated production facilities.

The Anniston systems contract Request for Proposal will be mailed for industry bids.

A revised programmatic life cycle cost and schedule will be developed and sent to the Congress.

The Office of the Program Manager for Chemical Demilitarization will be reorganized to form the U.S. Army Chemical Materiel Destruction Agency, which will be given the responsibility to destroy all chemical warfare related materiel, including the chemical weapons stockpile.

Support for Other Agencies. The Army continued to provide support to the Arms Control and Disarmament Agency (ACDA) for both bilateral and multilateral chemical weapons negotiations. In January 1991, Soviet experts visited the CAMDS test facility, the ongoing construction of the full-scale disposal facility in Tooele, Utah, and the JACADS as part of the bilateral chemical warfare destruction technology exchange program. An Army representative was provided to the Chemical Destruction Advisory Panel for the United Nations Special Commission.

Intergovernmental Consultation and Coordination Board meetings are held between officials from states, counties and cities where chemical demilitarization plants are to be constructed and operated and various U.S. government officials. The latter includes representatives from the Federal Emergency Management Agency (FEMA), the Program Manager for Chemical Demilitarization, the Department of Health and Human Services, the Army Materiel Command and its major subordinate commands. The meetings are designed as a pro-active outreach effort to resolve concerns and issues about the environment, safety and emergency response as they relate to the chemical demilitarization program. During FY91, such meetings were held at Anniston, AL; Pueblo, CO; Newport, IN, Lexington, KY; Umatilla, OR; Tooele, UT; and Aberdeen Proving Ground, MD. A national meeting was held in Denver, CO. The major topics of discussion continued to be environmental concerns and emergency preparedness.

Chemical Weapons Treaties. Chemical Weapons Arms Control negotiations continued on two separate but related fronts: bilateral negotiations with the USSR to reduce CW stockpiles and multilateral talks to seek a total ban on all CW and elimination of CW production capabilities. The U.S./USSR/Wyoming Memorandum of Understanding (MOU) of 1989 outlined CW data exchanges and certification procedures. A bilateral destruction agreement was signed in June 1990, but negotiations continued on the inspection protocol. The agreement required both parties to reduce their CW stockpile to 5,000 agent tons by the year 2002. The current draft inspection protocol would call for the further exchange of data and provided for inspections at CW storage and production sites as well as inspections and a continuous presence at CW destruction facilities.

Negotiations continued on the multilateral talks at the 39-nation Conference on Disarmament. On 13 May 1992, President Bush issued a CW initiative that called for the successful conclusion of the draft Chemical Weapons Convention (CWC) by May 1992.

In November 1991 the Commanding General, AMC created the Executive Agent (EA) for Chemical Treaty Compliance to be the single point of contact for the intensive centralized management of all AMC programs necessary for compliance with both chemical weapons treaties. Mr. Edward Calhoun, formerly of PM, Binary Office at CRDEC, was selected as EA.

Chemical Stockpile Emergency Preparedness Program (CSEPP). The DCS for Ammunition was the AMC manager of the CSEPP. This joint Army and FEMA program moved from the planning to the execution phase during FY91. The CSEPP exercise program was initiated by combining a full-scale CSEPP exercise with the Biennial Service Response Force Exercise held at Tooele Army Depot. The exercise was a success, with participants from numerous Army, Federal, State, and local agencies. This exercise was coordinated by the

AMC Surety Field Activity, but responsibility for the continuation of the CSEPP program was transferred to the U.S. Army Defense Ammunition Center and School.

Work was also initiated to coordinate the integration of the Chemical Accident/Incident Response and Assistance Plans at AMC chemical storage sites with those of the surrounding counties and states. Approval was granted for each AMC CSEPP installation to hire a dedicated CSEPP planner to continue this effort.

AMC Nuclear Weapons Program. On 27 September 1991, President Bush announced that the United States would retrograde all ground-launched tactical nuclear weapons currently stored outside of the Continental United States (OCONUS) and that the U.S. would eliminate its entire inventory of such weapons. This decision in effect terminated the Army's nuclear weapons program. AMC's role in the implementation of this policy was the development of a comprehensive retrograde plan to return all the American nuclear weapons currently located OCONUS to the U.S., where they would eventually be given to the Department of Energy for disassembly. The General Accounting Office (GAO) reviewed and validated AMC's plan.

A plan for the demilitarization of the Army's components of nuclear weapons, such as fuzes and non-nuclear explosives, was started was anticipated to be completed in FY92. Actual demilitarization was expected to take several years to complete and would involve several AMC installations.[31]

The elimination of these weapons would end AMC's mission to store and maintain them. Thus, a manpower analysis was undertaken to determine the impact at those AMC installations which were currently involved in storing and maintaining nuclear weapons. The elimination of the Army's tactical nuclear weapons also entailed the termination of three research, development and acquisition programs devoted to them: the production and changeout in the field of the Product Improvement Program for the Lance Timer; the Survivable Overpack Container research and development program; and the Modification Program for the M753 Projectile.

AMC initiated the orderly termination of these programs and terminated the Army Nuclear Stockpile Reliability Program, with the OMA funding from this program being used to assist in the retrograde of the Army's nuclear weapons. AMC did, however, purchase new containers for the air transport of these weapons during retrograde to ensure enhanced safety in the event of accident during shipment.

Operation Desert Shield/Storm. During ODS, action officers from the Chemical/Nuclear Division staffed the 24-hour Chemical Defense Equipment (CDE) desk in the AMC Emergency Operations Center. They assisted in expediting shipments of CDE to SWA; recruiting and sending logistics support personnel to SWA; providing chemical warfare hazard information to HQDA; providing the status and location of worldwide CDE to senior officers on an almost daily basis; expediting testing of foreign CDE; assisting in negotiating with foreign governments concerning their desire to have the U.S. supply them with CDE; and numerous other actions in support of the U.S. and allied forces in SWA.[32]

---

[31]Information regarding which installations are involved is classified.

[32]For additional information on AMC support of CDE for SWA, see the AMC history of ODS.

Chief Scientist

Organization and Personnel

There were no organizational or personnel changes during FY91 and the reporting chain of command did not change.[33] The Office of the Chief Scientist continued to report to the Commanding General, AMC. Dr. Richard Chait was the Chief Scientist; Mr. Richard E. Smith was his Assistant; LTC Albert A. Sciarretta was the Military Assistant and Mrs. Ruth T. Feltner was the Secretary.

Desert Shield and Desert Storm Chemical Defense Clothing

During Operation Desert Shield/Storm, the Office of the Chief Scientist was called upon to select and coordinate an independent scientific team of national experts, "world class" scientists, to evaluate the protective capabilities of U.S. chemical protective clothing. The team worked very closely with the Office of the Chief Scientist and final results of the evaluation were used to satisfy the concerns of the senior Army leadership.

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. Due to some administrative changes at USMA in summer training options for cadets, participation dropped slightly from 71 cadets (in FY90) to 57 cadets. This was still higher than the 50 cadets of FY89.

One of the highlights of the program was sending a cadet, James Anderson, to work in a Canadian Army laboratory, the Defense Research Establishment - Valcartier, in Quebec. His work, performance and personality all contributed to making the project a worthwhile endeavor. He continued his work the following semester at USMA as an individual study and forwarded his results to the Canadians in January 1992. The breakout of the other cadets who worked in AMC agencies was as follows:

Table III - 3: Summer Study Program Cadets By Participating Agency

AMC MSC/Office	CADETS
LABCOM	11
AMCCOM	7
AVSCOM	9
CECOM	1
DESCOM	1
MICOM	7
TACOM	7
TECOM	4
TROSCOM	8
FAST (Germany)	1
	56

[33]Unless otherwise noted, this section is based on the Chief Scientist historical submission for FY91.

In June 1991, Dr. Chait and LTC Sciarretta joined COL Jack Grubbs from USMA to visit cadets at the Ballistics Research Laboratory (BRL), TACOM and Canada. The trip was very rewarding. The cadets, as well as the AMC engineers/scientists working with them, were very happy to see them and to show off their work.

This was the first year that this program was centrally funded from HQ AMC. For USMA, this provided a tremendous reduction in the administrative burden of tracking down fund citations and payments. AMC provided $150,000 to USMA for the program, but the cadets actually used about $120,000. AMC's Deputy Chief of Staff for Research, Development, and Engineering and the Army Research Office (ARO) decided to give the remainder of the money to the Photonics Research Cell at USMA to purchase equipment for research conducted for ARO.

At the end of the FY91 program, General Tuttle travelled to West Point on 28 September 1991 to meet with cadets who had just finished the program. His discussion brought out many laudatory comments about AMC, its people and facilities. USMA expressed strong interest in continuing the program.

Technology Leveraging

The Office of the Chief Scientist continued to formulate a methodology for AMC to increase its leveraging of technology, that is, how one can benefit from someone else's efforts in the tech base. The office continued to seek to increase the leveraging of international efforts. For example, the office was responsible for selecting a team to evaluate and select D650 (Foreign Material) Program candidates for purchase/lease and exploitation. Another effort was the continued involvement with International Cooperative Programs Office. Finally, the AMC-USMA Summer Research Program assisted in this area by having a cadet work in a Canadian military laboratory in June and July 1991.

The office continued with the thrust to promote the exchange of information and enhance technology transition among AMC assets. The Leveraging Technology Conferences were the principal successes in this area. However, numerous opportunities were available to leverage technology efforts while travelling to the AMC laboratories and centers, meeting with Technical Directors and interacting with the Army representatives on the National Research Council (NRC) Board on Army Science and Technology (BAST) Strategic Technologies for the Army (STAR) Study. The AMC Board of Directors (which was organized as a result of an Army Science Board study recommendation supported by the Office of the Chief Scientist) will help to leverage technology among the labs and centers. See below.

University Research Initiative (URI) and Center of Excellence Program. The Office of the Chief Scientist conducted on-site reviews of the Army's URI and Center of Excellence Program, stressing the need to leverage the tech base. These reviews of the Army's programs involving academia were necessary to assure the Army that it was getting quality basic research for the money it invested. Additionally, it was also important to ensure that the Army laboratories and engineering and development centers leveraged the efforts of the universities and colleges in the URI and Center of Excellence programs.

AMC's Field Assistance in Science and Technology (FAST) Program. As requested by General Tuttle, the Office of the Chief Scientist continued to provide mentorship to the FAST Science Advisors and review the programs supported by them. In order to enhance the OCONUS FAST Science Advisor capabilities, the Office of the Chief Scientist planned and organized two "Leveraging Technology Conferences."

The first Leveraging Technology Conference was held in Heidelberg, Germany in November 1990. Its purpose was to bring together science and technology representatives from the various services and U.S. agencies in Europe to share ideas and needs with in-theater assets. It was a tremendous success. Networking of all the attendees was tremendously enhanced.

For example, the USAREUR FAST Science Advisor was able to find possible solutions to three problems which had been raised by General Saint, Commanding General, USAREUR. The first problem was that low-flying helicopters risked striking wires from telephone, telegraph, or power systems, with potentially fatal results. The FAST Science Advisor helped find a candidate wire-strike avoidance system. The second development, an auto-tracking system, was in response to another issue raised by General Saint. The tanks of some NATO countries possessed an auto-tracking system, which assists the tank gunner in tracking a moving target. U.S. Army tanks did not. The third problem mentioned by General Saint was that fuel cans for tent heaters were in constant danger of being knocked over while in use. Soldiers generally placed the cans on folding chairs. The USAREUR FAST Science Advisor came up with a safe tent heater fuel can stand.[34]

In March 1991, a follow-on "mini conference" was held at the AMC Standardization Office in London, England. Its purpose was to see if the Leveraging Technology Conference had provided any long range benefits. It was discovered that the networking and the identification of problems had been a tremendous help. Because of this, it was decided that a similar conference should be held in the Far East, as well as another conference in Europe in FY92.

In June 1991, the second Leveraging Technology Conference was held in Seoul, Korea, for all U.S. science and technology assets in the Far East. Its purpose and outcome were similar to those of the first conference in Germany. An example of one of its successes was the surfacing of an issue that General RisCassi, Commander in Chief, U.S. Forces-Korea/Eighth U.S. Army (USFK/EUSA) raised, which was the lack of architecture for the combined Command and Control of all forces in Korea. This issue caused the Office of the Assistant Secretary of the Army for Research, Development and Acquisition to engage MITRE Corporation, a Federally funded research and development center, to resolve the problem.

Army Science Board (ASB) Studies

The Office of the Chief Scientist provided the ASB with fully coordinated recommendations for Summer Study topics. For one of the studies -- an independent assessment of the ARO -- the office coordinated the Terms of Reference[35] and provided LTC Sciarretta as the staff assistant to the study team. The study was designed to answer the following:

Evaluate ARO's conduct of the Army Materiel Command's extramural basic research program and recommend improvements.

Obtain required input from the technical directors of the Research, Development and Engineering Centers (RDEC) and Corporate Laboratories concerning their current and recommended future working relationship with ARO.

Compare ARO's performance and organization with the Navy's Office of Naval Research and the Air Force's Office of Scientific Research.

Recommend how ARO may improve transition of its extramural research product to CMRL, RDECs and the Army as a whole.

---

[34]Additional information provided by the Office of the Chief Scientist, 8 and 18 June 1992.

[35]The "Terms of Reference" were questions that the study should answer.

Recommend how the Army can realize the most benefit for ARO reporting to the AMC Headquarters as LAB 21 is implemented.[36]

The final report was instrumental in the realignment of ARO under AMC and in the institution of the AMC Board of Directors. The AMC Board of Directors was to be headed by the Deputy Commanding General for Research, Development and Acquisition (DCGRDA) and have the Chief Scientist and Technical Directors as members. The purpose of the board was to provide strategic guidance and direction to the technological base. An additional benefit of having the board was that it would assist in leveraging technology.

Uniformed Army Scientist (UAS)

Working within AMC, the Office of the Chief Scientist continued to coordinate and emphasize the acceptance of a UAS program. The requirement from Congress to decrease the number of military personnel had made many Army leaders hesitant to start a new program. The Vice Chief of Staff of the Army, General Gordon R. Sullivan, asked that the UAS concept somehow be designed as an addition to a current program. The Office of the Chief Scientist explored the possibilities of making simple changes to Functional Areas within DA Pamphlet 600-3, *Commissioned Officer Professional Development and Utilization,* as an alternative.

1992 Army Technology Base Master Plan

In concert with the Army Research Office, the Office of the Chief Scientist took on responsibility for writing Chapter III, "Key Emerging Technologies," and Chapter IV, "Science Base," of the February 1992 *Army Technology Base Master Plan (ATBMP).* These chapters were the main thrust of the ATBMP, giving guidance as to where the Army should invest its resources in the near future. Additionally, LTC Sciarretta was selected to be one of the chief reviewers of the entire ATBMP as it underwent final revision.

Strategic Technologies for the Army

During the fiscal year, the Office of the Chief Scientist continued to lead and coordinate the National Academy of Science (NAS) STAR Study.[37] Also, the Chief Scientist acted as the Contracting Officer's Technical Representative for the study. The "study" portion of the STAR Study was finished, but the writing of the final reports needed a lot of work. Additional money had to be transferred to the NAS contract in order to continue the effort. The completion date of the study was moved from Fall 1991 to Summer 1992. The reports were to culminate the efforts of about 100 nationally known civilian science and technology experts from NAS, as well as the assistance of about 40 Army science and technology experts.

Organization of Senior Technical (S-T) Personnel

The Chief Scientist acted as the Chairman of the AMC board to increase the number of Senior Technicals in the Army from 4 to 28. He initiated and continued to hold meetings that brought together newly appointed S-T personnel from AMC Labs/Centers to exchange views on technological and organizational matters.

---

[36]Letter, Stephen K. Conver, Assistant Secretary of the Army for Research, Development and Acquisition, to Dr. Duane A. Adams, Associate Dean, School of Computer Science, Carnegie-Mellon University, July 8, 1991. Copy in AMCHO Archives.

[37]The NAS is a part of the National Research Council (NRC) Board on BAST STAR.

Contract Dispute Mediator

During the fiscal year, the Chief Scientist provided successful mediation, using the authority of the Alternative Disputes Resolution Act, of a contract dispute between the Army and a Belgium contractor -- Fabrique Nationale Nouvelle Herstal (FNNH). This resolved a long standing controversy involving the question of the Army's liability for royalties for foreign military sales transactions under a 1976 license agreement for the M-240 machine gun. Previous efforts to resolve the controversy had been on-going since early 1989 but were unsuccessful. A favorable interpretation of the 1976 agreement, applying to circumstances not contemplated when the agreement was executed, was obtained and a monetary settlement well within the Army's budget was achieved.

Office of the Command Chaplain

Manpower and Personnel

The manpower authorization for the Chaplain's Office remained at five during the fiscal year: three officers (chaplains), one enlisted, and one civilian. Chaplain (LTC) Mark E. Fentress, Director of Resource Management, Logistics and Training, left on 1 July 1991. Chaplain (LTC) Benjamin C. Manning replaced him on 16 August 1991.[38]

Operation Desert Shield/Storm

The major issue worked by this office during FY91 was the alleviation of a supply deficiency for the troops in Southwest Asia (SWA) during ODS by providing chaplain supplies to the theater of operations. This problem surfaced during the last quarter of FY90 and was worked on and solved during FY91.

Chaplain's supplies, normally provided from Base Operations-funded installation supply stocks, did not exist as a part of the current Army supply system. The resulting problems in supplying Chaplains in SWA was identified in late August 1990 by the CENTCOM [Central Command] Chaplain.[39] As a result, the U.S. Army Chaplain Center and School quickly developed a Chaplain Supply Kit, Consumable (CSKC), and on 11 September 1990 the AMC Command Chaplain "was tasked to facilitate the procurement of the CSKC through AMC logistical channels."[40] The CSKC included such items as sacramental wine, grape juice, hosts, communion cups, *Bibles*, *New Testaments* with *Psalms* in both English and Spanish, a rosary and a cross, a

---

[38]Unless otherwise noted, this chapter is based upon materiel from the Office of the Chaplain's historical submission for FY91. The section dealing with ODS also draws heavily upon the ODS historical submission of the Office of the Chaplain.

[39]See msg, USCINCCENT/CCJ1-CH to COMDT CHCENSCH, 40100Z Aug 90, Subject: Chaplain Support Package.

[40]Point Paper, Subject: Desert Shield Chaplain Ecclesiastical Supply Requirements, 11 September 1990; and Point Paper, Subject: Desert Shield Chaplain Supply Kit, Consumable, 4 January 1991, in the Office of the Command Chaplain Historical Submission for ODS.

Jewish prayer book, the *Book of Mormon*, the *Koran*, and the Bible, both with and without the Apocrypha.[41] Each kit would provide about one week's supply for a battalion-sized unit.

On the same day the tasking was received, the Office of the Command Chaplain briefed AMC's Deputy Commanding General for Research, Development and Acquisition, LTG Billy Thomas, and obtained his support. By 13 September, $275,000 in FY90 funds were allocated for this program under the provisions of the Food and Forage Act. The Office of the Command Chaplain was also involved in obtaining by 24 September a National Stock Number (NSN) for the kit. TROSCOM formally requisitioned the kit on 25 September, thereby obligating the funds. The actual contract was let on 1 November 1990 when the Defense General Supply Center contracted with the Tonini Church Supply Company of Louisville, KY, for 1,000 kits, which reached SWA on or about 22 November 1990. The time elapsed from recognition of the requirement to delivery to SWA was 10 weeks.[42]

On 10 January 1991, a second contract for 2,000 kits was let by the Defense Logistics Agency to the Autom Company.[43] By late February 1991, this shipment had also been sent to SWA, although 300 of the kits lacked the Jewish prayer book as there were not enough copies in print.[44]

In addition to ensuring that the kits were quickly procured, the Office of the Command Chaplain was also tasked to resolve transportation problems involved in the airlift of Chaplain supplies to SWA. This involved obtaining approval to use the Defense Transportation System to transport ecclesiastical supplies, establishing the Office of the Command Chaplain as the initial point of coordination for shipping religious supplies, establishing New Cumberland Army Depot (NCAD) as the single CONUS Consolidation/Containerization Point (CCP) to receive and prepare religious supplies for overseas movement, and providing transportation of the shipments to the Aerial or Surface Port of Embarkation.

The Office of the Chaplain was also involved in coordinating with the Military Air Traffic Control Unit representative at Dover Air Force Base and the Army Central Command (ARCENT) component forward staff chaplain on flight information, at times coordinating with ARCENT to obtain priority airlift. The office also developed and maintained an audit trail of shipments sent through NCAD to SWA.[45]

By June 1991, the following items had been shipped to SWA with the assistance of the Office of the AMC Command Chaplain: 2,985 CSKCs, 671,100 items of devotional literature, 215,000 Bibles, 420 Broadman

---

[41]Chaplain Supply Pack and Chaplain Supplemental Supply Pack, in the Office of the Command Chaplain Historical Submission for ODS.

[42]Point Paper, Subject: Desert Shield Chaplain Supply Kit, Consumable, 4 January 1991, in the Office of the Command Chaplain Historical Submission for ODS.

[43]Point Paper, Subject: Second Contract of Chaplain Supply Kit, Consumable (CSKC), 17 January 1991, in the Office of the Command Chaplain Historical Submission for ODS.

[44]Point Paper, Subject: Chaplain Supply Kit, Consumable (CSKC) Samples, 21 February 1991, in the Office of the Command Chaplain Historical Submission for ODS.

[45]MEMORANDUM FOR HQDA (DACH-PPE), Subject: Lessons Learned from Desert Shield/Storm, 28 June 1991, in the Office of the Command Chaplain Historical Submission for ODS.

Hymn Players, and 329,000 Reunion Resource Materials.[46] Other supplies shipped to the theater through mid-May 1991 included 26,000 Catholic Missalettes and 97 boxes of Jewish Passover supplies.[47]

The CSKC was the first logistical item in recent memory to be developed and deployed to support the religious and spiritual requirements of our soldiers as a part of the Army's logistical system. This package was developed and delivered with an unusually rapid response to such a major problem. Feedback from Unit Ministry Teams in SWA indicated that without these CRKCs they would have been unable to meet the full religious requirements of our soldiers.

Office for International Cooperative Programs

Mission, Organization and Key Personnel

The Office for International Cooperative Programs (OICP) served as the focal point for international cooperative research, development and standardization programs assigned by HQDA. It also served as the National Office of Record for agreements resulting from these assigned programs and it 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 (STANAG) and approximately 723 American-British-Canadian-Australian (ABCA) Quadripartite Standardization Agreements (QSTAG) 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 OICP provided the organizational interface for the U.S. Army Research, Development and Standardization Groups in the UK, Germany, Canada and Australia and the AMC Representative - France. OICP interpreters provide French and German linguistic support to Army International forums.

The DCG for International Cooperative Programs was a dual hat position of AMC's Deputy Commanding General for Research, Development and Acquisition, LTG Billy Thomas. Other key personnel included:

Mr. Michael Fisette, Assistant Deputy for ICP
COL Edwin T. Vernon, Chief, OICP/Assistant NATO/ABCA Activities
Mr. Aaron Mahr, Integration Officer
Mr. Rodney Smith, Chief, International Standardization and Interoperability Division
Mr. James Lash, Chief, Resource Development and Evaluation
Mr. Robert Bloom, Chief, International Materiel Evaluation Division

Since the establishment of the OICP within HQ AMC in October 1987, international offices have been established within the major subordinate commands and their Research Development and Engineering Centers

---

[46]Ibid.

[47]Religious Items sent to Southwest Asia Theater 4 October 1990 through 15 May 1991, Enclosure 3 of the Office of the Command Chaplain historical submission for FY91.

(RDEC).[48] The MSC/RDEC International Offices, overseas U.S. Army Research, Development and Standardization Groups, and their derivatives (such as the Office of the AMC Representative-France)[49] were staffed to monitor and coordinate international activities and ensure the leveraging of foreign technology. This was done through coordinating and monitoring programs such as Data Exchange Annexes/Agreements (DEA), the Engineer and Scientist Exchange Program (ESEP), the Nunn Amendment's cooperative Research and Development projects, Cooperative Opportunities Documents (COD), foreign market surveys, international seminars, and Program Executive Officer/Program Manager (PEO/PM) international interface.

Some expansion of the overall program was in process in FY91 as the OICP commenced paperwork for approval to place Army Rationalization, Standardization and Interoperability (RSI) representation in Israel. However, as the downsizing of the U.S. Army and Conventional Forces Europe (CFE) reductions commenced, authorizations for the U.S. Army Research, Development and Standardization Groups in Germany and the UK were reduced by one military position each, with actual loss of positions scheduled for FY92/93.

AMC's leadership stated two important propositions in early 1991. First, TQM is the most important issue, outside of actual conduct of war or support thereof and it is critical to get the right people together initially to work the problem. Second, the TQM effort, not fighting fires, is part of our job and the mandatory attendance of key leaders speaks of its importance. As a result of this emphasis, OICP provided members for all eight AMC Headquarters Process Action Teams. The OICP continued to give top priority to this effort to ensure due consideration of international functions in the final product. The result was validation of the need for 27 out of 32 positions, a significantly higher percentage than the headquarters as a whole.

Research, Development and Engineering Activities

Operation Desert Shield/Storm. AMCICP-RDE worked closely with the Special Assistant for Desert Shield/Storm, Colonel Robert Bruce. (COL Bruce was normally the Special Assistant to the Assistant Deputy for International Cooperative Programs.) AMCICP-RDE helped track and manage critical equipment and materials flowing between the U.S. Army and its allies during ODS. OICP tracked 35 major actions during the hostilities. Actions included arranging for the loan of German 120mm main tank gun ammunition, the gift of German Biological and Chemical Reconnaissance vehicles, Canadian Chemical Agent Monitors and the loan of 1000 Squad Automatic Weapons from Canada.[50]

Nunn Cooperative R&D Program. AMCICP-RDE provided program oversight for the Nunn Cooperative R&D program for the Office of the Assistant Secretary of the Army for RDA. During FY91, AMCICP provided assistance to PEOs/PMs/MSCs in the development if cooperative R&D project Nomination Proposals and obtained a joint AMC/TRADOC agreement to forward six new projects to HQDA for approval. Ten on-going projects were confirmed for renewal. OICP program activities resulted in:

---

[48]MSCs and Laboratories were asked to designated an International Point of Contact (IPOC). Some established a separate office, while others designated an individual within an existing office. See Memorandum, AMCICP-RDE to AMCHO, Subject: Operations Security (OPSEC) Review of Draft Annual Historical Review (AHR) for FY91, 5 October 1992. Copy on file in AMCHO Archives.

[49]This office is on the TDA of the U.S. Army Research Development and Standardization Group - United Kingdom, but performs a mission identical to the parent in the United Kingdom. Another office in Japan has a unique title but also performs a mission identical to France and UK offices.

[50]Memorandum, AMCICP-RDE to AMCHO, Subject: Operations Security (OPSEC) Review of Draft Annual Historical Review (AHR) for FY91, 5 October 1992. Copy on file in AMCHO Archives.

Receiving $28 million in Nunn funds to augment the Army FY91 RDT&E budget.

Developing Advanced Technology Transition Demonstrators for the Patriot multimode seeker, Surface-to-Air Missile Operations Center, Underground Ammunition Explosive Safety, and Ducted Rocket Propulsion.

Achieving cooperation with major non-NATO nations (Korea, Israel, and Japan).

United States/German Army Armaments Working Group. AMCICP-RDE participated in the United States/German (US/GE) Army Armaments Working Group (AAWG) meeting and supported the US/GE Army Chief of Staff Initiatives. The five initiatives continue to be intensely managed by the AAWG in conjunction with the Program Executive Officers, Program Managers, and major subordinate commands as projects with the greatest potential to enhance armaments cooperation and interoperability. They were: Future Infantry Fighting Vehicle Main Armament; Unimodular Propellant Charge; Simulations/Simulators Interoperability; Combat Net Radio Interoperability; and Low Level Air Picture Interface. Numerous other areas of potential or ongoing cooperation, such as mine/countermine, bridging, armor/anti-armor, Fuchs[51] Nuclear, Biological, Chemical (NBC) Reconnaissance Vehicle System Improvement Program (SIP), Chemical Biological Mass Spectrometer (CBMS) and Non-toxic Decontamination, were discussed.

AMC Loan Program. AMCICP-RDE began the AMC Loan Program, which was initiated under Section 65 of the Arms Export Control Act. This new process allowed the U.S. Army to loan equipment to NATO allies and other major non-NATO allies. The AMC Loan Program also allowed for the loan of foreign equipment to the U.S. Army. The international loans were to be executed for the purposes of Research, Development and Evaluation, including Standardization and Interchangeability.

Norway Data Exchange Agreement Review. The Norway Data Exchange Agreement (DEA) review took place in Oslo, Norway on 23 September 1991. The DEA review accomplished a great deal in the way of establishing the current status of each DEA and the wishes of both nations concerning future actions to be taken. As a result of the review, two data exchange annexes were terminated and a new exchange in the area of air defense radars was initiated.

Memoranda of Understanding. During the fiscal year, AMCICP-RDE reviewed and staffed approximately 20 MOUs. Three MOUs were negotiated directly and the following six MOUs were signed:

U.S./France - Command and Control for Automatic Data Processing (extension) - 28 December 1990

U.S./United Kingdom - Directed Energy Weapons (extension) - 20 June 1991

U.S./Republic of Korea - Underground Ammunition Storage Technologies - 12 August 1991

U.S./Canada - Defense Development Sharing Program (DDSP) Project Agreement (PA) Nitrile Rubber Track Pad - 28 August 1991

U.S./France/Germany/Italy/Netherlands - Demonstration of Advanced Radar Techniques (extension) - 3 September 1991

---

[51]Fuchs is the German word for Fox. In this case it refers to the reconnaissance vehicle which the Germans had loaned to the U.S. during Desert Storm, and which was used as a vehicle for carrying an NBC monitoring system.

U.S./Canada - DDSP Project Agreement Simulation Program for Improved Rotorcraft Integration Technology - 23 September 1991

Navy MOU Generator Program/MOU Tracking and Recording System. AMCICP-RDE acquired a copy of the U.S. Navy's MOU Generator program along with their MOU Tracking and Recording System. The MOU Generator provides a means to write a generic boilerplated draft MOU to serve as a starting point for developing a final MOU. The Tracking and Recording System will provide an automated system to track and store information on all MOUs that have been signed and that are being processed.

Bilateral Staff Talks. Although TRADOC was the Army executive agent for the Staff Talks (ST), AMCICP-RDE coordinated and participated in Army Staff Talks and respective Steering Committees (SC) with nine countries: Germany (GE), United Kingdom (UK), France (FR), Canada (CA), Italy (IT), Japan (JA), Republic of Korea (ROK), Spain (SP) and Brazil (BR). This also included the Army Armaments Working Group (AAWG) with GE, a materiel working group that reported to the Germany SC/ST. Staff Talks, cooperative RDA topics, and actions were processed by MAJ Walter Riedle, Jr., the Staff Talks Coordinator. The calendar year 1991 SC/ST were conducted as follows:

AAWG (GE), 24-28 February 1991, Orlando, FL (Mr. Fisette was U.S. Head of Delegation (HOD)
GE SC/ST, 15-18 April 1991, Fort Rucker (Mr. Fisette was AMC Delegate)
UK SC, 1-3 May 1991, Fort Monroe (MAJ Riedle represented AMC)
FR ST, 26-31 May 1991, Saumer, FR (FR Stan Rep, LTC Sayre, attended)
IT ST, 2-7 June 1991, Rome, IT (MAJ Riedle was AMC Delegate)
BR ST, 14-20 June 1991, Fort Leavenworth (no AMC attendance)
CA ST, 16-19 September 1991, Kingston, Ontario (attended by Cdr, USARDSG-CA, COL Mullen)
JA ST, 29 September - 4 October 1991, Fort Monroe (MAJ Riedle was AMC Delegate)
UK ST, 6-11 October 1991, Fort Benning (Mr. Fisette was AMC Delegate)
ROK ST, 21-25 October 1991, Fort Monroe (MAJ Riedle was AMC Delegate)
SP ST, 3-9 November 1991, Madrid, SP (LTC Henselman, USARDSG-GE, was AMC Delegate)

U.S./France Cooperative Programs. The U.S./France Cooperative Programs continued its activity. Several meetings took place in order to review the Materiel Working Groups and the Annual Data Exchange Program. Several proposed areas for cooperation were identified. Proposed cooperative efforts with France included electronic warfare, electro-magnetic gun, lasers, and battalion and below C^2. Several other DEAs were proposed in other areas of technology to augment and support the U.S./FR program, including thermal transfer, computer-aided software, artifical intelligence, and food processing and food service systems. LTG Thomas visited France to conduct Group Level I Review of these Working Groups. OICP also played a major role in orchestrating U.S. Army participation in the Paris Airshow. This was the first participation by a DOD agency in the Paris Air Show.

International Standardization and Interoperability

International Standardization Agreement Management Data Base. By direction of the OSD, the Institute for Defense Analyses (IDA) worked with OICP to develop an International Standardization Agreement Management Data Base to be available on the Interoperability Decision Support System (IDSS). The new system contains basic information on NATO STANAGs, ABCA Quadripartite Standardization Agreements and Air Standardization Coordinating Committee (ASCC) Air Standards, including ratification and implementation information. The system is available to the entire international community, DOD-wide. It is user-friendly, and the responsibility for maintaining the data will be delegated to the proponents of the agreements, with OICP managing the system.

Optical Laser Disk System. A contract for an Optical Laser Disk System (OLDS) was awarded to Severn Companies, Inc. The system was delivered in March 1991 and completed a successful "period of performance" in September 1991. The OLDS will support OICP's mission to maintain the records of the Office of Record for International Standardization Agreements (ORISA). It will later be used to store DEAs and MOUs, resulting in a library totaling some 550,000-plus pages of documentation. Full text, stored as images rather than as letters, of the agreements and supporting documentation will be stored on 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.

ABCA TEAL XXIX.[52] The ABCA TEAL XXIX, hosted by Australia, was held at Sanctuary Cove, near Brisbane in Queensland from 12 to 16 November 1990. The theme was "The ABCA Program in a Changing Global Environment." The CG, AMC represented the U.S. Army as Head of Delegation, with delegates from HQDA and TRADOC. The HODs agreed that the ABCA program deserved greater emphasis, especially in light of increased focus on contingencies outside Europe. To enhance management of the program, the HODs will periodically review progress on TEAL XXIX recommendations, and the U.S. will host an Interim TEAL HOD meeting in October 1991 to assess accomplishments and to plan for TEAL XXX. Expanded use of the Interoperability Decision Support System will be promoted to increase program and management effectiveness. The TEAL delegations agreed on 24 recommendations to the Armies and on 27 program directives. The significant TEAL program directives included:

Develop a program of action by which the interoperability of Combat Net Radios can be achieved.

Develop four representative scenarios for the Quadrilateral Working Groups (QWG) to use in their work.

All QWGs should consider directed energy threat.

Proceed with the further development and use of the cooperative logistics model using the scenarios.

Recommend a plan to improve simulation to the next TEAL.

Provide an assessment of ABCA program progress with recommendations for an improvement plan in light of the program strategy.

The assessment should include real achievements and deficiencies in interoperability.

Examine options for improving the management structure and program procedures.

Hold a TEAL Interim Meeting for the Heads of Delegation at the approximate mid-point between TEAL XXIX and the scheduled May 1992 TEAL XXX.

---

[52]TEAL originally stood for the "Tripartite Equipment and Logistics" steering group, composed of the Vice Chief of Staff of the United States, United Kingdom and Canada. The group expanded to include Australia and New Zealand in 1964 and the overall organization is known as the America-British-Canadian-Australian (ABCA) Standardization Organization. "TEAL" remains the name, no longer an acronym, of the bi-annual meeting of the steering committee of Vice Chiefs. See Memorandum, AMCICP-RDE to AMCHO, 5 October 1992, op cit. Copy on file in AMCHO Archives.

The TEAL HOD Interim Meeting was held at the Center for Night Vision and Electro-Optics, Fort Belvoir, VA on 1 October 1991. The CG, AMC was host and HOD for the U.S. Delegation; the Vice Chief of Staff, Army (VCSA) attended as the designated HOD for TEAL XXX. The United Kingdom was represented by the Inspector General, Doctrine and Training, Royal Army; Canada by the Commander, Land Forces, Canada Defense Force; and Australia by the Deputy Chief of Staff, Australian Army. The New Zealand Army Deputy Chief of Staff attended as an observer and guest of Australia.

Principal actions included reducing the length of TEAL XXX from five to three days (11-15 May 1992); using six designated Functional Area Plans of Action (Close Combat, Fire Support, Air Defense, Logistics, Intelligence, and Command and Control) as the primary management tool to focus the ABCA program; a decision to study the ABCA organizational structure to see if improvements can be made to reduce bureaucracy and redundancies; limiting TEAL discussions to Army policy-level matters and those things that cannot be resolved by the Washington Standardization Officers; continue holding Interim TEAL meetings; and determine the optimum period between TEALs (currently 18 months).

Deputy Washington Standardization Officer (DWSO) and National Standardization Officer (NSO) for the ABCA Armies Standardization Program. The division continued to provide the DWSO and NSO for the ABCA Armies Standardization Program. The DWSO and NSO participated in the annual ABCA Washington Standardization Officers (WSO) and Standing Chairmen Conference, and the NSO attended five meetings of the ABCA QWGs for program management purposes.

The NSO was the Army action officer for both TEAL XXIX and the TEAL HOD interim meeting, and coordinated all support required for the CG, AMC and VCSA. This included administrative support for the U.S. delegation, subject matter expertise, data base contact and support, and development of proposed U.S. positions both prior to and on site. The NSO has also been designated as the Army action officer for TEAL XXX, to be held in London, 11-13 May 1992.

Operation Desert Shield/Storm. Significant accomplishments in standardization and interoperability included providing information concerning ammunition interchangeability and the interoperability of artillery weapons to U.S. and UK forces in ODS. This was accomplished by providing the NATO Land Forces Ammunition Interchangeability Catalogue (AOP-6), which catalogued the interchangeability of ammunition in NATO nations, to the Operation Desert Shield/Storm Ammunition Office, to assist in logistics support of the multinational force. In addition, the NATO Fuze Characteristics Catalog (AOP-8), which provided descriptions and information on the systems for arming and staffing of fuzes in use or development by NATO countries, was also provided to ODS for use by the multi-national force.

STANAGS. In addition to the significant number of International Standardization Agreements (ISA) already in place, some 55 NATO STANAGs and 60 ABCA QSTAGs were adopted in 1991, which contributed to enhanced interoperability in operational and technical fields. The more important new ISAs included:

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 4316 - Countersurveillance Requirements for Future Main Battle Tanks (FMBT) (Radar Aspects)

STANAG 4318 - Countersurveillance Requirements for FMBTs (Acoustic Aspects)

STANAG 4319 - Countersurveillance Requirements for FMBTs (Infra-red/Thermal Aspects)

STANAG 4357 - Allied Vehicle Testing Publications (AVTP)

STANAG 4358 - Mutual Acceptance of Government Vehicle Test and Evaluation

Guide for DOD Personnel Participating in NATO Standardization. The division contributed to the newly published SD-3 "Guide for DOD Personnel Participating in NATO Standardization," which provides standardized DOD guidance to personnel travelling to NATO Headquarters for participation in NATO standardization meetings.

Publication and Distribution of Allied Publications. NATO Headquarters revised and streamlined the procedures for publishing and distributing Allied Publications (AP) which have Military Agency for Standardization (MAS) Working Parties as a custodian. Prior to this change, there were many outstanding bills from nations and difficulties due to demands for payment in certain countries' currency and the exchange rate differences. Each nation will now receive five copies without charge from NATO. Nations will make and distribute further copies at their own expense.

General Officer Steering Committee (GOSC) for International Activities. Under the aegis of AR 11-31 and the Army International Activities Plan (AIAP), there is a GOSC for international activities for which AMC is represented by the Assistant Deputy for International Cooperative Programs. The GOSC provided overall general guidance as required while a council of colonels (AMC is represented by the Chief, OICP) 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 FY91. Among the issues worked during the year was the establishment of a clearing house for international activities and the Policy Review Coordinating Group. Another was the realignment of Rationalization, Standardization and Interoperability (RSI) missions and functions.

AMC International Armaments Cooperation Strategy. Since two previous efforts to produce an Army-wide strategy were not successful, the decision was made to first develop an AMC strategy with provisions for future expansion Army-wide after proven success. A General Officer Review on 1 May 1991 resulted in concept approval for a three-pronged approach for development of AMC's strategy. *Technology Base Cooperation* will contain technical areas of emphasis by country. *Cooperative Development* will focus on AMC systems having potential for international cooperation by country. *Production Base Implications of International Sales and Co-Production* will emphasize efforts to support critical threatened portions of the production base. The OICP was responsible for integrating the triple approach into a single overall strategy, with the DCS for Intelligence giving support from the technology assessment and transfer perspective. This document will fill a void by institutionalizing the objectives, formalizing Army leadership support and focusing Army efforts.

Linguistic Support. RIF notices to all three interpreters were rescinded as a result of input from HQDA and from MSCs. The requirement for French and German interpreting services was barely impacted by the Gulf War (35 meetings). A message providing information on Army linguistic services was updated and sent to Army and OSD International points of contact. The response suggested an increasing volume of work in the future, and demonstrated the need for this Army organic asset. Supported meetings included:

Autonomous Precision Guided Munition (APGM) Executive Management Committee (Final meeting)

U.S./French Data Exchange Annex discussions on:
- Supplemental Medium Anti-Tank System (SIMATS)
- Advanced Field Artillery Tactical Data System (AFATDS)/ATLAS*
- Missile WG
- Army Tactical Missile System (ATACMS)
- Energetic Materials for Ammunition

NATO Panels and Sub-panels:
- AC/225 P II WGE3 (Wheeled/Tracked Vehicles)
- AC/225 P IV SP2 (Base Burn Technology)
- AC/301 WG7 (Environmental Testing)
- AC/225 Panel IV (Surf-to-surf Artillery)
- AC/310 SG IV (EWG on STANAG 4224)

Future Tank Main Armament (FTMA):
- Legal Working Group
- Technical Working Group
- Executive Management Committee
- Joint Configuration Board

Multiple Launch Rocket System (MLRS):
- Logistics WG
- Terminally Guided Warhead (TGW) Program Review
- Executive Management Committee
- Fire Control System Integration (FCSITG)

Army Armaments Working Group

ADLER**/AFATDS Interface Committee

M1/Leopard Tank Harmonization

HQ TECOM:
- Large Caliber Weapon Test Standardization
- Environmental Technologies Discussion

Four-Power Senior National Representatives (SNR[A])
- Anti-Tank Guided Weapons
- Tank Target SG

DARPA/DRET*** Cooperative Reactive Armor Techs discs.

* French field artillery data system
** German field artillery data system
*** *Direction des Recherches et Etodes Techniques* (French)

The AMC interpreters provided linguistic certifications of the foreign language versions of significant bilateral and multilateral MOUs. This included Operational and Tactical Data Systems (OPTADS), 155mm Howitzers/Ammunition, and Anti-Tank Guided Missiles, as well as DEAs, the DARPA/DRET Security Classification Guide, and translation of numerous short and lengthy technical program documentation from French and German into English and vice-versa. They also did a video voice-over on the seven AMC mission areas for the Paris Air Show.

Interpreters also provided technical advice on the construction of permanent interpreting booths at PEO Armaments, which were completed in September 1991. Army organizations involved in active international programs will realize major cost savings by thus procuring rather than renting interpreting equipment.

International Materiel Evaluation (IME)

The IME Division was an operating division of the OICP but was physically located at Aberdeen Proving Ground, Maryland. The IME Division was responsible for project management of the U.S. Army portion of the DOD sponsored Foreign Comparative Testing (FCT) Program. This program allowed the Army to identify non-developmental items/systems of friendly foreign manufacture, through market investigations, which appeared to have the potential to meet Army approved requirements.

Although there were no systems adopted by the U.S. Army under the FCT program during FY91, a number of significant actions took place. The U.S. Marine Corps purchased 72,000 British Mark IV Chemical-Biological Protective Suits for use in Operation Desert Storm. This purchase was based upon the Marine Corps' participation in the U.S. Army Lightweight Chemical-Biological (CB) Protective Garment FCT Program. In addition, the small American light-weight electric generator, the Auxiliary Power Unit (APU), was tested by the U.S. Army. The concept was validated under the FCT Program, and resulted in a release of a competitive Request for Proposal (RFP). Following the FCT for the M1 Tank, a competitive RFP was awarded to equip U.S. Army and U.S. Marine Corp M1 Tanks.

Table III - 4: Candidate Identifications (Formerly Called Market Investigations) Active During FY91

SYSTEM	COUNTRY
Anti-Magnetic Mine Clearing Device (AMMAB-D)	Multiple
Armored Gun System (AGS)	Multiple
Armored Security Vehicle	Multiple
Armored Weapons Carrier (WIESEL)	Germany
Automotive Battery (Togaku)	Hungary
Auto Packaging of Soft-Sided Containers	France
Combat Load Handling Equipment (CLOHE)	Multiple
CNIM Bridging Systems	France
Data Network System	Multiple
Decoy Ribbon Bridge (DRB)	Sweden
Delta-K Radar	Netherlands
Expeditionary Runway/Desert Operations	France
Field Fortifications	Multiple
Heavy Dry Support Bridge (HDSB)	Germany/United Kingdom
High Mobility Artillery Rocket System (HIMARS)	United Kingdom
High Mobility Trailer (HMT)	Multiple
Improved Fuze for M15 Mine	United Kingdom
Individual Equipment Decontamination Kit	United Kingdom/Belgium
Infrared Search and Track Device	United Kingdom/Sweden
Kieko Sam Dual Mode Seeker	Japan
Large area Mobile Projected Smoke System	Belgium
Longbow/Star Stand-off Jammer	Israel
Lightweight Mine Plow (LMP)	Multiple
MISTRAL Air-to-Air Missile	France
Mobile Army Surgical Hospital	Sweden
Multirole Shell System	United Kingdom
Programmable All-Arms Calculator	Australia
Pyrotechnic Signal Kit	Germany/United Kingdom
SAVAN-20 Tank Navigation & Sighting System	France
Self-Heat Meal, Operational, Ready-To-Eat	United Kingdom/Japan
Sound Ranging System	Sweden
Standoff Mine Detection System (STAMIDS)	Multiple
Starstreak Missile	United Kingdom
Steyr Diesel Engine	Austria
Trackway Launch and Recovery System	Canada
Transferable Stores Container	United Kingdom
Unicharge Interoperability Demo	Germany/United Kingdom

Table III - 5: Candidate Evaluations Active During FY91

SYSTEM	COUNTRY
9mm Penetrator Cartridge f/M9 Pistol	Sweden
35mm In-Bore Training Device f/120mm	Germany
Artillery Communication/Aural Protective System (ACAPS)	United Kingdom
Communication/Aural Protective System (CAPS)	United Kingdom
Dehumidifier for Aircraft	Sweden
Focal Plane Array	France
Ground Based Sensor	Multiple
HAWK Missile Loader/Transporter Modernization	NATO
Heavy Assault Bridge (HAB) - Leguan	Germany
High Explosive Dual Purpose Rd f/RAAWS	Sweden
Image Transmission System	Israel
Improved Chemical Agent Monitor	United Kingdom
Improved Ribbon Bridge - FFB2000	Germany
Lightweight CB Protective Garment	United Kingdom
M1 Tank Diesel Engine	Multiple
Manpack HF Communication Systems	Israel/United Kingdom
Muzzle Velocity System	Multiple
Reverse Osmosis Water Purification System	Australia/United Kingdom
Rocket Powered Target - ROBOT-X	Canada
Rotary Wing Vehicle (CL227)	Canada
Semi-Auto Loader f/Howitzer Improvement Program	Austria/Switzerland
Supplemental Interim Medium Anti-Tank System	France/Sweden
Trelleborg Survivable Tire	Sweden
Ultra Lightweight Camouflage Screening System	Multiple
Unmanned Aerial Vehicle-Maneuver	United Kingdom

U.S. Army Research, Development and Standardization Group - Germany

Manpower and Budget. The United States Army Research, Development and Standardization Group-GE ended the FY91 with the same authorization as at the beginning: the colonel (0-6) commander, three lieutenant colonel (O-5) international R&D coordinators; one GS-14 Liaison Specialist to *Bundesamt fur Wehrtechnik und Beschaffung (BWB)*,[53] and one secretary. With the departure of Colonel Gilbert Stieglitz, LTC Peter Heesch, Jr. assumed command on 15 August 1991. The total budget for FY91 was $310,000, compared to $300,000 for FY90.

The most significant issues handled by the Group were support for ODS and the development and fielding of Combat Net Radio Interface Adapter Device for the SINGARS and SEM(GE) radios. These and other significant issues are discussed below.

[53]This German organization's name translates as the *Federal Office for Weapons Technology and Development.*

Support for ODS. The Group facilitated the transfer of the 60 FOX (Fuchs) NBC Reconnaissance vehicles given to the U.S. by the Federal Republic of Germany. The group also assisted in the European market search for tires for the Heavy Equipment Transporters and 25mm ammunition for the Bradley.

Combat Net Radio Interface Adapter Device (CNR IAD). The Group assisted in the development and fielding of Combat Net Radio Interface Adapter Device for voice only communications between the SINCGARS and SEM(GE) radios. This effort was the first phase of one of the five Chief of Staff Initiatives.

Country Assessment. In September, the Group completed a country assessment on Germany's technical strength and willingness to cooperate. Assessed were the 13 emerging technologies identified in the Army's Tech Base Master Plan. Examples of the latter included robotics, biotechnology, artificial intelligence and directed energy. The Group also coordinated the visit of LTG Thomas to Germany in September 1991.

Joint Technology Steering Group. The Group coordinated the agreement between Mr. Fisette and Herr Bruas, Section III of the German Armament Directorate, concerning the establishment of a joint Technology Steering Group to provide oversight to the Data Exchange Agreement Process.

Head, Armaments Cooperation/Army

Organization and Personnel. The FY90 MOU between AMC, the American Embassy, and the U.S. Pacific Command which had established the position of Head, Armaments Cooperation/Army within the Mutual Defense Assistance Office, American Embassy Tokyo, called for an annual review of that position. The establishment of that position had allowed an AMC representative to work U.S. Army/Japanese Defense Agency (JDA)-related technology transfer and cooperative research and development issues within the American Embassy in Japan. The position was extended for another year by mutual agreement. The manpower authorization for the office in FY91 was one. The person assigned to that position was COL Rodney S. Tanaka, Head, Armaments Cooperation/Army. The office's budget of $44,100 was adequate.

Joint Working Group Meetings. Initial meetings of the three AMC-led Joint Working Groups (JWG) were held between DOD and the JDA. The first JWG meetings, co-chaired by AMC personnel, were conducted in Spring 1991. The Ducted Rocket Engine JWG met from 25 February - 1 March in Japan. It was led by Dr. Larry Mixon of MICOM and Dr. N. Kubota of the Technical Research and Development Institute's (TRDI) Third Research Center. A joint Memorandum For Record (MFR) was signed, which will lead to further transfer of information and to coordination on an MOU to formalize this cooperative program. Although U.S. Air Force and Navy representatives have expressed concerns about this program, MICOM personnel were very positive.[54]

The second meetings of the three JWGs were held in July 1991. The meetings of the Ducted Rocket Engine and Ceramic Propulsion JWGs were held at Redstone Arsenal, AL, and Warren, MI, respectively, while the Dual Mode Seeker JWG was held in Japan. Although all the JWGs continued good information exchange and coordination on their cooperative programs, the Ducted Rocket Engine JWG was the furthest along and had the most clearly defined objectives.

The long awaited draft MOU for the Ducted Rocket Engine cooperative program was passed to the JDA by Dr. Albert Kelley, Deputy Under Secretary of Defense, International Programs, during the 24 and 25 September Systems and Technology Forum. The Air Force and Navy objections were finally overcome and

---

[54]For details, see Memorandum, AMCICP-RDE to AMCHO, 5 October 1992, op cit. Additional information is For Official Use Only (FOUO).

a lengthy U.S. coordination problem ended just before the meeting started. This cooperative program was the first of its kind between the U.S. and Japan and established an important baseline for other efforts to follow.

Army Reciprocal Visit Program. LTG Billy Thomas, AMC's DCGRDA, led the Army Reciprocal Visit Japan II team to the Japan Defense Agency's TRDI research centers and defense industries. During the period 3 to 12 June 1991, the team conducted a technical assessment of critical technologies and developed a good understanding of current technical levels. Potential areas for cooperative R&D were explored and team members were excited over future possibilities.

U.S. Army Research Development and Standardization Group (UK)

Organization, Manpower, and Personnel. During FY91 the organization underwent numerous reviews of its structure, mission and focus. The structural review of the Standardization Division focused on CFE treaty reductions, while the Research Office was examined under a number of different studies but primarily Project Reliant. Project Reliant was a DOD-wide initiative to reduce manpower and streamline organizational layering. The focus is on reducing both redundancy in the services' laboratories and the problem of conducting research into identical issues at more than one location.

The organization started the fiscal year with authorization for 6 military officers and an Officer Distribution Plan (ODP) strength of seven. At the close of the fiscal year, that was unchanged. The U.S. civilian employees started the fiscal year with authorizations for nine, which also remained the same but with shifts in positions. One GS-15 research position was downgraded to GS-13 and was moved to the Paris office to assist with the Standardization Representative effort in France. The group also voluntarily gave up one of its positions in the fiscal office because of the pending AMC personnel reductions. Local National staff remained constant at seven employees.

The office's challenge has been to obtain replacements. The Chief of the Standardization Division, LTC Bruce Korda, was reassigned to the U.S. in early June and, because ODP fill was temporarily suspended for that position, the requisition was only approved in August. At the end of fiscal year the requisition had gone forward and a replacement had been named. LTC(P) Louis Curl assumed the role of Chief. Similar problems also existed with the departing Chief of the European Research Division. Dr. Wilbur Simmons rotated to the Army Research Office in early July and, as of the end of fiscal year, the decision had not yet been made to fill that position. Dr. Karl Steinbach, replacing Dr. Zavada in January, became the Chief.

M1 Tank Sale to the United Kingdom. Since FY89, the UK Army has been considering options to replace its present fleet of Chieftain Tanks. The U.S. Army, in a effort to standardize weapons systems, was pushing for the selection of the M1 Tank. Secretary Stone (on two separate occasions), GEN Tuttle and LTG Thomas all visited the UK in FY91 to promote sales. Late in June, the UK Ministry of Defense decided to select the Challenger II Tank, produced by Vickers Defense. The UK selection was based on interoperability within the UK's tank fleet, changing threat, and fiscal constraints.

Review of Tri-Service European Research Office. In mid-June, the Directors of the three Services Research Offices visited Edison House to analyze and report on the Tri-Service European research efforts. At the outbrief, the Directors stated they supported the research effort but recommended an increased working relationship between the services and better proactive thrusts in some areas where tri-service research could be accomplished.

The The Tri-Service European Research Office acted as the channel through which all equipment issues related to ODS between the U.S. and UK armies were conveyed. It established direct liaison with the British

Ministry of Defense and provided on-site coordination and expediting requests for supplies, materials and equipment. The group was commended for its efforts by both the U.S. and UK armies.

Office of Small and Disadvantaged Business Utilization

The organization and manpower authorizations for the office remained unchanged in FY91, although for the better part of the year one employee was in a "stay in school" status. Mr. Kurt E. Wussow was the AMC SADBU Office Chief during the entire period.[55]

The most significant issues for the office involved its support of ODS. Other Command Management issues included the "New Thinking" Conference, outreach programs, and statistical program goals. These and other programs are discussed below.

Operation Desert Shield/Storm

The most significant issue handled by the office in FY91 was its solicitation of ideas on products to help support the troops in ODS. This solicitation was issued in the *Commerce Business Daily*, and the office maintained control of the recommendations as they were staffed through the appropriate MSCs.[56]

"New Thinking" Conference

The office sponsored a conference on "New Thinking," the point of which was that businesses, especially small and disadvantaged businesses, must change their mind set on working with DOD from a "Build to Print" mind set to a long term approach, using the Non Developmental Item procurement concept.

Outreach Program

The office launched an aggressive outreach counseling program which involved personal contact and providing information on doing business with DOD, the Army, and AMC. This program reached such institutions and businesses as the Historically Black Colleges and Universities and Minority Institutions (HBCU/MI), Small Businesses, Small Disadvantaged Businesses, Woman-Owned Businesses, Indian-Owned Businesses, Puerto Rican Firms, and the Army "Blue Chip" firms. Blue Chip firms are those rated highly capable of manufacturing quality products in a timely manner at fair and reasonable prices. The names of these firms are provided to the AMC SADBU Office by the DA SADBU Director's Office.

SADBU Program Goals

AMC attempted to meet a variety of DA goals, set as a percentage of total procurement funds in specific areas that went to designated types of small businesses. AMC did meet its overall total small business goal, giving 14.8 percent of its procurement funds to such businesses, compared to the DA goal of 14.1 percent, but failed to make its goal in a number of specific areas, due at least in part to the impact of ODS.

---

[55]Unless otherwise noted, information in this section is taken from the Office of Small and Disadvantaged Business Utilization historical submission for FY91.

[56]For additional information on this program in support of ODS, see the draft history of AMC support for ODS.

Table III - 6: DA SADBU Goals and AMC Performance

PROGRAM	GOAL	ACTUAL
Total Small Business	14.1%	14.8%
Small Business Set-Asides	5.9%	5.4%
Small Business R&D	12.1%	11.1%
Small Disadvantaged Business	3.5%	2.3%
Woman-Owned Business	.6%	.5%
Small Business Subcontracting	50.6%	55.5%
Small Disadvantaged Business Subcontracting	5.0%	5.1%
HBCU/MI	12.3%	13.9%

Small Business Set-Asides

In FY87, Congress had passed Public Law 99-661, which required DOD to award at least 5 percent of its procurement budget to small disadvantaged business firms and institutions.[57] In May 1988, the Deputy Secretary of Defense issued a memorandum which placed a moratorium on most contracts. As a result, contract actions that would have supported the small and disadvantaged business programs were placed on hold until the moratorium was lifted in late June 1988.

During FY89, Congress passed Public Law 100-656, the "Business Opportunity Development Reform Act of 1988." This mandated the Small Business Competitiveness Demonstration Program, which provided for a test of unrestricted competition in four designated industry groups including refuse systems and related services. The Office of Federal Procurement Policy implemented Title VII of Public Law 100-656 through the issuance of the "Small Business Competitiveness Program Test Plan" on 31 August 1989. A primary purpose of the test is to determine the extent to which small business concerns are able to successfully compete in these designated industry groups without benefit of a small business set-aside. The program will be conducted over a four-year period, from 1 January 1989 through 31 December 1992. 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.[58]

Each participating agency, including DOD, was to establish an annual goal that is 40 percent of the dollar value of the contract awards for each group. 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 Federal Procurement Data System (FPDS) service code within an industry group fell below 35 percent. Therefore, HQDA requested that the AMC Small and Disadvantaged Business Utilization Office reestablish small business set-aside procedures pursuant to subpart 19.5 of the Federal Acquisition Regulation for two 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, which continued in force during FY91.

---

[57]Under a set-aside program, a percentage of suitable contracting opportunities are solicited through a competition restricted to eligible small business concerns.

[58]Memorandum, AMCSB to AMCHO, Subject: Operations Security (OPSEC) Review of Draft Annual Historical Review (AHR) for FY91, 11 September 1992. Additional information taken from HQ AMC's FY88, FY89, and FY90 AHRs.

Chapter IV
Materiel Readiness

Deputy Chief of Staff for Readiness

MG Thomas B. Arwood had served as the DCS for Readiness since October 1989. He came to AMC from 3rd Corps Support Command (COSCOM) in Europe where he served as commander.[1]

The DCS for Readiness was provided $1,869,000 in operating funds for FY91. Of that amount, $98,000 was obligated toward TDY with the remaining balance obligated toward payroll, awards, equipment, and supplies. In comparison, in FY90, the DCS was provided $2,480,000 of which $80,000 was obligated for travel. During the last quarters of FY90 and the first two quarters of FY91, travel was almost non-existent due to Operation Desert Shield/Storm (ODS). As a result, during the last two quarters of FY91, travel expenses rose sharply as travel put off during the previous 3 quarters was now being taken.

Military Plans and Operations Division

Organization

Colonel Craig M. Dexter was the Chief of the Military Plans and Operations Division until he retired in October 1990. For most of the fiscal year, Colonel Dennis L. Griggs was the Division Chief. In September 1991 Colonel Louis G. Mason became Chief of the division, while Colonel Griggs remained as a special assistant to the DCS for Readiness.

The division, consisting of three branches, consolidated into two branches in January 1991. The Contingency and Exercises Branch, less exercises, merged with the Mobilization and Reserve Components Branch and became the Command Operations Branch. The War Logistic Plans Branch absorbed the exercise portion of the old Contingency and Exercise Branch, less the Training and Doctrine Command's (TRADOC) Combined Arms Support Command (CASCOM) hosted LOGEX exercise. LOGEX was the responsibility of the Command Operations Branch.

Operation Desert Shield/Storm

The division was responsible for operating the AMC Command Operations Center, which served as the key coordination and decision making focus for AMC during ODS. The division was also responsible for overseeing the deployment processing center at Aberdeen Proving Ground, MD, which processed many of the AMC civilian and contractor personnel that went TDY to SWA.

---

[1]Unless otherwise noted, information in this chapter is taken from the DCS for Readiness historical submission for FY91.

Army Materiel Command Operations Center (AMCOC). The HQ AMC Operations Center activated on 7 August 1990 in support of Army forces deploying to Southwest Asia for ODS. Over the next two weeks, AMCOC expanded its operation into three full-time shifts of over fifty military and civilian personnel assigned to the headquarters.

Over the next seven months, manning of the operations center fluctuated to match the workload, with peak manning in November 1990, January and February 1991. After March 1991, manning on all shifts was reduced in conjunction with the decreasing workload.

During its activation for ODS, AMCOC had several significant upgrades. All action officer work stations received STU-III secure telephones, and each DCS with action officers in the operations center received at least one computer workstation. These workstations were tied into a secure Local Area Network (LAN). Four laser printers were integrated into the LAN for use in the action officer area of the operations center. Additionally, four more facsimile transceivers (two with TEMPEST specifications that permitted them to transmit classified data) were added to the operations center. In an old cryptographic room, a break room was created and equipped with a microwave oven, soda and snack vending machines for use by employees working in the operations center.

Daily briefings to the command group were prepared by the staff action officers and compiled and presented by the Military Plans and Operations division staff. Briefing compilation began each day at 0430 hours, with the briefing given at 1030 hours in the AMCOC conference room. Standard briefing charts and maps were prepared by a dedicated graphics section. The quality of the presentation and information covered equaled or surpassed those presentations at the Joint Chiefs of Staff and HQDA. The division was also responsible for preparing AMC's official after action report on its role in ODS.[2]

General William G. T. Tuttle Jr., AMC Commander, on behalf of the Secretary of the Army and Army Chief of Staff, presented the staff of AMC Operations Center with a commendation for extraordinary meritorious service in support of ODS. The award was accepted by Major General Thomas B. Arwood, DCS for Readiness, on behalf of all HQ AMC personnel who performed duties in the operations center during ODS. This award was put on display in the AMCOC.

Work continued after FY91 to upgrade the AMCOC facility, including a system for special badges for access to the facility and action officer workstations and chairs.

Deployment Processing Center at Aberdeen Proving Ground. Shortly after the deployment of the first U.S. military forces to Saudi Arabia, it became clear that ODS would challenge the Army Logistics System. There were more forces, deploying faster, operating at a higher tempo, under harsher conditions, and with less support infrastructure than in any recent military operation.

Military and civilian logistics support personnel from AMC deployed with the first units. AMC's forward element increased from seven people in August 1990 to over 3,000 at the conclusion of combat in March 1991. AMC Southwest Asia was comprised of three main elements: Logistics Assistance Representatives (LAR); Test, Measurement, and Diagnostic Equipment (TMDE) teams; and an Army Support Group. LARs were highly trained civilians who served with the units in the field; the TMDE teams calibrated and repaired critical TMDE for the Patriot tactical air defense missile system, M1A1 tanks, Apache helicopters, and other weapon systems; and the Support Group provided critical supply and maintenance support in the theater.

---

[2]This document, the *Army Materiel Command After Action Report: Operations Desert Shield/Storm* (1991), can be found in the AMC Historical Office archives.

During the early days of ODS, logistics support personnel were processed at Fort Bragg, NC, and other mobilization stations with the units they supported. With increasing numbers of AMC civilians (including contractor personnel) coming from all over the country to deploy to SWA, these stations could not support all the processing requirements. Thus, AMC decided to open a processing center at Aberdeen Proving Ground (APG), MD.

Planning for the center began on 11 September 1990. The first step was to form a team from HQ TECOM (APG's parent command) and from the APG Support Activity. Since APG was a unit mobilization station, the process for preparing for overseas replacement was already in place. Therefore, the team concentrated on determining the scheduling process, number of personnel to be processed, training requirements, and equipment needs.

The center processed its first person for deployment in mid-September and the was fully operational by 1 October 1990. Procedures for identifying, approving, and scheduling personnel evolved as processing continued. People from the inventory control points, the national maintenance points, depots, arsenals, other major subordinate commands, and separate reporting activities reported to the APG center.

Existing doctrine at the start of ODS dealt with the preparation for overseas replacement of military personnel. AMC decided to process Department of Defense (DOD) civilians and contractor personnel through the APG center in essentially the same manner as military personnel. If civilians were expected to deploy far from home, live under field conditions, and work until the job is done -- in essence, to perform side-by-side with soldiers -- then AMC owed them proper training and equipment. In addition, for contractor personnel the contracts were written or amended to include deployment processing requirements for contractors in the statement of work.

With the many sponsors and such short notice, initially it was difficult to institute standard procedures. Essentially, the processing at APG was conducted ad hoc and expedited by telephone and datafax. In time, progress was made in standardizing the procedures, especially with AMC's major subordinate commands. The MSCs established focal points to consolidate requirements and ensure that all the necessary coordination was accomplished. There were still last minute, high-priority deployments and requests for special processing that were handled individually.

Homecoming Parade Support for ODS Personnel. AMC played a significant role in supporting ODS victory parades for our men and women returning from Southwest Asia. Specifically, AMC provided equipment to five FORSCOM sites and three AMC depots for use as static displays at parade/homecoming sites throughout the country. The five FORSCOM sites were Forts Bragg, Hood, Irwin, Riley and Stewart, while the three AMC depot sites were Anniston, Letterkenny and Red River Army Depots.

The effort began on 1 March 1991 when the Vice Chief of Staff of the Army discussed the issue with the AMC Commanding General. The Army saw an opportunity to properly welcome ODS soldiers back from SWA and to capitalize on the public relations opportunity to (re)build the Army's image and support recruiting efforts. As envisioned, numerous parades and other celebrations would take place throughout the U.S., and it would be appropriate to display some of the military hardware used in our lightning victory. To support the effort, eight locations were selected as equipment pool sites that would allow for regional coverage of approved homecoming events. By 10 March 1991, HQDA identified thirteen weapon systems and several soldier support items for static display. FORSCOM was designated as the executive agent, with AMC supporting the effort as required.

The official tasker from HQDA on 14 March 1991 identified the specific details. The shortened and revised list of required weapon systems included the M1A1 Tank, M3 Bradley Fighting Vehicle, Mine Clearing

Line Charge (MICLIC), M109 Howitzer, High Mobility Multipurpose Wheeled Vehicle (HMMWV), Multiple Launch Rocket System (MLRS), Heavy Equipment Transporter (HET), and several helicopter configurations. The soldier support items included Meals Ready-to-Eat (MRE), temperature tents, camouflage nets with supports, and camouflage uniforms. The required support date was established as 29 March 1991.

Almost immediately, FORSCOM and AMC identified to HQDA several problem areas. The abnormally short required support date was unfeasible and was eventually changed to 29 April 1991, just in time for the first scheduled parade on 3 May 1991. Limited aviation assets within the U.S. precluded their being prepositioned in the established equipment pools; they were instead provided, as needed, from the nearest military installation. HETs were also in short supply (pending the return of equipment from SWA), so AMC relied heavily on commercial transportation to move the equipment although only military HETs were actually put on display. Highway weight limitations precluded transport of heavy equipment (i.e., the M1A1 Tank) by anything other than rail, which lengthened the lead time for scheduling purposes, and thus required more advanced notice of a homecoming activity. Supplying the M3 Bradleys and the MLRS systems, also in short supply in the U.S., required approval for delaying the Materiel Fielding Plan to FORSCOM units (which was acquired after some extensive lobbying). Finally, monetary support for the effort eventually utilized ODS funding accounts for all costs incurred by the commands and installations involved.

The DCS worked with AMC's MSCs, several Project/Program Managers (PM) and depots in a manpower intensive effort to ensure that each weapon system was delivered to the equipment pool sites in the proper mix (i.e., two each to every FORSCOM site and one each to every AMC depot site). The soldier support items resided exclusively at the depot sites since they were more easily and rapidly transported to the parade sites and did not need to be as widely dispersed. Despite the short timeframe, additional HQDA/FORSCOM/MSC/PM requirements, such as desert tan camouflage paint and loan agreements, and numerous logistical obstacles, all of the equipment was in-place prior to the required date and was utilized until termination of the pools by FORSCOM on 9 September 1991. However, homecoming activities were scheduled to continue through 1 January 1992.

Public Service Recognition Week. The Office of the DCS for Readiness, supported by the Office of Public Affairs, Exhibits Division, enhanced public awareness of AMC's mission and how the command, especially the civilian workforce, supported ODS, during Public Service Recognition Week, 9-12 May 1991. The four day event on the Washington National Capital Mall included a mural exhibit with promotional continuous play video information on AMC's missions. Two officers and one civilian LAR informed the public about AMC's role in providing support to ODS. Major Grubb and Captain Gore provided operations and aviation expertise, while Ron Craig, 1st Cavalry Division LAR, provided first hand experience on supporting Army forces in Southwest Asia.

Support of Intermediate-Range Nuclear Forces (INF) Treaty

The treaty to eliminate Intermediate-Range Nuclear Forces signed by the United States and the Soviet Union on 8 December 1987 directed the elimination of certain mid-range nuclear capable missile systems. Provisions of the INF treaty mandated on-site inspections. For the elimination of Pershing missiles, over 35 inspections were conducted at the four AMC inspection sites: Longhorn Army Ammunition Plant, Texas; Redstone Arsenal, Alabama; Pueblo Depot Activity, Colorado; and Dugway Proving Ground, Utah. The final elimination inspection for Pershing missiles was conducted at Longhorn Army Ammunition Plant on 6 May 1991. Soviet inspection teams are now visiting each facility on an annual quota inspection basis.

The operations center continued to be the focal point between the Army Operations Center and AMC subordinate commands and installations for notification of INF Treaty inspections at AMC sites.

Logistics Data Network (LOGNET)

LOGNET was a prototype automated logistics planning system that provided logistics planners with the logistics information required to accomplish crisis management planning in support of troop deployment. LOGNET could determine sustainment requirements for critical materiel, ascertain the current asset position, and calculate when in the force deployment scenario these supplies would be exhausted. HQDA DCS for Logistics (DCSLOG), Forces Command (J4), U.S. Army Logistics Evaluation Agency, Systems Integration Management Activity (SIMA) and HQ AMC used LOGNET. The LOGNET system was used extensively during ODS to determine sustainment requirements.

HQ AMC Worldwide Military Command and Control System (WWMCCS)

Facility Upgrade. The upgrade of the HQ AMC WWMCCS facility was completed during FY91. Equipment installed included workstation desks, KG-84 cryptotographic equipment and a multiplexer. One WWMCCS Information System (WIS) workstation, consisting of a Honeywell-MacIntosh computer, capable of multi and concurrent Joint Operations, Planning and Execution System (JOPES) use, was received and will be installed during FY92.

Army WWMCCS Information System (AWIS) Logistics Product Line. During FY91, PM AWIS began planning and implementing the Army portion of a modernized strategic WWMCCS. The Army's Logistics Product Line, the largest of 19 Army product lines, embodies the hardware, software, and communications needed to support the full spectrum of Command and Control (C^2) logistical functions for action officers at the participating commands.

The LOGNET prototype was the basis for the AWIS Logistics (ALOG) software product line. ALOG included 39 events from the existing LOGNET system, and functional descriptions related to Major End Item (MEI) redistribution and force sustainment from HQDA (DCSLOG) and Forces Command J4. The HQ AMC LOGNET/ALOG terminal was undergoing an upgrade that included a Digital 3100 workstation, printer, and 9600 baud STU III cryptographic device.

High Frequency (HF) Radios

As part of the HQDA High Frequency Radio Program, HQ AMC received two HF radios. One of the radios was installed on the tenth floor of the AMC building (where the command group was located), while the other was installed in the operations center. These radios were rendered inoperational due to storm damage. A lightening rod is to be installed on the roof the AMC building, after which damaged parts will be replaced to allow operation of the radios regardless of the weather conditions.

Prepositioned Ships

The prepositioned ships were called forward at the onset of ODS, and began arriving at ports in the Arabian Gulf within one to two weeks. The ships were off-loaded as the requirements for the prepositioned materiel were identified. Upon completion of the off-loading, the ships were returned to the contractors for servicing or reloading, as appropriate.

KL-43 Offline Encryption/Decryption Devices

An Emergency Regional Reporting System (ERRS) test was to be conducted during the month of August 1990. Due to the start of ODS, the test was cancelled. Keying material was on hand and available for future ERRS testing by AMC.

Exercise Participation and Support

The DCS supported and monitored the Ulchi Focus Lens 91 (UFL-91). An AMC staff officer conducted staff visits throughout the Pacific Command (PACOM) and served as staff officer at the Eighth U.S Army (EUSA) G-4 Logistics Operation Center at Taegu, South Korea, during this exercise.

Exercise Management Conference

During the period 12 to 16 August 1991, CECOM hosted the 1991 Exercise Management Conference at Fort Monmouth, New Jersey. The conference was chaired by HQ AMC and provided the opportunity for the exchange of knowledge, ideas, and new concepts. Attendees included HQ AMC staff, the MSCs, Separate Reporting Activities (SRA), and MSC subordinates.

Reserve Components (RC)

The General Officer Reserve Components Policy Council (GO RCPC) met quarterly to develop issues related to improving AMC support to RC readiness. These issues included actions to improve the management of the AMC Individual Mobilization Augmentation (IMA) program and to increase the support to RC units training at AMC facilities. To assist in focusing the issues, LTG Conaway, Chief, National Guard Bureau, and MG Sandler, Chief, Army Reserve, were special keynote speakers, addressing RC logistical support issues for the council.

The RC transportation support to AMC Base Realignment and Closure (BRAC) actions, as well as RC unit support to the Ammunition Demilitarization, provided realistic training opportunities to RC soldiers. This training supports missions relocating tons of ammunition and supply as the depots realigned functions. They were of value both to AMC, which saved funds while having a needed transportation function performed, and to the RC units and soldiers who were able to actually perform portions of their mobilization missions during peace time and thus improve their unit's mobilization readiness.

During ODS, a total of 5 RC units and detachments had been activated to support AMC depot activities. These supply and maintenance units augmented AMC civilian and military staffs at New Cumberland, Sharpe, and the Red River Depots, with McAlester Ammunition Plant and the AMC SWA Support Group receiving support from two other RC units. In addition, individual mobilization augmentees augmented AMC Operation Center staffs at the headquarters and at many of the subordinate commands Operations Centers, as well as serving in a variety of other DCS's throughout the headquarters.

The two High Tech Regional Training Sites - Maintenance (HTRTS-M) facilities at Tobyhanna and Sacramento became fully operational, providing valuable hands-on training experience for numerous RC units and soldiers. The continued upgrading of the equipment and facilities and the instructor certification by TRADOC representatives helped to maintain the high standards and excellent instruction ongoing at these two training sites.

Customer Support Division

Organization and Personnel

Effective 1 October 1990, the Aviation Office was reorganized into the Analysis and Systems Division and was renamed the Customer Support Division. It was headed by COL Thomas Johnson until July 1991, when he left to become the Commander, Corpus Christi Army Depot. On that date, COL Kenneth Culwell became

Chief, Customer Support Division, and Mr. John Savelli assumed duties as Chief, Aviation Office and AMC Aviation Officer, both positions previously held by COL Johnson.

Aviation Resource Management Surveys (ARMS)

The ARMS are conducted at each AMC Aviation Activity on an 18-month cycle. They include a compliance review of the activities as well as serving as the AMC Commander's evaluation of aviation units in the major functional areas of Operations, Standardization and Training, Aircraft Maintenance Management, Pilot Proficiency Evaluations, Air Traffic Control, etc.

The office completed 13 ARMS evaluations and one assistance visit during FY91. The results of each evaluation are as follows:

Unit/Activity	Results	Remarks
Airworthiness Qualification Test Directorate, Edwards AFB, CA	SAT	
Northeast Flight Detachment Chambersburg, PA	UNSAT	Reeval - SAT
AMCCOM Flight Detachment Moline, IL	SAT	
Aviation Applied Technology Test Directorate, Fort Eustis, VA	SAT	
Airborne Electronics Research Detachment, Fort Belvoir, VA	SAT	
Phillips Army Airfield Aberdeen Proving Ground, MD	SAT	
AMCCOM Flight Detachment Morristown Municipal Airport Morristown, NJ	SAT	
Seneca Army Depot Flight Detachment, Romulus, NY	SAT	
Flight Operations Directorate Redstone Army Airfield Redstone Arsenal, AL	SAT	
TACOM Flight Detachment Oakland/Pontiac Airport, Pontiac, MI	SAT	
Corpus Christi Army Depot Flight Detachment, Corpus Christi, TX	SAT	

Anniston Army Depot Flight Detachment, Anniston, AL	SAT
Red River Army Depot Flight Detachment, Texarkana, AR	SAT

Operational Support Airlift (OSA)

During FY91, office representatives attended a series of meetings with HQDA, TRADOC, the Centralized Army Aviation Support Office (CAASO), FORSCOM, Office of the Chief, Army Reserve (OCAR) and Army National Guard representatives to develop a concept plan for the consolidation of CONUS C-12/U-21 aircraft to support all CONUS OSA requirements.

Cargo Aircraft

AMC received eight C-23A Shorts fixed wing cargo aircraft from the Air Force. The Aviation Office established the Flight Training and Standardization Program, and the aircraft were distributed as follows: two to MICOM at Redstone Arsenal and one each to AMCCOM at Rock Island, AMCCOM at Morristown, NJ (Picatinny Arsenal Flight Detachment, Morristown Municipal Airport), CECOM at Lakehurst Naval Air Station (CECOM Flight Detachment), DESCOM at Corpus Christi Army Depot, TECOM's Aviation Technical Test Center at Fort Rucker, and the Program Executive Officer, Intelligence and Electronic Warfare.

Monthly Readiness Briefing to the CG

With the advent of ODS in August 1990, the Monthly Readiness Briefing to the CG was suspended. As of the end of the fiscal year, it had not been reinstituted.

Status of Resources and Training System (SORTS)

In FY91, AMC participated in the monthly SORTS briefing presented to the Chief of Staff, Army (CSA). The monthly CSA SORTS briefing provided an analysis of the Army's status of resources and training, forecasts of future status, an update of the modernization effort, and a progress report on reshaping the Army to meet mandated cuts in personnel. General Officers from HQ AMC and AMC major subordinate commands regularly attended these monthly briefings.

Unit Status Reporting

During FY91, the division continued to receive and process Unit Status Reports for AMC TMDE units. These reports summarized the unit's equipment and personnel. The reports were reviewed for accuracy and analyzed to determine if the reporting unit(s) were experiencing problems that impacted readiness and if assistance was required. Upon completion of the review, the reports were forwarded electronically to HQDA and the Office of the Joint Chiefs of Staff.

Beginning in January 1991, during ODS, the 1109 Aviation Classification and Repair Depot (AVCRAD), Connecticut Army National Guard (ARNG), Groton, CT, was federalized and assigned to DESCOM for command and control and deployed to SWA to support the U.S. Army Support Group. Concurrent with the unit's assignment to DESCOM, HQ AMC assumed responsibility for its Unit Status Reporting. A technical assistance visit was made to the unit to assist with the transition from reporting through the Director, ARNG to reporting through HQ AMC. The 1109 AVCRAD was returned to Connecticut's control in May 1991, after the completion of ODS, and Unit Status Reporting responsibility passed back to the Director, ARNG.

Readiness Integrated Data Base (RIDB)

The identification of field logistics readiness problems meant little without an in-depth analytical capability. AMC is 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 is the RIDB located at the U.S. Army Materiel Readiness Support Activity (MRSA) in Lexington, KY.

MRSA compiles, edits, analyzes and stores unit materiel readiness reports submitted for ground, missile and aircraft in the RIDB. The RIDB integrates this historical data and provides readiness trend data to field commanders and decision makers throughout the Army. Specific examples of RIDB readiness trend reports include the Equipment Historical Availability Trend (EHAT); Selected Command Unit Review (SCUR); and the Unit Equipment Status Serviceability Report (UESSR).

During FY91, the RIDB was accessible by a host of remote users that grew in number every month. Users included HQ AMC, Office of the Deputy Chief of Staff for Logistics (ODCSLOG), Customer Support Division; HQDA ODCSLOG Aviation Office; Army and Air Force National Guard Bureau, Army Logistics Division, Maintenance Branch; six AMC MSCs; HQ FORSCOM ODCSLOG, Readiness Division; AMC-Europe; U.S. Army Europe, 200th Theater Army Materiel Management Center (TAMMC); AMC-Far East; and many Logistics Assistance Offices (LAO) located at posts, camps, and stations throughout CONUS. Additional LAOs were added monthly with access via STU-III telephone. The HQ AMC ODCSLOG served as the Program Management Office for RIDB.

Army Materiel Status System (AMSS)

AMSS is an automated materiel readiness reporting system. The functional description was prepared in 1988 by the Office of the Deputy Chief of Staff for Readiness. The AMSS utilizes two existing Standard Army Management Information Systems (STAMIS), 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 of the total weapon system, including all on-board subsystems. Since the AMSS utilizes existing STAMIS reports to collect NMC data, it was virtually transparent to the user, a major AMSS achievement. The NMC data collected via AMSS will be in digital format, a major improvement over the current manual reporting system.

The Combined Army Support Command began software development for AMSS in September 1990 with completion scheduled for March 1992. Software acceptance and subsequent fielding was planned for the second quarter of FY92. Due to hardware limitations in the Reserve Components, AMSS was to be fielded first in the active Army divisions, with non-divisional and RC units coming on line at some future date.

Logistic Assistance Program Activity

Organization, Manpower and Personnel

During FY91, the following changes in leadership occurred: COL Robert Lytle replaced COL Tommie Mason as the LAO FORSCOM; COL Allen MaGill replaced COL Wimpy Pybus as LAO Europe; Mr. Timothy Haymend replaced Mr. Harold Josephson as LAO FAREAST, and LTC David R. White replaced LTC Gary Border as LAO SOUTHCOM. There was a reduction of 23 civilian positions, bringing the authorized civilian strength to 229.

To better portray areas of responsibility and the program's relationship to Army field elements, the following LAO offices were renamed to coincide with the Corps or MACOMs receiving primary support:

1) LAO CONUS changed to LAO FORSCOM;
2) LAO CONUS EAST changed to LAO XVII ABN CORPS;
3) LAO CONUS CENTRAL changed to LAO III CORPS;
4) LAO CONUS WEST changed to LAO I CORPS;
5) LAO EUROPE NORTH changed to LAO V CORPS; and
6) LAO EUROPE WEST changed to LAO 21st TAACOM.

Operation Desert Shield/Storm

Support for ODS was, of course, the most significant issue faced by the LAPA program in FY91. In response to the support requirements of ODS, LAO Southwest Asia was established, with COL Robert Lytle as the chief. LARs deployed with the initial troop deployments from the Continental United States, and LARs from Europe deployed with the deployment of the VII Corps from Europe. LARs were involved in every aspect of ODS from initial deployment to assisting the troops to redeploy after the fighting was over. Support to the soldier was paramount -- LARs worked around the clock, seven days a week to ensure that Army weapon systems and equipment was were properly supported. Approximately 600 LARs rotated through SWA and continued their support into FY92 in Kuwait.[3]

Project Vanguard

Project Vanguard, one of a number of studies of how the Army should be downsized, evaluated the Logistic Assistance Program (LAP) and concluded that LAPA and LAP positions should be eliminated, except for a small cell of 100 people. A follow-on study by the Logistics Evaluation Agency reaffirmed the need for LAPA and the LAP as positive contributors to Army readiness. These various studies have caused LAPA to evaluate how the program should be structured in 1995.

Deputy Chief of Staff for Supply, Maintenance and Transportation

Organization and Personnel

As of 1 October 1990, the DCS had a total of 203 authorized personnel: 189 civilians and 14 military. The DCS's structure as of 1 October 1991, utilizing the FY92 authorization, was 14 military and 189 civilians for a total of 203 positions. The DCS was divided into two directorates. Under the Director for Logistics Management were three divisions: (1) Supply; (2) Maintenance; and (3) Transportation and Equipping. The Director for Logistics Support also had three divisions: (1) Logistics Resources; (2) Integrated Logistics Support; and (3) Logistics Systems.[4]

---

[3]A more detailed discussion of the LAPA role in ODS can be found in a draft history by the AMC historical office on AMC support for ODS.

[4]This section is based on the FY91 historical submission by the office of the DCS for Logistics. Memorandum, AMCLG-OM (2014C), Assistant Deputy Chief of Staff for Logistics, A. David Mills, for Chief of Staff, ATTN: AMCHO (Mrs. Lockwood), Subject: AMC Annual Historical Review (AHR) (RCS CHIS-

During FY91, MG Charles M. Murray served as Deputy Chief of Staff for Supply, Maintenance and Transportation and Mr. A. David Mills was his ADCS. The Director for Logistics Management was Mr. James C. Hill and the Director for Logistics Support was Mr. George L. Moore. The Executive Officer was Major M. Boshears. The Division/Office Chiefs were:

COL B. C. Bryant, Supply Division
COL D. Longley, Maintenance Division
COL M. A. McFarlin, Transportation and Equipping Division
COL D. J. Fowler, Logistics Resources Division
LTC T. A. Bruno, ILS Division
COL J. G. Rinecker, Logistics Systems Division
Ms. S. S. Hatch, Operations Management Office
Mr. J. P. Obermyer, Special Programs Office

Director for Logistics Management

Supply Division

War Reserve Automated Database. The Operational Project automated database was demonstrated to HQDA on 22 May 1991. During the course of this demonstration a question emerged: "Can this system be used to show the status of war reserve assets?" The War Reserve Automation Working Group met in Harrisburg, PA from 23-25 July 1991. The meeting was chaired by HQDA (DALO-SMW) and attended by representatives from HQ AMC, AMCCOM, U.S. AMC Systems Integration and Management Activity East and West (SIMA-E, SIMA-W), U.S. AMC Catalog Data Activity (CDA), U.S. Army Combined Arms Support Command, U.S. Army General Materiel and Petroleum Activity and U.S. Army Support Activity.

After many discussions and briefings on the Balance of Sustainment Model and the Total Asset Visibility project, the conclusion was reached that a datacom database designed to show status of war reserve assets should be built at SIMA-E along with the currently existing operational project database. Data was to be down-loaded from CDA and the AMC MSCs for the database. The tasking to build this database was received from HQDA on 8 August 1991. A message was sent to SIMA-E and all concerned, directing development and fielding of the database in accordance with HQDA guidance. The initial milestone was to have this database up and running by 31 December 1991.

Economic Order Quantity/Variable Safety Level (EOQ/VSL) Enhancements in Commodity Command Standard System (CCSS). In August 1990, significant enhancements were fielded to CCSS EOQ/VSL, which yielded efficiencies in the secondary item safety level computation. Due to the impact of ODS on the requirements forecast, these efficiencies would not be measurable until FY93. Various DMRD initiatives currently ongoing across DOD will cause the secondary item forecast to become extremely volatile. The enhanced model will allow AMC to accommodate this volatility without impacting stock availability for the secondary item program.

Department of Defense Inventory Reduction Plan (DODIRP). The DODIRP was a management plan developed by the Office of the Assistant Secretary of Defense (Production and Logistics) (OASD[P&L]) for the purpose of reducing the cost of doing business while maintaining materiel readiness. It was divided into 12 functional areas with actions and implementing milestones. The DODIRP was initially transmitted from

---

CHIS-6(R3)), FY91. Copy on file in AMCHO Archives. Other sources are as indicated.

OASD(P&L) to HQDA for implementation in 1990 and an updated version was disseminated to HQDA in June 1991. HQ AMC participated in the development of the Army's implementation plan for the DODIRP by staffing the plan among functional offices within HQ AMC during the first quarter of FY91. Based upon input provided by AMC, HQDA published the Army's draft implementation plan for the DODIRP in September 1991. Subsequent to publication of the Army Inventory Reduction Management Plan, AMC provided additional input to the plan through staff development of initiatives and participation in HQDA-chaired workshops in September and October 1991.

On-Line Input Parameter System. This system was installed at all AMC major subordinate commands in June 1991. This initiative placed the parameters for the Budget Stratification System on-line with terminal access for review and update. The data provided in the Budget Stratification served as a basis for the development and defense of secondary item program budgets. Flexibility in creating and editing Budget Stratification parameters to influence output would assist HQ AMC and the MSCs in preparing and justifying program budget requests and responding to higher headquarters' reporting requirements. This capability was required to comply with the Information Systems Command's direction to discontinue the use of keypunch input media.

Modification to the Weapon System Supply Performance Analyzer (WS/SPA). In August 1991, features were incorporated into the WS/SPA which provide functionals with the capability to input target supply availabilities. The WS/SPA was then able to generate shortage cost values necessary to obtain the desired supply availability. In addition, shortage cost value ranges were produced to assist in analyzing the cost benefit of safety level investment. Features facilitated additional analysis of safety level investment based on weapon system combinations and within specified tolerance limits.

Daily Distribution Execution System (DDES). This system, initiated in during FY91, vastly improved the Class VII distribution system at the wholesale/retail levels by providing Requisition Validation/Equipment Release Priority System (REQVAL/ERPS) data in a more timely manner. This was done by updating asset data on a daily, rather than a monthly basis. Field units send update data directly to SIMA. The resulting changes were sent immediately to both the wholesale/retail levels. The DDES is now operational in USAREUR; SWA installation was nearly completed; CONUS installations and EUSA will be on line 1QFY92; worldwide conversion is estimated by 4QFY92.

European Redistribution Facility (ERF). ERF operations in FY91 were dynamic, including significant support to forces deploying to Southwest Asia for ODS and retrograde processing support as materiel returned from SWA. To accommodate SWA retrograde, the ERF expanded the storage mission to three sites. Additional warehouse space was provided by USAREUR at the Nahbollenbach site as well as funding for required storage aids and additional leased equipment at all three sites.

Saudi Arabian Redistribution Facility (SARF). The SARF was established as a function of the Army Support Group in Saudi Arabia. It began manual operation in November 1990, with on-line operation beginning in February 1991. Its mission was to expedite the flow of ODS retrograde from Southwest Asia to the appropriate storage or maintenance site, either in or out of theater. This was accomplished by adapting the pre-screen logic employed at the ERF sites in Germany. This logic provided on-line disposition of retrograde materiel processed as well as visibility to the respective item managers, whether wholesale or retail. As of November 1991, approximately $1.7 billion of materiel has been processed by the SARF. The projected SARF closeout date was 15 December 1991.

Consumable Item Transfer (CIT) to 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. Due to ODS, the CIT Program was deferred to 2 April

1991. By the end of FY91, the Army was processing 1,000 items per month from each MSC to DLA Centers. The office of the DCSSMT estimated that approximately 186,000 items would be processed to DLA by FY94. The MSCs used automation to facilitate the transferring data between the Army and DLA.

Supply Management Data Base (SMDB). AMC was developing SMDB as a result of a DOD tasking to develop a Data Base Management System which would enhance the Commodity Command Standard System. This would provide users with the capability to access data from multiple files simultaneously and update data in a "real-time" mode. Further study indicated that a system was needed which would be distributive/cooperative in nature and would maximize utilization of available resources by employing additional interactive processes (i.e., trend analyses and "what-if" capabilities). The SMDB would also utilize a relational data base, Model 204, with the ability to extend, store, and retrieve historical trend analysis and provide improved audit capabilities. The development of SMDB represented the most comprehensive and ambitious secondary item automation initiative undertaken in recent years. Milestones I and II were approved during FY91. Estimated completion date for this project was June 1994.

Maintenance Division

Army Oil Analysis Program (AOAP). The Army Oil Analysis Program was supported by 23 fixed-base laboratories and 2 field mobile labs. Eighteen of the twenty-three were located in CONUS and five were located outside the U.S. Fourteen of the CONUS labs and one of the OCONUS labs were contractor operated. There were also five depot labs used for quality assurance after depot overhaul and repair of AOAP-enrolled equipment. The lab at Bamberg, Germany closed May 1991. The work in USAREUR was redistributed between the Coleman Barracks and Giesson Labs.

There were several documents maintained by the AOAP Program Director (PD), which provided guidance and instruction to govern the program. The PD-AOAP periodically submitted changes to update several of the documents on a regular basis.

The PD-AOAP was actively involved as technical advisor for the two Mobile Labs which were completed and deployed for duty in ODS by the Project Manager, Petroleum Water Logistics. One lab was to be retained in Southwest Asia (SWA) until December 1991 for support of equipment not yet returned to CONUS. The other lab was returned to Fort Campbell, KY, for possible future deployment.

The PD-AOAP initiated a review of the program to adapt to the downsizing of the U.S. Army. This included establishment of requirements to adapt the program to support deployable forces in transition and during wartime in compliance with the Airland Operations Concept. This was expected to contribute to TRADOC preparation of doctrine for current wartime application of the AOAP as a maintenance diagnostic tool during the different phases of any future conflict.

During FY91, the PD-AOAP contributed to the Joint Oil Analysis Program (JOAP) by chairing the Coordinating Group to review various issues. The PD-AOAP also worked with the Navy and Air Force to evaluate two spectrometers for JOAP Certification. An Army major was assigned as Technical Director of the JOAP Technical Support Center (TSC) during FY91. The TSC Director and the PD-AOAP coordinated with the Air Force and Navy to establish a new training program for a more comprehensive training curriculum to include Physical Property training and Lab computer operation.

AOAP Operation Desert Shield Update. The AOAP wartime planning in Army Regulation 750-1, Army Materiel Maintenance Policy and Retail Maintenance Operations, called for the use of mobile laboratories, portable systems, and fixed based facilities in theater(s) of operation. Army assets consisted of two mobile laboratories and fixed-based laboratories at worldwide locations. No approved portable systems were available.

Two mobile AOAP laboratories were deployed -- one staffed with military personnel, the other with contractor personnel. These two laboratories made in-country oil analysis support available to all Army units and any other U.S. military services or allied nations requesting service. The presence of oil analysis in-country decreased sample "turn around" time, providing more timely support, thereby increasing flight and equipment safety. Plans for sustained support in-country by a fixed-based laboratory were developed; however, based on war developments, the plans were not implemented.

Lexington-Blue Grass Army Depot (LBAD) fabricated two mobile AOAP laboratories for Forces Command (FORSCOM). The first one deployed to SWA in October 1990. The second was fabricated August through November 1990 and deployed in February 1991. Representatives from the AMC Materiel Readiness Support Activity (MRSA), AOAP Branch, served as technical advisors to LBAD throughout the fabrication process for both laboratories.

The MRSA coordinated with FORSCOM and LBAD for shipment of the mobile laboratories deploying to SWA. The MRSA also coordinated and assisted in training 10 military personnel at Fort Campbell in AOAP laboratory procedures and operation and maintenance of the first mobile laboratory van and generator, 27 August through 5 October 1990. The MRSA deployed two technical representatives with the first mobile laboratory to assist in initial setup and operation, 17 October through 18 November 1990.

A shortage of AOAP-trained military personnel within the Army was identified when the only AOAP-certified military evaluator at the first mobile laboratory left on emergency leave. Two technical representatives were provided by MRSA 26 December 1990 through 25 March 1991, to serve as evaluators until the military could deploy additional certified evaluators. While on site, the representatives tested and certified six military personnel as evaluators. In SWA, MRSA representatives provided on site technical support to the second mobile laboratory and served as evaluators from the time the lab opened on 21 February 1991, until contractor support was in place on 19 March 1991.

MRSA developed an Integrated Support Plan (ISP) for AOAP support during ODS. The ISP identified equipment, supplies, actions, and responsibilities required to establish and maintain oil analysis support within the theater of operations. It was distributed for staffing 20 November 1990, but was not fully implemented due to the short duration of the war. As part of ODS Lessons Learned, issues addressed by the ISP (specifically, the need for concepts and doctrine on the wartime role of AOAP) were developed and submitted through Joint Universal Lessons Learned Systems. These issues were addressed at a June 1991 AOAP wartime role meeting of key players held at FORSCOM. After various data input from the MACOMs Army-wide, an initial evaluation of the AOAP was presented to the HQDA TAMMP Quarterly review at the FY91 Worldwide Maintenance Conference. It was decided that a meeting should be held to develop a mission need statement, with stated requirements for submission to TRADOC. This was planned for early FY92, to have TRADOC establish doctrine and procedures for the downsized Army using the Airland Operations Concept.

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 AMC in 1979. The ADMRU program maintains an assigned strength of over 1300 soldiers and consists 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 2700 aircraft assigned to the Army National Guard (ARNG). The ADMRU mobilization missions are 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 12 three-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) classified, repaired, and returned to the supply system in excess of 4800 components. This has resulted in a cost avoidance of nearly $15.6 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 being reclassified and returned to the supply system during the fiscal year. This included AH-64 and CH-47 components in support of ODS.

Due to political and economic developments in Europe, HQ USAREUR elected not to resource the AVCRAD facilities in Brussels for FY92. Furthermore, decisions were made to relocate the AVIM level component repair program from the AVCRAD to the 21st TAACOM in Germany. Relocation of this program began in July 1991 and was expected to be complete by December 1991. Due to the fact that as of the end of the fiscal year AVCRAD lacked both pre- and post-mobilization missions in USAREUR, the future of the concept and organization was being reviewed.

Chemical Agent Resistant Coating (CARC). Operation Desert Shield established an unprecedented immediate requirement for thousands of gallons of CARC Tan 686 Paint. The CARC had a limited shelf life and therefore was not available to support this one-time effort. The General Services Administration (GSA) and civilian industry were contacted and requested to surge its production. Overall, 430,000 gallons of CARC were produced and distributed to deploying forces and deployed forces in Southwest Asia. This required realignment of priorities and utilization of all modes of transportation to support around the clock painting at most CONUS installations.

As ODS erupted, the requirement to identify friendly forces to reduce casualties from friendly fire became an immediate need. Once again, civilian industry responded and within hours had a sample available for AMC inspection and evaluation. In a matter of days, 7,000 gallons of special paint was airlifted to SWA and was proven successful in the reducing casualties from friendly fire. Upon termination of ODS, the need to repaint vehicles Woodland Green for redeploying forces was also an immediate requirement to maximize available transportation. To meet this requirement, 41,000 gallons of Green 383 CARC paint was airlifted to SWA.

Materiel Maintenance Intern Program (MMIP). The DA central MMIP provided a pipeline of trained personnel to fill maintenance management series positions throughout the Army. Initial formal academic instruction was provided at the School of Engineering and Logistics (SEL), Red River Army Depot, Texarkana, Texas. Interns entered the Maintenance Management Program at the GS-5 level and spent the first 38 weeks at SEL receiving formal instruction, followed by rotational on-the-job training and intensified training at the permanent duty location. Upon successful completion, interns were placed in GS-9 positions.

During FY91, career program managers and the DA Functional Chief Representative began working to upgrade the official full career program grade structure. If the proposal under review was accepted by all

MACOMs at the December 1991 planning board, the current GS-5 entry level and GS-9 target grade for the intern program were to be upgraded to GS-7 and GS-11, respectively. Implementation of this proposal would have to take place gradually over time to ensure all facets of training, budgeting, recruitment, and placement were addressed and properly coordinated for a smooth transition.

Theater Aviation Maintenance Program-Europe (TAMP-E). The TAMP[5] was part of AVSCOM's Directorate for Maintenance and managed contractors who provided maintenance support to theater aviation units. It was a joint AMC/USAREUR initiative to enhance aviation maintenance capabilities. AVSCOM's acquisition plan was approved by HQDA in February 1987 and contained an airframe contract and a components contract. The airframe contract was awarded to Agusta-Teamco, Belgium in November 1987 and provided backup AVIM. During FY91, this contract was providing 32 field teams to aviation units. These teams were at 18 locations in Europe, with an additional 2 teams located in Turkey. A facility in Brussels provided overflow airframe repairs, performing AVIM and limited Depot maintenance on a case by case basis. There were 69 aircraft being worked as of the end of the fiscal year.

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 1178 overhauled components had been returned to theater by the end of the fiscal year, while 227 components were being worked on.

Two additional contracts had been added to TAMP in FY90: The South of Alps (SOA) contract awarded to Kay and Associates, which provided contractor field team support for Aviation units in Italy, Greece, and Turkey; and the Martin Marietta Special Repair Activity for depot level repair of AH-64 Target Acquisition and Designator Sight (TADS)/Pilot Night Vision Sensor (PNVS) components. These two contracts were still in effect at the close of FY91.

Theater Aviation Maintenance Program - Southwest Asia (TAMP-SA). The TAMP-SA program was divided into 3 areas of aviation. TAMP-SA (Base), in Abu Dhabi, performed major airframe and component repair including engine enhancement, rotor blade, hydraulic, avionics, and ground support equipment. TAMP-SA (Forward) provided classification support, Aviation Intermediate Maintenance pass back support, and selected depot modification work order repair. TAMP-SA was a limited TAMP-Forward and provided limited component and engine repair, blade taping, and contact teams to units to care for aircraft.

DOD Exemplary Facility (EF) Program. A Continuous Process Improvement (CPI) Task Force was established at HQ AMC (May 1991 - January 1992), to manage the development of a new performance-based contractor assessment program. The objectives of the CPI program were to improve performance of participating contractors and to establish a DOD core of world-class facilities. The program entailed contractor self-assessment and application, followed by Government assessment, and includes defined performance standards; metrics and validation methodology; process capability assessment; and the principle of Continuous Process Improvement. Other features included certified government evaluators, product/process orientation versus functions/procedures and the contractor's supplier/vendor base.

Several initial training sessions were conducted for Government and contractor personnel at selected contractor facilities during FY91. A formal training class at the Army Management Engineering College was scheduled for January 1992.

---

[5]The TAMP management office was headed by Mr. Charles Ameigh, who replaced LTC Tom Cole in July 1991.

Later in FY91, AMC became a participant and supporter of the DOD EF Program, and the CPI Task Force's (later known as the EF Task Force) efforts were focused to support the DOD EF Program. The objective of the DOD EF Program was to improve the performance of participating contractors, and reduce the Government resources required to administer and monitor contractor performance. Participants included AMC, DA, DLA, Air Force, Marine Corps, and Navy. HQ AMC worked with DLA and the other Services to incorporate Continuous Process Improvement, Acquisition Improvement Reviews, and Contractor Performance Certification Program lessons learned into the EF program. AMC expected to continue to support the EF Program and to work with DLA and the other services to implement a program to significantly improve the Army's Defense contractor base.

Transportation and Equipping Division

Redeployment from SWA. ODS and the redeployment of forces from SWA dominated activities and events in FY91. The preparation, submission, and distribution of DOD/Army Supply and Transportation documentation afforded AMC the opportunity to validate policies and procedures developed subsequent to Vietnam and *Nifty Nugget*.[6]

Throughout the year, the Transportation Division found it necessary to speed up the preparation of documentation, which lagged behind the physical handling and movement of the items. The Ocean Manifest listing cargo lacked sufficiently detailed data, which hampered container disposition in SWA. The lack of such data was severely felt when hostilities halted suddenly and the supply pipeline was reversed; contents of containerized shipments could not be identified from documentation; documents were not available in many instances and, when available, proved somewhat inadequate.

It became necessary to dispatch Shipper Service Representatives from the AMC Logistics Control Activity (LCA) who had strong contact to the commodity commands, DLA, GSA and FORSCOM to the CONUS ports of debarkation to provide immediate disposition instructions. The field Shipper Service Representation was primarily conducted by IMAs called to active duty for the war and subsequently extended to cover the retrograde and redeployment operations. These personnel did an outstanding job reviewing and providing disposition for 10,689 container (SEAVANS) loads of cargo with an estimated value of $1,175,306,457.

Cargo Manifest. Through coordination and cooperative effort, the Command was able to obtain ship manifest data from SWA to CONUS through EasyLink, a telecommunication system contracted by the Military Traffic Management Command (MTMC). The system was installed 2 May 1991 on two PCs: one at the LCA and the other in the Transportation Division at HQ AMC.

Cargo Diversion During Operations. As AMC proceeded through ODS, the supply priority system was subjected to many abuses, both push and pull.[7] As a result, the aerial ports began to flood and the cargo exceeded the CINC CENTRAL's air space allocation, thereby requiring cargo to be diverted from air to surface movement while at the aerial port. ARCENT representatives were assigned to the APOEs and CCPs to direct the diversions.

---

[6]*Nifty Nugget* was the first post-Vietnam era Army-wide total mobilization exercise, undertaken in 1976. The exercise revealed a tremendous number of deficiencies in mobilization planning and capabilities, some of which required long-term "fixes." Improvements were continuing during FY91.

[7]Push shipments were predefined packages sent from CONUS without previous requisition from SWA. Pull shipments were requisitioned by customers.

Air Transportation During ODS. The amount of materiel moving through the Defense Transportation System during ODS was massive. Both air and surface modes were taxed by the size of the movement requirement. The difference between the requirement and the capability within the air system was critical. In December 1990, the Joint Transportation Board allocated available airlift to the Southwest Asia theater. The Army portion of the allocation was 425 short tons per day. This mandated close coordination between HQ AMC, ARCENT REAR, and the Army Airlift Clearance Authority to control the flow of critical cargo into the air system. Air validation procedures were worked out among the three agencies for implementation by the Airlift Clearance Authority.

Stock Fund Secondary Item (SI) Second Destination Transportation (SDT) Funding. In FY91, HQDA directed HQ AMC to develop procedures, budget for, and pay overseas transportation bills for stock funded items. The LCA was directed to establish a program to track all stock funded materiel shipments, including CONUS, OCONUS, and retrograde movement, to assist in the management of this new mission. This was in line with preparation for FY92, when OSD was to publish policy under the new Defense Business Operations Fund (DBOF), which was to specify that CONUS depots and CCPs were to pay all outbound transportation bills and ICPs were to pay the inbound bills. As of the end of the fiscal year, the SDT funding procedures had not been formally executed as intended by HQDA and OSD. This was due to automated system limitations, expressed as a concern to OSD by all Services and DLA.

Electronic Data Interchange (EDI) of Transportation Documents and Data. As the HQDA executive agent for Army transportation policy, HQ AMC had the lead for implementing EDI technology at those AMC installations with the greatest transportation missions. This was being done via the Transportation Division of DCSSMT, Project Manager for Standard Depot System Modernization (PM SDS MOD), SIMA, DESCOM and AMCCOM, by essentially piggy-backing EDI onto SDS MOD, which was to be ready for use during FY92. Initial DOD milestones include EDI of Government Bills of Lading (GBL) to DFAS-Indianapolis in FY92. The same technology was to allow GBL movement to and from AMC installations, CONUS customers, and ports. As of the end of the fiscal year, action was being taken to develop communications costs for the depots and satellite ammo plants to begin using EDI. Future efforts were to show expansion throughout the rest of the Defense Transportation System, CONUS, and OCONUS.

Defense Transportation Tracking System (DTTS). The DTTS procedures, and policy and procedures in DOD 5100.76-M, *Physical Security for Conventional AAE*, were combined by DOD, HQDA and MTMC to require the use, by FY93, of the Satellite Motor (SM) Surveillance Service[8] as a Transportation Protective Service for all conventional AAE. While HQ AMC was coordinating requirements based on HQDA taskers, unilateral decisions were made to implement these new requirements. As of the end of the fiscal year, HQ AMC, AMCCOM and MICOM were coordinating the feasibility of implementing the new procedures and funding requirements, especially since the new SM might substantially increase CONUS line haul transportation costs.

Management Plan for DMRD 915, Issue Priority Group Initiative. During FY90, OSD had directed new supply and transportation procedures in order to control what appeared to be excessive use of priority transportation to fill requisitions. These procedures were incorporated in DMRD 915 and HQDA directed HQ AMC to develop a management plan which would track effectiveness of the new procedures and verify OSD's expected savings in transportation expenses. The policy and plan were developed and published. HQDA supply and transportation procedures were to be changed to match the OSD procedures for requisitioners. HQ AMC continued to assist HQDA in this effort. Once the changes were made and

---

[8]This is a CONUS system operated by the Navy using a satellite to monitor trailers hauling arms, ammunition and explosives, using transponders on the vehicle.

requisitioners were to begin implementing them, HQ AMC, via the LCA, expected to be able to track the shipments and transportation costs.

HQDA Management Decision Package (MDEP) and Force Modernization Weapon System (FMP) Fielding Costs. HQ AMC was tasked by HQDA to establish procedures to track over-ocean transportation costs for FMP and routine National Inventory Control Point (NICP)-directed shipments. This entailed assignment of MILSTAMP Transportation Account Codes (TAC) for almost every shipping scenario worldwide and, especially for FMP, systems changes to match the assignment of FMP MILSTRIP "I" Project Codes with published MILSTAMP TACs. This effort was still ongoing and was to eventually indirectly assist AMC to implement the new OSD unresourced funding missions in areas of providing information for shippers and ICPs to verify overseas bills.

Army Airlift Clearance Authority. During FY91, the Army Airlift Clearance Authority at the Logistics Control Activity processed 205,917 air eligible shipments weighing 210,504 short tons. Of this total, 8,683 shipments weighing 44,417 short tons were diverted to surface movement. This equaled a cost avoidance of $105,457,606. Compared with the preceding year, this represented an increase of 203 percent in number of air eligible shipments (284 percent increase in weight), an increase of 159 percent in diverted shipments (382 percent increase in weight) and a 589 percent increase in cost avoidance. This increase was directly attributable to ODS. After ODS, the trend resumed the downward slope it had taken before the operation.

Direct Support System/Air Line of Communication (DSS/ALOC). At the close of FY91 there were 987 Army units recorded as using DSS, of which 139 were ALOC units. This number excluded a small number of DSS/ALOC units remaining in SWA at the end of the fiscal year. Compared to 1,005 recorded DSS units the previous year, there was a net drop of 18, most of which were associated with the strength reduction in Europe. In FY90, 214 units were reported as ALOC; however, this large number was inflated by CONUS-based units converted to ALOC in support of the ODS deployment.

Ongoing FY91 shortfalls in Second Destination Transportation funds for air overseas shipments resulted in two major actions taken by DA. DA continued the suspension of ALOC until December 1990, except in support of ODS. All shipments of priority 09-15 materiel to ALOC units were via ocean carrier during this period, adding approximately 20-25 days to the average Order Ship Time (OST). DA also decided to commence diversion of low-priority ALOC cargo with Air Eligibility Code (AEC) 1 to surface mode of transportation. The AEC 1 referred to those National Stock-Numbered items normally shipped by air, but which could be shipped via surface if a transportation shortage existed.

In addition, the mandatory removal of 20 units from ALOC in April 1990 and the attrition of forces in Europe combined to reduce the worldwide total of ALOC units to 139--a drop of 46 from two years previous. Although this represented a 25 percent reduction in number of ALOC units, reduction in volume was less than proportionate, as many of the units removed were small customers.

During FY91 and early FY92, responsibility for the supply distribution missions at all Army Area Oriented Depots (AOD) was transferred to DLA. With the final transfer of Red River Army Depot's mission in October 1991, over 97 percent of all future ALOC shipments to Army OCONUS customers was to originate from DLA depots. Approximately 72 percent of all DSS surface shipments, CONUS and OCONUS, was to originate from DLA depots, with the residual coming from GSA (22 percent) and Army depots (6 percent).

In support of ODS, DSS/ALOC was implemented to SWA in September 1990. New Cumberland Army Depot provided unwavering AOD support throughout the entire operation amid resource constraints, the demands of converting operations to the new Eastern Distribution Center (EDC), and the transfer of command to DLA. Selected Class IX (repair parts) Supply Support Activities (SSA) were chosen for ALOC

support. Determination of these units was through intensive coordination between 1st COSCOM and CASCOM logistics and automated systems personnel at Fort Bragg and HQ AMC. Later, during the "second wave" of deployments, this same level of coordination was established and maintained with III Corps logisticians, installation Directors of Logistics, AMC Logistics Assistance Offices, ARCENT, FORSCOM, SIMA, New Cumberland Army Depot (NCAD), and other key elements of the operation. Ultimately, a peak total of 105 ALOC, 7 medical ALOC (MEDALOC), and 38 DSS SSAs were established in theater. Furthermore, a Supply Distribution Plan was established with 321st MMC and an Army Network Station was set up to orchestrate DOD Activity Address Code (DODAAC) changes for all deploying (and redeploying) units. A range of DSS/ALOC performance reports was also produced by the LCA to track OST.

Overall DSS and ALOC performance in FY91 improved over FY90 until impacted by, among other things, the suspension of ALOC in July 1991, the outbreak of war in SWA, and resource cuts mandated by the Defense Management Review:

Table IV - 1: Overall DSS And ALOC Performance, FY91

LOCATION	DSS OBJECTIVE	DSS PERFORMANCE	ALOC OBJECTIVE	ALOC PERFORMANCE
Europe	45	75.8	23	56.0
Korea	59	63.0	28	28.2
Panama	40	66.2	25	33.9
Hawaii	40	47.5	25	23.4
Japan	52	67.5	29	31.7
Alaska	42	42.7	26	21.4
TRADOC	20	39.4		
FORSCOM	20	40.0		

Table IV - 2: Defense Logistics Agency DSS and ALOC Average OSTs, FY91

LOCATION	DSS PERFORMANCE	ALOC PERFORMANCE
Europe	78.7	52.4
Korea	59.4	34.7
Panama	71.5	36.9
Hawaii	50.4	28.7
Japan	62.0	37.4
Alaska	50.5	28.2
TRADOC	26.6	
FORSCOM	33.2	

Table IV - 3: General Services Administration DSS and ALOC Average OSTs, FY91

LOCATION	DSS PERFORMANCE	ALOC PERFORMANCE
Europe	81.3	52.5
Korea	70.0	38.8
Panama	64.0	52.4
Hawaii	68.8	42.1
Japan	67.9	29.3
Alaska	58.4	50.2
TRADOC	24.4	
FORSCOM	29.9	

Of the 14 Army performance measurements shown above, only 3 were better (lower) or the same as FY90 (DSS Hawaii 47.5 versus 50.0 days, ALOC Hawaii 23.4 versus 23.0, and ALOC Alaska 21.4 versus 25.7 days). On a positive note, however, there were definite signs of improvement in depot processing, primarily at New Cumberland, and OST by the end of FY91.

Performance Oriented Packaging (POP). In January 1991, new laws and regulations for POP and follow-on transportation considerations for shipments worldwide became mandatory on a geographically limited basis. Changes to appropriate packaging regulations and transportation procedures were developed by the Packaging, Storage and Containerization Center (PSCC) under management of AMCLG-MT. The new POP requirements applied mainly to hazardous material packaging procedures and identification and certification throughout the Defense Transportation System. The POP requirements are planned for CONUS in 1995.

Packaging, Storage and Containerization Center Support to ODS. AMC PSCC continued to support ODS during FY91 by disseminating and clarifying DOD packaging requirements to depots and troop installations and preparing materiel for shipment to SWA. Center personnel visited SWA to review the Army's retrograde program and provide on-site packaging assistance to retrograde receiving and processing sites. Retrograde packaging procedures, cleaning, preserving, cushioning, and packing were reviewed at the U.S. Army Support Group (USASG)-Forward site, Ad Daman, Saudi Arabia, and other facilities in SWA.

Other contributions were participation in USASG supply operations by a distribution facilities specialist and participation by a general engineer who served on a survey team that reviewed commercial facilities in Ad-Daman. As a follow-on action to the survey, the engineer proposed a storage plan for the Ad-Daman site. PSCC personnel performed shock testing on spur and cluster controller hardened boxes (used to house electronic equipment destined for SWA) and humidity testing on the disc drives for the CTASC-II program. Other tests included testing bar code labels for the PMO TC-ACCIS to ascertain the best label material available for adherence to equipment, and altitude testing of single-round ammunition containers (used for shipment of ammunition to SWA). The AMCPSCC laboratory provided to the Medical Equipment Maintenance Division at Tobyhanna Army Depot, the use of chambers to refrigerate biomedical supplies and to refreeze ice packs in preparation of shipment of these supplies to Saudi Arabia.

Serial Number Tracking of Category One Non-Nuclear Missiles and Rockets in DOD Small Arms Serialization Program (DODSASP). In November 1988, HQDA had directed Army MACOMs to begin manual tracking of subject items in subject program. In February 1988, automatic tracking by Guided Missiles and Large Rocket Report/System proved infeasible. In December 1988, DA issued 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. As of the end of the fiscal year, the extent of the MACOMs' compliance was not known because neither the Central Registry nor the MACOMs had a reliable way to determine it. However, in October 1990, the DA Central Registry recommended an urgent change to AR 710-3 to disallow use of Unit Identification Code in the weapon owner block of the transaction (Document Identification Code DSM).

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. During FY91 there was a dramatic increase in the number of equipment loans or leases being made to Federal and civilian law enforcement agencies for use in support of drug interdiction operations. Requests for extensions of loans by Federal agencies also increased. As the number of loans increased, so did the number of delinquent loans. The status of delinquent loans or leases reported quarterly by the major subordinate commands was being assessed on a continuing basis. The 4QFY91 reports indicated a decrease in the number of delinquent loans over previous quarters. Equipment loans were made to the U.S. Military Academy in support of the 1991 Cadet Summer Training.

Wholesale Supply Consolidation Program. Since the draft DMRD 902 was first proposed by DLA in October 1989, AMC had transferred two Area Oriented Depots (Sharpe, CA and New Cumberland, PA) and two multi-mission depot wholesale supply distribution functions to DLA. Sharpe transferred in June 1990, New Cumberland in April 1991. The wholesale supply distribution function at Sacramento Army Depot, CA also transferred in April 1991; and that function at Red River Army Depot, TX, transferred 1 October 1991. Wholesale supply distribution functions at the remaining five multi-mission depots (Corpus Christi, TX; Anniston, AL; Tooele, UT; and Letterkenny and Tobyhanna, PA) were scheduled to transfer to DLA between February and June 1993. DOD expected very large savings would be achieved through these consolidations.

Logistics Technology (LOGTECH), Logistics Applications of Automated Marking and Reading Symbols (LOGMARS), and Microcircuit Technology in Logistics Applications (MITLA). The primary AMC MITLA actions and initiatives for FY91 can be grouped into three categories: Standardization, AMC demonstration project, and miscellaneous participation.

HQ AMC, through PSCC representation, has provided in-depth support to the Air Force in its endeavor as lead service to establish MITLA standards and/or standard hardware contracts. This support has been provided in the form of technical expertise to the MITLA Coordinating Group (MCG), the MITLA Working Group (MWG), and to a committee that was attempting to generate a MITLA standard based on the Air Force's Fuels Automated Management System (FAMS). HQ AMC, through CECOM as Materiel Developer and RRAD as the DESCOM CTX, has five demonstration projects underway that are nearing completion and can be fine-tuned for exportation to other depots operating on SDS.

Hazardous Waste Tracking - This system was to utilize microcircuit devices and Radio Frequency Data Communication (RFDC) to track waste from time of generation until delivered to a licensed disposer. Design criteria was to permit interface with other systems as required.

Automated Tool Control - The use of MITLA, LOGMARS and RFDC in this system was to control and improve the issue, turn-in, and exchange of tools. The system compliments the Standard Depot system by improving the input technology.

Paperless QA Maintenance - A MITLA device was used to store major item reject data. In addition, portable RFDC units eliminated paper by permitting real-time input of inspection transactions.

Paperless QA Supply - Same as Paperless QA Maintenance, except this was a LOGMARS project with no MITLA devices.

MITLA Supply Distribution Project - Uses RFDC, LOGMARS, and MITLA to further automate packing, loading, and transportation operations at the depot. Provides capability for bulk receipting at the retail receiving activity.

HQ AMC also supported the effort to utilize MITLA devices on ammo retrograde from SWA. Due to late involvement, AMC was not able to fully support the use of MITLA memory (Datakey) devices at receiving sites. Through CECOM, AMC attempted to utilize RF MITLA devices on 463L pallets pending further investigation into power level and frequency concerns. The PSCC continues to evaluate new MITLA technologies and support standardization efforts.

HQ AMC has also provided support to all Army components through PSCC, which was the Army CTX for both LOGTECH Programs - LOGMARS and MITLA. An Army MOA was currently being revised to delineate AMC roles and responsibilities in the LOGTECH Program. AMC has also provided PSCC with a heads-up tasker to coordinate an AMC LOGTECH MOA to delineate the roles and responsibilities of those AMC components required to support the LOGTECH Program.

Director for Logistics Support

Logistics Resources Division

Depot Materiel Maintenance and Support Activities. Depot Maintenance Activities (PE 732207) FY91 obligations (including Operation Desert Storm) for overhaul and repair were as follows:

Contract	865M
Organic	1,071M
Mainz AD	125M
	$ 2,061M

Table IV - 4: FY91 Obligations (Including ODS) for Overhaul and Repair

COMMAND	CONTRACT	ORGANIC	MAINZ AD	TOTAL
AMCCOM	82	115	8	205
AVSCOM	428	298	0	726
CECOM	158	164	3	325
MICOM	128	132	3	263
TACOM	11	334	111	456
TROSCOM	10	25	0	35
OTHER	48	0	0	48
DESCOM	0	3	0	3
	$865M	$1,071M	$125M	$2,061M

During the fourth quarter of FY91, the depot level reparables (DLR secondaries) funding transitioned from OMA to ASF, as directed by Congress. In accomplishing the move, there was intensive coordination between the Army Budget Office and the AMC OMA Programs Branch. In FY91, $200M in OMA funding was transferred to ASF. Members of the Logistics Resources Division hosted an ASF requirements review to validate the top 10 high driver DLRs at each MSC.

Total Maintenance Support Activities (PE 738017): The Maintenance Support Activities Program consists of maintenance engineering for weapon systems before, during, and after deployment; centralized programming and planning support; logistical technical assistance; Product Improvement Plan engineering; technical publication update and review; and training for all depot maintenance personnel. The FY91 program ended the year at $561 million in obligations (including ODS) as follows:

Table IV - 5: FY91 Obligations for Total Maintenance Support Activities

COMMAND/ACTIVITY	$(M)
AMCCOM	$78
AVSCOM	102
CECOM	66
DESCOM	31
MICOM	132
TACOM	79
TROSCOM	31
MRSA	13
USACTA	3
HQ	10
AMSAA	3
TMDE SUPPORT GROUP	8
PM NUC	5
	$561M

AMCSM Managed Supply Operations. Supply Depot Operations (PE 721111): In FY91, the Army Stock Fund (ASF) funded the processing of secondary items at AMC depots. The shipping and receiving functions for major items and ammunition increased in FY91 due to ODS; however, the mix in direct versus reimbursable changed due to secondary item support going to ASF. The accomplishment of the supply support functions such as COSIS, inventory, and re-warehousing was reduced due to the increased effort to support ODS. These functions were accomplished at 40.2 percent of requirements. Ownership of New Cumberland Army Depot and Sacramento Army Depot transferred to the Defense Logistics Agency on 14 April 1991. Red River Army Depot's (RRAD) materiel distribution function transferred to DLA on 30 September 1991. The ammunition and maintenance functions remain at all RRAD sites. Ammunition depot operation requirements were to transfer to a separate account (PE 728041.B3) in FY92. Major Item depot operation requirements were to be listed under PE 721120 in FY92 in lieu of PE 721111.

Supply Management Operations (PE 721112) had no significant unfunded requirements remaining at year's end. All secondary items transferred to the Army Stock Fund in FY91. The mix in direct versus reimbursable changed due to secondary item support going to ASF. Ammunition requirements will transfer to a separate account (PE 728041.AO) in FY92.

All known requirements for Second Destination Transportation (PE 728010) were funded during the fiscal year. The secondary item portion of this program transferred to the Army Stock Fund in FY91. Ammunition requirements were to transfer to a separate account (PE 728041.B7) in FY92.

All known requirements for Overseas Port Operations (PE 728013) were to transfer to a separate account (PE 728028) in FY92.

Table IV - 6: FY91 AMCSM Managed Supply Operations Obligations (Including Operation Desert Storm Costs)

PE	TITLE	DIRECT	REIMBURSABLE	TOTAL
721111	Supply Depot Operations	$323.7M	$274.6M	$598.3M
721112	Supply Management Operations	60.4M	100.3M	160.7M
728010	Second Destination Transportation	67.1M	1.5M	68.6M
728013	Overseas Port Operations	.3M	0.0	.3M

Integrated Logistics Support Division

Operating and Support Cost Reduction. The Operating and Support Cost Reduction Task Force was co-chaired by the DCSSMT and the DCS for Development, Engineering, and Acquisition. The task force developed an integrated program in conjunction with TRADOC to systematically attack the Operating and Support cost drivers in each phase of a system's life. The DCSSMT implemented a program called *Technology Insertion* in the Army Stock Fund. This program was aimed at replacing obsolete, unreliable, or costly components with re-engineered items using current state of practice technology and manufacturing methods. Savings were to be derived from reduced unit prices and increased reliability.

Total Package Fielding. A total of $10.843 million OMA P2 funds was expended for non-PEO total package fieldings, involving 71 weapons systems in FY91. Major expenditures included 10kw Generator Sets, M113A3 Armored Personnel Carriers, Mine Clearing Charges, M60A3 Tanks, and depot staging costs to D-SAFE. By way of comparison, in FY90 a total of 145 weapon systems, both PEO/PM and non-PEO, had been fielded using the total package fielding procedure at a cost of $113.1M in OMA P2 funds.[9]

Integrated Logistics Support Long Range Master Plan (ILSLRMP). The ILSLRMP served as the ILS road map for the future and described the issues being worked by the Army ILS Executive Committee. A major update of the ILSLRMP was staffed in FY91 and scheduled for publication in early FY92.

Quarterly ILS Review for Non-Major Systems. This review was chaired by the Deputy Assistant Secretary of the Army for Logistics. Attendees included representatives from ODCSLOG, SARDA, AMC, TRADOC, and other applicable agencies. The purpose of the review was to provide a summary of the assessments and

[9]Memorandum, AMCLG-OM (2119C), Suzanne S. Hatch, Chief, Operations Management Office, ODCSLOG to AMCHO, 29 June 1992, Subject: Operations Security (OPSEC) Review of Draft Annual Historical Review (AHR) for FY91.

positions taken by the designated independent evaluator, the Army Materiel Systems Analysis Activity (AMSAA), on non-major systems. Problem areas were identified and assigned to the appropriate agency for resolution. In FY91, there were two reviews conducted on site at AMSAA, Aberdeen Proving Ground.

Weapon System Sustainment Management (WSSM). The Weapon System Sustainment Management Program was designed to integrate the matrix support process and to insure the highest sustainment rate for a weapon system, while simultaneously reducing the operating and support costs for military units. General Tuttle directed this action to be implemented via the publication of an Army Materiel Command Regulation containing the policy and procedures concerning WSSM. The second draft of the regulation was being developed, to be staffed with the MSCs and the headquarters staff elements during January 1992.

Logistics Systems Division

Automation Laydown. At the request of General Tuttle, an automation laydown was held on 13-14 December 1990. The first of the two objectives was to provide information and stimulate discussion and understanding of the AMC automation environment through a summary overview of standard and unique automated systems used AMC-wide. The second objective was to gain an appreciation of the relative costs and benefits of automation programs with respect to fulfillment of AMC's mission.

As a result of the laydown, 75 tasks were given to the AMC MSCs and SRAs. The Logistics Systems Division was responsible for responding to 17 of these tasks. The central themes of these tasks were the central management of the MSC Applications Development Divisions; scrub of the unique systems with a goal of eliminating or standardizing them; scrub of automation work plans; automation reimbursement through Army Stock Fund and Army Industrial Fund; and establishment of user representation for DOD Corporate Information Management. Responses to the taskers were provided to General Tuttle during In-Process Reviews (IPR) in July 1991 and follow-on correspondence in September 1991.

Logistics Systems Review Committee (LSRC). The LSRC conducted three IPRs of standard automated system releases during FY91. Release 9120 IPR II was conducted 18 March 1991 via Video Teleconference (VTC) originating from HQ AMC. AVSCOM prototyped the release and the LSRC approved the implementation of Release 9120 as of 31 March 1991. CECOM, MICOM and TACOM installed the release on 6 April and TACOM installed the release on 13 April 1991. The LSRC conducted another VTC on 9 May 1991 to discuss Automation Laydown Logistics Issues. Release 9130 IPR I was conducted 11 - 12 June 1991 in St. Louis, MO, hosted by SIMA. The Committee reviewed and approved the proliferation of Release 9130 to be prototyped by CECOM beginning 17 June 1991. The Committee also approved a Special Release 9213, which contained changes required to support Defense Federal Acquisition Regulation (DFAR) changes. This was to be effective 1 January 1992.

The LSRC Chairman approved Release 9130 for proliferation to the other MSCs for installation on 8 August 1991, based on CECOM's recommendation and concurrence by the other MSCs. Release 9130 IPR II was conducted in Falls Church, Virginia on 11 September 1991, hosted by MICOM. The LSRC approved a Special Release 9223 which supported the stock funding of depot level reparables initiatives, which were required to be on line by 1 April 1992.

Strategic Logistics Agency (SLA) Memorandum of Agreement (MOA) with HQ AMC. The SLA, a field operating agency of the DA DCSLOG, was tasked to implement the Strategic Logistics Program. The program consisted of more than 21 initiatives to offset $4.2 billion in decrements to logistics programs imposed by the Defense Management Review. AMC was the lead functional proponent and application developer for the wholesale logistics portions of SLA initiatives. An MOA, effective 2 July 1991, ensured the integration and coordination of efforts between SLA and HQ AMC in the execution of Army logistics automation

initiatives. Key features of the MOA were: HQ AMC was to provide command direction and staff supervision over AMC participation in the SLA project; the Logistics Systems Division was the SLA single point of contact and focal point for coordination within AMC; and AMC Project Officers were to be appointed to execute the AMC portion of SLA initiatives.

Usage Based Requirements Determination (UBRD). This was an SLA initiative which was being developed by the AMC Systems Integration Management Activity during FY91. The goals of UBRD were to minimize the cost for weapon system availability and to meet Defense Management Report Directive 927J. The concept was to add usage experience to initial provisioning data and reduce parts provisioning for inter replenishments. In the past year, work continued in establishing provisioning and cataloguing functional requirements. Additionally, the Provisioning Master Record data file was converted into M204 relational data base. Work was also initiated on developing an automated failure factor update algorithm and a supporting field feedback data network. The UBRD was selected as a candidate DOD Logistics Interim Standard System for provisioning by the DOD Executive Agent for Item Introduction.

Readiness Based Maintenance (RBM). RBM was one of several initiatives sponsored by the SLA in response to DMRDs. DMRD 927 directed that logistic systems, by reducing order and ship times, and by improving weapon system availability at lower cost, were to maximize economy of logistics support within an environment of declining resources. The Logistics Systems Division served SLA as the RBM Program Integrator for Army logistics automation programing and enhancements. Readiness Based Maintenance was being conducted in three phases: Phase I, Depot/NICP level; Phase II, Forward Repair Activity; and Phase III, Corps and Divisional level Material Managers. Phase I was underway in its Proof of Principle (POP), which was scheduled for completion by the end of the first quarter FY92. Phase II was being bench-marked, as its POP was scheduled to begin with the second quarter FY92. Phase III was on hold as of the end of FY91, pending future decisions from HQDA. Once the three phases were complete, they were to be transitioned to PM-STAMIS as a seamless wholesale/retail logistic system, with AMC serving as the RBM Program Manager for the Army.

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. As of the end of the fiscal year, the Army had two levels of management of its stock fund, wholesale and retail. Studies conducted in FY91 by the Logistics Management Institute for the SLA recommended creation of a single stock fund manager. This would relieve tactical commanders of financial management burdens, and complement the creation of a seamless logistics system. Plans, approved in FY90 to conduct a POP test of the SSF concept at Fort Rucker, AL, in conjunction with a test of the Objective Supply System (Capability) were dropped in February 1991. Planning was also initiated by AMC to test the SSF concept at the National Training Center, Fort Irwin, CA, and an AMC installation. These plans were also overcome in April 1991 when SLA assumed an active leadership role in planning SSF development and implementation.

Total Asset Visibility (TAV). Development and testing of a TAV data base capability was initiated under DMRD 927. Program management and funding were provided by SLA and SIMA was responsible for project execution and software development. Funding provided through FY91 was approximately $4 million. The objective was to provide visibility of all Army assets, regardless of location, through data integration of wholesale and retail logistics data bases and processes. When fully implemented, TAV was to furnish visibility of weapon systems and weapon system materiel across the force structure by location, quantity, and condition. It was to provide managers a broad range of information with which to make decisions on distribution, repair, and procurement in support of a target level of weapon system readiness.

A POP test of the TAV concept was developed and successfully tested during the first and second quarter of FY91. The participating activities included SIMA-E and MICOM. The POP test was limited to one

weapon system, the Multiple Launch Rocket System, supply classes V, VII, and IX, and one gateway. A highlight of the POP was the demonstration of an easy to use yet sophisticated graphics user interface developed for TAV. The remainder of FY91 was consumed with evaluation of the test results, and planning and development of the operational prototype software scheduled for testing in FY92.

MITLA Supply Distribution. This Red River Army Depot initiative, rapidly developed under SLA auspices with $1 million FY91 dollars provided to demonstrate the long-range potential of MITLA technology insertion, showed exciting potential to improve Army distribution processing and in-transit visibility near-term. Remote LOGMARS terminals were to improve source data entry during shipment consolidation, packing and loading. Smart cards were to manifest each container and automate receiving. Radio Frequency (RF) Tags were to be affixed to trace/locate critical shipments and dedicated trucks. Smart cards were to manifest each load and automate in-transit data card processing. An interactive data base inquiry capability was to provide timely visibility of every item, container, and truckload from the time it was packed until the receipt was processed by the destination supply activity. During FY91, RRAD completed system design, development, bench testing, and hardware acquisition preparation for live testing, scheduled in FY92 at Fort Hood.

Special Programs Office

Intermediate Range Nuclear Forces (INF) Treaty Status. The INF Treaty between U.S. and USSR was signed 8 December 1987 and went into effect on 1 June 1988. Its purpose was the retrograde and elimination of U.S. PERSHING P1a and PERSHING II missile systems. First CONUS elimination commenced on 8 September 1988. On 6 July 1989, the last P1a rocket motors were eliminated at Longhorn Army Ammunition Plant (LHAAP). A total of 343 P1a missile stages, one P1a erector launcher, and 72 P1a training stages were eliminated in accordance with INF Treaty. On 6 May 1991, the last two PII missile stages were eliminated at LHAAP. A total of 457 PII missile stages, 165 PII erector launchers, and 179 PII training stages were eliminated in accordance with the INF Treaty.

Lance Missile System. The Lance Missile System was in the process of being withdrawn from the Army's inventory during FY91. Retrograde of the Lance Main Missile Assemblies (MMA) from Europe commenced in October 1991. The MMAs were to be stored at Anniston Army Depot until their demilitarization. Demilitarization options of de-tanking or static firing the MMAs were under consideration in both CONUS and Europe. Retrograde of M251A1 conventional warheads began in June 1991 with a second shipment in October. The M74 bomblets in this warhead were being downloaded at Milan Army Ammunition Plant for use in the TACMS warhead. Retrograde and elimination of the Lance nuclear warhead was being accelerated based on President Bush's nuclear arms reduction speech of 27 September 1991.

Action Officers Workshop (AOW) for Petroleum Distribution System. AOW 18 was held at Fort Belvoir, Virginia, 5-6 December 1989. The purpose of the workshop, initiated in July 1983 under guidance from the General Officer Steering Committee, was to improve the Army's petroleum distribution capability.

Over the years since the first AOW at Fort Story, Virginia had been held in August 1983, the growth and accomplishments were impressive. Detailed equipment and facilities data for the Southwest Asia Petroleum Distribution System Operational Project (SWAPDOP) Inland Petroleum Distribution System (IPDS) were established; participation has increased from 10 organizations to over 30; the IPDS was successfully tested and produced; distribution plans were completed; and a Logistics Civil Augmentation Program was in place for SWAPDOP IPDS areas 1 and 3. The many years of endeavor resulted in the successful deployment of 15 Tactical Petroleum Terminals, 37 Pipeline Stations, 69 Pipeline Sets, 4 Pipeline Support Assemblies, and 310 miles of pipe to the Mideast in support of ODS. Hundreds of individual actions and tasks were accomplished to support the development, testing, and acquisition of capabilities which had been only ideas 8 years previous.

JP8 Demonstration Program. The JP8 Demonstration Program, initiated by HQ AMC Special Programs Office and monitored by the Materiels, Fuels, and Lubricants Laboratory, Belvoir Research, Development, and Engineering Center, supported 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 1 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 September 1991 to obtain additional data. Final program results were being formulated as of the end of the fiscal year. Interim results showed that there had been no significant increase in fuel consumption or power loss in equipment. The replacement of fuel pumps, injectors, and filters, on the other hand, showed a welcome decrease.

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 as 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 held 26-29 August 1991 at the BRDEC.

Ideas promulgated in previous WRMAGs resulted in the outstanding support by the Reverse Osmosis Water Purification Units (ROWPU) supporting ODS (600 Gallons Per Hour and 3000 Gallons Per Hour units). Adding to that outstanding support was the use of the 300,000 gallons per day ROWPU Barges, Tactical Water Distribution Systems, Storage and Distribution Systems, Small Mobile Water Chillers, Forward Area Water Point Supply systems, Hypochlorination units, Well Completion Kits, and thousands of 5-gallons cans and 2-quart canteens.

Apache Program Status. The Army planned to purchase a total of 807 Apache aircraft with a distribution of 678 TO&E, 48 TDA, and 81 ORF/RCF. The first production delivery occurred on 26 January 1984. As of the end of the fiscal year, the Army had signed for 690 aircraft and there had been 25 crash losses. Apache unit activations and conversions were on-going with 25 to 50 Apache battalions fielded by the end of FY91. The Apache performed well during ODS and was credited with firing the first offensive shots of the war. Plans were in place to modernize the entire "A" series fleet. (AH-64B program was to retrofit 272 air craft less attrition, while the AH-64C program was to retrofit 308 air craft less control radar and 701C engine, and AH-64D LONGBOW program was to remanufacture 227 aircraft. The strategy as of the end of FY91 was to start fielding Longbow Apache (LBA) before the RAH-66 Comanche comes on board in CY98. First Unit Equipped date for LBA was September 1996 and the unit was to be company size.

Mobile Subscriber Equipment (MSE). Fielding of MSE to III Corps units was completed in August 1990. Fielding in USAREUR commenced in May 1990 with completion scheduled for November 1992. As of 1 October 1991, 25 MSE Battalions were fielded worldwide. GTE was the MSE prime contractor. AMC participated heavily by executing the Total Package Fielding of MSE DELTA items. The MSE DELTA were the new and increased items of equipment generated by MSE Signal Battalion unit conversions and activations, which were not MSE-peculiar items. As of the end of the fiscal year, all fieldings had been successful and the equipment had been well received by the troops.

MSE-equipped units were deployed to the ODS Area of Responsibility (AOR), and GTE provided MSE contractor logistics support in the AOR. During ODS, the operational readiness rate for MSE was 96 percent. The ODS commanders were very pleased with performance, reliability and support of MSE.

Black Hawk (UH-60) Special Operation Aircraft (SOA) Swap. In an October 1990 message, HQDA tasked HQ AMC to transition the SOA UH-60 fleet from its current UH-60A configuration to the newer and more capable UH-60L aircraft. The program required turn-in of 60 SOA UH-60A aircraft for 36 UH-60Ls.

The changeover started in January 1990, with a 4-year completion milestone, at a total cost of $27 million. A major cost driver was the return of "A" models to their standard configuration after dismantling 77 SOA-unique modifications from each aircraft, and reinstalling them on the new "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 1991, CCAD/LBAD had completed 18 "A" models and 7 of the 12 "L" model aircraft inducted into the depots.

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 MLRS's modified M270 launcher and provided corps commanders with the ability to engage deep targets. Warheads for the system were divided into two separate development programs: Anti-Personnel/Anti-Materiel (Block I) and Anti-Armor (Block II). Block I fieldings were halted and diverted to SWA during ODS. The system was used in battle during ODS and although battle assessments were limited, information provided indicated performance exceeded all expectations. Since ODS ended, normal fieldings to USAREUR and EUSA resumed and were on schedule.

Conventional Forces in Europe (CFE). The CFE Treaty involved zonal limitations and equipment ceilings on five categories of materiel, located in Europe from the Atlantic Ocean to the Urals (ATTU) mountains. Categories were combat aircraft, attack helicopters, tanks, artillery weapons, and Armored Combat Vehicles (ACV). The aforementioned items were referred to as Treaty Limited Equipment (TLE). During the negotiations for the treaty, the U.S. retrograded some TLE items (tanks, ACVs, and artillery pieces) from Europe to FORSCOM, TRADOC, National Guard units, and Anniston Army Depot as a force modernization initiative, to support future foreign military sales requirements. In addition, under the military assistance program, 700 M60A1 tanks were transferred to Egypt, 60 to Morocco, and 30 to Tunisia.

The CFE treaty was signed on 19 November 1990 at the Paris summit of the 34-nation Conference on Security and Cooperation in Europe. Twenty-two nations participated in the CFE Treaty including the U.S. and Soviet Union. The treaty was to enter into force 10 days after ratification by the last nation, which was expected to occur in 1992.

Nations could meet their reduction liabilities through transfer, destruction, or a combination of the two. The U.S. planned to meet its reduction liabilities on tanks, ACVs, and artillery pieces through transfers to six NATO Allies (Denmark, Greece, Norway, Portugal, Spain, and Turkey). The U.S. had no reduction liabilities for combat aircraft and attack helicopters. The TLE items transferred were to be free receiving nations in accordance with minimum operational standards criteria. Follow-on support was to be through bilateral negotiations via Foreign Military Sales channels.

Counter-Narcotics Assistance. Section 506(a)(2) of the Foreign Assistance Act provided the President with special authority to respond to emergencies in foreign countries. Presidential Determination 90-33 stated that it was in the United States' national interest to draw down defense articles from DOD stocks and utilize military education and training to provide counter-narcotics assistance to Mexico, Colombia, Bolivia, Ecuador, Jamaica, and Belize. The President authorized DOD $53.3 million to provide counter-narcotics assistance to the above countries with the Army portion being $33.8 million. 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. Due to the impact of ODS, the Secretary of Defense extended the original 120-day execution period (25 July - 22 November) until further notice. By the end of FY91, the total requisitions processed (to all countries) were 16,52 with a value of $24.2 million.

M1A1 Rollover. In October 1990, HQDA decided to modernize tanks supporting ODS. This decision required moving over 600 M1A1 tanks from USAREUR Prepositioned Materiel Configured to Unit Sets

(POMCUS) stocks to Southwest Asia. These tanks required repair, up to five modifications, and application of CARC prior to hand-off. A later decision was made to transfer an additional 240 M1A1 tanks from USAREUR POMCUS stocks to SWA to enhance the tank modernization effort. These tanks also required the aforementioned maintenance actions.

The described maintenance tasks were completed on 743 tanks in 66 days with the relocation of 84 tons of tools and equipment from Anniston Army Depot, deployment of over 300 civilians from 6 different depots, and repair efforts by Mainz Army Depot as well as by prime and sub-contractors. Dedicated transportation was arranged to support deployment of personnel and equipment from CONUS. The 743 tanks were used to modernize the 24th Infantry Division (Mechanized), 1st Cavalry Division, 3d Armored Cavalry Regiment, 1st Infantry Division (Mechanized), and elements of the 1 Armored Division under the concept of Total Package Fielding (TPF). The TPF provided the Project Manager, Abrams[10] control over assembling and movement of the total support required for the new system. MSCs were able to push extra M1A1 unique components in the TPF packages that were not in the Saudi Arabian pipe line. The normal peacetime requisition and TPF package assembly of 6 months was successfully compressed to less than 60 days. Numerous challenges were overcome to accomplish the M1A1 Rollover mission.

Materiel Readiness (MR) Business Planning. In October 1990, the DCGRDA requested MSC participation in a business planning meeting. This initiative led to the formation of a Business Planning Working Group (BPWG), which was established in November 1990. A draft charter was developed with the scope of the BPWG to develop AMC-wide business plans. The initial focus of the BPWG was on AMC labs, RDT&E centers, and test activities. In April 1991, General Tuttle tasked the MSC Commanders to look at their materiel management and industrial operations and apply their Business Plan. In order to expand the focus of the BPWG and investigate alternate targets of opportunity within the materiel/logistics management and industrial operations arenas, a MR Subgroup was established in September 1991. Membership for the MR Subgroup came from the MSCs, SRAs, and AMC. An initial meeting of the MR Subgroup was conducted on 24-25 September 1991 and served as an excellent vehicle for communicating business planning. Subsequent subgroup meetings were anticipated as management strategy was developed, "profit centers" were defined, subgroups were built and the required business plans were developed.

U.S. Army Test, Measurement, and Diagnostic Equipment Activity

Personnel Strength

As of 31 July 1991, FY91 authorizations for the U.S. Army Test, Measurement, and Diagnostic Equipment Activity (USATA) reflected in the AMC Program and Budget Guidance (PBG) were 25 officers, 37 warrant officers, 925 enlisted personnel, 1,257 direct hire civilians, and 88 indirect hire local nationals. Adjustments from the end of FY90 to FY91 included an increase of three military authorizations. There were

[10]Since there is a great deal of confusion about the use of PM to stand for Program Manager, Project Manager, and Product Manager, the following should be noted. The Program Executive Officer (PEO), Armored Systems Modernization has under him the Project Manager, Abrams Tank System. Under him are Product Managers for the two different versions of the tank: M1A1 and M1A2. Immediately under the PEO, in some cases, there may be one or more Program Managers, as well. See *Project Management in the Army Materiel Command, 1962-1987*, Dr. Herbert A. Leventhal, AMCHO.

no adjustments to the civilian manpower authorizations during FY91. A revised PBG reflecting the end of FY91 manpower authorization was not available.[11]

Organizational Structure

As a result of the Defense Management Review Decision (DMRD) to consolidate Test, Measurement, and Diagnostic Equipment (TMDE) functions, a proposal was developed to integrate the functions of the U.S. Army Central TMDE Activity, Lexington, Kentucky; Program Manager-TMDE, Fort Monmouth, New Jersey; Office of the Deputy Executive Director for TMDE, AMC; and the U.S. Army TMDE Support Group (USATSG), Redstone Arsenal, Alabama into a single TMDE management organization. Permanent Orders 90-1, dated 19 October 1990, established the U.S. Army Test, Measurement, and Diagnostic Equipment Activity (Provisional) with an effective date of 1 October 1990. Permanent Orders 41-2, dated 16 May 1991, approved the U.S. Army TMDE Activity as a fully integrated and centrally managed organization located at Redstone Arsenal, Alabama, with an effective date of 1 May 1991. The objectives of the DMRD reorganization were to strengthen management of the Army's TMDE program, to improve support to the soldier through increased emphasis on quality, and to achieve efficiencies through collocation of activities.

Reorganization

Initial planning for a single TMDE entity began in 1988. Ultimately, the following organizations were merged into the U.S. Army TMDE Activity at Redstone Arsenal, Alabama. The personnel authorizations identified for each entity were used to form the new entity. The reorganization/consolidation saved 7 military and 36 civilian positions and streamlined the operating and management structure.

Organizational Entity	**Authorizations Transferred**
Office of the Deputy Executive Director for TMDE (HQ AMC)	12
U.S. Army Central TMDE Activity (Lexington, Kentucky)	31
Program Manager-TMDE (PM-TMDE) (CECOM) PM-TMDE Matrix Support (CECOM) Group	75
U.S. Army TMDE Support (Redstone Arsenal, Alabama)	426

The resulting 576 authorizations for the U.S. Army TMDE Activity after DMRD implementation underwent a further mandatory reduction associated with Program 75 mandated reductions. Net authorization for the USATA (UIC W1PLAA) was 553.

The U.S. Army TMDE Support Activity - CONUS (USATSAC) was redesignated the U.S. Army Test, Measurement, and Diagnostic Equipment Support Group in October 1990. This redesignation effected a change in the reporting channels for the 517th and 74th Maintenance Battalions and moved the six Area TMDE Support Centers (ATSC) eight TMDE Support Centers (TSC) and forty-four TMDE Support Operations (TSO) into a 3-Region concept. By the end of April 1991, the 3 Regions (Region 1 - Letterkenny; Region 2 - Redstone; and Region 3 - White Sands) were staffed and operational. To make these large regions manageable, District TMDE Support Offices were established at White Sands, Red River Army Deport,

[11]This section is based on a draft historical report for FY91 submitted by TMDE. Any additional sources are noted in the text. A copy of all original documentation is maintained in the AMCHO Archives.

Sacramento Army Depot, Letterkenny Army Depot, Tobyhanna Army Depot, Lexington Army Depot, Anniston Army Depot, Picatinny Arsenal, Aberdeen Proving Ground and Redstone Arsenal. Under the guidance and direction of the Regions, the District Offices will manage a number of TSOs. Another significant factor in the reorganization was the placement of the 95th Maintenance Company under the command and control of the 74th Maintenance Battalion, headquartered at Fort Lewis, Washington.

The Systems Support Division, Logistics Directorate, was established on 7 October 1991 from elements and mission responsibilities of the former USATSG Logistics Directorate's Materiel Division and the U.S. Army Central TMDE Activity. The primary function of the new division was to focus the quality and timeliness of support for Integrated Logistics Support (ILS) planning and wholesale logistics functions to a wide variety of customer organizations (Program Executive Officers/Program Managers, materiel developers within AMC and at other major commands; supply/maintenance/transportation managers; and the USATSG). Army-wide acquisition approval for TMDE was added as an additional mission. The primary objective of consolidating acquisition approvals was to provide materiel developers with a central point to coordinate their development and selection of logistically supportable TMDE.

The Logistics Management Office was established to provide direct support to the PM-TMDE. The office was to provide ILS management services for the PM-TMDE as well as support for special projects and studies for the Logistics Directorate. An ILS Management Team, consisting of three logistics management specialists, was established to provide ILS management functional support to the Product Manager, Test Equipment Modernization, (PM-TEMOD). A similar team of three specialists was established to provide ILS management for the Integrated Family of Test Equipment (IFTE), which included the Electronic Shop, Transportable, Contact Test Set (I, II, and III), and Electro-Optics Augmentation. A 196-step Integrated Logistics Support Milestone Tracking List with a cross-reference for terms was prepared for guidance.

The Quality Assurance and Policy Compliance Division was realigned under the Office of Management and Productivity as part of the new USATA organizational structure. The quality assurance inspection program, as a result of a PEER initiative dated 29 May 1991, was redesigned to include a sampling plan for those activities receiving reports with no deficiencies. The requirements for USATSG regional/battalion quality assurance inspections was redefined as a surveillance program, eliminating duplication of formal quality assurance inspections. The program changes were implemented as directed by USATA Regulation 702-1 (dated 1 September 1991), starting 1 October 1991. As of May 1991, the Quality Assurance and Policy Compliance Division started inspecting for and reporting to the Federal Aviation Administration (FAA) inspection results of USATSG activities which provided calibration/repair support to FAA. This work was established in the interservice support agreement with FAA, eliminating the need for FAA inspections.

Key Personnel

Headquarters, U.S. Army TMDE Activity

Director

Robert K. DuBois - Assumed position in October 1990.

(He also served as the Executive Director for TMDE at HQ AMC.)

Deputy

COL Michael F. Boyd - Assumed position as Acting Deputy in October 1990.

Chief, Office of Management and Productivity

Kenneth V. Mattoon - Assumed position in October 1990.

Chief, Program Analysis and Evaluation Division

Charles B. Coulter - Assumed position in January 1991.

Chief, Quality Assurance and Policy Compliance Division

Richard S. Shields

Chief, Management Information Systems Division
Vacant
Chief, Support Operations Office
Eugene Johnson - Assumed position in July 1991.
Director, Resource Management Directorate
Harvie White, Jr.
Chief, Financial Management Division
Thomas G. Corley - Assumed position in November 1990.
Chief, Procurement Planning Division
Doris F. Bendall
Director, Logistics Directorate
Troy E. Ellis
Chief, Logistics Management Office
Douglas C. Meeks - Assumed position in July 1991.
Chief, Security Assistance Division
Joseph T. Buck
Chief, Systems Support Division
David J. Fledderman - Assumed position June 1991.
Chief, Field Support Division
Gary W. Hodge
Chief, Publications Division
Edward D. Friday
Director, Science and Engineering Center
Peter P. D. Chen - Assumed position in October 1990.
Director, Engineering Directorate
James R. Jones
Chief, Design and Development Division
John M. Ball
Chief, Production and Manufacturing Engineering Division
James R. Miller III
Chief, Test and Evaluation Division
John T. Bowles - Assumed position in June 1991.
Chief, Software Engineering Division
Philip T. Smith - Assumed position in November 1990.
Chief, Systems Engineering Division
Francis L. Jones
Chief, Weapons Development Support Office
Vacant
Director, U.S. Army Primary Standards Laboratory Directorate
James A. Harmon
Chief, Production Control and Shipping Division
James E. Starling - Assumed position in August 1991.
Chief, Advanced Technology Office
Charles D. Bosco - Assumed position in July 1991.
Chief, Microwave Standards Laboratory
Malcolm H. Shelton
Chief, Physical Standards Laboratory
Ray E. Wernle
Chief, Radiation Standards and Dosimetry Laboratory
Patrick J. Kuykendall

Chief, U.S. Army Ionizing Radiation Dosimetry Center (AIRDC)
A. Edward Abney

Program Manager, TMDE
Program Manager
COL Gary L. Uliano - Assumed position in December 1990.
Deputy Program Manager
Vacant
Chief, Product Manager's Office
LTC Timothy J. Dube - Assumed position in November 1990.
Chief, Program Manager Engineering Office
Joseph M. Rivamonte - Assumed position in January 1991.
Chief, Test Equipment Modernization Engineering Division
Richard Maryanski - Assumed position in June 1991.
Chief, Automatic Test Support Systems Engineering Division
Patrick J. Stevens - Assumed position in June 1991.
Chief, Program Management Office
Vacant
Chief, Logistics Division
Joseph A. Myers - Assumed position in October 1990.
Chief, Resources Division
Edna L. Sanders - Assumed position in February 1991.

U.S. Army TMDE Support Group
Commander
COL Michael F. Boyd - Assumed position in September 1990.
Deputy to the Commander
Frank G. Westmoreland - Assumed position in September 1990.
Commander, Headquarters and Headquarters Detachment
CPT A. Kevin Hunter - Assumed position in July 1990.
Chief, Operations and Readiness Division
Frederic W. Read - Assumed position in May 1991.
Chief, Management Support Division
Eleanor R. Combs
Chief, Region 1, Letterkenny
Donald L. Flory - Assumed position in February 1991.
Chief, Region 2, Redstone
Larry C. Turnipseed - Assumed position in February 1991.
Chief, Region 3, White Sands Missile Range
Richard L. Berlemann - Assumed position in February 1991.
Commander, 517th Maintenance Battalion (TMDE), Europe
LTC Ronald D. King - Assumed position in July 1991.

Productivity Enhancements, Efficiencies, and Rewards (PEER)

The Deputy Executive Director for Test, Measurement, and Diagnostic Equipment (DEDT) felt further enhancements and efficiencies were possible and determined a PEER study was an appropriate mechanism for identifying follow-on initiatives. Implementation of PEER initiatives over the allowed 3-year time frame provides for an orderly streamlining of the organizational structure and for adjustments required within

USATA to deal with anticipated changes in the Army's force structure. Expectations of declining resources also played a major role in the decision to initiate a PEER study.

As a result of the DEDT's briefing to General Tuttle on 25 May 1990, General Tuttle granted tentative verbal approval for the USATA to plan on formally entering into a contractual arrangement, under the guidelines established via the AMC PEER initiative, at the earliest practical date. Following the 4 February 1991 Army announcement of its plan to implement the DMRD, the USATA, via memorandum dated 5 March 1991, announced its intent to formalize the PEER contractual arrangement. By memorandum dated 20 March 1991, HQ AMC formally accepted the USATA commitment to develop a study of the USATA organization.

During the following five months, the USATA completed initial phases of the PEER study, developed baseline data, and obtained Internal Review and Compliance Office certification. On 12 August, the DEDT entered into a formal contractual arrangement with AMC officials and committed to a 3-year PEER plan.

At the end of FY91, 11 PEER initiatives had been completed, using principals of total quality management (e.g., use of process action teams comprised of employees from affected functional areas to perform the studies). Year one of PEER was completed with results identified to the first year PEER contractual agreement. All the savings were effected through the stringent management of vacancies. No adverse actions resulted from PEER -- all impacted employees were placed in positions of equal grade.

3-Year PEER Plan First Year (FY91)

Personnel Work-Years and Manpower Authorizations Savings: 91.
Personnel Hard Dollar Projected Savings: $3.6 million.
Other Than Personnel Hard Dollar Savings: 0.

Second Year (FY92)

Personnel Work-Years and Manpower Authorizations Savings: 97.
Personnel Hard Dollar Projected Saving: $3.5 million.
Other Than Personnel Hard Dollar Savings: Will be identified in service contracts, contracted equipment maintenance, administrative vehicle use, travel and per diem, calibration intervals, paperless publications, and information management support for FY92.

Third Year (FY93)

Personnel Work-Years and Manpower Authorizations Savings: 102.
Personnel Hard Dollar Projected Savings: $3.7 million.
Other Than Personnel Hard Dollar Savings: Will be identified in service contracts, contracted equipment maintenance, administrative vehicle use, travel and per diem, calibration intervals, paperless publications, and information management support for FY93.

Budget

The USATA operating budget for FY91 totaled $154.893 million. Breakout by appropriation follows:

	OPA	RDTE	OMA	OMAR	FMS	TOTAL
Army	$59.713	$9.519	$56.444	$1.550	$2.750	$129.976
Customer	8.809	16.108				24.917
TOTAL	$68.522	$9.519	$72.552	$1.550	$2.750	$154.893

Operation Desert Shield/Storm

As the primary organization for TMDE, USATA was committed to end item readiness through TMDE availability and support. The USATA headquarters leads organizational elements in providing worldwide administrative, resource management, engineering, and logistical functions in the TMDE arena. As the life cycle manager for general purpose TMDE and provider of critical field support, USATA was the Army's center of excellence for TMDE, assuring critical cradle-to-grave availability and readiness. As such, USATA played a vital role in providing support for Operation Desert Shield/Storm.

Base Realignment and Closure (BRAC)

Additional sites (through BRAC II) within the Army, that served as bases of operations for the U.S. Army TMDE Activity, were added to the list of installations affected by BRAC I. These sites (Fort Devens, Fort Ord, and Sacramento Army Depot) were added to BRAC I sites, which included Pueblo Army Depot, Lexington-Blue Grass Army Depot, Jefferson Proving Ground, Fort Sheridan, and the Army Materiel Testing Laboratory at Watertown, Massachusetts. Implementation plans for relocation of the TMDE facilities affected by BRAC I actions were modified to adjust for changes made necessary by BRAC II decisions. Plans for implementing BRAC II were being developed at the end of the fiscal year. Planning was complex, and relocation sites were tentative, due to the potential for further base closures, the dynamic workload changes caused by overall Army downsizing, operations adjustments required by the Defense Management Review Initiative 927E, and ongoing USATA PEER effort.

Assumption of the Program Manager, TMDE Mission

The assumption of the PM, TMDE Mission resulted in the transfer of a number of complex contracts from CECOM, involving large-scale procurements of integrated systems. A Data Management Team was established with responsibility for implementing and managing the Contract Data Management Program, involving the preparation and tracking of the Contract Data Requirements List (CDRL) (DD Form 1423), the issuance of calls for feeder data requirements for new acquisition actions, and the TMDE Materiel Acquisition Program.

The contracts transferred from CECOM involved the Integrated Family of Test Equipment (IFTE), a family of Automatic Test Equipment (ATE) which consists of a Base Shop Test Facility (BSTF), Contact Test Set (CTS), and Commercial Equivalent Equipment (CEE); Test Equipment Modernization (TEMOD); and associated equipment.

IFTE. Significant actions were as follows:

(a) Limited Rate Initial Production (LRIP) (BSTF) Contract DAAB07-89-C-N001, approximate value $130 million. This contract, received 15 July 1991 from CECOM, required continuous monitoring of numerous ongoing actions; e.g., Engineering Change Proposals. Test evaluations were completed 10 September 1991 with fielding target date of March 1991.

(b) Contact Test Set Electro-Optical Augmentation (CTS-EOA), estimated value $25 million. The requirement was hand-carried from CECOM to USATA on 9 January 1991. The combined efforts of USATA and MICOM personnel resulted in the final competitive proposals being received 23 September 1991. This procurement action comprised the first requirement for a source selection evaluation board. Because this was a first and USATA experience was very limited, the office had to rely heavily on outside organizations. As of the end of the fiscal year, final selection and contract award had not been made.

(c) BSTF full scale production Contract Requirements Package (CRP) was received from CECOM on 22 March 1991. A draft solicitation, DAAH01-91-R-0239, was issued to Grumman Aerospace Corporation (GAC) on 22 July 1991 for a total quantity (including 3 option years) of 76 units. The draft response was received 21 August 1991 and USATA comments were prepared. A formal Request for Proposal (RFP) was to be issued 1 October 1991. The award of contract was scheduled for March 1992 with an estimated value of $307.5 million. This procurement represented the highest dollar value for USATA thus far.

TEMOD. These acquisitions involved state-of-the-art, off-the-shelf electronic test equipment to replace the existing Army inventory of TMDE. Of the ongoing TEMOD projects, significant actions were taken on five. Actions were in progress as of the end of the fiscal year on two other instruments, AN/GTM-12 (a 26-pair Cable Test Set) and AN/GRM-114B (a new state-of-the-art FM Radio Test Set).

Logistics Support

Acquisition and technical and logistical assistance was provided to AVSCOM in several aviation mission areas including attack, air combat, electronic warfare and intelligence gathering, and lift and transportation of troops and materiel. USATA support strategy in the aviation mission area sought to increase readiness by downsizing and modernizing the current mix of automated and manual TMDE. Several tasks were performed in conjunction with USATA's 1 November 1991 assumption of the AH-64 Apache electro-optics support.

At the request of the U.S. Army Environmental Hygiene Agency, an evaluation of several commercial calibration and repair support contracts was made. The results of the evaluation revealed that the USATA could calibrate and repair several of the items that had been contractor-supported. The net saving to the Environmental Hygiene Agency was approximately $65,000 dollars.

USATA significantly improved its coordination and communications with the National Security Agency, the U.S. Army Intelligence Materiel Management Center, and the Intelligence and Security Command (INSCOM). A representative attended 12 Minimum Essential Integrated Logistics Support Requirements (MEILSR) boards. Progress was made during these meetings on how and what tactical and strategic intelligence systems would require USATA support, and what additional support equipment, if any, these entities will require in order for USATA to provide organic support.

The AMC Installation Supply Account Performance Measures RCS-AMCEN-1032 reports were submitted for FY91. The total amount of reported assets (mission supply support accounts) was $4,803,768. The last quarterly AMCEN 1029 report, which was a total of all USATA property books and their dollar value, was submitted to the AMC Installations and Services Activity, reflecting a total of nine property books with a total dollar value of $203,358,360.

Foreign Military Sales (FMS)

During 1991 the Security Assistance Division, Logistics Directorate, was actively involved in FMS cases with 11 countries having a total value of $22.1 million. Projected FMS cases with seven countries, a total value of $3.9 million, were in varying stages of approval or acceptance at the end of the fiscal year. The Security Assistance Division prepared Price, Availability and Serviceability (PAS) data for Jordan, Egypt and Saudi Arabia; furnished data, presented briefings, and responded to requests for action item resolution for one Program Management Review (PMR) with United Arab Emirates and three Interim Program Reviews (IPR) with Egypt, Jordan, and Taiwan; coordinated for calibration standards requiring higher level support for Taiwan, Jordan, Egypt, and U.S. Government equipment used in support of UAE. The following is information on FMS cases in varying stages of approval or acceptance:

United Arab Emirates (UAE) - FMS Case TC-B-UBH. The last equipment procured for UAE from Environmental Systems, Inc. and sole source contracts, was delivered to the country. A USATA representative visited UAE to present the Mobile Calibration Facility (MCF) truck/tractor specifications to the UAE Government. The UAE Government requested that formal calibration training be arranged for ten UAE military personnel at Lowry AFB, Colorado. The Emirates were in need of higher level training due to the recent fielding of a secondary reference facility in that country. The MCF was accepted and shipped to the Emirates the last week of June 1991. The last contract for procurement of equipment for the UAE was awarded in May 1991 to Ridge Instruments, with a 6-month delivery time frame. This will complete procurement of equipment for UAE. Technical assistance to UAE calibration personnel was provided by three technical personnel from the Security Assistance Division.

Egypt - FMS Cases EG-B-UGK, UGX, UIR and UJY. A Guildline model 9154D standard cell was calibrated by the USATA Primary Standards Laboratory and then a Security Assistance Management Directorate representative hand-carried the standard cell, since he was attending a PMR in Egypt. This action averted expensive alternate shipping methods. The requirement for transporting standards cells is that to maintain traceability they must arrive at their destination not later than 72 hours after removal from their power source. A contract (for over $1.2 million) was awarded to Ridge Instruments to procure TMDE and parts for the Government of Egypt.

Morocco - FMS Case MO-B-UMS. A technical assistance visit requested by the Moroccan Government was completed in November 1990. The purpose of this trip was to review the calibration needs, the status of the set calibration standards, and the repair capabilities of the Moroccan calibration facility. Also, the USATA technical representative, at the request of the Moroccan Government, repaired a backup uninterrupted power source for a computer system.

Taiwan - FMS Cases TW-B-YBP and YLL. The Taiwan IPR was completed 5 February 1991. All of the Ballantine Model 1605A Thermal Transfer Standards and Julie AC Standards, Model AC-129, and Amplifiers, Model P-A 225, were tested, accepted, and shipped to Taiwan. Higher level support continued to the Taiwan Government under TW-B-YLL. As of the end of FY91, the final group of calibration equipment procured under TW-B-YBP for Taiwan was being accepted and calibrated as received, and then shipped to the country.

Saudi Arabia - FMS Cases SR-B-VDD, VOH and VOQ. The last two items covered under FMS Case SR-B-VDD, Ballantine Model 1605A, Thermal Transfer Standards, SNs 21116 and 21117, were repaired, calibrated, and shipped to Saudi Arabia. This completed actions on SR-B-VDD. The case was being prepared for closure as of the end of the fiscal year. Case SR-B-VOQ was a new FMS case for 2 years of higher level support for their secondary reference calibration standards. The previous higher level support requirement expired in February 1990. Case SR-B-VOH was implemented for procurement of calibration equipment.

USATA Publications Program

The reorganization of all TMDE elements into the USATA allowed several changes in the manner in which business was conducted, one of which was the implementation of the revised USATA publications program. The previous USATSG publications program was accomplished by three policy specialists. The new USATA publications program is now controlled by one policy and doctrine specialist. The publications program directs subject matter experts to prepare and coordinate the regulations. Afterwards, the Support Operations Office processes the regulations for distribution. Several of the regulations and policies which contain similar subject matter and/or guidance were consolidated, reducing the total number of regulations and policies by approximately 25 percent. The time required to prepare, coordinate, print, distribute, and post these regulations was significantly reduced.

Executive Director for Conventional Ammunition

Mission

The Office of the Executive Director for Conventional Ammunition (EDCA) ensured the proper execution of the Army's mission as the DOD Single Manager for Conventional Ammunition (SMCA).[12]

Significant Issues

Operation Desert Shield/Storm Support. The office's role in ammunition supply during ODS was highly rated by all the services it supported. However, two problem areas were noted in the area of ammunition supply. During ODS, inventory managers reverted to using manual systems instead of the now obsolete automated system, a point noted by both the Marine Corps and the Air Force. This expedited critical requisitions but introduced the chance for error. For example, at one point, inventory managers were attempting to use ammunition reserved by Service for use in deploying its own forces. The EDCA annual report noted that its automated and communications systems needed to be "upgraded or replaced to support peacetime, mobilization and wartime operations."

Overall, the need to support ODS lead to the deferral of a variety of other needed actions, such as periodic inspections and Care of Supplies in Storage (COSIS), rewarehousing, and some inventory operations. This in turn caused a number of SMCA performance indicators to decline in FY91:

Table IV - 7: SMCA Performance Indicators

Indicator	FY90/91 %	Goal
Material Denial Rate	.9/1.4	=<1.0
On Time Receipt Processing	94.2/72.6	=>90
Location Reconciliation	98*/90	=>98
Location Survey Accuracy	99.2/99	=>98
Inventory Accuracy	99.7/99.8	=>95

*(Omits 3rd quarter)

In addition, during ODS, the lack of funds for minor maintenance and COSIS over the preceding two years created the need for immediate action to inspect and upgrade ODS ammunition prior to shipment.

Ammunition Maintenance. Budget reductions had negated gains made in minor maintenance in recent years, resulting in an increasing backlog. Minor maintenance had been unfunded, with the only minor maintenance performed during the year being funded by ODS. Returning ODS stocks would substantially increase the backlog. Major maintenance, however, was performed satisfactorily during the year, with all four services showing a decline in their major maintenance backlog.

[12]Unless otherwise noted, the data in this chapter is taken from the EDCA FY91 Annual Report: Progress and Status of the Single Manager for Conventional Ammunition.

Ammunition Demilitarization. A record 46,000 short tons was demilitarized in FY91. This, however, reduced the backlog by only 5 percent. This was a steadily increasing problem, although a change in funding for FY92 held some promise of help.

> Continuing emphasis on base relocation and closure and return of stocks from overseas makes storage space a critical concern. Ammunition demilitarization costs are rising because environmental concerns require more expensive and restrictive methodologies. Reduced budgets and higher costs will reduce the demilitarization pace, which will decrease available storage space and, in turn, negate savings projected from consolidation due to a lack of storage space. Conventional ammunition demilitarization will be funded with PAA [Procurement Ammunition, Army] dollars in FY92, thereby taking it out of the competition for increasingly scarce OMA [Operations and Maintenance, Army] funds.

Production Base. The issue was how to downsize. The FY85 ammunition appropriation had been the highest in a decade at $3.8 billion and had steadily declined, resulting in a steady decline in the production base workload except for a peak due to an ODS supplemental appropriation. It was scheduled to continue to decline until leveling off after FY94 at approximately $1 billion per year. In addition, the trend towards smaller quanitities of more lethal and expensive munitions exacerbated this trend.

During FY91, EDCA developed the latest of a series of versions of the production base reduction plan, called the Ammunition Facility Strategy for the 21st Century (AMMO-FAST 21). During the year, preliminary implementation steps and the solicitation of comments from the Services had been underway. In general, the Services appeared to be accepting the plan.

Table IV - 8: Ammunition Facility Strategy for the 21st Century

CATEGORY	FY90 BASELINE	FY90 STUDY	AMMO-FAST 21
Active	17	9	9
Inactive	7	11	15*
New Missions	--	2	--
Excess	6	8	6

* *Inactive plant breakdown under this plan was as follows: 4 were maintained under facility contracts; 8 were maintained by operating contractor; and 3 were in caretaker status.*

Conventional Ammunition Working Capital Fund (CAWCF). The CAWCF consolidated orders from the Services for ammunition to finance ammunition procurement. The fund charged a fixed standard price that covered the CAWCF costs for procuring the munitions, including the cost of hardware and various other associated costs, in addition to a positive or negative surcharge adjustment to bring the CAWCF to a break-even position. This charge remained in effect for the life of an order with the CAWCF absorbing the cost variances and passing them on the next year in the adjustment. At the end of FY91, the CAWCF cumulative loss was $181.5M and, with the approved surcharge adjustment of 3.76 percent, the estimated FY92 end-of-year loss would be 84.1M. The CAWCF requested a surcharge of 4.14 percent for FY93 to bring the CAWCF back to a break-even position.

Special Assistant for Joint Activities

The Office of the Special Assistant for Joint Activities supported AMC's participation in the Joint Logistics Commanders' (JLC) conferences. As was customary, four such meetings were held in FY91. On 4 and 5 December 1990, AMC hosted a JLC meeting at MICOM. On 13 and 14 March 1991, a JLC meeting was hosted by the Air Force Systems Command, Eglin Air Force Base. On 4-6 June 1991, the Air Force Logistics Command hosted a JLC meeting at Ogden Air Logistics Center, Hill Air Force Base. On 10-12 September 1991, AMC again hosted the JLC, this time at TECOM in Aberdeen Proving Ground. Attending the meetings were the commanders of the Army Materiel Command, the Air Force Logistics Command, and the Air Force Systems Command, as well as the Chief of Naval Operations for Logistics. In addition, high ranking logistics personnel from the Defense Logistics Agency and the Marine Corps[13] attended the meetings as invited participants.[14]

AMC-Europe

Manpower and Organizational Changes

At the start of FY91, the manpower authorizations for HQ AMC-Europe were 87 civilians and 24 military, for a total work force of 111 personnel. By the end of the fiscal year the authorized civilian strength had increased to 90 while the authorized military strength remained unchanged, for a total strength of 114.[15]

LAO-Europe structure changed drastically during FY91 due to the CFE Drawdown and ODS. As a result of CFE, the LAO VII Corps Region was dissolved, which caused LAO-Europe to operate under a 2 Region concept versus a 3 Region concept. Other LAOs which were deactivated include the 56th Field Artillery in April 1991, the 3rd Armored Division in June 1991, the 1st Infantry Division in July 1991, the 1st Armored Division in July 1991, and the 2nd Corps Support Command (COSCOM) in September 1991.

At the beginning of FY91, LAO manpower authorizations were 20 military and 66 civilians and actual strength consisted of 17 military and 60 civilians, for a total workforce of 77. At year's end, LAO-Europe manpower authorizations were 20 military and 63 civilians and actual strength consisted of 16 military and 46 civilians, for a total workforce 62 personnel.

Key Personnel Changes

The Command Group of AMC-Europe had several key personnel changes during FY91. On 8 April 1991, COL Stephen Etzel, former Chief of Staff, assumed command of AMC-Europe in a ceremony hosted by General William G. T. Tuttle, Jr., Commanding General, AMC. The former Commander of AMC-Europe,

---

[13]A Marine Corps representative did not attend the 4-5 December 1990 meeting.

[14]Memorandum for Distribution, Subject: Joint AMC/OPNAV/AFLC/AFSC Commanders (JLC) Meeting, 4-5 December 1990, 21 December 1990; Memorandum for Distribution, Subject: Joint AMC/OPNAV/AFLC/AFSC Commanders (JLC) Meeting, 13-14 March 1991, 11 April 1991; Memorandum for Distribution, Subject: Joint AMC/OPNAV/AFLC/AFSC Commanders (JLC) Meeting, 4-6 June 1991, 19 July 1991; Memorandum for Distribution, Subject: Joint AMC/OPNAV/AFLC/AFSC Commanders (JLC) Meeting, 11-12 September 1991, 4 October 1991.

[15]Unless otherwise noted, this section is based on AMC-Europe Historical Submission for FY91.

BG Harvey E. Brown, relinquished the Commander's position, which he had held from 9 January 1990 to 8 April 1991, to assume command of AMC-Southwest Asia (AMC-SWA). The position of Chief of Staff for AMC-Europe remained vacant. The Command Sergeant Major, CSM Arthur Spears, transferred on 16 June 1991 and was replaced by CSM Robert Bernier on 3O August 1991. The Secretary to the General Staff, MAJ Andrew Chmar, transferred on 14 April 1991. He was replaced by MAJ David Miles as Executive Officer on 15 April 1991. The Staff Judge Advocate position has been vacant since 5 June 199O. The Interim Inspector General, Mr. Rockwell Gerlach, was replaced by LTC Ermal Crossfield on 5 August 1991. Mr. Gerlach was reassigned to the Directorate for Supply, Maintenance and Transportation. The Chief of the Quality Assurance Office, Mr. Jack Gouge, was reassigned on 8 September 1991 to the Directorate for Supply, Maintenance and Transportation. The Chief of Quality Assurance Office remained vacant. Key personnel at AMC-Europe at the end of FY91 were as follows:

COL Stephen L. Etzel	Commander
CSM Robert Bernier	Command Sergeant Major
Mr. Richard Roane	Deputy to the Commander
Vacant	Chief of Staff
MAJ David Miles	Executive Officer
Vacant	Staff Judge Advocate
LTC Ermal Crossfield	Inspector General
Mr. Thomas Hankus	Public Affairs Officer
Vacant	Chief, Quality Assurance
COL Joseph Galloway	Director for Materiel Fielding
MAJ Robert Hornbaker	Chief, Operations Division (DMF)
Vacant	Chief, Force Analysis Division (DMF)
Mr. Alberto Reyes	Acting Director of SMT
Mr. Dick Pouch	Chief, Maintenance Division
Jack Gouge	Chief, Supply/Transportation Division
Ms. Ruth Lilley	Director for Resource Management
Vacant	Chief, Force Management Division
Vacant	Chief, Program/Budget Division
Ms. Dorothy Helms	Chief, Management Review and Analysis Division
LTC James Gray	Chief, Security, Plans and Operations Office
COL Allan C. McGill	Chief, LAO-Europe
Mr. Hardie Lequire	Deputy Chief, LAO-Europe
Mr. Raymond J. Coffman	Chief, LAO-Europe Readiness Division
Mr. William R. Coleman	Chief, LAO-Europe Support Division
Mr. Ford G. May	Region Chief, LAO-Europe V Corps
Mr. Larry C. Cable	Acting Region Chief, LAO-Europe 21st TAACOM

Command Management Issues

Operation Desert Shield/Storm. BG Harvey E. Brown, Commander, AMC-Europe was sent TDY to serve as Acting Commander of AMC-SWA in February 1991. On 8 April 1991, BG Brown was officially designated Commander, AMC-SWA and command of AMC-Europe passed to COL Stephen L. Etzel. When BG Brown deployed to SWA, three other military personnel accompanied him. CSM Arthur Spears, First Lieutenant Jeff Tronvold, his aide, and SGT Steven Williams, his chauffeur. Loss of these personnel drastically altered the day-to-day operation of the AMC-Europe Command Group.

The requirements of ODS led AMC-Europe to establish an Emergency Operations Center in Building 974. This was planned and operated by the Security, Plans, and Operations (SPO) Office with assistance from

all other Directorates. Daily command situation briefings were conducted on the status of the SWA operation and missions were detailed by the Commander. Significant message traffic was reviewed and disseminated to action officers.

A 24-hour guard force was established for the physical protection of the installation. THREATCON C required identity and vehicle checks at the main gate and at different key locations within the Hammonds Barracks compound. The guard force and security requirements were coordinated by SPO, Headquarters, and Headquarters Detachment personnel.

A family Support Database was developed to identify all AMC personnel from Europe (military, Department of the Army Civilians [DAC], Logistical Assistance Representatives [LAR] and contractors) deployed to SWA. The database was used to maintain family/next of kin (NOK) information and to ensure visibility of all families remaining in theater.

On 14 March 1991, there was a memorial service at Hammonds Barracks in honor of Mr. James Neberman, an AMCCOM LAR who was killed in an explosion during ODS.

Mainz Army Depot (MZAD) Study. During FY91, AMC-Europe was requested to conduct a study to determine if MZAD should remain in theater or be closed. Due to the overall drawdown in the Army and the CFE treaty drawdown requirements, overall depot level maintenance requirements continued to decline. Coupled with this decline was the lack of projected General Support overflow workload from U.S. Army, Europe (USAREUR). AMC-Europe was asked to conduct this study, after a DESCOM study indicated that MZAD should be closed, to again explore the options of closing MZAD or keeping it in operation with a minimal economic work load.

The AMC-Europe study also examined, for the first time, the possibility of having the workload handled by the NATO Maintenance and Supply Agency (NAMSA). Following the determination that after 1994 there would not be enough workload in Europe to maintain MZAD at the minimum economic workload, that NAMSA could only perform some selected portions of the MZAD mission, and that there would be a substantial savings if MZAD was closed, the study recommended that MZAD be closed, to which HQ AMC concurred. DOD was to make the final decision.[16]

Command Group

Change of Command. The evening following the change of command from BG Brown to COL Etzel, 120 members of the AMC Community gathered at a local restaurant to informally farewell BG and Mrs. Brown. GEN Tuttle concluded his trip to USAREUR with a visit to the 3rd Infantry Division Support Command (DISCOM), located in the field at the Hohenfels Training Area.

Family Support Group (FSG) Establishment. The Hammonds Barracks/AMC-in-Europe Family Support Group met at the Commander's home. On 23 January 1991, Mrs. Jayne Brown hosted an AMC-Europe FSG meeting. The AMC-Europe Family Assistance Handbook was distributed as was literature gathered from both HQ AMC and the Heidelberg Military Community. Mrs. Brown stressed the Commander's concern for support of our families (civilian, military, and contractor) while the sponsors were deployed to Southwest Asia. Discussions centered around the need for an FSG, AMC-in-Europe organizational responsibilities, and the role the family members themselves will play in our FSG. This was the first of many FSG meetings.

---

[16]The study is included as an appendix to the AMC-Europe historical submission for FY91.

Visitors. During the period from 7 to 13 April 1991, General Tuttle and MG Thomas B. Arwood, AMC's Deputy Chief of Staff for Readiness, visited USAREUR and selected Army Materiel Command activities. The primary purpose of the visit was to conduct the change of command ceremony for AMC-Europe and to visit several AMC units in Europe. General Tuttle was invited to Berlin by the German officials and accepted their invitation. While in Berlin, he visited LAO-Berlin.

On 11 to 12 September 1991, LTG Billy M. Thomas, AMC's Deputy Commanding General for Research, Development, and Acquisition (DCGRDA) visited USAREUR and AMC-Europe while in Europe to host the annual United States Army Research, Development and Standardization Group Reception.

From 15 to 21 September 1991, LTG Marvin D. Brailsford, AMC's Deputy Commanding General for Materiel Readiness (DCGMR), visited U.S. Army Europe and AMC-Europe while in Europe, at the invitation of the Commander-in-Chief, USAREUR, to visit REFORGER. LTG Brailsford visited several units, including the 21st Theater Army Area Command (TAACOM), the 517th Maintenance Battalion, the 29th ASG, the 200th Theater Army Materiel Management Center (TAMMC), NATO Maintenance and Supply Agency (NAMSA), Nahbollenbach European Redistribution Facility (ERF), MZAD, Ober Ramstadt Army Depot Activity (ORADA), and the 59th Ordnance Brigade.

On 23 January 1991, Mrs. Clytie Cleaves of the Directorate for Information Management (DOIM) was tasked by the Commander, AMC-Europe to develop a deployment database for ODS. By 11 February 1991, she had completed the database and a tailored automated system in dBase III Plus to identify all AMC-in-Europe personnel deployed to Southwest Asia. The system provided a menu-driven interactive screen to allow users to input, edit, delete and display data elements on deployed personnel. The system had display, backup and restore capabilities; and generated numerous programmed reports. To ensure database integrity, the system performed edit checks, calculated key dates, and automatically input data when "what if" conditions existed. Additionally, the program captured pertinent Family Support information.

The Deployment Database and the tailored automated system were disseminated to AMC-Europe's field activities for data collection and input into a master file. The database continued to be maintained for monitoring deployment of AMC-in-Europe personnel following the completion of ODS.

Directorate for Readiness

LAO Readiness for ODS

At the onset of ODS, a review of the Logistics Assistance Office-Europe missions and functions was conducted to ensure maximum support to both the peacetime mission and the forthcoming contingency requirements. The review disclosed that the current support concept was adequate, and that if a unit was to be deployed, then the supporting LAO would also deploy. The DCS's primary focus then became the personal preparation of each LAO and LAR to ensure maximum readiness and supportability to the deploying USAREUR unit. The DCS's secondary focus was on family support, to ensure as smooth as possible transition for remaining family members. In addition, the DCS continued to focus on the day-to-day missions.

ODS and ODS-Related Deployments. The following LAO-Europe personnel deployed to support ODS:

Raymond Coffman	26 Aug 90 - 6 Dec 91	CPT(P) Williams	8 Dec 90 - 21 Apr 91
Dana Thorpe	26 Aug 90 - 18 Dec 91	LTC Goodman	8 Dec 90 - 10 May 91
SGM Behrens	8 Dec 90 - 17 Mar 91	Donna Ruggles	8 Dec 90 - 20 May 91
SFC Vazquez	8 Dec 90 - 14 Apr 91	Kevin Rohm	26 Dec 90 - 19 Apr 91

James Porter	26 Dec 90 - 20 May 91	Gary Burkavich	24 Jan 91 - 22 Apr 91
Edgar Conners	27 Dec 90 - 11 May 91	Monroe Mitchell	26 Jan 91 - 14 Apr 91
Robert Hosack	27 Dec 90 - 09 Jun 91	Terry Malone	5 Feb 91 - 4 Aug 91
MAJ Sanders	27 Dec 90 - 26 May 91	Jimmy Wood	5 Feb 91 - 4 Aug 91
LTC Harrold	30 Dec 90 - 25 Apr 91	Geoffrey Embrey	14 Feb 91 - 17 Apr 91
MAJ Abernathy	5 Jan 91 - 23 May 91		

An LAO was established in Incirlik, Turkey to support Operation Provide Comfort. The LAO mission was to provide logistics support to U.S. units and humanitarian assistance to the Kurdish people. The LAO maintained control of all AMC elements deployed, ensured that AMC provided adequate and timely support when needed, and served as a single point of contact between the Armed Forces (ARFOR) Commander and the AMC community.

The following LAO-Europe personnel were deployed in support of Operation Provide Comfort:

LTC Helton	26 Apr 91 - 23 Jul 91	Akemi Stanley	21 May 91 - 30 Jul 91
William Coleman	26 Apr 91 - 10 Jun 91	Patricia Murphy	20 Jul 91 - 2 Sep 91
Patricia Duarte	4 May 91 - 21 Jun 91	LTC Daugherty	20 Jul 91 - 3 Oct 91
James Foster	17 May 91 - 6 Aug 91	Donald Allen	31 Jul 91 - 3 Oct 91
MSG Easley	21 May 91 - 8 Jul 91		

Task Force Victory II, consisting of U.S. forces from the 11th ACR and 8th ID, were deployed from the European theater to operate in Kuwait as a peace keeping force and to protect Kuwait from future Iraqi attacks. The following LAO-Europe personnel deployed with their respective units to provide logistical support during the operation:

MAJ Martin	13 Jun 91 - 12 Sep 91	MAJ Tucker	1 Sep 91 - after end of FY91
Marvin Hornbeck	28 Jun 91 - 15 Sep 91	John McGill	1 Sep 91 - after end of FY91

Operation Determined Resolve was initiated in September 1991. This exercise was designed as a deterrent to future hostile operations by the Iraqi government. LAO-Europe personnel deployed to Riyadh, Saudi Arabia, to provide logistical support for Patriot units operating in and around the Riyadh Province. Personnel deployed to Saudi Arabia for this operation were:

James Roberts	25 Sep 91 - after end of FY91
MAJ Palm	25 Sep 91 - after end of FY91

Annual LAO-Europe Workshop

COL Allen McGill chaired the annual LAO-Europe workshop conference held from 3 to 6 September 1991 in Willingen, Germany. Conference guest speakers included COL Creel - Commander, Defense Logistics Agency-Europe (DLA-E), COL Mulrine - 200th TAMMC, LTC Kimmel - Senior Command Representative TACOM-Europe (SCR TACOM-E), COL Riley - 21st TAACOM, LTC Helton - LAO 8th ID, Mr. Treusdell and Mr. Greber - HQ LAPA, LTC Gillies - Commander, European Redistribution Facility (ERF), COL Lytle - FORSCOM LAO, Ms. Huber - Civilian Personnel Officer V Corps, and Ms. Holly Brown - LAO-E. The banquet's keynote speaker was BG(P) Coburn - USAREUR and 7th Army's DCS for Logistics. The attendees stated the conference was a great success and that they looked forward to the next one.

Directorate for Materiel Fielding

Conventional Forces Europe

The CFE Cell was created in FY90 as a single ad hoc organization within the directorate to handle actions associated with CFE negotiations and decisions for HQ AMC-Europe.[17] In October 1990, AMC-Europe submitted a recommendation to HQ AMC for drawing down the military workforce from 732 to 188 by the end of FY93. The AMC Commander approved this plan was approved on 25 January 1991. In February 1991, USAREUR further reduced troop strength from 120K to 92.2K. This initially reduced AMC-in-Europe military strength to 50. AMC-Europe requested additional spaces from the USAREUR DCSLOG in order to continue providing TMDE support to the theater. The DCSLOG took the AMC-Europe proposal to the Commander-in-Chief (CINC) USAREUR for approval. Approval was received in April 1991. CINC USAREUR approved 148 spaces of which 115 were for TMDE and 33 were for the remaining activities within AMC-in-Europe.

AMC-Europe submitted a plan to reach the end state of 148 by the end of FY95 to the AMC Commander. Approval was received in June 1991 and during that month each major subordinate command was briefed by representatives from USAREUR and AMC-Europe on the plan for the phased reduction of USAREUR and AMC-in-Europe through FY95.

Intermediate Nuclear Forces (INF) Treaty Verification

During FY91, 55 Pershing Erector Launchers were eliminated at the Equipment Maintenance Center, Hausen, in accordance with INF Treaty provisions. This process included six elimination inspections, each attended by a ten-man Soviet Inspection Team. On 17 April 1991, the last Erector Launcher in Europe was destroyed, and on 18 April the Soviets conducted a closeout inspection for the Equipment Maintenance Center, Hausen. All inspections were conducted in a professional manner with only complimentary remarks by the Soviet inspectors. On 13 September 1991, the Equipment Maintenance Center in Hausen was turned over to the Frankfurt Military Community (MILCOM),[18] ending AMC-in-Europe's involvement with the INF Treaty.

German Patriot Program

The issues of transportation and accountability continued to plague this program in FY91. The May 1990 Memorandum of Understanding (MOU) between PM, Patriot and USAREUR on transportation of U.S. Owned/German Manned missiles was implemented by USAREUR with organic transportation. This effort met with limited success. The German Air Force insisted on compliance with provisions of a November 1989 Memorandum of Agreement (MOA) between HQDA and the German government. The MOA stated the German Air Force would move the missiles and the U.S. would pay for movement. AMC-Europe hosted two meetings to resolve this and other issues. By the end of FY91, USAREUR agreed to pay for the movement of missiles, and the issue was resolved.

Accountability for U.S. Provided and U.S. Owned/German Manned missiles and equipment improved in FY91. During that period, MZAD corrected the formal accountability findings identified in the June 1990 Army Audit Agency report on the German Patriot Program. The problems associated with reporting Class

---

[17]The CFE Treaty deals only with the reduction of military personnel and weaponry in Europe.

[18]A MILCOM is a battalion-sized administrative support unit now called an Area Support Group (ASG).

VII (major end items) in Continuing Balance System-Expanded (CBS-X) and Class V (ammunition items) in the Guided Missile and Large Rocket (GMLR) Report were not resolved. Also, much of the U.S. equipment under German control was not reflected on MZAD's Table of Distribution and Allowances (TDA). At fiscal year's end, AMC Europe and the Systems Integration Management Activity (SIMA) European Field Office were working with MZAD to correct the systemic and procedural problems involved in CBS-X reporting. MICOM was reviewing the requirement for Class V reporting by 200TH TAMMC. HQDA agreed to again look at the MZAD responsibility for maintaining German PATRIOT authorizations on its TDA. This review could result in transfer of the responsibility to another activity.

Mobile Subscriber Equipment (MSE)

In FY91, the 22d Signal Brigade (V Corps), 142d Signal Platoon (2d Armored Division Forward) and the 123d Signal Battalion (3d Infantry Division) received MSE. Also, the Air Defense Interface (ADI), to suport MSE fielding in the 11th Signal Battalion (32d Army Air Defense Command [32d AADCOM]), was successfully tested. During this period, the CFE Treaty and ODS actions necessitated changes to the program. The 143d Signal Battalion (3 AD) and 142d Signal Platoon deployed to SWA. The release of selected Theater Reserve and CFE excess items to support the fill of equipment shortfalls for USAREUR units allowed MSE fielding to continue uninterrupted throughout the period of operations in SWA.

The fieldings' schedule and architecture, however, were revised to accommodate SWA deployments and CFE decisions. Besides fielding MSE to the 32 AADCOM, division signal battalions were increased in size from 4 to 6 nodes. During FY91, USAREUR announced the 143d Signal Battalion would be inactivated. The 51st Signal Battalion moved from the 93d Signal Brigade (VII Corps) to the 22 Signal Brigade in August. It was scheduled to receive MSE equipment from the 143d, 121st (1 ID Fwd) and 142d Signal Platoons during the April-September 1992 fielding window. The transfer of equipment from SWA deployed units presented a problem since much of the equipment needed refurbishment.

Provision of Disposition Instructions for Excess Equipment Generated in Drawdown of USAREUR Units

In support of the compressed unit drawdown schedule, AMC agreed to provide disposition instructions to USAREUR on excess major end items within 3-7 days, not more than ten days, after it was requested. To facilitate this expedited process, DA granted a waiver for technical inspection documentation and AMC's National Inventory Control Points (NICP) provide shipping instructions electronically. AMC-Europe monitored NICP performance, assisted USAREUR, and prepared management reports. During FY91, of the 2,241 requests for disposal instructions submitted by USAREUR, AMC responded to 1,968 within the required time frame (88 percent). Indications are that performance will continue to improve as systemic glitches and procedural problems are resolved.

New Equipment Fielding Effort

USAREUR units were handed 25,836 end items of new equipment during FY91. The greatest activity occurred in August, when 14,283 items were fielded. The least activity occurred in January, when 225 items were fielded. There were 21,853 CECOM items handed off during the fiscal year, constituting 84.5 percent of the total. The size and complexity of this effort ranged from major system fieldings (such as MSE and Guardrail) to minor system fieldings (such as night vision goggles). TACOM equipment made up the second largest group of fieldings with 2,838 (10.9%) items handed off to USAREUR. Armored systems such as the M1A1 Abrams and M2A2/M3A3 Bradleys and other vehicles such as the 4,000 lb. forklift and M939A2 5 Ton Trucks were issued. Significant fieldings of other commodities included the ATACMS, the Multiple Launch Rocket System (MLRS) and the HAWK PIP IIIA (MICOM); the Apache AH-64, the Chinook CH47 Extended Range Fuel System (ERFS), and Kiowa OH-58 Army Helicopter Improvement Program (AHIP)

(AVSCOM); the 81mm Mortar and the Fox XM93 Chemical/Biological Detection Vehicle (AMCCOM); and Laundry Units and Quiet Reliable Generators (QRG) (TROSCOM).

Battalion Countermine Set (BCS). The BCS was fielded in Southwest Asia (SWA), however, no unit received a complete set. Instead, components of the BCS were fielded as needed. When the remaining systems are modified for heavy armor and shipped to the theater for fielding, USAREUR will fill units by components and direct transfer of components as needed, to insure that each gaining unit has a complete BCS.

Armored Combat Earthmover (ACE). The ACE fielding was accelerated to equip units deploying to SWA. Initially, USAREUR neither knew which units had received the ACE nor how many they had received. When the units returned from SWA, an inventory was conducted and it was determined that, up to 30 September 1991, a total of 65 vehicles were fielded. The ACE fielding is continuing; a total of 155 are scheduled to be fielded in later fiscal years.

Maneuver Control System (MCS) AN/UYQ-43(V)1/2. During FY91, a total of 248 AN/UYQ-43(V)1/2 systems were fielded to V Corps units. This fielding was originally scheduled for the first quarter of FY89, but had been postponed when USAREUR refused to accept MCS equipment with the software capability it had. Continuous upgrades to the MCS software resulted in a USAREUR call forward in the first quarter of FY90, but the system was again refused by USAREUR. This refusal resulted in the MCS package being returned to CONUS in the December 1989/January 1990 time frame. USAREUR did not decide to accept the MCS package until early February 1991. This required the PM, Operational and Tactical Distribution System (PM, OPTADS) to expedite the shipment of the V Corps Non-Divisional equipment to meet the 11 March 91 New Equipment Training (NET) start date.

When USAREUR decided to accept the system, the command placed an extreme requirement upon the Fielding Command and PM, OPTADS to comply with required NET dates. Because of the time constraint, shipment via commercial air resulted in a continuing need to prepare and deliver customs declaration papers to numerous freight forwarders at Frankfurt airport. The CFE plan caused numerous changes to the fielding distribution. These changes, along with previously unanticipated unit deployments, invalidated the MCS fielding documentation. Extremely short shipping/deprocessing to fielding date time frames caused a "field-as-you-receive" methodology. Even so, no major shortages occurred at time of hand-off and NET was adequately supported. The success of MCS can be directly attributed to the dedication and professionalism of the CECOM European Field Office, PM OPTADS, and the civilian contractors involved.

AH-64A Attack Helicopter Backup Control Systems (BUCS). Two Attack Helicopter Battalions (AHB) were fielded (6/6 AHB at Illesheim and 2/3 AHB at Geibelstadt) with BUCS. These two AHB are the only units with BUCS, so logistical support was initially limited. All fieldings went smoothly and the 6/6 AHB was able to deploy to Turkey after training in USAREUR.

AMC Central Staging Activity Support for ODS. During FY91, the AMC Central Staging Activities at Friedrichsfeld, Seckenheim and Geinsheim provided 21,028 force modernization items to deploying USAREUR units or to units already deployed to SWA. The items provided included end items, support equipment, spares, repair parts and Communications Security (COMSEC) systems. Staging site personnel assisted units by arranging transportation for much of the equipment. They also delivered equipment to Military Airlift Command (MAC) cargo terminals for priority shipment to SWA via Desert Express aircraft.

Battlefield Communications Review (BCR) II Retrograde. The retrograde of displaced communications systems from USAREUR to CONUS, under the BCR II program, continued in FY91. The Geinsheim Staging Activity received more than 900 line items of BCR II materiel in FY91. By April, the backlog of items at the Geinsheim Staging Activity holding area occupied more than 90 percent of available space. This was caused

by continued saturation of the transportation system with SWA requirements and the prior fiscal year freeze on second destination transportation funds. Since the 32d AADCOM was due to begin turn-in of BCR II equipment in July, it was necessary to clear some of the materiel. Also in July, the 1st Theater Movement Control Agency (TMCA) advised the CECOM European Field Office (EFO) that there would be enough transportation assets available to retrograde all of the equipment backlog. Transportation was available because of the lag between the end of the Gulf War and redeployment of U.S. forces. By August, most of the backlogged equipment had been shipped to CONUS. At the end of FY91, there were 106 line items of materiel at the staging activity awaiting disposition instructions or transportation.

Improved High Frequency Radios (IHFR). The fielding of IHFR was accelerated in October 1990 to meet ODS requirements. Total systems fielded during FY91 were 84 AN/GRC-193As and 176 AN/GRC-213s. The systems were fielded from the Friedrichsfeld Staging Activity to deploying units while they were still in Europe. The radios were issued with general purpose Installation Kits (IK). Vehicle unique IK items were fabricated or locally procured by gaining units. Despite this surge in the fielding activity for IHFRs, the remaining radios at Friedrichsfeld (30 of each type) had not been issued by the end of the fiscal year. Uncertainties, caused by redeployment of forces from SWA and realignment of VII Corps units to V Corps, resulted in continued delay. At the end of the year, CECOM was awaiting vehicle application requirements from V Corps. After these requirements were known, according to CECOM, it would take up to 180 days to make the installation kits available. In August, CECOM notified USAREUR that it will receive an additional 118 IHFRs. At the end of the fiscal year, USAREUR had not yet developed a new distribution plan.

Corps Air Defense Artillery (ADA) Brigade

On 1 September 1991, the 69th Corps ADA Brigade was activated in V Corps. The activation capped months of intensive planning and execution by the 32D AADCOM, V Corps and USAREUR's Office of the Deputy Chief of Staff for Operations (DCSOPS). The brigade was formed from existing air defense resources already in theater. It consists of the 5/2 ADA Battalion (Chaparral), the 6/43 ADA Battalion (Patriot) and the 6/52 ADA Battalion (Hawk). The 69th Corps ADA Brigade was headquartered at Leighton Barracks, Wuerzburg, Germany.

CFE Treaty Limited Equipment (TLE)

The CFE treaty requires that all TLE be reported by all activities owning or maintaining it within Europe. Additionally, these activities are subject to inspection and evaluation by the signatories of each treaty. During FY91, AMC-Europe coordinated treaty verification procedures and reports with AMC in Europe activities designated as Objects of Verification (OOV). Treaty compliance responsibilities were transferred to MILCOMs, however, AMC-Europe continued coordination with OOVs and compiled and reported AMC TLE on-hand.

Directorate for Supply, Maintenance, and Transportation (DSMT)

Operation Desert Shield/Storm

Deployment of Fuchs NBC Vehicles in SWA. AMC-Europe personnel participated in a meeting with the German Army regarding transfer of the Fuchs vehicles to the U.S. Army. The HQ AMC-Europe Procurement Management Office (PMO), DSMT, acted as the liaison between the U.S. Army Europe Contracting Center (USAREURCC) and HQ AMC-Europe. PMO reported the status of the contract, to include delivery of vehicles shipped, packing and packaging specifications of parts, markings to ensure delivery to the subcontractor in SWA, and the resolution of any problems encountered. PMO was also responsible for

coordination with the MSCs, USAREURCC, and the U.S. Liaison at the embassy in Bonn for LAR automotive and chemical operational training, which was conducted by the Germans.

Transportation Assistance Provided by AMC-Europe to ODS. The AMC-Europe transportation specialist assisted USAREUR and all AMC elements in the tracking and movement of equipment, supplies and personnel to and from SWA. Direct coordination with theater transportation activities was accomplished to expedite identification of materiels and speed their movement to final destinations. Technical and general information was provided on all modes of transportation and on specific transportation actions for all types of equipment and materiel to the AMC-Europe Commander, staff, logistics assistance personnel and AMC MSC personnel in theater. Air transportation of AMC personnel deploying to SWA was coordinated with USAREUR DCSLOG/DCSOPS to expedite their movement. Additionally, guidance and assistance was provided to the 517th Maintenance Battalion on deployment procedures in support of their deployment to SWA, specifically with developing load plans and load list information required to be entered into the Joint Operations Planning and Execution System (JOPES) and Transportation Coordinator, Automated Command and Control Information System (TC ACCIS).

Contract Support to ODS. AMC-Europe contract personnel coordinated with the USAREUR Contracting Center to establish alternate sources for various supply/services in support of AMC requirements in SWA. These included Chemical Agent Resistant Coating (CARC) painting of vehicles, air freight services and tire purchases. In some instances, contractors were contacted to establish delivery schedules and prices.

AMC-Europe SMT Personnel Deployed to SWA. Three AMC-Europe personnel deployed to SWA from the SMT Directorate. Mr. Warren Boyett was deployed to SWA from 22 February to 10 August 1991. He provided support to the U.S. Army Support Group (USASG) as the Chief, Shipping/Outloading Branch, Transportation Division, USASG. Mr. Boyett supervised 21 employees and was responsible for forwarding equipment and supplies within SWA and retrograding shipments of outbound equipment.

Mr. William Smith returned to Europe on 7 May 1991, after a ten week deployment to SWA. His efforts in SWA were two-fold. He assisted ARCENT with the retrograde of ammunition and served as the Deputy Commander, AMC-SWA (Rear). He assisted in coordinating/executing the wide-ranging AMC missions in the Dhahran area and maintained oversight of approximately 2,400 AMC military and civilian personnel on the ground.

Mr. Joe Bush returned from Saudi Arabia on 6 March 1991. During his 30-day deployment to SWA, Mr. Bush assisted the USASG by establishing the Saudi Arabia Redistribution Facility (SARF) and assisting in the SARF's automated system design. The SARF served as the hub for the massive retrograde effort.

Other SMT Support to ODS. SMT provided a representative to the USAREUR DCSLOG Crisis Action Team (CAT) for the duration of ODS. This representative assisted with the USAREUR Desert Fill Project which ensured that VII Corps deployed with an adequate Authorized Supply Level (ASL) fill. SMT's close coordination and assistance were essential in expediting MZAD support to USAREUR for ODS. Specifically, SMT provided on-the-spot information on depot capabilities and capacities to USAREUR and early identification of requirements to MZAD. Every member of the SMT Directorate participated in the 24 hour staffing of the AMC-Europe Emergency Operations Center.

Modification Work Order (MWO) Program. In June, AMC-Europe and the 200TH TAMMC co-chaired the annual MWO Coordinating/Scheduling Workshop at 2OOth TAMMC, Zweibruecken. The workshop was attended by USAREUR units, 2OOth TAMMC, AMC-Europe and Mainz Army Depot. The proposed FY92 theater MWO program was presented, the current MWO program was reviewed, and problem areas were

discussed. The current status of the new MWO information system was provided, along with an overview of expected capabilities. AMC-Europe continued to monitor MWO program execution in theater, providing an interface between the AMC community and USAREUR and assisting with individual MWO programs as required. MWO assistance was provided to the theater during movement of equipment from stored stocks in Europe to Southwest Asia, in support of ODS.

Chemical Agent Resistant Coating. AMC-Europe continued to provide assistance to USAREUR in resolving issues related to CARC paint. AMC-Europe assisted in the CARC painting of USAREUR equipment for deployment to Southwest Asia by providing technical information and coordinating actions with HQ AMC, Geinsheim, MZAD and USAREUR DCSLOG.

OCONUS Contracts Database. The AMC-Europe Procurement Management Office maintained a database of all AMC contracts in theater. Data was received from the AMC MSCs, the U.S. Army Contracting Center and the Defense Contract Management Command-International (DCMCI). Data was maintained on AMC OCONUS contracts/contractor logistic support for ODS. All AMC elements (CONUS and OCONUS) were requested to provide specific information on all service contracts supporting SWA. Data was entered into a LYRIX[19] file and the HQ AMC-Europe OCONUS contracts database.

European Redistribution Facility (ERF). ERF was a DESCOM organization with three locations in Germany. ERF Main was located in Nahbollenbach, ERF V Corps in Hanau, and ERF VII Corps in Boeblingen. The ERF received and redistributed retrograde excess serviceable and unserviceable, economically reparable materiel. During FY91, the ERF took on as an additional mission the receipt and processing of theater owned containers from SWA. At the end of FY91, the ERF had processed more than 600 Ocean Containers from SWA, increasing the ERF on-hand inventory from more than 31,000 lines (worth over $25,000,000) to over 61,000 lines (worth $96,000,000). During FY91, the ERF processed over $541,000,000 of Materiel Release Orders, redistributing much needed equipment and materiel to USAREUR units.

Directorate for Resource Management

Operation Desert Shield/Storm

Several of the Directorate of Resource Management personnel expended many hours in support of ODS, carrying out such functions as maintaining the Deployment Database, manning the Emergency Operations Center (EOC), and providing assistance to the AMC-Europe Family Support Group. The following personnel were recognized for their contributions and received an On-the-Spot cash award for $250 for performing duties as the Staff Duty Officer and manning the EOC: Dottie Helms, Mrs. Glenda Roberts, Mr. Allan Schmack, Mr. Joseph Maddox.

Expenditures for ODS and Operation Provide Comfort (OPC). The following table provides a detailed breakdown of funds expended for ODS and OPC.[20]

---

[19]LYRIX is a word processing software package used on the Intel system.

[20]Information provided by Mr. Robert Fitzsimmons, AMC-Europe Liaison Officer, 1 July 1992.

Table IV - 9: Expenditures for ODS and OPC

	ODS	OPC	TOTAL
REG SALARY	105,355.89	2,962.07	109,236.36
OVERTIME	30,412.16		30,412.16
TDY	5,431.07		5,431.07
SERVICES	28,582.43		28,582.43
SUPPLY	43,095.89	902.18	43,998.07
EQUIPMENT	32,637.14		32,637.14
GRAND TOTAL			239,395.25

Commander's Vision Conferences. Col Etzel, Commander, AMC-Europe hosted two Vision Conferences during the summer of 1991. The first conference audience consisted of LAO-Europe and the MSC SCRs. The second conference audience was with the AMC-Europe staff. The purpose of the conferences was for each person attending to identify his/her envisioned organization role in support of USAREUR as it pared down. The conference was very successful in that it opened new levels of communications between the Commander and the SCRs.

Agreements Program. A significant effort was made to ensure that the agreements program was responsive to the organization's needs. A database was developed during FY90 which listed all known agreements for AMC activities in Europe. The Agreements Database was updated as needed to ensure status of agreements, MOUs, and MOAs were accurate. Active coordination with all AMC-in-Europe activities and USAREUR was increased. As often as possible, the coordination network was conducted via electronic mail.

The following Annexes to the Basic AMC/USAREUR Memorandum of Understanding were completed or updated during the year:

(1) Annex C, DA Modification Work Order (DAMWO) Program, between AMC and USAREUR;

(2) Annex D, Logistical Support Agreement for MZAD, between MZAD and USAREUR;

(3) Annex Q, Proper Administrative Procedures and guidelines for the Handling of Intelligence and Security Actions, between USAREUR and AMC;

(4) Annex R, Science Assistance Program, between AMC and USAREUR through the Science Assistance (Advisor) Program, AMC-FAST;

(5) Acquisition of Nontactical Vehicles (NTV) from Host Nation MOU, between USAREUR, USAFE and AMC;

(6) Use of the Biblis Equipment Site MOA between AMC-E and PM-MSE;

(7) Establish and delineate areas of responsibility for provision of support by Hammonds Barracks to Level 1 Drug Suppression Team MOA between AMC-Europe and CID;

(8) The procurement support from Letterkenny Army Depot (LEAD) to USAREUR;

(9) Support Agreement (Renewal), Maintenance Support to Friedrichsfeld Staging Area, between 29th ASG, 51st Maintenance Battalion and AMC-Europe.

AMC-Europe's FY91 Operating Budget. Despite the overall budget reductions throughout DOD, the approved FY91 operating budget of $5.255M was sufficient to fund all mission essential requirements. This was due, in part, to reduced man year utilization and "smart" resource management throughout the fiscal year. Additionally, AMC-Europe's annual funding program was increased for Operation Desert Storm and Operation Provide Comfort. As a result, AMC-Europe was able to accomplish its mission despite inflationary costs driven by an unfavorable dollar rate in Europe.

Security, Plans and Operations (SPO) Division

ODS. The AMC-Europe SPO Division activated its Emergency Operations Center 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/Storm support were also given to the AMC-Europe command structure.

Relocation. The Plans and Operations Division moved their physical work location from the basement of Building 974 into offices located on the ground floor of the same building. A functional Emergency Operations Center has been established to be used as a Command Operations Center (COC) for exercises. The Security and Intelligence (S&I) Office moved their physical location from Building 972 to Building 974.

Impact of Political Events. As political events unfolded during FY91, USAREUR did not participate in regularly scheduled exercises. The Gulf War and the unification of East and West Germany put a stop to business as usual and sensitized the way the U.S. Army conducted training within Europe. Normally, USAREUR attempted to minimize its visibility. However, the U.S. Army presence became very obvious to German citizens during the Gulf War. Rail, barge, and convoy movement of equipment, supplies and personnel to support the war effort had a tendency to polarize some communities.

European Aviation Classification Repair Activity Depot (AVCRAD) at Brussels, Belgium. The European AVCRAD at Brussels has undergone a major mission change while it continued to provide outstanding Overseas Deployment Training (ODT) opportunities to the National Guard Bureau. The AVCRAD peacetime mission of providing a General Support Repair Program (GSRP) facility has been reassigned to the 21st TAACOM. This mission shift, along with the USAREUR drawdown of personnel and equipment, has led to the closure of the "warmbase" facility.

Transition-to-War Plan. The Plans Officer has completely 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 upon hostilities within Europe. As a result, an MOU was being staffed in AMC-Europe and USAREUR which specified support requirements needed by 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 (7A CATC).

Security Assistance Visits. Members of the SPO conducted 11 assistance visits to AMC elements in theater during FY91. Significant visits were to the 517th Maintenance Battalion's Vicenza and Camp Darby Detachments. These detachments had never been visited by AMC Security personnel and both did not have a security program. This was corrected by the AMC-Europe team. Upon the team's departure, both detachments had a viable security program.

MOU with USAREUR DCS for Intelligence. On 11 June 1991, members of the Security and Intelligence Office met with members of the DCS for Intelligence, HQ USAREUR, to discuss the details of an agreement between the two commands' intelligence offices. This agreement had been staffed with AMC-Europe and HQ AMC and at the end of the fiscal year it was being staffed at HQ USAREUR. When completed, the document will provide a working agreement between the two agencies.

Assistance to German Intelligence. On 14 August 1991, USAREUR DCS for Intelligence requested AMC-Europe Security and Intelligence to provide damage assessment from over 100 U.S. Army manuals found in the files of MFS, the former East German Intelligence organization. These documents were forwarded to appropriate AMC major subordinate commands for review and damage assessment. This effort provided the German Government with information it used during trials of individuals charged in German Courts with espionage.

Law Enforcement Program. The duties of processing German criminal and civil complaints (traffic tickets), and Military Police reports continued to expand. From October 1990 to September 1991, the S&I office processed over 224 criminal and traffic violations. Numerous inquires were conducted on behalf of AMC members involved in offenses requiring further investigation. On 15 October 1991, a class was given to AMC-Europe supervisors to make them aware of their responsibilities for crime prevention, law enforcement and traffic safety. Members from the Heidelberg Judge Advocate General office presented a class on Civilian Misconduct.

Cargo Customs Program. DOD Regulation 5030.49R, *Customs Inspections*, dated May 1977, required inspections of all CONUS bound cargo by Military Customs Inspectors (MCI). Customs inspectors conducted several inspections at AMC facilities during the year. All AMC facilities passed inspection. All AMC elements in theater are now meeting the requirements of the above regulation.

Quality Assurance (QA) Office

Corrosion of Materiel from SWA. At the request of the USAREUR Office of the Deputy Chief of Staff for Logistics, the AMC-Europe QA office evaluated the degree of corrosion that was verbally reported from several signal, armor and artillery units in theater. The concern was that the SWA environment, along with overocean transportation, may have caused excessive corrosion problems. Three visits to different units were accomplished. The results indicate that corrosion exists on some tactical vehicles fielded prior to the mid '80s and that implementation of a Corrosion Prevention Program in Europe will correct current problems and prevent further corrosion damage. USAREUR also received feedback regarding the generally poor quality of painting accomplished in SWA. Paint was often applied over rust and dirt, causing a lack of adhesion to the equipment. Paint was also routinely applied over adhesive tape and canvas tops on High Mobility Multipurpose Wheeled Vehicles (HMMWV).

Foreign Military Sales (FMS) of Equipment in Theater. One lesson learned from ODS was that an official method to relay inspection, configuration, special packaging and shipment instructions to theater managers regarding the sale of theater assets to foreign countries did not exist. The QA Office forwarded to HQ AMC a recommendation to use the same method currently in place for sale of overhauled equipment located in U.S. Army Depots to foreign countries.

In support of TACOM, the AMC-Europe QA office participated in Pre-Shipment inspections of M548A2s and conducted port inspections of M88A1s sold to SWA countries. The M548A2s were located in several Reserve Storage Activities throughout Europe.

Packaging Assistance. The preservation and packaging discipline received special attention this year due to the implementation of Performance Oriented Packaging (POP) requirements for hazardous materiel and the retrograde of great quantities of materiel from SWA. The QA office arranged for a DA/AMC team to visit USAREUR regarding application of POP requirements in Europe and served as a conduit for POP information to the theater. A floppy disk containing a POP database was forwarded to USAREUR and Reserve Storage Activity (RSA), Benelux, to provide current information regarding shipment of hazardous materiel. An outreach visit by a team from the Packaging, Storage and Containerization Center was arranged and coordinated for the theater and the ERF to provide special packaging guidance and to rectify packaging and Care of Supplies in Storage (COSIS) problems.

Public Affairs

The Public Affairs Office published two comprehensive newspaper articles on AMC-in-Europe's support to ODS. An article on LAO-Europe's contributions to operational readiness in SWA was a feature in the March issue of the *AMC NEWS*.

Headquarters Detachment

Preparation for Overseas Movement (POM). The AMC-Europe Headquarters Detachment conducted a POM for over 200 military, DA civilians and contractor personnel. The POM ensured that the personnel and medical predeployment requirements were met. As part of the predeployment packets, the deploying personnel received information about Saudi Arabian culture, military operations in a desert environment, and information pertaining to the current operations. A final checklist was also provided to ensure that personnel were fully prepared to be deployed at any time.

Installation Reaction Force (IRF). The AMC-Europe Headquarters Detachment activated the Installation Reaction Force on 17 January, when the Heidelberg Military Community elevated its THREATCON to THREATCON C. IRF noncommissioned officers conducted 100 percent identification checks at the installation gate, random vehicular checks at the gate, perimeter patrols, and building security at the command building/EOC. IRF NCOs reacted quickly and have been a very effective deterrent measure for the installation. The German Police made frequent checks on the installation as well. Building Coordinators set up rosters for access control in each building on the installation.

Inspector General (IG) Office

LTC Kravchonok and Mr. Bateman of the HQ AMC Inspector General's Office conducted an AMC IG Team Assistance Visit to AMC-Europe from 19 July to 6 August. The purpose visit was to:

(1) Sense soldier and civilian reactions to Army, AMC, and local policies/issues by conducting sensing sessions.

(2) Evaluate the assistance rendered by local Inspectors General to members of this command.

(3) Assist by providing personnel the opportunity to seek assistance or register complaints with the Inspector General System.

AMC-Far East

The position of Commander, AMC-Far East, changed hands in FY91 when on 20 July 1991 Colonel Donald L. Bullock completed a two-year tour as commander and left to take over the position of Director of Readiness at MICOM. He was replaced on 30 September 1991 by Colonel Gilbert H. Edmondson, who had previously been serving as the Director of the Materiel Management at the Missile Logistics Center at Redstone Arsenal.

AMC-Far East was a hybrid organization which existed by using spaces from a number of TDAs. The Office of the Commander, AMC-Far East, was composed of spaces on the TDA of AMC's Logistics Assistance Program Activity (LAPA). Its nine offices consisted of personnel authorized by the TDAs of a variety of AMC MSCs and Separate Reporting Activities, with the majority of these personnel also coming from various logistics assistance programs within the MSCs. Specifically, it included six Senior Command Representatives (SCR) from six MSC logistics assistance programs. They represented AMCCOM, AVSCOM, CECOM, MICOM, TACOM, and TROSCOM. The other three offices consisted of the DESCOM Support Activity-Far East (D-SAFE); the Test, Measurement, and Diagnostic Equipment (TMDE) liaison officer and the 2d Maintenance Company (TMDE), which represented the TMDE Support Group; and the Logistics Assistance Office-Far East, which represented AMC's Logistics Assistance Program Activity. The Logistics Assistance Office-Far East also provided the funds for running the office of the Commander, AMC-Far East.[21]

A number of changes occurred in D-SAFE. Due to the transfer to DLA of its responsibility for Contract Administration Services for overflow general support and depot contracts, the office reorganized and transferred 19 civilian spaces with the Contract Administration Services function to DLA. In FY91, D-SAFE also completed relocating from a commercially-leased storage facility in Changwon to a government-owned facility at Camp Hialiah in Pusan, which was estimated to save the government $400,000 per year in annual rental costs. D-SAFE also completed the development of a secure storage facility at Camp Market to house classified and sensitive systems and components of equipment to be fielded to the Eighth U.S. Army (EUSA).

The three major issues confronting AMC-Far East in FY91 were support for the Automotive Gas Turbine (AGT) 1500 engine used in the Improved M1 (IPM1), dealing with the shortage of spare and repair parts for IPM1 tanks in the Far East due to the diversion of such materiel to SWA, and development of an in-country repair facility for high failure circuit cards used in the M1 tank and Bradley Fighting Vehicle System.

At the end of FY90, the 2nd Infantry Division had received two battalions of IPM1 tanks. The IPM1 was the first major upgrade of the basic M1 tank, and included improved survivability features and an upgraded suspension. Based upon the tank's low density within EUSA and the high cost (estimated to be between $5.8 and 8 million) of developing a repair facility within Korea, the original support strategy for its AGT 1500 engine was to perform organizational and Direct Support maintenance in Korea and to have all other maintenance support performed at Anniston Army Depot (ANAD) in Alabama. This was to be accomplished by replacing defective modules in the tank engine and then shipping the faulty modules to ANAD for repair.

Due to concerns about cost, turn around time and, due to ODS, the availability of transportation, EUSA asked AMC-Far East to determine if an alternate repair procedure was possible. Following a durability analysis of the engines and a review of the failure data accumulated in Europe for these engines, AMC-Far East came up with an alternate plan called Direct Support Plus (DS Plus). Under this plan, an additional 47 repair tasks that could be performed at the Direct Support level were identified. To accomplish these tasks

[21]Information in this chapter was taken from the AMC-Far East historical submission for FY91.

the Direct Support facility would require an additional 90 tools, 186 line items of spare parts, and a skilled technician.

The first full year of implementation of DS plus ended in July 1991 with savings of over $4 million for EUSA. This was based on having repaired or retained in theater 103 defective modules and the shipment of 29 to the United States for repair as opposed to the projected in-theater repair of only 56 modules and the shipment of 92 to the United States under the original maintenance support plan.[22] This program had the potential for saving EUSA approximately $8 million per year, and was being evaluated by AMC for possible Army-wide implementation.

As the buildup for ODS got well underway, units within the EUSA began to experience a shortage of repair parts for the IPM1 tank due to the diversion of such parts to support for ODS. AMC-Far East identified the most important of these potential shortages as the ones for support of the Hydromechanical Unit (HMU), the Generator, and the Gunner's Primary Sight (GPS) Body Assembly. EUSA requested Special Repair Authority (SRA) from the pertinent MSCs to retain and repair these parts in country instead of replacement or evacuation to depot.

In cases where authority was received, AMC-Far East worked with EUSA's Materiel Support Center-Korea (MSC-K) to develop the capability that would permit MSC-K to diagnose and repair this equipment.[23] At the same time, AMC-Far East identified the need to acquire a test program set composed of additional software programs, interface adapter, cables, and simulators to support these repairs and assisted MSC-K in submitting the appropriate documentation. The in-country repair of these and other items in short supply during ODS and afterwards resulted in a total cost savings of over $1.2 million by the end of FY91.

Early in FY91, AMC-Far East identified a high failure rate of certain circuit cards in EUSA's M1 tanks and Bradley Fighting Vehicle Systems. They then took action to obtain an in-country maintenance capability for these cards at MSC-K by coordinating with Mainz Army Depot in Europe. As a result, MSC-K programmed funds for, and was scheduled to obtain, the Test Program Sets needed to diagnose and repair the circuit cards in question. This was expected to result in improved readiness and in savings of over $100,000 per year on circuit cards that previously had to be obtained through the wholesale supply system.

---

[22]The figures related to DS Plus (103 repaired and 29 shipped to CONUS) represents actual work (totalling 132 modules) done under the enhanced program. Had this enhanced maintenance plan not been implemented, it is projected that more work would have been required. The projected figures were 56 repaired in country and 92 shipped to CONUS, for a total of 142 modules.

[23]It should be noted that in some cases SRA authority was granted, and in others it was not. As of August 1992, in some cases, a decision was being reconsidered or was not yet made. See Memorandum, AMXFE, Subject: Operations Security (OPSEC) Review of Draft Annual Historical Review (AHR) for FY91, 27 August 1992.

Index

A

AAE (Army Acquisition Executive) 3, 19, 42, 50, 75, 134, 140, 142, 143, 148, 154, 156, 158, 161, 162, 163, 167, 238

Accounting Office, General (GAO) 35, 54, 115-119, 122, 123, 191, 199

Acquisition 1, 3-6, 8, 9, 15, 16, 18, 19, 21, 22, 28, 31-33, 38, 46, 49, 50, 54, 67, 74-76, 81, 87, 93, 107, 113, 114, 125, 127, 129, 133, 134, 140, 149, 143-148, 150, 151, 153, 156-159, 161-168, 170-178, 183-191, 193, 195, 199, 202, 203, 205, 206, 220, 236, 237, 245, 246, 248, 253, 257, 258, 265, 273

Acquisition Board, Defense (DAB) 28, 140

Acquisition Executive, Army (AAE) 3, 19, 42, 50, 75, 134, 140, 142, 143, 148, 154, 156, 158, 161, 162, 163, 167, 238

ADPA (American Defense Preparedness Association) 21, 170

Affirmative action 89, 96, 98, 219, 220

- Black Employment Program 98
- Federal Women's Program 98
- Historically Black Colleges and Universities Program 89, 219, 220

Air defense 29, 140, 146, 152-155, 208, 211, 222, 268, 270

Air Force 4, 27, 28, 38, 59, 93, 106, 119, 140, 143, 144, 151, 173, 174, 186, 188, 190, 192, 202, 205, 217, 228, 229, 233, 237, 242, 260, 262, 267

Aircraft

- AH-64A Attack Helicopter 269
- Apache 116, 222, 249, 268
- Blackhawk 142, 249
- Chinook 268
- Comanche 17, 161, 249
- Hawk 17, 29, 152, 216, 249, 268, 270
- Kiowa 268
- UH-1H helicopter 250

ALMC (Army Logistics Management College) 42, 68, 69, 84, 89, 165

AMCCOM (Armament, Munitions and Chemical Command) 20, 21, 35, 49, 51, 59, 70, 75, 79, 91, 102, 106, 107, 130, 156, 172, 184, 187, 188, 200, 227, 228, 231, 238, 244, 264, 269, 277

AMCMEA (AMC Management Engineering Activity) 151, 93

AMEC (Army Management Engineering College) 126

American Defense Preparedness Association (ADPA) 21, 170

Ammunition 2, 4, 8-10, 18, 20, 21, 37, 38, 43, 51, 55, 58, 67, 81, 83, 88, 94, 102, 104, 106, 110, 111, 113, 119, 140, 147, 157, 178, 194-196, 198, 199, 207, 208, 211, 213, 214, 217, 224, 226, 238, 241, 244, 245, 248, 260, 261, 268, 271

Ammunition, Conventional 35, 43, 194-196, 260, 261

Ammunition Plants, Army

- Alabama 51, 85, 86
- Badger 86
- Cornhusker 85, 86
- Holston 83
- Indiana 83
- Iowa 85, 86, 94
- Joliet 83, 85, 86
- Lake City 85, 86
- Lone Star 85, 86
- Longhorn 67, 85, 86, 157, 224, 248
- Louisiana 85, 86, 94
- McAlester 88, 226
- Milan 83, 85, 88, 248
- Newport 83
- Radford 81, 86
- Riverbank 85, 86
- Sacramento 58
- Twin Cities 85, 86, 94
- Volunteer 85, 86

ARL (Army Research Laboratory) 51

Armament, Munitions and Chemical Command (AMCCOM) 20, 21, 35, 49, 51, 59, 70, 75, 79, 91, 102, 106, 107, 130, 156, 172, 184, 187, 188, 200, 227, 228, 231, 238, 244, 264, 269, 277

Army Analysis, Total (TAA) 13, 39

Army, Department of the, Headquarters (HQDA) 9, 12-14, 16, 18-20, 31, 32, 35, 39, 40, 43-45, 48, 49, 51-53, 57-60, 67-70, 72-76, 78-80, 84, 86, 90, 95, 98, 102, 106, 107, 111, 128, 132, 133, 135, 136, 138, 139, 144, 46-150, 153, 155, 156, 160, 161, 163, 166, 176, 177, 192, 199, 205, 206, 207, 210, 212, 220, 222-225, 228, 229, 231, 232, 234, 236, 238, 239, 241, 247, 249, 250, 267, 268

Army, Secretary of the 2

Army Systems Acquisition Review Council (ASARC) 28, 133, 134, 140, 143, 157

Army, Under Secretary of the 13, 40, 51, 117, 140, 145

Arsenals

Edgewood 82, 85
Picatinny 6, 78, 85, 86, 112, 163, 214, 228, 253
Pine Bluff 58, 59
Redstone 6, 8, 46, 67, 86, 155, 217, 224, 227, 228, 252, 253
Rock Island 56, 86, 178
Rocky Mountain 85, 86, 114
Watervliet 83, 86, 178

Arwood, MG Thomas B. 107, 221, 222, 265

ASARC (Army Systems Acquisition Review Council) 28, 133, 134, 140, 143, 157

ASB (Army Science Board) 19, 107, 128, 129, 151, 202

Association of the United States Army (AUSA) 7, 124, 126

Attrition 12, 15, 150, 239, 249

Audit 11, 13, 139, 146, 189, 205, 233, 267

AUSA (Association of the United States Army) 7, 124, 126

Automation 4, 5, 16, 22, 27, 32, 36, 38, 39, 61-63, 65, 68, 79-81, 83, 97, 115, 121, 127, 130, 137, 146, 160-162, 173, 229, 231, 233, 246, 247

Aviation 3, 5, 17, 22, 27, 28, 46, 47, 51, 69, 100, 113, 224, 226-229, 234-236, 253, 258, 274

Aviation Administration, Federal (FAA) 27, 28, 253

Aviation Systems Command (AVSCOM) 236, 243, 244, 246, 250, 258, 269, 277

AVSCOM (Aviation Systems Command) 236, 243, 244, 246, 250, 258, 269, 277

B

Base Realignment and Closure (BRAC) 39, 51, 52, 77, 78, 80, 81, 92, 94, 95, 119, 226, 257

Blind, National Industries for the (NIB) 171

BRAC (Base Realignment and Closure) 39, 51, 52, 77, 78, 80, 81, 92, 95, 119, 226, 257

Brailsford, LTG Marvin D. . . . . vii, 23, 105, 265

BRDEC (Belvoir Research, Development and Engineering Center) 20, 69, 102, 131, 132, 135, 249

Budget 5, 12-15, 18, 19, 25, 26, 28, 32, 35-42, 44, 48, 49, 52, 53, 55, 58, 59, 73, 80, 83, 112, 114, 116-118, 121, 128, 129, 134, 137, 147-151, 153, 162, 178-180, 183, 194, 195, 204, 208, 216, 217, 220, 232, 238, 244, 251, 256, 260, 263, 274

Bush, President George 198, 199, 248

C

CAA (Clean Air Act) 81, 87, 90

CASCOM (Combined Arms Support Command) 6, 19, 148, 158, 221, 240

CECOM (Communications-Electronics Command) ... 5, 16, 21, 32, 35, 43, 47, 81, 91, 102, 106, 118, 126, 138, 144, 156, 162, 164, 168, 172, 180, 187, 188, 200, 226, 228, 242-244, 246, 252, 257, 258, 268-270, 277

CFE (Conventional Forces Europe) Treaty 12-14, 40, 45, 207, 218, 250, 262, 264, 267-270

Chait, Dr. Richard ..... ix, 200, 201

Chemical defense 3, 14, 107, 110, 130, 184, 199, 200

Chemical weapons 101, 135, 196-198
- binary 135
- defense 199
- demilitarization 197, 198
- disposal 197
- treaties 198

Chief of Staff, Army (CSA) 12, 19, 44, 53, 128, 140, 148, 211, 228

Chiefs of Staff, Joint (JCS) 1, 143, 180, 222, 228

Clean Air Act (CAA) 81, 87

Clean Water Act (CWA) 81, 86

Cold War 1, 73, 182

Combined Arms Support Command (CASCOM) 6, 19, 148, 158, 221, 231, 240

Command Counsel 115, 120-123, 189, 191

Commerce, Department of (DOC) 180, 181

Communications 5, 9, 16, 20, 43, 47, 61, 63-66, 72, 127, 129, 136, 138, 140, 142-144, 146, 152, 158, 169, 184, 217, 225, 238, 250, 258, 260, 269, 273

Communications-Electronics Command (CECOM) . . . 5, 16, 21, 32, 35, 43, 47, 81, 91, 102, 106, 118, 126, 138, 144, 156, 162, 164, 168, 172, 180, 187, 188, 200, 226, 228, 242-244, 246, 252, 257, 258, 268-270, 277

Concurrent engineering 4, 5, 21, 30, 128, 156, 168, 169, 173, 176-178, 180, 184, 190, 191

Congress 12, 45, 48, 52, 53, 72, 80, 117, 120, 122, 135, 136, 138, 148, 149, 153, 156, 159, 161, 181-183, 185, 195, 197, 198, 203, 220, 244

Contractors

Allied Signal Aerospace 179
Allison Transmission Division 179
Atlantic Research Corporation 155
Autom Company 205
BDM 176
BMY 133, 159
Bofors 156
Calgon Carbon Corporation 181
CASA 236
Caterpillar, Inc. 20, 131, 135
Computer Sciences Corporation 176
Detroit Diesel 21
DuPont 23, 105
DynCorp 235
Eastern Technologies, LTD 131
Environmental Systems, Inc. 259
ERC Inc. 164
Fabrique Nationale Nouvelle Herstal 204
FMC Corporation 179
Ford Aerospace Communications Corporation 140
GENCO Service Center 186
General Dynamics 21, 29, 130, 154, 155
General Motors 179
General Telephone and Electronics and Analytics, Inc. 140
Gitchner Systems Group Inc. 136
Grumman Aerospace Corporation 258
GTE 142, 249
Hewlett Packard 140
ITT 21
Kay and Associates 236
Kollsman 189
Lockheed Sanders, Inc. 154
Loral and Command System, Inc. 141
Loral Space and Range Systems 137
Mack Truck, Inc. 133
Magnavox 141
Martin Marietta 21, 155, 236
MITRE Corporation 202
Motorola 21

Northrop 189
Rand Corporation 55
Raytheon 4, 154, 155
Ridge Instruments 259
Rockwell 21
Severn Companies, Inc. 210
Sprung Instant Structures 188
Stewart and Stevenson, Inc. 133
Thomson Ramo Woolridge 141
Thyssen Henschel 130
Tonini Church Supply Company 205
TRW 176
Vickers Defense 218
Vindicator, Inc. 136
Xerox 176
Zenith 141

Conventional Forces Europe (CFE) Treaty 12-14, 40, 45, 207, 218, 250, 262, 264, 267-270

Conver, Honorable Stephen K. 29, 129, 130, 154, 163, 203

CSA (Chief of Staff, Army) 12, 19, 44, 53, 128, 140, 148, 211, 228

CWA (Clean Water Act) 81, 86, 87

D

DAB (Defense Acquisition Board) 28, 140

Defense Management Review (DMR) 5, 9, 10, 15, 39, 40-44, 87, 111, 112, 123, 170, 171, 191, 240, 246, 252, 257

Defense, Secretary of 7, 9, 18, 27, 28, 30, 32, 33, 35, 37, 38, 44, 52, 53, 59, 60, 70, 84, 88, 94, 109, 119, 117, 130, 134, 137, 143, 149-151, 153, 162, 167, 170, 176, 177, 180, 181, 182, 185, 186, 189, 191, 193, 195, 206, 212, 217, 220, 231, 238, 239, 250

Defense Systems Management College (DSMC) 5, 166

Demilitarization 78, 90, 196-199, 226, 248, 261

Depot System Command (DESCOM) 11, 30, 31, 35, 51, 58, 59, 91, 93, 100, 102, 106, 115, 116, 119, 186, 187, 200, 228, 238, 242-244, 264, 272, 277

Depots, Army

Anniston 51, 85, 86, 94, 178, 223, 228, 242, 248, 250, 251, 253, 277
Blue Grass 51
Corpus Christi 83, 226-228, 242, 250
Fort Wingate 51

Letterkenny 51, 85, 86, 88, 131, 178, 223, 242, 252, 253, 273
Lexington-Bluegrass 60, 234, 250, 257
New Cumberland 56, 83, 86, 88, 102, 226, 239-242, 244
Red River 51, 58, 86, 119, 132, 138, 183, 223, 226, 228, 235, 239, 242, 244, 248, 252
Sacramento 51, 56, 59, 81, 85, 86, 102, 226, 242, 244, 253, 257
Savanna 85
Seneca 85, 86, 227
Sharpe 85, 86, 88, 226, 242
Sierra 56, 85, 131
Tobyhanna 85, 173, 178, 226, 241, 242, 253
Tooele 51, 83, 85, 124, 198

DESCOM (Depot System Command) 11, 30, 31, 35, 51, 58, 59, 91, 93, 100, 102, 106, 115, 116, 119, 186, 187, 200, 228, 238, 242-244, 264, 272, 277

Desert Shield/Storm, Operation (ODS) 1-4, 9, 11-15, 17, 19, 20, 21, 35, 40, 48, 53, 60, 66, 71, 73, 74, 76, 77, 78, 80, 81, 93, 94, 99, 100, 101, 103, 105-107, 112, 113, 116, 117, 123, 124, 126, 130-133, 135, 136, 140, 141-146, 149, 152, 154, 155, 157-160, 162, 170, 179-183, 186, 188-190, 193-195, 199, 200, 204, 205, 207, 208, 211, 214, 216-219, 221-226, 228, 230-235, 237-239, 241, 243, 244, 248-250, 260-265, 268-278

DLA (Defense Logistics Agency) 7, 9, 10, 15, 38, 40, 43, 44, 82, 85, 86, 88, 93, 106, 110, 174, 177, 180, 193, 205, 232, 233, 237-239, 240, 242, 244, 262, 266, 277

DLSIE (Defense Logistics System Information Exchange) 51, 61

DMR (Defense Management Review) 5, 9, 10, 15, 39, 40-44, 87, 111, 127, 128, 170, 171, 191, 240, 246, 252, 257

DOC (Department of Commerce) 180, 181

DOE (Department of Energy) 93, 199

Downsizing 12, 15, 48, 57, 66, 68, 78, 96, 111, 121, 169, 193, 207, 233, 257, 258

Attrition 12, 15, 150, 239, 249
Flat structure 5, 53, 127
Outplacement assistance 15
Project Vanguard 102, 111, 112, 230
Reduction in Force (RIF) 12, 15, 26, 31, 38, 40, 48, 61, 78, 123, 196, 212
Reorganization 4-6, 26, 38, 53, 63, 103, 118, 127, 169, 188, 252, 253, 259
Vision 2000 . . . . . 10, 186, 188
Voluntary Early Retirement Authority (VERA) 15, 30, 110
Voluntary Military Reduction (VMR) 14, 39, 40

DSB (Defense Science Board) 135, 162

DSMC (Defense Systems Management College) 5, 166

E

EEO (Equal Employment Opportunity) 4, 6, 44, 96, 97, 115, 121

Emergency Management Agency, Federal (FEMA) 198

Energy, Department of (DOE) 93, 199

Environment 1, 3, 11, 13, 21, 22, 39, 49, 54, 60, 66, 67, 75, 80, 84, 86, 101, 104, 115, 118, 121, 122, 166, 236, 246, 247, 275

Environmental issues

- air quality 87
- audit program 83
- Chesapeake Bay 88
- Clean Air Act 81, 87, 90
- Clean Water Act 81, 86, 87
- compliance 81-83, 86, 87, 89-91
- Comprehensive Environmental Response, Compensation, and Liabilities Act 82, 85, 92
- depleted uranium 106, 107, 111
- drinking water 87
- energy conservation 79
- groundwater contamination 82
- hazardous waste 81-83, 89, 92, 93
- National Environmental Policy Act (NEPA) 52, 81, 89, 91, 92
- noise 88
- open burning/open detonation 90, 196
- radon 90
- Resource Conservation and Recovery Act 81, 82, 84, 86, 89, 90, 92
- safety 101
- Toxic Substance Control Act 81, 82, 90
- training 89

Environmental Protection Agency (EPA) 81, 82, 85, 87-93, 106

EPA (Environmental Protection Agency) 81, 82, 85, 87-93, 106

Equal Employment Opportunity (EEO) 4, 6, 44, 96, 97, 115, 121

Equipment surged for ODS

- ballistic laser protective spectacles 4
- Chemical Agent Resistant Coating 235, 251, 271, 272
- chemical defense equipment 3
- clam shell 3
- desert battle dress uniform 4
- desert boots 4
- flameless ration heater 4
- laundry 132

petroleum storage and transportation equipment 3
Reverse Osmosis Water Purification Unit 132
tank ammunition 194
water purification, storage and distribution systems 3

F

FAA (Federal Aviation Administration) 27, 28, 253

FAAR (Forward Area Alerting Radar) 153, 154

FEMA (Federal Emergency Management Agency) 198

FFA (Food and Forage Act) 116, 117, 189, 205

Fielding 11, 17, 20, 46, 87, 132-134, 137, 142, 143, 145, 152-155, 159, 165, 175, 180, 183, 184, 193, 216, 217, 224, 229, 231, 239, 245, 249, 251, 257, 259, 263, 267-270

Flat structure 5, 53, 127

FMS (Foreign Military Sales) 256, 258, 259, 275

Food and Forage Act (FFA) 116, 117, 189, 205

Force structure 1, 13, 15, 28, 39, 43-45, 78, 135, 142, 195, 196, 247, 256

Forces Command (FORSCOM) 9, 64, 143, 151, 153, 190, 223, 224, 225, 228-230, 234, 237, 240, 241, 250, 266

Foreign Military Sales (FMS) 5, 53, 127, 153, 204

FORSCOM (Forces Command) 9, 64, 143, 151, 153, 190, 223, 224, 225, 228-230, 234, 237, 240, 241, 250, 266

Forward Area Alerting Radar (FAAR) 153, 154

Funding 10-12, 17, 22, 26, 31, 37, 44, 46, 48, 53, 57, 60, 65, 66, 77-79, 86, 88, 91, 95, 108, 114, 117, 119, 132, 135, 136, 139, 140, 144, 146, 149-151, 153, 156, 157, 159, 161, 164, 172, 175, 178-180, 183, 185, 189, 191, 196, 199, 224, 232, 238, 239, 244, 246, 247, 250, 261, 274

G

GAO (General Accounting Office) 35, 54, 115-119, 122, 123, 191, 199

General Services Administration (GSA) 115, 134, 235, 237, 239, 241

Government Printing Office (GPO) 64

GPO (Government Printing Office) 64

GSA (General Services Administration) 115, 134, 235, 237, 239, 241

H

Handicapped, National Industries for the Severely (NISH) 171

HASC (House Armed Services Committee) 135

HBCU (Historically Black Colleges and Universities) 89, 219, 220

Headquarters Installation Support Activity (HISA) 5, 6, 25, 95, 96

Health 22, 23, 84, 86, 100-110, 136, 149, 190, 196, 198

Health Hazard Assessment (HHA) 103, 105, 107

Health Services Command (HSC) 23, 104, 106, 108, 110, 190

HISA (Headquarters Installation Support Activity) 5, 6, 25, 95, 96

Historically Black Colleges and Universities (HBCU) 89, 219, 220

House Armed Services Committee (HASC) 135

HQDA (Headquarters, Department of the Army) 9, 12-14, 16, 18-20, 31, 32, 35, 39, 40, 43-45, 48, 49, 51-53, 57-60, 67-70, 72-76, 78-80, 84, 86, 90, 95, 98, 102, 106, 107, 111, 128, 132, 133, 135, 136, 138, 139, 144, 46-150, 153, 155, 156, 160, 161, 163, 166, 176, 177, 192, 199, 205, 206, 207, 210, 212, 220, 222-225, 228, 229, 231, 232, 234, 236, 238, 239, 241, 247, 249, 250, 267, 268

HSC (Health Services Command) 23, 104, 106, 108, 110, 190

Hussein, Saddam 3

Hygiene, Industrial (IH) 23, 51, 104, 124, 188, 190

I

ICP (International Cooperative Programs) 43, 68, 206

IH (Industrial Hygiene) 23, 51, 104, 124, 188, 190

Industrial base 3, 15, 21, 170, 178-180, 183, 196

Industrial Operations Command (IOC) 23, 51, 104, 124, 188, 190

INF (Intermediate Nuclear Forces) Treaty 8, 18, 67, 71, 153, 157, 158, 224, 248, 267

Information management . . 6, 22, 27, 30, 32, 62, 65, 79, 95, 125, 144, 172, 175, 176, 192, 193, 246, 256, 265

Information Systems Command 184, 232

INSCOM (Intelligence and Security Command) 43, 73, 258

Intelligence 5, 127, 129, 138, 142, 143, 209, 211, 212, 217

Intelligence and Security Command (INSCOM) 43, 73, 258

Intermediate Nuclear Forces (INF) Treaty 8, 18, 67, 71, 153, 157, 158, 224, 248, 267

International Cooperative Programs (ICP) 43, 68, 206

IOC (Industrial Operations Command) 23, 51, 104, 124, 188, 190

Israel 17, 67, 152, 181, 207, 208, 215, 216

J

Javits-Wagner-O'Day (JWOD) Act 170, 171

JCS (Joint Chiefs of Staff) 1, 143, 180, 222, 228

JLC (Joint Logistics Commanders) 143, 262

JWOD (Javits-Wagner-O'Day) Act 170, 171

K

Kuwait 3, 73, 106, 107, 132, 181, 230, 266

L

LABCOM (Laboratory Command) 139, 164, 180, 187, 200

Laboratories

Ballistic Research *L.* 67
Combat Materiel Research *L.* 22

Harry Diamond *L.*s 4
Human Engineering *L.* 4
Materials Technology *L.* 22, 51, 86, 173
Materiels, Fuels, and Lubricants *L.* 249
National Engineering *L.* 94
Vulnerability Assessment *L.* 154

Laboratory Command (LABCOM) 139, 164, 180, 187, 200

LAN (Local Area Network) 63, 65, 68, 134, 222

Leadership 9, 19, 135, 136, 148, 150, 158, 161, 200, 207, 212, 229, 247

Lessons learned 21, 60, 142, 170, 174, 175, 193, 205, 234, 237

Logistics 1, 2, 4, 6, 7, 9-11, 14, 15, 38, 40, 43, 44, 51, 53-55, 60, 61, 63, 64, 68, 75, 83, 84, 89, 96, 97, 102, 106, 116, 125, 134, 140, 165, 172, 175-177, 180-182, 185, 186, 191, 194, 199, 204, 205, 210, 211, 213, 222, 223, 224, 226, 229-231, 233, 234, 237, 239, 240, 242-249, 251, 252-255, 258, 262, 265, 266, 271, 275, 277

Defense *L.*Agency (DLA) 7, 9, 10, 15, 38, 40, 43, 44, 82, 85, 86, 88, 93, 106, 110, 174, 177, 180, 193, 205, 232, 233, 237-239, 240, 242, 244, 262, 266, 277
Army *L.* Management College (ALMC) 42, 68, 69, 84, 89, 165
Defense *L.* Systems Information Exchange (DLSIE) 51, 61
Joint *L.* Commanders (JLC) 143, 262
L. Assistance 14, 54, 222, 229, 240, 265, 271, 277

M

Management Engineering Activity, AMC (AMCMEA) 151, 93

Management Engineering College, Army (AMEC) 126

Maneuver Control System (MCS) 29, 136, 140, 141, 269

Manpower and Personnel Integration (MANPRINT) 107, 145, 165

MANPRINT (Manpower and Personnel Integration) 107, 145, 165

Marines 3, 130, 158

Materiel for Winning 148

Materiel Readiness Support Activity (MRSA) 8, 60, 165, 229, 234

McGrath, MG William B. . . . . viii, 22, 23, 37, 104, 105, 115

MCS (Maneuver Control System) 29, 136, 140, 141, 269

MDW (Military District of Washington) 42, 190

Media 72, 74, 82-84, 123, 124, 174, 232

MICOM (Missile Command) 21, 153-155, 158, 172, 176, 187, 188, 200, 217, 228, 238, 243, 244, 246, 247, 257, 262, 268, 277

Military District of Washington (MDW) 42, 190

Military personnel 6, 14, 32, 35, 43, 46, 49, 51, 59, 68, 73, 75, 97, 102, 116, 153, 155, 203, 223, 234, 259, 263, 267

Military Traffic Management Command (MTMC) 186, 237, 238

Missile Command (MICOM) 21, 153-155, 158, 172, 176, 187, 188, 200, 217, 228, 238, 243, 244, 246, 247, 257, 262, 268, 277

Missile Systems

- Anti-Tank Guided Missile 214
- Army Tactical Missile System 213, 250, 268
- Chaparral 153, 154, 159, 270
- Corps Surface-to-Air Missile 153
- Hawk 152
- High Mobility Artillery Rocket System 215
- Javelin 156, 167
- Lance 248
- MISTRAL 215
- Multiple Launch Rocket System 71, 135, 157, 213, 224, 268
- Patriot 4, 17, 29, 152, 208, 222, 224, 248, 266-268, 270
- Pershing 8, 9, 67, 157, 158
- Starstreak 215
- Terminally Guided Warhead 213

Missions 1-3, 8, 12, 17, 35, 37, 45, 47, 48, 51-55, 62, 73, 78, 83, 102, 109, 111, 121, 146, 161, 192, 194, 196, 212, 224, 226, 234, 235, 238, 239, 261, 264, 265, 271

Mobile Subscriber Equipment (MSE) 29, 142, 249, 268, 273

Mobilization 1, 4, 6, 36, 43, 66, 77, 79, 80, 103, 162, 169, 179, 180, 182, 196, 221, 223, 226, 234, 235, 237, 260, 274

Modernization 1-3, 18, 19, 21, 31, 65, 78, 89, 93, 94, 108, 128, 133, 135, 136, 146, 147, 170, 179, 182, 191, 216, 228, 238, 239, 250, 251, 253, 255, 257, 269

MRSA (Materiel Readiness Support Activity) 8, 60, 165, 229, 234, 244

MSE (Mobile Subscriber Equipment) 29, 142, 249, 268, 273

MTMC (Military Traffic Management Command) 186, 237, 238

N

National Guard 2, 3, 31, 46, 160, 192, 226, 228, 229, 234, 250, 274

NATO 174, 202, 206, 208, 209, 211-213, 216

Navy 22, 28, 33, 38, 65, 93, 106, 119, 140, 151, 160, 166, 172, 174, 175, 177, 178, 190, 192, 193, 202, 209, 217, 233, 237, 238

NBC (Nuclear, Biological and Chemical) 20, 129, 130, 135, 156, 160, 161, 181, 182, 188, 211, 270

NEPA (National Environmental Policy Act) 52, 81, 89, 91, 92

Network, Local Area (LAN) 63, 65, 68, 134, 222

NIB (National Industries for the Blind) 171

Night vision 20, 69, 236, 268

NISH (National Industries for the Severely Handicapped) 171

NRC (Nuclear Regulatory Commission) 110, 111, 201, 203

Nuclear, Biological and Chemical (NBC) 29, 129, 130, 135, 156, 160, 161, 181, 182, 189, 208, 211, 270

Nuclear Regulatory Commission (NRC) 110, 111, 201, 203

Nuclear weapons 47, 114, 199

O

Occupational Safety and Health Administration (OSHA) 23, 104, 105, 109, 110

ODS (Operation Desert Shield/Storm) . . . 1-4, 9, 11-15, 17, 19, 20, 21, 35, 40, 48, 53, 60, 66, 71, 73, 74, 76, 77, 78, 80, 81, 93, 94, 99, 100, 101, 103, 105-107, 112, 113, 116, 117, 123, 124, 126, 130-133, 135, 136, 140, 141-146, 149, 152, 154, 155, 157-160, 162, 170, 171, 179-183, 186, 188-190, 193-195, 199, 200, 204, 205, 207, 208, 211, 214, 216-219, 221-226, 228, 230-235, 237-239, 241, 243, 244, 248-250, 260-265, 268-278

Oil analysis 233, 234

OPC (Operation Provide Comfort) 266, 272, 273, 274

Operating and Support Cost Reduction (OSCR) 19, 27, 145, 146, 148, 176

OPTEC (Operational Test and Evaluation Command) 129, 134, 184

OSCR (Operating and Support Cost Reduction) 19, 27, 145, 146, 148, 176

OSHA (Occupational Safety and Health Administration) 23, 104, 105, 106, 109, 110

OTEA (Operational Test and Evaluation Agency) 18, 153

Outplacement assistance 15

P

Pacific Command 217, 226

PAT (Process Action Team) 4, 23, 34, 37, 38, 77, 96, 104, 107, 160, 162, 163, 170, 176, 184, 185

PEER (Productivity Enhancements, Efficiencies and Rewards) 58, 59, 253, 255-257

PEO (Program Executive Officer) 1, 20, 21, 27, 31, 34, 35, 38, 60, 67, 75, 93, 108, 129, 133, 134, 139, 143, 146, 154, 158, 162, 163, 170, 177, 184, 185, 186, 193, 207, 214, 228, 245, 251

PERSCOM (Personnel Command) 31

Personnel 4, 6, 8, 12-15, 20, 25-27, 30-32, 36, 38, 39, 45, 48, 52-54, 56, 58, 59, 61, 62, 64-66, 69-77, 79, 84, 89, 91, 94-97, 99-101, 103, 106, 107-116, 118-121, 123-126, 127, 128, 130, 131, 134, 135, 137, 140, 142, 145, 150, 151, 153, 155, 158, 162, 164, 165, 169, 174, 176, 177, 180, 181, 183, 185-188, 192, 194, 199, 200, 203, 204, 206, 212, 217, 218, 221-223, 226, 228-230, 234-237, 240, 241, 244, 245, 250-253, 256, 257, 259, 262-267, 269-272, 274, 276, 277

Personnel Command (PERSCOM) 31

Pierce, CSM Michael B. x

PM (Program/Project Manager) 1-3, 9, 17, 19, 20, 27, 28, 30, 31, 42, 45, 46, 60, 71, 96, 98, 100, 114, 117, 128-130, 133, 134, 139-141, 144, 146, 152, 154, 155, 158, 160-163, 165, 175, 179, 187, 188, 198, 207, 224, 225, 238, 244, 245, 247, 251-253, 255, 257, 267, 269, 273

Powell, General Colin L. 1

PPBES (Programming, Planning, Budgeting and Execution System) 36, 51

Process Action Team (PAT) 4, 23, 34, 37, 38, 77, 96, 104, 107, 160, 162, 163, 170, 176, 184, 185, 187

Procurement 3, 5-7, 11, 18, 20, 21, 29, 35, 49, 65, 111-115, 117, 120, 122, 125, 127, 128, 131, 132, 134-137, 141, 145, 146, 148, 150, 160, 161, 164, 170, 179, 183, 186-193, 195, 196, 204, 219, 220, 247, 254, 257-259, 261, 270, 272, 273

Production 3, 4, 15, 17, 21, 22, 28-30, 49, 55, 57-59, 64, 71-73, 76, 78, 79, 81, 93, 94, 126, 130, 135, 137, 140-143, 152, 154-157, 159, 160, 165, 167-169, 171, 173, 174, 176, 178-184, 186, 188, 194-199, 212, 231, 235, 249, 254, 257, 258, 261

Productivity 1, 4, 10, 38, 50, 51, 57-61, 84, 174, 179, 253, 255

Productivity Enhancements, Efficiencies, and Rewards (PEER) 58, 59, 253, 255-257

Program Executive Officer (PEO) 1, 20, 21, 27, 31, 34, 35, 38, 60, 67, 75, 93, 108, 129, 133, 134, 139, 143, 146, 154, 158, 162, 163, 170, 177, 184, 185, 186, 193, 207, 214, 228, 245, 251

Program/Project Manager (PM) 1-3, 9, 17, 19, 20, 27, 28, 30, 31, 42, 45, 46, 60, 71, 96, 98, 100, 114, 117, 128-130, 133, 134, 139-141, 144, 146, 152, 154, 155, 158, 160-163, 165, 175, 179, 187, 188, 198, 207, 224, 225, 238, 244, 245, 247, 251-253, 255, 257, 267, 269, 273

Programming, Planning, Budgeting and Execution System (PPBES) 51

Provide Comfort, Operation (OPC) 266, 272, 273, 274

Proving Grounds

- Aberdeen 6, 14, 51, 82, 85, 86, 88, 94, 103, 107, 126, 131, 133, 137, 197, 198, 214, 223, 246, 253, 262
- Dugway 67, 86, 92, 94, 224
- Engineer 79
- Jefferson 51, 257
- Sierra 88
- Yuma 56, 83, 86, 88, 94, 131, 133

Public Affairs 123, 124

Q

Quality Management, Total (TQM) 7, 8, 31, 50, 55, 56, 59, 62, 77, 125, 126, 164, 167, 174, 176, 187, 207, 256

Quickstart 78, 134

R

R&A (Review and Analysis) 55, 146

RCRA (Resource Conservation and Recovery Act) 81, 82, 84, 86, 89, 90, 92

RD&E (Research, Development and Engineering) 20, 46, 69, 73, 102, 125, 131, 136, 151, 163, 164, 175, 183, 202, 207

RDTE (Research, Development, Test and Evaluation) 5, 6, 18, 35, 37, 107, 78, 90, 127, 128, 135, 146, 149, 150, 161, 165, 180, 256

Readiness 3, 6, 8-10, 16, 21, 33, 56, 60, 79, 105, 116, 140-142, 149, 154, 158, 159, 165, 170, 171, 173, 177, 185, 190, 191, 221, 222, 224, 226, 228-231, 234, 247, 249, 251, 255, 257, 248, 263, 265, 276-278

Reduction 12-15, 19, 26, 27, 31, 39, 40, 44, 45, 48, 59, 128, 132, 145-150, 157, 176, 179, 194, 196, 201, 229, 231, 232, 239, 245, 248, 250, 252, 261, 267

Reduction in Force (RIF) 12, 15, 26, 31, 38, 40, 48, 61, 78, 123, 196, 212

Reorganization 4-6, 26, 38, 53, 63, 103, 118, 127, 169, 188, 252, 253, 259

Research, Development and Engineering (RD&E) 20, 46, 69, 73, 102, 125, 131, 136, 151, 163, 164, 175, 183, 202, 207

Research, Development and Engineering Center, Belvoir (BRDEC) . . . 20, 69, 102, 131, 132, 135, 175, 249

Research, Development, Test and Evaluation (RDTE) 5, 6, 18, 35, 37, 107, 78, 90, 127, 128, 135, 146, 149, 150, 161, 165, 180, 256

Research Laboratory, Army (ARL) 51

Reserve component 4, 59, 159

Resource Conservation and Recovery Act (RCRA) 81, 82, 84, 86, 89, 90, 92

Resource management 4-6, 12, 13, 25-27, 30, 31, 34, 37-40, 45, 48, 49, 55, 75, 96, 125, 189, 204, 227, 254, 257, 263, 272, 274

Review and Analysis (R&A) 55, 146, 263

RIF (Reduction in Force) 12, 15, 26, 31, 38, 40, 48, 61, 78, 212

S

Safety 4, 17, 19, 21-23, 28, 84, 100-105, 109, 110, 114, 130, 133, 136, 148, 149, 152, 154, 155, 161, 171, 191, 198, 199, 208, 231, 232, 234, 275

Saudi Arabia 17, 76, 94, 124, 130, 152, 181

Saudi Arabian National Guard 2, 3

Science Board, Army (ASB) 19, 107, 128, 129, 134, 151, 201, 202

Science Board, Defense (DSB) 135, 162

SDC (Strategic Defense Command) 18, 153, 163

Security 1-3, 6, 17, 35, 43, 44, 49, 53, 64, 66-75, 87, 95, 96, 113, 114, 119, 123,138, 139, 187, 189, 207, 214, 215, 220, 238, 245, 250, 254, 258, 259, 263, 264, 269, 273-276, 278

Security Assistance 1-3, 35, 123, 254, 258, 259, 274

Security Assistance Command, U.S. Army (USASAC) 2, 3, 64, 123

SIMA (Systems Integration and Management Activity) 9, 22, 39, 63, 166, 170, 172, 192, 225, 231, 232, 238, 240, 246, 247, 268

SMART (Supply and Maintenance Assessment and Review Team) 8, 144, 178, 248, 274

SMT (Supply, Maintenance and Transportation) 74, 191, 230, 231, 263

Software 4, 5, 9, 16, 17, 27, 32, 36, 39, 44, 61-65, 69, 80, 87, 122, 127, 128, 138, 140-144, 147, 152, 162, 193, 209, 225, 229, 247, 248, 254, 269, 272, 278

Southwest Asia (SWA) . . . 4, 11, 14, 17, 20, 21, 53, 76, 107, 112, 126, 130, 131-133, 140-143, 152-155, 159, 160, 186, 188, 189, 194-196, 199, 204-206, 221, 222-224, 226, 228, 230, 232-235, 236, 237, 238, 239-241, 243, 248, 250, 251, 263-265, 268-272, 274, 275, 277

Standardization 137, 168, 170, 171, 202, 206-213, 216, 218, 227, 228, 242, 243, 265

START (Strategic Arms Reduction Treaty) 18, 42, 80, 95, 108, 131, 147, 156, 195, 196, 203, 223, 225, 249, 262, 269

State Department 14, 67

Strategic Arms Reduction Treaty (START) 18, 42, 80, 95, 108, 131, 147, 156, 195, 196, 203, 223, 225, 249, 262, 269

Strategic Defense Command (SDC) 18, 153, 163

Supply 4, 8-11, 14, 16, 54, 57, 65, 75, 80, 87, 97, 102, 107, 125, 131, 134, 140, 153, 160, 187, 188, 190-192, 194, 199, 204, 205, 222, 224, 226, 230-233, 235, 237-245, 247-249, 253, 258, 260, 263-265, 270, 271, 273, 278

Supply and Maintenance Assessment and Review Team (SMART) 8, 144, 178, 248, 274

Supply, Maintenance and Transportation (SMT) 74, 191, 230, 231, 263

Surge 15, 76, 132, 149, 162, 179, 188, 193, 235, 270

SWA (Southwest Asia) . . . 4, 11, 14, 17, 20, 21, 53, 76, 107, 112, 126, 130, 131-133, 140-143, 152-155, 159, 160, 186, 188, 189, 194-196, 199, 204-206, 221, 222-224, 226, 228, 230, 232-235, 236, 237, 238, 239-241, 243, 248, 250, 251, 263-265, 268-272, 274, 275, 277

Systems Integration and Management Activity (SIMA) 9, 22, 39, 63, 166, 170, 172, 192, 225, 231, 232, 238, 240, 246, 247, 268

T

TAA (Total Army Analysis) 13, 39

TACOM (Tank-Automotive Command) 20, 21, 30-32, 35, 43, 56, 87, 93, 97, 102, 116, 130, 131, 134, 135, 171, 172, 179, 180, 187, 188, 191, 200, 207, 227, 243, 244, 246, 266, 268, 275, 277

Tank-Automotive Command (TACOM) 20, 21, 30-32, 35, 43, 56, 87, 93, 97, 102, 116, 130, 131, 134, 135, 171, 172, 179, 180, 187, 188, 191, 200, 207, 227, 243, 244, 246, 266, 268, 275, 277

Tanks

- Challenger II 218
- Chieftain 218
- M1 . . . . . 214, 218
- M1A1 (Abrams) 179, 194, 222, 224, 250, 251, 268, 277

Technology leveraging 201-203

TECOM (Test and Evaluation Command) 26, 46, 80, 91, 102, 115, 129, 134, 155, 164, 184, 187, 200, 213, 223, 228, 262

Test and Evaluation Agency, Operational (OTEA) 18, 153

Test and Evaluation Command (TECOM) 26, 46, 80, 91, 102, 115, 129, 134, 155, 164, 184, 187, 200, 213, 223, 228, 262

Test and Evaluation Command, Operational (OPTEC) 129, 134, 184

Test and Experimentation Command (TEXCOM) 46, 134

Test, Measurement and Diagnostic Equipment (TMDE) 6, 13, 43, 45-47, 76

TEXCOM (Test and Experimentation Command) 46, 134

Thomas, LTG Billy M. . . . . vi, 5, 18, 20, 26, 27, 62, 103, 127, 129, 130, 147, 164, 178, 184, 185, 205, 206, 209, 217, 218, 221, 222, 226, 254, 263, 265

TMDE (Test, Measurement and Diagnostic Equipment) 6, 13, 43, 45-47, 76

Toxic Substance Control Act (TSCA) 81, 82, 90

TQM (Total Quality Management) 7, 8, 31, 50, 55, 56, 59, 62, 77, 125, 126, 164, 167, 174, 176, 187, 207, 256

TRADOC (Training and Doctrine Command) 8, 16-20, 28, 42, 46, 69, 73, 102, 128, 130, 131, 134, 138-140, 144, 146-148, 151, 153, 155, 157-161, 163, 165, 167, 184, 185, 190, 206, 207, 209, 210, 221, 226, 228, 233, 234, 240, 241, 245, 250

Training 1, 3, 7, 8, 14, 16, 18, 25, 28, 29, 31, 36, 37, 39, 43, 54, 57, 68, 69, 72, 73, 79, 80, 89, 91, 97-100, 102, 110, 113, 115, 116, 120-122, 125, 126, 130, 131, 133-135, 137, 138, 130, 143-145, 147, 148, 152, 155, 156, 161, 165-167, 170, 174, 181, 185, 187, 194, 197, 200, 204, 211, 216, 221, 223, 226-228, 233-236, 242, 244, 247, 248, 250, 259, 264, 269, 271, 274

Training and Doctrine Command (TRADOC) 8, 16-20, 28, 42, 46, 69, 73, 102, 128, 130, 131, 134, 138-140, 144, 146-148, 151, 153, 155, 157-161, 163, 165, 167, 184, 185, 190, 206, 207, 209, 210, 221, 226, 228, 233, 234, 240, 241, 245, 250

Troop Support Command (TROSCOM) 20, 44, 45, 49, 51, 52, 75, 98, 102, 106, 116, 117, 124, 126, 129, 130, 180, 187, 189, 200, 205, 243, 244, 269, 277

TROSCOM (Troop Support Command) 20, 44, 45, 49, 51, 52, 75, 98, 102, 106, 116, 117, 124, 126, 129, 130, 180, 187, 189, 200, 205, 243, 244, 269, 277

TSCA (Toxic Substance Control Act) 81, 82, 90

Turkey 17, 152, 236, 250, 266, 269

Tuttle, General William G. T., Jr. . . . . v, 1-4, 7-11, 13-21, 23, 30, 39, 40, 51-54, 61, 104, 108, 116, 128-130, 136, 146, 147, 161-163, 171, 175-177, 187, 189, 193, 201, 218, 222, 246, 251, 256, 262, 264, 265

U

UAE (United Arab Emirates) 258, 259

United Arab Emirates (UAE) 258, 259

U.S. Army Europe (USAREUR) 12, 13, 17, 45, 47, 141, 142, 146, 152, 153, 202, 229, 232, 233, 234, 236, 249-251, 264-276

Uranium, depleted 106, 107, 111

USAREUR (U.S. Army, Europe) 12, 13, 17, 45, 47, 141, 142, 146, 152, 153, 202, 229, 232, 233, 234, 236, 249-251, 264-276

USASAC (U.S. Army Security Assistance Command) 2, 3, 64, 123

USSR 66, 67, 198, 248

V

Vanguard, Project 102, 111, 112, 230

VCSA (Vice Chief of Staff, Army) 12, 13, 19, 42, 44, 45, 102, 140, 148, 151, 211

Vehicles

- Armored Combat *V.* 250
- Armored Security *V.* 215
- Bradley Fighting *V.* 110, 111, 160, 179, 195, 217
- Combat Engineer *V.* 130
- commercial 134
- Family of Medium Tactical *V.*s 133
- Field Artillery Ammunition Support 157
- Fuchs 208
- Future Infantry Fighting *V.* 208
- Heavy Equipment Transporter 134, 180, 224
- High Mobility Multipurpose Wheeled *V.* 134, 143, 224, 275
- Non-Tactical *V.* 134, 273
- simulators 134
- Unmanned Ground *V.* 158

VERA (Voluntary Early Retirement Authority) 15, 30, 110

Vice Chief of Staff, Army (VCSA) 12, 13, 19, 44, 45, 102, 140, 148, 151, 211

Vision 2000 . . . . . 10, 186, 188

VMR (Voluntary Military Reduction) 14, 39, 40

Voluntary Early Retirement Authority (VERA) 15, 30, 110

Voluntary Military Reduction (VMR) 14, 39, 40

W

White Sands Missile Range (WSMR) 28, 31, 67, 86, 92, 154

WSMR (White Sands Missile Range) 28, 31, 67, 86, 92, 154

World Order 1

Acronym Glossary

AAA	Army Audit Agency
AACI	Abbreviated Analysis Cost Information
AADS	Army Aviation Dehumidification System
AAE	Army Acquisition Executive
AAFARS	Advanced Aviation Forward Area Refueling System
AAMMIS	AMC Automated Manpower Management Information System
AAN	Audit Alert Network
AAP	Army Ammunition Plant
AARS	Advanced Airborne Radiac System
AAWG	Army Armaments Working Group
AAWS	Advanced Anti-Tank Weapon System
ABCA	American-British-Canadian-Australian
ACAP	Army Career Alumni Program
ACCES	Army Civilian Career Evaluation System
ACDA	Arms Control and Disarmament Agency
ACDT	Automated Core Document Test
ACE	Armored Combat Earthmover
ACH	Annual Command History
ACOE	Army Communities of Excellence
ACP	Army Cost Position
ACPC	Arroyo Center Policy Committee
ACR	Armored Cavalry Regiment
ACS	Army Community Service
ACTEDS	Army Civilian Training, Education and Development System
ACTS	Army Compliance Tracking System
ACV	Armored Combat Vehicle
ADA	Air Defense Artillery
ADAPCP	Alcohol and Drug Abuse Prevention and Control Program
ADATS	Air Defense Anti-Tank System
ADCS	Assistant Deputy Chief of Staff
ADDS	Army Data Distribution System
ADI	Air Defense Interface
ADMRU	Aviation Depot Maintenance Roundout Unit
ADPA	American Defense Preparedness Association
ADS	Acoustic Detection System
AEC	Air Eligibility Code
AEC	Army Education Center
AEFA	Aviation Engineering Flight Activity
AERC	Acquisition Executive Review Council
AERR	Army Environmental Requirements Report
AFAP	Army Family Action Plan
AFAR	Army Federal Acquisition Regulation
AFATDS	Advanced Field Artillery Tactical Data System
AFES	Automated Financial Entitlements Systems
AFFS	Army Field Feeding System
AFRTS	Armed Forces Radio and Television Service
AGR	Active/Guard Reserve
AGS	Armored Gun System
AGT	Automotive Gas Turbine
AHB	Attack Helicopter Battalions
AHIP	Army Helicopter Improvement Program
AHR	Annual Historical Review
AIAP	Army International Activities Plan
AIEP	Army Ideas for Excellence Program
AIF	Army Industrial Fund
AIM	Automated Information Management
AIR	Acquisition Improvement Review
AIRDC	Army Ionizing Radiation Dosimetry Center
AIS	Automated Information System
ALC	Air Logistics Center
ALMC	Army Logistics Management College
ALOG	AWIS Logistics
AMAS	Army Materiel Accounting System
AMC	Army Materiel Command
AMC-SWA	AMC-Southwest Asia
AMCCOM	Armament, Munitions & Chemical Command
AMCLOG	Army Materiel Command Logistics
AMCMEA	AMC Management Engineering Activity
AMCOC	Army Materiel Command Operations Center
AMEC	Army Management Engineering College
AMHA	Army Management Headquarters Account
AMHA	Army Management Headquarters Activity
AMM	Acquisition Materiel Management
AMPMOD	Army Materiel Plan Modernization
AMS	AUTODIN Mail Server
AMSAA	Army Materiel Systems Analysis Activity
AMSS	Army Materiel Status System
AMV	Armored Maintenance Vehicle
ANAD	Anniston Army Depot
ANBACIS	Automated Nuclear, Biological and Chemical Information System
ANVIS	Aviation Night Vision Imaging Systems
AOAP	Army Oil Analysis Program
AOD	Area Oriented Depot
AOG	Army Occupational Guide
AOR	Area of Responsibility
AOW	Action Officers Workshop
AP	Armor Piercing
APFSDS-T	Armor Piercing Fin-Stabilized Discarding Sabot-Tracer
APG	Aberdeen Proving Ground
APGM	Autonomous Precision Guided Munition
AP	Allied Publication
APSEAG	Army Physical Security Equipment Action Group
APU	Auxiliary Power Unit
ARAT	Army Reprogramming Analysis Team
ARDEC	Armament Research, Development and Engineering Center
ARFOR	Armed Forces
ARL	Army Research Laboratory
ARMTE	Army Materiel Test and Evaluation
ARNG	Army National Guard
ARO	Army Research Office
ARR	Annual Recurring Requirements
ASA	Army Support Activity

ASA(FM)	Assistant Secretary of the Army (Financial Management)
ASA(IL&E)	Assistant Secretary of the Army (Installation, Logistics and Environment)
ASA(M&RA)	Assistant Secretary of the Army (Manpower and Reserve Affairs)
ASA(RDA)	Assistant Secretary of the Army (Research, Development and Acquisition)
ASAPP	Army System for Automation of Preparedness Planning
ASARC	Army Systems Acquisition Review Council
ASAS	All Source Analysis System
ASB	Army Science Board
ASCC	Air Standardization Coordinating Committee
ASF	Army Stock Fund
ASG	Area Support Group
ASL	Atmospheric Sciences Laboratory
ASL	Authorized Supply Level
ASPP	Acquisition Systems Protection Program
ASRS	Automated Storage and Retrieval System
ASSIST	Automated Specifications and Standards Information System
ASTF	Acquisition Streamlining Task Force
ATACMS	Army Tactical Missile System
ATAR	Advanced Technology Assessment Report
ATBMP	Army Technology Base Master Plan
ATC	Air Traffic Control
ATCCS	Army Tactical Command and Control System
ATCOM	Aviation and Troop Command
ATD	Allison Transmission Division
ATE	Automatic Test Equipment
ATM	Alpha Track Monitor
ATM	Anti-Tactical Missile
ATSC	Area Test, Measurement and Diagnostic Equipment Support Center
ATTU	Atlantic [Ocean] to the Urals
AUSA	Association of the United States Army
AVCRAD	Aviation Classification Repair Activity Depot
AVIM	Aviation Intermediate Maintenance
AVLB	Armored Vehicle Launched Bridge
AVSCOM	Aviation Systems Command
AVTP	Allied Vehicle Testing Publications
AWIS	Army WWMCCS Information System
AWL	Army Wholesale Logistics
BAST	Board on Army Science and Technology
BAT-DE	Battlefield Deception Element
BCE	Baseline Cost Estimate
BCR	Battlefield Communications Review
BCR	Business Clearance Review
BDA	Battle Damage Assessment
BEP	Black Employment Program
BEPM	Black Employment Program Manager
BES	Budget Estimate Submission
BIG	Blacks In Government
BLPS	Ballistic Laser Protective Spectacles
BMAR	Backlog of Maintenance and Repair
BOIP	Basis of Issue Plan
BPRR	Budget Program Resource Review
BPRRS	Budget Planning Resource Requirements Schedule
BPWG	Business Planning Working Group
BR	Brazil
BRAC	Base Realignment and Closure
BRDEC	Belvoir Research, Development and Engineering Center
BRL	Ballistics Research Laboratory
BSTF	Base Shop Test Facility
BTI	Balanced Technology Initiative
BUCS	Backup Control Systems
C2	Command and Control
C2MUG	Command and Control Microcomputer Users Group
C2S2	CECOM Center for Space Systems
C3	Command, Control and Communications
CA	Canada
CAA	Clean Air Act
CAA	Concepts Analysis Agency
CAAS	Contracted Advisory and Assistance Services
CAIG	Cost Analysis Improvement Group
CALS	Computer Aided Acquisition and Logistic System
CAMDS	Chemical Agent Munitions Disposal system
CAP	Casualty Assistance Program
CARC	Chemical Agent Resistant Coating
CASCOM	Combined Arms Support Command
CAT	Crisis Action Team
CATS	Complaints Appeals Tracking System
CAWCF	Conventional Ammunition Working Capital Fund
CB	Chemical-Biological
CBMS	Chemical Biological Mass Spectrometer
CBRS	Concepts Based Requirements System
CBS-X	Continuing Balance System-Expanded
CC	Condition Code
CCAD	Corpus Christi Army Depot
CCF	Central Clearance Facility
CCNVEO	CECOM Center for Night Vision and Electro-Optics
CCP	Consolidation/Containerization Point
CCPD	Contract Cost Performance Division
CCSS	Commodity Command Standard System
CCTT	Close Combat Tactical Trainer
CD	Counter-Drug
CDA	Catalog Data Activity
CDC	Child Development Centers
CDD	Communication Deception Devices
CDE	Chemical Defense Equipment
CDRL	Contract Data Requirements List
CDS	Child Development Services
CE	Concurrent Engineering
CEAC	Cost and Economic Analysis Center
CECOM	Communications-Electronics Command
CEE	Commercial Equivalent Equipment
CEIO	CALS Evaluation and Integration Office
CENTCOM	Central Command
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CEV	Combat Engineer Vehicle
CEWI	Combat Electronics Warfare and Intelligence
CFE	Conventional Forces Europe

CG	Commanding General
CHP	Chemical Hygiene Plan
CHR	Command Health Report
CHS	Common Hardware/Software
CIE	Clothing and Individual Equipment
CIM	Corporate Information Management
CINC	Commander-in-Chief
CIO	Corporate Information Office
CIPMS	Civilian Intelligence Personnel Management System
CIS	Capital Investment Strategy
CIS	Contractor Information System
CIT	Consumable Item Transfer
CLIP	Configuration and Logistics Information Program
CM	Configuration Management
CMAG	Configuration Management Advisory Group
CMF	Consolidated Maintenance Facility
CMI	Classified Military Information
CMP	Countermine Modernization Plan
CMPSC	Charles Melvin Price Support Center
CMRL	Combat Materiel Research Laboratory
CMTC	Combat Maneuver Training Center
CMV	Combat Mobility Vehicle
CN	Counter-Narcotics
COC	Command Operations Center
COD	Cooperative Opportunities Document
COEA	Cost and Operational Effectiveness Analysis
COIC	Critical Operational Issues and Criteria
COMSEC	Communications Security
CONUS	Continental United States
COR	Contracting Officer Representative
Corps SAM	Corps Surface-to-Air Missile
COSCOM	Corps Support Command
COSIS	Care of Supplies in Storage
COVERS	Combat Vehicle Reliability Simulation
CP	Career Program
CP	Corrosion Protection
$(CP)^2$	Contractor Performance Certification Program
CPAF	Cost Plus Award Fee
CPC-CTX	Corrosion Prevention and Control Center for Technical Excellence
CPFF	Cost Plus Fixed Fee
CPI	Continuous Process Improvement
CPIF	Cost Plus Incentive Fee
CPLAN	Command Plan
CPO	Civilian Personnel Office
CPR	Cost Performance Report
CPX	Command Post Exercise
CRC	CONUS Replacement Center
CRKC	Chaplain Resupply Kits, Consumable
CRLCMP	Computer Resources Life Cycle Management Plan
CRP	Contract Requirements Package
CSA	Chief of Staff, Army
CSBM	Confidence and Security Building Measures
C/SCSC	Cost/Schedule Control Systems Criteria
CSDP	Chemical Stockpile Disposal Program
CSEPP	Chemical Stockpile Emergency Preparedness Program
CSI	Chemical Surety Inspection
CSKC	Chaplain Supply Kit, Consumable
CSS	Combat Systems Support
CSSCS	Combat Service Support Control System
CSTA	Combat Systems Test Activity
CTC	Combat Training Center
CTIS	Central Tire Inflation System
CTS	Contact Test Set
CTS-EOA	Contact Test Set Electro-Optical Augmentation
CTX	Center for Technical Excellence
CUCV	Common Utility Cargo Vehicle
CW	Chemical Weapons
CWA	Clean Water Act
CWC	Chemical Weapons Convention
D-SAFE	DESCOM Support Activity-Far East
DA	Department of the Army
DAB	Defense Acquisition Board
DAC	Department of the Army Civilians
DARPA	Defense Advanced Research Projects Agency
DARSE	Department of the Army Relocation Services for Employees
DASD(PR)	Deputy Assistant Secretary of Defense (Production Resources)
DATP	Detroit Arsenal Tank Plant
DBOF	Defense Business Operations Fund
DCGMR	Deputy Commanding General for Materiel Readiness
DCGRDA	Deputy Commanding General for Research, Development, and Acquisition
DCII	Defense Central Investigative Index
DCMCI	Defense Contract Management Command-International
DCS	Deputy Chief of Staff
DCSDEA	DCS for Development, Engineering and Acquisition
DCSIM	DCS for Information Management
DCSLOG	DCS for Logistics
DCSMM	DCS for Management
DCSOPS	Deputy Chief of Staff for Operations
DCSSMT	Deputy Chief of Staff for Supply, Maintenance, and Transportation
DDAL	Delegation of Disclosure Authority Letter
DDES	Daily Distribution Execution System
DDR	Defense Distribution Regions
DDR	Drug Demand Reduction
DDSP	Defense Development Sharing Program
DEA	Data Exchange Agreement/Annex
DEA	Development, Engineering, and Acquisition
DEDT	Deputy Executive Director for Test, Measurement, and Diagnostic Equipment
DEH	Directorate for Engineering and Housing
DEMIS	Defense Environmental Management Information System
DERA	Defense Environmental Restoration Account
DESCOM	Depot System Command
DF	Direction Finding
DFAR	Defense Federal Acquisition Regulation

DFSC	Defense Financial Services Center
DIMES	Defense Integrated Management Engineering System
DIOR	Directorate for Information, Operation and Reports
DISCAS	Defense Career Automated Referral System
DISCOM	Division Support Command
DLA	Defense Logistics Agency
DLEA	Drug Law Enforcement Agency
DLSIE	Defense Logistics Systems Information Exchange
DMR	Defense Management Review
DMRD	Defense Management Review Decision
DMVS	Desert Mobility Vehicle System
DNT	Dinitrotoluene
DOC	Department of Commerce
DOD	Department of Defense
DODAAC	DOD Activity Address Code
DODIG	DOD Inspector General
DODIRP	DOD Inventory Reduction Plan
DODSASP	DOD Small Arms Serialization Program
DOE	Department of Energy
DOIM	Director of Information Management
DOL	Directors of Logistics
DOM	Desert Operations Motorcycle
DOT	Desert Operations Trailer
DPA	Defense Production Act
DPAS	Defense Priorities and Allocations System
DPSC	Defense Personnel Support Center
DRS	Deficiency Reporting System
DSASC	Defense Standardization and Acquisition Streamlining Council
DSB	Defense Science Board
DSC	Defense Standardization Council
DS/GS	Direct Support/General Support
DSMC	Defense Systems Management College
DSP	Defense Standardization Program
DS Plus	Direct Support Plus
DSREDS	Digital Storage and Retrieval of Engineering Data System
DSS/ALOC	Direct Support System/Air Line of Communication
DTC	Design to Cost
DTIC	Defense Technical Information Center
DTTS	Defense Transportation Tracking System
DU	Depleted Uranium
DWSO	Deputy Washington Standardization Officer
E&MD	Engineering and Manufacturing Development
E^3	Electromagnetic Environmental Effects
EA	Economic Analysis
EA	Environmental Assessment
EA	Executive Agent
EAC	Echelons Above Corps
EC/EDI	Electronic Commerce/Electronic Data Interchange
ECAP	Environmental Compliance Achievement Program
ECAS	Environmental Compliance Assessment System
ECP	Engineering Change Proposal
ECR	Environmental Compliance Review
ECU	Environmental Control Unit
EDC	Eastern Distribution Center
EDCA	Executive Director for Conventional Ammunition
EDI	Electronic Data Interchange
EEO	Equal Employment Opportunity
EF	Exemplary Facility
EFO	European Field Office
EHAT	Equipment Historical Availability Trend
EHSC	Engineering and Housing Support Center
EIO	Exchange Integrated Officer
EIR	Equipment Improvement Recommendation
EIS	Environmental Impact Statement
ELA	Extender Lens Assembly
EMC	Environmental Management Committee
EME	Electromagnetic Environment
EO	Equal Opportunity
EO	Executive Order
EOA	Equal Opportunity Advisor
EOC	Emergency Operations Center
EOQ/VSL	Economic Order Quantity/Variable Safety Level
EPA	Environmental Protection Agency
EPG	Engineer Proving Ground
EQD	Environmental Quality Division
ERF	European Redistribution Facility
ERFS	Extended Range Fuel System
ERPS	Equipment Release Priority System
ERRS	Emergency Regional Reporting System
ESEP	Engineer and Scientist Exchange Program
ESS	Environmental Stress Screening
EUSA	Eighth U.S. Army
FAA	Federal Aviation Administration
FAAD	Forward Area Air Defense
FAAD C2	FAAD Command and Control
FAAR	Forward Area Alerting Radar
FAASV	Field Artillery Ammunition Support Vehicle
FACC	Ford Aerospace Communications Corp.
FAMS	Fuels Automated Management System
FAP	Family Advocacy Program
FCFA	Foreign Currency Fluctuation Account
FCG	Functional Coordinating Group
FCIM	Flexible Computer Integrated Manufacturing
FCRC	Federally Contracted Research Center
FCSITG	Fire Control System Integration
FCT	Foreign Comparative Testing
FD	Functional Description
FDO	Foreign Disclosure Officer
FEMA	Federal Emergency Management Agency
FEW	Federally Employed Women
FFA	Food and Forage Act
FFCA	Federal Facility Compliance Agreement
FFP	Firm Fixed Price
FIRST	Functionally Integrated Resource Support Team
FMBT	Future Main Battle Tanks
FMD	Force Management Division
FMP	Force Modernization Weapon System
FMP	Foreign Materiel Program

FMS	Foreign Military Sales
FMTV	Family of Medium Tactical Vehicles
FNNH	Fabrique Nationale Nouvelle Herstal
FNSI	Finding of No Significant Impact
FORDTIS	Foreign Disclosure and Technical Information System
FORSCOM	Forces Command
FOUO	For Official Use Only
FOV	Family of Vehicles
FPDS	Federal Procurement Data System
FR	France
FSD	Full Scale Development
FSG	Family Support Group
FSR	Fielded System Review
FSR	Functional Support Report
FTMA	Future Tank Main Armament
FWE	Foreign Weapons Evaluation
FWPM	Federal Women's Program Manager
GAC	Grumman Aerospace Corporation
GAO	General Accounting Office
GBL	Government Bill of Lading
GBS	Ground Based Sensor
GDIP	General Defense Intelligence Program
GDLS	General Dynamics Land Systems
GE	Germany
GFE	Government Furnished Equipment
GMLR	Guided Missile and Large Rocket
GMPA	General Materiel and Petroleum Activity
GO RCPC	General Officer Reserve Components Policy Council
GOSC	General Officer Staffing Council
GOSC	General Officer Steering Committee
GPH	Gallons Per Hour
GPO	Government Printing Office
GPS	Global Positioning Satellite
GPS	Global Positioning System
GPS	Gunner's Primary Sight
GS	General Support
GSA	General Services Administration
GSM	Ground Station Module
GSRP	General Support Repair Program
GW	Groundwater
GWJHS	George Washington Junior High School
HASC	House Armed Services Committee
HATS	Hawk Advanced Training Simulator
HAZMIN	Hazardous Waste Minimization
HBCU	Historically Black Colleges and Universities
HCA	Head of the Contracting Activity
HCP	Hazard Communication Program
HET	Heavy Equipment Transport(er)
HETS	Heavy Equipment Transport System
HF	High Frequency
HISA	Headquarters Installation Support Activity
HMMWV	High Mobility Multipurpose Wheeled Vehicle
HMT	High Mobility Trailer
HMU	Hydromechanical Unit
HOD	Head of Delegation
HQDA	Headquarters, Department of the Army
HSC	Health Services Command
HTRTS	High Tech Regional Training Site
HW	Hazardous Waste
HWDMS	Hazardous Waste Data Base Management System
I/FE	Installation/Field Elements
I&SA	Installations and Services Activity
IAG	Interagency Agreement
IBRAC	Industrial Base Resource Allocation Council
ICA	Independent Cost Assessment
ICUZ	Installation Compatible Use Zone
ICP	International Cooperative Programs
IDA	Institute for Defense Analyses
IDSS	Interoperability Decision Support System
IEA	Industrial Engineering Activity
IERW	Initial Entry Rotary Wing
IEW	Intelligence and Electronic Warfare
IFLCS	Interim Force Level Control System
IFS-M	Integrated Facilities System-Micro/Minicomputer
IFTE	Integrated Family of Test Equipment
IG	Inspector General
IGNET	Inspector General Network
IH	Industrial Hygiene
IHFR	Improved High Frequency Radios
IK	Installation Kits
ILS	Integrated Logistics Support
ILSLRMP	ILS Long Range Master Plan
ILSP	Integrated Logistic Support Plan
IMA	Individual Mobilization Augmentee
IMA	Information Management Area
IMA	Intelligence Materiel Activity
IMAIT	Infrastructure Mission Area Integration Team
IMB	Information Management Board
IME	International Materiel Evaluation
IMIP	Industrial Modernization Incentives Program
IMM	Integrated Materiel Management
INF	Intermediate Nuclear Forces
INS	Inertial Navigation System
INSCOM	Intelligence and Security Command
IOC	Industrial Operations Command
IOI	Interim Operating Instruction
IOT&E	Independent Operational Test and Evaluation
IOT&E	Initial Operational Test and Evaluation
IPDS	Inland Petroleum Distribution System
IPM1	Improved M1
IPO	Industrial Preparedness Operations
IPOC	International Point of Contact
IPP	Industrial Preparedness Planning
IPR	Intelligence Production Requirement
IPR	Interim Program Review
IPR	In-Process Review
IPS	Integrated Procurement System
IRAC	Internal Review and Audit Compliance
IRF	Installation Reaction Force
IRFPA	Infra-Red Focal Plane Arrays
IRR	Individual Ready Reserve
IRR	Investigative Records Repository
IRV	Improved Recovery Vehicle
ISA	International Standardization Agreements
ISAP	Information Systems Architecture Plan
ISC	Information Systems Command

ISOO	Information Security Oversight Office
ISP	Integrated Support Plan
IT	Italy
IWD	Integrated Weapons Display
J&A	Justification and Approval
JA	Japan
JACADS	Johnston Atoll Chemical Agent Disposal System
JCS	Joint Chiefs of Staff
JDA	Japanese Defense Agency
JGIB	Joint Group on the Industrial Base
JLC	Joint Logistics Commanders
JLUS	Joint Land Use Study
JOAP	Joint Oil Analysis Program
JOPES	Joint Operations, Planning and Execution System
JPO	Joint Program Office
JSTARS	Joint Surveillance Target Attack Radar System
JTF	Joint Task Force
JWG	Joint Working Groups
JWOD	Javits-Wagner-O'Day
LABCOM	Laboratory Command
LAN	Local Area Network
LAO	Logistics Assistance Office
LAP	Logistic Assistance Program
LAPA	Logistics Assistance Program Activity
LAR	Logistics Assistance Representative
LAUE	Lightweight Army User Equipment
LBA	Longbow Apache
LBAD	Lexington-Bluegrass Army Depot
LBCN	Logistic Base/Critical None
LCA	Logistics Control Activity
LCCE	Life Cycle Cost Evaluation
LCM	Low Cost Motor
LCSE	Life Cycle Software Engineering
LCU	Lightweight Computer Unit
LD	Leak Detection
LDP	Leadership Development Program
LEA	Law Enforcement Agency
LEAD	Letterkenny Army Depot
LHAAP	Longhorn Army Ammunition Plant
LIDAR	Light Detection and Ranging
LIMDIS	Limited Dissemination
LL	Lessons Learned
LMS	Lightweight Multi-Purpose Shelter
LNO	Liaison Officer
LOGEX	Logistics Exercise
LOGMARS	Logistics Applications of Automated Marking and Reading Symbols
LOGNET	Logistics Data Network
LOGTECH	Logistics Technology
LOSF	Line of Sight Forward
LOSR	Line of Sight Rear
LPU	Limited Procurement Urgent
LRAMRP	Long Range Army Materiel Plan
LRIP	Limited Rate Initial Production
LRIP	Low Rate Initial Production
LRRDAP	Long Range Research, Development and Acquisition Plan
LRSUBRS	Long Range Surveillance Unit Base Radio Station
LRTP	Long-Range Training Plan
LRU	Line Replaceable Unit
LSD	Large Screen Display
LSDIS	Light and Special Division Interim Sensor
LSPP	Large Screen Printer Plotter
LSRC	Logistics Systems Review Committee
LSSI	Limited Scope Surety Inspection
MAA	Mission Area Analysis
MAC	Military Airlift Command
MACE	Mobilization AVCRAD Control Element
MACOM	Major Command
MAIS	Mobile Automated Instrumentation Test Suite
MAISRC	Major Automated Information System Review Council
MAMP	Mission Area Materiel Plan
MANPRINT	Manpower and Personnel Integration
MANTECH	Manufacturing Technology
MAS	Military Agency for Standardization
MAT	Medical Augmentation Team
MC	Materiel Change
MCA	Military Construction, Army
MCAAP	McAlester Army Ammunition Plant
MCAP	Mine Clearing Armor Protection
MCB	Managing Civilians to Budget
MCCA	Military Child Care Act
MCCD	Multispectral Close Combat Decoys
MCCET	MACOM Child Care Evaluation Team
MCD	Mines, Countermine and Demolitions
MCD	Missiles Countermeasures Device
MCF	Mobile Calibration Facility
MCG	MITLA Coordinating Group
MCI	Military Customs Inspector
MCIS	Materiel Change Information System
MCM	Materiel Change Management
MCS	Maneuver Control System
MCSAM	Marine Corps Systems Acquisition Model
MDB	Munitions Demilitarization Building
MDEP	Management Decision Package
MDW	Military District of Washington
MEAPO	Mid-East Asia Project Office
MEDCEN	Medical Center
MEDDAC	Medical Department Activity
MEI	Major End Item
MEILSR	Minimum Essential Integrated Logistics Support Requirements
MFG	Manufacturing
MFR	Memorandum For Record
MI	Minority Institutions
MICLIC	Mine Clearing Line Charge
MICOM	Missile Command
MILCOM	Military Community
MILDEP	Military Deputy
MISMA	Model Improvement and Study Management Agency
MITLA	Microcircuit Technology in Logistics Applications
MLRS	Multiple Launch Rocket System

MLRS-TGW	Multiple Launch Rocket System - Terminal Guidance Warhead
MM	Martin Marietta
MMA	Main Missile Assemblies
MMIP	Materiel Maintenance Intern Program
MMP	Mobilization Master Planning
MOA	Memorandum of Agreement
MOBTDA	Mobilization TDA
MOD	Miscellaneous Obligation Document
MODELS	Modernization of the Defense Logistics Standard Systems
MOI	Memorandum of Instruction
MORE	Meal, Ordered, Ready-to-Eat
MOS	Military Occupational Specialty
MOU	Memorandum of Understanding
MP	Military Police
MPRJ	Military Personnel Records Jackets
MR	Materiel Readiness
MRE	Meal, Ready-to-Eat
MRSA	Materiel Readiness Support Activity
MS3	Manpower Staffing Standards System
MSA	Mine Safety Appliances
MSC	Major Subordinate Command
MSC	Materiel Support Center
MSE	Mobile Subscriber Equipment
MTL	Materials Technology Laboratory
MTMC	Military Traffic Management Command
MTOE	Modification Table of Organization and Equipment
MWG	MITLA Working Group
MWO	Modification Work Order
MZAD	Mainz Army Depot
NAC	National Security Check
NAF	Nonappropriated Fund
NAMSA	NATO Maintenance and Supply Agency
NAS	National Academy of Sciences
NAS	National Airspace System
NASS	National Association for Suggestion Systems
NATO	North Atlantic Treaty Organization
NBC	Nuclear, Biological and Chemical
NBCRS	NBC Reconnaissance System
NCAD	New Cumberland Army Depot
NDI	Non-Developmental Item
NDP	National Disclosure Policy
NDS	National Defense Stockpile
NEPA	National Environmental Policy Act
NET	New Equipment Training
NG	Nitroglycerine
NGS	Non-Government Standards
NIB	National Industries for the Blind
NICP	National Inventory Control Point
NIPR	Non-Recurring Intelligence Production Requirement
NISH	National Industries for the Severely Handicapped
NIST	National Institute of Standards & Technology
NLOS	Non Line of Sight
NM	Nanometer
NMC	Not Mission Capable
NOK	Next of Kin
NOV	Notice of Violation
NPL	National Priority List
NRC	National Research Council
NRC	Nuclear Regulatory Commission
NRP	Net Radio Protocol
NSE	National Security Exemption
NSN	National Stock Number
NSO	National Standardization Officer
NTH	New Training Helicopter
NTI	National Trial Inspections
NTV	Non-Tactical Vehicle
NWTI	Nuclear Weapons Technical Inspection
O&S	Operation and Support
OB/OD	Open Burning/Open Detonation
OBCE	Operational Baseline Cost Estimate
OCONUS	Outside of the Continental United States
ODCSINT	Office of the Deputy Chief of Staff for Intelligence
ODCSLOG	Office of the Deputy Chief of Staff for Logistics
ODP	Officer Distribution Plan
ODS	Operation Desert Shield/Storm
ODT	Overseas Deployment Training
OEO	Office of Equal Opportunity
OICP	Office for International Cooperative Programs
OLDS	Optical Laser Disk System
OMA	Operations and Maintenance, Army
OMB	Office of Management and Budget
OOV	Objects of Verification
OPA	Other Procurement, Army
OPC	Operation Provide Comfort
OPM	Office of Personnel Management
OPSEC	Operations Security
OPTADS	Operational and Tactical Data Systems
OPTADS	Operational and Tactical Distribution System
OPTEC	Operational Test and Evaluation Command
OR	Operational Readiness
ORADA	Ober Ramstadt Army Depot Activity
ORISA	Office of Record for International Standardization Agreements
OSCR	Operations and Support Cost Reduction
OSD	Office of Secretary of Defense
OSHA	Occupational Safety & Health Administration
OST	Order Ship Time
OT	Operational Testing
OTEA	Operational Test and Evaluation Agency
OTSG	Office of the Surgeon General
P1a	Pershing 1a
PA	Performance Analyzer
PA	Performance Assessment
PA	Project Agreement
PAA	Procurement Ammunition, Army
PACOM	Pacific Command
PADRDA	Principal Assistant Deputy for Research, Development and Acquisition
PAM	Priorities and Allocations Manual
PARC	Principal Assistant Responsible for Contracting
PAS	Preliminary Assessment Screening

PAS	Price, Availability and Serviceability
PAT	Process Action Team
PBD	Program Budget Decision
PBG	Program and Budget Guidance
PBIS	Productivity Based Incentive System
PBS	Production Base Support
PC	Personal Computers
PCBs	Polychlorinated Biphenyl
PCIP	Productivity Capital Investment Program
PCL	Precombat Checklist
PCS	Permanent Change of Station
PD	Program Director
PDES	Product Data Exchange Standard
PDM	Pursuit Deterrent Munition
PE	Program Element
PECIP	Productivity Enhancing Capital Investment Program
PED	Purchase Early Development
PEER	Productivity Enhancements, Efficiencies, and Rewards
PEO	Program Executive Officer
PEO CCS	Program Executive Officer, Command and Control Systems
PEO STAMIS	Program Executive Office, Standard Army Management Information Systems
PERSCOM	Personnel Command
PIF	Productivity Investment Funding
PII	Pershing II
PLFT	Pilot Lot Flight Test
PLGR	Precision Lightweight GPS Receiver
PLS	Palletized Load System
PLS	Portable Loudspeaker
PM	Program/Project Manager
PM ADCCS	Program Manager Air Defense Command and Control System
PM AIM	Program Manager, Acquisition Information Management
PM CHS	Program Manager, Common Hardware/Software
PM CIE	Project Manager for Clothing and Individual Equipment
PM ITTS	Project Manager, Instrumentation Targets and Threat Simulators
PM OPTADS	Program Manager, Operational Tactical Data Systems
PM RMA	Program Manager for Rocky Mountain Arsenal
PM-S	Program Manager - Soldier
PM SDS MOD	Project Manager for Standard Depot System Modernization
PM-TEMOD	Product Manager, Test Equipment Modernization
PM TSS	Project Manager Tactical Soldier System
PMCS	Preventive Maintenance Checks and Services
PMO	Procurement Management Office
PMO	Program Management Office
PMR	Program Management Review
PNVS	Pilot Night Vision Sensor
PO AFF	Project Office for Army Field Feeding
PO	Permanent Orders
POM	Preparation for Overseas Movement
POM	Program Objective Memorandum
POMCUS	Prepositioning of Materiel Configured to Unit Sets
POP	Performance Oriented Packaging
POP	Proof of Principle
POR	Preparation of Replacements
PPBES	Planning, Programming, Budgeting, and Execution System
PPQT	Pre-Production Qualification Test
PPU	Prime Power Unit
PR	Periodic Reinvestigation
PRAG	Performance Risk Analysis Group
PSCC	Packaging, Storage and Containerization Center
PSE	Physical Security Equipment
PSE	Program System Evaluation
PSEAG	Physical Security Equipment Action Group
PSI	Program Security Instruction
PUDA	Pueblo Army Depot Activity
QA	Quality Assurance
QASAS	Quality Assurance Specialist (Ammunition Surveillance)
QDR	Quality Deficiency Review
QER	Quarterly Evaluation Report
QMB	Quality Management Board
QMR	Quarterly Management Report
QRG	Quiet Reliable Generator
QRIP	Quick Return on Investment Program
QRR	Quick Reaction Requirement
QS	Quickstart
QSTAG	Quadripartite Standardization Agreement
QWG	Quadrilateral Working Group
R&A	Review and Analysis
RAAP	Radford Army Ammunition Plant
RADCON	Radiation Control
RADCON	Radiological Control
RAM	Reliability, Availability and Maintainability
RAMCAD	Reliability, Availability and Maintainability Computer Aided Design
RAMP	Rapid Acquisition of Manufactured Parts
RAMP	Review of Army Mobilization Planning
RASP	Rapid Acquisition of Spare Parts
RBM	Readiness Based Maintenance
RC	Reserve Component
RC-IRONS	Reliability Centered-Inspect and Repair Only as Necessary
RCRA	Resource Conservation and Recovery Act
RDA	Research, Development, and Acquisition
RDAISA	Research, Development and Acquisition Information System Activity
RDB	Requirements Data Base
RDDS	Research and Development Descriptive Summary
RDE	Research, Development, and Engineering
RDEC	Research, Development and Engineering Center
RDTE	Research, Development, Test and Evaluation
REC	Record of Consideration
REQVAL	Requisition Validation

RF	Radio Frequency
RFDC	Radio Frequency Data Communication
RFEA	Request for Equitable Adjustment
RFI	Reactor Facility Inspection
RFP	Request for Proposal
RIDB	Readiness Integrated Data Base
RIF	Reduction in Force
RMP	Reprogrammable Microprocessor
RMS	Resource Management Software
RMU	Resource Management Update
ROC	Required Operational Capability
ROD	Report of Discrepancy
ROK	Republic of Korea
ROM	Refuel on the Move
ROWPU	Reverse Osmosis Water Purification Unit
RPMA	Real Property Maintenance Activity
RRAD	Red River Army Depot
RRC	Requirements Review Committee
RRCC	Realignments, Reductions, Closures and Consolidations
RRP	Radon Reduction Program
RS	Requirement Statement
RSA	Reserve Storage Activity
RSI	Rationalization, Standardization and Interoperability
RST	Robotic Systems Technology
S&CDM	Strategic and Critical Defense Materials
S&I	Security and Intelligence
SA	Selective Availability
SAAC	Security Assistance Accounting Center
SAAD	Sacramento Army Ammunition Depot
SAC	Senate Appropriations Committee
SACM	Strategic and Critical Materials
SADARM	Sense and Destroy Armor
SAE	Society of Automotive Engineers
SAFOR	Semi-Automated Forces
SAG	Senior Advisory Group
SAG	Study Advisory Group
SAIC	Science Applications International Corporation
SAIMS	Selected Acquisition Information and Management
SAMS	Standard Army Maintenance System
SAP	Special Access Program
SAPOC	Special Access Program Oversight Committee
SAPSAT	Special Access Program Staff Assistance Team
SARA	Superfund Amendments and Reauthorization Act
SARDA	Secretary of the Army for Research, Development, and Acquisition
SARF	Saudi Arabian Redistribution Facility
SATCOM	Satellite Communications
SAW	Squad Automatic Weapon
SAWE	Simulated Area Weapons Effects
SC	Steering Committees
SCALP	Suit Chemical Avoidance Liquid Protective
SCOTT	Single Channel Objective Tactical Terminal
SCR	Senior Command Representative
SCUR	Selected Command Unit Review
SDC	Strategic Defense Command
SDIO	Strategic Defense Initiative Organization
SDS	System Demonstration Substage
SDT	Second Destination Transportation
SDWA	Safe Drinking Water Act
SE&I	Systems Engineering and Integration
SEL	School of Engineering and Logistics
SEP	Soldier Enhancement Program
SETAF	Southern European Task Force
SGS	Secretary of the General Staff
SHAD	Sharpe Army Depot
SI	Secondary Item
SIAD	Sierra Army Depot
SICPS	Standardized Integrated Command Post System
SIDPERS	Standard Installation Division Personnel System
SIMA	Systems Integration and Management Agency
SIMATS	Supplemental Medium Anti-Tank System
SINCGARS	Single Channel Ground and & Radio System
SIP	System Improvement Program
SISOCS	Streamlining Information Service Operations Consolidation Study
SITF	Software Implementation Task Force
SLA	Strategic Logistics Agency
SLEP	Service Life Extension Program
SLGR	Small Lightweight GPS Receivers
SLRP	Strategic Long Range Plan
SM	Satellite Motor
SMART	Supply and Maintenance Assessment and Review Team
SMCA	Single Manager for Conventional Ammunition
SMDB	Supply Management Data Base
SMMP	System MANPRINT Management Plan
SMP	Small Mechanical Part
SMP	Soldier Modernization Plan
SMS	Standardization Management System
SMT	Supply, Maintenance and Transportation
SOA	South of Alps
SOA	Special Operation Aircraft
SOF	Special Operations Forces
SOMARDS	Standard Operation Maintenance Army, Research and Development System
SOP	Spill/Overfill Prevention
SORR	System Operational Readiness Review
SORTS	Status of Resources and Training System
SOTS	Security Operational Test Site
SP	Spain
SPA	Special Priorities Assistance
SPO	Security, Plans, and Operations
SRA	Separate Reporting Activity
SRA	Special Repair Authority
SSA	Supply Support Activities
SSAC	Source Selection Advisory Council
SSF	Single Stock Fund
SSO	Special Security Offices
S-T	Senior Technical
ST	Staff Talks
STAMIS	Standard Army Management Information Systems

STAMIS	Standard Mission Information System
STANAG	Standardization Agreement
STAR	Strategic Technologies for the Army
START	Strategic Arms Reduction Treaty
STTWG	Security and Technology Transfer Working Group
STU III	Secure Telephone Unit
STV	Surrogate Tele-operated Vehicle
SWA	Southwest Asia
SWAPDOP	Southwest Asia Petroleum Distribution System Operational Project
SWG	Simulation Working Group
SWQT	Software Qualification Test
T&M	Time and Materials
TAA	Total Army Analysis
TAACOM	Theater Army Area Command
TAADS-R	The Army Authorization Documents System - Redesign
TAC	Transportation Account Codes
TACJAM	Tactical Communications Jamming
TACOM	Tank-Automotive Command
TADS	Target Acquisition and Designator Sight
TAMMC	Theater Army Materiel Management Center
TAMP	Theater Aviation Maintenance Program
TASP	The Army Study Program
TASS	Technical Analysis Support System
TAV	Total Asset Visibility
TC ACCIS	Transportation Coordinator, Automated Command and Control Information System
TC-LPU	Type Classified-Limited Procurement Urgent
TCAE	Technical Control and Analysis Center
TCT	Tactical Computer Terminals
TDA	Table of Distribution and Allowances
TD/CMS	Technical Data/Configuration Management System
TDP	Technical Data Package
TDY	Temporary Duty
TEAD	Tooele Army Depot
TECOM	Test and Evaluation Command
TECRAS	Technical Reconnaissance and Surveillance
TEMOD	Test Equipment Modernization
TEMP	Test and Evaluation Master Plan
TEXCOM	Test and Experimentation Command
TGW	Terminaly Guided Warhead
THT	Tracking Head Trainer
TLE	Treaty Limited Equipment
TMCA	Theater Movement Control Agency
TMDE	Test, Measurement & Diagnostic Equipment
TNT	Trinitrotoluene
TOA	Total Obligation Authority
TOC	Tactical Operations Center
TOE	Table of Organization and Equipment
TOW	Tube Launched, Optically Tracked, Wire Guided
TPD	Technical Data Package
TPF	Total Package Fielding
TPGID	Tank Precision Gunnery In-Bore Device
TPO	Technical Project Officer
TPS	Transportation Protective Service
TQM	Total Quality Management
TRADOC	Training and Doctrine Command
TRDI	Technical Research and Development Institute
TROSCOM	Troop Support Command
TRW	Thomson Ramo Woolridge
TSC	Technical Support Center
TSC	TMDE Support Center
TSCA	Toxic Substance Control Act
TSIP	TOW Sight Improvement Program
TSO	TMDE Support Operations
TSS	Target Sensing System
TT	Technical Testing
TTC	Tank Turret Camouflage
UAE	United Arab Emirates
UAS	Uniformed Army Scientist
UBRD	Usage Based Requirements Determination
UESSR	Unit Equipment Status Serviceability Report
UGV	Unmanned Ground Vehicle
UIC	Unit Identification Code
UK	United Kingdom
ULCANS	Ultra Lightweight Camouflage Net System
ULLS	Unit Level Logistics System
URI	University Research Initiative
US/GE	United States/Germany
USAAA	U.S. Army Audit Agency
USAADASCH	U.S. Army Air Defense Artillery School
USACDA	U.S. Army Materiel Command Catalog Data Activity
USACE	U.S. Army Corps of Engineers
USADACS	U.S. Army Defense Ammunition Center and School
USAES	U.S. Army Engineer School
USAICS	U.S. Army Intelligence Center and School
USAMRICD	U.S. Army Medical Research Institute for Chemical Defense
USAOMMCS	U.S. Army Ordnance Missile Munitions Center School
USAREUR	U.S. Army Europe
USARTTC	U.S. Army Redstone Technical Test Center
USASAC	U.S. Army Security Assistance Command
USASG	U.S. Army Support Group
USASOC	U.S. Army Special Operations Command
USATA	U.S. Army Test, Measurement, and Diagnostic Equipment Activity
USATHAMA	U.S. Army Toxic and Hazardous Materials Agency
USATSAC	U.S. Army Test, Measurement, and Diagnostic Equipment Support Activity - CONUS
USATSG	U.S. Army TMDE Support Group
USFK/EUSA	U.S. Forces-Korea/Eighth U.S. Army
USMA	United States Military Academy
USMC	United States Marine Corps
USSOCOM	United States Special Operations Command
USSR	Union of Soviet Socialist Republics
UST	Underground Storage Tank
VAL	Vulnerability Assessment Laboratory
VCSA	Vice Chief of Staff, Army
VEARS	Value Engineering Automated Reporting System

VECP	Value Engineering Change Proposal
VEMIS	Value Engineering Management Information System
VERA	Voluntary Early Retirement Authority
VMR	Voluntary Military Reduction
VTC	Video Teleconference
WARM	Wartime Reserve Modes
WBS	Work Breakdown Structure
WIDGET	Weekly Intelligence Digest
WIS	WWMCCS Information System
WQAS-P	Water Quality Analysis Set: Purification
WQAU-P	Water Quality Analysis Unit: Purification
WRMAG	Water Resources Management Action Group
WS/SPA	Weapon System Supply Performance Analyzer
WSMR	White Sands Missile Range
WSO	Washington Standardization Officer
WSSM	Weapon System Sustainment Management
WSTA	Weapon System Technical Assessment
WWMCCS	Worldwide Military Command and Control System
YS	Youth Services
ZBR	Zero Based Resourcing

Distribution List

Activities Under Headquarters, AMC and Separate Units

U.S. AMC Catalog Data Activity 1
New Cumberland Army Depot
ATTN: AMXCA-PP
New Cumberland, PA 17070-5010

U.S. AMC Field Safety Activity 1
ATTN: AMXOS
Charlestown, IN 47111-9669

U.S. AMC Field Office 1
HQ Air Force Systems Command
Andrews Air Force Base
Washington, DC 20334

U.S. Army LAO-CONUS 1
ATTN: AMXLA-CO (Bldg 210, RM 224)
Ft. McPherson, GA 30330-6000

U.S. Army LAO-Korea 1
APO SF 96301

U.S. Army LAO-NGB 1
Room 2E425
The Pentagon
Washington, DC 20310

U.S. AMC R&D Field Support Activity 1
Ft. Hood, TX 76544

U.S. Army Materiel Readiness Support Activity 1
ATTN: AMXMD-PM
Lexington, KY 40511-5101

U.S. Army Automated Logistics Management Systems Activity 1
ATTN: AMXAL-RAG
P.O. Box 1578
St. Louis, MO 63188-1578

U.S. Army Central TMDE Activity 1
ATTN: AMXCT-RM
Lexington, KY 40511-5104

U.S. Army Industrial Base Engineering Activity 1
ATTN: AMXIB
Rock Island, IL 61299-7260

U.S. Army Human Engineering Lab 1
ATTN: SLCHE-D
Aberdeen Prvng Grnd, MD 21005-5001

U.S. Army Management Engineering Training Activity 1
ATTN: AMXOM-DO
Rock Island, IL 61299-7040

U.S. AMC Log Control Activity 1
Presidio of San Franciso, CA 94129

U.S. Army LAO-TRADOC 1
Ft. Monroe, VA 23651-5000

U.S. Army LAO-Pacific 1
ATTN: AMXLA-P
Ft. Shafter, HI 96858-5400

U.S. Army Logistics Mgmt Center 1
ATTN: AMXMC-P
Ft. Lee, VA 23901-6056

U.S. Army Materiel Systems Analysis Activity 1
ATTN: AMXSY-PM
Aberdeen Prvng Grnd, MD 21005-5071

U.S. Army Lexington-Bluegrass AD 1
DESCOM PAFTA
ATTN: AMSDS-Q-E-Q
Lexington, KY 40511-5104

U.S. AMC QA Field Activity 1
Lexington, KY 40507

HQ AMC-Europe 1
ATTN: AMXEU-R
APO NY 09333-4747

U.S. Army Equipment Authorizations Review Activity 1
Alexandria, VA 22333-0001

U.S. Army Armament Research and Development Center 1
ATTN: AMSMC-HO(D)
Dover, NJ 07801-5001

HQ AMC-Far East 1
ATTN: AMXFE
APO SF 93601

U.S. Army Toxic and Hazardous Materials Agency 1
Aberdeen Proving Ground, MD 21010

Major Subordinate Commands

AMCCOM 10
U.S. Army Armament, Munitions and Chemical Command
ATTN: AMSMC-HO(R)
Rock Island, IL 61299-6000

ATCOM 5
U.S. Army Aviation and Troop Command
ATTN: AMSAT-GSH
4300 Goodfellow Boulevard
St. Louis, MO 63120-1798

DESCOM 1
U.S. Army Depot System Command
ATTN: AMSDS-PA-H
Chambersburg, PA 17201-4170

STRICOM 1
U.S. Army Simulation, Training and Instrumentation Command
12350 Research Parkway
Orlando, FL 32826-3276

TECOM 2
U.S. Army Test and Evaluation Command
ATTN: AMSTE-PE-H
Aberdeen Prvng Grnd, MD 21005-5055

ARL 4
U.S. Army Research Laboratory
ATTN: AMSRL-PA (Dr. Bill Moye)
2800 Powder Mill Road
Adelphi, MD 20783-1145

CBDCOM 1
U.S. Army Chemical and Biological Defense Command
ATTN: SMCCR-HO
Aberdeen Prvng Grnd, MD 21010-5423

MICOM
U.S. Army Missile Command
ATTN: AMSMI-H
Redstone Arsenal, AL 35898-5010

TACOM 1
U.S. Army Tank-Automotive Command
ATTN: AMSTA-CH
Warren, MI 48397-5000

USASAC 1
U.S. Army Security Assistance Command
ATTN: AMSAC-SA
5001 Eisenhower Avenue
Alexandria, VA 22333-0001

Program/Project Managers Reporting to HQ AMC

Defense Communications Systems (Army) 1
Ft. Monmouth, NJ 07703

Saudi Arabian National Guard 1
APO NY 09038

Historical Offices

Commandant 1
Army War College
ATTN: Classified Library
Carlisle Barracks, PA 17013-5050

Eighth Army 1
ATTN: SJS-H
APO SF 96301-0010

Military Traffic Management Cmd 1
ATTN: MT-CH (Rm 325)
5611 Columbia Pike
Falls Church, VA 22041-5050

U.S. Army Center of Military History 1
1099 14th Street, NW
Franklin Court
Washington, DC 20005-3402

U.S. Army Command and General 1
Staff College
ATTN: ATZL-SWI
Ft. Leavenworth, KS 66027-6900

U.S. Army Corps of Engineers 1
Office of History
ATTN: CEHO
Kingman Building
Ft. Belvoir, VA 22060-5577

U.S. Army Europe 1
ATTN: AEAGS-MH
APO NY 09403

U.S. Army Information Systems Cmd 1
ATTN: AS-CS-H
Ft. Huachuca, AZ 85613-5000

U.S. Army Forces Command 1
ATTN: AFCS-MH (Military History)
Ft. McPherson, GA 30330-6000

U.S. Army Health Services Command 1
ATTN: HSOP-SP (Historical Office)
Ft. Sam Houston, TX 78234-6000

U.S. Army Military History Institute 1
Carlisle Barracks, PA 17013-5008

U.S. Army Combined Arms Center 1
ATTN: ATZL-MH
Ft. Leavenworth, KS 66027-5000

U.S. Army Logistics Center 1
ATTN: ATCL-H
Ft. Lee, VA 23801-6000

U.S. Army Center for Army Lessons 1
Learned
HQ Combined Training Academy
ATTN: ATZL-TAL
Ft. Leavenworth, KS 66027-7000

U.S. Army Military Academy 1
Department of History
West Point, NY 10996-1793

U.S. Army War College 1
Carlisle Barracks, PA 17013-5050

U.S. Army South 1
ATTN: SOOP-H
APO Miami 34004-5000

U.S. Army Training and 1
Doctrine Command
ATTN: ATMH
Ft. Monroe, VA 23651-5000

U.S. Army Western Command 1
ATTN: APOP-HI
Ft. Shafter, HI 96858-5100

Headquarters AMC

Commanding General	1
Deputy Commanding General	1
Chief of Staff	1
Chief Scientist	1
Command Sergeant Major	1
Principal Deputy for Acquisition	1
Principal Deputy for Technology	1
Principal Deputy for Logistics	1
Assistant Deputy for International Cooperative Programs	1
Commanding General's Staff Group	1
DCS for Acquisition	1
DCS for Ammunition	1
DCS for Engineering, Housing & Installation Logistics	1
DCS for Logistics	1
DCS for Personnel	1
DCS for Research, Development and Engineering	1
DCS for Resource Management	1
ADCS for Chemical and Biological Matters	1
Executive Director for TMDE	1
Executive Director for Conventional Ammunition	1
Liaison Officer, AMC-Europe/AMC-Far East	1
Office, CALS Requirements Integration	1
Office of the Command Chaplain	1
Office, Congressional Liaison	1
Office, Corporate Information	1
Office of Equal Opportunity	1
Office, Foreign Liaison	1
Office, Historical	4
Office of the Inspector General	1
Office Internal Review and Audit Compliance	1
Office for International Cooperative Programs	1
Office, Management of Change	1
Office, Protocol	1
Office of Public Affairs	1
Office, Safety	1
Office of Small and Disadvantaged Business Utilization	1
Office, Special Analysis	1
Office of the Special Assistant for Quality	1
Office of the Surgeon	1
Ombudsman	1
Saudi Arabian National Guard Modernization Program	1
Senior Advisors	3
Special Assistant for Joint Activities	1
Technical Library	1