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US ARMY
MATERIEL DEVELOPMENT
AND
READINESS COMMAND
ALEXANDRIA, VIRGINIA
22333

# ANNUAL HISTORICAL REVIEW

# FISCAL YEAR 1982

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# U. S. ARMY MATERIEL DEVELOPMENT AND READINESS COMMAND

## ANNUAL HISTORICAL REVIEW

FISCAL YEAR 1982
(RCS-CSHIS-6 (R3))

Prepared by

Historical Office

Headquarters, U.S. Army Materiel Development and Readiness Command

31 January 1986

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# PREFACE

This Annual Historical Review was prepared in accordance with the provisions of AR 870-5, and covers the twentieth year of the life of the U. S. Army Materiel Development and Readiness Command (U. S. Army Materiel Command prior to 26 January 1976). The history was prepared in part from submissions compiled by historical officers of headquarters staff elements and project manager offices which are discussed in the text, and in part from sources referenced in footnotes assembled through various research programs. The Review serves as the official history of the Command and is used as a management instrument on which to base current and future operations, a record for the provision of historical precedent, and a means for the orientation of newly assigned personnel to the Command. It is also a valuable reference work which is used for the preparation of more comprehensive Command and Army histories

Fiscal year 1982 was a year of complexity and transition for DARCOM. The major emphasis on improvement of materiel development and acquisition which began in the seventies set in motion a continuing trend of expanding mission and responsibilities while resources continued to decline. By fiscal year 1982, however, the resource base was expanding, but still limited. Fiscal year 1982 saw DARCOM involved in the most extensive force modernization ever undertaken by the Army. This transformation was massive and complex, hurdling from the technologies of the fifties and sixties to the eighties and nineties. The challenge of the eighties was to effect drastic change in weapons, weapons systems and equipment while maintaining a high degree of readiness worldwide. Much of the DARCOM management effort was occupied by the necessity to acquire quality weapons and equipment systems with limited resources.

The preparation of the history was a team effort. Team leaders were Mr. George J. Stansfield and Dr. Robert G. Darius, Senior Action Officers for Annual Historical Reviews, who planned and coordinated the entire project. George Stansfield also prepared Chapter VI and assisted in the preparation of Chapter VII. Dr. Darius prepared Chapters III, V, VIII, and assisted in the preparation of Chapter IV. Chapter I was written by Mr. Don McLeod, who also assisted with the preparation of Chapter IV. Chapter II was prepared by Dr. Howard K. Butler, of the U. S. Army Troop Support and Aviation Materiel Readiness Command. Dr. Butler also assisted in the preparation of Chapter VII. The manuscript was edited, prepared for printing, and graphics arranged by Guyanne Parker, assisted by Dianne Alexander.

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# CHAPTER I

## COMMAND MANAGEMENT

### Introduction

(U) General Donald R. Keith assumed command of the US Army Materiel Development and Readiness Command (DARCOM) at a time of perhaps the most extensive logistics modernization effort ever undertaken. The Army's force modernization was expected to introduce more than 400 new weapons and equipment systems to the inventory in this decade.[1] More than 170 of these were expected to be fielded in Europe by fiscal year 1983 and 1984.[2] The US Army Materiel Development and Readiness Command was intensely involved[3] in this extremely complex transformation which had a two-fold purpose--that of completely modernizing the Army's forces, while at the same time, maintaining a high degree of day-to-day readiness. As General Keith remarked in his address to the Army's Leadership Seminar in August 1982, ". . . We must learn to manage change while effectively maintaining a credible fighting force."[4]

(U) The success of force modernization depended largely upon improvements in materiel acquisition. Consequently, General Keith established as his first priority the upgrading of weapons systems acquisition in his initial year as DARCOM Commander.[5] Concern for this problem was shared by Mr. Frank Carlucci, Deputy Secretary of Defense, who was quoted in the October issue of DEFENSE 81 as saying, ". . . If (Mr.) Weinberger and I do nothing else in these next four years except to straighten out the weapons acquisition system, we will have had a successful tour."[6]

(U) To fulfill this goal, the Deputy Secretary of Defense instituted the Defense Acquisition Improvement Program (DAIP) to correct what were identified as 32 deficiencies in the DOD weapons acquisition system, more familiarly known as the "Carlucci Initiatives". The DARCOM commander used the DAIP along with his own programs to improve the way

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1 CG's Address to Army Leadership Seminar, 13 Aug 82, pp. 3-4.

2 LTC Henry Sabieshi, "DARCOM-Europe," R&D Magazine, Jan-Feb 83, pp. 2-3.

3 COL J. F. Biemeck, Introductory Remarks at CG Historical File POC Meeting, 25 Apr 83.

4 GEN Keith's Address to Army Leadership Seminar, 13 Aug 82, p. 3. GEN Thompson White Paper.

5 CG's Briefing to Army Commanders' Conference, 14 Oct 83.

6 DEFENSE 81, Oct 81.

DARCOM conducted its materiel acquisition business, and to facilitate the force modernization process. Thus, acquisition improvement and force modernization were interwoven in a direct impact upon readiness. Underlying all three, was an expanding but limited resource base. Although the Defense Department enjoyed a period of increased budgets under the Reagan Administration, General Keith was concerned that the pro-defense consensus was fragile, and that those watching defense dollars would have to demonstrate professionalism, competence, and efficiency if the strides made in force modernization were to be maintained.[7]

(U) General Keith established the Commanding General's Historical Files in the custody of Headquarters Historical Office in order to preserve for future generations of managers and historians the record of significant actions and initiatives attendant upon the most extensive modernization of the Army in its history. This collection included documents and interviews of key DARCOM executives, which represented definitive DARCOM management issues. The CG's files were arranged by fiscal year and contributing staff element, as well as management issues.

## Force Modernization

(U) Force modernization was massive and complex. It sought to redress a long period in the development of Army weapons systems when little or no modernization was being carried out. The Korean War was fought with leftovers from World War II; and despite the tremendous amounts of materiel which poured into Vietnam, the exigencies of this conflict prevented modernization--just the upgrading of the weapons and equipment on hand. Consequently, ground was lost to the Soviets, who launched their own modernization program in the 1960s after being forced by US superior military strength to back down during the Cuban Missile Crisis.

(U) To catch up, the Army launched a comprehensive modernization program in the 1970s, and developed a new family of weapons systems designed to restore a qualitative advantage over the Soviets.

(U) The challenge for DARCOM in the eighties remained to buy weapons and equipment systems at economical rates and to successfully deliver these and the necessary support systems to Army customers.[8]

(U) Modernization was not just a question of replacing the Army's old equipment with new. Often a two- or three-step process occurred which created a ripple effect. As high priority units (those first to fight) got their new equipment, the displaced materiel was refurbished and passed on to the next lower priority unit. For example, the

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[7] GEN Keith, Speech to George Washington AUSA Chapter, 19 Feb 1982.

[8] GEN Keith, Speech to the Atlanta Conference, 4 Mar 82, p. 8.

Abrams Tank would displace the M60A3 tanks, which in turn would displace the M60A1s or the M48A5s. In each case, modernization occurred where the management challenges were similar, and a qualitative change took place.[9]

Doctrine and Force Structure Changes

(U) Force modernization was a continuous process, resulting in changes not only in weapons and equipment, but also in doctrine and force design. Force modernization provided the Army with a doctrine and organizational blueprint for developing and integrating advanced battlefield concepts while incorporating developmental weapons and equipment. "Army 86" was the synthesis process which designed the tactical force structure, from the battalion through theater level, as a coherent entity based on concepts for the near and far terms.[10]

## Acquisition

(U) As an integral part of force modernization, acquisition improvements occupied much of General Keith's management efforts. Lack of stability, cost overruns, and poor transitioning from research and development to production represented the biggest problem areas in this complex life-cycle procurement process, extending from conception to salvage of equipment and weapons systems. The importance of improving weapons and equipment acquisition was vital.

Carlucci Initiatives

(U) To get the acquisition process in order and demonstrate to the press, the public, and the Congress that the Army could wisely spend the dollars allotted to it in its increasing budgets, the Defense Acquisition Improvement Program (DAIP), better known as the Carlucci Initiatives, was inaugurated. This program comprised 32 initiatives which attempted to manage the unmanageable: weapons acquisition, a perennial task which had been tried many times before. General Keith used these initiatives along with many of DARCOM's own programs to improve the way the command conducted its materiel acquisition business. In essence, the initiatives involved several management principles:

Improvement of long range planning.

Delegation of more responsibility and authority while strengthening accountability

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9 CG's Speech to Army Leadership Conference, 13 Aug 82, p. 5.

10 Commanders' Call, "Why Army 86?", Force Modernization, Jan-Feb 82, DA PAM 360-866, p. 2.

Use of lower risk approaches.

Use of more economically productive rates.

Making cost and budgeting more realistic.

Considering readiness and sustainability early in the development cycle.

Strengthening the industrial base.

Increasing competition.[11]

(U) The Army had long been concerned about its acquisition process, as indicated by the seven acquisition studies which had been conducted since 1970. At a West Point meeting, Dr. Jay R. Sculley, Assistant Secretary of the Army for Research, Development and Acquisition, chaired a select group of experienced acquisition managers who assembled to discuss the process. They determined, by overwhelming consensus, that the Army did not need new acquisition policies and procedures. These were already in place. What was required was a better disciplined acquisition system. Particular problems included:

Taking excessive technical risks.

Failing to prioritize.

Employing unrealistic budgeting.

Allowing contract delays and deficiencies in program planning.

An acquisition steering group was chartered by the Secretary of the Army to accelerate the Army's acquisition program and direct changes in its procedures.[12]

(U) At the DARCOM level, General Keith emphasized, in his Materiel Acquisition Progress Report to the Army Chief of Staff, that ". . . We need a well thought-out and documented acquisition strategy, wherein all essential elements affecting the downstream program execution and cost for development, acquisition, and support are developed, and a course of action selected and set in concrete." To implement this strategy, a senior level panel of top DARCOM management was set up to review the acquisition plans of the Army's most important weapons program. The panels evaluated acquisition and production strategies,

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11 R, D, & A Magazine, May-Jun 82, p. 6.

12 R, D, & A Magazine, Jan-Feb 83, pp. 4-6.

costing techniques, program funding and executability, delivery requirements, test and evaluation plans, mobilization considerations, and supportability.[13]

Major Acquisition Problem Areas

(U) General Keith's long experience in Army Materiel acquisition management provided him with a unique ability to pinpoint major problem areas, such as lack of stability in requirements, lengthy weapons systems developmental times, cost overruns, and poor transitioning from research and development to production.

(U) Lack of Stability. Program instability, widely recognized as a fundamental problem in rising costs, was cited by a business meeting at the Chicago Cost Discipline Conference in June 1982. A group of executives met with members of the Army Staff, including General Keith, to offer their views and recommendations on controlling costs of weapons systems.[14] Lack of stability in requirements had long troubled funding programs, manpower suthorizations, and acquisition auditing and management. Fixing requirements, budgets, and management would contribute to a reduction in turbulence, lessening administrative load, and cost control.[15]

(U) Lengthy Development. Developmental time for weapons systems was also too long. In a 19 February 1982 address to the George Washington Chapter of the Association of the United States Army, General Keith called for a simplified process which would eliminate repeated changes in basic requirements, the determination not to begin programs which were not fully funded, and better estimates of what programs would really cost.

(U) Cost Control. Cost control was stressed at the Atlanta VIII Conference. The Commanding General cited this issue as one of the toughest problems which faced the Army, as well as industry. Affordability had to be considered early in concept development, and it had to play a greater role in the life-cycle process.[16]

(U) Prior to the Atlanta Conference, the DARCOM Commander had personally addressed the cost issue in the Army Washington Group Session and persuaded the Secretary of the Army to appoint a cost advisory committee. Designated the Cost Discipline Advisory Committee (CDAC), it was tasked to make an independent assessment of how well the Army's present and proposed management processes contributed to controlling the cost of Army weapons systems, services, and supplies. Its membership included General Henry Miley, Jr., former AMC Commander and several knowledgeable individuals from industry.

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13 Ibid.

14 Ibid.

15 R, D, & A Magazine, Jan-Feb 82, p. 6.

16 R, D, & A Magazine, May-Jun, pp. 5-6.

(U) The assessment made by this committee was completed on 16 December 1981. The Chief of Staff, DARCOM, issued instructions to the staff on 2 March 1982, which assigned responsibilities for cost discipline implementation.[17]

(U) The effect of the CDAC was on-going. General Keith participated in a series of review with the Under Secretary, the Vice Chief of Staff, and other senior Army officials. These sessions guided the implementation effort and culminated in publication of an Implementation Report in June 1982, which was submitted to the Secretary of the Army.[18]

(U) In a letter to the Secretary of the Army, the Cost Discipline Advisory Committee reported that they had found a determination in the Army leadership to deal with the problem of cost discipline. However, the Committee preferred to view it, instead, as a "management discipline" problem. The CDAC saw cost growth occurring when planned production quantity changed; when there were increased technical or mission requirements; and during transition from the development to the production.[19] General Keith especially underscored this last factor as one of his major management initiatives in fiscal year 1982.[20]

(U) Transitioning. One of the major areas of cost increases, according to the Army's Cost Discipline Advisory Committee, occurred when Weapons and Equipment Systems Program transitioned from development to production. Both the DARCOM Commander and the Vice Chief of Staff, General John R. Vessey, presented these findings to the Atlanta Conference. General Keith described transition as the Army's nemesis. He explained that in the mid-70s many people, including himself, believed that industry could efficiently produce new systems so long as the Army was able to get them through research and development. This, he said, was an incorrect supposition because it was obvious that the industrial base was unable to do all of the things people thought it should do. He referred to a 1982 article in Fortune Magazine, which asserted that for years US industrial production had been ignored while corporate managers focused on marketing and finance. However, he felt that this trend was changing.

(U) The CDAC Review was more specific in its findings, pointing out that sharp rises in costs in early production contracts seemed to be characteristic of new systems acquisitions. Several conditions contributed to these significant cost increases, such as:

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17 DRCCP-SD, Summary Sheet, subj: CDAC, 16 Mar 82, CG's Files.

18 DRCCP-SD, Fact Sheet, subj: CDAC, 16 Mar 83, CG's File. Also, Implementation Report, Jun 82.

19 Implementation Report on Recommendations of CDAC, Jun 82, CG's File.

20 Army Commanders' Conference, 14 Oct 82.

Lack of parts and material when needed. (The prime contractors were basically assemblers of components received from their own subcontractors. Late delivery of parts and material delayed manufacturing and increased costs).

Receipt of poor quality material from vendors.

Lack of available production facilities and lines.

(U) For its part, the Army had created conditions which also contributed to the sharp rise in production costs. These included:[21]

Letter contracts converted to cost plus management with no risk assumed by the contractor.

Engineering changes.

Lack of adequate drawings and specifications.

Government funding problems resulting in program stretch-out.

(U) In other areas, the Army's manufacturing technology programs, although good, had been quite limited. Lead times for the combat developments community also had been too long and cost discipline was not adequate.[22]

Long Term Acquisition Initiatives

(U) To address these problems in the Army's acquisition system, the DARCOM Commander aggressively pursued several long-term initiatives which were designed to produce real and auditable improvements in the Army's weapons purchasing practices and procedures. Some had originated with General Keith, while others had been introduced by previous commanders. The most important of these were:

Program Management and Control System, known as PMCS.

Total Risk Assessing Cost Estimate - Production, called TRACE-P.

Military and civilian Materiel Acquisition Management Program, referred to as MAM.

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21 DRCCP-SD, CDAC Report, 16 Dec 81. CG's Files.

22 Ibid.

(U) Other areas of particular concern to the Commanding General were international cooperation, should-cost studies, command interface with industry, and implementation of the Nunn-McCurdy Amendment.

(U) Program Management and Control System (PMCS). In fiscal year 1982, PMCS, along with Total Risk Assessing Cost Estimate - Production (TRACE-P), and the military and civilian Materiel Acquisition Management Program (MAM) were the three long-term system initiatives to better manage major weapons system acquisition.[23] The PMCS program represented DARCOM's most visible effort to control program instability, which was the most significant contributor to weapons systems cost growth. Evolving from General Guthrie's Project Cost Control System (PCCS), which borrowed on the experience gained from the Air Force Systems Command, PCCS was redesignated the Program Management Control System (PMCS) early in 1982. As such, it was devised to foster stability, cost discipline, and strengthen management control.[24]

(U) In fiscal year 1982, DARCOM faced several acquisition difficulties which mitigated against program stability and cost control. Reporting systems were fragmented and did not permit early identification of program decision alternatives and trends. Program baselines from which progress was tracked were too numerous. And no effective systems existed for bringing technical, integrated logistical support, quantity, or schedule changes under control.[25]

(U) PMCS would go a long way toward correcting these difficulties. It would define program objectives, increase program discipline, and provide increased visibility of program trends, plus provide earlier identification of decision alternatives. In simple terms, PMCS was a contract between the DARCOM Commander and the project managers, which was ratified by the Department of the Army. It laid out in great detail the program to be executed and the resources available. Its greatest contribution was that all levels of management would read from the same "sheet of music" and program changes would be kept to a minimum. No alteration would be allowed without assessing all ramifications: not only the R&D cost, but more importantly the impact upon production costs. The result would be an audit trail of who directed what program changes with a record of attendant costs. PMCS would communicate to all levels of management, including the Department of the Army. The alternative was chaos: three ships (Department of the Army Staff, TRADOC, and DARCOM) passing in the night with three different concepts of what was needed to solve major weapons system acquisition problems.[26]

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23 Ltr, GEN Keith to GEN Meyer, Chief of Staff, US Army, DRCDRM, 16 Sep 82, p. 4, (Hereafter CG's Ltr to CSA, 16 Sep 82.) CG's Files.

24 Army Commanders' Conference, 14 Oct 84.

25 CDAC Report, 16 Dec 82. CG's Files.

26 From Interviews, key DARCOM executives.

(U) Where critical projects were fenced and could not be changed or amended without the signature of an approving authority, it might be possible to demonstrate to the Congress that arbitrary change would be a disservice, not only to the project, but to readiness and to the effective management of materiel. Thus, discipline would be introduced into the Army's acquisition process.

(U) For PMCS to work, stability was required all the way to the top. Changes in fiscal year 1983 Congressional action and POM 84-90 caused perturbations with both of DARCOM's PMCS systems affected. In dealings with the Office of the Secretary of Defense (OSD) and Congress, the senior Army level leadership had to clearly articulate the impact of this turbulence. General Keith imphasized that, ". . . We need to pick the programs we are serious about stabilizing, and fight for them."[27]

(U) In fiscal year 1982, 37 systems were identified as PMCS candidates. It was projected also in fiscal year 1982, that by the end of fiscal year 1983, the PMCS program would be implemented for all 37.[28] Unfortunately, such a rapid implementation was not realized because of funding reductions, program redirections, and changes in program acquisition strategies. Ironically, it was this program instability, the very thing PMCS was designed to alleviate, which was instrumental in keeping DARCOM from fully implementing the PMCS program. Another impediment was the Army Staff's slow processing of PMCS documents.[29]

(U) Total Risk Assessing Cost Estimate - Production. The second of General Keith's long-term initiatives to better manage weapons acquisition in fiscal year 1982 was the Total Risk Assessing Cost Estimate - Production (TRACE-P). The original concept to budget for the uncertainties in research, development, test and evaluation (RDT&E) originated in the mid-1970s. Later, in response to the Carlucci Initiatives numbers six and eleven, the Army expanded the concept. The new application, known as TRACE-P, was studied by a DARCOM Deputy Commanding General for Resources Management (DCGRM) task group in September 1981. This group refined and tested the methodology using the M735 round as a test case; and the TRACE-P concept was briefed to and approved by the Command General, DARCOM in February 1982. In March, the DARCOM Comptroller assumed staff responsibility.[30]

(U) The program simply modeled the probability of having a problem at any point in a weapons systems program and translated that into dollars by fiscal year to have a fifty-fifty chance of solving the problem. Risk associated with transition to production was every bit as high as the

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27 Army Commanders' Conference, 14 Oct 82.

28 Ibid.

29 DRCDE-PI, Newsletter No. 1, 23 May 83.

30 (a) Army Commanders' Conference, 14 Oct 82.
(b) DRCCP-ER, Fact Sheet, 19 May 82, subj: Development of TRACE-P.
(c) R, D, & A Magazine, May-Jun 83, p. 27.

engineering risk during development. The record showed that there was cost growth in nearly every weapons system program at this point. TRACE-P would allow DARCOM to properly account for this risk. However, this management reserve would not be available to the project manager automatically. It would be held at the Department of Army (DA) level until both the Project Manager (PM) and the DARCOM Commander determined that it should be requested. General Keith assured the Army Commanders' Conference in October 1982, that, ". . . TRACE-P will be calculated to address true risk and not poor management."[31] Pilot projects for 1982 included Abrams, Remotely Piloted Vehicle (RPV), Advanced Helicopter Improvement Program (AHIP), SINCGARS, and PERSHING II.

(U) Materiel Acquisition Management (MAM) Personnel Program. MAM was the third of General Keith's long-term initiatives to better manage weapons systems acquisition, an issue which arose because of an Army shortage of trained managers. The CG inaugurated this program while serving as the Deputy Chief of Staff for Research, Development, and Acquisition (DCSRDA).

(U) He briefed the Chief of Staff, Army in August 1981, on military MAM shortly before being named Commander, DARCOM and brought the proponency of Code 51 with him to DARCOM. At DARCOM, he immediately encouraged the development of a comparable program for civilian personnel, a DARCOM initiative which would be recommended for Army-wide use.

(U) With the MAM, General Keith was stressing the resource, people, as he had in so many of his other initiatives, and as General John R. Guthrie had done before him in other areas. In fiscal year 1982, he emphasized to the Chief of Staff, Army, that ". . . people . . . and a continuous development and revitalization program to update and sharpen their acquisition management skills. . . " were among the major considerations in upgrading DARCOM's procurement practices. Such a training program would insure that the Army would get a fair return on its procurement dollars.[32]

(U) MAM was developed as the recognition of the acquisition community's need for a more comprehensive professional development program. Such a program already existed to train project managers (PM). It was known as the Project Manager Development Program (PMDP) and was designed to prepare qualified officers for PM positions. These slots, however, represented only a small number of positions in the Army's acquisition community.

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31 Army Commanders' Conference.

32 R, D, & A Magazine, Jan-Feb 83, Keith Report to C/S Army, p. 6, and John G. Miscik, A Cover for You: MAM, pp. 14-15.

(U) Many other duty positions existed within the hardware development commands, the DA staff and TRADOC, which required officers and civilians who were trained as qualified materiel acquisition managers. Addressing this need, the Materiel Acquisition Management (MAM) program was a multi-disciplined, complex field requiring managerial experience across a broad range of functions. Technology, system complexity, and rising production costs, made it vital that the Army professionally develop personnel to be successful materiel acquisition managers throughout the entire acquisition area. [33]

(U) Although the MAM was a dual program, which included both military and civilian personnel, the two parts were not exactly parallel. The civilian program covered both procurement and logistics, and the small differences in the military and civilian personnel program administration caused variances in implementation.

(U) The civilian MAM aimed for a progression of qualified mid-level personnel through the choice of a variety of career fields in the acquisition and readiness areas. This flexibility would be reinforced by the listing of top management jobs up to and including civilian assistant deputy jobs, to which people in several career fields could aspire. This variety and flexibility, in turn, would promote competition among the better-rounded and more qualified individuals for the top civilian jobs in the command.

Short Term Acquisition Improvement Initiatives

(U) Besides the above long term issues of PMCS, TRACE-P, and MAM, many short term initiatives were vigorously pursued to improve the Army's acquisition process in fiscal year 1982. The Integrated Logistics System (ILS) program was the most comprehensive of these. In addition, three Carlucci initiatives--pre-planned product improvement, multi-year contracting, and industrial preparedness--were actively stressed during the first year of General Keith's command.

(U) Integrated Logistics System (ILS) Program. "Without question my paramount thrust in improving the acquisition process is, and will continue to be, good, solid, up-front planning . . ." so reported General Keith to Chief of Staff, Army, General Edward D. Meyers, on 16 September 1982. A concomitant of ILS was an acquisition strategy which would fix all essential elements affecting program execution, cost for development, acquisition, and support. In fiscal year 1982, such comprehensive planning was to become a way of life at DARCOM.[34]

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33 Ibid.

34 (a) CG's 16 Sep 82 Ltr to CSA.
(b) R, D, & A Magazine, Jan-Feb 83, p 3, 6.

(U) Mr. William Kracov emphasized in an Army Research, Development and Acquisition magazine article, that development and support were inseparable partners. Until the developer understood and reacted to his support responsibilities, the acquisition community could not do justice to the soldier in the field.[35] According to General Keith's assessment in 1982, DARCOM had not spent enough, early enough on research and development to make Army weapons and equipment maintainable and supportable. He emphasized that the Army had to design for readiness.[36]

(U) As a first step, an ILS study examined practices, identified weakness in the systems, and recommended potential improvements. ILS received increased emphasis in DARCOM solicitation documents, proposals, and contracts; front-end planning and funding would also be fenced into the command's R&D programs; and industry would be directed to design in maintainability for all echelons of repair. Plans also called for realignment of Headquarters DARCOM, Directorate for Supply, Maintenance, and Transportation (SMT) early in fiscal year 1983, to place greater emphasis upon ILS and bring this system's program and other major functional areas under a new senior executive service deputy director. In addition, an ILS conference was scheduled for March 1983, and a master plan was in preparation in fiscal year 1982.[37]

(U) Preplanned Product Improvement. In fiscal year 1982, the fundamental concept associated with $P^3I$ was that the first generation weapons system should satisfy near term requirements with the potential for extended life through future block improvements over a period of time. This would enable the Army to get capability at a reasonable risk in a reasonable amount of time. By the end of fiscal year 1982, $525 million of cost avoidance was directly attributable to $P^3I$ when it had been applied to the Multiple Launch Rocket System (MLRS) and the interim message facility. Savings had also been realized for the Abrams M1 and M1E1, Bradley Fighting Vehicle System, PATRIOT, and Remotely Piloted Vehicle, although these had not been defined.[38]

(U) Multi-Year Contracting. Multi-Year Contracting, one of the more familiar initiatives in the Defense Acquisition Improvement Program (DAIP), projected a total potential in fiscal year 1982-1988 savings of $900 million. However, these economies depended upon Congressional approval of the Army's multi-year plans, and there were also major hurdles to be overcome in the Office of the Secretary of Defense.

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35 R, D, & A Magazine, Mar-Apr 82, p. 1.

36 CG, Speech to GW AUSA Chapter, 19 Feb 82, p. 14.

37 (a) R, D, & A Magazine, Jan-Feb 82, p. 3.
(b) Army Commanders' Conference.
(c) CG's Speech to Retired Generals Leadership Symposium, 13 Aug 82.

38 Army Commanders' Conference, 14 Oct 82.

Industrial Base

(U) Industrial Preparedness. While in fiscal year 1982, industrial preparedness was not a new program, additional emphasis and visibility were provided as a result of MOBEX 78 and 80, as well as Congressional inquiries in 1980 and 1981; and FY 82 administration interest. Against this background, progress had been made in several areas. First, more realistic industry plans were brought about by increasing the funding needed for their preparation and by improving DARCOM's planning assumptions. Next, adequate resources were programmed in fiscal year 1982 to layaway and maintain standby facilities for emergencies. Finally, Army-owned industrial equipment was managed better; while, at the same time DARCOM had proceeded with a substantial modernization of its in-house facilities. In this area, over $5 billion had been invested in tank plants, arsenals, depots, and ammunition plants since 1970.

(U) In the area of mobilization production capacity, REARM, in fiscal year 1982, was being undertaken at Watervliet and Rock Island Arsenals. At Watervliet, a quarter of a billion dollars was being spent to upgrade the cannon production base, which was started in fiscal year 1978 with the last funded year planned for fiscal year 1985. REARM at Rock Island began in fiscal year 1982 and was expected to be completed in fiscal year 1988. It would upgrade production facilities for TOWED artillery, weapon mounts, recoil systems, and assigned crew-served weapons.[39]

(U) Command Interface With Industry. The perennial problem between defense and industry had been cost. But there was emerging the understanding, on the part of industry, that the old days of the cost plus concept was self-defeating. In fiscal year 1982, industry understood that there was a limit beyond which weapons systems costs could not go because of the Congressional sensitivity to cost overruns. Also General Keith's efforts at the Chicago and Atlanta Conferences contributed significantly in the DARCOM interface with industry. In a speech to the George Washington Chapter of the Association of United States Army, given on 19 February 1982, he said, ". . . We need to communicate more closely with industry. When it comes to cost control we share responsibility here equally. Both the Army and industry must recognize that overruns are the enemy which we both must fight together."[40]

(U) Addressing the subject of the weakness of the American industrial base, General Keith indicated that it had suffered a decline in the seventies. It was felt that production engineering had been downgraded while corporate managers focused more on marketing and finance. As a result, in fiscal year 1982, DARCOM was placing much more emphasis on production engineering and manufacturing technology to insure that

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39 Army Commanders' Conference, 14 Oct 82.

40 CG's Speech to GW AUSA Chapter, 19 Feb 82, p. 8. AUSA

its contractors did what was required to produce high quality equipment in an efficient manner.[41]

(U) The producibility engineering and planning portions of the DARCOM development programs were expanded to ensure that producibility was designed into Army weapons. Also, DARCOM applied state-of-the-art manufacturing technology to their production and instituted an industrial productivity improvement program to incrementally modernize the facilities where its weapons were built.[42]

(U) To improve product quality, General Keith asked General Kerwin to lead a group of expert consultants in an in-depth review of DARCOM's product assurance and test program. The board found a lack of adequate product assurance involvement in the design and development of major systems and presented a list of the following recommendations:

Up-front product assurance involvement.

Independent design and quality reviews.

Improved test and evaluation.

Plan for transition to production.

Upgrade technical competence and capability.

Increase role of project manager in product assurance.[43]

DARCOM-TRADOC Partnership[44]

(U) In fiscal year 1982, the Training and Doctrine Command (TRADOC) and the Materiel Development and Readiness Command (DARCOM) were forging linkage to help compress the development cycle, while at the same time enabling the Army to project requirements further into the future. Both the Army's Long Range Research, Development and Acquisition Planning System (managed by DARCOM) and TRADOC's Mission Area Analysis Process, would combine to provide a "roadmap" of how to get to the Army of the future. These planning and analysis devices would provide a means of considering future implications of current decisions. They would also offer a way of coupling these actions with the Planning, Programming, Budgeting, and Execution System (PPBES) for resource allocation. Unfortunately, in fiscal year 1982, the details of the Long Range RDA Process were not well known to most combat and materiel developers, nor did enough of them underatand TRADOC's contribution to this partnership.

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41 CG's Speech to Army Leadership Seminar, 13 Aug 82.

42 Army Commanders' Conference, 14 Oct 82.

43 Ibid.

44 For a fuller discussion on this issue, see Mar-Apr 83, R, D, & A Mag., MG J. B. Oblinger, Jr., and MG Orlando B. Gonzales, "The TRADOC-DARCOM Partnership in RDA Planning."

(U) In 1980, the Army launched a program to bridge this planning and programming gap by linking RDA efforts to the development of doctrine, training, and force structure. Decision-makers could now see what the development of a particular system was likely to cost 10 or 15 years in the future. The payoff was that affordability decisions could be made before a program proceeded too far into the development cycle. To implement this decision making process, DARCOM had to understand the needs of the future battlefield, and that was where TRADOC played a key role.

(U) According to Major General J. B. Oblinger, Jr., Deputy Chief of Staff for Combat Development at Headquarters, TRADOC and Major General Orlando B. Gonzales, Director of Development, Engineering, and Acquisition at Headquarters, DARCOM, the TRADOC-DARCOM partnership was the only viable way to sow the right technological seeds for the 90s and still shorten the development cycle. It was the only way to manage modernization in today's rapidly changing environment and make the most of scarce resources.

## Readiness

(U) Although force modernization and its concomitant, acquisition improvement, were the big issues which occupied the Commanding General's time and efforts in fiscal year 1982, they were directed toward one goal--readiness.

(U) Both General Keith and General Edward C. Meyer emphasized that the Army's biggest problem was equipping the total force--including active Army, National Guard, and Army Reserve--and providing enough weapons and equipment to sustain it if the United States went to war. But a shortage of equipment throughout the Army was not the only issue having impact upon readiness. Ensuring that newly fielded equipment was maintainable and supportable through the Integrated Logistical Support (ILS) System was equally important. Furthermore, the readiness problem was aggravated when supplanted equipment (such as the M60A3s being displaced by the Abrams tank) had to be modernized, and in turn fielded, supported, and maintained by the DARCOM logistical system. One of General Keith's continual themes in fiscal year 1982 was that in most cases, a combat unit was better off without an item of equipment if the alternative item was not supportable.

(U) Thus, equipment displaced by modernization was a great problem, and it had not been completely resolved by fiscal year 1982. With the management complexity of modernization, planners had failed to realize that equipment displaced by modernization still constituted assets, important assets in an equipment-short Army. It took a while to understand that arrangements for rebuild, maintenance, and reassignment had to be made before new equipment was assigned. After the complexity of this ripple effect was understood, the next problem was to provide funding. It was through grappling with such complexities as these that improved Army readiness was achieved.

(U) The creation of DARCOM-Europe, the Command's forward element in Europe, was another important step toward improved readiness. It provided single DARCOM management for the numerous modernization and fielding activities administered by the 1,100 DARCOM people throughout Europe, thus reducing organizational fragmentation, facilitating planning, and affecting workload and resource control.[45]

DARCOM-Europe

(U) This new DARCOM command and control headquarters, was established on 1 July 1982, at Sechenheim, Germany, marking a new milestone in the history of the command.[46] The establishment of this command gave strength to DARCOM's overall support to the Army in the field. It was one of several initiatives to improve DARCOM customer service in fiscal year 1982. Other areas included signing a memorandum of understanding (MOU) with the Eighth US Army (EUSA), a continued Logistics Assistance Program, Depot Support Program, and Combat PLL/ASL Standardizations.[47]

(U) As with many of DARCOM's initiatives, DARCOM-Europe was a cost-conscious command. Effort was exerted to produce the maximum possible benefits for the Army with the minimum expenditure of resources.[48]

(U) In fiscal year 1982, its key missions were to:

Represent the Commander of DARCOM as the single DARCOM manager and focal point for the United States Army, Europe.

Serve as the central emergency and mobilization, and planning services element for all DARCOM organizations.

Monitor Test, Measure, and Diagnostic Equipment (TMDE) repair and calibration activities in Europe.

Perform liaison activities as required to foster good customer relations.

Improve service to the customer and assist in resolving major problems within the DARCOM area of responsibility.[49]

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45 (a) R, D, & A Magazine, May-Jun 82, p. 4.
(b) COL Bobby T. Helms, DARCOM-Europe, DARCOM News, Vol 10, Aug 82, p. 1.

46 COL Helms, DARCOM-Europe, DARCOM News.

47 Army Commanders' Conference, Oct 82, pp. 17-38.

48 COL Helms, DARCOM-Europe, DARCOM News.

49 DARCOM News, 1 Jul 82.

(U) In fiscal year 1982, Headquarters DARCOM-Europe consisted of five directorates including Resources, Plans, Maintenance, Force Modernization, and Logistics Assistance, with a staff of approximately 83 civilians and military personnel.[50]

Mobilization Planning

(U) During the same year, the big problem in mobilization was a lack of emphasis on the planning. Another crucial problem was that of improving the production base to meet existing and projected mobilization needs. DARCOM's Project REARM was a major initiative which addressed this problem. In addition, the cannon production base upgrade was underway at Watervliet Arsenal.

(U) General Keith stated, at DARCOM's Atlanta VIII conference, that he hoped to improve mobilization planning, which would include industrial preparedness planning. A recent initiative in this area included a new prioritized list of the items.[51]

## Resources

(U) Satisfying the requirements of readiness for the total force through force modernization far exceeded the resources available to the Army in fiscal year 1982. Moreover, as the modernization effort proceeded, the strain upon resources increased. As stated above, one of General Keith's greatest concerns was to alleviate this resource crunch through cost savings in acquisition. Most acquisition improvement initiatives were, in fact, aimed at cost reduction. But the weapons cycle was not the only area where cost savings were sought. In the resource area, the command went through a stringent self-evaluation in order to make better use of available resources.

RESHAPE

(U) Resource Self-Help Affordability Planning Effort (RESHAPE) was perhaps the best example of making better use of resources, particularly manpower. It was a set of internal management initiatives designed to close the gap between workload and manpower. These common sense initiatives included use of overhire, overtime, capital investment, organizational streamlining, and sick leave reduction, plus a wide variety of other centrally and locally developed sources which could be tapped.[52] RESHAPE covered the functions essential to DARCOM's support of the total Army, such as research and development, test and evaluation, procurement and production, distribution, wholesale logistics, and supply and maintenance of equipment.

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50 DARCOM News, Jul 82.

51 "Atlanta Seminar Focuses on New Acquisition Initiating," R, D, & A Magazine, May-Jun 82, p. 5.

52 Army Commanders' Conference, Oct 82, p. 109.

(U) RESHAPE efforts to reduce sick leave usage achieved overwhelming success in fiscal year 1982, when DARCOM figures for this category of leave fell to the lowest level for any Federal agency of its size.

(U) But DARCOM requirements did not remain fixed. Increased workload, including missions assigned to the headquarters without resources, added 6,000 manyears to requirements. This deficit included the zero-based bill for new missions since fiscal year 1980. Most dealt with the start-up of new weapons systems projects, project manager (PM) offices, and inter-command support.

(U) Some of the headquarters' important priority programs met with success in the out-of-cycle manpower process in fiscal year 1982. These were programs such as Test, Measurement, and Diagnostic Equipment (TMDE) Management, Regency Net, PM Joint Vertical Experimental Aircraft (JVX), and Corps Support Weapons System (CSWS). However, these areas did not come fully manned, and new missions such as light armored vehicles, TOW II, and in-plant representatives to support the Advanced Attack Helicopter (AAH) production program were not supported with spaces.

Army Materiel Acquisition Review Committee (AMARC) Revisited

(U) Besides seeking resource gains in the area of manpower, greater efficiency was sought by realigning and reorganizing the command in order to meet the demands of the 1980s. Since its AMARC reorganization in 1976, DARCOM Headquarters had been operating under a corporate management philosophy. Unfortunately, this philosophy of decentralized management placed a severe strain on planning, directing and controlling its multi-billion dollar programs.[53]

(U) In General Keith's opinion, the concept of DARCOM becoming a "corporate" headquarters may well have been sound, but the implementation just did not work.[54]

(U) The reasons were apparent when developments beginning with the Vietnam era were reviewed. From 1965-72, DARCOM's materiel support to this conflict relegated research and development (R&D) to a minimal rate. Even so, the AMARC recommendations were reasonable, they attempted to reemphasize R&D. But the ensuing reorganization resulted in the creation of R&D commands instead of establishing laboratories and R&D centers as the AMARC study group had intended. It became apparent fairly early, that other effects were also bad. The realignment had produced a gap between R&D and procurement, besides creating an expensive and unwieldy organization.

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53 Roy D. Green and Dr. James H. Donnelly, "DARCOM Realignment Spawns System Manager Concept," R, D, & A Magazine, Nov-Dec 81, p. 8.

54 Ibid.

(U) The impact of AMARC could also be seen in the DARCOM procurement staff where duplicate procurement organizations were created in the former commodity commands. These commands had been split into R&D commands and readiness commands as a result of the AMARC decisions which diluted the technical competence of each command and increased overhead by creating two procurement shops at the expense of DARCOM professionals. Further aggravating these procurement problems were cuts, reorganization, and turbulence, which came at a time when the command workload was increasing. This growth was evidenced by real increases in the procurement actions economic conditions, and national priorities which made procurement more complex.[55]

(U) The only solution was further realignment. But, this time reorganization was approached cautiously, on a command-by-command basis. Each realignment was tailored to correct particular problems.

HQ Realignment and Matrix Management[56]

(U) Headquarters Realignment began under the previous Commander, General John R. Guthrie, and was briefed to General Keith while he was still Deputy Chief of Staff for Research, Development and Acquisition. This realignment attempted to rectify the corporate management philosophy of decentralization which was established by AMARC in 1976. The headquarters "corporate" staff was stretched very thin and did not have enough knowledgeable people with in-depth information to handle management crises. Often the field had to be called upon for the answers.

(U) This lack of depth was underscored by General Keith during a September 1981 Commander's Call. "I have to tell you that when I was the Deputy Chief of Staff for Research, Development, and Acquisition, the lack of depth in the DARCOM HQ staff, particularly on the RD&A (Research, Development, and Acquisition) side of the house, was a source of frustration."[57]

(U) The realignment became effective on 15 October 1981 and was of such magnitude that the headquarters staff was expected to be increased from 1,485 to 1,835, mostly in the technical areas. Based upon recommendations made by Major General R. L. Bergquist's senior executive management team, a decision was made to use the matrix management organizational structure. The certerpiece for this structure was to be the Weapon Systems Management (WSM) concept.

(U) WSMs were to be drawn from each of two principal directorates, newly formed by Headquarters Realignment. These were the Directorate

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55 CG's 16 Sep 82 Ltr to CSA.

56 The following section, including quotations which are from Historical Office manuscripts, is based primarily upon interviews.

57 Greene and Donnelly, DARCOM Realignment, R, D, & A Magazine, Nov-Dec 81, p. 8.

for Development, Engineering and Acquisition (DEA) and the Directorate for Supply, Maintenance and Transportation (SMT). Each WSM would basically perform as the single Headquarters DARCOM authority for each of the weapon systems assigned. However, as LTG R. J. Lunn emphatically pointed out, "The PM is still the PM . . . we are just trying to present a unified position." Thus, the purpose of the WSMs was not to preempt the PM, but to strengthen their position and voice in the Washington area.

(U) In a broader sense, as LTG H. F. Hardin, Jr., Deputy Commanding General for Materiel Readiness noted, ". . . Matrix Management should allow us to be more responsive, not only to the Department of the Army, Congress, and the public, but equally, if not more important, it should permit us to improve support to our soldiers in the field."

(U) The staff reviews of matrix management were mixed. Some felt that it should have been an action officer's dream, yet answers were not forthcoming. ". . . We (DARCOM) deserve high marks for overcoming our growing pains in the expansion of the Headquarters, but low marks for efficiency and effectiveness." Another appraisal indicated that people were learning the acquisition business under the WSMAT System, although it was taking longer to get used to this system than was anticipated. The point was also made that with General Keith's ". . . practice of decentralization of the staff, he needs Matrix Management. His actions and policies indicate that he intends Matrix Management as an integrating effort, a means of maximizing the use of all in-house resources to attack all major problems. He uses it as a means of working together, of getting the right people on the job."

(U) In another view, Matrix Management was seen as a good tool for the individual who needed flexibilily to get things done. Through Matrix Management, he could tap into the rest of the headquarters. But in overall effect, there had been little change in the way things were done in the headquarters. Business had not been simplified; It was not being conducted faster, nor was output higher. It still took six to eight signatures on a memo before it could be given to the DCG and even more for presentation to the CG.

(U) Finally, it was felt that ". . . there is a need for this management concept. So much so, that if it had not existed it would have had to be invented. Presently, it is working partly, but it will improve with time. Matrix is forcing people to do things differently in ways not done before. It is teaching newcomers how to play and the old hands to change their ways. It won't happen overnight, but with top level commitment, Matrix will get better."

People

(U) The building blocks of Matrix Management were people, and General Keith was keenly aware that "people" remained the most important of DARCOM's commodities.[58] People represented a fundamental resource, having the potential to make the Army's acquisition system and materiel readiness programs succeed or fail. In a keynote address before the Industrial Representatives of the American Defense Preparedness Association on 1 October 1981, General Keith stated that ". . . DARCOM has a workforce of hard working, intelligent, motivated people. Like Jack Guthrie, I intend to spend a great deal of time in the personnel policy area--both military and civilian. I am greatly concerned about their working conditions, their living conditions and their opportunity for recreation. As I visit throughout the command, I intend to ferret out the problems having an adverse effect on the workforce and give them the attention they deserve. The personnel of DARCOM are frequently referred to as a family. I intend to take care of that family."[59]

(U) Since 1980, increases in procurement manpower permitted DARCOM to come to grips with a fundamental resource problem--inadequate manning. The addition of over 1700 procurement and procurement-related spaces enabled the command to devote increased attention and skill to the qualitative aspects of procurement. These were in the area of advanced planning regulatory compliance, maintenance of bidders' lists, training, and other functions that had been deferred or not performed at all in past years because of manpower shortfalls.

(U) New people, however, were the raw material for DARCOM's needs. They had to be trained as they joined DARCOM, and their development had to be continuous in order to make them effective acquisition managers. Few universities graduate students possessing the rudimentary skills required to be an effective manager. Therefore, the command had to train its own. In September 1982, 38 percent of the procurement workforce was in some stage of initial training.[60]

(U) It was not by choice that newly hired candidates for acquisition jobs were trained. Their 3-year program included more than 850 hours. of formal training, and 4600 hours of on-the-job training was mandatory. For seasoned veterans, there was continuing professional development. Over 450 mid-level and senior employees attended advanced level Defense Management Education and Training (DMET) procurement courses in fiscal year 1982.

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58 R, D, & A Magazine, Jan-Feb, pp. 4 and 6.

59 CG's Keynote Address before the Industrial Representatives of the American Defense Preparedness Assn., 1 Oct 81, p. 12.

60 CG's 16 Sep 82 Ltr to CSA, pp. 4-6.

(U) Competent people required not only good training, but adequate tools. In fiscal year 1982, a number of process improvements were being developed to reduce the administrative workload of paperwork, increase accuracy, and reduce document review and rework. Two such tools were the Procurement Automated Data Documentation System (PADDS) and the Procurement Automated Manpower Utilization Projection Systems (PAMUPS). In fiscal year 1982, PADDS automatically produced procurement documents such as solicitations, contracts, and management reports. The system had reduced human-induced errors by 33 percent. When fully implemented in fiscal year 1983, PAMUPS would provide a systematic means of establishing performance objectives for each step in each type of procurement. PAMUPS would allow DARCOM to assess performance against a measured standard; and more precisely, project the future workforce requirements based on workload estimates.[61]

DARCOM Directions ($D^2$)

(U) After effectively organizing and training the people resources of the command, the best use of manpower could be made when the 10,000 military and 113,000 civilians[62] had a clear idea of where the command was going. DARCOM Directions was the program which articulated and communicated this understanding. It was intended to provide the flexible framework for implementing the Total Army Goals and insure performance of DARCOM's part in the Army's mission.[63] General Keith initiated $D^2$ in April 1982, and it evolved into a command-wide system for managing areas which needed emphasis. Initially, there were 17 areas or thrusts identified, followed by two and then three more for a total of 23 thrusts in all.

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61 Ibid.

62 DARCOM Command Briefing, 5 Jul 83.

63 M. Bechtold, "$D^2$ Effects Begin to Pay Dividends," Interchange, 6 Jun 83, p. 6.

# CHAPTER II

# RESOURCES MANAGEMENT

## Comptroller

### Introduction

(U) The Comptroller was responsible for providing direction for, and supervising the overall management of the DARCOM Financial Management, Cost and Economic Analysis, Internal Review and Audit Compliance, Review and Analysis, Management Analysis, and Committee Management Programs. During fiscal year 1982, this involved the office in a $20.363 billion appropriations program: $4.129 billion went to OMA, $13.103 billion to APA, and $3.131 billion to RDTE. APA, the largest funding area, was, counting fiscal year 1980 and fiscal year 1981 add-ons, obligated in the following manner:

| Category | Outlay (billions) |
|---|---|
| Aircraft (2031) | $2.028 |
| Missile (2032) | 2.495 |
| Weapons and Tracked Vehicles (2033) | 4.333 |
| Ammunition (2034) | 2.474 |
| Other (2035) | 3.195 |
| Total | $14.525 [1] |

These direct outlays exceeded fiscal year 1981 obligations by 13 percent.

### Budget

(U) Command Operating Budget. In July 1982, for the first time, DARCOM included RDT&E and Procurement unfinanced requirements in its Command Operating Budget (COB). This budget, which covered fiscal year 1983/fiscal year 1984, was both an attempt to respond to DA guidance and a command desire to put into effect a Planning, Programming, Budgeting, and Executive System (PPBES) which integrated and balanced resources to accomplish its mission. The budget, which showed $3.803 million in fiscal year 1983 and $3.454 million in fiscal year 1984 for OMA, represented an overview of the top priority shortfalls of all appropriated funds, totaling $753.1 million in fiscal year 1983 and $1,161 million in fiscal year 1984. Of these shortfalls, $1,844.5 million were must items for OMA projects such as unfinanced depot maintenance backlogs and for OPA Base-Level Commercial Equipment, Missile and Aircraft Procurement, Army, and Production Base Support.

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[1] Budget Division, Ofc of Comptroller, FY 82 Resource Data Book, pp. 1-2.

(U) In fiscal year 1982, again for the first time, DA required the MAC to account for Equipping the Force--formerly Force Modernization--on a quarterly basis. The Budget Division closely monitored this program, conducting two reviews. The result was a 110 percent obligation rate, or $544,876 spent, as opposed to $497,316 planned.

Cost Analysis

(U) Carlucci Initiatives. DARCOM installed a formal reporting system for each of the 32 Defense Acquisition Improvement Programs (DAIPs) or Carlucci Initiatives. The Cost Analysis Division had the responsibility for three of these initiatives--Budget to Most Likely Cost, Budget Funds for Technological Risks, and Budget Weapon Systems for Inflation. In September 1981, the Army Cost Discipline Advisory Committee (CDAC) was established, many of which committee's recommendations emphasized the management and reporting of program cost changes, thus paralleling the DAIPs. Actions covered included annual Baseline Cost Estimate (BCE) updates and the Program Management Control System.

(U) Once integrated into the HQ DARCOM 1982 reorganization, the Program Management Control System (PMCS) matured as a management tool. With the integration of the matrix management concept, DARCOM was able to reinforce the PMCS, and DA subsequently approved two systems--the Multiple Launch Rocket System (MLRS) and the M1 Abrams Tank--for inclusion under the PMCS. Eight more systems awaited PMCS inclusion approval as the year ended.

(U) TRACE-P. The Comptroller Office developed a method for estimating and budgeting the funds required for technological risks during production. The method was called Total Risk Assessing Cost Estimates for Production (TRACE-P). A TRACE-P for the XM-833 Projectile entered the fiscal year 1984 budget, and TRACE-Ps began for the Remotely Piloted Vehicle (RPV) and the Advanced Helicopter Improvement Program (AHIP). The TRACE-P's intent was to minimize unexpected cost increases from an inadequately funded program or system.[2]

(U) Cost Research. The CDAC recommended a contractor-supported cost research program in fiscal year 1982. The Army-wide centrally funded contractor supported research program, which was administered by the Cost Research Planning Board (CRPB), was the subject of three

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2 MG Robert L. Bergquist, Ltr, DCG for Resources and Mgt, HQ DARCOM, to DCSRADA, 25 May 82, subj: Total Risk Assessment Cost Estimating for Production (TRACE-P).

fiscal year 1982 meetings. At the last meeting, the CRPB approved four DARCOM projects worth $1.725 million. These four were an analysis of data base and model architecture, development of a missile base, development of an electronic data base, and development of a methodology to predict first unit cost. Moreover, DA awarded a contract to Management Consulting and Research, Incorporated to develop a communications equipment data base for CECOM.

(U) Other Cost Actions. Other division cost control actions in fiscal year 1982 included the issuance of two consolidated inflation guidance letters; and survey of the Bradley Fighting Vehicle System (BFVS) and the Sergeant York Division Air Defense (DIVAD) PMOs to investigate the reconciliation of the BCE and the proposed contract award price. Actions also included the conduct of a cost model survey of 47 cost models available or under development within the DARCOM cost analysis community. Cost control actions also included the publication of the results of a review of 1979-1981 cost growth reports and of the 16 Selected Acquisition Reports of December 1981 to discuss problems in cost estimating.

(U) Cost Analysis Personnel Assessment (CAPA). The Comptroller Office completed the Cost Analysis Personnel Assessment (CAPA) Study, which assessed DARCOM's cost analysis capability to respond to the PMCS and related OSD and DA initiatives. The study also addressed the actions of the MSC cost analysis offices to assure that they were orienting resources toward the materiel acquisition process. The study recommended a retention of the general organization structure of the cost analysis community in fiscal year 1982, and an increase in cost analysis personnel.

(U) Operating and Support Cost Management Information System. The Operating and Support Cost Management Information System (O&SCMIS) revealed several design deficiencies during its system test phase. Most of these were minor, but the correction of some would require an extensive redesign of several of the O&SCMIS subsystems. In order to attain the March 1983 milestone for producing the first report, the division had to extend the completion date for aircraft, combat vehicles, and armament software production, for manuals, and for the second report and software production for missiles and electronics.

(U) Fiscal year 1985 MCA Program. On 7 June 1982, the Director for Installation and Services presented the fiscal year 1985 DARCOM Military Construction, Army (MCA) Program to the Program Budget Advisory Committee (PBAC) for approval. It consisted of 87 projects worth $522.9 million in six categories: Mission Support (37), Energy Conservation (28), Water Pollution Control (7), Occupational Safety and Health (9), Special Energy (5), and Solid Waste (1).

Reports, Estimates, and Analyses

(U) The Comptroller Office reviewed or coordinated a number of reports, estimates, and such actions in fiscal year 1982.

(U) DOD policies required an Independent Parametric Cost Estimate (IPCE) for each major weapon system undergoing a milestone review by the Defense Systems Acquisition Review Council (DSARC). Moreover, selected systems required an Independent Cost Estimate (ICE) for systems undergoing a review by the Army Systems Acquisition Review Council (ASARC). The IPCE or ICE was a tool to assess the reasonableness of the PM's estimate of the cost resources needed to complete the program. IPCE/ICE activity in fiscal year 1982 included completed ones for the RPV, the AHIP, the PERSHING II, the DIVAD, and the Mobile Protected Gun System (MPGS). Four others were in process.

(U) Baseline Cost Estimates (BCE). The PMs normally prepared BCEs, which formed the basis for the audit trail throughout the life cycle of a weapons system. The division made BCEs, or BCE reassessments, for 26 systems, including the RRN, the CHAPARRAL, the AHIP, and the CH-47. Nine more were in process, including one for the STINGER and the Remotely Monitored Battlefield Sensor System (REMBASS).

(U) Cost and Operational Effectiveness Analysis (COEA). In conjunction with the Comptroller of the Army, TRADOC, DARCOM MSCs, and the PMOs, the division completed Cost and Operational Effectiveness Analysis (COEA) for twelve items or projects. These included the Corps Support Weapon System, the Advanced Attack Helicopter (AAH), and the Air Defense Study.

(U) Selected Acquisition Reports (SAR). OSD required Selected Acquisition Reports (SAR) for all programs which it had designated major defense systems. SARs summarized estimates of technical schedules, quantity, and cost information. During fiscal year 1982, 14 systems were under SAR reporting, to include the BLACK HAWK, PATRIOT, and COPPERHEAD.

Finance and Accounting

(U) ASF Cash Flow Problems. Inflation continued to adversely affect DARCOM Division, Army Stock Fund (ASF) wholesale. Problems began in last quarter fiscal year 1979, and by 30 September 1982, negative cash operations had reached $161.8 million, or an average loss of $13.4 million per month. Only two cash allocations, totaling $194.2 million prevented an RS 3679, or public statute, violation.

(U) On 20-22 July 1982, in order to rectify this situation, General Hardin held a meeting to discuss ASF operations and cash. In attendance were representatives from the Comptroller, Supply and Procurement elements of both HQ DARCOM and its MSCs. Participants

identified the main problem as the realignment of ASF consumable items to the Defense Logistics Agency, to the Army Procurement Appropriations (APA), and to war reserve disbursements. Corrective actions included the request of payments for items transferred to DLA, the obtainment of cash allocations from DA for war reserve obligations, the realignment of accounts receivable to 15 days of sales in accounts receivable, and the request for DA approval to bill Foreign Military Sales (FMS) customers on the basis of Materiel Release Order (MRO) rather than the Materiel Release Confirmation Policy.

(U) About $500,000 in old unreconcilable Accounts Receivable remained open in the discontinued Stock Fund operation of the International Logistics Center which was being closed out by the New Cumberland Army Depot (NCAD) Finance and Accounting Office (FAO). This was a sharp decrease from the 30 September 1981 balance of $3 million, and HQ DARCOM requested DA approval to write off the balance. DA did not grant this request, on the ground that most, or about $300,000 of the $500,000 pertained to FMS.

(U) Cooperative Logistics Supply Support Arrangements (CLSSA). Since 1977, when OSD authorized a change from an item to a dollar management concept, HQ DARCOM operated under revised Cooperative Logistics Supply Support Arrangements (CLSSA). The new procedures were very cumbersome, offering special problems in four major areas: item realignment, termination and reduction, transfer of collections between fiscal years, and establishment of orders. The DARCOM Comptroller recommended various procedural changes to ease these difficulties, and the Comptroller of the Army (COA) accepted them. As a further sweetner, the Assistant Secretary of Defense (ASD) Comptroller approved a DOD directive change, allowing reimbursement of the appropriation or fund against which the obligations were originally incurred.

(U) Force Modernization. During fiscal year 1982, the division became responsible for accumulating and reporting costs incurred against each Program Decision Increment Package (PDIP). About 160 PDIPs met the reporting requirement, covering planned obligations of $497.3 million. Actual obligations were 110 percent, or $546.5 million. DARCOM's fiscal year 1982 force modernization funding share was 58 percent.

(U) Program and Fund Control System (PFCS) Implementation. On 1 October 1981, the Program and Fund Control System (PFCS) became the official program and funds distribution system for the APA for DARCOM suballocations. On 1 April 1982, it also became the official system for allotments. This meant that DARCOM then had a fully automated funding system from the President's Budget level down to the allotment level.

(U) Standard Finance System (STANFINS). With DARCOM assistance, HQ, DA was replacing the Standard Finance System (STANFINS) with a redesigned STANFINS. The remodeled system was to be the standard Army installation level accounting and reporting system used by all Army FAOs. It was to be a single system responsive to all of an installation's financial management needs, and it was to include state-of-the-art Automatic Data Processing (ADP) technology. The STANFINS redesign had seven modules: Travel, Commercial Accounts, Dispursing, Cost Accounting, General Accounting, Program Budget, and Performance Measurement. DARCOM was responsible for the Cost Accounting module and two applications of the General Funds module--Fixed Assets and Accounts Receivable.

(U) Except for some minor corrections, DARCOM had completed its functional descriptions for cost accounting and fixed assets. Its own Cost Accounting module documentation was to be complete by March 1984.

(U) In addition to financial support for the redesign, DARCOM was also assisting the Computer Systems Command with the ADP effort. In addition, two DARCOM subordinate elements, the Automated Logistics Management Systems Activity (ALMSA) and the Logistics Systems Support Activity (LSSA) functioned as Central Systems Design Agencies (CSDA) for travel and cost accounting, respectively.

(U) Two long-standing DARCOM efforts neared completion in fiscal year 1982. One of these efforts, the Standard Army Procurement Appropriation System (APARS), began in late 1978 as an attempt to convert the five extant materiel readiness commands (MRC) unique APAR systems to a single standard system. The five APARS set various specific times to accommodate programming changes to meet regulatory and reporting times. In April 1982, ARRCOM began prototype and parallel operations, with total conversion to APARS expected by November 1982.

(U) The other long-standing DARCOM effort, the Standard Army Civilian Payroll System (STARCIPS), started in 1980 as an effort to standardize DARCOM payroll systems. The wide variety of ADP equipment in DARCOM elements, however, delayed the actual start until December 1981. This start, which focused upon depots, resulted in the conversion of 12 depots to STARCIPs by 3 September 1982.

Management, Review, and Analysis (MRA)

(U) CPIR. The Command Performance Indicator Review (CPIR) System was established in August 1977, and continued throughout fiscal year 1982 to be the primary system for measuring performance toward the accomplishment of DARCOM's missions, goals, and objectives. There were several procedural changes made in fiscal year 1982 to improve the CPIRs. The chief improvement was a prescreening of CPIR indicators by the Deputy Commanding Generals (DCG) and the Chief of Staff (CofS) to assure that only

matters of importance remained in the CPIR process. There were six CPIRs submitted in fiscal year 1982, and within the Comptroller itself, four mini-CPIRs during the year. Finally, the division executed a study to reduce CPIR presentation time from two days to one, and still retain their value.

(U) The division supplied analytical support to the Force Modernization effort. This consisted of in-depth analysis summaries of two systematic problem areas, Training Devices and Basis of Issue Plan (BOIP). Qualititative and Quantitative Personnel Requirements Information, was delivered to Force Modernization personnel, and the division also established a library of pertinent regulations, an automated acronym index, and a consolidated automated listing of over 300 Force Modernization Weapon Systems equipment items.

(U) Defense Acquisition Improvement Program. In May 1982, the Deputy Secretary of Defense requested the Joint Commanders to provide him with a record of auditable savings and cost avoidances associated with the Defense Acquisition Improvement Program. The MRA Division accordingly detailed a methodology for formulating savings and cost avoidances for distribution to the MSCs and direct-reporting PMOs. The Navy and the Air Force subsequently adopted this methodology.

(U) Reduction Programs. Divisional efforts succeeded in reducing or eliminating duplicate or superfluous efforts. One area was the reduction of PM reports, toward which the division recommended the consolidation or elimination of various reports, the use of automation at the PM level, and the emphasis of a focal point in HQ DARCOM for reports. The other area was the Comptroller Functional Assessment Program (CFAP), which the division received direction to produce as a non-travel alternative and supplement to the Comptroller Evaluation Surveys (CES). The Comptroller Functional Assessment Program (CFAP) was to be developed from data available within DARCOM. The division agreed that, since such data were inaccurate, imprecise, and untimely, the report should not be implemented. The Deputy Comptroller agreed, and the program was canceled.

(U) Comptroller Evaluation Surveys (CES). The CES program itself began on 30 November 1981. There were five surveys: the US Army Armament Research and Development Command (ARRADCOM), Natick Laboratories (NLAB), Electronics Research and Development Command (ERADCOM), the Armament Readiness Command (ARRCOM) and the US Army Security Assistance Center (USASAC). Travel fund cuts canceled four other survey trips. The division also briefed the DARCOM Comptroller on 27 August 1982, recommending, among the nine approvals, more money, more time, and a new name for the program.

(U) Outside Studies. The division acted as a focal point for DARCOM's responses to two major outside study teams. The first was DCAC, formed in September 1981, to make an independent assessment of how well the Army's past and proposed management processes and systems contributed to the control of the cost of Army weapon systems and the improvement of the management and control of Army programs. In February 1982, the second team originated, when the President announced the formation of the President's Private Sector Survey on Cost Control (PPSSCC), or the Grace Commission. Its purpose was to review selected management and monetary practices and procedures in the US Government, and to provide ways to cut costs and improve efficiency and effectiveness.

Productivity Management

(U) Since its July 1981 formation, the Office of Productivity Management was active in five major areas: the Resource Self Help Affordability Planning Effort (RESHAPE); the Economies, Efficiencies, and Management Improvement Program (EEMI); Productivity Capital Investment; Methods and Standards (M&S); and Behavior Motivation Programs.

(U) RESHAPE. RESHAPE was the central productivity improvement program of DARCOM. At its start, DARCOM personnel, using an index of operational effectiveness and a thoroughly quantified baseline study, showed that a peacetime effort of 143,291 manyears was necessary each year to meet the wholesale logistics requirements of the Army. DARCOM, unfortunately, had only about 117,000 people.

(U) RESHAPE tried to fill this gap by requiring the headquarters and each MSC to establish productivity goals in manyears to be accomplished through overtime, overhire, capital investment, organizational streamlining, and other initiatives. The result was to save manhours. In fiscal year 1981, it beat the 12,000 goal by nine percent and, in fiscal year 1982, it beat the 16,000 goal by 11 percent. The eventual goal was a manyear gain of 23,000 more hours by fiscal year 1985.

Capital Investment

(U) The division managed three Productivity Capital Investment programs: the Productivity Investment Funding (PIF) Program, the Army Industrial Fund Fast Payback System (AIF-FPS), and the Quick Return on Investment Program (QRIP).

(U) PIF was a DOD-managed program for projects with a minimum $100,000 investment and a pay back of four years or less. The fiscal year 1982 DARCOM PIF program was $12.7 million, the fiscal year 1983 program was $3.9 million. DARCOM tried to reverse this downward trend for fiscal year 1984 by introducing 44 projects worth $227 million and an annual $96 million in savings.

(U) The AIF-FPS was applicable to industrial-funded activity projects costing between $5,000 and $600,000, and amortizing in four years or less. The fiscal year 1982 AIF-FPS ended the year with $36 million in obligations, for more than fiscal year 1981's $7.4 million. It was believed that the Carlucci Initiatives might end the AIF-FPS in fiscal year 1983.

(U) The QRIP felt the effect of several fiscal year 1983 policy changes. The program would now include RDT&E, OMA, and ammunition projects, and DARCOM now had project approval and fund distribution authority. The fiscal year 1982 program consisted of 31 projects totaling $1.2 million with an annual savings of $1.5 million. The fiscal year 1983 program was $7 million.

Methods & Standards (M&S)

(U) The major Methods and Standards (M&S) objective in fiscal year 1982 was to develop detail and summary level standards which could be effectively applied by managers in work planning and control, budget quantification, workloading, cost estimating, fixed prices development, productivity gain sharing, and manpower management processes. The office administered programs in four major organizations: the US Army Depot Systems Command (DESCOM), ARRCOM, the US Army Test and Evaluation Command (TECOM), and the US Army Integrated Methods and Standards Activity (IMSA). The office had several fiscal year 1982 successes, including the completion of a maintenance measurement study to cover 1,200 authorizations in maintenace engineering and provision at ARRCOM, CECOM, MICOM, TACOM, and TSARCOM. Another accomplishment was the establishment of the first DARCOM-wide summary level standards for performing cataloging functions. These standards covered 620 cataloging employees.

(U) Behavior Motivation. HQ DARCOM centralized a part of its human motivation and employee involvement efforts by establishing program responsibility for Productivity Gain Sharing (PGS), Quality Circles (QC), and Socio-Technical Systems Analysis (STSA) in the office.

(U) With the 27 July 1981 approval of General Guthrie, the office launched a PGS program. The fiscal year 1982 highlight was an October 1981 command-wide planning workshop which discussed roles, terminology, participant expectations, and schedules. In April 1982, tests began at two locations--MICOM and Tobyhanna Army Depot (TOAD).

(U) On 23 June 1982, the Comptroller's Office gained official responsibility for DARCOM management of the QC Program. QCs were small, voluntary groups of workers drawn from, and formed within individual organizational elements. These groups discussed and proposed solutions for work-related problems. The number of QCs grew from 253 in December 1981 to 325 in September 1982.

(U) STSA. The goal of STSA was to rearrange technology, and either to redesign the organizational structure, or restructure the work, or both, in order to optimize the relationships among organizations, their technology, and their environment. The Corpus Christi Army Depot (CCAD) was the site of a pilot STSA which, by the end of fiscal year 1982, had already produced major organizational changes.[3]

## Personnel, Training and Force Development

(U) MG Henry Doctor was Director of Personnel, Training, and Force Development (PT&FD) throughout most of fiscal year 1982. On 9 August 1982, he left to become Chief of Staff, HQ DARCOM. BG Eugene S. Korpal succeeded him. Two major programs to appear during the tenure of these officers included Force Alignment II, a program which established, by grade, grade ceilings for both officer and enlisted authorizations, and the General Support Forces Civilian Substitution Program, which permitted the conversion of certain field grade officer positions to civilian status.

(U) The directorate also supported a 15 October 1981 reorganization of HQ DARCOM. The directorate lost 12 civilian spaces to support this move, and DARCOM Personnel Support Activity lost five more. Besides its five spaces, PSA also lost all of its non-PT&FD functions. On 15 March 1982, the HQ Manpower Office, HQ Civilian Personnel Office (CPO), and HQ Military Personnel Office (MPO) all transferred to DARCOM Service Support Activity (SSA) in Phase I of two phases. Phase II realigned the remaining PSA elements and the Directorate for PT&FD. The Chief of Staff interrupted this phase, approving, on 9 August 1982, a recommendation that the PSA perform the Command Adjutant General (AG) functions. On 17 October 1982, the realignment of the PT&FD Directorate and the PSA at last took place on a provisional basis. The office of the Command Adjutant General was to draw its spaces from SSA, the Military Personnel Division of PT&FD, and the Installation and Services Activity (ISA), Rock Island, Illinois. The final tally of fiscal year 1982, showed 119 spaces in PT&FD and 154 in Personnel Support Activity (PSA).

## Manpower and Force Management

(U) PARR. The Program Analysis and Resource Review (PARR) was the first document in the program and budget cycle for, through the PARR, the MACOMs identified and explained their resource requirements to HQ DA. In January 1982, HQ DARCOM submitted its fiscal year 1984-1988 PARR to HQ DA. Focusing on fiscal year 1984, this PARR identified 134,462 essential military and civilian requirements and total requirements of 141,341.

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[3] The bulk of the material for the preceding section came from: Office of the Comptroller, Annual Report of Major Activities, FY 82,

(U) Command Operating Budget (COB). In July 1982, DARCOM submitted its Command Operating Budget (COB) to DA. It identified 123,775 civilian requirements for fiscal year 1983 and 124,960 for fiscal year 1984. The COB identified significant civilian increases in Supply Management, Maintenance Support, Base Operations and RDT&E, the latter commanding 4,700 spaces.

(U) Army Industrial Fund (AIF). In August 1982, DARCOM submitted the fiscal year 1983 Army Industrial Fund (AIF) budget to DA. DARCOM gained 340 spaces in fiscal year 1982 and 550 in fiscal year 1983 by this submission, based upon forecast depot maintenance workloads. Furthermore, thanks to DA and DARCOM efforts in this area, OSD restored 1,032 civilian spaces.

(U) Equipping the Force. The fiscal year 1983-1984 COB was the first which identified manpower requirements for weapons systems. Excluding DESCOM depot maintenance and TECOM RDT&E requirements, these systems called for 9,161 spaces. Other DARCOM efforts resulted in an increase of about 1,300 spaces in fiscal year 1984 for this program, to grow to 2,100 extra spaces in fiscal year 1986.

(U) Personnel Spaces. The DA program to DARCOM was about the same for fiscal year 1982 (107,209 civilian spaces) as it was for fiscal year 1981 (107,172 spaces). Actual strength fell from 107,779 to 107,079, due in large measure to a command-wide hiring freeze from 2 to 30 September 1982. Military spaces grew slightly, rising from 9,677 to 10,323. The authorized level was 10,836.

(U) Civilian Substitution Program. The fiscal year 1983 President's Budget authorized the conversion of 1,000 field grade officer positions to civilian incumbancy Army-wide. In September 1982, for its part, DARCOM submitted the possible alteration of 101 military spaces into 81 civilian ones. Implementation was to occur in fiscal year 1983.

(U) Force Alignment II. In June 1982, ODCSPER, DA, announced a Force Alignment II Program which would establish Command Grade Ceilings (CGC) on both officers and enlisted authorizations by grade, the latter for the first time. Controlled branches, such as the Army Medical Department (AMEDD), were excluded; only the basic branches, or those under the Officer Personnel Management System (OPMS) were involved. Some positions were to be downgraded; this was to be done by peacetime attrition. Implementation was to be in fiscal year 1984.

(U) FMS Manpower. DARCOM was able to meet its FMS workload only by diverting personnel spaces from US mission requirements. In September 1982, after seven years of urging from DARCOM and others, the Army Secretariat approved amendatory legislation to exclude FMS spaces from manpower ceilings. Pending Navy and Air Force concurrence, the package was to go to the 98th Congress in January 1983.

(U) Manpower Planning, Requirements and Utilization. One of the planning projects slated for development for Exercise PROUD SABER/MOBEX 83, in October and November of 1983, was to explore the possibility of an intermediate manpower structured organization, a "surge TDA." This TDA would cover these real world requirements levied upon DARCOM in its logistics and materiel roles, but not supportable by peacetime TDAs; yet whose requirements did not warrant implementation of the mobilization TDA.

(U) RESHAPE. The Comptroller Office generated three significant RESHAPE initiatives. One was organizational streamlining, by establishing a data base in the Army Authorization Documents System (TAADS), which would enable managers to monitor the space migration between direct mission and support functions, thus achieving more productive space use. The other two were overtime and overhire. These two saved over 10,000 estimated manhours in fiscal year 1982.

(U) DARCOM-Europe. On 1 July 1982, DARCOM-Europe, located at Seckenheim, Germany, was organized to represent the DARCOM Commander as the single DARCOM manager and focal point in the European Theater. Its authorized strength was 21 officers, seven EMs and 55 civilians.[4]

Civilian Personnel Management

(U) Special Employment Programs. DARCOM exceeded its goals in all of its special employment programs in fiscal year 1982. Besides the EEO, these included the President's Stay-in-School Programs, the Vietnam Era veterans, the handicapped, the disabled veterans, the targeted disabilities (deaf, blind, etc., and summer employment of youth).

(U) Pre-Emergency Preparedness. Mobilization had a very high priority in the civilian personnel administration area. On 20 August 1982, the DARCOM civilian personnel officers conducted a pre-emergency preparedness check of their offices. Sixty-seven percent had a rating of 95 or better; not one office scored less than 70 percent.

(U) Mobilization Planning. The Civilian Personnel Office (CPO) was to participate more strongly in PROUD SABER/MOBEX 83 than in past exercises. One aspect would be a check of CPO abilities to fill Mobilization TDA requirements and vacancies produced by military call-ups. One adjunct of PROUD SABER, "Depot Surge," called for the Anniston and Red River Army Depots (ANAD and RRAD) to implement an actual production surge of rebuilding tank engines in two ten-hour daily shifts.

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[4] DA PO No. 87-1, 21 Dec 81.

(U) Materiel Acquisition Management (MAM). Noticing the acquisition managers tended to be too specialized, the Commanding General, DARCOM, in September 1981, started the Materiel Acquisition Management (MAM) Program. MAM's aim was to give acquisition managers a broader, multidisciplinary understanding of the total acquisition and logistics process by blending work assignments and formal training in a three-part program: one, interdisciplinary training and development; two, competitive selection for further training and development; and three, placement of candidates in designated key MAM positions in the acquisition and logistics area. By the year's end, DARCOM had responded well, developing, as an example, a MAM orientation program attended by 78 interns. Other steps included the US Army Management Engineering Training Agency's (AMETA) development of a list of skills, knowledge, abilities, and experience required for MAM positions, the Army Logistics Management Center's development of a basic MAM instruction course, and the CPO's development and staffing of a draft MAM regulation.

(U) DARCOM Referral Level Disestablishment. On 22 February 1982, DARCOM began an 18-month test of the disestablishment of its MACOM career program referral level. As part of the test, DARCOM agreed with DA to assess the effectiveness of the use of local procedures to fill career program positions by on-site reviews, special reporting requirements, and questionnaires. The new procedures fared well. The cost of filling vacancies fell, and the representation of both minorities and women exceeded goals.

(U) High Grade Management. The DOD Appropriation Authorization Act of 1982 respected the statutory requirement for the reduction in the number of GS-13 and above positions in DOD. Instead, at Congressional urging, it adopted an aggressive position management program. In March 1982, with this in mind, DARCOM identified 1,315 more high grade requirements to DA for fiscal year 1982 and 1983. In May 1982, DA granted 10,993 high grade positions to DARCOM. On 30 September 1982, 10,952 of these positions had occupants.

(U) Military Personnel. There were three primary developments in the Officer Personnel Management System. In April 1982, the Officer Branch implemented the Requisition Generator (REQ-GEN) System, which allowed DARCOM to share the strength and by-name data which DA's Officer Personnel Management Directorate (OPMD) maintained for each activity. The heart of the system was a word processing network, which permitted a more efficient means of requisitioning and managing officer personnel.

(U) Training with Industry (TWI). On 22 July 1982, proponency for the officer Training with Industry (TWI) Program for the procurement and research and development fields transferred from ODCSRADA to DARCOM. This gave DARCOM intensive management responsibilities for this program, an opportunity which the command seized, to try to eliminate a major problem. This required that utilization positions be identified two years in advance of a TWI graduate's arrival on the job; which requirement had proved to be unresponsive to dynamic organizational changes.

(U) Army Educational Requirements Board (AERB). The Army Educational Requirements Board (AERB) underwent several changes in fiscal year 1982. These included annual, instead of tri-annual, meetings, and a decision that colonel positions would no longer be requested and validated, which increased training opportunities for captains and majors.

(U) Enlisted Personnel Management System. DARCOM met, or exceeded, all DA reenlistment goals. This helped it to maintain an average of about a 97 percent fill of its authorized enlisted spaces. Moreover, the operating level for the Non-Commissioned Officer Logistics Program (NCOLP) reached 74 percent, a ten percent increase over fiscal year 1981.

(U) Personnel Policy, Plans and Training. On 1 October 1981, the Mobilization Designee Program became known as the Individual Mobilization Augmenter Program (IMAP). Authorized program positions increased from 1,315 to 1,451; assigned from 869 to 1,074. Funding problems held training to 847.

(U) Army Physical Fitness Program. The CSA declared 1982 the US Army Year of Physical Fitness. DARCOM responded, conducting semi-annual fitness tests and initiating a cardiovascular screen for over-40 soldiers.

Schools Management

(U) DARCOM's four schools, ALMC, AMETA, the Joint Military Packaging Training Center (JMPTC), and the US Army Defense Center and School (USAPACS) trained more than 66,000 students--more than in any previous year--and 7,000 more than in fiscal year 1981. This total included over 40,000 in residence, and over 26,000 off-site. Travel and per diem increases were of great aid.

(U) DARCOM Schools Conferences. DARCOM held two Schools Converences in fiscal year 1982. The objective of these conferences was to provide guidance, a discussion exchange forum, and a means of reviewing accomplishments and projected workloads.

(U) Training Career Program. During fiscal year 1982, the Education and Training Career Program divided into the Education Services Civilian Career Program and the Training Civilian Career Program. The functional chiefs were, respectively, the Adjutant General and the Deputy Chief of Staff for Operations and Plans.

Alcohol and Drug Abuse Program

(U) DARCOM's Alcohol and Drug Abuse Prevention Program (ADAPP) had more than double the Army's rate of civilian admissions, 6.5 per 1,000 (687 employees) as opposed to DA's 2.9. Admissions were up 31 percent over fiscal year 1981, and another 3,082 were screened.

Alcohol abuse accounted for 91 percent of the admissions. Command emphasis, training, and the increased awareness of supervisors led to the high rate.

(U) The military rate also exceeded projections; indeed, it was higher than ever. Alcohol abuse accounted for 77 percent of the admissions. Of drugs, marijuana abuse accounted for 85 percent of the admissions. The command supervisors referred 41 percent of the personnel.

(U) Prevention, Education, and Review. DARCOM met its goal of 80 percent of supervisor training. The primary aim of this training was to assist supervisors in employee referral evaluation. The staff also conducted management reviews at 18 installations to assure that all was in order and to stress command program emphasis.

(U) HQ Counseling Services Office. The HQ Counseling Services Office broadened its services to supervisors and to employees seeking help for personal problems. These referrals were higher in fiscal year 1982. The office's fiscal year 1982 educational program focused on needs at the directorate level.[5]

Management

(U) Reorganization. On 15 October 1981, as part of the HQ DARCOM reorganization, the Directorate for Plans and Analysis received the new designation of Directorate for Management. The Systems Analysis Division disappeared with this move, and some of its personnel transferred to the newly established Directorate for Program Analysis and Evaluation. The Army Materiel Systems Analysis Activity (AMSAA) assumed the responsibility for functional analysis. The Programs, Plans, and Policies Division also underwent disestablishment, its people manning the new Studies Management Division. Certain of the functional responsibilities of the defunct division became the province of the Directorate for Program Analysis and Evaluation.

(U) The net result was a three division structure: Resource Analysis and Evaluation, Studies Management, and Mission Organization.

Resource Analysis and Evaluation

(U) Cost Based Reviews. Management of the Commercial Activities (CA) entailed 24 review actions in fiscal year 1982: one the completion of a delayed fiscal year 1980 review, nine for fiscal year 1982 and 14 for fiscal year 1983. Of the nine fiscal year 1982 reviews, the division

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5 Most of the material for the preceding section came from Directorate Personnel, Training and Force Development and DARCOM Personnel Support Activity Annual Historical Review, FY 82.

only completed one--a contract. A tentative decision was reached on seven others--two contract and five in-house, while the remaining one was deferred. The incomplete review, for MICOM, proved to be complex and lengthy, and it faced unexpected policy and regulation changes. As the year ended, work continued on FY82 reviews, as well as all 14 fiscal year 1983 reviews.

(U) OCBRs. The division submitted 41 separate Other-Than-Cost-Based Reviews (OCBR) to HQ DA during fiscal year 1982. Thirty-six of these were for single installations. The division submitted one each for DESCOM's maintenance, ammunition, and manufacturing missions, one for ARRCOM's manufacturing mission, and one for DESCOM-ARRCOM chemical munitions and special weapons mission. National defense and the disruption and delay of Government programs formed the bases for OCBRs.

(U) New Starts and Expansions. New starts and expansions covered approval for new equipment and facilities only. HQ DA approved three new starts, one submitted in fiscal year 1981 and two in fiscal year 1982. One of the latter won final DA approval.

(U) DARCOM Consolidation, Realignment, Reduction and Closure (CRRC). On 1 July 1982, the Arizona Army National Guard (ARNG) took charge of the Navajo Army Depot Activity. Transfer of aircraft depot maintenance from the New Cumberland Army Depot (NCAD) to the CCAD, approved in fiscal year 1982, underwent deferral until fiscal year 1983, as did a study to consolidate base operations and support at the NCAD and Carlisle Barracks. The final report on studies to consolidate base operations and support at ANAD, Fort McClellan, at White Sands Missile Range (WSMR) and Ft. Bliss was due at DA in the 1st quarter of fiscal year 1983. There were three new studies, involving the transfer of the management and operations of the Fort Wingate Depot Activity to the New Mexico National Guard; the consolidation of the Service Item Control Centers (SICC) at CECOM, at the General Materials and Petroleum Activity (GMPA), NCAD, and the Army Support Activity (ASA), Philadelphia; and the phase-down or closure of the Rocky Mountain Arsenal.

Studies Management

(U) DARCOM Direction ($D^2$) Thrusts. On 1-2 April 1982, the CG, DARCOM, conducted a DARCOM Emphasis on Goals and Objectives Conference at Fort Belvoir, Virginia. The purpose of the conference was to determine what needed emphasis in DARCOM in fiscal year 1982, two years from that time, and what needed emphasis beyond the two years. The results were the adoption of six values which the Army felt were important to do daily business, and the identification of 17 (later expanded to 21) major or $D^2$ thrusts.

(U) A thrust was a point of DARCOM emphasis at a given time. Points of emphasis were to emerge, be emphasized, and then possibly submerge into normal day-to-day business. Each thrust also had one or more elements, which were stated objectives which would assure that required emphasis would fall on the thrust. Under matrix management, a lead director managed thrust; they also managed thrust elements, making status reports to a thrust lead director.[6]

(U) The DARCOM Chief of Staff chartered the Automation Committee in March 1982. He also chaired the committee, whose members consisted of key directors and office chiefs within the headquarters. The committee made four significant accomplishments in fiscal year 1982. These were: a complete inventory of all HQ DARCOM automation assets; the inclusion of all of these assets on SSA-maintained property books; the identification and prioritization of all fiscal year 1982 automation requirements; and supplemental funding to purchase automation equipment and services.

Mission and Organization

(U) RESHAPE. In February 1982, the Directorate for Management became the HQ DARCOM proponent for RESHAPE. It was in charge of two RESHAPE actions, as well: to serve as the HQ point-of-contact (POC) for the organizational analysis aspect of RESHAPE, and to challenge on-going RESHAPE activity.

(U) HQ Realignment. There were three major functional realignments and organizational changes made in the headquarters in fiscal year 1982. The first, on 6 July 1982, transferred control of the Directorate for Management Information System (DMIS) from the Chief of Staff to the DCG for Resources and Management. The second, on 8 July 1982, transferred proponency for three DARCOM organization and functions regulations from the Manpower Office to the Directorate for Management. The third, effective 1 October 1982, was far more complicated. It established a Command Adjutant General under PT&FD, on the headquarters PSA TDA; transferred the Office of Protocol from SSA to the Secretary of the General Staff (SGS); and reorganized HQ SSA to perform support functions for the headquarters only. The resultant SSA had seven elements: A Resource Management Division, HQ Services Division, HQ Security Office, HQ Adjutant General, HQ CPO, HQ EO, and OEO. The first four elements reported to the SSA Director, the latter three to the Chief of Staff.

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6 DF, MG Henry Doctor, Jr., C of S, HQ DARCOM to Dir, Ofc Ch et al., 17 Sep 82, Subj: Thrusts for DARCOM Direction ($D^2$).

(U) DARCOM-Europe. On 1 July 1982, DARCOM-Europe came into being. This element, which served as the single DARCOM manager and focal point in USAREUR, had three maintenance activities under its operational control--the Fischstein Missile Repair Activity; the HAWK Field Facility; and the Pirmosens Missile Repair Activity. The Mainz Army Depot had command control of all three activities.

(U) Test, Measurement and Diagnostic Equipment (TMDE). There were three major Test, Measurement and Diagnostic Equipment (TMDE) organizational changes. In the first two, effective 27 April 1982, the CG, DARCOM became the Executive Agent for TMDE, and the US Army Office of the Program Manager, TMDE, was established within CECOM. Later, on 11 July 1982, the US Army TMDE Support Group was deleted from MICOM, and became a separately reporting DARCOM activity.

(U) Joint Tactical Fusion Program (JTFP). On 1 February 1982, the Program Manager, Joint Tactical Fusion Program (JTFP) was established at Adelphi, Maryland, to manage the JTFP to include the direction, development, acquisition, and fielding of the All Source Analysis System (ASAS) and the Air Force's Enemy Situation Correlation Element (ENSCE) in accordance with validated service requirement documents. The JTFP also managed the development and acquisition of other relevant projects, as assigned. The basis of the JTFP's organization concept was a fully integrated joint program management office, staffed primarily by Army and Air Force personnel. DARCOM provided manpower and automatic data processing support.

(U) Battlefield Exploitation and Target Acquisition (BETA). Some JTFP office help came from the Battlefield Exploitation and Target Acquisition (BETA) Joint Project Office at Adelphi, Maryland. On 1 September 1982, DARCOM discontinued this office and transferred its manpower and functions to the JTFP.

(U) PM, ASAS. On that same date, DARCOM also discontinued the Project Manager, All Source Analysis System (ASAS), at Vint Hill Farms Station, Virginia. This element's manpower and functions also went to JTFP.

(U) Organization and Mission Revisions. The directorate updated 24 DARCOM Regulations (DARCOM-R) during the year. Most covered DARCOM subordinate commands, such as MICOM or the US Army Aviation Research and Development Command.[7]

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7 The bulk of the material for this portion of the chapter derives from the Directorate for Management, Annual Historical Review, 1 October 1981 to 30 September 1982.

Installations and Services

(U) The Directorate for Installations and Services (I&S) was to direct, staff, supervise, and develop authorization and funding programs for, and to coordinate the management use of the physical plant of DARCOM, as well as the logistical support services incident to the operation of its installation. In the case of DARCOM I&S Activity at Rock Island Arsenal, this meant direct supervision. I&S also served as resource manager and program director of the MCA appropriation, two DARCOM Family Housing Management Appropriation Budget Programs, as program director for the DARCOM I&S Program, and as DARCOM coordinator for all matters related to installation restoration assigned to the USA Toxic and Hazardous Materials Agency (USATHAMA).

Plans and Programs

(U) The Plans and Programs Office's main concerns were program and funding issues which affected DARCOM missions and cut across most appropriations. Toward these ends, it prepared data for the DA 84-88 Program Objective Memorandum submission to OSD in May 1982; the on-going OSD budget decisions for fiscal year 1982 and fiscal year 1984; DA's Program Budget Guidance for July, October and November of 1982; and the October 1982 "Army Guidance." This last document was a lead-in for the DARCOM fiscal year 1985-87 PARR submission to DA. The office was adding two powerful micro-computers to aid its work.

Energy

(U) Objectives. The Energy Office had three major objectives: to assure adequate energy supplies to maintain force readiness; to conserve nonrenewable energy resources; and to foster the conservation ethic. Against an uncertain energy background, these objectives were to be achieved by means of a comprehensive guide called the DARCOM Industrial Energy Plan (DIEP). The DIEP had seven major thrust areas: buildings, industrial equipment, methods and processes, energy production and distribution systems, contracting procedures, funding and energy R&D. These thrusts involved such topics as technology transfer, energy awareness, contingency planning, and incentive awards.

(U) Goals. Using fiscal year 1975 as a base year, DA and DARCOM set the following goals:

| | Goal | DA | DARCOM |
|---|---|---|---|
| FY 85 | Facility Energy Reduction | 20% | 35% |
| FY 85 | Mobility Energy Reduction | 10% | 10% |
| FY 85 | Petroleum and Gas for Facilities | -- | 30% |
| FY 85 | Alternate Fuels in Facilities | -- | 30% (of total) |
| 2000 | Facility Energy Reduction | 40% | 40% |
| 2000 | Petroleum and Gas for Facilities | 75% | 75% |
| 2000 | Vehicle Fuel Efficiency Increase | 15% | 15% |

(U) While the fiscal year 1985 petroleum reduction goal was met in fiscal year 1980, attainment of the other goals became doubtful. Electricity use rose, and total usage of all energy rose 2.5 percent in fiscal year 1981. Low cost, conservation efforts had quickly reached their limits, and DARCOM decided that only high return energy savings efforts would be pursued. Meanwhile, DARCOM began to try to get DA to lower the goals. With fiscal year 1982 marking a second straight year of energy use increases, DARCOM did realize that this area could be addressed more strongly.

(U) Energy Capital Investment Programs. There was a high level of activity in all three of the energy capital investment programs: the Energy Engineering Analysis Program (EEAP), the Energy Conservation Investment Program (ECIP), and the Energy Conservation and Management (ECAM) Program. The EEAP contracted 145 studies at DARCOM installations; the ECIP added six projects, worth 226,000 Mega-British Thermal Units (MBTU); and the ECAM, implemented in fiscal year 1982, identified 17 projects worth about 300,000 MBTU.

(U) Army Energy Technology Demonstration (AETD). The Army Energy Technology Demonstration (AETD) Program at RRAD and the Lone Star Army Ammunition Plant (LSAAP) was a joint DOD/DOE initiative to hasten the development and commercialization of new energy technologies for use by the Army and other Government agencies. There were five project thrust areas here: Biomass, alternate transportation fuels, solar conversion, terratecture or underground construction, and energy conservation. Projects nearing the prototype phase included a wood and coal fired boiler, a wood gasifier, electric vehicles, gasohol, and solar-powered domestic and industrial hot water and energy monitoring and control systems. Future plans called for the construction of an underground facility and the demonstration of a fuel cell and photovoltair power array for the generation of electric power.

(U) Construction Engineering Research Laboratory (CERL). The Construction Engineering Research Laboratory (CERL) was much concerned with formulating policies and procedures to identify that portion of DARCOM's energy which was consumed by industrial processes. Toward this end, it engaged in a two-phased study: phase one, to define and quantify DARCOM's process energy; and, phase two, to identify production and mission parameters having a high correlation with process consumption. The completion due date for the study was in 3d quarter, fiscal year 1983.

(U) DARCOM participated in an energy ad hoc group which the Joint Logistics Commanders (JLC) had formed in December 1981. In June 1982, the group submitted a report which recognized the vulnerability of military energy sources to hostile action or to terrorist forces. The group recommended that plans be drafted to protect critical areas from such attacks by making them energy self-sufficient.

Engineering

(U) Real Estate. The transfer of the Navajo Army Depot Activity allowed the Arizona National Guard (ARNG) the experience of operating it. Thus the ARNG gained training in several skills, including handling explosive materials. The Guard performed the DARCOM mission at Navajo Army Depot Activity under a license arrangement.

(U) In coordination with the National Park Service, the division began a DARCOM Historical/Archeological Survey (DHAS). The purpose was to bring all buildings on DARCOM installations into compliance with regulations, laws, and executive orders on preservation of cultural resources. Furthermore, all DARCOM installations were to have archeological surveys and historic and archeological management plans.[8]

(U) The Facilities Branch was in charge of five pollution abatement projects in fiscal year 1982. The net worth of these was about $10 million.

(U) The Engineer Branch was responsible for 17 urgent Minor Construction, Army (MCA) projects in fiscal year 1982. Funding for these projects amounted to $5.6 million.

(U) There were 34 production base support construction projects in fiscal year 1982. There was $42.6 million funded for this.

(U) On 23 December 1981, the President signed into law the Military Construction Authorization and Appropriation Acts of 1982. These acts authorized $98,020,000 for 25 DARCOM construction projects.

Environmental Quality

The Environmental Quality Division was the command focal point for a broad-board, multi-desciplined effort encompassing environmental management, applied technology for pollution abatement and environmental enhancement, and research and development (R&D) for the solution of unique Army problems. The division faced new requirements for fiscal year 1982 under the Toxic Substances Control Act (TSCA), the Resource Conservation and Recovery Act (RCRA), and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The Pollution Abatement Operations Center (PAOC), established in fiscal year 1978, continued to be the information center for questions about DARCOM's posture in regard to these and other acts and, as such, it was the stop for several distinguished DARCOM and outside personnel visits.

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8 Environmental Qual. Div., Environmental Newsletter, Vol. 4, No. 3, (May-Jun 82), 8p. Pollution Abatement.

Compliance

(U) Toxic Substance Control Act (TSCA), Resource Conservation and Recovery Act (RCRA), and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) overtook past emphasis on the clean air and water acts of the 1970s. TSCA regulated the manufacturing and importation of chemical substancees. RCRA and CERCLA addressed the present and past management of land disposal of hazardous waste.

(U) DARCOM had 21 noncomplying installations as fiscal year 1982 began. These noncompliers consisted of seven air sources, 20 water sources, two hazardous waste sources, and one solid waste source. By the end of the year, DARCOM had 17 noncompliers, composed of four air, 13 water, three hazardous waste, and two solid waste sources. The net gain of one hazardous waste and one solid waste noncompliers were the first regulatory enforcement actions under TSCA and RCRA. The actual net number of installations facing legal action dropped from eight to five. The five averaged about four violations each per quarter.

(U) Law suits remained at three for fiscal year 1982. The largest was the $50 million damages claim lodged against Redstone Arsenal in Alabama. The Illinois District Court suit against the Joliet AAP (JAAP) continued, although JAAP had applied for solid waste permits for solid waste landfills. Also remaining in litigation was the Government claim against the Olin Chemical Company for the cleanup of DDT on and near Redstone Arsenal.

(U) The operating permit status for DARCOM installations for air, water, solid waste, hazardous waste, and dredge and fill increased from 84 to 92 percent during the year. The permits on hand, plus applied-for permits, remained constant for the same period, and the division expected this situation to remain steady.

(U) Golden Football. Under the terms of an Army Environmental Protection Agency (EPA) agreement, the EPA agreed to refrain from primitive measures against 17 non-complying sources at 15 DARCOM locations so long as DARCOM adhered to its construction compliance schedules. As part of a multi-year effort, DARCOM had brought 10 of the 17 into compliance by the end of fiscal year 1982. Five, however, were late due to design and technical difficulties.

Groundwater Contamination

(U) No real action against groundwater contamination was taken until 19 November 1981, when Congress passed regulations implementing the 1976 RCRA. The RCRA dealt with hazardous waste; the CERCLA, passed

in December 1980, concerned the clean-up of old dumps and emergency spills. For DARCOM's point, an RCRA groundwater monitoring program went into effect at all of the Command's installations. The monitoring program included background values for groundwater at disposal units to determine if contamination existed.

(U) During fiscal year 1982 the EPA called for the first permanent permit applications for DARCOM. Contractors at Huntsville were to handle these first-ever permits, covering 16 DARCOM installations at an estimated cost of $100,000 each. DARCOM expected another 16 to receive the call in fiscal year 1983.

(U) CERCLA. By executive order (EO), DOD was the only Federal Agency to have its own authority to investigate and identify sites, evaluate the threat of those sites, and respond with emergency or remedial action. Since this authority dated only from August 1981, the DARCOM program still had not taken final shape. Moreover, this policy covered both on and off post contamination, and it had to conform to such devices as the National Oil and Hazardous Substances Contingency Plan (NCP). As the year ended, DOD and EPA were negotiating a pertinent Memorandum of Understanding (MOU).

(U) While awaiting DOD's CERCLA policy, DARCOM followed the Installation Restoration (IR) Program. The IR Program, established in 1976, was the basic CERCLA compliance vehicle pending further DOD action. This meant that DARCOM was negotiating each situation on its own merit. The most significant fiscal year 1982 CERCLA was at Letterkenny Army Depot (LEAD) where LEAD was found to be the sole source of groundwater contamination by trichlorethylene (TCE) in 12 private wells. The Army began supplying bottled water to the well owners while trying to find a solution. There were also on-going CERCLA actions at the Rocky Mountain Arsenal, the Cornhusker Army Ammunition Plant, and the Sharpe Army Depot.

(U) Summary. DARCOM eventually established confirmed groundwater contamination under RCRA, CERCLA, and the IR Program, or all three, at 28 installations, ranging from the Aberdeen Proving Ground to Umatilla Army Depot.

(U) Toxic Substance Control Act. The principal concern with TSCA was polychlorinated biphenyls (PCBs).[9] First, the EPA changed a ruling on PCB use in electrical equipment, allowing DARCOM to save millions of dollars by using PCB transformers for the rest of their useful lives. It did, however, prohibit the use of large PCB capacitors in restricted areas after 1 October 1988. A decision was expected to cost the command at least $2.5 million.

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9 Environmental Quality Division, Environmental Newsletter, Vol. cited, p. 9.

(U) Second, the Construction Engineering Research Laboratory developed a PCB interactive decision model to assist installations in the management of their PCB-containing equipment. This model, under HQ DARCOM evaluation in fiscal year 1982, covered such items as operations, maintenance, capital costs, and useful life.

(U) Water Quality. A 1981-initiated effort to renegotiate what seemed to be unreasonable standards began to pay in fiscal year 1982. DARCOM won easier effluent limitations at Tobyhanna and Anniston Army Depots, Redstone Arsenal, Milan and Kansas Army Ammunition Plants. DARCOM also won several MCA programming struggles with DA for many important water pollution abatement projects.

(U) Air Quality. To avoid problems caused by open burning of munitions, several explosive waste incinerators (EWI) and contaminated waste processors were in various stages of completion. During fiscal year 1982, the first CWPs were completed at the Badger and Iowa AAPs. Batch burning proved no problem, but continuous operations presented difficulties.

(U) Volatile Organic Compounds Control. Following 1977, DARCOM had serious problems with the control of volatile organic compounds (VOC), particularly those released by paint spray booths and vapor degreasers. Some DARCOM installations, such as ANAD and LEAD, had as many as 40 of these sources. Luckily, Federal guidelines released during the year were not as severe as anticipated.

(U) Vehicle Emissions. The big problem in this area was the jeep. Attempts to clean the engines hurt performance, leading to a long struggle which finally led, on 30 June 1981, to a permanent EPA national security exemption for jeeps. Other Army vehicles also operated under relaxed standards, or a "Federal Fleet" approach, a situation which offered potential local state compliance difficulties.

(U) National Environmental Policy Act (NEPA). As with the other bodies of regulations discussed, the National Environmental Policy Act's (NEPA) strict enforcement image moderated. The Army published a special regulation for it, AR200-2, 1 September 1981. The regulation enabled DARCOM to delegate many of its NEPA requirements to appropriate levels of management, eliminating unproductive multi-level reviews.

(U) Environmental Noise. On 20 May 1981, DA implemented the Installation Compatible Use Zone (ICUZ) Program. ICUZ required the development of noise zone contours at those installations generating sound from such sources as aircraft operations, weapons firings, and munitions detonations. DARCOM began preparing appropriate supportive policy and guidance, scheduled for final issue as a supplement in early fiscal year 1983.

(U) Implementation required eight steps, the paramount of which were the assessment of noise sources and the preparation of noise zone contour maps. By the end of the year, the division had 39 DARCOM installations as needing a complete noise contour map. Only three had them.

(U) Noise Studies. At divisional insistence, the CERL was essaying two basic acoustical studies. One concerned sound power flow measurements for the Abrams tank, the other a perimeter noise warning system. The former relied largely on data collected at the Stratford Army Engine Plant (SAEP), CT, the latter at Aberdeen Proving Ground.

(U) Installation Restoration. The US Army Toxic and Hazardous Materials Agency (USATHAMA), a DARCOM field operating agency, managed the DARCOM IR Program under divisional guidance. The program had two major objectives: to identify and contain, or eliminate, toxic materials which were spreading or which could spread, and to decontaminate fouled Army programs.

(U) The first step was an extensive installation records search. During fiscal year 1982, this involved 31 DARCOM installations, ranging from Camp Bullis to Fort Leonard Wood. If records showed possible contaminations, an onsite survey was to follow to obtain data from soil, ground and surface water sampling, and analysis. Surveys started in fiscal year 1982, from fiscal year 1981 analyses. Surveys took place at the following installations: the Gateway, Longhorn, Alabama, Milan, and Twin Cities Army Ammunition Plants; and the St. Louis Area Support Center. The division completed five surveys, at the Gateway and Alabama AAPs; Sacramento and Umatilla Army Depots; and Savannah Depot Activity.

(U) Remedial actions had to be implemented at five sites in fiscal year 1982. These five, and the actions, were: Alabama AAP - decontamination of the leaseback area; Twin Cities AAP - treatment of contaminated groundwater; Letterkenny Army Depot - provision of bottled water to off-post residents; Rocky Mountain Arsenal - design of the Northwest Boundary Containment and Treatment System; and Anniston Army Depot - removal and disposal of chemical sludges.

(U) Environmental Conference. On 4-6 May 1982, the division sponsored a DARCOM MSC Environmental Coordinator's Meeting at the National Mine Health and Safety Academy, Beckley, West Virginia. Eighty-five attendees, consisting of environmental coordinators and law specialists, met to consider such subjects as RCRA, TSCA, CERCLA, and the NCP. The law attendees also introduced information on the civil and criminal penalties that could result from noncompliance.

(U) Environmental Publications. There were two important environmental publications. One was the Environmental Newsletter, which began in fiscal year 1979. It was a divisional publication. Another, was DARCOM Supplement 1 to AR 200-1, dated 15 June 1982, and prescribed the policies, assigned the responsibilities, and established the procedures for the protection and preservation of the environment in relation to DARCOM installations, facilities, equipment, and vehicles.

(U) Operations and Maintenance, Army. DARCOM spent $25,399,000 for environmental quality in fiscal year 1982. This consisted of $9,148,000 from DA and the rest from reprogrammed funds. Nearly all, or $25,188,000 of the funds went to RCRA permit application preparation, studies by such elements as the CERL, and major rehabilitation and clean-up projects.

Housing Management Division

(U) Budget. The fiscal year 1982 Family Housing Management Account (FHMA) was 28 percent greater than in fiscal year 1981. The fiscal year 1982 outlays amounted to about $8.8 million, of which $6 million was for maintenance and repair and $2.8 million for utilities and services. Expenditures equated a 99.96 percent obligation rate.

(U) Minor Construction. For the first time since fiscal year 1979, minor construction funds were available. The amount was only $150,000. This funded 16 projects at 15 installations, which ranged from $2,400 to $23,000.

(U) ECIP. DARCOM programmed 47 fiscal year 1985 MCA ECIP projects in fiscal year 1982. Beginning with fiscal year 1985, ECIP projects were to be handled as part of the MCA program. Project examples included solar hot water at Yuma Proving Ground, and storm windows at Aberdeen Proving Ground.

(U) Unaccompanied Personnel Furnishings Support. The division obligated about $2.6 million in OMA funds and $292,000 in RDT&E money in fiscal year 1982 to support furnishings replacement, maintenance and repair, and movement, control and handling at DARCOM installations. This represented about 20 percent of the total furnishings inventory values of $14.8 million. Though an excellent ratio, much of it went to cover work not funded in previous fiscal years.

Services Division

(U) Excess Equipment. Under division guidance, DARCOM installations and activities declared as excess 5,554 line items of equipment valued at $10.6 million. It redistributed 2,137 line items valued at $5.5 million, to include 157 nontactical vehicles valued at $2.6 million to the Command. It made the rest available to other Government agencies through normal channels.

(U) Clubs/Restaurants/Exchange Facilities Transfer. On 1 October 1982, the directorate transferred the responsibility for non-appropriated funds (NAF) operated club systems, post restaurants, and post exchange facilities to the Directorate for PT&FD. The purpose of this was to establish one point-of-contact (POC) within DARCOM and to centralize the responsibility for all NAF activities in PT&FD's Morale, Welfare, and Recreation Office. Ninety-three percent of all DARCOM clubs made money in fiscal year 1982, compared with 73 percent in fiscal year 1981.

(U) Defense Retail Interservice Support (DRIS). In August 1982, DA directed DARCOM to intensify the Defense Retail Interservice Support (DRIS) Program. This direction involved such steps as changing and establishing new policies, joining a DOD inter-departmental task force to direct the program, and conducting the study of 11 base operations functions in fiscal year 1983. This effort would increase the divisional emphasis and workload in this area.

(U) Motion Picture and Television Production Moratorium. Due to the continuance of a Presidential moratorium, work was limited on the production of new videotapes and motion picture films as well as the lease, purchase, or contract services for such projects. DARCOM's two major in-house producers, APG and WSMR, completed 56 productions with 1,206 screen minute running times. DARCOM spent about $40 million in this area in fiscal year 1982.[10]

Program Analysis and Evaluation

(U) On 15 October 1981, DARCOM established the Directorate for Program Analysis and Evaluation (PA&E) with an authorized strength of 66 personnel. The initial staff consisted of 13 civilians and nine military personnel, whose organizational origins were the Directorates for Plans, Doctrine and Systems and Plans and Analysis, as well as the Office of the Comptroller. PA&E's first director was BG Fred E. Elam.

(U) The directorate consisted of three divisions--Program Integration; Plans, Policy, and Review; and Information Resources Management. These elements were responsible for the development and maintenance--or discipline--of the Resource Management Data Base (PPBES) for DARCOM and for ensuring that available resources were planned and programmed for optimum utilization. As of 30 September 1982, the directorate had 55 assigned personnel--47 civilians and eight military.

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10 Most of the preceding material derived from the Directorate for Installations and Services, Annual Historical Review, 1 Oct 81-30 Sep 82.

Program Integration

(U) With initial skeletal staffing, the division which was responsible for ensuring that the Command's resources were put to good use, focused primarily upon the PARR and the Modernization Resources Information Submission (MRIS). The division met its scheduled submission date of 15 January 1982 to DA for PARR/MRIS. A joint DA-MACOM staff review followed in February 1982 for the MRIS requirements.

(U) Other divisional tasks included a CG-assigned task to review the Command's final program budget for executability. The division also assumed, from the Comptroller, the task of being the office of record for the program budget decisions (PBDs), and it established a Congressional Clearinghouse to assure that the Command was fully aware of on-going actions between DA and the Congress. Finally, the division, again at the CG's direction, reviewed over 200 DOD issue outlines for the pending Program Decision Memorandum (PDM) late fiscal year 1982 cycle. The PA&E identified 49 issues as DARCOM impacters, a step that led to eight major issue assessments being provided to DA on a formal basis, and 41 more informally.

Plans and Policy Review

(U) This division had two big jobs. One was to develop and maintain a DARCOM Resource Management Process. The other was to develop and maintain a Strategic Long-Range Plan. The first step toward accomplishing these jobs was to secure CG approval of its start. This done, Phase 1 began, which consisted of hosting the first annual DARCOM SLRP workshop on 24-27 August 1982 at Chantilly, Virginia, and the assembly of a DARCOM SLRP Steering Group. The group was to shape a DARCOM SLRP Process and to institutionalize it via a DARCOM regulation. Another group task was to frame future scenarios which focused upon critical command issues and identified specific tasks for future efforts.

(U) Guidance. In June 1982, the division published the first DARCOM guidance. Relying on the Army Plan, this guidance was to provide DARCOM programmers with PPBES direction for all appropriations. The division planned to issue future guidance to include the DARCOM SLRP, still in development.

(U) Task Force. In March 1982, the division launched a task force to improve PPBES operations in DARCOM. The task force's goal was to establish, document, and put into effect a PPBES in DARCOM which would integrate and balance that Command's resource strategies. The task group's recommendations were to go forward to the Command Group in fiscal year 1983.

Information Resource Management Division

(U) This division was responsible for the provision of functional expertise for the development and use of information in support of the DARCOM program analysis function. The division addressed this mission with two major accomplishments: (1) it designed, developed, and implemented an interactive PARR data base. This was the first time DARCOM had successfully automated the process, enabling a faster and more efficient treatment of financial data; (2) the division began configuring a classified, $2.5 million computer center. This center would improve the accuracy and timeliness of information, and it would increase the PA&E analytical capability. The center would also offer aid in such areas as computer graphics and the latest data base management systems.[11]

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11 The source for the preceding directorate materiel was Dir. for Prog. Analysis and Evaluation, Annual Historical Review, FY 82.

# CHAPTER III

# MATERIEL DEVELOPMENT

## Introduction

(U) It was General Keith's concern, after assuming command of DARCOM, that the Command put the Army's limited resources where they would do the most good. To accomplish this, a program of intensified management was stressed DARCOM-wide. As part of the Command's general reorganization to strengthen and give increased visibility to productivity-enhancing aspects of the DARCOM mission, a number of organizational changes took place during fiscal year 1982.

(U) The Directorate for Development, Engineering and Acquisition was realigned. This Division provided headquarters staff management for all missile systems except VIPER and HELLFIRE; and all Air Defense Systems except STINGER. The Office of Product Improvement became a branch of the Program Integration Division in the Directorate for Development, Engineering and Acquisition. COL George Rostine was appointed Chief of the Division, and Mr. Stephen Rickey became Chief of the Product Improvement Branch.

(U) The Munitions Systems Division was organized on 14 October 1981.

(U) As a step consistent with the newly implemented Matrix Management System, the Office of Manufacturing Technology became the Directorate for Manufacturing Technology.

(U) In fiscal year 1982, the Ammunition Stockpile Reliability Program was publicized to ensure continued support and recognition. A series of articles was planned for publication to describe the functions and benefits to be derived from such a program.

(U) During fiscal year 1982, loans of Army materiel to foreign nations for the purpose of test and evaluation in connection with Research, Development and Standardization Programs were severely curtailed by the new loan provisions in PL 97-113, enacted December 1981. Under direction of the DARCOM Commander, diligent efforts were made to relieve the constraints of the restrictive interpretations, but at the end of fiscal year 1982, the loan program remained subject to compliance with PL 97-113.

## Aviation Systems

(U) Advanced Attack Helicopter (AH-64, APACHE). The production go-ahead for the APACHE Program was granted by DSARC III on 26 March 1982. The first production contract for 11 aircraft was signed on 15 April 1982.

(U) Light Helicopter Family (LHX). The Light Helicopter Family of Army Aircraft, or LHX, received support for a new start in fiscal year 1984. The LHX was expected to replace those UH-1, OH-58, AH-1, and OH-6 aircraft not replaced by the UH-60, AH-64, and AHIP. A special working group was formed to manage the LHX Program and prepare documentation needed between November 1982 and the date a Project Manager was assigned.

(U) Aircraft Survivability Equipment (ASE). The largest and probably the most significant contract in the history of aviation electronic countermeasures was awarded during 1982. The contract, a three-year multi-year, was awarded to ITT for the purchase of 600 ALQ-136 radar jammer systems for installation on AH-1 COBRAs. These radar jamming systems were state-of-the-art technology and were projected to be capable of defeating all known threat radar systems into the 1990s. It was expected that future contracts would equip the remainder of the COBRA fleet as well as the Army's newest attack helicopter, the APACHE.

(U) Remotely Piloted Vehicle (RPV). A decision review of the RPV program by the ASARC was held on 30 September 1982 to approve RPV acquisition. The program was approved and fully funded.

(U) AH-64 Combat Mission Simulator (AH-64 CMS). Contract for the AH-64 Combat Mission Simulator was awarded to Link Division, Singer Corporation in July 1982.

## Support Systems

(U) Nuclear, Biological, Chemical (NBC) Systems. During fiscal year 1982, the Nuclear, Biological, Chemical System made progress in several areas including new starts, transition from XD to ED, type classification, and a variety of miscellaneous programs.

(U) New Starts. Decontaminating aparatus, Diesel powered, skid mounted, XM18 was initiated as a 6.4 effort and was undergoing engineering design.

(U) GEONDS. Ground Electromagnetic and Optical Nuclear Detonation Detection System (GEONDS) was initiated as a 6.3B advanced development effort. The program was a restructured version of an earlier advanced development effort known as the Nuclear Burst Detection System (NBDS). XM77 Medium Altitude Proximity (MAP) fuze development effort was initiated to provide a proximity fuze capability for the XM877, 8-inch projectile.

(U) Transition from XD to ED. Weapons Access Delay System (WADS) was initiated in response to requirements from Europe. Transitioned from 6.2 to 6.4 in fiscal year 1982, the program was managed by PM, Nuclear Munitions.

(U) Type Classification. Simulator, Training, Chemical Agent, Simulant, M137 was type classified in March 1982. Also, the product improved smoke generator was type classified M3A4 on 30 September 1982. The PIP effort alleviated or eliminated many of the operational and maintenance problems existing on the M3AA. The M3A4 was expected to be phased into the Army inventory through an MWO effort in addition to new acquisitions during the period 30 September 1982 through 30 April 1985.

Terminations

(U) Development of XM770 Medium Altitude Proximity (MAP) fuze for the XM877, 8-inch projectile was terminated, as was the 6.3B advance development on the XM877, 8-inch binary projectile, because OSD zeroed both in the fiscal year 1984 budget.

(U) On 2 July 1982, the Chief of Staff, US Army, approved the recommendation to terminate the XM30 series mask program for the US Army. Both the Air Force and the Navy continued operational testing and scheduled a production decision by 31 December 1983.

(U) A follow-on Protective Mask Program was established to replace the terminated XM30 series mask. On 2 July 1982, the Chief of Staff directed DARCOM and TRADOC to assess the urgency of developing a new mask which would meet the Joint Operational Requirement and then establish and fund the Research and Development Program. The new mask, known as the MCMR (Minimum Change, Minimum Risk), was officially designated the XM40.

(U) Engineering development effort was terminated on the AN/VDR-1 Radiac because of unacceptable test results and a desire to incorporate state-of-the-art technology. Follow-on engineering development would go forward on AN/VDR-2.

(U) The XM49 Large Area Smoke System (LASS) was terminated in the advanced development phase on 30 October 1981 due to mechanical design deficiencies. The XM52 turbine engine smoke generator, which was also expected to have IR screening capability, was proposed as a replacement. Completion of the LOA for the XM52 was impending during the fiscal year.

(U) The XM14 Vehicle Mounted Decontamination Apparatus was terminated at the request of TRADOC. The decision was based primarily on logistics and cost impact of providing a dedicated 5-ton truck for the aparatus.

Tactical Wheeled Vehicles and Engineer Equipment

(U) In fiscal year 1982 development was initiated on a 3 Kw free piston Stirling cycle engine driven generator set.

(U) Type Classification. A commercial fire truck to replace the obsolete model 530-C was classified standard. Also, the Small Unit Support Vehicle (SUSV) was type classified standard in February 1982. Efforts were underway for a production award in early fiscal year 1983.

(U) Other Achievements. Studies were conducted for the Heavy Assault Bridge. Five concepts were evaluated using scale models. USAES and MERADCOM agreed that two concepts would be purchased during advanced development.

(U) Contract solicitations were underway to procure $1 billion in construction equipment. Solicitations were for four individual five-year multi-year contracts to procure 1902 loaders, 1803 graders, 1047 scrapers, and 1399 compressors. A waiver to Foreign Trade Agreement was made and the successful bidder could be required to produce in the United States.

(U) Initiated production of the 150 Kw regenerative gas turbine generator was set for PATRIOT.

(U) Fabrication and developmental testing were completed on a prototype petroleum hoseline and pipeline outfit.

(U) Plans were completed for development of a 3000 GPH Reverse Osmosis Water Purification Unit (ROWPU), with type classification projected for first quarter fiscal year 1985. Other plans were also completed for the development of a 1500 GPH Reverse Osmosis Water Purification Unit (ROWPU), with type classification projected for first quarter fiscal year 1986.

(U) A 4000 ampere turbine generator set was designed, constructed, and delivered for use with Navy mineclearing experiments.

(U) Engineering and development testing was completed on the 200 GPM Gas Turbine Engine Driven Refueling Pump Unit at Cold Regions Test Center, for the Arctic Fuel Dispensing Equipment System.

(U) Developmental testing was initiated of prototype 5,000 barrel collapsable fuel storage tanks for bulk fuel tank assembly at US Army Tropic Test Center, Panama.

## Munitions Systems

(U) The Munitions Systems Division was organized on 15 October 1981, with an initial manning of two officers and one civilian secretary. By the end of the fiscal year, nine civilian engineers were added and an additional secretary.

## Major Development and Acquisition Programs

(U) COPPERHEAD. During fiscal year 1982, this project was extremely active in that production items were not meeting the desired levels of reliability, and unit cost remained higher than planned. During the year the Project Office provided production data and information on production problems, furnished data on fielding the system with the Ground Laser Locator Designator, and analyzed test failures. In addition, 10 rounds were diverted to the Fire Integrated Support Team Vehicle operational test, and funding was projected in relation to alternatives for producing future rounds.

(U) VIPER. In fiscal year 1982, the VIPER was the new developmental item slated to replace the Lightweight Anti-armor Weapon (M72 LAW). The following activities were primarily related to funding and resources. For example, comments were provided on program costs and the testing program, data were provided on programmed production quantities and funding, information was provided on active contracts and the cost trail, a letter was prepared to the contractor on costs and performance, data were provided on fiscal years 1982-83 funding alternatives, military manpower was added to the Project Office, and impact statements were prepared on proposed funding cuts.

(U) LAW. A LAW program became active when the Army received a Norwegian proposal to develop a major product improvement of the M72A3 LAW. During the fiscal year, the Norwegian LAW proposal was evaluated. Comments were provided on the Norwegian LAW as an alternative to VIPER, as well as on a cooperative Norway/US development program, and the headquarters position on the Norwegian LAW proposal. In other areas, the Munitions Systems Division provided guidance on shipping LAW candidate weapons to test sites; tasked AMSAA to perform a LAW program evaluation and the building of an evaluation model. The Division evaluated a joint Army/Marine Corps LAW program.

(U) Tank Rounds. The Division continued to be involved with the development and acquisition of new rounds for both the 105mm and the 120mm tank guns. During the year, the Munitions Systems Division reviewed the XM797 round and its program for development, described the program for developing and acquiring the 120mm tank main armament, the XM829 round, the 120mm kinetic energy round, and 105/120mm tank ammunition. In addition, information was provided on Canadian/US joint development of tank rounds, and on a proposed 145mm tank gun.

(U) GUARDRAIL. GUARDRAIL was a remotely controlled airborne and ground based intercept and radio direction finding system designed to exploit HF, VHF, and UHF communications. Its major components were six airborne intercept platforms, a ground processing facility, and distributed communications terminals which provided ground tactical commanders near-real time communications intelligence. DARCOM assumed responsibility for this system in 1977, based on the recommendation of the Intelligence Organization and Stationing Study (IOSS).

(C) Product improvements were approved for GUARDRAIL which included pressurized aircraft (RC-12D), wideband data link, Improved Inertial Navigation System, automated signal classification and recognition, extended direction finding range, improved ground terminals, and all interoperable with Air Force. In 1982, action was initiated to integrate the QUICKLOOK II ELINT capabilities and the GUARDRAIL COMINT capabilities along with a precision emitter locater capability called the Coherent High Accuracy Airborne Locating System (CHAALS) into the RC-12D airframe. The resulting system was initially called GUARDLOOK, but was later renamed Improved GUARDRAIL/Common Sensor (GR/CS).

(C) Initial fielding of the Improved GUARDRAIL V was expected to be scheduled for USAREUR in 4th quarter fiscal year 1984. Initial Operational Capability (IOC) of GR/CS was scheduled for Korea in fiscal year 1986.

(U) TRAILBLAZER. TRAILBLAZER (AN/TSQ-114), the Army's primary tactical ground communications intelligence system, provided the capability to intercept and locate hostile communications. ERADCOM developed this system with funds provided by National Sound Agency (NSA) through the tactical crytologic program. It was initially fielded in 1980 as a Quick Reaction Capability (QRC) for the four divisions in Europe. A fifth QRC system was provided TRADOC for training.

(C) Production began in 1979, of four systems mounted in a tracked vehicle and featuring a quick erect antenna. In June 1981 Congress approved a supplemental appropriation to accelerate the improvement of these systems while still in production. Improvements included automatically acquiring and identifying signals of interest, obtaining locational data within one second, enhanced intercept range and improved interoperability with the All Source Analysis System (ASAS). As of year-end, FY 1982, fielding was expected to be between 1984-1986.

(U) QUICKLOOK. QUICKLOOK was the Army's airborne non-communication intercept and direction finding system, which was operational on an RV-1 aircraft in fiscal year 1982. Contractual efforts were initiated during the fiscal year to miniaturize the QUICKLOOK system into an Advance QUICKLOOK system which could be integrated with GUARDRAIL on a C-12 aircraft. This change would provide the Army with a Comm-Noncom intercept and location capability from the same aircraft.

(U) TEAMPACK. TEAMPACK (AN/MSQ-103A), the Army's divisional non-communications detection and location system, was scheduled to replace the AN-MLQ-24 system in fiscal year 1983. In fiscal year 1982 this system successfully completed its first article acceptance test and the follow-on evaluation by the US Army Intelligence and Security Board (USAINSB). The preplanned product improvements were also initiated to increase the height of the antenna, to add an automatic north seeking gyro, and to provide netting/CAC interface.

(U) Hand Emplaced Expendable Jammers (HE-EXJAM). In fiscal year 1982, the US Army Expendable Jammers (EXJAMS) program encompassed development of a family of Expendable Electronic Countermeasure (ECM) devices for jamming hostile tactical enemy communications and non-communications systems. These jammers, employed set-on or barrage ECM and would be delivered via artillery, unmanned aerial vehicles (UAV), or hand emplaced by soldiers.

(U) The Developmental and Operational tests on the HE-EXJAMS were successfully performed during mid-year 1982. The Developmental Test (DT) organization was the US Army Electronic Proving Ground (USAEPG) at Fort Huachuca, Arizona, and the operational test organization was the US Army Intelligence and Security Board (USAINSBD) at the same facility.

(C) A production contract was expected to be awarded in the third quarter of fiscal year 1983. Initial first year production would be approximately 2700 units. The IOC for HE-EXJAM was expected to be in the first quarter of fiscal year 1985.

(C) PIRANHA. In fiscal year 1982 PIRANHA was a ground-based vehicular mounted, communications jammer capable of jamming in the 20-76 MHz frequency range with continuous tuning from 20-53 MHz. This QRC with its 1,000 watts of jamming power would be provided to each VHF ECM team within the CEWI unit (6 per Bn) to be used with the 1/4 ton, AN/VRC-47 communications vehicle. Total procurement would be 227 systems.

(C) QRC-52 was funded in fiscal year 1982 at $4.2 million and fiscal year 1983 at $10.3 million. These funding levels insured procurement of 159 systems for USAREUR, Korea, FORSCOM, and 88 systems for the USAR.

(U) PIRANHA competitive contract RFPs were released on 30 July 1982. Review of contract bids was scheduled to be completed and final FFP contract let by 31 December 1982. EWL planned to conduct first article testing in August and begin system fielding during first quarter fiscal year 1984.

(C) STINGRAY. STINGRAY was an optical warning/optical jamming countermeasure system for the protection of armored combat vehicles. STINGRAY would use electronic and electro-optic techniques to counter threat weapon systems which used direct view optics or night sights for target acquisition and/or fine control. The system would deny or degrade the use of threat optic and electro-optic systems by directed-in band laser radiation. It would be an add-on system for the combat vehicle family and would operate in either a semi-automatic or manual mode.

(U) In first quarter fiscal year 1982, a STINGRAY demonstration program was conducted at Fort Knox with the system installed on an M60A3 tank for test purposes. TRADOC subsequently assigned proponency to the Infantry School at Fort Benning, Georgia, and directed that an operational and organizational plan be developed.

(U) On 27 September 1982, a contract was signed with Martin Marietta Orlando Aerospace. The contract was for 24 months with hardware delivery by June 1983. Deliverables would be one prototype system fully integrated on an M-2 IFV and one prototype system not installed.

(U) Vulnerability/Susceptability (VUL/SUSC). As a prerequisite to fielding new systems, DARCOM conducted extensive VUL/SUSC tests to insure these systems could operate as intended in a hostile Electronic Warfare (EW) environment. Deficiencies identified during these tests formed the basis for implementing Electronic Countermeasures to harden the system against the EW threat.

(U) DARCOM's principal activity responsible for VUL/SUSC testing was the Office of Missile Electronic Warfare (OMEW), a subordinate element of USA ERADCOM. Specific systems tested during fiscal year 1982 are listed below:

| Surface-to-Surface | Air Defense | $C^3$ |
|---|---|---|
| PERSHING II | PATRIOT | SINCGARS |
| MLRS TGW | PATRIOT GROWTH | HF RADIO |
| CSWS | STINGER POST | MICNS |
| HELLFIRE | I-CHAPARRAL | APS-94 ECCM PIP |
| TAD/PMVS | I-HAWK | TPQ-36 |
| COPPERHEAD | SGT YORK | TPQ-37 |
| ASSAULT BREAKER | ROLAND | PLRS |
| SADARM | SHORAD $C^2$ | PLRS |
| RATTLER | | TIDS |
| TOW-II | | PJH |
| TADS | | E-O DEVICES |
| FUZES | | |

(U) As a result of the VUL/SUSC testing, 200 improvements were implemented including 88 for the PATRIOT system.

## Command and Control

(U) Position Location Reporting System (PLRS). OT II was conducted during October-December 1981. Subsequently, a ten-month PEP/RAM contract was awarded to Hughes Corporation in March 1982 to correct technical deficiencies discovered in DT/OT II. A concept evaluation was successfully completed at the 9th ID High Technology Test Bed (HTTB) during the April-May 1982 period. A decision to proceed with production was reached at the PLRS ASARC III on 1 September 1982. Preparations were underway to execute a four-year multi-year production contract with Hughes in January 1983.

(U) Joint Tactical Information Distribution System (JTIDS). Full scale engineering development for the JTIDS Class II terminal with Singer-Kearfott continued throughout fiscal year 1982. A demonstration using the ASIT (Class I Terminal) to provide a direct link between the Air Force E-3A and the Army AN/TSQ-73 (Missile Minder) was successfully completed. Preparations were underway for a limited procurement of ten ASITS to provide this interim data link capability until production Class II terminals became available.

(U) PJH proceeded in accordance with the five-phase implementation plan. The Phase II demonstration to verify the interoperability of PLRS and JTIDS for data exchanging was successfully completed. The 37-month Phase III effort which included interface capability with selected battlefield systems, complete development of the enhanced PLRS user units and initial net management software capability was started in March 1982 with Hughes.

(U) Field Artillery Tactical Data System (FATDS). Testing was successfully completed on the Battery Computers Systems (BCS). A decision was made during production In Progress Review (IPR) to continue production and to deploy the BCS by first quarter fiscal year 1983. The Advanced Field Artillery Tactical Data System (AFATDS) entered into a contract for the advanced development of the Communications Control Systems (CCS). The Tactical Fire Direction System (TACFIRE) software update (Version 4) was completed and deployed. The Fire Support Team Digital Message Device (Fist DMD) successfully completed the FDT&E test at Fort Sill, completing the final phase of the DMD Product Improvement Program.

(U) Regency Net. At the request of the Under Secretary of the Army, the Regency Net procurement schedule was accelerated early in the year. The Statement of Work and the Technical Specification were successfully coordinated with the Army, Navy and Air Force in August 1982. A FAD-I priority was approved for the program in the fourth quarter of fiscal year 1982.

(U) Single Channel Ground and Airborne Radio Sub-System (SINCGARS). There were three development contractors for the SINCGARS. One was terminated early in the year. The program was accelerated in the second quarter under an initiated action from the Under Secretary of the Army. Funds were provided in the latter part of the year for the accelerated program. Also, the program was directed by Headquarters Department of the Army in the fourth quarter to terminate the SINCGRS aircraft radio and to modify the Air Force aircraft radio for Army requirements.

(U) SHORAD $C^2$. Under pressure from the HASC staff, the program was restructured in October 1981 with concept definition conducted in-house. The 23 September 1982 DA IPR approved the development of a new objective sensor for SHORAD $C^2$ system and the requirement of accepting input data from an airborne sensor.

(U) Satellite Communications Light Transportable Terminal, AN/TSC-86. In fiscal year 1982, the AN/TSC-86 was part of a family of shelter-mounted highly transportable SHF TACSATCOM terminals produced for Defense Satellite Communications System use. The basic TSC-86 was an RF sub-system capable of a maximum of four simultaneous transmit and receive carriers. It was equipped with an integral eight foot diameter antenna with limited steering range. For greater capacity it was also configured with a 20 foot diameter antenna (AS 3199). System mobility was provided by M-82 mobilizers with appropriate prime movers.

(U) An FPI contract was awarded to RCA Corporation for six terminals in September 1977 as an add-on to a contract for TACSATCOM terminals. Production of the six terminals was completed in November 1981. Qualification tests were completed in March 1982. At yearend 1982, these systems were undergoing test and acceptance onsite.

(U) Medium Satellite Communications Terminal, AN/GSC-39. In fiscal year 1982, the GSC-39 medium terminal consisted primarily of nomenclatured items of the standardized AN/FSC-78 SHF heavy fixed terminals. These terminals could be configured in fixed installations or in vans for transportable operation. Each transportable terminal required two vans for the electronics and separate vans for maintenance and supply. These terminals would provide an electrical interface to the user at 70 or 700 MHF and were capable of communications with Frequency Division Multiple Access (FDMA) spread spectrum multiple access (SSMA) and time division multiple access (TDMA) modulation techniques.

(U) An FFP (NDI) contract for production of the GSC-39 was awarded to Comtech Laboratories in March 1978. Twenty-one GSC-39 terminals were being procured and integrated with the OE-222/G 38 foot antenna sub-system for the Defense Satellite Communications System (DSCS). The GSC-39 would replace TSC-54 and MSC-46 terminals in the DSCS. Four terminals were delivered in fiscal year 1981, six in fiscal year 1982, and six were scheduled for fiscal year 1983.

(U) State-of-the-Art Medium Satellite Communications Terminal. In fiscal year 1982, the State-of-the-Art Medium Terminal was expected to consist of commercial off-the-shelf components redundant in all critical areas and with built-in fault isolation to ensure traffic availability in excess of 99.9 percent. The monitor, control, and status functions would be consolidated in a computerized control console allowing unattended operation. These medium terminals would be delivered in fixed and van configurations and would use the 38 foot diameter OE-222 antenna.

(U) An FPI (NDI) contract was awarded to Ford Aerospace in September 1982 for production of 39 terminals. Deliveries were scheduled to begin in September 1984 and continue through April 1988. Deployment of these terminals for the Defense Satellite Communications System was scheduled to begin September 1984 and end August 1987.

(U) Jam Resistant Secure Communications (JRSC) Satellite Earth Terminal. In fiscal year 1982 the Jam Resistant Secure Communications (JRSC) Satellite Earth Terminal (AN/GSC-49) were expected to use the USC-28 jam resistant modulation station in operation with the Defense Satellite Communications System (DSCS) SHF satellite. The terminal would be produced in fixed and transportable configurations providing voice, data, and Secure Voice Graphic Conferencing (SVGC). The JRSC was designed to provide critical $C^2$ user to user jam resistant survivable communications.

(U) A firm fixed price (NDI) contract was awarded to Harris Corporation for the GSC-49 in September 1980. All components in the JRSC terminal were developed under previous DSCS and TACSATCOM projects. Harris experienced technical problems resulting in a 9 month schedule slip announced in 1982. The contractor first article test was scheduled for April 1982 with the first eight systems scheduled for delivery in November 1982.

(U) Reconstitution Radio. In fiscal year 1982, the Reconstitution Radio Project (D149-35) was a joint Services project to refurbish damaged or destroyed digital microwave radio communications sites in the Digital European Backbone (DEB) system. It was also anticipated that the Reconstitution Radios would be used to replace damaged or destroyed microwave radio sites in other areas of the DCS system.

(U) The Reconstitution Radio Project was in the RDT&E phase for producing two advance development models (ADM). These two ADMs (eight radios and associated modems) would prove the equipment engineering design and would be fielded in Europe for trial purposes. Following successful field trials, a procurement contract would be placed to fulfill operational requirements.

(U) Also during the fiscal year, funding was approved for the ADM. A CPIF contract for the two ADMs was expected to be awarded during the second quarter of fiscal year 1983.

(C) The Reconstitution Radios were expected to be fielded in Europe during fiscal year 1985 and fiscal year 1986.

(U) SB-3614 Tactical Telephone Switchboard. In fiscal year 1982, the SB-3614 was a 30-line automatic switchboard developed by the Sylvania Systems Group of General Telephone and Electronics under contract to the US Marine Corps for use by the Marines, the US Army, and the Canadian Armed Forces. It was type classified standard by the US Army after extensive testing and was established as the standard US military field switchboard for tactical operations.

(U) A product improvement to provide a tandem autovon capability was approved in June 1982. The switchboard featured three-digit dialing where the user, using a telephone directory, identified how to route his call. In a directly connected string of switchboards, the user would be required to dial a three-digit number on entering each SB-3614 in the string, after receiving dial tone, to get the desired called party. The product improvement would provide automatic tandem call routing, five levels of precedence vice two and a number of other features.

(U) Fiber Optics Transmission System - Long Haul (FOTS-LH). During the fiscal year FOTS-LH was expected to provide a fiber optic communication cable transmission capability to replace the twin metallic coaxial cable in use by combat, combat support, and combat service support units. This would enable the Army in the field to achieve superior communications, and higher reliability, while decreasing installation time.

(U) The engineering development contract was awarded to ITT, Nutley, New Jersey on 23 July 1982. The preliminary design review was held 12-13 October 1982 and the critical design review was held 14 December 1982.

(U) Single Channel Objective Tactical Terminal (SCOTT). SCOTT, a single channel EHF satellite communications terminal with Demand Assigned Multiple Access and high anti-jam capability, was nearing completion of its Advanced Development Phase. Fielding was scheduled for calendar year 1987.

(U) The SCOTT program was accelerated to meet the CY87 fielding schedule; consequently, the Engineering Development Phase was eliminated. Plans during the fiscal year were to release a Request for Proposal to industry in calendar year 1983 for a small production quantity.

Battlefield Automation Management

(U) Computer Resource Management. During fiscal year 1982, the Ada, high order computer language, approached the completion of its development. The language was delivered to CECOM for testing in September 1982, and was expected to be accepted by the Defense Department in 1983. A software technology initiatives program was initiated by OSD with active DARCOM participation in the planning phase. The program would receive initial funding in fiscal year 1984. The Military Computer Family (MCF) program continued in advanced development (AD). International Business Machines (IBM), one of the four AD contractors, was terminated due to a project cost overrun. The AD models were to be delivered in January 1983.

(U) Army Command and Control System (ACCS). The ACCS was composed of the wide variety of equipment and systems which constituted the Army's Command and Control capability. By managing the ACCS as a system of systems, the Army would improve interoperability among battlefield automated systems, develop and implement a total ACCS systems design and be able to field a balanced command and control capability. The Director, DE&A, was the Program Director for the ACCS Systems Engineering effort. Major events supported in this effort included Command and Control System Program Review (C2SPR) presentation to the Vice Chief of Staff; completion of functional analysis and configuration item identification for Air Defense and Fire Support functional segments; seven interface specifications; and a revision to the ACCS Systems Engineering Implementation Plan. The first cohesive Command Control Communications and Computers (C4) Architecture briefing was presented to top Army management as a joint TRADOC/DARCOM effort.

(U) Post-Deployment Software Support (PDSS). The PDSS effort had been proceeding with active involvement from the DARCOM centers at ARRADCOM, AVRADCOM, CECOM, ERADCOM, and MICOM. This involvement included active participation in the bimonthly meetings, chaired by HQ, DARCOM as well as the generation of "white papers" of interest to all the centers. These issues included: Software Acceptance and Release Procedures, Software Configuration Management, Software Verification and Validation, and Interoperability between PDSS centers.

(U) The PDSS Concept Plan was conditionally approved in May 1981, and was expected to be revised during fiscal year 1983. The revision would reflect the increased role that TRADOC played as the Combat Developer. Other pertinent events include the development of a Draft Charter and Memorandum of Agreement among DARCOM, TRADOC, and the Computer System Command, which would establish more definitive guidelines regarding the roles played by each of the major commands. Also, a contract was let with Teledyne Brown Engineering (TBE) on "In-Theater Post Deployment Software Support". This was a 16 month contract, under the supervision of the TRADOC Logistics Center, which would be used to determine how Software Support would be performed during wartime conditions.

## Programs and Budget

(U) The Fiscal Year 1984-1988 RDTE Program. The US DARCOM Five-Year RDTE Program for fiscal year 1984-1988 was submitted to the Deputy Chief of Staff for Research, Development and Acquisition, Department of the Army, in November 1982. Upon completion of the POM cycle in May 1982:

Dollars in Thousands

| FY 83 | FY 84 | FY 85 | FY 86 | FY 87 | FY 88 |
|---|---|---|---|---|---|
| 3,125,267 | 3,518,083 | 4,304,225 | 4,507,448 | 4,624,811 | 5,666,728 |

(U) The Deputy Chief of Staff for Research, Development, and Acquisition, Department of the Army, with other DA Staff, reviewed the DARCOM program and changed it as of 9 September 1982 as shown:

| FY 83 | FY 84 | FY 85 | FY 86 | FY 87 | FY 88 |
|---|---|---|---|---|---|
| 3,148,041 | 3,571,598 | 4,443,713 | 4,697,919 | 4,752,008 | 5,744,942 |

(U) In January 1983, the fiscal year 1984 program would be presented to the Congress.

(U) Program Control. The fiscal year 1982 RDTE Program Apportionment Request, September 1982 was $3,077.0 million. As of 30 September 1982 the RDTE Program released to DARCOM totaled $2,748.4 million.

(U) Management Systems and Procedures. The practice of limiting face-to-face reviews with major subordinate commands, project managers (PMs) or laboratories to one a year was continued in fiscal year 1982, and the seventh annual RDTE Program Review was conducted in the May-July timeframe of 1982. The seventh review gained great support from the DCSRDA staff, DCSOPS, and TRADOC headquarters. The practice minimized the number of program reviews requiring field participation/preparation both to this headquarters and to Headquarters DA. It further reduced the number and time duration of meetings required between DARCOM and DA staff members required to resolve differences toward establishing an Army RDTE Program.

(U) The DRCDE-P continued to provide support to the School of Logistic Science of the Army Logistic Management Center (ALMC) by providing guest speakers and technical assistance for the cost estimating for engineers, Decision Risk Analysis, and Research and Development management courses being conducted at ALMC.

(U) Modernized Army Research and Development Information System (MARDIS). In an effort to modernize the RDTE reporting system, DA developed an automated Research and Development Information System. The system was based on a Program Data Form (PDF) for data capture, which replaced the manually prepared forms supporting the budget formulation, POM building, phase scheduling, and apportionment processes. MARDIS became operational with the submission of data support of the fiscal year 1981 budget. The MARDIS technical milestone reporting requirements for DARCOM were merged with the Integrated Logistic Milestones Reporting System operated by the Directorate for Readiness. This action eliminated one quarterly reporting requirement. A special report was prepared for the Office of Manufacturing Technology that drew their requirements for producibility engineering data from the MARDIS file. Also, a special report was prepared to identify these RDTE funded product improvement programs. Another report was prepared to satisfy the interchange of dollars among DARCOM commands. A fiscal years 1985-1989 POM submission of MARDIS data was used to support the HQDA preparation of Congressional descriptive summaries, the POM building process, and the basic input to the HQDA RDA data base.

(U) Program Execution. Program data to support the 1982 RDTE President's Budget was prepared in accordance with Zero Base Budgeting procedures directed by the President.

(U) RDTE Program Directives. The fiscal year 1982 RDTE funding document (DA Form 1323) was received in October 1981 from the Comptroller of the Army. After receipt of funds, program directives (DARCOM Form 1006) were released to the field to cover the approved plan for each project and/or task. These Forms 1006 were forwarded to the Finance and Accounting Division, Comptroller, DARCOM, along with Schedule I and DARCOM Forms 20 requesting issuance of funds to the major subordinate commands and laboratories.

(U) Program directives were issued throughout the year for the fiscal years. These program directives were used to reprogram, issue released funds and withdraw unobligated funds excess of requirements. An average of approximately 12 program directives were issued each working day. In addition to this, numerous program revisions for each subordinate command were processed within this Headquarters and approvals returned to the subordinate commands.

(U) Project SCORECARD. In fiscal year 1982, DARCOM subordinate commands, independent corporate laboratories, project and product managers again operated under the concepts and principles of incremental funding.

(U) SCORECARD (Obligation Status) reports began in October 1978 on a monthly basis. Subordinate commands and independent activies reported their unobligated balances of the fiscal year 1981 carryover program as well as their fiscal year 1982 unobligated balances at project level. The status of reimbursable programs was also reported. As of June 1982, this status of funds was reported on a semi-monthly basis.

(U) The total direct unobligated balance for fiscal year 1982 as of 30 September 1982 was $128 million (based on the $2,738.4 million released to the field). The total direct RDTE program for fiscal year 1982 released to DARCOM as of 30 September 1982 was $2,748 million of which $2,738.4 million was released to the field. The following table reflects the direct fiscal year 1982 program and percent of obligation achieved for each major subordinate command and the separate activities and HQ DARCOM as of 30 September 1982.

| COMMAND | PROGRAM ($M) | % OBLIGATED |
|---|---|---|
| ARRADCOM | $357.8 | 97.5 |
| AVRADCOM | 351.5 | 98.0 |
| TSARCOM | 11.5 | 74.1 |
| ERADCOM | 276.9 | 94.7 |
| CECOM | 293.9 | 98.2 |
| MICOM | 479.2 | 97.2 |
| TACOM | 296.3 | 85.9 |
| TECOM | 361.4 | 97.4 |
| MERADCOM | 50.8 | 98.4 |
| NLABS | 35.3 | 98.0 |
| OTHER DARCOM | 233.7 | 89.0 |
| | 2,738.4 | 95.3 |

(U) In fiscal year 1982, through the SCORECARD reporting system, this headquarters continuously assessed the progress of each command toward meeting an obligational goal established by the subcommand and/or activity.

## Program Integration

(U) The Integration Branch (DRCDE-PII) was created at the time of the Headquarters DARCOM realignment. The mission and responsibilities of the Branch included some elements formally performed by the Office of Program Management and newly defined functional support to the Weapon Systems Management concept. This branch provided coordination and integration of planning, programming, budgeting and execution of resources. It served as a focal point for the dissemination of directives, policy, and other types of information to the various echelons of command, and provided data resources for the prioritization of program execution, manpower alignment, program scheduling and trade-off effects on other concerns. In addition, the office managed, directed, and coordinated reporting systems such as Program Management Control System (PMCS), System Acquisition Reports (SARs), and Program Monthly Status Reports (PMSRs); and provides coordination and scheduling of Command Reviews and Periodic Information Briefing (PIB) pre-briefs.

(U) During fiscal year 1982, the Integration Branch became fully operational and almost fully staffed. The distribution of duties and responsibilities among the branch members was in total consonance with the headquarters Matrix Management Concept initiated during the realignment. The branch was divided into teams, with each team being responsible for a major weapon system category. Individual team members were further responsible for a broad range of functional areas. Team members served as Weapons System Support Officers (WSSO) and were appropriately assigned to Weapon System Management Teams (WSMaT).

(U) Throughout the year, the Integration Branch responded to innumerable questions resulting from the Cost Discipline Advisory Committee, implementation of the Carlucci Initiatives concerning planning, programming, budgeting and execution, and the materiel acquisition process. The Branch assisted the Weapon System Managers and the Force Modernization Office in preparing the Army Modernization Information Memorandum, and in the follow through efforts of preparing and analyzing the Modernization Information Resource Submission. In addition the following areas, by functional areas, represented important issues which were dealt with by the program Integration Division.

(U) Matrix Management Support. The total mission of this branch was dissected and assigned to specific individuals. These persons were the source of expertise for a specified functional area and a specified weapon system. This branch also provided support to functional areas that could encompass a broad range of weapon systems including any or all of the subordinate commands.

(U) System Acquisition Reports (SAR). This branch successfully transitioned all duties and responsibilities associated with SARs from the Office of Program Management to the Integration Branch. The transition was completed without interruption or discord in the reporting process.

(U) Monthly Program Status Report (MPSR). The Vice Chief of Staff approved a recommendation of the Army Cost Discipline Advisory Committee to institute the subject report. The initial submissions by the HQDA designated program managers were received May 1982. Headquarters coordination, staffing, and written assessments were provided by this branch. This reporting system would continue until each of the 24 systems came under the PMCS reporting system.

(U) Program Management Control System (PMCS). PMCS was a major DARCOM initiative to provide improved program control and cost discipline. PMCS began in 1981 and was refined in 1982. Originally, 38 weapon systems were designated to come under PMCS. That number was reduced to 37 with the deletion of five systems and the addition of four. Two systems were approved for PMCS reporting by DA during the fiscal year. DARCOM Circular 11-1 defined PMCS. The Circular was revised and transmitted to the field on 27 September 1982. The goal was to bring all systems under PMCS by the end of calendar year 1983.

(U) Publication of DARCOM Regulation 1-34. DARCOM Regulation 1-34 (Command Review of Program/Project/Product Managed Program) was published in May 1982. The regulation provided guidance to all PMs for preparation of Command Review briefings.

(U) Multi-Appropriation Programming. Although the OMA (Operations and Maintenance, Army), procurement and RDTE appropriation program and budget requests continued to go through separate channels, some progress was made toward the goal of multi-appropriation programming. DCSRDA agreed to accept RDTE MARDIS data on manpower coded in the HQDA PDIP structure. The CG, DARCOM tasked DEA to conduct several multi-appropriation analyses, reflecting a growing concern for multi-appropriation programming and a reflection of the fact that a multi-appropriation analytical capability existed.

(U) Executability Assessment. Several weapon system programs in the fiscal year 1984-1988 POM slipped significantly from program profiles in the fiscal year 1983 President's Budget. The DCGRDA expressed concern

about the impact of these slippages if the POM programs were sustained and carried forward in the fiscal year 1984 Army Budget Estimate. The CG indicated that he wanted an Executability Assessment of each slipped program. Accordingly, RDTE and APA profiles for each of the systems were evaluated for executability and individual assessment sheets provided to the Command Group. After review by the CG, the package was forwarded to ODCSRDA.

(U) Impact of Continuing Resolution Authority (CRA). The Chief of Staff of the Army asked the ARSTAF to assess the impact of the fiscal year 1983 CRA. ODCSRDA requested DARCOM to assist in a review of the RDTE and Army Procurement Appropriation programs. DARCOM provided input through the two separate appropriation channels after WSSM coordination. A summarized version of the review was provided to the CG by memorandum through the DCGRDA.

(U) Integrated Logistic Support (ILS). In May 1982, LTG Hardin, DCGMR, directed a detailed review of the ILS process in DARCOM. Accordingly, a study group, under the leadership of MG Welch, Director, SMT, was established to examine the system, identify its weaknesses, and provide recommendations for improvement. The final report from the study group was presented to the CG on 29 September 1982.

(U) Expansion of Monthly Program Status Report. ASA(RDA)/DCSRDA approved a DARCOM proposal to begin a series of briefings on non-major systems which were not included in the written monthly program status reports submitted and briefed to DA. The intent was to focus on those low visibility, non-major systems which were relatively high dollar consumers. The plan provided for informal, information type briefings to ASA(RDA)/DCSRDA of one hour duration, on one topic per month, presented on a one time basis, at a time other than the usual monthly program status reports. The briefing program was initiated in October.

## Product Improvement

(U) Realignment. On 15 October 1981, as part of the Headquarters DARCOM Realignment, the Office of Product Improvement ceased to exist as an independent entity and became the Product Improvement Branch of the Program Integration Division of the Directorate for Development, Engineering and Acquisition. The personnel who comprised the Technical Management Division of the Product Improvement Office were transferred to other offices in the DEA Directorate while Program Control Budget Division personnel comprised the Product Improvement Branch. Colonel George Rostine became Chief of the Program Integration Division and Mr. Stephen Richey became Chief of the Product Improvement Branch.

(U) Joint Reviews. The Product Improvement (PI) Program Joint Reviews for the fiscal year 1984-1988 Program Objective Memorandum (POM) and the fiscal year 1984 budget were hosted by DARCOM in December 1981

and June 1982 respectively. As a result of these reviews, 912 PIPs were reviewed at the POM Joint Review, held on 7-10 December 1981. Of this number, 799 were approved, 37 were conditionally approved, 46 were completed, 16 were cancelled, four were deferred pending resubmission at the next review, one was withdrawn prior to the review by the PIP proponents and nine were disapproved. The 836 approved and conditionally approved PIPs had total fiscal year 1984 dollar requirements of $2.289 billion.

(U) In addition, the PI Program Joint Review for the fiscal year 1984 Budget was held from 15-17 June 1982. A total of 893 PIPs were reviewed, of which 804 were approved, 13 were conditionally approved, 54 were cancelled, three were deferred, three were withdrawn by the PIP proponents and 16 were completed. The total fiscal year 1984 dollar requirements for the 817 approved and conditionally approved PIPs was $2.421 billion.

Product Improvement Program (PIP)

(U) Management. After assuming command of DARCOM, General Keith repeatedly expressed concerns about whether the Command was putting the Army's limited resources where they would do the most good. Accordintly, he challenged the Product Improvement Branch to intensify its management of the PI Program to achieve more efficient scheduling of PIP applications and to eliminate PIPs which were only marginally cost effective. In response to the CG's challenge, this branch initiated a number of actions in fiscal year 1982 to intensify overall PIP management.

(U) A DARCOM General Officer Review Board (GORB) was initiated. The first DARCOM GORB was held on 11 June 1982 prior to the June 1982 Product Improvement Program Joint Review. In attendance were the Director, DEA; the Director, SMT; plus representatives from the DARCOM Comptroller's Office and the Procurement and Production Directorate. The objectives of this review were to increase the level of DARCOM management attention in the PIP approval process; review selected PIPs; approve/disapprove proposed PIPs as highlight issues for the Product Improvement Joint Review; and assess the value/scope of DARCOM General Officer Review of PIPs and the appropriate format/scope. A total of 39 selected PIPs were reviewed at this meeting. They comprised all the new/late start PIPs submitted in the second quarter, fiscal year 1982 PIP submission in addition to significantly revised PIPs having large dollar increases and/or substantial scope increases. The general opinion was that the review was well conducted and was valuable in informing the management of proposed new product improvements. It was planned to hold a General Officer Review Board before each Joint Review.

(U) In July 1982, the Director DEA sent a letter to the major subordinate commands/Program Managers requesting a vigorous review of all approved and conditionally approved Product Improvement Program (PIP) initiatives. This action was in response to the CG DARCOM's concerns for closer scrutiny of PIPs. The intent of this review was to identify unwarranted PIPs for cancellation based on the following criteria:

DA determined the end item would be removed from the inventory earlier than previously planned.

A technological breakthrough obviated the improvement.

The PIP did not provide a quantum jump in performance but rather offered only an incremental change in performance that did not substantially enhance operational effectiveness.

The PIP experienced funding decrements or remained in an unfunded status which jeopardized the efficient use of funds--on hand and/or those programmed.

The PIP had technological problems which extended the planned engineering effort for a period that caused the improvement to be questionable.

The PIP, based on evaluation of changed parameters, was no longer cost effective.

(U) In response to this, the PIP proponents recommended a total of 25 PIPs for cancellation. The analysts in the Product Improvement Branch, using the same criteria, recommended an additional 26 PIPs for cancellation. The final decision on these proposed cancellations would be made at the November 1982 Product Improvement Program Joint Review.

(U) Preplanned Product Improvement - $P^3I$. In early 1981, the Deputy Secretary of Defense began a process to significantly improve the defense acquisition system. This effort included a decision to make major changes both in acquisition philosophy and the acquisition process itself. These decisions became known as the Carlucci Initiatives and were known in fiscal year 1982 as the Defense Acquisition Improvement Program (DAIP). One of the initiatives in the DAIP was Preplanned Product Improvement ($P^3I$). $P^3I$ was defined as planned future evolutionary improvement of developmental systems for which design considerations were effected during development to enhance future application of projected technology and/or those improvements planned for ongoing systems which went beyond the performance envelope (engineered with RDTE funds) to achieve a needed operational capability consistent with Mission Area Analysis and the RDA Long Range Plan. In July 1982, Major Phil Miller of the Product Improvement Branch was designated US Army POC for $P^3I$.

(U) Significant accomplishments in the implementation of $P^3I$ during fiscal year 1982 included:

A DARCOM/DA/TRADOC developed definition of $P^3I$ along with interim guidance on $P^3I$ application was provided to material developers and program managers.

The structuring of $P^3I$ into major system new starts became a requirement with the rewrite of AR 70-1.

Procedures for structuring $P^3I$ into ongoing systems were developed as an aid to accomplish product improvement.

Procedures were established to report cost/saving avoidance resulting from structuring $P^3I$ into the acquisition process.

A DARCOM implementation plan was developed for direct assistance through educational briefing/assistance visits to all MSCs and program managers. This effort was scheduled for completion in January 1983. When completed, this assistance would have been provided to more than 600 personnel from all areas of the material acquisition process.

Guidance for the structuring of $P^3I$ into the system acquisition process was incorporated in the rewrite of the DARCOM/TRADOC Materiel Acquisition handbook.

More than $525 million in cost savings/avoidance were obtained as a direct result of $P^3I$.

## Development, Engineering and Acquisition

### Acquisition Assessment

(U) Under the DARCOM Headquarters Realignment, the Acquisition Assessment Division was established to independently identify system acquisition problems, determine causes of these problems, and recommend corrective actions. To close the loop, the acquisition policy function was subsequently added to the Division's mission to retrospectively review assessments and match management practice against policy to determine why and where management went wrong. The results of this review form the basis for revised acquisition policy or other appropriate action.

(U) The Acquisition Assessment Division completed a two-week assessment to determine which Major Subordinate Command (MSC) should manage the Counterobstacle Vehicle and the Robotic Obstacle Breaching Assault Tank Programs.

(U) This Division managed an assessment support contract with the Jet Propulsion Laboratory (JPL) on the AN-TMQ-31 Meteorological Data System's readiness to enter production. It also managed an assessment support contract with JPL on the M724, M577, and XM762 fuzes to determine the ability of the industrial base to meet mobilization goals. In addition, the Division conducted an independent assessment of the Combat Vehicle Heading Reference Set (CVHRS) to determine the system's readiness to enter production. This Division managed a large cost analysis/resource team to analyze and recommend a resources strategy framework and concomitant data base management system for resources planning, direction and control. Another task managed by the Division was the Ballistic Missile Defense (BMD) Program Office to which they provided support through a planning and definition effort and follow-on study. They developed and provided a detailed resource estimate to BMD for the fiscal year 1983-1988 timeframe.

(U) The Acquisition Assessment Division also managed an independent study performed by the Army Materiel Systems Analysis Activity (AMSAA) on the M1 IR Signature and Thermal Sights.

(U) They revised and initiated staffing of AR 70-1, Army Research, Development and Acquisition. The Division also developed and issued a revised policy on the staffing of requirements documents and In Process Review (IPR) packages.

Program Management

(U) The combined fiscal year 1982 programs managed by BFVS-PMO totaled $1,142 million, of which $918 million or 80.4 percent was obligated at fiscal year end. These resources covered three appropriations as shown below.

| Program Activity | Program Authority ($000) |
|---|---|
| R&D | |
| IFV/CFV (644616.258) | $103,133 |
| PIP - LRP (643633.164) | 1,053 |
| PIP - Veh (243735.332) | 4,227 |
| Multiple Launch Rocket Sys (694000.564) - MLRS | 6,651 |
| Other Reimbursables (694000.258) | 931 |
| | $115,995 |

| Program Activity | Program Authority ($000) |
|---|---|
| PAA | |
| Infantry Fighting Vehicles (IFV/CFV) | $856,600 |
| 25mm Gun (M242) (3211.16) | 31,300 |
| 25mm Ammo | 102,273 |
| Firing Port Weapon (3211.16) | 19,400 |
| Other Reimbursables | 4,776 |
| | $1,014,349 |
| OMA | 11,863 |
| TOTAL | $1,142,207 |

(U) A Development Acceptance (DEVA) IPR was held on 23 June 1982, which resulted in the recommendation to type classify Standard, the 25mm, Dummy, XM794, metal. The recommendation was approved by the Director, D&E, DARCOM on 16 July 1982.

(U) External Reviews. A Government Acceptance Office (GAO) Task Force conducted an extensive study beginning in September 1981 and concluding in November 1981, on BFVS cost growth and the planned acquisition of vehicles. The Project Manager's Office (PMO) responded to several GAO questionnaires which related to the announced OSD objective to reduce costs and improve the acquisition process. No formal GAO report was submitted; however, a list of recommendations was issued to the Program Manager.

(U) On 22 September 1982, the GAO began a review of the cost estimating procedure used in DOD. The review, to include the BFVS, involved the Baseline Cost Estimate (BCE), Selected Acquisition Reports (SAR), and other reports was expected to continue to February 1983.

(U) The Army Audit Agency (AAA) made a Cost Discipline Advisory Committee (CDAC) review of BFVS during the period 1-23 October 1981. The overall objective was to determine why a better estimate of the production costs was not available sooner. AAA also sought to determine how inflation rates applied to the BFVS production program. Their findings were contained in Audit Report No. HQ82-701, dated 28 October 1981.

(U) The AAA conducted a review of the BFVS Baseline Cost Estimate during the period 26 July through 27 August 1982, in response to the Under Secretary of the Army's 29 April 1982 memorandum to the Director of the Army Staff. The review objective was to determine if the most current information was used to prepare the BCE, and whether the data used were supported and reasonable. AAA's findings were indicated in Audit Report EC82-703, dated 30 August 1982.

(U) A Defense Audit Service (DAS) team conducted a special review at the PMO on 27 January 1982 to investigate BFVS' requirements for Mercury-Cadmium-Telurid (forward looking infrared (FLIR) detection materials). The auditors were briefed on the development and acquisition program and the projected FLIR requirements.

(U) DARCOM Program Management Control System (PMCS) documentation was submitted by PMO, BFVS to DARCOM on 30 April 1982 for staffing and comment. Recommended changes were incorporated in preparation for two scheduled briefings to formally approve the PMO's PMCS submission. On 6 August 1982, DARCOM Directors were briefed on the BFVS Program. The DARCOM Commander was briefed on 16 August 1982. Pending DA's approval of the PMCS submission, the PMO was submitting a Monthly Program Status Report (MPSR), commencing with the May 1982 report. This MPSR highlighted program problems and accomplishments and summarized cost/schedule performance on selected contracts.

(U) Vehicle fielding to TRADOC and DARCOM MRCs began in April 1982. Eighty vehicles were delivered to user sites by the end of fiscal year 1982. Materiel Fielding Plans were finalized for both FORSCOM and USAREUR and a signed Materiel Fielding Agreement with FORSCOM in September 1982 completed a major milestone. Two FORSCOM fielding conferences were conducted in February and September 1982, which brought the developer and user communities closer together in support of initial fielding. The third USAREUR Fielding Conference was conducted in March 1982.

(U) A letter contract was awarded to FMC Corporation on 23 December 1980 for production of 172 IFVs, 128 CFVs, and 32 MLRS Carriers at an estimated value of $399,312,000. In February 1982, the fiscal year 1981 contract was definitized in the amount of $365,400,000. The fiscal year 1981 supplement for 100 IFV/CFVs was added by modification to the fiscal year 1981 contract on 30 April 1982 in the amount of $102,100,000.

(U) A contract was awarded to FMC Corporation on 9 April 1982, for production of 328 IFVs, 272 CFVs, and 68 MLRS Carriers in the amount of $605,080,000. The contract also included the fiscal year 1982 requirements for peculier special tools, training support packages, classroom peculiar spare parts, suspension restraint kits, and prepositioned test support packages.

(U) A production contract was awarded on 9 January 1980 for a total of 3,128,000 rounds of the 25mm M790 series family of ammunition. The award was a fixed-price-incentive, three-year, multi-year contract to Ford Aerospace and Communications Corporation. The second program year was funded for 1,212,000 rounds of ammunition on 9 January 1981. The third program year was funded in January 1982 for 1,231,000 rounds of ammunition.

(U) The vehicle second source program was cancelled, based on the decision by the Under Secretary of the Army.

Missiles and Air Defense

(U) When the Directorate for Development Engineering and Acquisition was realigned at the beginning of fiscal year 1982, the Missiles and Air Defense Division was formed from the former Air Defense Team and Field Artillery Team. In fiscal year 1982, the division provided headquarters staff management for all missile systems except VIPER and HELLFIRE, and all Air Defense Systems except Air-to-Air STINGER.

(U) Testing was completed satisfactorily on STINGER-POST with a production decision ASARC expected in 2Q fiscal year 1983.

(U) A development contract for CHAPARRAL-ROSSETTE was awarded to Ford Aerospace in September 1982. Mini ROC was approved for a towed version of CHAPARRAL. Ford Aerospace developed and demonstrated a prototype.

(U) DA directed termination of ROLAND procurement with 27 fire units and 595 missiles. This single battalion was assigned an air defense role with the Rapid Deployment Force. Operation of the battalion by the National Guard set a new precedent.

(U) Pershing II Integrated Flight Test Program was begun in June 1982. The production contract for the fiscal year 1982 buy of missiles of related ground support equipment was let to Martin-Marietta Aerospace Corporation in June 1982.

(U) MLRS was the first system put under Project Management Control System (PMCS) receiving final DA approval in June 1982. Initial production deliveries of rockets began in May 1982. A multi-year RFP was released to Vought in July 1982 for the first five years of full production. The MLRS-TGW let five contracts plus one at no cost to international consortiums to produce concept definition/international program management studies. Based on these contractor studies that were presented in Koblenz, FRG in June 1982, the international SWG began developing a best technical approach.

(U) The joint tactical missile system program was initiated, combining the Army's Corp Support Weapon System (CSWS) and the Air Force's Conventional Standoff Weapon (CSW). The draft CSWS LOA was completed for final staffing.

(U) During fiscal year 1982, the TOW 2 FSED was essentially completed. The second production contract was awarded and the Performance Demonstration Test for Acceptance of Initial Production hardware was initiated.

(U) The first production radar and engagement control system for PATRIOT was accepted by the Army on 1 June 1982. Launchers, missiles and other equipment was accepted on 18 June 1982. Soldier training on production hardware began 26 July. Component Design Confirmation/ System Design Confirmation tests on production hardware started on 27 September 1982. Completion was expected at the end of January 1983. Special Program Review to ASARC Principals was scheduled 17 March 1983.

(U) During 1982, progress continued toward fielding the HAWK II and III PIPs for countering advanced threat and improving HAWK's RAM performance. Following the January 1982 Army decision to extend HAWK's life indefinitely, the HAWK Evolution Study was completed at MICOM and Army planning was accomplished to incorporate additional improvements in the late 1980s.

(U) In response to HQDA requests, briefings were provided to the ARSTAF/OSD on a proposed antitactical missile (ATM) program starting in fiscal year 1983. The program would include an interim ATM system to satisfy the near term requirement and a future ATM directed against the future tactical missile threat.

(U) Affirmative decision to produce the SGT York System (DIVAD) was provided by the DSARC III on 27 May 1982, and the Ford Aerospace and Communications Corporation was awarded a production contract for the quantity under the Option I. The system was type classified standard. The PM SGT York was also given responsibility to develop acquisition strategies for the Lightweight Air Defense System (LADS). The LADS, as envisioned in fiscal year 1982, was a derivative of the SGT York System.

Ground Combat System

(U) After completion of the Operational Test and a number of the engineering tests were conducted with the improved M16A1 rifle, the US Marine Corps (USMC) concluded that performance was equal or better than the standard M16A1 rifle. On 16 September 1982, the USMC approved the rifle for Service use, and designated it the M16A2. The USMC funded a procurement action through ARRCOM for approximately 27,000 M16A2 rifles.

(U) On 10 August 1982, the USAIS recommended to HQ TRADOC that all future rifles procured for the Army be the improved M16 rifle as tested by the USMC. To assist in establishing an Army position regarding the M16A2, DA tasked DARCOM to conduct a Cost and Logistic assessment of adopting the M16A2. Alternatives to be costed included continued use of standard M193/M190 ammunition and adoption of the NATO Standard M855/ M856 ammunition for use with the M16A2 rifle. The completed assessment was expected at HQ DARCOM in November 1982.

(U) The requirement for the Division Support Weapon System (DSWS) was established by the MENS for Heavy Brigade/Division Weapon System, which was approved in late 1980. This MENS established the need for improvements in four major areas: responsiveness, survivability, terminal effects, and RAM--to cope with Warsaw Pact Surface Threat elements.

(U) Headquarters Department of the Army and Fort Sill positions relating to rocket/missile concepts for DSWS were that they were unsuitable for the close support role. When these positions were stated in August 1981, the decision was made to use cannon alternatives to fulfill brigade fire support obligations. Yet to be resolved at yearend 1982, was how to cover the area from maximum cannon range out to 70km, mid-range, and beyond.

(U) In May 1982, the DSWS Special Study Group (SSG) was initiated, with the Director at Fort Sill. The SSG Director would manage the DSWS program from activation of the SSG through the ASARC I, scheduled for March 1983. With support from a Study Advisory Group (SAG), the SSG would complete a Cost and Operational Effectiveness Analysis (COEA) which would be instrumental in selection of alternative concepts for future development.

(U) Six candidate concepts were considered for DSWS: Baseline M109E4; three versions of M109E4 product improvement; a newly developed, casemated, full-tracked, auto-loading, air-transportable, self-propelled howitzer; and a product-improved SP70 howitzer (foreign). In fiscal year 1982, the COEA relating to these concepts was on-going, and would culminate in recommendations to the ASARC in March 1983.

(U) The comprehensive evaluation program for the Personal Defense Weapon, XM9, 9mm, was completed on 29 January 1982, for 9mm pistols submitted by four bidders. After reviewing data which were presented, the Source Selection Activity concluded that it was not possible to make an award because the submitted samples had failed to meet the essential requirements of the Joint Service Operational Requirement (JSOR) as contained in the procurement solicitation. In connection with cancellation of the solicitation, the House Appropriations Committee Survey and Investigative Staff members, on 8 March 1982, visited the test sites and installations engaged in 9mm pistol program activities. The results of this investigation criticized the Army for mismanagement and persistent foot-dragging, which was reported in a 4 May 1982 letter to the Secretary of Defense. An updated Acquisition Plan was prepared and forwarded to DA for approval on 3 August 1982.

(U) Armored combat vehicle crews dressed in Nuclear, Biological, Chemical (NBC) overgarments were susceptible to considerable heat stress due to the overgarments insulation. Tests demonstrated that in an NBC

environment, the combat vehicle crew became ineffective within 30 minutes due to heat stress. It was found the heat stress could be eliminated or reduced by the use of microclimate cooling equipment.

(U) Cooling equipment for armored combat vehicles was under development by a number of Program Managers/DARCOM Laboratories. Efforts by the Under Secretary of the Army to accelerate development and fielding of microclimate cooling systems highlighted an urgent need to develop a DARCOM comprehensive plan. On 5 April 1982, DARCOM assigned the TACOM Commander the single manager responsibility to develop an integrated plan for armored vehicles cooling systems. The TACOM plan was expected to provide for a single manager responsibility capable of providing a coordinated NBC/Cooling Acquisition Strategy for all armored combat vehicles.

(U) The Fire Support Team Vehicle (FISTV) was basically the integration of two major systems and several subsystems which were either already fielded, in production, or under development. The M113A2, Armored Personnel Carrier (APC) and the ITV M901 Weapon Station, comprised the major systems, while the subsystems included the following:

The North Seeking Gyrocompass (NSG), Targeting Station Control and Display (TSCD), a Four Channel Intercom, and a 200 Amp Alternator were being developed as part of the FISTV program.

The Ground Vehicle Laser Locator Designator (G/VLLD), was in the production stage in fiscal year 1982. This was developed by PM, HELLFIRE/Ground Laser Designators, MICOM. The PM, FISTV funded the development of a G/VLLD engineering change to enable it to be operated remotely from within the FISTV.

The TOW 2 Night Sight Equipment Set (AN, UAS-12), managed by CECOM was in production and was already fielded.

The Digital Message Device (DMD) (AN/PSG-2A), managed by CECOM, was used in the FISTV to transmit digital target coordination. A new four channel DMD was being developed by PM Tactical Fire Direction System/Field Artillery Tactical Data Systems (TACFIRE/FATDS).

(U) In February 1982, type classification was approved by Headquarters Department of the Army for the Squad Automatic Weapon (SAW)--the 249 machine gun, 5.65mm ball ammunition M855, 5.56mm tracer ammunition M856, and 5.56mm metallic belt cartridge link M27. On 28 September 1982, ARRCOM awarded a two-year multi-year contract for 13,203 M249 weapons and 16,015,000 rounds of M855/856 linked

ammunition for a contract value of $32,062,000 to include both Army and US Marine Corps requirements for the two years.

(U) Some technical problems were encountered in the start-up of CONUS production of M856 tracer ammunition at the Lake City Army Ammunition Plant. These problems caused a delay in projected deliveries, and a decision was made to allow fiscal year 1983 planned deliveries to project into the fiscal year 1984 funded delivery period.

(U) In fiscal year 1982, the US Army evaluated the United Kingdom (UK) 81mm Mortar System for possible procurement. The primary advantage to be gained was the increased range of the 5,600 mile maximum, which was approximately 1,000 meters greater than the 81mm mortar in use at that time.

(U) Acquisition strategy for the Improved 81mm Mortar included fielding when sufficient HE, Smoke, and illumination rounds were available. Development of an on-shore HE ammunition capability was to be rapidly established. IOC was scheduled for second quarter fiscal year 1987, with the UK mortar, HE ammunition and existing US Illimination and Smoke rounds.

(U) The M1 Abrams Tank. In March 1982, the Detroit Arsenal Tank Plant (DATP) joined with the Lima Army Tank Plant (LATP) in producing M1 tanks. Total M1 tank production as of 30 September 1982 was 612. It was planned to achieve a combined production rate of 60 tanks per month by November 1982.

(U) Block improvements to the M1 tank included the development testing of the 120mm gun, 105 and 120mm ammunition, and integration of these items as well as improved armor and hybrid NBC, with a microclimate conditioning system for crew cooling.

(U) Four M1 Abrams tank battalions were issued to US Army Europe (USAREUR) armor units, three of which participated successfully from a readiness viewpoint in the 1982 Reforger exercise. The second battalion at Fort Hood was being issued tanks and associated maintenance and crew transition training. Preparation for fielding a third battalion was underway in fiscal year 1982.

(U) Division Support Weapon System (DSWS). The requirement for DSWS was established by the Mission Element Needs Statement (MENS) for Heavy Brigade/Division Weapon System, which was approved in late 1980. This MENS established a need for improvements in four major areas--responsiveness, survivability, terminal effects, and RAM to cope with Warsaw Pact Surface Threat elements.

(U) The HQDA and Fort Sill position was that rocket/missile concepts for the DSWS were unsuitable for the close support role. When this was stated in August 1981, the decision was made to use cannon alternatives to fulfill brigade fire support obligations. The problem of covering the area from maximum cannon range out to mid-range and beyond was yet to be resolved in fiscal year 1982.

(U) Mobile Protected Gun System (MPGS). By memorandum of 15 September 1981, the Deputy Secretary of Defense directed that the US Marine Corps' Mobile Protected Weapon System (MPWS) and the Army's Mobile Protected Gun - Far Term (MPG-F) programs be combined in a single effort to develop one vehicle satisfying the needs of both Services. A joint project managed program was established called MPGS, having an Army PM located at TACOM.

(U) This project manager was responsible for the development, test, acquisition and logistical support of the system which included the vehicle, main gun and ammunition. The MPGS would be a prime candidate for the Rapid Deployment Force, the Army's light divisions, and the amphibious forces of the Marine Corps. The MPGS differed from the Light Armored Vehicle (LAV) program in that it was oriented toward the 1990s versus the 1980s LAV. The PM was responsible for joint development of the 75mm Medium Caliber Anti-armor Automatic Cannon (MCAAAC), which was one of the candidates for the vehicle's main armament system.

(U) During fiscal year 1982, a Memorandum of Agreement (MOA) on the program was signed between DARCOM and the Marine Corps and a DARCOM/TRADOC Letter of Agreement (LOA) executed. In third quarter fiscal year 1982, nine contractors were engaged by the Army to study the dual Army/USMC requirements and develop vehicle concepts incorporating the combined needs of the two Services. Studies were also initiated involving ARRADCOM, AMSAA, BRL, TRASANA, and the Naval Surface Weapons Center (NSWC) to determine the effectiveness of the 75mm MCAAAC versus the M68, 105mm cannon for the MPGS main gun. At year end the two Services were well along on a Joint Statement of Requirements (JSOR) for a common vehicle. The major problem going into fiscal year 1983 was the reduction in funding for the year and a zeroing of fiscal year 1984 funds. Unless rectified, the project would have to delay the start of the Demonstration/Validation phase which was scheduled to begin in fiscal year 1983. Alternate program schedules were being proposed to DA to cope with the budgetary limitation; however, DARCOM was on record as recommending termination of the project until an adequate and continuous funding profile could be programmed by Department of the Army.

(U) Light Armored Vehicle (LAV) Program. In fiscal year 1982 the US Army and US Marine Corps were engaged in a joint project to develop a family of highly mobile, readily deployable, light armored vehicles for forward area use. The project had a USMC PM and was located at TACOM with an Army civilian staff. The projected users of the vehicle would be the Army's light divisions and the USMC amphibious forces. The primary vehicle of the family was the LAV-25 which had a three-man crew and mounted the 25mm Bushmaster gun as its main armament. Both Services would also buy quantities of the Light Armored Recovery Vehicle (LARV). The Light Armored Squad Carrier (LASC) variant, which was peculiar to Army requirements, was deleted.

(U) The program, which was basically nondevelopmental, ran competitive tests on four candidate vehicles from three contractors. Award was made to General Motors of Canada for their entry of an 8x8 20,000 pound (curb weight) vehicle using the GM MOWAG chasis.

(U) Fighting Vehicle Systems. During the fiscal year a total of 106 production IFVs and 56 CFVs were delivered by FMC and accepted by the Government. A total of 20 MLRS carriers were also delivered. M242/25mm gun deliveries as of 31 October 1982 totaled 370. The Hughes Helicopters' production was delayed from July 1981 to September 1981 due to manufacturing start-up problems. However, no impact on vehicle deliveries occurred due to the offsetting FMC strike.

(U) During the first program year, 685,000 rounds of 25mm ammunition were produced. As of 31 October 1982, 83,591 rounds had been delivered for the second year program. An initial production contract for 1,600 M231 Firing Port Weapons was completed in May 1982. Second year production for 4,000 weapons was expected to be completed in December 1982.

(U) Also during the fiscal year, initial production contracts for STE and DSESTS were successfully delivered. Fiscal year 1982 requirements were on contract with no anticipated delivery problems. System technical support contracts were awarded to both RCA and Chrysler. The second production contracts of fiscal year 1982 for combined purchases of 102 each STE-M1/FVS test sets for BFVS and 20 each DSESTS-M1/FVS test sets for M1 were awarded in October 1981.

(U) First Article Test-Government (FAT-G) was performed using three M242 guns. Over 90,000 rounds were fired. All tests were satisfactorily completed, and all guns met the performance requirements, except that one gun failed the rain test. This failure resulted in an improvement of the sealing in the control box connector which had allowed water entry. CPT-1 was performed using three M242 guns. Over 28,000 rounds were fired. The guns met performance requirements, except that all three failed the rain test. This failure was attributed to the feed select solenoid. The APDS FAT-C was conducted between 1 June and 30 July 1982, at the contractor's test site with approximately 560 rounds fired. A task force, including members of the Project Manager's Office, ARRADCOM, and Ford Aerospace and Communications Corporation (FACC), investigated the case separation problem. No conclusions had been reached at year end fiscal year 1982.

(U) Initial Production Test (IPT) began on schedule at Aberdeen Proving Ground on 15 June 1982. Seven production vehicles, six IFVs and one CFV were used in the conduct of this test. Five vehicles ran 6,000 RAM miles, firing 12,000 25mm RAM rounds each. One vehicle was used to conduct automotive performance tests, and one to conduct weapons performance tests. After a slow start due in part to Test Measurement and Diagnostic Equipment (TMDE) vehicle interface problems, testing was progressing satisfactorily in fiscal year 1982, and was expected to be completed on schedule on 15 April 1983.

(U) A Vulnerability Test was conducted to determine the protection provided by the BFVS against conventional weapons to include the effects of small arms attack, artillery shell fragmentation and mine blast. This test began on 15 November 1980 at Aberdeen Proving Ground, and was completed on 7 November 1981. The test results determined that the vehicle conformed to the Materiel Need (MN) requirements.

## International Research, Development and Standardization

(U) Mission. During fiscal year 1982, the mission of International Research, Development and Standardization was to manage the Army's participation in international programs for multilateral, structured standardization of systems materials, processes, procedures, concepts and doctrine, and bilateral cooperative research, development and standardization of weapons/materiel systems and related technologies.

(U) Programs. The major international programs managed by the International Research, Development and Standardization Division in fiscal year 1982 included: Data Exchange Agreement (DEA); Professional Scientists and Engineers Exchange; Cooperative Research and Development; US-Canadian Defense Development Sharing; Multilateral Research and Standardization Agreements; International Materiel Evaluation; Loans of materiel for cooperative R&D; and Army Staff Talks.

### Major Activities

(C) Data Exchange Agreement (DEA). A total of six new DEA Annexes were established in fiscal year 1982 including one with Sweden, two with Israel, and three with Korea. At the end of fiscal year 1982, DARCOM had monitorship of 226 DEA Annexes involving 16 countries. One DEA Annex was terminated. DARCOM also participated in 30 DEA Annexes sponsored by the US Navy and 17 DEA Annexes sponsored by the US Air Force.

(C) Professional Scientists and Engineers (S&E) Exchange. During the past fiscal year, there were 26 placements within this program. Korea placed 10 and Germany placed 11 S&E personnel within the US at various R&D installations, while Israel and Egypt each placed one. The US placed one S&E to Israel and two in Germany.

(U) Cooperative Research and Development. The cooperative R&D program reflected those joint projects which the Army had underwa in fiscal year 1982, with NATO allies and other friendly nations. At the end of fiscal year 1982, forty Memoranda of Understanding (MOU) were in force, and four in various stages of negotiation.

(U) US-Canadian Defense Development Sharing. In addition to a number of meetings which were held during the fiscal year 1982 period, a contract was negotiated for an intrusion detection system project.

(U) Multilateral Research and Standardization Agreements. These Multilateral Research and Standardization Agreements included North Atlantic Treaty Organization (NATO), American-British-Canadian-Australian (ABCA) Standardization Agreement, Air Standardization Committee (ASCC), the Technical Cooperation Program (TTCP), Advisory Group on Aerospace Research and Development, NATO Military Agency for Standardization, ABCA Standardization Program. The NATO Standardization Agreements (STANAGs) included 64 which were processed, 23 ratified, and five which were not ratified. ABCA Quadripartite Standardization Agreements (QSTAGs) included 16 which were processed and seven ratified. Air Standardization Committee (ASCC) Air Standards included 14 Air Standards which were processed, two ratified, and two which were not ratified. One ABCA Navy Standards was processed.

(U) At the end of fiscal year 1982 there were 1,785 Multilateral Research and Standardization Agreements in force.

(U) The Technical Cooperation Program (TTCP) (ABCA Countries). Under the program, there were numerous subgroup - technical panel action groups and key technical area meetings. Much data has been exchanged within the scope of TTCP.

(U) The NATO Small Caliber Ammunition panel continued its meetings in fiscal year 1982. The development of the test manual on the Standardization of 5.56mm ammunition for NATO continued as a top priority item. The United States was expected to ratify this STANAG when the test manual was completed and agreed upon.

(U) The Rationalization of Design Principles, Tests and Safety Criteria for Explosive Materials and Explosive Stores (NATO AC/310) groups continued to meet to develop STANAGs aimed at standardizing the test and design principles for explosive materials, thus eliminating costly retesting, and providing countries with a simple way of evaluating explosive materials for various uses.

(U) American-British-Canadian-Australian (ABCA) Armies Standardization Program. During fiscal year 1982, 27 Quadripartite Working Groups (QWG) met. Of these meetings, the US was host country for QWG on Electrical Power Sources (EPS).

(U) International Materiel Evaluation (IME). In April 1981 the Directorate for Development Engineering and Acquisition (International R&D and Standardization Division) assumed management responsibility for the US Army IME program. This program provides for technical and/or operational evaluation of foreign weapons systems and technologies to determine their potential use to DOD components. The Army IME program was funded under the OSD PE65111D, and was part of OSD administered Foreign Weapons Evaluation Program.

(U) Loans of Army Materiel to Foreign Nations. During the reporting period, 42 loans for US equipment, 17 loans for foreign equipment and four loan extensions were processed. Since January 1982, all loan programs of Army materiel for the purpose of test and evaluation (T&E) in connection with Research, Development and Standardization Programs were severely curtailed by the new loan provisions in PL97-113 (enacted in December 1981). The loan provisions of Chapter 6, PL97-113 were interpreted to effectively preclude the US Army's past practice of loaning Army materiel to Allies and friendly countries under NATO, ABCA, MWDDEA and other cooperative agreements. The implications of new loan policy were far-reaching, and at extremes could potentially be in direct conflict with the guiding principles embodied in international agreements and treaties which existed in fiscal year 1982.

(U) Under Commander DARCOM direction, diligent efforts were made to seek corrective measures that would relieve the constraints of the restrictive interpretations of the intent of PL97-113. To support these efforts, a staff study was prepared on the Impact of PL97-113 on the United States Army International Cooperative Research, Development and Standardization Programs. The study was released in August 1982. Despite all efforts, at the end of fiscal year 1982 the loan program remained subject to compliance with Chapter 6, PL97-113. At year end fiscal year 1982, no equipment had been released after 1 January 1982, under the new loan provisions of PL97-113.

## Product Assurance and Test

(U) The DARCOM Directorate for Product Assurance and Test was involved in a variety of activities during the 1982 fiscal year. The Materials Testing Technology (MTT) Committee was convened to review the results of the technical working groups. A testing needs survey of major subordinate commands was conducted to determine the overall testing needs of DARCOM for fiscal years 1983-1985. The American Society for Quality Control (ASQC) created a committee to develop and review generic standards in the field of quality assurance. The Quadripartite Working Group on Proofing, Inspection and Quality Assurance (QWG/PIQA) was established as a means to enable ABCA Armies to recognize each other's methods and responsibilities, and to accept standards, one for the other.

(U) The Systems Evaluation and Test Division of DRCQA was formed on 1 October 1981, to handle the test function, previously the prime responsibility of the Directorate for Development, Engineering, and Acquisition. Also during the fiscal year, the Army continued to serve as the lead Service in the area of Procurement Quality Assurance Policies and Procedures. In this capacity, DARCOM provided the chairmanship of the Defense Acquisition Regulation (DAR) Subcommittee on Procurement Quality Assurance (PQA).

(U) An independent executive management evaluation of the DARCOM Product Assurance and Test Program was conducted from March through August 1982 by the retired Vice Chief of Staff of the Army, General Walter T. Kerwin. He headed a review team consisting of industry and retired military executives. Finally in the area of the DARCOM Ammunition Surveillance Program, several initiatives were pursued to better train specialists, manage, publicize, and report such programs as the Ammunition Stockpile Reliability Program (ASRP), Toxic Chemical Munitions, Conventional Munitions, and Missiles Programs.

Quality Engineering

(U) Materials Testing Technology (MTT) Program. The MTT Committee was reconvened in fiscal year 1982 to review the results of the technical working groups review of the fiscal year 1983 MTT program. The fiscal year 1983 program was expected to be funded for $4.6 million. A testing needs survey of the MSCs, conducted to determine the overall testing needs of DARCOM for FY83-85, was expected to determine possible MTT and Manufacturing Methods and Technology (MMT) projects, RDT&E projects and projected overall funding needs. The testing needs survey was completed in third quarter fiscal year 1982. The results of the survey were being reviewed by AMMRC at yearend fiscal year 1982, and were to be published in second quarter fiscal year 1983.

(U) Testing Technology. Funds were obtained for testing technology programs in fiscal year 1983. DARCOM had previously funded 6.1 basic research in test technology and had a materials testing technology program, but coherent 6.2/6.3 R&D program funds did not exist. A testing needs survey, conducted in fiscal year 1982, identified $18 million of R&D needs. In fourth quarter fiscal year 1982, $500,000 of late fiscal year 6.2 funds and $500,000 of fiscal year 1983 funds were identified toward meeting this need. The funds were programmed under a reliability for readiness task and were to be managed by AMMRC.

National Standardization

(U) American National Standards Committee (ANSI) Z-1 on Quality Assurance. The Z-1 Committee on Quality Assurance was an ANSI Committee, with the American Society for Quality Control (ASQC) holding the Secretariat. It was created to develop and review generic standards in the

field of quality assurance having general appreciation, and it included developing appropriate standard guidelines of a general nature. It also provided advice to other standards activities which covered quality assurance for specific areas, and interfaces with appropriate international standards activities. Preparation of individual product of industry standards was not included in the scope of this committee.

RSI Standardization

(U) Quadripartite Working Group on Proofing, Inspection, and Quality Assurance (QWG/PIQA). The QWG/PIQA was established under the provisions of the Basic Standardization Agreement of 1964, and the Quadripartite Standard Operating Procedures (QSOP). This working group was managed by the Washington Standardization Offices (WSO), and it was established to identify and recommend means of establishing common or compatible proofing, inspection, and quality assurance procedures, techniques, terms, and definitions to enable American, British, Canadian and Australian Armies to recognize others' methods and responsibilities and to accept each other's standards. The organizational structure and method of operation of QWG/PIQA differed from other QWGs, except QWG/ES. Both of these QWGs worked on a project system, with project officers appointed to each project within each Army. QWG/PIQA project officers were responsible for producing the detailed work of the QWG, initially under information exchange conditions to establish the feasibility of standardization.

(U) The ninth QWG/PIQA was hosted by Australia at Watsonia Barracks in Melbourne from 16-24 November 1981. The results achieved at the meeting were a substantial contribution to the standardization aims of the group. Action was initiated to terminate 11 projects when their work was completed. Two projects were suspended and 13 new projects initiated. Ten of the new projects dealt with quality assurance of combat vehicles which provided for standardization of quality engineering design practices, test procedures, data collection and analysis methodology, QA for selected major sub-systems, and definition of terms. Two of the new projects dealt with the field of quality assurance of electronic systems for such vital areas as software quality control system requirements and the testing and acceptance of software.

(U) At the ninth QWG/PIQA, 65 recommendations were made which resulted in 217 scheduled milestone dates. At the end of fiscal year 1982, 185 milestones had been completed (48 percent). The goal was established for 85 percent of the scheduled milestones to be completed in order that the 10th QWG/PIQA meeting be held.

(U) NATO AC/250 Group of National Directors. The purpose of NATO AC/250 Sub-Group IX Defense Equipment Reliability and Maintainability Assurance was to provide a focal point for the exchange of information and experience on equipment availability (Reliability and Maintainability) between the various NATO Nations and Agencies and to assist in the establishment of rationalized common policies, procedures and methods in this field.

(U) NATO AC/250 Sub-Group X on Quality Assurance of Software developed, staffed and coordinated AQAP-14. If no major objections were voiced, AQAP-14 was expected to be recommended for ratification in March 1983.

System Evaluation and Test

(U) The DARCOM reorganization of 1981 had a significant impact on the Product Assurance and Test Directorate. The DARCOM Matrix Management initiative assigned new and expanded duties to the Directorate. The test function, previously the prime responsibility of the Directorate for Development, Engineering and Acquisition, was transferred to Product Assurance. A new division, titled the Systems Evaluation and Test Division was formed on 1 October 1981, with a "core" of five individuals (four engineers and one quality assurance specialist) reassigned to the division from the existing PA staff on 1 December 1982. COL James R. Hill became the director of the division. He initiated recruitment actions for 14 additional personnel to complete the staffing of the new division.

(U) The mission assigned to the System Evaluation and Test Division was to develop policy and program guidance, direct and control the life cycle test and evaluation of DARCOM materiel. The Division had responsibility for matters pertaining to development test design and evaluation functions for materiel acquisition, testing and test facilities, including direction to the US Army Test and Evaluation Command (TECOM) and the US Army Materiel Systems Analysis Activity (AMSAA). They participated in post-fielded systems reviews and assessments and the materiel release of all new systems in accordance with DARCOM-R 700-34.

(U) Weapons System Matrix Management Team (WSMAT) support responsibilities immediately became the prime thrust of the Division. Each engineer was assigned an initial complement of systems to monitor and oversee.

(U) With the establishment of the DARCOM Direction ($D^2$) thrusts, the Division became responsible for two principal initiatives. These were to improve Product Assurance and Test with tasks: improve Test and Evaluation, improve PA&T Acquisition Management, improve PA&T Management, and improve Resources Management.

(U) Systems Assessment. The systems assessment regulation, DARCOM-R 702-9, was revised in fiscal year 1982, in an attempt to increase user involvement by increasing the number of disciplined reviews as they required user participation. A second objective was to combine the post fielding review program with the system assessment program. During fiscal year 1982, the division completed system assessments on 23 systems.

(U) Materiel Release Program. Fiscal year 1982 saw significant increases in the number of materiel release actions approved as well as continued emphasis on program improvements. There was a total of 213 full or conditional materiel release actions approved during the period, which was an increase of 11 percent over the release activity for the previous average year base line of 190. Also, fiscal year 1982 saw a 73 percent program performance for materiel releases forcast for release to releases accomplished--an eight percent increase over the fiscal year 1981 performance of 65 percent.

(U) Conditional Releases. The number of conditional releases approved during fiscal year 1982 saw an increase of five over the previous average three year base line of 57. However, when compared with the increased activity for the fiscal year, the percentage of conditional releases to total releases saw a one percent reduction from the previous average three year base line of 30 percent.

(U) An assessment of the urgency for conditional releases showed that 19 (31 percent) of the 62 releases in fiscal year 1982 were to support training or for purposes other than a tactical release to the field Army. These 19 releases were in support of RDF training and TRADOC Advanced Instructor Training (AIT) or to support production and delivery of major end items, for example, AN/APS-94F radar surveillance set urgently required by PM-SEMA for assembly into new production of OH-1D MOHAWK aircraft.

(U) ILS shortfalls accounted for 71 percent of the major conditions precluding full release with design/technical, testing and safety issues comprising the 29 percent balance. For each conditional release approved, a get well plan addressing the conditions precluding full release was developed and all release actions were considered suitable and supportable for their intended purpose.

(U) Conditional Code-D (CC-D) Materiel. At the start of fiscal year 1982, there were 31 lines ($90.0 million) of government accepted materiel in depot storage delayed from issue due to design, testing or Integrated Logistics Support (ILS) shortfalls. The number of lines of CC-D materiel increased to 38 ($102.9 million) during the first quarter. However, because of intensive management, the next three quarters saw a steady decrease of materiel in this category. At the end of fiscal year 1982, there were 14 lines of government accepted materiel in CC-D delayed from issue worth, $46.9 million.

(U) Materiel Release Program Automation. In mid fiscal year 1982, efforts were initiated to automate the forecasting and performance results of the DARCOM Materiel Release Program. At the close of the fiscal year, programming and prototype testing of the system had been completed and minor program errors identified. Implementation of the ADP system in HQ DARCOM was scheduled for first quarter fiscal year 1983. Implementation by all DARCOM materiel release program participants was scheduled for second quarter fiscal year 1983.

## Test and Evaluation

(U) With the realignment of HQ DARCOM for the Weapons System Matrix Management concept, the test and evaluation function was transferred from the Directorate for Development, Engineering and Acquisition to the newly created System Evaluation and Test Division of the Directorate for Product Assurance and Test. The mission of this function remained essentially the same, but some of the testing responsibilities of other divisions of the Product Assurance Directorate were added to this division.

(U) A policy letter was issued to DARCOM MSCs and Project Managers implementing the Carlucci initiative on front-end funding for test hardware. MSCs and PMs were directed to assure that they had planned and programmed for adequate numbers of prototypes for testing. A series of meetings were held to initiate a uniform policy within the command for the testing of components for qualification. DARCOM Regulation 700-38, Test and Evaluation Incidents Disclosed During Testing, was revised to bring it in line with the organization and policies. It was reissued as DARCOM-R 70-13. A companion regulation was published to cover application of an automated test data collection system, DARCOM-R 70-14, Common Test Data Collection System.

(U) Common Test Data Collection System (CTDCS). Progress was made during the fiscal year in the application of CTDCS to the collection of test data on major systems. Tests were initiated using CTDCS on the Multiple Launch Rocket System at White Sands Missile Range and Aberdeen Proving Ground (APG) and on the Sergeant York Air Defense System at APG. Several system changes were made to improve the output report formats and the ease of access to the data. When it was fully developed and utilized, CTDCS would provide an automated system for collecting, storing, and reviewing test incident data on large weapons systems during their entire development cycle. It would facilitate reviewing and projecting RAM performance of a system as it progressed through development.

(U) High Energy Laser System Test Facility (HELSTF). In 1976, DOD and Congress directed construction of a facility at White Sands Missile Range (WSMR) to be used in testing demonstration laser systems, and at some later date, prototype and actual weapons. Since that time, planning and coordination culminated in the ground breaking for the facility on 25 March 1981. Construction of the basic facility (test control center, fluid supply system, pressure recovery systems) and test cell #1 reached 90 percent completion. Test cell #1 would support the Navy's SEALITE program. Designs were completed for follow-on construction work for the multi-purpose chemical laser (MPCL) and auxiliary beam director (ABD). Efforts aimed at the integration of instrumentation and equipment in HELSTF were reaching a peak, and would continue for the following year.

(U) Test Facility Modernization. Inadequate funding over the past several years resulted in accelerated deterioration of TECOM facilities: buildings, test structures, roads, airfields, and laboratories. The TECOM overall real property acquisition cost was approximately $600 million. Replacement cost would be many times that figure. To preclude replacements and to protect investments, more attention had to be given to the maintenance and repair programs and facility modernization. Funds for reduction of maintenance and repair were fenced with an aim of reducing the backlog to a manageable level. Also, in fiscal year 1982, headquarters DARCOM directed TECOM to develop a modernization plan for each of its proving grounds with emphasis on Dugway Proving Ground, Yuma Proving Ground and Electronics Proving Ground. Plans for modernization of Dugway Proving Ground were expected to be completed by first quarter fiscal year 1983.

(U) The US Army Electronics Proving Ground located at Fort Huachuca, Arizona, accomplished work on project Modular Automated Integrated Systems Interoperability Test and Evaluation (MAINSITE). The purpose of MAINSITE was to modify the electronic proving ground facilities and instrumentation to insure that the communications, command control and intelligence $C^3I$ systems being developed or produced perform their intended functions according to specifications, and interact with other systems within the framework established by the requirements document, logistics support plan, and various other requirements. MAINSITE would exercise computer based $C^3I$ systems with both message traffic and radio frequency interference environments. Most of the electronic systems which were being developed by or for DARCOM would go through MAINSITE for development testing. The program approval and contract were anticipated by the end of first quarter fiscal year 1983.

Quality Assurance Improvements in the Defense Acquisition Program

(U) The Army continued to serve as the lead Service in the area of Procurement Quality Assurance Policies and Procedures. DARCOM provided the chairmanship of the Defense Acquisition Regulation (DAR) Subcommittee on Procurement Quality Assurance (PQA). In this capacity, several significant DAR cases were developed to improve PQA within DOD.

(U) Federal Acquisition Regulation. The DAR Quality Assurance Subcommittee engaged in the evaluation and rewrite of Section 35, Part 46, of the Federal Acquisition Regulation which involved procurement quality assurance policy for all Government organizations. Numerous recommendations and policy changes were made by the subcommittee on behalf of the DAR Council for consideration by the Federal Acquisition Regulation Policy Office (FARPO). This effort was critical in order to achieve compatibility between DOD and Federal policy guidance for procurement quality assurance.

(U) Major Weapons Systems Reviews. Leadership was provided in the review of Major Weapons Systems Programs warranting headquarters management evaluation. Technical expertise was furnished on a number of these reviews such as M1 tank engines, M60 machine guns and components, gas masks, forklifts, storage batteries, etc. Extensive improvement recommendations were made to the industry and government organizations involved to improve the manufacturing and quality control operations to achieve a reliable production that fully conformed to technical requirements. The results of these reviews were highly beneficial and significant in the enhancement of the Army's readiness.

(U) Nondestructive Testing (NDT) Certification Program. This program was developed in order to train and certify Quality Assurance personnel who performed tests, approved test procedures, interpreted test results, and performed training using the following nondestructive test methods: liquid penetrant, magnetic particle, ultrasonic, radiographic, and eddy current. A total of 567 individuals were certified in fiscal year 1982, with an increase of 141 certified personnel since fiscal year 1981.

(U) Mobilization Readings. Product Assurance made major improvements in planning and preparations to enable a better response to mobilization requirements in fiscal year 1982. A revision of the Product Assurance portion of the DARCOM Mobilization Plan was completed which is more definitive as to actions and responses needed. Product Assurance and Test participated in a major mobilization exercise with personnel assigned to cover all three shifts through the course of the exercise. Other mobilization actions were taken throughout the year to meet all mobilization contingencies. These included review of all subordinate commands' mobilization plans; review of files at the alternate headquarters site; utilization of a US Army Reserve Mobilization Designee to update mobilization procedures; update of the Mobilization TDA; and designation and training of personnel to become members of an Alert Cadre in the event of mobilization. These efforts in the mobilization area should enable Product Assurance to effectively complete its missions should the need occur.

(U) New Regulations and Pamphlets. DARCOM-P 702-13, A Guide to Product Quality Management, was published on 20 November 1981. This pamphlet superceded AMCP 702-13, published in 1970, and provided improved guidance for the conduct of product quality management actions to assure that products of the requisite quality acquired for the Army by the Major Subordinate Commands (MSCs) and Program Managers (PMs). It implements DARCOM-R 702-6. DARCOM-R 702-12, Product Assurance Industrial Training Doctrine, was published on 23 March 1982. This regulation prescribed policy, assigned responsibility and provided authority for determining training requirements and the conduct of product assurance industrial type training. Implementation of DARCOM-R 702-12 was expected to ensure that the industrial type training necessary to develop and maintain a proficient and effective product assurance workforce was accomplished throughout DARCOM.

(U) An independent executive management evaluation of the DARCOM Product Assurance and Test Program was arranged during the period 16 March through 11 August 1982. Retired Vice Chief of Staff of the Army, General Walter T. Kerwin, headed the review team which consisted of industry and retired military executives. Mr. J. S. Lorber served as technical advisor to the team, whose primary objective was to obtain information and facts at selected key DARCOM organizations in assessing the Product Assurance and Test involvement in the design and development phase of munitions and missiles programs. When the panel presented its report in August, the report made 32 recommendations for improvement in 12 areas of the acquisition process. General Keith accepted the report, but directed that it not be released until a plan could be devised to implement the recommendations. He then directed Product Assurance and Test to develop an implementation plan to be correlated to the DARCOM Directions ($D^2$) effort. A new $D^2$ thrust (Product Assurance Improvement) was added to accommodate those recommendations that did not fit into thrusts which were existing at that time. General Keith briefed the Army Commanders' Conference on the Kerwin Review in October, and MG Peter Olenchuk, USA Retired, a member of the panel, briefed the Program Managers' Conference on the report in November. Representatives from the various affected DARCOM Directorates were working with Product Assurance and Test to finalize the implementation plan which was expected to be complete in November 1982.

(U) The DLA/DARCOM Selected Program Review was established by an agreement between the US Army Materiel Development and Readiness Command (DARCOM) and the Defense Logistics Agency (DLA) in February 1981. The purpose of the program was to improve the Procurement Quality Assurance Program for providing materiel meeting technical requirements to the user. Program emphasis was placed on determining the adequacy of government technical requirements, quality assurance provisions of the procurement package, and technical guidance and support provided the Defense Contract Administration Service (DCAS); the ability of the contractor to control manufacturing operations and consistently product acceptable products; and the effectiveness of the Government's inspection and acceptance operations. DLA and DARCOM jointly began a review of the M44 and M939 series cargo trucks produced by AM General under the direction of the US Army Tank-Automotive Command (TACOM) in the first quarter of fiscal year 1983. Completion of the review was expected in second or third quarter of fiscal year 1983. Heavy involvement in the Kerwin Review caused scheduled reviews to be delayed.

DARCOM Supply and Maintenance Quality Assurance Program

(U) Supply and Maintenance Quality Assurance Policy. The Product Assurance initiative to separate the regulatory guidance governing supply and maintenance quality assurance policy from that of procedure was completed in fiscal year 1982. Policy in the new DARCOM Reg 702-7

provided the basis for an improved relationship between MSCs, depots, and the overhaul of facilities and improved realignment of program responsibilities. A number of special Quality Assurance (QA) programs developed in recent years which had proven successful in sustaining viable quality systems and contributing to customer satisfaction, were incorporated. In addition to the regulation, a $D^2$ major thrust was initiated which was specifically designed to further enhance the supply and maintenance quality assurance interface between subordinate commands.

(U) Unissuable Materiel in Storage. This program was established as an ongoing initiative dedicated to the control and reduction of the amount of unissuable materiel in the Army wholesale system. The program was initiated by the Product Assurance and Test Directorate in response to DARCOM Command Group concerns over the amount of unissuable assets and the related impact on the readiness posture of the Army. In support of this program, a reporting system was established to track assets in a number of key unissuable supply condition codes and commodity commands were directed to develop management plans for the control and reduction of unissuable assets. These efforts achieved asset visibility at the commodity commands and overall program visibility at all levels of management. While management plans to include targets for reduction were developed by the commodity commands, the need existed for further refinement of the program to assure effective management and realistic goals for reduction. The Deputy Commanding General for Materiel Readiness (DCGMR) was apprised of unissuable program status and proposed actions for further development. With the DCGMR's approval and indorsement, a plan of action was developed to refine management plans, develop an interim manual reporting program, establish regulatory guidance for the program, and develop a long term automated program.

(U) Shelf-Life Program. During the year efforts continued toward improvement of the DARCOM Shelf-Life Program. DARCOM accomplished a 20 percent review of DARCOM shelf-life items to determine if the assigned shelf-life codes were realistic or if the shelf-life item population could be reduced. Results of the survey indicated a 98 percent accuracy rate in the assignment of shelf-life codes within DARCOM as compared with a 77 percent accuracy rate by the other Services. To assure that shelf-life items were covered by DARCOM storage serviceability standards, the MRCs milestoned initiatives and the required storage serviceability standards were completed. A Product Assurance and Test Bulletin was published to increase awareness of the program. It was well received by the quality assurance and supply communities and was also provided to the other Services through indorsement by the DOD Shelf-Life Administrator. The Army continued to play a leading role in the DOD-wide management program through active participation with the DOD Shelf-Life Committee. The Government Accounting Office (GAO) limited review of shelf-life, conducted FY 1982, substantiated an assessment that progress was being made in the Shelf-Life Program management.

(U) DARCOM Quality Assurance Certification Program. This program was implemented at the depots and plant activities to assure that only qualified personnel perform inspection and acceptance of Army materiel. Specific objectives of the program were to assess, recognize and improve the technical capabilities of the QA workforce in order to keep pace with the complex, advanced state-of-the-art systems entering the Army stockpile now and in the future. In FY 82, the percent of employees certified was above the DARCOM goal of 90 percent during all months, and since February 1982, 96 percent certification was maintained with all individual depots above the 90 percent mark and several at 100 percent. This accomplishment was particularly noteworthy in view of the fact that the program was voluntary.

DARCOM Ammunition Surveillance

(U) Quality Assurance Ammunition Specialist (Ammunition Surveillance) (QASAS) Career Program. In fiscal year 1982, the Commanding General, DARCOM, was responsible for providing QASAS to various Department of Defense installations, activities and commands engaged in receipt, storage, maintenance, use, and disposal of ammunition and explosives. QASAS was assigned to worldwide positions under a mandatory rotational system managed by the Director of Product Assurance and Test as the Functional Chief Representative. There was an increase in the number of authorized spaces in the career program from 565 to 581 during fiscal year 1982. At the same time, there was a decrease in vacant positions from 49 to 15. The long standing problem of QASAS shortages was expected to be essentially eliminated during fiscal year 1983. Recruitment and training of new QASAS interns became adjusted accordingly.

(U) AR 702-12 was revised, providing the authority and responsibilities for the conduct of the program as well as the general qualifications and placement guidance for the careerists in the program. This revised AR was published in July 1982. This revision provided new management guidance to the field with regard to the relationship between DA safety personnel and Quality Assurance Specialists (Ammunition Surveillance)(QASAS). This revision was the first guidance in an Army QASAS role in establishing procedures and controls to insure compliance with established explosive safety policy.

(U) Centralized funding of management training was implemented for QASAS personnel assigned to DARCOM installations. During the fiscal year 1982, the QASAS Training Committee identified a considerable backlog of management training for QASAS careerists. This backlog was attributed to the difficulty that QASAS encountered in securing spaces at ALMC and AMETA due to their transient status wherever they were assigned. The QASAS Career Program arranged several meetings at DARCOM headquarters which resulted in the Schools Division agreeing to provide blocks of spaces in selected management courses to the Ammunition Civilian Career Management Office for subsequent selection of QASAS attendees from DARCOM installations. An initiative to provide DARCOM centralized funding for non-DARCOM QASAS received a favorable review by the DARCOM Conptroller. Letters were submitted to other Army Major Commands requesting their position on the proposed DA-wide program.

(U) Improvements were made in the area of Quality of Life and Career Progression for QASAS careerists during fiscal year 1982. Partly as a result of continued efforts by DRCQA to improve the quality of life for QASAS and their families living under the world-wide mandatory mobility system, the President signed Executive Order 12362 on 12 May 1982, which allowed family members of civilian employees and military members, who served in appropriated fund positions overseas, to qualify for non-competitive entry into career civil service positions upon their return to the United States. Through the development of higher visibility for the QASAS program, and participation in the staffing plans for both DRCSM and the EDCA, significant progress was made worldwide in the QASAS progression ladder.

(U) Subprogram Areas of the Ammunition Stockpile Reliability Program (ASRP). Significant progress was made in several of the subprogram areas of ASRP in fiscal year 1982. A centralized function test program was established at CONUS depots for ammunition other than large caliber artillery and heavy mines. Previously, this function testing was accomplished at all depots on all lots of designated munitions. This centralized program, administered by ARRCOM Product Assurance, was expected to result in each required lot being tested only once. Centralized test locations were established at Savanna and Pueblo Depot Activities. Savings from this program were expected to be substantial.

(U) Stockpile Function Firing Overseas. The project to expand the number of locations for performing large ammunition item stockpile testing to OCONUS locations was continued in fiscal year 1982. A trial program for test firing 155mm projectiles and propelling charges was completed successfully at Meppen, Germany during May 1982. Agreements were finalized to perform testing of four types of ammunition at two locations in Germany in fiscal year 1983. Also, negotiations were underway to complete agreement to test fire in Korea in May of 1983. The OCONUS testing program, when fully operational, was expected to save substantial money and provide more timely test results. Reductions in transportation costs and handling incident to shipment of test samples was expected to be the source of considerable savings while host nation agreements would cover the cost of testing with the exception of incidental expendables.

(U) Toxic Chemical Munitions Stockpile Reliability Program. The Surveillance Program Lethal Chemical Munitions (SUPLECAM) reached a significant milestone in fiscal year 1982, with the completion of agent sampling of all high priority nerve agent lots. This was achieved in spite of a program disruption to support a special project on Johnston Island. No significant degradation trends in nerve agents were detected. Also completed during the fiscal year, was the first metallurgical analysis of leaking munitions by AMMRC which confirmed that an alternative burster configuration used in two lots of 105mm GB projectiles was not compatible with loaded agent. These lots were demiliterized. Following up on a discussion during the Toxic Chemical Munitions Workshop at Salt Lake City, Utah in November 1981, the DARCOM Ammunition Surveillance Team initiated a study which resulted in the cessation of all periodic inspections of M55 VX rockets. This change was expected to result in significant savings to the chemical ASRP.

(U) Conventional/Missile Stockpile Reliability Program. In fiscal year 1982, actions were initiated to develop a standard Ammunition Surveillance Workshop design for all locations requiring replacement of their obsolete facilities. Recent changes in explosive safety criteria for buildings used to process or inspect ammunition dictated that most surveillance workshops constructed during World War II be replaced. The standard design, being developed by the US Army Defense Ammunition Center and School and the Huntsville Corps of Engineers in fiscal year 1982, would significantly reduce the total costs of these facilities compared with pursuing individual designs at each location. Four of these workshops were listed high on the DARCOM fiscal year 1985 MCA priority list.

(U) A program was established at the US Army Missile Command (MICOM) to provide tighter controls on lot formation during manufacture of high density missiles. The scope of recent (in fiscal year 1982) suspension actions for TOW and Dragon missiles could have been significantly reduced if tighter controls on lot formation had been required. This program resulted, for the first time, in a coordinated and formal policy within MICOM closely controlling the number of lots of components which could be included in a missile lot.

(U) A program was established to insure the proper control and management of missile malfunctions, suspensions and restrictions at MICOM. MICOM agreed to publish missile suspensions and restrictions as an appendix to the ARRCOM publication listing conventional ammunition suspensions and restrictions. This was the first time that a listing of suspended and restricted missiles had appeared in a Department of the Army (DA) publication.

(U) New policy guidance was furnished to the field regarding the reporting of ammunition malfunctions. The DA Regulation governing malfunction reporting (AR 75-1) was changed to add Quality Assurance Specialist (Ammunition Surveillance) (QASAS) as one of the personnel responsible for initial on-site malfunction investigation and reporting. Although participation by QASAS in these investigations and reports had been common in the past, QASAS were not mentioned officially in the previous Army Regulation (AR). The revised AR included additional detailed guidance on malfunction report preparation.

(U) The quarterly management report for Ammunition Surveillance activities had been changed to include more specific information on actual performance data and utilization of manpower resources. The DARCOM Regulation (DARCOM-R 702-7) governing this report had been revised to implement the new format and provide clearer and more understandable instructions. Also, included in the revision was expanded guidance for the analysis of the combined data of all reports made by the Ammunition Center and School at Savanna, Illinois.

(U) Ammunition Stockpile Reliability Program. In fiscal year 1982, the Ammunition Stockpile Reliability Program was publicized to ensure continued support and recognition. These efforts were required to assure that the ASRP continued to receive the necessary support through funding and manpower allocations to remain a viable and reliable tool to determine and predict the serviceability, effectiveness and safety of the US Army managed ammunition stockpile.

(U) A magazine article describing the Ammunition Stockpile Reliability Program within the US Army Missile Command (MICOM) was published by the Army Logistician Magazine, which described all the functions associated with the program at MICOM, and alluded to the benefits derived by the missile community from the missile ASRP. It was the second in a series of articles planned for publication to help gain recognition and support for the Stockpile Reliability Program.

(U) Ammunition Test Requirements and Expenditures. A trial program to add to the Worldwide Ammunition Reporting System (WARS), a segment to be used to forecast and report expenditures of ammunition in testing, was initiated and successfully completed in fiscal year 1982. A new chapter to be included in the revision of AR 702-22, which was in progress, included the provisions for this new system. The system was successfully trial tested during 1982, and a draft report listing the forecast of ammunition required for fiscal years 1983-1988 was prepared. Complete implementation of the program was expected in fiscal year 1983.

(U) This reporting system was required to gain control and visibility over the expenditures of ammunition for testing purposes. Several years ago it was recognized that several new types of munitions were being expended for testing purposes and little if any production was being issued to the field. At one time 38,000 of 40,000 M203 propelling charges manufactured had been expended for testing. The CASPR also recognized this as a significant issue affecting conventional ammunition reasiness. The dollar amounts to be controlled were enormous. The FY 83-88 forecast listed by the trial report totaled $430 million not including several pages of non-stock numbered R&D type munitions. This system would enable control and visibility over the testing expenditures, thus preventing recurrences of past embarrassments. Also, it would provide visibility of the amount of money required to be budgeted to complete desired testing. It would also allow managers to review and recognize areas where duplicate testing could possibly be scheduled.

(U) Chemical Protective Suit Stockpile Reliability Program. Efforts continued to develop the stockpile reliability program for the Chemical Protective Suit. Several portions of the testing phase of this effort had been completed in fiscal year 1982. Based upon these test results, the expiration date of the suits manufactured between 1977 and 1980 was extended by one year. This one year extension enabled DA to delay replacement procurement of chemical protective suits worth approximately $65 million for at least one year. The stockpile reliability program, when fully

operational, would be able to identify deficiency trends and degradation by specific lot and manufacture. The program's test and user data would also enable DARCOM to predict accurate shelf-life data. The management responsibility for this significant program was transferred to ARRCOM from TSARCOM. ARRCOM through its experience with other chemical items and the ammunition stockpile reliability program, is much better suited to organize and manage a viable stockpile program.

## Army Reliability, Availability and Maintainability

### Revised Directives and Guidance

(U) AR 702-3, the regulation which implements the policies of DOD Directive 5000-40, Reliability and Maintainability, and reflects an improved DA policy and procedures for reliability and maintainability of materiel systems, was published and became effective 1 June 1982. In addition, a continuing effort during fiscal year 1982, was the preparation of the DARCOM Supplement to AR 702-3. The supplement was prepared, coordinated, and submitted for editing and publication.

(U) DARCOM/TRADOC PAM 70-11, RAM Rationale Annex. The handbook which provides guidance to the materiel developer, the combat developer and other involved participants for the development of RAM Rationale Annex, was developed and published through the joint efforts of DARCOM and the Army Logistics Center.

(U) RAM Requirements Acquisition in NDI. Guidance was prepared, coordinated and distributed through the joint efforts of DA, TRADOC, and DARCOM, addressing the subject of RAM requirements in NDI acquisition. It allowed the combat and materiel developer common guidance on the establishment of RAM requirements and the conduct of market surveys in support of the acquisition of materiel systems using the NDI approach.

(U) DA Pamphlet 700-xxx (Logistic Supportability Test and Evaluation Guide) was an overall effort to streamline the test and evaluation of weapon systems and equipment. Procedures were provided for test issue/requirement as well as for test conduct and supportability assessment. The handbook was forwarded to HQDA for staffing and publication.

(U) DARCOM Pamphlet 706-199 (Engineering Design Handbook) was a continuing effort in the preparation of the DARCOM contracting strategies to improve RAM aspects of solicitation documents, source selection factors, and resulting contracts with contractor incentives for reliability and support.

(U) In fiscal year 1982, the Common Test Data Collection System (CTDCS) established an improved reliability and support data base management system. The system provided the needed flexibility to collect RAM and support data on all types of systems. Being an event-oriented

data system, it permitted the test community the capability to select data elements required for a particular test, enter data into a computer and perform automatic editing, and have access to the data via the System 2000 Data Base Management System. Commonality of the system would permit more flexible sharing of information between the testers, evaluators, project managers, and the development and readiness commands. A CTDCS implementation guide for the managers was published.

(U) DARCOM Direction ($D^2$) Thrusts. Principal initiatives to improve test and evaluation in support of the DARCOM Directions Program included six principal initiatives which were developed by DARCOM Product Assurance and Test (PA&T) Directorate. These initiatives reflected the commitments of Headquarters DARCOM and major subcommands (MSC) PA&T directorates, and would improve the way of doing business for the Quality Assurance Office. Specific PA&T initiatives included improvements in the following:

Product Assurance and Test was supported by three major tasks of improving test and evaluation, product assurance management, and test management.

Resources management complemented the above by providing the needed people and material resources to improve the proving ground facilities, to develop new and better testing capabilities, and to improve the test and evaluation system.

Workforce program consisted of an intense program of surveying the training needs of the people resources and to improve the management and testing abilities of the working force.

Army quality program emphasized the need to provide quality products and to recognize the outstanding contractor performances.

Customer relationship consisted of selected program assessment to insure periodic and timely evaluation of fielded system, and to reduce the amount of unissuable materiel in the stockpile and in the field using activities.

Product assurance engineering was the technical program associated with product assurance engineering. Emphasis was placed on material testing technologies, improvement of reliability and maintainability, software development requirements, software test and evaluation guidance, and command performance indicators in the product assurance programs.

(U) A Software Quality Assurance Test & Evaluation (SQA T&E) working group was formed to identify SQA T&E needs and resource requirements, and to develop a schedule for timely implementation. The working group was still in the process of identifying the needs at year end fiscal year 1982.

## Manufacturing Technology

(U) Organization. As a step consistent with the newly implemented Matrix Management System, which instituted Weapons System Managers (WMSs) and Weapons Systems Support Officers (WSSOs), there were significant changes during fiscal year 1982. The Office of Manufacturing Technology became the Directorate for Manufacturing Technology (DMT), as part of DARCOM's general reorganization to strengthen and give increased visibility to productivity-enhancing aspects of the Manufacturing Technology Program. The WSM, along with DARCOM staff WSSOs formed Weapons Systems Management Teams (WSMaT) to better solve problems from a functional standpoint during the life cycle of the Weapons System.

(U) In fiscal year 1982, the position of Director, DMT was filled by Mr. Frederick J. Michel. The senior Industrial Engineer provided a team leader for Capital Investment Master Planning (CIMP), and two Industrial Engineers were hired to assist with the CIMP effort. Three temporary action officers were hired, an Industrial Specialist and a General Engineer to assist this severely understaffed directorate which had required extensive unpaid overtime on the part of its top staff to assure proper continuation of the Manufacturing Technology program. Also, an Industrial Engineer was appointed to manage the OMA funded Production Engineering area and to assist with the Manufacturing Methods and Technology program in the Special Equipment commodity area. A hiring freeze prevented the directorate from filling four vacant TDA spaces.

(U) Manufacturing Methods and Technology. MMT received a funding increase in fiscal year 1982 of $13 million over the previous $75.2 million program in fiscal year 1981, which amounted to an increase of approximately 17.5 percent. There was a decrease in the rate of project completions, and an increase in the number of projects approved/funded, which resulted in a 9.4 percent increase in the number of active projects. The total program dollars increased some $38 million for a total program investment of $277.1 million. Contractor programmed funding increased approximately 2 percent during fiscal year 1982, for a total of 62.6 percent being accomplished out-of-house for the active program. The technical success rate and the implementation rate of technically successful projects was expected to be at least 85 percent and 62 percent respectively. Success rate data could not be confirmed until January 1983. The MACI program continued to be operative in fiscal year 1982 with the bulk of the funds going to MERADCOM and TACOM.

(U) DRCMT continued to participate in the MTAG operations with several action officers present at the annual Tri-Service meeting held in the fall of 1982.

(U) Army Product Engineering Services Office (APESO). With its mission of improving production management, APESO participated in Production Readiness Reviews for the Pershing II, Stinger-Post, Multiple Launch Rocket System (MLRS), AN-TMQ, the Meteorological Data System, and Position Locating Reporting System (PLRS).

(U) Design to Cost (DTC). The quarterly Design to Cost Report, RCS DRC 809, was modified during fiscal year 1982 to include labels for the various data elements. The report, required by AR 70-64, "Design to Cost," for which the Directorate for Manufacturing Technology was the proponent, provided selected DTC information on items and systems. While some difficulties existed in getting selected field elements to make the required reports, there was significant improvement over fiscal year 1981 and the quarterly reports were supplied to HQDA on schedule. A copy of the report was provided for the first time to the Program Integration Division of the Directorate for Research, Development and Acquisition for distribution to the affected WSMs. The report continued to be supplied to Cost Analysis Division of the DARCOM Comptroller.

(U) A representative of the Directorate continued to participate in the DOD Ad Hoc Working Group established in January 1981, for the purpose of revising DODD 5000.28, "Design to Cost," which was to be published in fiscal year 1983. The same representative also served as the Directorate POC on the Army's Defense Acquisition Improvement Program (DAIP) for Recommendation 22, DTC contract incentives of the Deputy Secretary of Defense' Memo dated 30 April 1981.

(U) The Army Procurement Research Office (APRO) was tasked to conduct a study of DARCOM engineering development contracts and to provide an analysis of how Design to Cost had been handled. The analysis was due in the first quarter of fiscal year 1983.

(U) An informal DTC Working Group was established within the headquarters with this Directorate as the lead organization. Other members were from DRCPP, DRCCP, and DRCDE.

(U) Producibility Engineering and Planning (PEP). Additional emphasis given PEP in fiscal year 1982 was assignment of a General Engineer to manage the program. Attendance at the RDTE annual reviews provided impetus to the program by making all MSCs and PMs aware of the PEP effort and its execution being necessary for a smooth transition from full scale engineering development to low rate initial production. Early PEP identification of crucial MMT Projects was stressed. This would improve producibility in order to avoid manufacturing difficulties encountered during initial production efforts. A draft PEP regulation was written and staffed at HQ DARCOM along with field review comments which were being incorporated in fiscal year 1982. Planning for a PEP workshop which was to be held in November 1982, in Albuquerque, New Mexico was initiated with selection of papers to be presented. In addition, a new training course for PEP was in the process of being formulated by AMETA and a series of courses was to be presented in fiscal

year 1983, to train personnel for the PEP effort to be expanded. Procurement offices in the field were being requested to provide PEP clauses as an integral part of Regulations. Funds for PEP were provided to the field by the Directorate for Development, Engineering and Acquisition, and these funds were to be fenced for the PEP effort. Any reprograming of these funds for use other than PEP was to have prior approval from the Directorate for Manufacturing Technology.

(U) Value Engineering. Fiscal year 1982 was the first year that validated savings crossed the $400 million level in the DARCOM Value Engineering Program. Savings amounted to $430 million as compared with $360 million in fiscal year 1981. Contractors submitted 604 Value Engineering Change Proposals during the year as compared with 600 for fiscal year 1981. Inhouse personnel submitted 1,538 Value Engineering Proposals (VEPs) versus 1,374 for the previous year. One hundred twelve percent of the DARCOM inhouse VEP goal was accomplished, 99 percent of the VECP goal was met and the dollar savings/cost avoidance goal was oversubscribed by 213 percent. An innovation during fiscal year 1982 was the introduction of DARCOM sponsored Contractor VE Seminars. The first of these was held at ARRADCOM with 180 contractor personnel in attendance. Additional contractor VE seminars were scheduled on a regional basis. The Value Engineering (VE) Awards Program recognized 38 Army contractors, seven major subordinate commands, and two project managers through the presentation of appropriate plaques and certificates proclaiming their outstanding achievements.

(U) Capital Investment Master Planning. Capital Investment Master Planning is a new mission for HQ DARCOM. The need for this mission was recognized in the headquarters realignment study and the mission was assigned to the Directorate for Manufacturing Technology effective in fiscal year 1982. Five industrial engineering spaces were provided to staff this function. There were approximately twenty programs used by HQ DARCOM to fund capital investments. One of the prime reasons for establishing Capital Investment Master Planning was to insure that installations developed master plans using a top down approach rather than several separate plans to submit under different funding programs.

(U) During fiscal year 1982, accomplishments included development of a capital investment milestone plan, a study of how two SUBMACOMs documented and controlled their capital equipment program and a study of the systems available for recording acquired capital investments. Capital investment personnel also were major participants in an automation study for the MT directorate.

(U) Configuration Management. A draft revision of AR 70-37, Configuration Management, was distributed for field coordination. The document was not acceptable in its initial form and required extensive revision.

(U) Data Management Program. DARCOM as the Army representative on the Joint Logistics Commanders (JLC) Ad Hoc Group for the Release of Technical Data to the Public, participated in the preparation and coordination of a draft JLC Regulation for Release of Technical Data to the Public. This regulation was completed in June and was being held in abeyance awaiting further OSD policy guidance.

(U) DARCOM prepared and coordinated AR 700-70, Application of Specifications, Standards, and Related Documents in the Acquisition Process. This regulation was forwarded to TAG for publication and was subsequently returned to reduce the reading grade level.

(U) Technical Data/Configuration Management System (TD/CMS). It had been determined that the present TD-CMS must be redesigned to meet the functional requirements of the configuration management community. The major effort of the TD-CMS Functional Coordinating Group (FCG) during the year was the writing of the Functional Description defining the features and improvements required in the redesigned TD-CMS.

## Technology Planning and Management

(U) Organization. As part of the HQ DARCOM realignment, the Directorate for Technology Planning and Management (DRCLD) implemented its new organizational structure and recruited in fiscal year 1982 to fill its new 32-space civilian organization plus a Deputy Director, COL John Herrling. The new Assistant Deputy for Science and Technology in the office of the Deputy Commanding General for Research, Development and Acquisition (DCGRDA), was Dr. Richard L. Haley, who succeeded Dr. R. S. Wiseman. He joined Mr. Bender in conducting the first off-site planning meeting on 2 September 1982 at the Night Vision and Electro-Optics Laboratory to develop directorate goals and objectives for fiscal year 1983.

(U) Special Activities. A special assignment carried out by Drs. Hagan and Bushey for Dr. Haley, was the drafting and coordination of articles for the July-August issue of the Army RD&A magazine. The articles were devoted exclusively to the Army laboratories as they existed at that time.

(U) The deputy directors of the Foreign Science and Technology Center and the Missile Intelligence Agency, as well as associate technical directors and laboratory directors within commands, were invited to participate in at least one meeting annually of the Board of Technical Directors, because of the increased recognition of the relationship of intelligence and laboratory programs.

(U) The Board was formed principally as a means of direct communication and discussion of problem areas, development and better understanding of the technology base program priorities, and participation in evaluations of laboratory performance.

Management Projects

(U) Two major personnel management projects were completed during the fiscal year. These were the DARCOM Announcement Distribution System (DADS) and the Senior Executive Service (SES) recruitment status tracking by computer. DADS provides automatic notification to potential applicants who voluntarily registered for consideration of DA vacancies in the Engineers and Scientist career field at the grade 13-15 level. Interested candidates then dealt directly with the civilian personnel where the vacancy existed. DADS Registration of both federal and non-federal persons began in February, and vacancy announcements were started in May. DADS expedited search for qualified applicants, provided an audit trail on search and fill, reduced the administrative burden on DA CPOs, and gave a track record for equal opportunity recruitment. SES recruitment data maintained in the computer included dates of: organization position established or vacated; recruitment plan prepared, reviewed and approved by DA; vacancy announcement with closing date; number of applicants and convening of Ad Hoc panel to prepare the referral list to DA showing best qualified; DA approval of list including number of minorities and women; transmittal to field for final selection; and OPM approval of selection if a previous non-SES candidate was selected. During fiscal year 1982 the ratio of 48 out of 182 vacancies, was reduced to 15, with only six requiring further action by the Directorate for Technology, Planning and Management.

Defense Science and Engineering Apprentice Program

(U) At the request of Mr. James Spates, ODCSRDA, Dr. Bushey was assigned responsibility for monitoring Army-wide participation in the Defense Science and Engineering Apprentice Program for high school students. Total numbers reported, including contract and in-house summer hires, were: ARO - 104, other DARCOM - 76, Corps of Engineers - 11, ARI - 9, and The Surgeon General - 30. ARO participants were at universities which had research contracts with ARO. All the others were at Army installations.

(U) The Science and Technology portion of the DARCOM Long Range RDA Plan was compiled on a computer, published, and disseminated. It was made available to qualified industry through the TILO and the Defense Technical Information Center. Computer assistance was provided to the DA/DARCOM/TRADOC Spring-Summer RDTE reviews for the fiscal year 1983 program and development of the fiscal years 1984-1988 budget at HQ DARCOM. DRCLD provided two members of the core team for those reviews, Mr. Langworthy and Dr. Andersen.

(U) Following the planning which started in fiscal year 1981, Dr. Bushey represented DARCOM on the Army Science Conference Advisory Group and coordinated the DARCOM participation in the 13th conference at West Point, held

15-18 June 1982. Included in the program as session chairperson were Mr. Shirata, Mr. Langworthy, Dr. Hagan, Dr. Andersen, and Dr. Bushey. DARCOM laboratory authors won thirteen out of seventeen awards, including the prestigious top prize of $1,500 with the Paul A. Siple medal for a paper on "The Planar Doped Barrier: A New Class of Electronic Devices" by Malik, Ross, AuCoin and Savage from ERADCOM's Electronic Techniques and Devices Laboratory. Dr. Andersen also presented a status report on the DARCOM Long Range RDA Plan.

Air Land Battle 2000

(U) As part of the Army focus on meeting the Air Land Battle 2000 objective of endurable, highly mobile, firepower-intensive maneuver forces capable of operating on the integrated battlefield within the scope of a highly synchronized effort, the Under Secretary of the Army selected five new thrust areas for special emphasis and visibility in the science and technology base. The Army Science Board had identified twenty-three high leverage technology options where the US could capitalize on a significant technological national advantage and where improved systems could provide force multipliers. The new thrusts were VISTA - Very Intelligent Surveillance and Target Acquisition; $DC^3I$ - Distributed Command, Control, Communications and Intelligence; Self-Contained Munitions; Soldier-Machine Interface; and Biotechnology. Dr. Gieske was assigned responsibility to monitor the implementation plans including contractual support from the Jet Propulsion Laboratory under NASA contract for a field demonstration of potential capabilities in 1986.

## Project Management

(U) As a continuation of previous years' functions, the Project Management Division exercised staff responsibility for the Army/DARCOM Program/project/product manager (PM) programs. It advised the DARCOM Command Group and HQ DARCOM staff on the application of project management concepts and principles to the materiel acquisition, development, and support functions, and formulated and disseminated policies and procedures related to project management concepts and organizations. The Project Management Division also handled personnel matters concerning the program/project/product managers in the areas of selection criteria and selection, chartering, training, assigning and termination. The division also served as an advisor to the PM in these and other matters.

(U) Entering fiscal year 1982, there were 54 Project Managers (PM). PM, Joint Tactical Fusion Program (JTFP) continued as a provisional carryover from fiscal year 1981. PM, JTFP charter was approved on 11 February 1982. Concurrently with the signing of the JTFP charter, PM, All Source Analysis Systems (ASAS) was officially absorbed by PM, JTFP. PM, Physical Security Equipment (PSE) was elevated to a Product Manager on 21 October 1981 from a DARCOM-R 614-13 Project Officer. The PM, PSE charter was signed by CG, DARCOM on 17 August 1982.

(U) During fiscal year 1982, three PMs were provisionally established. They were PM, Joint Vertical Lift Aircraft (JVX); PM, Test, Measurement and Diagnostic Equipment (TMDE); and PM, TMDE Modernization (TMOD). PM, Light Armored Vehicle (LAV) was also operational but was never formally provisionally established. His charter was signed on 26 October 1982, and was to be tallied in the subsequent report.

(U) Also during fiscal year 1982, three PMs were terminated. They were 30mm Ammunition (a subordinate PM to PM, Advanced Attack Helicopter (AAH) PM, Stand-Off Target Acquisition System (SOTAS) (terminated by Congress on 3 November 1981); and PM, ASAS (absorbed into PM, JTFP when the JTFP charter was signed).

(U) Name changes during the year were: Improved TOW Vehicle (ITV) became Fire Support Team Vehicle/Improved TOW Vehicle (FISTV/ITV); PM, Test, Measurement and Diagnostic Systems (TMDS) became PM, Automatic Test Support Systems (ATSS) under PM, TMDE; Fighting Vehicle Systems became the Bradley Fighting Vehicles; Division Air Defense (DIVAD) Gun became the Sergeant York (charter not yet changed); and PM, Armored Combat Vehicle Technology (ACVT) became PM, Mobile Protection Gun (MPG).

(U) Also during fiscal year 1982, 17 charters were processed and fully approved either by the Secretary of the Army or CG, DARCOM as applicable.

(U) New proposals for PMs during fiscal year 1982 were PM, 9mm Pistol Program, RATTLER, and Tactical Intelligence/EW Systems.

(U) End of year count of PMs, excluding provisional, PMs was 52.

(U) During fiscal year 1982, DARCOM PMs guided the expenditure of approximately $1.3 billion in R&D funds and $7.6 billion in procurement funds. This represented approximately 46 percent and 54 percent, respectively, of the total DARCOM budget in these categories. The work force assigned to PMs at the end of fiscal year 1982 averaged about 3,500 people or 3 percent of the total DARCOM work force.

(U) Improving and sustaining excellent lines of communications and rapport between command headquarters and the PMs, and between the PMs themselves, always ranked high on the list of the Project Management Division's priorities. Toward this end, the 12th annual PM Conference was held in Orlando, Florida in November 1982. Presentations included an address by the Under Secretary of the Army, the Honorable James R. Ambrose; the Assistant Secretary of the Army (Research, Development and Acquisition), the Honorable Jay R. Sculley; Commander, DARCOM, General Donald R. Keith, and other high ranking officials within HQDA, and the Congressional staff. During the conference, the sixth annual Secretary of the Army Award was presented to the outstanding project managers, COL Clinton H. Black, PM, Vertical Installation of the Automation Baseline of the Computer Systems Command, and COL Ronald K. Anderson, PM, BLACK HAWK Helicopter Program.

(U) The Defense Systems Management College trained a substantial number of Army and DA civilians in program/project related courses during fiscal year 1982. The Executive Refresher Course, 3 weeks in duration, trained 25 officers and five civilians. The Contract Finance for Program Managers Course (1 week long) taught six military personnel and 20 civilians and the Contractor Performance Measurement Course (1 week long) educated 26 military and 105 civilians. The Program Managers Course, the capstone DSMC course, taught 109 officers and 20 civilians the skills necessary to manage defense systems programs.

(U) The Army Logistic Management Center was also instrumental in preparing military and civilian personnel to assume their roles in program/project management during fiscal year 1982. The six week Program Managers Development Course taught 67 DARCOM military personnel and 52 DARCOM civilians and the 1 week Research and Development Managers Course trained 105 DARCOM military personnel and 310 DARCOM civilians both at ALMC and at on-site locations.

(U) Promotion of Project Manager Development Program (PMDP) members to major on the first look was 97.6 percent of the eligibles; to lieutenant colonel, the number was 92.0 percent; and promotion to colonel was 53.2 percent. These selection rates compared very favorably with statistics for the total Army selection rates, exceeding the total Army rate in each case.

# CHAPTER IV

# PROJECT MANAGER - WEAPONS AND WEAPONS SYSTEMS

## Introduction

(U) Fiscal year 1982 saw a period of assiduous management in an effort to cut costs while carrying out assigned mission responsibilities. With this broad-based attention to management, most systems made good progress at a time of high inflation indices.

(U) The M1 Abrams Tank Project Management Office, through intense financial management, aided the Government in contract savings which exceeded $200 million. The M1 Program was significantly affected by the sale of Chrysler Defense, Incorporated to General Dynamics Land Systems Division in March of 1982. This sale was inclusive. The M1 Abrams Tank Washington Field Office at DARCOM was closed; and new offices were opened, which included the Continental U. S. Materiel Fielding Team at Fort Hood, Texas and the Aberdeen Proving Ground Test Site Office at Aberdeen Proving Ground, Maryland.

(U) The M1 did well in its participation in REFORGER, which was its first appearance in these annual international trials.

(U) The Advanced Attack Helicopter Program continued to be one of the Army's top priority programs, structured under the DARCOM multi-level project concept. In fiscal year 1982, AAH Program interest centered on the AAH-64, which was a two-place, twin-engine, rotary wing aircraft. It represented an optimization of helicopter technology for modern tank-heavy, battlefield conditions, and was expected to contribute greatly to the Army's ability to fight.

(U) The Fighting Vehicle Systems Program underwent a major reorganization and was formally redesignated the Bradley Fighting Vehicle Systems in a ceremony at Fort Myer in October 1981.

(U) The PATRIOT Project Manager Office assumed responsibility for development and acquisition of an advanced surface-to-air missile system, designed for macimum effectiveness against the air breathing threat of the 1980s and beyond.

(FOUO) PM NUC met initial operational capability on two nuclear systems, which were the first additions to the Army's nuclear inventory since 1973.

## Abrams Tank System

(U) The major event of the year was the sale, on 16 March 1982, of Chrysler Defense, Incorporated, for $336.1 million to the General Dynamics Land Systems Division. This sale was inclusive, involving the Detroit Arsenal, Lima Tank and Sterling Defense Plants, and the Centerline Engineering Center, all of which were in Michigan, and the Scranton Defense Plant in Pennsylvania. The Abrams Project Manager Office (PMO), with an authorized strength of 298, monitored the work of all of these facilities.

### Production

(U) The Detroit Arsenal Tank Plant (DTAP) met its first delivery milestone schedule of March 1982. By 30 September 1982, the DTAP had produced 612 tanks and was well on its way to attaining its output goal of 60 tanks per month.

(U) Overall, the program fielded 314 M1 tanks in 1982. This included completion of the second year production of 309 tanks and initiation of the third year total of 569. Field support also began for these products, consisting of Special Test Equipment-M1 (STE-M1) and the Direct Support Electrical System Test Set (DSESTS). This support was part of a major, and successful, effort to improve all technical manuals (TM) and automated test sets.

### International Operations

(U) In September 1982, M1 tanks participated in Reforger, which was the first appearance of these tanks in these annual trials. The tanks did well. The 174 M1s had an average availability of 97 percent, and an average daily travel of 275 miles each.

(U) US and German cooperative efforts continued. The attempt to fit the German-designed 120mm cannon and ammunition remained on target toward initial fiscal year 1984 production. In the meantime, both the M1 and its German Leopard 2 rival were undergoing Swiss purchase evaluation.

### Organization

(U) Sites. Besides the production facilities noted earlier, at which it had representatives, the PMO had its main office in Warren, Michigan, which reported directly to DARCOM. The PMO also had field offices in Bonn, at APG, and Fort Hood. The ancillary PM for Tank Main Armament Systems was to be found at the Picatinny Arsenal (PA), Dover, New Jersey.

Mission

(U) The PM was responsible for the development, procurement, production, testing, distribution, and logistical support of the M1, known as the Abrams Tank System. This office was responsible for the product improvement programs, the 105mm tank main armament, and ammunition development program, and the 120mm gun, ammunition, and integration development programs. He executed these missions with his staff of 67 military and 231 civilians.

Management

(U) Realignments. There were several closings and openings of offices in fiscal year 1982. The former included the M1 Abrams Tank Washington Field Office at HQ DARCOM, and liaison offices at Aberdeen Proving Ground, Fort Knox, and Bern, Switzerland. New offices were the Continental United States Materiel Fielding Team at Fort Hood, Texas and the Aberdeen Proving Ground (APG) Test Site Office.

(U) The PMO's Automatic Test Equipment Office, formerly under the Systems Engineering Division, became a separate office reporting directly to the Project Manager.

(U) Tank Main Armament Systems Project Office. The Tank Main Armament Systems Project Office added several functions in fiscal year 1982. Those included the transfer of the contracting officer representative (CRO) function to it from the Large Caliber Weapon Systems Laboratory of ARRADCOM; and the assignment, as added duties of the same function, and its alternates, for the 120mm ammunition technology, transfer, fabrication and test; the 105mm XM833 Armored Piercing Fire Stabilized Discarding Sabo Tracer Cartridge development and initial production; and the 105mm XM815 High Explosive Anti-tank Multipurpose Tracer Cartridge development. In addition, the Program Support Division absorbed heavier contractual and administrative functions in support of the CROs and their alternates.

(U) MIS. The PMO augmented its 1979 Management Information System (MIS) with a capability of nearly one billion characters for 128 interactive terminal users. It also added a fast, efficient local dial access to the minicomputer for key US and European locations. Finally, the office also added several more, and more complex, data terminals to the system.

Product Assurance and Test

(U) DT III. Development Test (DT) III concluded on 31 May 1982 at WSMR. Shortly before, in January 1982, all reliability, availability, maintainability and engineering (RAM-E) performance subtests concluded at APG. DTIII/Operational Test III (OT III) work involved 82,300 miles and 18,400 main gun rounds.

(U) Product Improvement (PI) Testing. PI testing involved several subtests to verify major on-going PIs. These included a 4,000 mile engine durability test at Aberdeen Proving Ground (APG), concluded in January 1982; a self-cleaning air filter test, conducted at Fort Knox from February to May 1982, with further tests beginning at Yuma Proving Ground (YPG) in June 1982; a 3,000 mile, random-tank-selected-per-quarter performance test at the Lima Army Tank Plant (LATP); initiation, in June 1982, of a 2,000 mile test of the AVCR 1360 diesel engine alternate engine at YPG; commencement, in June 1982, of a five-tank, 6,000 mile (each), powertrain durability test at APG; and, in another start, initial production tests, beginning in June 1982, of four DTAP tanks to see if they were as good as the Lima-produced tanks.

(U) DT/OT III RAM and Durability (RAM-D). The M1 had 13 separate requirements which addressed RAM-D characteristics. It met all but two of these--track life and powertrain durability. The former was limited by rubber technology, the latter was simply four percent short.

(U) Quality Assurance (QA). The main QA effort revolved about the reorganization of the corporate and plant QA structure attendant to the Chrysler sale. Aided by colocated commands, the PMO not only expanded QA to the 120mm M1E1 tanks, but it was able to make substantial QA improvement. Of particular import were the start of Enhanced Quality Programs at AVCO, Detroit Diesel Allison (DDAD).

Technical Activities

(U) M1E1 Block Improvement Program. Acting on a September 1981 Vice Chief of Staff, Army (VCSA) decision to merge the 120mm gun program and the Block I Improvement Program onto a common August 1985 production schedule, the PMO combined the RDT&E activities of these programs. This meant an immediate cessation of logistics testing until the Block Improvements could begin, and it led to December 1981 and July 1982 letter contracts with General Dynamics. The July contract formally merged that program and provided the basis for a new total program proposal from the contractor.

(U) Design Tests. Tests began on the 63-ton Automotive and Fire Control Test Rigs to determine the effect of the combined weight impacts of the 120mm gun, improved armor, and the Nuclear, Biological, Chemical (NBC) System on tank performance. Design changes resulted, being installed on three prototype M1E1s in August and September of 1982. The ensuing Engineering Development Test-Contractor (EDT-C) was to begin in October 1982.

(U) Crew Cooling. A major fiscal year 1982 NBC revision came in response to a new user requirement for crew cooling. The original program using Honeywell equipment used too much space. Consequently, a General Officer's In-Process Review (IPR) led to a decision to change to a Garrett Air Cycle System. First vehicle installation occurred simultaneously with the aforementioned EDT-C of October 1982.

(U) Ballistic Protection. Ballistic testing continued to go well. The 2d Year Ballistic Hull and Turret, and a series of eight QA armor tests successfully concluded in September 1982. Two contractor-built armor sections also passed ballistic tests during this period.

(U) Other ballistic improvements included the initiation into production of several special armor design and fabrication improvements, the development of preliminary armor designs for the Hybrid NBC (HNBC) sponson-mounted hardware on the M1E1 design, and the near-completion of the design and development of the M1E1's 120mm ammunition compartments.

(U) Night Vision System (NVS). The PMO placed six picture improvement modifications into production and retrofitted them across the tank fleet. Meanwhile a government and industry task force was formed to investigate methods of improving the production yield for detectors.

(U) Nuclear, Biological, Chemical. The first prototype NBC system was delivered. Tests continued on transient radiation effects on piece parts and circuits.

(U) Automatic Test Equipment (ATE)-M1. Besides the Special Test Equipment-M1 (STE-M1) and DSESTS, noted earlier, RCA also received a June 1982 contract to complete the integration of the STE-M1 and the STE-M1/Fighting Vehicle System (FVS) into a truly common test for both the M1 tank and the M2s and M3s. In September 1982, the STE-M1/FVS successfully passed in a demonstration. Production followed.

(U) Other achievements included the production of ten more Direct Support (DS) Electrical System Test Sets, bringing the total to 32. These sets were accompanied by two software updates. Also, development of the Thermal System Test Set (TSTS) concluded; the contractor delivered the first two production TSTSs to the Government in August and September of 1982 for training and initial production testing.

(U) RAM-D Growth Program. On 30 September 1981, the PMO signed the RAM-D Growth Program contract. This pact covered 33 RAM-D and Reduced Maintenance Burden Improvement Items. The major improvement target was powertrain reliability and durability.

(U) Self-Cleaning Air Filter. Besides the Self-Cleaning Air Filter tests discussed earlier, RAM-D growth facility vehicles underwent component development testing at the General Motors Milford Proving Ground and the General Dynamics Chelsea Proving Ground. A 1000-hour engine laboratory test also started at the AVCO-Lycoming Plant.

(U) RAM-D Growth Tests. General Dynamics took delivery of the first five production vehicles for modification with RAM-D Growth items. Tests were to begin in March 1983 at Fort Knox.

(U) M1 Final Drive. The M1 final drive underwent a major redesign for application in the last year of M1 production and the follow-on M1E1 production program. Design changes ranged from improving bearing thrust capacity to final drive reduction ratio increases. This latter change cut the top speed from 45 to 41.5 miles per hour.

International Program

(U) Programs. International harmonization efforts centered about maximum interchangeability and commonality with the Leopard 2. Other interested parties included the Swiss, the British, the Saudis, and the Koreans.

(U) German/US. On 16 September 1982, the 15th US/Germany Abrams/Leopard 2 Harmonization Executive Group took place at Unterluess, Germany. Discussions centered about integration of 120mm tank main armament systems into the M1 and the review of interoperability in the areas of fire control, training devices, and product improvement programs. At the September meeting, the participants agreed not to install an automatic loader in either tank or to pursue a joint track. They did agree to test a hybrid configuration of the gun tube, breech block, and cannon components. They also came to accord on ammunition exchanges, and the US decided to adopt the German 120mm perforated core kinetic energy (ke) training round design.

(U) Swiss. Swiss testing of the M1 and Leopard 2 concluded in July 1982. Evaluation, however, continued with a final selection expected by the end of fiscal year 1983.

(U) The Swiss also expressed renewed interest in sub-licensing 120mm ammunition. They preferred US ammunition, even if they were to pick the Leopard 2 Rheinmetall, builder of Leopard 2, agreed to sub-license with the US in that event.

(U) British. The PMO made the rounds of British firms for four items. These were lighter, more durable roadwheels, a water-based non-combustible hydraulic oil, a muzzle/bore scope, and a muzzle reference system. These items would reduce weight and increase survivability.

(U) Saudi Arabia. Acting on Saudi requests, the PMO arranged for a tactical demonstration of the M1, M2, and M3 vehicles at Ft. Hood in August 1982.

(U) Korea. The Koreans continued to work, with General Dynamics help, on a tank similar to the M1. The PMO established a special field office to control and monitor information flow.

Tank Main Armament Development Activities

(U) 120mm Tank Main Armament. The US 120mm program to transfer the technology of the German-designed cannon and ammunition continued on schedule. Key events included the Watervliet Arsenal's fabrication of six complete XM256 cannons and 15 spare tubes; the successful tests of US-made XM827 Ke rounds, and of XM831 multi-purpose training rounds; and the progression into Full Scale Engineering Development (FSED) of the US-developed XM829 Armor Piercing, Fire Stabilized Discarding Sabot Tracer Cartridge for the 120mm program.

(U) The XM830 round with the US-developed XM764 fuze offered the one major failure. Difficulties included severe reliability problems with the US fuze, and with the oversensitivity of the US-developed explosive load. Other items with technical difficulties were the DM1106A1 primer igniter cap and the Ke training round. The former was resolved by permitting the US license to use a resistance-bridge design, the latter by adopting the German DM38 instead of the US XM832 break-up round.

(U) Other. The XM829 made good progress, successfully completing its validation IPR in early 1982. In June 1982, the PMO selected the German JA-2 7-perforation propellant as the XM829's propellant. To build enough XM829s, the PM, Tank Main Armament System added the XM829's manufacture as an added contractor responsibility. All hands aimed at a December 1983 type classification for the XM829, so that the contractor would not have to series-produce the less capable XM827 round.

(U) Planning was in progress for a follow-on on High Explosive Anti-Tank Multipurpose Round, the XM859, which was to supersede the XM830. The XM859 would have a 3,000 yard range, be more accurate, and carry a high technology warhead. The XM859 program was to begin in 1984.

(U) Finally, the combustible cartridge case passed a severe tropical test in Panama. In December 1981, after ninety days of unpacked, open storage, the case fared well under heavy firing use. The XM865 and XM829 were to undergo a like test in the winter of 1982-1983.

(U) 105mm Tank Main Armament. In late 1982, the PMO awarded manufacturing contracts for the XM833 projectiles and penetrators. In January 1983, Nuclear Metals, Inc., one of the contractors, advised the commanding general, ARRADCOM, that it could not make acceptable penetrators because of the bowing of the bars after machining. The PM, Tank Main Armament Systems, took over the CRO from ARRADCOM and, after intensive Government and industry efforts, Nuclear Metals was able, in June 1982, to make the penetrators. The PMO clung to its February 1983 final type classification goal.

(U) On 28 September 1982, the AVCO Corporation received a competitive systems contract to conclude the Advanced Development (Validation) Phase of the XM815 Cartridge Program. A preliminary Design Review was to follow in January 1983 to set the baseline design.

(U) XM797 Cartridge. Due to the design status of a new break-up mechanism required to resolve recurring performance problems, a special IPR in January 1982, put the XM797 cartridge back into the Advanced Development phase. Work simultaneously began on a downward Required Operational Capability (ROC) revision while negotiating with the Germans for their 105mm cartridge as an alternative.

(U) M774 Cartridge. Paced by the availability of penetrators, the M774 cartridge production reached a high of 6,000 units per month in March 1982. Accordingly, on 15 May 1982, M774 management responsibility shifted from the Project Manager, Tank Main Armament System to ARMCOM.

(U) 105mm Enhancement Program. In order to extend the service life of the M60 and M1 tanks, the PMO was studying the use of the 105mm M68 cannon on these machines. The PM, Tank Main Armament System was to have charge of this program, which would involve lengthening the cannon tube and product improving the XM833 cartridge. This program was to start in fiscal year 1983.

Integrated Logistics Support Activities

(U) As part of a major effort to improve M1 supportability, the PMO made significant advances in the quality, effectiveness, and quantity of technical manuals (TM). These gains included a noteworthy amount of on-going validations and verifications of all M1 publications at Fort Knox and Aberdeen Proving Ground; the submission of all "-10" series operators' manuals and five organizational, GS and DS maintenance manuals to The Adjutant General's (TAG) Office for printing and distribution; and the initiation, in late fiscal year 1982, of a troop test of durable manuals, i.e., tear- and stain-resistant, at Fort Hood.

(U) Training. New Equipment Training Teams (NETT) trained 7th Army Training Center personnel, and they supported transition training at Fort Hood, for unit conversion from M60 to M1 tanks. General Dynamics personnel also began preparations for fiscal year 1986 M1E1 fielding by training potential M1E1 instructors and key personnel at the US Army Ordnance Center and School.

(U) Maintenance Allocation Chart (MAC). Taking into account field inputs, the PMO began an extensive MAC review. The result was to be a new MAC which was to appear on 1 November 1982.

(U) Supply Support. Using the "call forward" concept for initial issues of Authorized Stockage List (ASL) and Prescribed Load List (PLL) items, the PMO was able to improve the percentage fill of both lists. Meanwhile, the Parts Allocation Board continued to monitor 50 critical items.

(U) Depot. Depot support transitioned from a PM-funded Contractor Depot Support Program to a combination of organic depot support and selected contractor depot support. Anniston, Sacramento, and Mainz Army Depots received authorization to repair assemblies and components on a form, bit, and function basis. Each depot also signed MOUs outlining assemblies and components to be repaired, repair decision timeframes, and procedures for evacuation to contractors. Identified and constantly updated, the lists of equipment received by the depots included seven different items, ranging from engine balancing equipment to laser system test equipment. The three depots had eleven types total, as ANAD and Mainz had four of the same issues.

(U) TACOM development continued on depot maintenance work requirements for the engine and the transmission. By the year's end the final drive depot maintenance work requirements were completed, while the rest were being contractually let. All ARMCOM component depot maintenance work requirements, with the exception of the ballistic computer, were placed under contract.

(U) M1 Fielding. As stated, 314 M1s deployed in fiscal year 1982. These tanks filled three battalions in Europe and two in CONUS. The first National Guard fielding was to commence in March 1983.

Procurement and Production Facilitization

(U) Production Facilitization. By the end of fiscal year 1982, DATP had completed facilitization for M1 production. By that time, Lima had produced 542 M1s and Detroit 70. Both plants were to reach a 60 per month production level in November 1982.

(U) Tank Plant 1982. The March 1982 Chrysler sale's chief impact was recovery of the delivery schedule by increasing deliveries each month. General Dynamics established a much larger and better central manufacturing staff.

(U) United Auto Workers Strike. A 14 September 1982 United Auto Workers (UAW) strike hit all General Dynamics Land Systems facilities as the Chrysler contract expired. Both plants resumed operation on 27 September. The loss was small, and General Dynamics was able to deliver 27 of the 55 tanks scheduled for September.

(U) AVCO Industrial Productivity Improvement (IPI) Program. During fiscal year 1982, the Army and AVCO entered into an IPI Program, which was a joint effort. The Government was to fund the design and planning, the contractor was to fund the implementation. The Government's Part I effort was completed on time and within cost, and involved a determination of the SAEP's conditions. Part II, which began in September 1982, was to develop a detailed design for improvements in delivery, quality, and for reductions in recurring costs. This part, in two phases, was to be completed in February 1984.

(U) Engine Production. Engine output continued to be the primary pacer of tank production. AVCO's quality control weaknesses led to recurring shortages of in-house built parts. The Army, General Dynamics, and AVCO began work to rectify this problem with more manufacturing floor discipline, increased quality control checks, and more testing. The payoff was to occur in fiscal year 1983, permitting both plants to resume in-station rather than out-of-station engine installations.

(U) Surge Facilities. While reaching for the 60 tank per month per plant goal, the PMO directed the tank and major component contractors to re-evaluate their 150 per month facilitization plans to optimize facilitization to 150 per month, and by directing other work elsewhere, to achieve rates between 90 and 150 tanks per month. Each contractor presented his plan by the year's end.

(U) Mobilization Planning. On 23 June 1982, the PMO completed a study on the feasibility of producing 390 tanks per month. The study established that the production base existed to accomplish this.

(U) Procurement. In May 1982, as stated previously, the 2d year production of 309 tanks was completed and the 3d year production of 569 began. Due to the Chrysler sale, the Under Secretary of the Army approved a delay in the award of the 4th year contract until March 1983. This delay would permit concurrent negotiations of the 4th and 5th year contracts, although each would be priced separately. It also prevented two should-cost actions from falling just behind each other.

(U) Multi-Year Fire Control Procurement. ARMCOM awarded a modification to the 5th year Laser Rangefinder (LRF) and Thermal Imaging System (TIS) long lead delivery order on 16 July 1982. This modification provided for termination liability funding in support of advanced acquisition, or long lead, for 2,161 sets of LRF and TIS in anticipation of a multi-year contract for the fiscal year 1983-1985 program.

(U) M1 Track. Rubber technology limitations contrived to hound track manufacturers. Firestone won the 3d year track contract, but initial production and start-up problems so slowed track output that it threatened tank production. Firestone set about solving its problems. Meanwhile, the PMO accelerated the 4th year spares contract from Standard Products and diverted this output to production until mid-September 1982, when Firestone could again meet schedules.

(U) M1 Unity Periscopes. During the 3d year of production, the PMO encountered a critical shortage of quality periscopes. There were two reasons for this. First, resolution imperfections developed in the adjustable plastic mirror when it was exposed to certain atmospheric conditions; and, second, there was a lack of quality laser filters. The solution for the first problem was found by replacing the plastic mirror with a polished aluminium mirror; testing and long lead acquisition times, however, did pose difficulties. Finally, the Government began accepting tanks without periscopes, which the contractor was to install later. As for the second problem, General Dynamics did not expect to secure a good source until August 1983.

(U) System Technical Support (STS). The fiscal year 1982 STS contract covered 1 March 1983 through 29 February 1984. This was an undefinitized letter contract, and a cost-plus-fixed-fee level of effort type contract was contemplated. Army Procurement Appropriation (APA) funds in the amount of $61.8 million were obligated to provide for required technical services.

(U) Automatic Test Equipment (ATE). The tank program spent $17.1 million for two test sets in fiscal year 1982. These covered Simplified Test Sets (STE-M1/FVS) and DS Electrical System Test Sets (DSESTS-M1/FVS). As the final five letters in each set indicate, it was a joint Abrams/ Bradley buy.

(U) M1E1 Tank Development. On 22 August 1981, the PMO let a $55.7 million contract for the 120mm gun. After that, program changes had to plan for a cost increase proposal. Other outlays included a 15 May 1981 BIP award for NBC, armor, transmission and final drive improvements, as well as weight reductions. Work on the definitization of this contract continued throughout fiscal year 1982, with finalization expected in fiscal year 1983 for $94.3 million.

(U) There were also additions to a fiscal year 1981 RAM-D contract. This contract was awarded on 30 September 1981 for $8 million originally. However, the contract had been modified and consisted of $2.4 million of fiscal year 1981 RDT&E funds, and $21.0 million of fiscal year 1982 Army Procurement Appropriation funds. Completion was scheduled for 29 February 1984.

Finance and Cost

(U) RDT&E. The PMO received $25.6 million in fiscal year 1982 105mm program authority to finance contracts for system support, RAM-D growth, depot maintenance work requirements development, armor improvement, the continuation of test set and training device development, and related in-house efforts.

(U) Block Improvement Program (BIP). Fiscal year 1982 Block Improvement Program (BIP) authority was $25.2 million. Of this, $18.3 million went to General Dynamics for FSED of product improvements for the M1E1, $2.6 million went to TACOM for the purchase and repair of AGT 1500 Government furnished engines, $350,000 went to begin a Block II Improvement four-month concept study; and the remainder went to related in-house Government requirements.

(U) Tank Gun Integration Authority. Fiscal year 1982 Tank Gun Integration program authority was $53.3. Of this, $24.9 was for General Dynamics for FSED. The remainder went to Honeywell International for ammunition procurement and to various government activities for required program support.

(U) Army Procurement Appropriation (APA). The fiscal year 1982 APA (Weapons and Tracked Vehicles) was $1,647 million. This consisted of $1,284.0 million for vehicles, basic issue items, RAM-D, STS, and auxiliary services; $57.8 million for initial production facilities; $212.0 million for the advance procurement of hardware items in support of fiscal year 1983 vehicle requirements; $58.1 million for training devices; and $35.0 million for production base support. General Dynamics signed a 3d year production contract for 665 vehicles.

(U) Operations and Maintenance, Army (OMA). The fiscal year 1982 Approved Operating Program was $7.2 million. Of this, the PMO issued $2.1 million for the Statement of Quality and Support Program which provided for repair parts for the hands-off warranty period. The rest of the authority of $5.1 million paid for the manpower to support the program mission.

(U) Financial Program Assessment. Intensive financial management made it possible for the PM to cut costs, thus allowing the program to buy 855 tanks in fiscal year 1983 instead of the planned 776. This management included several should-cost studies which, for the 3d year contract alone, aided the Government in negotiating 20 percent, or $200 million, off the cost. Moreover, other efforts broke out engines, transmissions, and final drives for the 3d year buy, and most of the fire control components for the 4th year buy. Therefore, the PMO did not have to pay middle-man fees to the prime contractor to buy these items from sub-contractors. Other savings included an anticipated $70 million on a three-year fire control multi-year procurement with the Hughes Aircraft Company; a five-percent reduction on the fiscal year 1982 program turbine engine price; and the PMO won approval for a determination and finding (D&F) for a second-source engine, with no additional funds required for this action.[1]

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1. Material for the preceding portion came from: PM, Abrams Tank System, Annual Historical Review, Abrams Tank System, 1 October 1981 to 30 September 1983.

## Advanced Attack Helicopter (AAH)

(U) In fiscal year 1982, Advanced Attack Helicopter (AAH) Program Manager interest centered on the AAH-64, which was a two-place, twin-engined rotary wing aircraft. The AAH-64 could deliver anti-armor and area suppression fire for the day, night, and limited weather anti-armor mission with emphasis on the ability to fight, survive, and live with troops in the front-line battlefield environment. The AAH-64 represented an optimization of helicopter technology for modern tank-heavy battlefield conditions, and contributed greatly to the Army's ability to fight.

### Background

(U) Prototypes. Government testing, or flyoff, concluded on 30 September 1976 on the prototypes, and resulted in an AAH Defense Systems Acquisition Review Council (DSARC) decision for full scale Engineering Development (ED) of the AAH system. Hughes Helicopters received the development contract for $317.4 million, on 10 December 1976. It called for modification of the flyoff models, fabrication of three additional air vehicles, subsystem development, and testing and integration of mission equipment subsystems into the aircraft.

(U) On 10 March 1977, Martin Marietta and Northrop Corporation received contracts for competitive development of the Target Acquisition Designation Sight (TADS)/Pilot Night Vision Sensor (PNVS) subsystem. By the end of the 3d quarter fiscal year 1980, all test aircraft were configured, with the winning TADS/PNVS design offered by Martin Marietta. On 9 April 1980, Martin Marietta won a Maturity Phase contract with production options for first and second year procurements.

(U) In May 1980, the XM799 projectile received a Limited Production type classification. In the same month, the Department of the Army (DA) awarded a contract for 20,000 rounds. Initial deliveries began in October 1980.

Pre-qualification testing for the XM789 High Explosive Dual Purpose (HEDP) projectile was completed in June 1980. Initial qualification testing ended in October 1980.

### Fiscal Year 1982 Program Development

(U) The Program Manager and staff personnel presented preliminary briefings to the Army System Acquisition Review Council (ASARC III) on 3 November 1981, followed by the full ASARC III Review on 9 November 1981. As a result the AAH-64 Advanced Attack Helicopter was type classified standard. National Stock Number (NSN) 1520-01-106-9519 identified

the AAH-64. On 30 October 1981 a Command Review was conducted at DARCOM Headquarters. The completed package was reviewed and approved.

(U) On 18 December 1981, the Long Leadtime Material Contract with Hughes Helicopters, Incorporated was modified and signed. Modification approval assured continuation of the long leadtime material acquisition effort by the prime contractor.

(U) The Program Manager and staff personnel presented briefings to the Defense System Acquisition Review Council (DSARC III) on 26 March 1982. As a result the decision to begin production of the AH-64 Advanced Attack Helicopter was made. The initial production contract for construction of 11 aircraft was signed with Hughes Helicopters, Incorporated (HHI) and General Electric Corporation on 15 April 1982. A Program Progress Review (PPR) was conducted by PM staff personnel at HHI beginning on 18 May 1982. Delivery of the first Cost Performance Report (CPR) was made on 24 June 1982.

(U) Presentation of the AH-64 to US Forces in Germany was initiated with visits to VII Corps units in June 1982. A demonstration to the German Ministry of Defense was made from 25 June through 16 July. The aircraft demonstrated hover and climb performance, speed envelopes for forward, sideward, and rearward flight; static longitudinal and dynamic stability. Other engineering type flight tests were successfully conducted while the APACHE was at Manching.

(U) After finishing the presentation to SHAPE headquarters and deploying across the English Channel, the APACHE attended the British Army Air Corps 25th Anniversary Celebration at the British Army Aviation Corps Center in Middle Wallop, UK during 23-25 July 1982.

(U) A Source Selection Board for the second production contract of 48 aircraft was convened on 15 August. The contract was expected to be signed in December 1982.

Target Acquisition Designation Sight (TADS)/Pilot Night Vision Sensor (PNVS)

(U) Flight testing of the TADS at Yuma Proving Ground, Yuma, Arizona, to verify compliance with performance specifications was completed on 23 October 1981. Included in the test matrix were verification of day and night detection/recognition ranges, FLIR/DVO/DTV designations, auto and manual tracking performance, and autoboresight verifications. On 3 November 1981, an evaluation began to investigate the capabilities and limitations of the Aviator Night Vision Imaging System (ANVIS) and the Pilot Night Vision Sensor (PNVS) under a mid-European environment during a projected period of adverse weather. It was expected that data would continue to be collected through the end of January 1982, or until sufficient data for the established light level and delta T categories were achieved.

(U) The TADS/PNVS 500 hour endurance test, which is part of the TADS/PNVS overall qualification test program, was successfully completed on 12 December 1981.

(U) The original Martin-Marietta longlead time contract (DAAK50-80-C-0014) was restructured in December 1981. Sustaining funding was provided to the contractor to cover him through 2 March 1982. This allowed Martin-Marietta to continue effort on the production contract to protect the delivery schedule until full go-ahead was given by DSARC.

(U) Longlead items for the TADS/PNVS contract were awarded in January 1981. Due to the quantity change directed at Army Acquisition Review Council (ASARC) and the delay in Defense Systems Acquisition Review Council (DSARC), the original production option scheduled for award on 31 December 1981 had to be restructured. Negotiations were continuing to restructure the options, and the option was exercised on 30 April 1982. Meanwhile, Martin-Marietta was being provided sustaining funds to preserve the delivery schedule.

(U) The ANVIS/PNVS test was concluded on 29 January 1982. Data reduction and analysis continued on the data collected from the ANVIS/PNVS tests held in Germany. The purpose of the test was to obtain data during adverse weather conditions from a mid-European environment. A final report was made in May 1982.

(U) A program to provide additional surrogate trainers was formulated based on a request from the Department of the Army (DA). The DA requirement for cost and scheduling for an APACHE Surrogate PNVS Flight Trainer Program was satisfied. Work was underway in AVRADCOM P&P to prepare a D&F, Procurement Plan, and Request for a Quotation (RFQ). The program was awaiting formal funding go-ahead for fiscal year 1982 longlead dollars. With a program go-ahead, the RFQ was released for competitive bids.

(U) Automatic Test Equipment. The fourth in a series of Critical Design Reviews for Test Program Sets was held during 22-26 March 1982. Review of nineteen Test Program Sets was completed (bringing the total completed to 41 of the scheduled 92).

(U) TADS/PNVS/Micromin Qualification Testing. The qualification program continued with both the TADS/PNVS and 4 box micromin programs. Full system environmental qualification tests, including salt, fog, and vibration gunfire were conducted in March 1982. The micromin qualification effort continued with the completion of the TADS power supply and PNVS Electronics Unit Electromagnetic Interference/Electromagnetic Compatibility (EMI/EMC) tests and the temperature/altitude portion of the Environmental Qualification Test (EQT). Remaining EQT efforts were underway.

(U) Negotiations were completed with Martin-Marietta on the restructured LOT I TADS/PNVS production contract. The LOT I options were defined and the contract was officially signed on 30 April 1982, at which time the option for LOT II longlead items was exercised.

(U) A Subsequent Application Review for the $(CS)^2$ was held 2-6 August 1982 at Martin Marietta, Orlando, Florida, on LOT I. Fact-finding on LOT II production began in June 1982 and continued. Negotiations were scheduled for August-September with estimated contract award on 8 October 1982.

(U) Formal go-ahead on the program on 11 May 1982 and fiscal year 1982 longlead funding for hardware design had been released. The formal Acquisition Plan for the Pilot Night Vision Surrogate Training Program had been forwarded for review and approval. Preparation of the Request for Proposal (RFP) for the integration effort was underway. Release of the RFP was expected in July 1982 with contract award scheduled for 1 November 1982.

(U) Qualification testing for the XM789 HEDP cartridge was completed during the period. Data were sent to AMSAA for independent evaluation. Because of the change in barrel rifling by the developing weapon contractor and because of additional testing imposed by AMSAA, type classification of the XM789 cartridge was completed in March 1982.

(U) The major effort for fiscal year 1983 was expected to center around the second production procurement of 48 aircraft and LOT II production of TADS/PNVS. Contractor Logistics Support Planning, Repair Parts Planning, Depot Maintenance Planning and Publications Planning were also to provide heavy emphasis during the fiscal year. This was expected to pave the way for first production delivery in early calendar year 1984.

Program Management Structure

(U) The AAH was one of the Army's top priority programs, structure under the DARCOM multi-level project concept. Major General Browne, the Program Manager, reported to the Commanding General, DARCOM. The Project Manager for the TADS/PNVS and the Project Manager for the 30mm development reported to the Program Manager, AAH, and used elements of the AAH staff to assist them in their program efforts.

(U) The Program Manager was responsible for the overall program management of the AAH system to include the aircraft and its related mission equipment and subsystem. He directed and controlled all phases of research, development, procurement, production, distribution, and logistics support involved for the AAH and its sub-projects. He was directly responsible for the life cycle management of the AAH and was to centrally direct, coordinate, integrate, and support the material development and acquisition of the subordinate Project Manager of TADS/PNVS and the Product Manager of XM788/789/799 30mm ammunition.

Personnel Strength

(U) Personnel strength, both authorized and assigned, for the Advanced Attack Helicopter (AAH) Project Manager's Office (PMO) is shown in the following table:

| | Civilian | | Military | | Total | |
|---|---|---|---|---|---|---|
| Date | Auth | Assign | Auth | Assign | Auth | Assign |
| 30 Sep 81 | 96 | 108 | 14 | 13 | 110 | 121 |
| 1 Oct 82 | 91 | 104 | 16 | 14 | 107 | 118 |

Program Cost Estimate

(U) The total AAH Program Cost Estimate as of 30 September 1982 was $1,230.8 million for development and $6,149.9 million for procurement for a total of $7,380.7 million.

## Bradley Fighting Vehicle Systems (BFVS)

### Establishment

(U) The Office of the Project Manager, Mechanized Infantry Combat Vehicle was established by the Army Materiel Command (AMC) in January 1968. The office was reorganized and redesignated in July 1975, the Office of the Project Manager, Mechanized Infantry Combat Vehicle Systems. At the close of fiscal year 1978, the Office of the Project Manager (OPM) was located at Michigan Army Missile Plant, Sterling Heights, Michigan. Brigadier General Stan R. Sheridan was designated the Department of the Army Project Manager for the Mechanized Infantry Combat Vehicle Systems (MICVS), effective 14 July 1975. In May 1977, Department of the Army (DA) approved the change in titles to Program Manager, Fighting Vehicle Systems (PM-FVS). The MICV TOW Bushmaster Armored Turret (TBAT) II for infantry and scout was also redesignated Project Manager, Fighting Vehicle Armament System (PM-FVA).

(U) General Sheridan's Charter was approved by the Secretary of the Army on 13 March 1978. Brigadier General Philip L. Bolte was designated Program Manager, Fighting Vehicle Systems, by the Department of the Army, on 10 January 1979. General Bolte's Charter was approved by the Secretary of the Army on 5 April 1979. Brigadier General Donald P. Whalen was designated by the Department of the Army, Program Manager, Fighting Vehicle Systems on 1 July 1980. General Whalen's Charter was approved by the Secretary of the Army on 22 December 1980. The Program Manager was delegated full line authority of the Commanding General, DARCOM, for centralized management of the FVS Program. In October 1981, during a ceremony at Fort Myer, Virginia, the vehicles were officially designated Bradley Fighting Vehicles (M2/M3) and the program title became Bradley Fighting Vehicle Systems (BFVS).

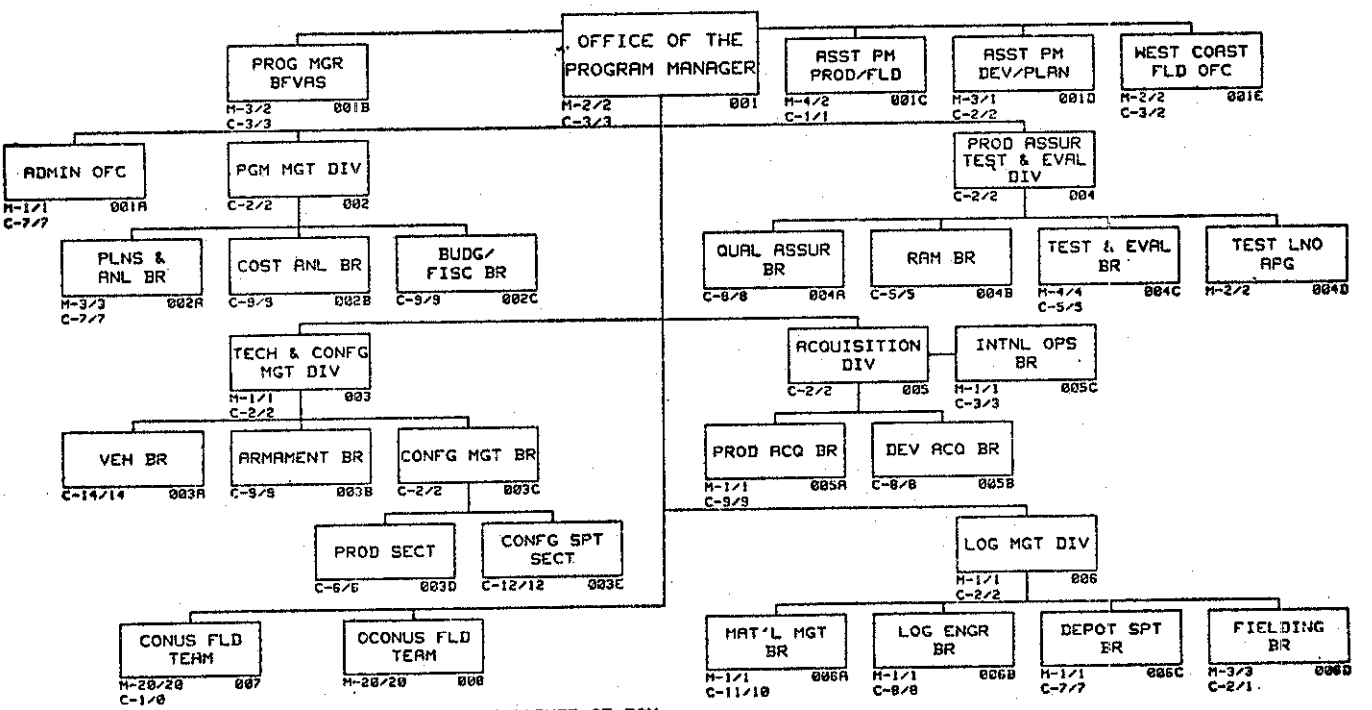
### Mission

(U) In fiscal year 1982, the mission for the Bradley Fighting Vehicle Systems (BFVS) was to improve cross-country mobility, mounted firepower, provide a swim capability, and be air transportable. These vehicle systems would afford communications and protection for the infantry and cavalry squad in mounted combat. The Bradley Fighting Vehicle Systems included the Cavalry Fighting Vehicle (CFV), the Infantry Fighting Vehicle (IFV), and other derivitive vehicles. Program management for this system also included responsibility for the XM714 fuze series for all applications, the BFVS firing port weapon, and the Vehicle Rapid Fire Weapon System.

Personnel/Organization

(U) During the summer of 1981, the program underwent a major reorganization. This step was taken in order to better support the production and fielding of vehicles. The reorganization was approved by DARCOM headquarters during August 1982. At the end of fiscal year 1982, the authorized strength for the BFVS Office was 70 military and 159 civilians, with an on-board strength of 34 military and 131 civilians. The organization chart shows the required and authorized strengths.

PROGRAM MANAGER, BRADLEY FIGHTING VEHICLE SYSTEMS
ORGANIZATION CHART




NOTE: TDA PARAGRAPH NUMBER AT LOWER RIGHT CORNER OF BOX
MILITARY (M-) AND CIVILIAN (C-) REQUIRED/AUTHORIZED STRENGTH AT LOWER LEFT CORNER OF BOX

Fighting Vehicle Systems

(U) The same basic vehicle was used in both the Infantry Fighting Vehicle (IFV) and Cavalry Fighting Vehicle (CFV) roles, and the vehicles were virtually indistinguishable when viewed externally. The interiors, however, were unique and configured to best accommodate the personnel and equipment for each particular role.

(U) The IFV (M2) provided optimum arrangement for the 10-man infantry squad to most effectively fight from the vehicle while mounted. The location of the commander in the turret provided him with all-round vision and permitted him the greatest capability for command and control. The six personnel in the crew compartment each had a unity vision device with an associated firing port weapon which gave them visual orientation within the battlefield, as well as the capability to suppress enemy ground troops. Stowed within the vehicle interior was a quantity of ammunition to support the needs of both the vehicular and individual weapons, as well as a mixture of TOW, Dragon, and LAW missiles.

(U) The arrangement of the CFV (M3) was likewise optimally suited for the five-man cavalry squad so that they, too, could most effectively operate while mounted. The commander also had an optimum location within the turret. The CFV, however, carried 900 more rounds of 25mm ammunition than the IFV, and stowed a total of 10 TOW missiles. Seating arrangements for the two crewmen in the rear compartment provided for maximum comfort and safety while in transit, as well as an optimized viewing capability while performing reconnaissance underway.

(U) The two man turret, identical for both IFV and CFV applications, was occupied by the commander and gunner. Each had control of the turret through separate control handles with the commander having an override capability. The turret was powered by an all-electric, stabilized drive system developed by General Electric (GE) and permitted the 25mm primary gun and 7.62mm coaxially mounted machine gun to be accurately fired by either crewman while moving cross-country. The same power control system was used for employment of the TOW missiles. The drive system had two speeds; a slow, extremely accurate rate for laying and tracking of targets, as well as a high speed slew rate for rapid engagement of alternate targets. The 25mm gun was dual fed and could selectively fire either armor piercing (AP) or high explosive (HE) ammunition. A new integrated day/night sight developed by Hughes Aircraft Company (HAC) used the modern thermal imaging componentry developed for the TOW ground mount system in the night portion of the sight to allow effective employment of all turret mounted weapons during both day and night operations. The two-missile TOW launcher, which had both a travel and firing position, could be reloaded through the crew compartment hatch which provided a degree of overhead protection.

(U) The IFV/CFV was intended to operate with the M1 tank in combined arms operations. Its automotive and suspension systems had been continuously improved to meet this requirement. The 500 horsepower Cummins turbocharged diesel engine, combined with the very responsive GE hydromechanical transmission, provided the IFV/CFV with a top speed of 42 miles per hour. Performance evaluations during cross-country operations at Aberdeen Proving Ground had demonstrated that the redesigned suspension system--using high strength torsion bars and high performance shock absorbers--could provide a mobility capability comparable with the M1.

(U) The IFV and CFV, unlike the lightly armored M113A1 Armored Personnel Carrier, were fighting vehicles and required significantly increased armor protection. This was provided at a minimum weight to insure vehicle mobility. This increased protection was achieved through the use of a unique, spaced laminate armor system combining both aluminum and steel materials.

Multiple Launch Rocket System

(U) The multiple Launch Rocket System (MLRS) was being developed to provide a low cost, multiple launch, guided rocket system. It would be a quick reaction, non-nuclear system, and was intended to supplement existing field artillery. As such, it would operate within the division areas and provide the capability to engage mid-range targets; deliver large volumes of fire; and defeat lightly armored targets.

(U) To improve the survivability of MLRS, it combined the use of armor protection, quick reaction and shoot-and-scoot tactics. The MLRS was being developed at Redstone Arsenal, Alabama. A TRADOC Systems Manager had been established and was located at Fort Sill, Oklahoma.

(U) The MLRS carrier was being developed as a derivative of the Infantry Fighting Vehicle, and was therefore, being accomplished via support agreement between the Project Manager, MLRS and the Program Manager, Fighting Vehicle Systems.

(U) The vehicle was a cab-over-transmission configuration providing space for the three-man crew with necessary fire control equipment. Sufficient armor was provided to permit the completion of a fire mission without dismounting from the vehicle.

Technical Configuration Management

(U) Vehicle Branch. Contractor Engineering Development Testing (EDT-C) was in progress at the start of fiscal year 1982, and was conducted in December 1981, except for environmental evaluation which was completed in February 1982. On-vehicle validation of the application programs (GO-chains) was also performed during the period.

Contractor Prototype Qualification Testing (PQT-C) was initiated in January 1982 during which a Fault Insertion Program was conducted to validate 92 of the approximately 1,600 No-GO chains. In March 1982, a follow-on (400) Fault Insertion effort was initiated and was ultimately extended to perform a complete (100 percent) No-GO chain validation. This total effort was scheduled for completion in December 1982. Government Prototype Qualification Testing (PQT-G) was conducted in two phases and concluded in May 1982. Three prototype units were produced and delivered during January-February 1982. Production delivery of the STE-M1/FVS was started in February 1982 with 18 deliveries during this reporting period out of a total quantity of 25. One unit was supporting vehicle Initial Production Testing (IPT) at Aberdeen Proving Ground (APG). Other units were at the Infantry Center, the Ordnance Center, the Armor Center, and the Armament Command.

(U) Direct Support Electrical System Test Set -(M1/FVS DSESTS-M1/FVS). Contractor Engineering Development Testing (EDT-C) was in progress at the start of fiscal year 1982, and due to difficulties experienced with the Electronic Control Assembly (ECA) test hardware/software development, was extended through March 1982. This caused the initial production units to be delivered without the ECA capability. Contractor Prototype Qualification Testing (PQT-C) was also in progress as a two-phase effort. Phase II was concluded in May 1982 with the completion of environmental (EMI) testing. Validation of the application programs (Go-chains) was also performed on production Line Replaceable Units (LRU) during the period. Delivery of three prototype test sets was completed in January 1982. Government testing (PQT-G) covered the period November 1981 through May 1982. Fifteen production units, which comprised the total first year production, were delivered as scheduled from March through September 1982, with the ECA capability ultimately phased in with the basic unit. One test set was supporting vehicle Initial Production Testing (IPT) at Aberdeen Proving Ground. Other units were located at the Infantry Center, Ordnance Center, Armor Center, and Red River Army Depot.

(U) Vehicle Engineering. The Product Improvement Annex to the Materiel Need was approved. As a result, efforts were initiated for the key product improvements of BCFV Configuration Modification to significantly improve the observer's vision in the cargo hatch area of the CFV. There was also the initiation of an effort to harden the venicle system against nuclear weapon effects. This first phase was a study of the individual systems to determine the level of hardening to pursue.

(U) The first phase of an effort to protect the vehicle against biological and chemical threats was initiated in a study and trade-off effort to determine the best approach to satisfy the materiel need requirements.

(U) A decision was made by the Chief of Staff of the Army, and effort was begun to add one seat to the IFV, and revise the stowage provisions as necessary to accommodate the additional equipment.

Armament Engineering

(U) 25mm Gun/Ammunition System. The M242 25mm guns were delivered from September 1981 through September 1982 for the first production option of 310 guns. These guns successfully passed the Government hardstand first article tests at Aberdeen Proving Ground (APG). Evolutionary PPEP and regular Engineering Change Proposals (ECP) were incorporated and prepared to meet existing and emerging interface requirements with the ammunition and M2/M3 IFV/CFV. Production guns were in use for contractor and Government vehicle testing including application to the Marine Corps' Light Armored Vehicle (LAV). The second production option for 480 guns was exercised.

(U) Development of the 25mm M790 series of ammunition by Ford Aerospace and Communications Corporation was successfully completed and a three-year first production contract for 3.1 million rounds was awarded to FACC in January 1981. The M790 series ammunition was an Americanized, production engineered and improved version of Oerlikon 25mm ammunition. The form, fit, and function M790 series TDP would be validated during the first production contract.

(U) A second source M790 series ammunition contract was awarded to Honeywell Incorporated in June 1981. The ammunition produced by the second source was expected to be qualified during Government testing scheduled to begin in October 1982. The Government had an option to purchase an additional 900K rounds under the second source contract. Subsequent production buys would be competitive.

(U) The Army offered to conduct qualification testing in fiscal year 1983 for companies interested in becoming producers of 25mm ammunition. Aerojet Corporation accepted the Army's offer to deliver 32,000 rounds in January 1983 for qualification testing.

(U) The M794 Dummy was type classified standard in June 1982. Ford Aerospace and Communications Corporation (FACC) was awarded the first production contract.

(U) M621 Shipping and Storage Container tooling was completed and first production units were being produced by FACC.

(U) The 25mm NATO Standardization Agreement (STANAG) was final drafted and was in process of the approval cycle. An extensive Manual of Proof and Inspection which accompanied the STANAG was being prepared, and completion was expected by December 1983. The NATO Working Party for the STANAG was being chaired by the Netherlands with the participation of the US, Belgium, Germany, United Kingdom, Italy and France (Not an official member).

(U) M231 5.56mm Submachinegun/Firing Port Weapon. The initial production fiscal year 1980 contract of 1,600 and most of the 4,000 of the fiscal year 1981 production contract SMGs were manufactured. Early vehicle and Comparative Production Tests (CPT) hardstand tests indicated that the SMGs had low reliability during cold temperature operation. An engineering design and test program determined three minor design changes (i.e. add dry-film lube to the bolt carrier, shorten the innermost recoil spring, open up the barrel gasport and change the gas seal). These changes plus a VEP to remove the folding buttstock were performed for retrofit during first and second quarter fiscal year 1983. These changes would allow a DARCOM 700-34 full release during January 1983. The third production contract for 18,400 was awarded fourth quarter fiscal year 1982 to Colt Industries.

(U) M240C 7.62mm Coaxial Machinegun (MG). The vehicle contractor and the Government conducted various vehicle system tests using production M240C MGs. The vehicle installation of the M240C MG and its vehicle supplied firing solenoid kit were being changed for mid-second year vehicle production.

(U) 714 Fuze Program. Responsibility for all XM714 fuzes with the exception of the 25mm M758 had been transferred to ARRADCOM. This included the XM755, XM756, and XM757 20mm, the M759 (30mm) fuze and the M761 (40mm) fuzes. The M759 had been type classified standard for Advanced Attack Helicopter (AAH) application and the M761 had been type classified for the DIVAD Program.

Configuration Support

(U) A validated and complete Technical Data Package (TDP) was available, suitable for competitive procurement for the M242 gun.

(U) The Government controlled Technical Data Package (TDP) contained the top assembly drawings, top specifications, and interface control documentation for the 25mm M790 series of ammunition.

(U) A validated and complete Technical Data Package (TDP) was available, suitable for competitive procurement for the M621 shipping and storage container.

(U) A valid and complete Technical Data Package (TDP) was available, suitable for competitive procurement for the M794 Dummy.

(U) A valid and complete Technical Data Package (TDP) was available which was suitable for competitive procurement for the M758 fuze.

Logistics Management

(U) During 1982 the Integrated Logistics Support planning was translated into actual support as depot stocks were built up in support of Start of Unit Hand-off. Training of cadre personnel for TRADOC schools and new equipment training was accomplished. Validated manuals were delivered and verification accomplished using target audience soldiers. The Depot Maintenance Support Plan was published and Materiel Fielding Plans finalized and published. All items forming the logistic support of the BFVS were integrated and focused for the start of unit hand-off scheduled for 28 March 1983.

(U) Maintenance. The Technical Manuals and Repair Parts and Special Tools (RPSTS) for the M242 25mm gun went through the Government verification effort during January-February 1982 with excellent results. As a result, the verified TMs were delivered in May 1982. Periodic deliveries were made of updated Logistics Support Analysis (LSA) data throughout the period. This data had been used to update the provisioning documentation in order to provide maximum spare and repair part support for fielding. First Article Testing by the Government (FAT-G) on the M242 was successfully conducted from November 1981 through April 1982. The first in a series of Comparative Production Tests (CPT) was completed on 9 September 1982.

(U) The verification of the vehicle technical manuals began on 1 March 1982, and was expected to be virtually completed by the end of calendar year (CY) 1982. This effort was to provide soldier verified technical manuals to support the start of unit hand-off (SUH).

(U) The Depot Maintenance Support Plan was published in October 1982. The plan established the milestones to insure the timely completion of planning acquisition and the scheduling and training requirements needed to develop the government capability for depot maintenance support for the BFVS.

(U) Depot Maintenance Work Requirement (DMWR) development had proceeded on schedule throughout 1982, and contractor depot support was in place to supplement in those areas where government capability would not be developed prior to the start of unit hand-off.

(U) By the end of the CY, the numerical equivalent in vehicle density of a battalion (plus) was fielded and being operated by the TRADOC schools in preparation for the conduct of resident training. During the period of May 1982-October 1982, only 66 materiel failures occurred which resulted in a non-operational vehicle status. Although faced with shortages of manuals, tools, and limited repair parts, the TRADOC installations were able to return these vehicles to service quickly. As the support system matured and these shortages were overcome, the operational rate of the BFVS fleet was expected to climb dramatically.

(U) Materiel Fielding. Vehicle fieldings to US Army Training and Doctrine Command (TRADOC) and DARCOM MRCs began in April 1982. Eighty vehicles were delivered to user sites by the end of fiscal year 1982. Materiel Fielding Plans were finalized for both US Army Forces Command (FORSCOM) and US Army Europe (USAREUR) and a signed Materiel Fielding Agreement with FORSCOM in September 1982 completed a major milestone in the Bradley fielding effort. Two FORSCOM fielding conferences were conducted in February and September 1982, which brought the developer and user communities closer together in support of initial fielding. The third USAREUR Fielding Conference was conducted in March 1982. Materiel Fielding Teams for FORSCOM and USAREUR were approved and subsequently manned during the fiscal year.

(U) Training. Training on Test Measurement Diagnostic Equipment (TMDE) began in early fiscal year 1982. This training was necessary to support the TMDE evaluation program established at Aberdeen Proving Ground (APG). Following completion of TMDE training, Instructor and Key Personnel (I&KP) training was conducted by the contractor to establish an institutional training base within DARCOM and TRADOC. Primary Military Occupation Specialties (MOS) 63T, 63H, 63G, 45T, 45K, 35H were included in the I&KP training. I&KP training was to conclude in October 1982 with an MLRS organizational course at TACOM. Approximately 177 students were trained over a six-month period. Near the end of fiscal year 1982, the Materiel Fielding Team started training at TACOM and ARRCOM to support the start of unit hand-off scheduled for 28 March 1983.

(U) Supply. During fiscal year 1982, Basic Ordering Agreement (BOA) deliveries to support the TRADOC training base vehicles began. A support list allowance card (SLAC) deck was negotiated with TRADOC in January 1982, and stock was issued to TRADOC units. Materiel Readiness Command (MRC) breakout direct to FMC subcontractor for contracting of spare/repair parts continued to all MRCs. The Project Manager's Office (PMO) placed orders to procure Statements of Quality and Support (SOQAS) packages, and established a Memorandum of Understanding (MOU) with Red River Army Depot for support of the effort.

A Parts/Tools Committee began meeting in February 1982 to track and expedite deliveries of parts, MOUs were signed by each MRC for establishment of a Parts Allocation Board patterned after the M1 tank procedures. Special emergency expediting procedures were established and used to obtain items required to repair vehicles in a Non-Mission Capable Supply (NMCS) status because of zero depot stock on hand. These procedures normally resulted in the shipment of the required parts from the contractor within 72 hours of the receipt of the requirement. Initial shipment of special tools and special tool sets was made for New Equipment Training (NET), Technical Manual (TM) verification, and TRADOC training. There were several tool shortages in sets shipped, and shortages were shipped to customers as deliveries were received. Procedures for package shipments of CONUS/OCONUS ASL/PSSs were established and coordinated with DESCOM.

(U) TMDE. During 1982, the delivery of production units of Simplified Test Equipment (STE) and Direct Support Electrical System Test Sets (DSESTS) began. The TMs Logistic Support Analysis Record (LSAR), training and supply support were being finalized to support the first unit equipped.

(U) During fiscal year 1982, SLAC decks were prepared to support the fielding of the first unit. Stock number assignment continued to items in the PMR, over 90 percent of ASL, PLL items had NSNs. Parts were being delivered to the depot to support the test sets beginning in January 1983. Contractor logistic support existed through December 1982. Statement of Quality and Support (SOQAS) parts had been put on order to support fielding in March 1983. The LSAR was completed and was being updated quarterly.

(U) Technical Manuals had been developed, validation completed, and were going through verification. The test sets were to be supported at depot level of contractor depot support.

(U) The units which were being fielded initially had been briefed on the plans for operation and support of TMDE. SLAC decks had been provided to Fort Hood for support of the test set. Both test set contractors, RCA and CHED respectively, were expected to have an individual on the Materiel Fielding Team to solve TMDE problems during initial fielding.

Product Assurance Test and Evaluation

(U) RAM Data Collection - Contractor Test. The Pre-production Test - Contractor (PPT-C) was completed March 1982. The Reliability, Availability, and Maintainability (RAM) test consisted of three vehicles which accumulated 18,275 miles. The vehicles were run according to the mission profile and data scored according to the IFV/CFV Failure Definition/Scoring Criteria (FD/SC). The vehicles demonstrated 309 mean miles between failure (MMBF) which was well above the 240 MMBF requirement for IPT. The reliability of the IFV/CFV continued to progress upward.

(U) Vulnerability. The Vulnerability Test was conducted to determine the protection provided by the BFVS against conventional weapons to include the effects of small arms attack, artillery shell fragmentation, and mine blast. The test began on 15 November 1980 at APG, and was completed on 7 November 1981. The test results determined that the vehicle conformed to the materiel need (MN) requirements.

(U) Initial Production Test-Government. Initial Production Testing-Government at Aberdeen Proving Ground, Maryland started on schedule on 15 June 1982. Seven production vehicles, six IFVs and one CFV were being used in the conduct of this test. Five vehicles were running 6,000 RAM miles and firing 12,000 25mm RAM rounds each. One vehicle was being used to conduct automotive performance tests, and one to conduct weapons performance tests. After a slow start, due in part to Test Measurement and Diagnostic Equipment (TMDE)/vehicle interface problems, testing progressed satisfactorily, and was expected to be completed on schedule on 15 April 1983.

(U) Pre-production Test-Contractor/First Article (Initial Production) Tests-Government (FAT-G). A combined contractor/government test was conducted at Yuma Proving Ground, Arizona. Testing began on 1 March 1982, using a production vehicle, and included vehicle and weapons performance, environmental, and desert conditions tests. Also, a 1,500 mile durability test was planned to include periodic firings. Automotive and armament problems were prevalent early during the testing. Most automotive problems were resolved but 7.62mm weapons and 25mm gun/vehicle interface problems persisted during the conduct of sand and dust weapons performance tests. The production vehicle which was used in this test was shipped to FMC, San Jose, California, on 8 September 1982, to undergo modifications prior to a scheduled environmental test at the Cold Regions Test Center (CRTC) in Alaska. The vehicle arrived at CRTC on 3 October 1982, where it undertook testing through 15 March 1983. A re-run of the weapons firing sand and dust test on the 25mm M242 gun, the 7.62mm M240C, and 5.56mm M231 weapons was scheduled at Yuma Proving Grounds at a later date, using a production vehicle.

(U) First Article Pre-production Test - Contractor (FA-PPT-C) for the M2. FA-PPT-C testing, using three production vehicles, was completed on 5 March 1982. Over 18,000 miles were run and more than 36,000 25mm rounds were fired. Reliability goals for IPT-G were 240 mean miles between failure (MMBF); pre-production test - contractor (PPT-C) experience was 309 MMBF. A number of performance tests were marginal or slightly below the requirements, but due to the single sample tests and further evaluation, it was deemed justifiable to start IPT-G and continue to work on design improvements and/or revise specification requirements when it became more cost effective to the Government. This was a part of the Systems Technical Support (STS) program.

(U) 25mm M242 Gun Tests. First Article Testing - Government (FAT-G) was performed using three M242 guns. Over 90,000 rounds were fired. All tests were satisfactorily completed, and all guns met the performance requirements, except that one gun failed the rain test. This failure resulted in an improvement of the sealing in the control box connector which had allowed water entry.

(U) Comparative Production Test - 1 (CPT-1) was performed using three M242 guns. Over 28,000 rounds were fired. Guns met performance requirements, except for the rain test, and all three failed that. The failure was attributed to the feed select solenoid. Improvements were made and would be checked out in subsequent CPT tests.

(U) 25mm Ammunition Testing. The armor piercing discarding sabot (APDS) FAT-C was conducted between 1 June and 30 July 1982, at the contractor's test site. Approximately 560 rounds were fired. Requirements, except function and casualty (two case separations occurred) were met. A task force, including members from the Project Manager's Office, ARRADCOM and FACC, investigated the case separation problem. No conclusions had been reached by 30 July 1982.

(U) The Propellant Qualification Test started on 15 August 1982 and continued at Aberdeen Proving Ground. Scheduled completion date was 30 October 1982.

(U) M621 Ammunition Box. FAT-C was conducted between 7 June and 23 August 1982. It was successfully completed.

(U) Initial Production Testing at APG started on 1 September 1982 and was scheduled for completion on 1 December 1982. Gross leakage and hot and cold temperature shock tests were completed. Rough handling tests remained to be done.

(U) Product Specification Component Testing. Product Specification Component Testing (PSCT) covering a total of 36 key vehicle components was expected to be completed during the first half of 1983. Six items had not completed testing and 15 items had been approved by the PCO at mid-1982.

Acquisition

(U) IFV (M2) and CFV (M3) Production. During fiscal year 1982, a total of 100 production IFVs and 56 CFVs were delivered by FMC and accepted by the Government. FMC was behind schedule by 16 vehicles, but were working to regain scheduled deliveries.

(U) MLRS Carrier Production. During fiscal year 1982, a total of 20 production MLRS carriers were delivered by FMC and accepted by the Government. FMC was five vehicles behind schedule at yearend 1982.

(U) Test Measurement and Diagnostic Equipment. Initial production contracts for STE and DSESTS were successfully delivered. Fiscal year 1982 requirements were on contract with no anticipated delivery problems. System technical support contracts were awarded to both RCA and Chrysler. The second production contracts (fiscal year 1982) for combined purchases of 102 STE-M1/FVS tests sets for BFVS, and 20 DSESTS-M1/FVS test sets for M1 were awarded in October 1981.

(U) 25mm Automatic Gun (Production). As of 31 October 1982, 370 automatic guns (M242) were delivered. The Hughes Helicopters' production was delayed from July 1981 to September 1981 due to manufacturing start-up problems. However, no impact on vehicle deliveries occurred due to the offsetting FMC strike.

(U) 25mm Ammunition. During the first program year, 685,000 rounds of 25mm ammunition were produced. As of 31 October 1982, 83,591 rounds were delivered for the second year program.

(U) M758 (25mm) Fuzes. The multi-year contract for fiscal years 1980 through 1982, for initial production was for 1,375,000 (25mm) fuzes. As of 31 October 1982, there were 1,088,000 fuzes delivered.

(U) Firing Port Weapon. An initial production contract for 1,600 M231s was completed in May 1982. Second year production for 4,000 weapons would be completed in December 1982.

(U) Government-Furnished Property (GFP). During fiscal year 1982, Government-Furnished Property to FMC for the IFV/CFV/MLRS carrier had minor delays in meeting delivery dates, but did not impact upon production. GFP in support of the 25mm gun and fuze had been on schedule, problems with the Armor Piercing Discarding Sabot (APDS) propellant were corrected, and the Government was to furnish 35,000 pounds in November 1982.

(U) Breakout Items. New items considered and approved for breakout in fiscal year 1983 and 1984 were the transmission, turret drive system, TOW subsystem, and power control unit. The fiscal year 1984 component breakout plan was established and approved by the Project Manager's Office on 9 June 1982.

(U) Fiscal Year 1981 Production for IFV (M2), CFV (M3) and MLRS Carrier (XM993). A letter contract was awarded to FMC on 23 December 1980 for production of 172 IFVs, 128 CFVs, and 32 MLRS carriers at an estimated value of $399,312,000. In February 1982, the FY81 contract was defined for $365,400,000. The fiscal year 1981 supplement for 100 LFV/CFVs was added by modification to the fiscal year 1981 contract on 30 April 1982 in the amount of $102,100,000.

(U) Fiscal year 1982 Production for IFV (M2), CFV (M3), and MLRS Carrier (XM993). A contract was awarded to FMC on 9 April 1982 for production of 328 IFVs, 272 CFVs, and 68 MLRS carriers in the amount of $605,080,000. The contract also included fiscal year 1982 requirements for peculiar special tools, training support packages, classroom peculiar spare parts, suspension restraint kits, and prepositioned test support packages.

(U) Systems Technical Support (STS). The fiscal year 1982 STS was on contract. A three month extension to the fiscal year 198 effort was being negotiated to support fiscal year 1984 requirements until a cost plus award fee contract could be negotiated for the balance of the fiscal year 1983 STS requirements.

(U) 25mm Ammunition. A production contract was awarded on 9 January 1980 for a total of 3,128,000 rounds of the 25mm, M790 series family of ammunition. The award was a fixed-price-incentive, three-year, multi-year contract to Ford Aerospace and Communications Corporation. The second program was funded for 1,212,000 rounds of ammunition on 9 January 1981. The third program year was funded in January 1982 for 1,231,000 rounds of ammunition.

Second Source

(U) Vehicle. The vehicle second source program was cancelled based on the decision by the Under Secretary of the Army.

(U) Ammunition. A contract was awarded on 11 June 1981, to Honeywell, Incorporated, as the second source ammunition supplier. This contract, which was a firm fixed price, was for prove-out quantities of 25mm round, with an option to acquire 300,000 additional rounds on a firm fixed price (FFP) option basis. The option would be exercised in November 1982.

(U) Systems Technical Support (STS) M758 Fuze. Contract DAAK30-80-C-0037, with Ford Aerospace and Communications Corporation, was awarded in May 1980 for STS services for initial production of a 25mm ammunition system. The contract was being supplemented to provide for an increase in the program hours of 19,500 for a total of $1,097,000.

(U) M758 (25mm) Fuzes. A three-year, multi-year contract for initial production of 1,375,000 M758 (25mm) fuzes for fiscal year 1980 through 1982 requirements was awarded to Honeywell, Incorporated, Defense Systems Division on 1 April 1980. The total contract amount was $13,950,000 on a firm fixed price basis. All program years had been funded.

(U) A contract for fiscal year 1980 STS of the M758 fuze was awarded to Honeywell, Incorporated, Defense Systems Division, on 4 June 1980. The $294,530 award of Modification P00001, dated 11 September 1981, added 4,000 hours and extended the performance period by eight months. The contract was being supplemented to provide for an increase of 8,018 hours for a dollar amount of $619,000.

(U) Firing Port Weapon. A second production contract was awarded to Colt Industries on 2 August 1981. This contract, awarded on an FFP basis for $2,579,207, provided for the delivery of 4,000 weapons. A third production contract was awarded on 18 August 1982, which provided for delivery of 18,850 weapons.

(U) Coproduction of M242 Automatic Gun, 25mm. A consortium (UK, France, and Germany) was negotiating with Hughes Helicopters, Incorporated for the rights to produce the M242 in Europe. Japan was also negotiating the same type of manufacturing rights to build the gun in Japan for internal use.

(U) Foreign Interest in the Purchase of IFV/CFV. Several foreign countries requested P&R data and demonstrations concerning the M2/M3 vehicles. A demonstration was held at Fort Hood, Texas during 31 August through 2 September, and another was planned OCONUS for August 1983. Potential sales from these demonstrations was estimated to be in excess of 500 units (M2/M3).

Program Management

(U) The combined fiscal year 1982 programs managed by this office totaled $1,142 million, of which $918 million or 80.4 percent was obligated at fiscal year end. These resources covered three appropriations, Procurement Appropriations, Army (PAA), Operation and Maintenance, Army (OMA), and Research, Development, Test and Evaluation (RDT&E).

(U) Program and Fiscal Resources. Status of allotment reports as of 30 September 1982 for fiscal year 1979 through 1982 were reviewed, their accuracy verified, and the reports were certified. The results of this review for fiscal year 1982 are summarized as follows:

| R&D | Program Authority ($000) | Obligations | Percent of Obligation |
|---|---|---|---|
| IFV/CFV (644616.258) | $103,133 | $ 79,675 | 77.3 |
| PIP-LRP (643633.164) | 1,053 | 968 | 91.9 |
| PIP-Veh (243735.332) | 4,227 | 3,711 | 87.8 |
| Multiple Launch Rocket Sys (694000.564)-MLRS | 6,651 | 4,294 | 64.6 |
| Other Reimbursables (694000.258) | 931 | 790 | 84.9 |
| | $115,995 | $ 89,438 | 77 percent |
| PAA | | | |
| IFV/CFV | $856,600 | $723,280 | 84.4 |
| 25mm Gun (M242) (3211.16) | 31,300 | 17,973 | 57.4 |
| 25mm Ammunition | 102,273 | 58,581 | 57.3 |
| Firing Port Weapon (3211.16) | 19,400 | 14,665 | 75.6 |
| Other Reimbursables | 4,776 | 2,784 | 58.3 |
| | $1,014,349 | $817,283 | 80.6 |
| O&MA | 11,863 | 11,423 | 96.3 |
| Total | $1,142,207 | $918,144 | 80.4 |

(U) Joint reviews were conducted with the TACOM Comptroller's Office of all unliquidated obligations against their source documents, and undated budgets were prepared and submitted via Modernized Army Research and Development Information System (MARDIS) for fiscal year 1984 through fiscal year 1988 on the IFV/CFV and PIP projects. Budgets were also submitted by way of Procurement Appropriation, Army (PAA) P-Forms for fiscal year 1984 through fiscal year 1988 for IFV/CFV, 25mm gun, 25mm ammunition, and training devices budget lines, as well as Operations and Maintenance, Army (O&MA) Command Operating Budget Estimate for fiscal year 1983-1984.

Cost Information and Analysis

(U) Not-to-exceed prices for the plastic ammunition box, designated fiscal year 1980-1982, were provided to FVAS by Ford Aeronautics and Communications Corporation. Prices were evaluated to determine the impact in fiscal years 1980-1982 and in the out years.

(U) Cost information on the Bradley Fighting Vehicle System was furnished to representatives from the Department of Commerce to develop the price change level from year-to-year for major DOD systems.

(U) A revised fiscal year(s) 1984-1988 vehicle Procurement Objective Memorandum (POM) was prepared. T2SS requirements were added and an enhanced level was computed to include Product Improvement Programs (PIP).

(U) A Baseline Cost Estimate (BCE) was developed and prepared for the vehicle, gun, and ammunition. Operating and Support (O&S) costs were included; but due to the disparity for determining O&S costs existing within DARCOM, TACOM was tasked to develop a standard O&S cost methodology.

(U) Impacts were prepared for three of the five T2SS alternatives requested by the Department of the Army.

(U) Cost estimates for the CFV modification were provided to the Army Program Manager (APM), Bradley Fighting Vehicle System production, relative to production and retrofit, the ancillary electronics equipment alternative (for the IFV), and two Product Improvement Program alternatives.

(U) Bradley Fighting Vehicle System cost data were provided to TRADOC for other assessment. The data included production and retrofit costs for the basic TOW and the Improved TOW sub-systems (T2SS).

(U) Cost estimates were prepared for the Mr. Judd White/Bernard briefing for producing 600 IFV/CFVs in fiscal years 1983 and 1984.

(U) A POM was prepared for the vehicle, gun, and ammunition covering fiscal years 1984 through 1988. Bradley Fighting Vehicle Systsms management was briefed on each POM item.

(U) Due to changes to the Office of Management and Budget (OMB) inflation indices, the cost section of the December 1981 BFVS SAR was redone and resubmitted to DARCOM.

(U) A study on inflation involving the BFVS was completed, validated by TACOM, and submitted to DARCOM for approval.

(U) Cost analysts participated in a meeting to "Delphi" investment costs of T2SS. Costs from basic TOW and Project Manager, TOW Baseline Cost Estimate (BCE) for the Improved TOW Sub-System were used as floor and ceiling costs.

(U) An affordability section was developed to support the second source evaluation team report to identify additional resources to fund the second source program, should the decision be made to implement.

Plans and Analysis

(U) Program Reviews. More than 35 major briefings were presented during fiscal year 1982 to OSD, DA, DARCOM Senior Managers, House and Senate Appropriation Committees and Army Commanders. Special briefings were given to the CIA, Industrial College of the Armed Forces (ICAF), and Army War College.

(U) Type Classification. A DEVA IPR was held on 23 June 1982, which resulted in the recommendation to type classify standard, the 25mm, Dummy XM794, and metal. The recommendation was approved by the Director, Development and Engineering (D&E), DARCOM on 16 July 1982.

(U) External Reviews. A Government Accounting Office (GAO) Task Force conducted an extensive study beginning in September 1981 and concluding in November 1981 on the Bradley Fighting Vehicle Systems' cost and growth, and the planned acquisition of vehicles. The Project Manager's Office (PMO) responded to several GAO questionnaires which related to the announced OSD objective to reduce costs and improve the acquisition process. No formal GAO report was submitted; however, a list of recommendations was issued to the Program Manager.

(U) On 22 September 1982, the GAO began a review of the cost estimating procedure used in Department of Defense (DOD). The review, to include the BFVS, involved the Baseline Cost Estimates (BCE), Selected Acquisition Requests (SAR), and other reports, and would continue to February 1983.

US Army Audit Agency (AAA)

(U) AAA made a Cost Discipline Advisory Committee (CDAC) review at BFVS during the period 1-23 October 1981. The overall objective of the review was to determine why a better estimate of the production costs was not available sooner. The Army Audit Agency (AAA) also sought to determine how inflation rates applied to the BFVS production program. Their findings were contained in Audit Report No. HQ82-701, dated 28 October 1981.

(U) The AAA conducted a review of the BFVS Baseline Cost Estimate (BCE) during the period 26 July through 27 August 1982, in response to the Under Secretary of the Army's 29 April 1982 memorandum to the Director of the Army Staff. The review objective was to determine if the most recent information was used to prepare the BCE and whether or not the data were supported and reasonable. AAA's findings were indicated in Audit Report EC82-703, dated 30 August 1982.

(U) Defense Contract Audit Agency (DCAA). DCAA conducted an evaluation in December 1981 of the C/SCSC Demonstration Review held at FMC Corporation. DCAA's review covered FMC's C/SCSC systems description and procedures, accounting system, cost allocation, and report preparation. Their findings were contained in Audit Report No. 7391-2A110010-001, dated 18 December 1981.

(U) Defense Audit Service (DAS). A DAS team conducted a special review at the PMO on 27 January 1982 to investigate BFVS' requirements for Mercury-Cadmium-Teluride (forward looking infrared (FLIR) detection materials). The auditors were briefed on the development and acquisition program and the projected FLIR requirements.

(U) A team assembled by DOD (Assistant Secretary of Defense (ASD) Research and Development (R&D)) began a review on 17 September 1982 of coverage and use of audits of major sub-contractor pricing proposals. This review, which involved the PMO, BFVS, Defense Contract Administration Services (DCAS) and Defense Contract Audit Agency (DCAA) on the West Coast, would continue until March 1983.

(U) Quarterly SARs were prepared on the BFVS program and were forwarded to HQ, DARCOM for submittal to Congress through the Department of the Army and the Office of the Secretary of Defense.

(U) PMCS documentation was submitted by PMO, BFVS to DARCOM on 30 April 1982 for staffing and comment. Recommended changes were incorporated in preparation for two scheduled briefings to formally approve the PMO's PMCS submission. On 6 August 1982, DARCOM Directors were briefed on the BFVS Program. The DARCOM Commander was briefed on 16 August 1982. Pending DA's approval of BFVS PMCS submission, the PMO had been submitting a Monthly Program Status Report (MPSR), beginning with the May 1982 report. This MPSR highlighted program problems and accomplishments, and summarized cost/schedule performance on selected contracts.

(U) The following formal support agreements, MOUs, and MOAs were negotiated in fiscal year 1982 with participating commands/offices:

| | |
|---|---|
| PM, BFVS/ARRADCOM | Revision |
| PM, BFVS/PM, Smoke Obscurants | Revision |
| PM, BFVS/PM, TOW | Original |
| PM, BFVS/PM, M1 Abrams Tank | Original |
| PM, BFVA/ARRCOM | Original |
| PM, BFVS/USAOC&A | Original |
| PM, BFVS/NAVPRO | Original |
| PM, BFVS/TACOM (Mission) | Revision |

(U) Support Agreements with the following participating activities were being staffed at the end of fiscal year 1982: PM, BFVS/ERRADCOM; and PM, BFVS/MPBMA.

Cost Schedule Control System

(U) During fiscal year 1982 contractor cost reporting was analyzed and information papers and executive summaries were prepared each month. In addition, quarterly briefings were presented to the PMO and his staff. Content of the written analysis and briefings included contract cost and schedule status, projections of cost and schedule trends, contract cost estimates at completion, and evaluations of problem areas. Also monthly analyses on selected contracts were provided to HQ DARCOM, and quarterly analyses prepared for inclusion in the Selected Application Request (SAR) and Supplemental Contractor Cost Report (SCCR)

(U) The evaluation and validation of contractor production phase Cost Schedule Control (C/SC) system was underway. In fiscal year 1982, two BFVS contractors, FMC and Hughes Helicopters, Incorporated (HHI), passed the cost/schedule (C/S) review process by demonstrating compliance with the C/S criteria. In October 1982, a government review team recommended validation of the contractors C/S systems to HQ DARCOM. In addition, Hughes Aircraft Corporation (HAC), the BFVS contractor for the 25mm M242 gun, passed a Subsequent Application Review conducted in September 1982 on the TOW-2 development contract. Texas Instruments, a sub-contractor to HAC, passed their SAR on the TOW 2d-and 3d-year buy also in September 1982. The PMO, BFVS furnished members for these C/S teams.

(U) Because of BFVS' concern for cost escalation, cost management continued to receive major emphasis in fiscal year 1982. The contractor-prepared Cost Performance Reports and Cost Schedule Status Reports were closely monitored and given priority attention each month.

(U) Management Information. The Management Information Control System (MICOS) in fiscal year 1982 continued to assist in the management of the many aspects of the Bradley Fighting Vehicle Systems. Monthly MICOS meetings provided information on the status of development, production, and testing within the BFVS program. In-depth, detailed information and milestones on requirements and accomplishments to achieve fielding in March 1983 were emphasized in the MICOS meetings. Information on the events which made up the path to fielding was added to the MICOS format in fiscal year 1982.

Automatic Data Processing Equipment

(U) In fiscal year 1982, the PMO took delivery on the remaining Automatic Data Processing Equipment (ADPE) which had been ordered late in fiscal year 1981: six cathode ray tube (CRT) terminals, six letter quality printers, six dual speed modems and six portable data terminals. This equipment was procured to permit accessing the M1 prime computer by on and off-site BFVS users. The CRT terminals and printers had been distributed to the West Coast Field Office, Aberdeen Liaison Office, Pentagon Carrier Team DASC Office (printer only), PA Division, Acquisition

Division, APM Development and Planning (terminal only) and PM Division (terminal only). The portable terminals were used to support short term needs and off-site activities for which no CRT terminal/printer workstations were available. Portable terminals were in use by the BFVS Material Fielding Team at Fort Hood, Texas, and to support Environmental IPT at the Cold Regions Test Center, Alaska. Some of this equipment was also used to access test data files at Aberdeen Proving Ground, Maryland, and logistics data files at the Presidio of San Francisco, California.

(U) During the summer of 1982, this office employed a co-op student as a programmer. In September, a permanent position was created in BFVS and the individual was selected for the GS-05 Computer Technician. Effort was underway to create a Computer Programmer position and develop a training program for that position.

(U) Programs were written in-house on our two Hewlett-Packard desk top computers support: general briefing chart preparation, contract cost/schedule performance analysis, TWX preparation, vehicle fielding schedule network (PERT/Gantt) analysis and budget preparation. Effort was underway to procure a multi-user microcomputer system for use by PM Division, as part of our RESHAPE initiatives. This system was expected to permit shifting many of the non-graphics application off of the HP system and provide users with data base management, financial modeling, and word processing systems.

(U) The Program Management Division also assisted two TACOM offices in fiscal year 1982 in evaluating computer hardware, preparing computer procurement justification, providing copies of part of the chart preparation programs, and assisting in setting up ADP equipment and running the systems.

(U) Management Studies. An extensive study was prepared by and forwarded to HQ DARCOM (DCGRM) on the application of risk assessment funding for transition to initial production. The information provided identified risk areas, established possible cause relationships, and indicated manpower and funding requirements pertinent to the acquisition process.

(U) Charter Revisions. Charters for the Project Manager (PM), BFVS and the PM BFVA, were restructured and forwarded through HQ DARCOM to DA for approval. These charters were approved by the Secretary of the Army on 17 September 1982.

## Joint Tactical Fusion Program

(U) During fiscal year 1982, the Joint Tactical Fusion Program efforts were expanded primarily in four areas. These included procurement of a fusion capability for the Army's All Source Analysis System (ASAS) and the Air Force Enemy Situation Correlation Element (ENSCE); complete development and fielding of Technical Control and Analysis Center (Division) (TCAC(D)) System; continued development, refinement, and use of the Tactical Simulation (TACSIM) effort; and fielding of a EUCOM requested Limited Operational Capability Europe (LOCE).

(U) All Source Analysis Program and Air Force Enemy Situation Correlation Element. Estimates produced early in the fiscal year revealed that ASAS Required Operational Capability (ROC) would cost considerably more than originally estimated. The JT P office working with Army Requirements personnel scrubbed the ROC and produced a phased approach that would field an early ASAS with a set capability. By using the Product Improvement Program (PIP) approach, the original capability would then be incrementally upgraded until all capabilities were added to the system.

(U) Although a number of approaches for the Acquisition Strategy of the ASAS/ENSCE were developed by the Project Manager's Office (PMO), coordinated with DARCOM/TRADOC, and presented to HQ DA, no one approach was found suitable. In July a special Task Force was directed by the Under Secretary to review the program and recommend the acquisition strategy to be used for the program. On 27 September 1982, the Task Force completed its review and produced a report, but as of 30 September 1982, no specific guidance had been given on the program.

(U) RCA, Incorporated, Burlington, Massachusetts, the prime contractor for the design and development of the Signals Intelligence/Electronic Warfare System (SEWS) Advanced Development Model (ADM) and the parallel Technical Control and Analysis Center (Division) (TCAC(D)) efforts continued progress toward fielding the systems. During this period the RCA contract was restructured to make it more specific by removing its ambiguities and to provide better software definition. In February, design problems resulted in a virtual restart of the software effort and the eventual release of HRB-Singer as the software subcontractor. As a result, the decision was made to redefine the TCAC(D) Special Evaluation to incorporate primarily Developmental Test Issues in the System Acceptance Test, which included a Post Acceptance Test sequence. It was also decided to require a follow-on evaluation in the fourth quarter of fiscal year 1983 by the 9th Infantry Division at Fort Lewis, Washington, in order to examine Operational Test Issues. By October 1982, RCA had completed manufacture and Configured Shelter Assembly Test on sixteen of the programmed twenty advanced development models and TCAC(D) shelters. Also, a location had been identified in Europe for the TCAC(D) Intermediate Maintenance Facility (IMF) and final coordination of the European Materiel Fielding Plan was completed.

(U) In October 1981, a program was initiated to acquire, for the Air Force, a Deployable Intelligence Data Handling System (DIDHS), using the TCAC(D) hardware as the building block to provide a near-term Quick Reaction Capability to the J-2, Rapid Deployment Joint Task Force (RDJTF). The efforts and close coordination of the Rome Air Development Center and JTFP personnel culminated in the delivery of the DIDHS shelter to MacDill Air Force Base, Florida, in less than one year.

Tactical Simulation

(U) During fiscal year 1982, the Tactical Simulation (TACSIM) program supported Joint and Army exercises, supported evaluation of the Joint Tactical Fusion Test Beds (JTFTB) and continued evaluation/development of the simulation capability.

(U) November 1981, the TACSIM supported the JTFTB evaluation at Fort Hood, Texas during a 3rd Corps Command Post Exercise. In January-February 1982, TACSIM was used to drive the INTEL-EW aspects of JCS exercise Gallant Knight. In April-May 1982 the same support was provided for Golden Sabre; and in August-September 1982, again for Korean exercise Ulchi/Focus Lens 82. During June-July 1982 TACSIM supported the evaluation of the JTFTB at Hurlburt Field, Florida.

(U) Development efforts included initiation of work for incorporation of national assets into TACSIM; development of division level sensor models in coordination with the Army Model Improvement Program (AMIP); generation of message tapes in support of the Intelligence/Electronic Warfare Mission Area Analysis (IEW MAA); and initiation of work on the automation of detailed scenario generation.

Limited Operational Capabilities, Europe

(U) The Limited Operational (Fusion) Capability in Europe (LOCE) was initiated as a result of the United States Commander in Chief, Europe's (USCINCEUR) statement of requirement to the Office of the Secretary of Defense (OSD) on 17 July 1981. After consultation with Congress, OSD directed the Army and Air Force to deploy a tactical fusion capability to Europe using BETA Test Bed assets.

(U) During the fiscal year, the LOCE system was comprised of a joint correlation center (CORCEN), located at the COIC at Ramstein Air Base, Germany, Sensor-Ground-Station Interface Modules (SIM) at ground stations and other sites, and Remote Display Systems (RDS) at Army, Air Force, EUCOM and NATO headquarters.

(U) By the end of fiscal year 1982, a long list of accomplishments had been made. The LOCE correlation center and operator terminals had been installed and checked out; the Zweibrucken, Metro Tango and TFC Interface Modules had been installed and partially checked out; all the Remote User Stations had been installed and partially checked out; and final checkout of Interface Modules and Remote User Stations was awaiting delivery of communication lines from the German Telephone Company. Also, the Gruenstadt Sensor Interface Module development was on contract with delivery and installation expected in second quarter fiscal year 1983. The V/VII Corps Sensor Interface Modules requirements were being refined by the JTFPMO and the appropriate Program Offices. Delivery and installation was tentatively scheduled for the second quarter of fiscal year 1983, and delivery of the upgraded version of the BETA software was complete. In September, a System Manager and an Operator Terminal Training Course had been conducted at Fort Hood for a Cadre of personnel from Europe; final plans for the European Training had been completed; and European Training courses were scheduled to be complete by 1 December 1982.

## Nuclear Munitions

### Background

(FOUO) The mission of the Office of the Project Manager for Nuclear Munitions (OPM-NUC), located at Dover New Jersey, was outlined in the Project Manager's Charter, as well as other Department of Defense (DOD), Department of the Army (DA), and US Army Materiel Development and Readiness Command (DARCOM) regulations. The Project Manager exercised full line authority and responsibility for planning, directing, and controlling the allocation and utilization of authorized resources in all phases of research, development, procurement, production, distribution, logistical support, and stockpile safety and reliability testing programs of assigned nuclear munitions programs.

(FOUO) The Project Manager (PM) for Nuclear Munitions reported directly to the Commander, DARCOM, on all matters pertaining to life cycle management of nuclear munitions. He served as the DARCOM spokesman in dealing with the Office of the Secretary of Defense, the Assistant to the Secretary of Defense for Atomic Energy and other higher authority or lateral agencies in his assigned area of responsibility. In addition, the PM office continued organizing and chairing Joint Nuclear Weapons program groups for which the Army was the designated materiel developer. These included the Joint Department of Energy/Department of Defense (DOE/DOD) Phase II feasibility study groups, design review and acceptance group (DRAAG), DOE/DOD Project Officer Groups (POG), Joint Test Working Group (JTWG), and the Comprehensive Test Plan Group (CTPG), as well as the principal Army member for the Configuration Control Group (CCG) (nuclear warheads) and Joint Task Group (JTG). The PM Office also provided Army membership on all Air Force and Navy DRAAGs as well as Army official observer to Air Force and Navy Joint DOE/DOD Phase I, II, IIA study group activities.

(FOUO) During fiscal year 1982, LTC Thomas R. Ward replaced LTC Joseph H. Brooks as the PM's Assistant Project Manager, Albuquerque Field Office. LTC Ward served as the PM's principal representative in the Albuquerque, Los Alamos, and Las Vegas areas in all DRAAG activities. The Albuquerque Field Office (AFO) also provided an Army member to the B61 and PAL/CD controller POGs as well as an Army observer to the W80, W81, B83, W84, and W87 weapon system POGs. The AFO also provided the Army's official observer to the Air Force and Navy Phase I, II, and IIA study group activities mentioned above.

(FOUO) The PM-NUC West Coast Liaison Office, located at Livermore, California, functioned as the interface between the Nuclear Project Office and the Lawrence Livermore National Laboratory (LLNL), and the Sandia National Laboratory,Livermore. The AFO assumed responsibility

for the mission and functions of this liaison office since the resignation of CPT Stewart W. Long, who had served in this position from July 1980 through July 1982.

(FOUO) The US Army Missile Command (MICOM) Liaison Office at Redstone Arsenal, Alabama, served as agent for interactions with Ballistic Missile Defense System Command (BMDSCOM), MICOM, and the Weapon System Project Managers located at MICOM.

(FOUO) At the beginning of fiscal year 1982 the PM-NUC Office was authorized 39 civilians and 10 military spaces. At the end of the fiscal year, the authorized strength was 40 civilians and 11 military. A civilian space was lost at the end of fiscal year 1981 in support of the HQ DARCOM realighment, but in fiscal year 1982, the Office was successful in gaining one military space for a Warrant Officer (260A) and a civilian space for a Quality Assurance Specialist (Ammunition Surveillance). The civilian workforce was brought to full staff by the end of the fiscal year. Military strength was at 10 by the end of fiscal year 1982 although the PM-NUC Office was understaffed for the major portion of the fiscal year. Manpower utilization in fiscal year 1982 averaged 39 civilian manyears and 9 military at a cost of approximately $1.9 million.

Summary

(FOUO) Fiscal year 1982 marked a successful year in project management, in that the PM-NUC Office not only met initial operational capability (IOC) on two nuclear systems--the M753 Improved 8-inch nuclear projectile and M234 Improved LANCE (Mod 3) nuclear warhead section--but the entire Outside Continental United States (OCONUS) force structure was fully provisioned and equipped with all TOE equipment in precise execution of complex Materiel Fielding Agreements as scheduled and within budget. These two items were the first additions to the Army's nuclear inventory since 1973 when LANCE Mod 2 was introduced. While a Presidential directive prohibited overseas deployment of War Reserve items, these enhanced radiation (neutron) weapons were available for rapid deployment on order and significantly improved the national defense posture.

(FOUO) In response to an urgent requirement from CINCEUR (Commander in Chief, Europe), the PM-NUC Office began an accelerated development program for devices to enhance the physical security of nuclear munitions (Weapons Access Delay System - WADS). The first Engineering Development funds were received in April 1982 with initial production deliveries for lead items scheduled for delivery to theater in January 1983. Accelerated as they were, all key milestones were on or ahead of schedule.

(FOUO) During fiscal year 1982, it became apparent that some version of a Ballistic Missile Defense Weapon and a Corps Support Weapon would be required, probably within the subsequent decade. This was a matter of grave concern in that the nuclear weapons engineering capabilities of the Army's in-house laboratories expenditure resulted in no significant accomplishment for the third consecutive year. If the Army was to support Ballistic Missile Defense and replace the LANCE nuclear capability with a Corps Support Weapon, it would be imperative that component development be initiated in fiscal year 1983. Still, funds allocated in fiscal year 1983 ($0.5 million) allowed no component hardware fabrication for test or experimentation.

(FOUO) The sustained erosion of the in-house nuclear weapons engineering capability also threatened the mid-term readiness of the Army nuclear stockpile. It was expected that annual stockpile assessments would discover problems with fielded systems. The availability of an experienced work force to solve or even recommend solution approaches to anticipated problems was distinctly in question.

Carlucci Initiatives

(FOUO) Defense Acquisition Improvement Program (DAIP). The DARCOM DAIP, introduced in 1982, included thirty-two initiatives. The PM-NUC Office responded with progress reports of actions taken in the following initiatives:

Initiative 1 - Management Principles.
Initiative 3 - Multi-year Procurements.
Initiative 6 - Budget to most likely costs.
Initiative 8 - Assure Appropriate Contract Type.
Initiative 20 - Improve Source Selection Process.
Initiative 30 - Logistic & Support Resources.
Initiative 32 - Increase Amount of Competition.

Budget

(FOUO) Funds provided in fiscal year 1982, such as the Five-Year Development Plan (FYDP) and Program Objectives Memoranda (POM) provided the PM-NUC Office the resources to support their programs; however, there were not enough funds provided in the nuclear technical base (6.2 Spef) within the Army. Lack of support in the nuclear area made it difficult, if not impossible, for the Army to compete with the Department of Energy (DOE) laboratories on the non-nuclear components of new systems and participate in Phase I and II Studies.

(FOUO) This erosion in the nuclear technology base restricted the Army in its ability to:

Favorably compete with DOE laboratories to develop non-nuclear components for nuclear munitions.

Evaluate waivers for repair parts procurement in support of stockpiled items.

Support Foreign Military Sales for trainers and test equipment.

Conduct special studies for the Department of the Army.

Perform root cause analysis of field incidents/ accidents.

Make product improvements relative to the stockpile reliability program findings.

Provide the checks and balance relative to DOE recommendations and product change proposals.

NUCLEAR MUNITIONS PROGRAMS APPROPRIATIONS
($ Thousands)

| APPROPRIATION | FY 82 | FY 83 | FY 84 | FY 85 | FY 86 | FY 87 |
|---|---|---|---|---|---|---|
| Procurement | 27,211 | 43,235 | 130,788 | 101,781 | 87,216 | 64,740 |
| RDTE | 44,097 | 44,946 | 43,327 | 37,328 | 38,901 | 37,199 |
| OMA | 15,006 | 18,124 | 18,279 | 17,099 | 17,536 | 17,319 |
| Total | 86,314 | 106,305 | 192,394 | 156,208 | 143,653 | 119,258 |

(FOUO) Stockpile Reliability Test Program. In fiscal year 1982, the stockpile reliability test sampling procedures were modified in response to a JCS/EUCOM request to reduce weapons movement in theater; and all joint Army-Department of Energy (DOE) stockpile reliability test schedules were satisfied. In addition, the OPM-NUC Supplement to AR 742-8 (Army Nuclear Weapons Stockpile Reliability Program) was issued. OPM-NUC and the German Air Force entered into an agreement to participate jointly in fiscal year 1982 stockpile reliability test firings.

(FOUO) Materiel Release. M753 support equipment, previously conditionally released, was given a full release.

(FOUO) Eight-Inch Projectile (M753). Initial operational capability (IOC) was achieved in November 1981. The M753 Joint New Material Firing Test (NMFT) Program was initiated during fiscal year 1982. Three test series were fired with all rounds functioning properly Additional tests were conducted by the US Army Armament Research and Development Command (ARRADCOM) under the New Material Laboratory Test (NMLT) Program. These tests indicated proper function of M753 hardware.

(FOUO) Fielding plan commitments for initial operational capabilities were completed for all gaining organizations with the exception of three FORSCOM shipments, less reserves and National Guard, which were not scheduled until fiscal year 1986.

LANCE

(FOUO) The M234E3 warhead section was type classified standard, Logistics Control Code A by Headquarters, Department of the Army, (DA) on 22 December 1981. Initial operational capability (IOC) was achieved in November 1981. Assembly of M234E3 warhead sections began in November 1981, and the fiscal year 1982 allocation pegpoint was achieved in September 1982.

(FOUO) Distribution of all M234E3 warhead section support equipment and trainers was completed by June 1982 except for the DOE W70-3/4 Type 3D Cutaway Trainer for explosive ordnance disposal (EOD). This trainer was expected to be available June 1983, and there would not be any impact on training or readiness for the M234E3 warhead section.

(FOUO) The M234E3 warhead section new materiel integrated laboratory test (NMILT) program was successfully conducted and three new materiel firing tests (NMFT) were also successful. All M234E1 and M234E2 warhead section stockpile laboratory and firing programs were successful. In addition, an M234E1/E2 warhead section special stockpile engineering investigative program (SSEIP) was in progress during fiscal year 1982. The program was 60 percent complete by the end of fiscal year 1982.

PERSHING 1A

(FOUO) In fiscal year 1982, nine Pla flight tests were conducted at the Eastern test range and eight at the McGregor test range. Five of the flight tests had joint DOD/DOE warhead section stockpile evaluation objectives in addition to missile system objectives. Four of the tests were successful. The other flight was scored a no test because of a missile failure. The McGregor flights included the last scheduled US artillery/ordnance (ARTY/ORD) tests. The Federal Republic of Germany was expected to continue this type of test for several years.

PERSHING II

(FOUO) Fiscal year 1982 was a busy year for the PERSHING II because of the effects of telescoping the engineering development and procurement efforts. Initial interface testing was conducted among missile, warhead, and adaptation kit developers concurrently with actions to release the first year procurement.

(FOUO) The joint testing program, including flight tests, was delayed approximately six to ten months, with no relief from the IOC of December 1983. The delay in testing increased the risk associated with procurring from technical data packages which were not fully substantiated by a complete testing program.

(FOUO) Two very important milestones, manual equipment checked out (MECO) and joint task group evaluation of both DOE and DA manuals and handling equipment were successfully accomplished in fiscal year 1982.

(FOUO) In fiscal year 1982, PERSHING II logistic, provisioning, and deployment plans were in place to support the initial operational capability (IOC). DOE reimbursable items and spare parts were all ordered, and timely deliveries anticipated. Provisioning conferences were held for the Army warhead and missile sections plus DOE materiel. A major effort was required from all supporters because of highly compressed schedules.

(FOUO) Finally, DOE source data were verified earlier than normal and the ARRADCOM contractor prepared all system manuals to support an October checkout.

(FOUO) Eight-Inch Projectile (M422). The first full-function stockpile firing test was conducted at Tonopah, Nevada, with proper range and trajectory performance achieved.

Nike Hercules (NH)

(FOUO) W31 Warhead Modernization Program. At a DOE/DOD Project Officer meeting held in October 1981, the attendees assumed that both the DOE laboratories and the Army would be authorized to expend funds in January 1982. Accordingly, OPM-NUC and ARRADCOM prepared a Product Improvement Proposal (PIP) to cover Army engineering and logistical support to the DOE modernization effort, which was subsequently approved by DARCOM.

(FOUO) Unfortunately, DOE did not receive its fiscal year 1982 Nike Hercules operating funds to support long lead time production tooling. However, development funds to cover some warhead redesign were expended. Moreover, the Army PIP was not funded.

(FOUO) Cable, Simulator Special Purpose W-. As a result of a special Department of the Army sponsored Nuclear Safety Review, the PM-NUC Office was directed to provide, within one year, a special cable for the NH warhead section. This cable, which would provide a missile test capability and enhance the nuclear safety of the warhead section, would be employed as an interim measure until the advent of the modernized W31 warhead discussed above.

(FOUO) M454 /M198 Howitzer Compatibility Program. The M454/M198 Compatibility Program was completed and reviewed by the Nuclear Weapons System Safety Committee (NWSSC). As a result, the M454 was fully certified for use in the M198 with all its prop charges, XM206 (Zones 1 and 2) and M197 (Zone 3) out to its maximum range of 14.7Km.

(FOUO) XM785. The improved diffusion bonding method using niobium interfoil was selected in October 1981 for attaching the upper rotating bands to the titanium module bodies after the completion of technical evaluation of firing test results, post-test hardware condition, and the manufacturing process.

(FOUO) An eleven-month slip in the program was directed by the Military Liaison Committee in January 1982, because of Congressional reductions made in fiscal year 1982 Department of Energy (DOE) capital and operating budgets. All schedules were adjusted to make maximum utilization of the time and reduce risks. The slip allowed the concept of the MC3705 Integrated Control Unit, which combined fuze setting, Permissive Action Link (PAL) and command disable operations to be incorporated into the XM785 system baseline design.

(FOUO) A transonic dynamic instability problem at Mach .98 was discovered in March 1982 during range testing, that had resumed with the resolution of the rotating band problem. The new problem was analyzed, alternatives tested, and the best solution incorporated into the design and general testing resumed by the end of September 1982. Final confirmation of the redesign was expected with tests scheduled for Nicolet, Canada, in January 1983. The solution changed the rotating band configuration from the M483 to the L15 (UK version of M549), the fuze wrench slots to four small holes and the contour of the fuze nose.

(FOUO) The decision was made that actions should be taken as required to protect the combat emergency use only capability of firing the XM785 with M203 propelling charges from M109A series Howitzers.

(FOUO) The preliminary Design Review and Acceptance Group (DRAAG) meeting was held on the W82 warhead. The DRAAG recommended that DOE continue with the design as presented to the DRAAG. The draft preliminary warhead development report was distributed by Sandia National Laboratories, Livermore (SNLL) in August 1982.

Weapons Access Delay System (WADS).

(FOUO) Final adversary testing of proposed WADS components was performed at Navajo Army Depot, Flagstaff, Arizona during fiscal year 1982. Based upon the results of this and testing performed at Sandia National Laboratories, Albuquerque (SNLA) and Redstone Arsenal during June 1981, as well as operational testing performed at the prototype site, Fischbach, Germany, the components to be developed for WADS were selected.

(FOUO) At a Special In Process Review (IPR) held in February 1982, DARCOM approved the basic development program proposed by the PM-NUC Office, and initial funding for WADS 6.4 engineering development was provided. Development of the technical data packages for the following components was completed and approved by the POG and Army Military Liaison Committee members: Tiedown, Z Cage, and Concertina Blanket. Development of other WADS components, such as dead bolt lock, interior barrier, smoke generator system, weapon security cage, and alignment lock continued during fiscal year 1982.

(FOUO) Based upon an urgent US Army, Europe (USAREUR) request to relieve immediate concerns, prototype WADS hardware, tiedowns, alignment locks, and development packages, Z Cage and smoke generator system were provided for immediate use at a site south of the Alps. During the year, installation of the tiedowns was completed, and procurement and installation of the other hardware was in process.

(FOUO) A 27 May 1982 revision to DOD 5210.41M established a requirement for the Services to provide a system which delayed unauthorized access to and/or removal of nuclear weapons from land based storage structures. The Army was designated Executive Agency for the development and acquisition of a delay system to meet these revised requirements and satisfied device operational concepts. Based upon PM-NUC experience on WADS, this office was selected to manage this program. An initial planning meeting between the Services was held in July. A program management plan for this program was published in September 1982, and actions were initiated for the development of Service operational concepts and a joint Service operational requirement.

Corps Support Weapon System (CSWS)

(FOUO) Four meetings of the Phase 1 (Weapon Conception) Study Group were held during fiscal year 1982.

(FOUO) In a memorandum to the Services, the Assistant to the Secretary of Defense for Atomic Energy directed that the requirements of the Army's Corps Support Weapons System be merged with those of the Air Force's Conventional Standoff Weapon program with the object of developing a common weapon system that would meet the needs of both Services.

(FOUO) Identification of LANCE nuclear warhead section logistic support cost and readiness drivers was developed during this period for use in the CSWS COEA and Phase 1 Weapon concept study. Also during fiscal year 1982, logistic support design parameters were developed for use in Phase 1 study efforts and much effort was dedicated to participation in conduct of insertible nuclear component (INC) proof of concept demonstration.

Ballistic Missile Defense (SENTRY, SPRINT, SPARTAN)

(FOUO) OPM-NUC continued its chairmanship of the SENTRY (previously referred to as LoAD) Phase 2 (feasibility) activities. The basing concept for SENTRY, as well as MX, underwent several substantial changes during the fiscal year, and ended the period in a state of flux. Tentative completion date of the Phase 2 study effort was expected to be summer or fall of 1983.

(FOUO) Interest was expressed in using SPRINT as an alternative for a newly developed SENTRY System. As a result, OPM-NUC participated in a preliminary report assessing the viability of reactivating SPRINT. In addition, interest was also expressed in using SPARTAN as an overlay interceptor in the defense of MX or Minuteman.

(FOUO) Integrated logistic support activities involved development of support concepts and efforts to influence design of warhead sections mating joints, Ballistic Missile Defense (BMD) maintenance operating base facilities and BMD onsite transport systems.

## PATRIOT

(U) The PATRIOT Project Manager (PM) was responsible for the development and acquisition of an advanced surface-to-air missile system, designed for maximum effectiveness against the air breathing threat of the 1980s and beyond. PATRIOT would replace the high and medium altitude air defense systems (NIKE HERCULES and Improved HAWK). During confirmation testing the system demonstrated that significant improvements had been made in system capability and maintainability since developmental and operational testing was completed. The first production ground equipment and missiles were received by the Army during this period, and the first PATRIOT unit was equipped at Fort Bliss, Texas.

### Engineering Development

(U) Effort continued in the development of enhancements to ensure that the PATRIOT System would counter the evolving threat. This system growth development, which was initiated in March 1981, was the result of recommendations made by the Defense Science Board (DSB) and the Army Systems Acquisition Review Council (ASARC). A well structured implementation program was developed and coordinated at all levels of the Army. Presentations were made to DOD and follow-up meetings were held with DSB members in January and July of 1982. Approval was received from TRADOC, DARCOM, and DA for three product improvements: the addition of an expanded memory, a land navigation system, and a new fuze processor. Also, several software enhancements were incorporated into the software deployment build and additional items were to be included in later builds. The growth development program formed the basis for the PATRIOT Preplanned Product Improvement ($P^3I$) program. This development and implementation program was expected to provide the required capabilities to counter potential responsive aspects of the PATRIOT threat, to upgrade the basic PATRIOT technology, to enhance operational capabilities, and to accommodate new missions.

(U) A $22.4 million contract was awarded to Raytheon Company in January 1982 for the engineering design definition and initial engineering development of the Special Access Program. The contract period of performance was originally through 31 September 1982; however, this was extended to 31 March 1983 to allow engineering development to continue at a reduced level until additional funding became available. On 1 September 1982 a General Officer's Review of the status of this program was held at the US Army Air Defense School.

### Testing

(U) Unit III of the Defense Systems Acquisition Review Council (DSARC) directed Confirmation Test was completed by the Army Materiel Test and Evaluation Agency on 23 October 1981. This unit of test included missile firings and a reliability demonstration. Production

hardware maintenance and operational procedures were evaluated by military personnel, and extensive search/track tests were performed to evaluate pre-deployment and deployment software. Testing was initiated on the first production missiles and ground equipment during June through September 1982.

Production

(U) The following major production end item deliveries for the fiscal year 1980 production buy were accomplished as of 30 September 1982:

| | |
|---|---|
| Radar | 2 |
| Engagement Control Station | 2 |
| Information and Coordination Central | 2 |
| Launching Station | 6 |
| Communications Relay Group | 4 |
| Missiles | 42 |

Contracting

(U) The third production contract for 9 fire units and 176 missiles was awarded in May 1982 for $379.3 million. It combined the letter contract for critical longlead materials awarded in November 1981, and the balance of material contract was awarded in February 1982.

(U) The fourth Initial Production Facility (IPF) contract for $14.3 million was awarded on 28 May 1982 to provide the necessary special tooling and test equipment required to incrementally achieve the contracted production rates. This IPF was scheduled to achieve production rates of 1.3 fire units and 32 missiles per month at Raytheon Company and 20 missiles and 6 launching stations per month at Martin Marietta Corporation.

(U) A Research and Development (R&D) contract was awarded in April 1982 in the total amount of $11,300,291 for Preplanned Product Improvement ($P^3I$) tasks. This contract was later modified to include additional $P^3I$ tasks, the Maintenance Improvement Program, and basic engineering development.

(U) The second contract for PATRIOT engineering services in support of production was awarded on 14 October 1981 in the amount of $87,421,430. This contract was supplemented in fiscal year 1982 to reach a total contract amount of $93,614,856.

Support Planning

(U) The final TRADOC and FORSCOM Materiel Fielding Plans (MFP) were published in May 1982 and August 1982, respectively. Each MFP contained a description of the PATRIOT weapon system end items (including government furnished equipment), described the logistics support

concepts for the total PATRIOT system and assigned responsibilities for that support. Each plan also contained a Statement of Quality and Support (SOQAS) and a Materiel Fielding Agreement.

(U) The major milestone for the initial transfer of knowledge from DARCOM to the Training and Doctrine Command (TRADOC) was completed on 25 June 1982 via the Instructor and Key Personnel Courses. This training provided TRADOC with the required expertise to develop the training courses needed to deploy the PATRIOT System.

(U) A conditional release for TRADOC of the first production equipment was approved by DARCOM on 18 June 1982. A major milestone was accomplished on 20 July 1982 when the US Army Air Defense Artillery School, First Unit Equipped (FUE) date occurred. This event established the hardware baseline to permit Advanced Individual Training (AIT) to be accomplished using tactical PATRIOT equipment.

(U) The Savannah Army Depot successfully completed tests on loading, blocking, and bracing the PATRIOT missile in a milvan and in a commercial intermodal container. This mode of containerized shipment of missile rounds would significantly reduce packaging costs for ocean shipment and reduce damage related to handling.

(U) PATRIOT's Logistical Support Analysis Record (LSAR) development program, a first for major Army Systems, was completed in June 1982. The LSAR was a repository of detailed maintenance engineering analysis data, which provided the foundation for technical publications, training, and provisioning programs.

(U) Test, Measurement, and Diagnostic Equipment (TMDE) was identified and evaluated for maintenance and calibration through the intermediate maintenance level.

International Operations

(U) The Memorandum of Understanding (MOU) for the program of common acquisition of PATRIOT for NATO, originally scheduled to terminate on 30 September 1982, was extended to 30 April 1983.

(U) On 29 October 1982, the PATRIOT Project Office and Raytheon Company completed a nine-month contract which had been awarded by NATO PATRIOT Management Office (NAPATMO) to study the possible substitution of European Common Military Equipment (CME) for the US Government Furnished Equipment (GFE). As a result of this study, viable candidates of European CME which could be substituted for the US GFE were identified and evaluated. Significant problems dealing with NATO interoperability in selecting a common UHF frequency band and crypto equipment were presented by NAPATMO for resolution. Four technical reports and two briefings were provided to NAPATMO in culminating the study.

(U) The Japanese SAM-X Study began on 1 August 1982 to analyze the PATRIOT system to ascertain its operational effectiveness and life cycle costs to Japan. The study group consisted of representatives from the Ground Self Defense Force and Air Self Defense Force staff offices of the Japanese Defense Agency (JDA) and personnel from the PATRIOT Project Office. JDA was considering replacing both the HERCULES and HAWK systems with PATRIOT. Study efforts at that time had been acclaimed as highly successful by the Japanese and were expected to provide Japan the information required to select a future SAM system.

(U) Bilateral discussions continued with German Government representatives on the method of acquisition and management. They proceeded with a national acquisition planning process which would lead to a planned program start in late 1984 or early 1985.

Defense Acquisition Improvement Program (DAIP)

(U) A DAIP working group was established within the PATRIOT Project Office. This group met on a regular basis to discuss implementation of DAIP initiatives within the Project Office. Initiatives during fiscal year 1982 included an Information Resources Management (IRM) project aimed at increasing worker productivity, capital investment for additional test hardware, and in-theater screening of battery replaceable units.

RESHAPE

(U) The PATRIOT Project Office exceeded its fiscal year 1982 goal by gaining 2.04 manyears. This gain was due primarily to investment in six word processors and one terminal to provide an electronic mail capability.

# CHAPTER V

# EQUIPMENT AND MANAGEMENT

## Introduction

(U) During fiscal year 1982, data communications requirements were greatly accelerated after having maintained a relatively steady pace for more than a decade. Thus fiscal year 1982 requirements were to provide greater accessibility to compensate for the rapid acceleration in demand. US Army Communications Command (USACC) made a concentrated effort to modernize and upgrade communications services CONUS-wide.

(U) During the fiscal year, the organizational structure of the Program Management and Requirements Division was changed from a separate division to a branch within the Operations, Research and Engineering Management Division. The realignment placed emphasis on central program management structured to characterize new business from external requests and align work within internal operating divisions.

(FOUO) The SANG Modernization Program, which was begun in 1973, was divided into three phases. Phase II was started in fiscal year 1982, to run through fiscal year 1985, with its objectives to complete the modernization of and sustain the First Brigade, to modernize and sustain the Second Brigade, to expand and sustain the First Signal Company, to complete the modernization of and sustain the Training Base, expand and sustain the Logistics Base, make preparations for Phase III, and sustain OPM SANG.

## Communications Systems

### USACC-Aberdeen

(U) The US Army Communications Command (USACC), Aberdeen Proving Ground (APG), located at the head of the Chesapeake Bay, comprised the Aberdeen and Edgewood areas. Both areas were within 1½ hours of Baltimore, Maryland.

(U) In fiscal year 1982, APG was responsible for the planning, programing, operation and maintenance of base communications services to the Aberdeen Proving Ground Command and the tenant activities. These services involved administrative and secure telephone data message transmission over AUTODIN, common user intermediate and high speed secure facsimile transmission, operation of the Baltimore Automated Multi-Media Exchange (AMME), range communications, and Air Traffic Control operation/navigational aids maintenance.

(U) Accomplishments. At USACC-Aberdeen, a Stromberg-Carlson DBX 5000 line Electronic Telephone Switch was installed in the 300 block area of APG as the first phase of a plan to upgrade and replace the telephone system. A cable addition/rework to provide trunking between the DCO, ESS and 19 buildings was accomplished by the Cable and Construction Branch Maintenance Division, in record time with minimum downtime and inconvenience to the users. Mobile Maintenance Teams assisted in installing/rework of the buildings. Implementation of additional FTS circuits in the Aberdeen-Edgewood areas resulted in significant toll/WATS reductions. USAFORSCOM WWMCCS Entry System (WES) was installed in the PT&FMD Directorate. This terminal would insure adequate communication between installations and HQ FORSCOM to support the command control information system. Test Diagnostic Facilities were installed in the BRL, MISO and APG MISO to more efficiently analyze circuit problems which would reduce MODEM downtime and alleviate drawn out "finger-pointing" in multiple vendor situations. As recommended by DARCOM CSDPI, the activity acquired the Property Book from the host. BRL and USAEHA Modular Autodin Terminal equipment configuration was removed from the tenants and reverted to over-the-counter service (OCS).

(U) Strength. Sixty-three civilians and 11 military, totaling 74, were assigned in FY 1982. Sixty-three civilians and 22 military, totaling 85, were authorized at the end of the reporting period.

USACC-Adelphi

(U) USACC-Adelphi provided communications support to both headquarters, US Army Electronics Research and Development Command (ERADCOM) and Harry Diamond Laboratories (HDL) to include the Woodbridge Research Facility (WRF), Woodbridge, Virginia; the Joint Tactical Fusion Program Office (JTFPO); and the US Naval Reserve Center (NRC), Adelphi, Maryland.

(U) Although only a small contingency of civilian personnel were assigned, USACC-Adelphi was charged with the highly important mission of communications support for the commands mentioned above, as well as providing a consolidated Telecommunications Center (TCC/SSO) unit for USA ERADCOM and USA Harry Diamond Laboratories. The TCC used

a UNIVAC DCT 9000 Standard AUTODIN Terminal (SATV) 32K system comprised of a card reader, card punch, a standard UNIVAC page printer, three magnetic tape servos, and two UNIVAC U-200 Video Display Terminals (VDT). The TCC personnel also operated two facsimile devices, (1 common user low speed unclassified device and one dedicated high speed secure terminal). In addition, the TCC supported, COMSEC-wise, a control information reference and control terminal (CIRC-II), two Defense Technical Information Centers (DTIC), two AUTOSEVOCOM terminals, and various R&DE (test) projects. The unit provided further support with complete administrative telephone service, leased from the Chesapeake and Potomac and Continental telephone companies, through the Defense Telephone System-Washington (DTS-W), for USA HDL and tenants to include the Woodbridge Research Facility at Woodbridge, Virginia, non-tactical radio, National Security Agency (NSA) Gray Phone and Frequency tactical radio, National Security Agency (NSA) Gray Phone and Frequency Spectrum Management. In that USACC-Adelphi's mission was to provide optimum communications service within the resource limitations imposed by higher authority, an American Telephone and Telegraph (AT&T), Dataphone II System (Diagnostic-type facility for long-haul circuits) was leased through the DTS-W and installed in March 1982. In a continuing effort to provide modern, efficient and rapid communications facilities, this unit was in the process of establishing a Teleconferencing facility (with both audio and video capabilities) to be operational, hopefully, in January 1983.

(U) Strength. In FY 1982, nine civilians, one civilian overhire and no military were authorized and assigned.

USACC-Anniston

(U) Located in Anniston, Alabama, USACC-Anniston planned, programed, operated, budgeted and maintained base communications-electronic systems in support of the Anniston Army Depot mission and provided communications support for host emergency operations. Private sector industry was solicited by the 7th Signal Command to compete with the Federal Government for proposal for the operation and maintenance of the administrative telephone systems for the southeast region, to include the Anniston Army Depot. Announcement was made by the 7th Signal Command on 25 August 1982, concerning results of the Commercial Activities (CA) cost comparison for the administrative telephone service in the southeast region. The 7th Signal Command's recommendation was in favor of contracting out to RCA Service Corporation. The earliest possible date for commencement of contract performance depended on the length of time required to gain final approvals from ACC and the Department of the Army.

(U) Data Communications. The TDF and network control facility was moved to a new location in Building 363, in conjunction with the computer room move. Expanded facilities were installed during the move. The Private Automatic Computer Exchange (PACX) was installed. The PACX allowed users to access multiple computer ports by keyboard entry from remote terminals. There were now over 40 remote terminals accessing 24 computer ports from four systems. The PERTEC remote job entry computer system was moved to the computer room and all communications equipment used with the system were installed in the TDF. All communications circuits were installed for the ONYX office automation computer system. This involved eight circuits from the Director's offices to the PACX, to the ONYX. All circuits were designed and installed by USACC personnel. A dial-in circuit from Redstone Arsenal to Anniston was installed to permit the MICOM PDP-1170 to automatically call the ONYX at Anniston and exchange traffic. USACC-Anniston installed the first 1200 BAUD asynchronous dial-in through the PACX to the SPEEDEX SYSTEM. This prototype led to the procurement of equipment for four more such circuits. A 16-channel multiplexed circuit from Anniston to MICOM, Redstone Arsenal was put in. ARPANET circuits appeared on the Anniston PACX and were accessed via local telephone numbers removing ARPANET from AUTOVON circuits and giving much improved service to Anniston ARPANET users. Also, this activity installed 14-channel dial-in capability in support of the ARPANET for low volume users. USACC-Anniston also provided data technical support to the LBDA "MERSA" oil analysis program.

(U) Projects. Minor construction project for renovation of Dial Central Office (DCO) Building 1 was completed. Construction of a building in the east area to house extended private branch telephone exchange was awarded to Hale Construction Company. A minor construction project for renovation of a radio transmitter building and installation of a 140-foot steel tower was awarded to Anniston Communications. Renovation of the building would be accomplished in-house by Facility Engineers. A project to procure two-way non-tactical radio equipment for replacement and upgrade of equipment used in General Supply Division operation was completed in March 1982. Kentron International was awarded a contract for the engineering of projects DRC-DSC-600CN-107, DRC-DSC-600CN-108, DRC-DSC-600CN-109 and DRC-DSC-600CN-110. These projects included replacement of all existing telephone cable from DCO through the Ammunition area. Project engineering was accomplished 16-21 June 1982. Finally, a contract was awarded to Aubrey Silvey Enterprises for replacing two 1212 pair feeder cables from DCO in the underground duct system to manhole 16, area of Coosa Gate and a cable replacement manhole 16 to Ammo area G600 row.

(U) Strength. As of 1 October 1981, civilian strength was 40 with 36 spaces authorized. Civilian strength as of 30 September 1982, ending report period was 37 with 35 spaces authorized.

USACC-Bush Hill

(U) The Bush Hill unit was collocated with HQ, DARCOM in the AMC Building located in the Bush Hill area of Alexandria, Virginia.

(U) Accomplishments. Another exciting year passed for Bush Hill at HQ, DARCOM, with many new communications requirements. Initial site surveys were completed for installation of a Satellite Earth Station at Cameron Station which would increase communications capabilities as well as allow installation of an Audio Visual conferencing capability for DARCOM. Automatic Data Processing requirements continued to expand as more and more offices modernized their operations.

(U) During September 1981, a TEQCOM Corp MAQS-4 Concentrator was installed in the DARCOM Tele-Communications Center (TCC). This provided the capability of going directly on line to the Andrews ASC by the Optical Character Reader, thereby eliminating the paper tape punch-and-read step commonly used. We were now able to provide faster service to our customers. In addition, the DARCOM SSO TCC was upgraded from Model 28 Teletypewriters to Model 40 VDU type terminals. The TCC crypto vault and administrative space could be more efficiently used. Security and environmental control was improved. In addition to the above events, two new division chiefs came on board in FY 1982.

(U) Strength. The authorized vers s on-hand strength, as of 30 September 1982, was 14 military and 22 civilians against an authorized strength of 34 (11 military and 23 civilians).

| Military | Authorized | Actual |
|---|---|---|
| Officer | 1 | 1 |
| Enlisted | 9 | 15 |

| Civilian | Authorized | Actual |
|---|---|---|
| Operations | 15 | 14 |
| Support | 6 | 5 |

USACC-Charlottesville

(U) USACC-Charlottesville, in support of the Foreign Science and Technology Center, a DARCOM activity, was located in Charlottesville. Virginia. This installation consisted of two federal buildings, one located downtown. Its mission role was quite simple on the surface in that it operated only a switchboard and a Telecommunications Center. The volume of messages, their complexities, organizational relationship and the sheer necessity to automate the host side of the tons of incoming paper kept things active in FY 1982.

(U) Accomplishments. The USACC-Bush Hill was able to avoid installing two new circuits this year with accompanying crypto and costs by multiplexing and bulk encrypting existing circuit. More of this was expected. Message traffic continued to increase. The center was somewhat astounded at the volume when this TCC first opened in 1979. FY 1982 reflected a 100 percent increase over the 1979 volume which the TCC was struggling to process with fewer people. Success was attained in getting authorized amendments to operating instructions to permit service which satisfied the customers while avoiding those old manual processes required in teletype days and still required in regulations.

(U) Strength. In FY 1982, 16 civilians were assigned and 17 were authorized. Seven enlisted personnel were assigned, also and only two were authorized.

USACC-Detroit

(U) The basic mission of USACC-Detroit was to provide telecommunications services to the US Army Tank-Automotive Command, subordinate and satellited activities located at the Detroit Arsenal, Warren, Michigan; Selfridge Air National Guard, Mt. Clemens, Michigan; and the Lima Army Tank Center, Lima, Ohio. Also provided was communications support for host emergency operations and this TCC served as C-E Staff Officer on host commander's staff and special advisor to satellited commanders/project managers. The unit was physically located in Warren, Michigan.

(U) Accomplishments. On 3 May 1982, the Value Added Network (VAN) service for the PM, Abrams Tank System (DRCPM-GCM) and the R&D Center became operational, providing the capability for data communications between the Abrams Prime 750 and R&D Center Prime 850 computers and contractor and Army facilities in CONUS; Berne, Switzerland; and Vilsek and Bonn, Germany. On 7 June 1982, TELER DRC-TMR-401CN-094, FAX Upgrade, was completed. The Xerox Model 410 dedicated facsimile terminals for Abrams Tank System PM, BRADLEY Fighting Vehicle Systems PM, and the TACOM R&D Center were replaced with Burroughs Model DEX 4200 dedicated facsimile terminals. The TCC received a distinguished tributary award certificate from the GENTILE AUTODIN Switching Center (ASC) for maintaining an average CIM percentage of 0.25 (actual) or less for the period 1 January 1982 through 30 June 1982.

(U) Strength.

| | 1 October 1981 | | 30 September 1982 | |
|---|---|---|---|---|
| | Assigned | Authorized | Assigned | Authorized |
| Civilian | 35 | 36 | 35 | 36 |
| Enlisted | 1 | 1 | 3 | 1 |

USACC-Dover

(U) This organization was directed by Mr. S. J. Sabo, and reported to USACC-DARCOM, commanded by COL E. E. Tabor. In his capacity as Director, Communications-Electronics, Mr. Sabo was under the operational control of HQ, US Army Armament Research and Development Command (ARRADCOM), commanded by BG H. Whittaker. (Acting Commander).

(U) Accomplishments. A Stromberg-Carlson ESS DBX-5000 was installed in January 1982, as part of the telephone modernization plan. The new system, a digital switch, would electronically place calls and other information as fast as personnel could operate the equipment. Replacing the AE switch which was electro-mechanical was dictated due to the analog system being obsolete and with automation there was a growing need for a faster, more accurate communications medium.

(U) The AE System, while servicing Picatinny Arsenal for more than 50 years, could no longer supply service to an increasing demand. The proposed new system would provide a multi-mode, single system that would handle voice, data special circuit applications employing conventional copper wiring, fiberoptics and coaxial interface. The new switch was capable of handling 2,000 lines; it had about 900 users, but was capable of being expanded to accomodate up to 3,000 users which was more than adequate to serve the phase one area. Four major underground cable projects would expand cable distribution in support of the switch. The projects, which contained about 8,000 pairs of cable were installed by ACCs CEEIA-CONUS installation team from Fort Ritchie, Maryland, the mobile maintenance team from Fort Monmouth, New Jersey and commercial contractors. There were three remaining phases which envisioned another digital switch and additional cables in phase two; complete replacement of the old electro-mechanical system across the entire installation in phase three; and a switch and cables to serve the Navy Hill area in phase four.

(U) A request was made for assistance to regrade the Dial Central Office (DCO) in Building 173. USACEEIA-CONUS provided a team to complete this work, consisting of increased trunking between the existing DCO and DBX, linefinder to first selector crossconnects. Even with the installation of the Stromberg-Carlson ESS, numerous problems had surfaced causing degraded service in the telephone system. Some of the major problems were: (1) Lack of trunking between the DCO and the DBX; (2) numerous problems relating to the air conditioning and micro-processor failures; (3) program loader (back-up take) was not working; and (4) the DBX ground reading 30 ohms, exceeded the required 5 ohms. To resolve these

problems, an addition of 119 trunks had been terminated between the DBX and the DCO. An additional ground plate was installed by FED for the DBX in order to obtain the 5 ohm minimum ground. The solution of the microprocessor and program loader problem was being coordinated by USACC-DARCOM, USACC-Dover and Stromberg-Carlson. A new air conditioning unit was procured and would be installed as the primary system with existing units to be used as a backup system.

(U) During the month of May 1982, 25 Federal Telephone Systems (FTS) were installed, thus eliminating 19 WATS lines and three FX circuits. These FTS trunks would provide access to all parts of the country at a reduced cost over direct distance dialing. There were some drawbacks to FTS, but in the long run it was thought that it would reduce toll bills.

(U) Impact of Data Communications. Since 1979, data communications requirements maintained a relatively steady pace. Over the past year, the pace was greatly accelerated and hampered communications capability. FY 1982 requirements were to provide accessability to six on-post computers. These included 400 on-post and 200 off-post terminals. FY 1983 promised an even greater impact with implementation of various new systems. A time and attendance program would require the connection of 200 terminals. Two directorates had acquired their own personnel CPUs and had requirements to reach their people at remote locations.

(U) The amount of personnel requiring access to one or more of these computers would increase year after year. The Automated Data Processing (ADP) forecast of FY 1980 was an increase of 75 terminals per year for the next five years. FY 1982 presented USACC-Dover with service requests to hook up over 140 terminals. FY 1983 promised to surpass FY 1982 requirements.

(U) The problem to meet the needs of ARRADCOM had been two-fold: terminating cables between locations and having the equipment Modems on hand to complete the link. Many requirements could not be forecasted because of their urgency and the realignment of many research and development procedures. Use of the PACX provided the customer the capability of accessing any CDU. These dedicated circuits aided in the elimination of many dial-up Modems, but there still remained over 200 terminals on post using the switching network. The ultimate solution was to connect every one to the PACX and provide the capabilities to access any on-post or off-post computer.

(U) Telecommunications Center. During FY 1982, the following equipment improvements were accomplished in the Telecommunications Center. Two Panafax MV1200 units replaced a Xerox facsimile machine and a 3M facsimile machine. One of the Panafax MV1200 units was equipped with an automatic document feeder, saving personnel

handling time in the transmission of multi-page facsimile messages. Both units were equipped with a high speed capability for both transmitting and receiving facsimile messages. The DACOM 412 secure facsimile machine was modified by installing a dry toner unit replacing the wet toner unit with the end result being much improved, higher grade copies of incoming facsimile messages. During the USAINSCOM Crypto Facility Inspection in October 1981, this unit received a detailed inspection of the cryptofacility. No major or minor discrepancies were cited, and the custodian was commended for his outstanding interest in COMSEC accounting procedures and awareness by the inspecting unit.

(U) Finances. For FY 1982, USACC-Dover received approximately $2 million, of which $459 thousand was for TELER projects. As of 24 September 1982, the obligation rate of 96 percent awaited obligation of two TELER projects. As of 30 September 1982, there was a 100 percent obligation rate with all orders fully obligated.

(U) Training. In applying the principles in achieving objectives set forth in the various management programs, time, effort and money were expended in providing training and development opportunities for USACC personnel.

(U) Strength.

| | 1 October 1981 | | 30 September 1982 | |
|---|---|---|---|---|
| | Authorized | Assigned | Authorized | Assigned |
| Enlisted | 0 | 0 | 0 | 5 (TDY) |
| Civilian | 35 | 30 | 35 | 39 |

Staffing at USACC-Dover was supplemented by 10 overhires and TDY personnel to support the ever increasing ARRADCOM mission.

USACC-Dugway

(U) USACC-Dugway was directed by Mr. Bernard E. Groharing, who reported to the Commander, USACC-DARCOM commanded by COL Ernest E. Tabor. In a dual-hat capacity, Mr. Groharing was also the Director of Communications-Electronics (C-E) to the Dugway Proving Ground, commanded by COL George A. Carruth. The basic mission of this Unit was to insure readiness by providing cost effective mission essential communications through positive management, command and control, efficient operation, and maintenance of communications facilities.

(U) Accomplishments. The TELER DRC-TEC-701CN-079 project replaced an existing obsolete two-pair lead cable with a more state-of-the-art 12-pair plastic cable. This Cable Replacement Project to Defensive Test Chamber was completed in September 1982. After some difficulty with the KG-34 Cryptographic Equipment, TELER Project DRC-TEC-70160-065, Sensitive Compartmented Information Facility was completed in August 1982. The TELER Project DRC-TEC-701BN-081, Neckbone Microwave System at an estimated lease cost of $385 thousand was being installed by contractor personnel. This system would provide communications support to the Granite Mountain Test Area and two mobile van sites at Dugway Proving Ground.

(U) A host-funded microwave system contract in the amount of $55 thousand was awarded, and installation efforts by the contractor were underway. The microwave system would provide communications support for the RDT&E Test Mission at TARGET "S."

(U) The 7th Signal Command funded $7 thousand for installation of environmental equipment alarms in USACC-Dugway communications facilities. This project would provide automatic alarming of environmental equipment failures and in turn, provide timely repair and restoration of subject environmental equipment. This would prevent communications service degradation due to long term failures of subject environmental equipment.

(U) A new Pulse Code Modulated Cable Carrier System was installed during February and March 1982. The system which ran from the Ditto Technical Area, Dial Telephone Exchange to the North Wing Test Site in support of the CLOM Test Program was funded, courtesy of the United States Air Force. The maintenance vehicles and bulk materials were securely stored in the Ditto Area DCO after the erection of a new security fence. The $3.8 thousand project was funded by 7th Signal Command and completed in September 1982.

(U) An existing 40 miles of open wire line was to be replaced by a new cable system with a PCM carrier system, running from Tooele City to Dugway. The contract of $45 thousand awarded to Mountain Bell Telephone Company would provide Dugway with an alternate communications role. Work should begin in fiscal year 1983.

(U) A Corps of Engineer's funded contract was awarded in July 1982, in the amount of $63 thousand for installation of a HALON Fire Extinguishing System in the main Dial Telephone Exchange and communications center. The project was scheduled for completion in February 1983.

(U) The Mobile Maintenance Team and local personnel completed a project to provide Class "B" telephone service to the troops in Building 5314. The $5,000 project was approved and funded by the 7th Signal Command.

(U) Strength. Five military and 21 civilians were authorized for FY 1982.

USACC-Fort Monmouth

(U) The mission of USACC-Fort Monmouth was to plan, program, operate and maintain base Communications-Electronics (C-E) systems. C-E services were provided to the Host, US Army Communications-Electronic Command (CECOM), and approximately 32 activities both on and off Post. It provided communications support for the Host and Tenant activities at Fort Monmouth and served as Director, C-E on the Host Commander's staff. Communications provided were local and long haul voice, data and facsimile; and Telecommunications Center support, which included secure voice, narrative and card traffic and secure and non-secure facsimile traffic.

(U) Accomplishments. The outside plant telephone cable upgrade was completed with the installation of approximately 2,000 feet of polyethylene cable which replaced a deteriorating old lead sheath cable No. 2 in the Hexagon exchange area. Augmentation of outside plant telephone cable was completed in the 1200 area. Relocation of project managers from the Hexagon into barrack's buildings required expansion of plant on emergency basis. Approximately 5,000 feet of new cable in pair sizes from 200 to 900 pair was installed. Also, activation of the 513th battalions required installation of new cable plant to Building 1201.

(U) Installation of a Fiberoptic Transmission system was completed and cutover in March 1982. The system was designed to carry interoffice (Hexagon-Main) telephone traffic. Upon cutover of this lightwave transmission system, it marked the first such system to carry administrative voice and data traffic within the Department of the Army and the state of New Jersey. The optical cable consisted of 12 fibers bundled in a half-inch cable installed in an existing telephone subway. The terminal equipment consisted of first and third level (T-3) multi-plexers with conversion from electrical to light wave, accomplished by a gallium arsenide injection laser transmitter and an avalanche photodiode receiver. Four optical fibers were dedicated to the link of which two fibers served as protection. Initial system capacity was designed to carry 192 channels with growth to 1344 channels over two fibers by the addition of modules to existing multi-plexer cabinets.

(U) Strength.

| Personnel | Assigned | Authorized |
|---|---|---|
| Officers | 1 | 1 |
| Warrant Officers | 1 | 1 |
| Enlisted | 14 | 13 |
| Civilian | 58 | 63 |

Headquarters, USACC-DARCOM

(U) Personnel. On 22 March 1982, USACC-DARCOM imposed a hire freeze on any recruitment action which would increase the total USACC onboard strength; i.e., new appointments, reinstatements, transfers and reassignments from other than USACC units. In June 1982, USACC revised the guidance on the hire freeze to allow the hiring of temporaries to fill full-time permanent vacancies; however, all temporaries were to be off the rolls not later than 29 September 1982.

(U) Mr. Arthur E. Paige, Chief, Resources Division, retired from HQ, USACC-DARCOM in December 1981. Mr. Thomas D. Hope replaced Mr. Paige in February 1982. Mr. Henry Sanders, Plans Division, retired in May 1982.

(U) Strength.*

| | Officers | Warrant Officers | Enlisted | Civilian |
|---|---|---|---|---|
| **1 October 1981** | | | | |
| Authorized | 2 | 1 | 4 | 40 |
| Assigned | 2 | 1 | 5 | 38 |
| **30 September 1982** | | | | |
| Authorized | 2 | 1 | 4 | 40 |
| Assigned | 2 | 0 | 5 | 89 |

* Headquarters only. See unit histories for unit strength.

(U) Safety. Accident Exposure Data Reporting was begun at the direction of the 7th Signal Command. A request to reconsider reporting requirements on the basis that personnel strength was already being reported, was denied. Additionally, the report had to be submitted by message, vice telephone. The 7th Signal Command Safety Director's position was abolished. The ACSP&A and SGM had picked up the Command Safety Function. The impact was that no command safety inspections were conducted, and it eliminated the expertise available to USACC-DARCOM and units. The DARCOM Staff Safety Office initiated a Joint Safety Committee in accordance with AR 385-10 and was meeting quarterly. Mr. Fred Huebner, USACC-DARCOM Safety Officer, was designated as a representative.

(U) Accident reporting was no longer to be coordinated with the host Safety Office. The 7th Signal Command directed units to complete DA Form 285 through block 38 and forward them to the 7th Signal Command for completion. Accident Analysis Data had not been provided by the 7th Signal Command this year; therefore, a comparison with the 7th Signal Command and USACC rates could not be made.

(U) Communications Career Program, CP-25. There were two mid-year DA-Wide Screening Panels that convened; one during October 1981 and one in April 1982. The Skills, Knowledge, Abilities and Personnel Characteristics (SKAPs) were distributed to the field to be completed for paneling in October 1982. This year a copy of the GPAS/MPAS was submitted along with the SKAP for evaluation by the Screening Panel. The GPAS/MPAS was also required for the "no change" SKAP submissions.

(U) Realignment/Reorganization. The transfer of the Navajo Depot Activity to the Arizona Army National Guard (AZARNG) was effective 1 June 1982. Using the Statement of Work (SOW) and the Study Package assembled by the US Army Depot Systems Command (DESCOM), the 7th Signal Command tasked USACC-Tooele to negotiate an ISSA with AZARNG. One telephone operator space was saved.

(U) The 7th Signal Command conducted a reorganization study of USACC-White Sands in March 1982. The study was necessary to provide an organizational structure to enable the USACC to do a manpower survey in 1984. A Letter of Instruction (LOI) was to be effective 1 October 1982, that would save 11 required spaces; however, the LOI had not been received by the end of FY 1982.

(U) Equal Opportunity (EO). USACC-DARCOM participated in the implementation of both the HQ, DARCOM and Command Affirmative Action Plan (AAP) Multi-year Plan. Under-representation percentages were specified for determining minority and women goals. HQ, DARCOM EEO was assisting in establishing criteria that would allow more reasonable goals--action would continue.

(U) Twenty-seven military and civilian personnel attended nine modules of EO training with a 70 percent attendance record. Division Chiefs identified personnel for attendance--training would continue to achieve 100 percent attendance.

(U) Summary Statistics of Minorities and Women were not being added to referral lists prepared by the Communications Career Program (CP-25). The impact of not receiving this data affected the ability of USACC-DARCOM to attain the goals it set, not the actual application of EO policy and procedure.

(U) Methods and Standards (M&S) Program. In 1979, this Headquarters implemented an M&S Program in accordance with AR 5-4, for our field units that had access to the Standard System Applications (SSA) system (formerly SPEEDEX). By 1980, M&S had developed to the point where standards codes and performance standards could be promulgated to the field as a common base for their monthly Work Center Performance Report. In April 1982, it was decided to suspend unit reporting since there was no automated system at HQ, USACC-DARCOM to evaluate or review the reports, nor a common system by which the M&S Program could be implemented Command-wide.

(U) Supply. A supply workshop (training) was held in Birmingham, Alabama during 8-12 February 1982 for USACC-DARCOM supply technicians. The training was provided by HQ, USACC-DARCOM logistics personnel. There were 25 attendees from 23 USACC-DARCOM units. The Department of Army issued new supply regulations effective 1 April 1982. These regulations implemented new supply forms as well as some changes in procedures. This required the conversion of property books, document registers, hand receipts, prescribed load lists (PLL), installation hardware, and cable/wire records to the new forms, a massive effort for the supply technicians.

(U) Command Management. During this period, Command Management Reviews were performed at 11 units. These reviews provided improved policy compliance by the units and improved understanding by Headquarters personnel of the operational problems of the units in the field.

(U) Inspector General Visits. Eight units were visited by the 7th Signal Command Inspector General teams during this period. Of these, two were rated as unsatisfactory and would be subject to reinspection early in FY 1983. Personnel shortages and turnovers in the logistics/supply positions continued to contribute to these shortfalls.

(U) Automated Data Base Established. An Automated Data Base for the accumulation of local leased costs, associated with the administrative telephone systems was established. The system, when fully operational, would compare year-to-date costs with costs during previous periods. Comparitively, this system should reduce manpower application to the function by about .25 manyears.

(U) Commercial/Industrial-Type Activities (CITA). The Commander, 7th Signal Command was tasked to perform CITA Reviews of Communications-Electronics (C-E) facilities CONUS. Only two USACC-DARCOM units were included in the FY 1982 schedules. Headquarters, USACC-DARCOM provided the team leaders to conduct the on-site technical reviews and to prepare

the Statement of Work (SOW) for the administrative telephone system at Redstone Arsenal, Anniston Army Depot and Fort McClellen Air Force Base These on-site technical reviews required about seven weeks of TDY for the two team leaders to document requirements. In addition, five weeks were expended in preparing the SOW. The SOW required bids for operation and maintenance of the telephone system as well as an upgrade of the system. The milestones for the CITA reviews called for contract award or cancellation in May 1983.

(U) Security. Significant events relative to the security mission accomplished during FY 1981 included the following: (1) The establishment of the SIGSEC Board in compliance with DARCOM Supplement 1 to AR 530-4; (2) Approximately 75 percent of the Automated Data Processing Special Security Officers (ADPSSO) in the field had attended the Security in Automated Systems course at Fort Lee, Virginia to comply with AR 380-380; and (3) USACC-DARCOM accomplished 100 percent of the security inspections programmed for FY 1981, which included Crypto-facilities, Data Processing Agencies (DPA), Command Security (COMSEC) and Physical Security.

(U) TEMPEST. DARCOM's TEMPEST program was developed, and policy established by the writing of DARCOM Supplement 1 to AR 530-4, DARCOM TEMPEST Policy Letter on TEMPEST inspections, and letter on installation of remote terminals policy. The DARCOM TEMPEST policy was presented to the DARCOM-wide Security Symposium in October 1981.

(U) Installation Telecommunications Plan (ITP). The ITP start date was October 1980. The purpose of the ITP was to identify the total telecommunications requirements catagorized by type of facility, thereby establishing a Communications-Electronics (C-E) plan for each DARCOM installation. The formulated C-E plan was to consider existing facilities, determine deficiencies and recognize new requirements for imposed C-E support to DARCOM. Six DARCOM locations, Aberdeen/Edgewater, Picatinny Arsenal, Rock Island Arsenal, Letterkenny Army Depot, Anniston Army Depot and Fort Monmouth were identified for the FY 1981 telecommunications requirements survey. The results of these studies to identify existing facilities and the requirements for the six additional locations were provided to the 7th Signal Command/CEEIA-CONUS. Technical solutions (recommended projects) were anticipated during September/October 1981. The completed ITP documents would provide the basis for all future program actions relative to Base Communications at DARCOM subordinate elements. Twenty-three ITPs were scheduled for completion during FY 1983-84. Commencing in FY 1985, ITP would be the source document from which ATCOGS program items were identified.

(U) Project Planning--Base Communications Modernization. Requirements totaling $17.7 million were programmed in the ATCOGS for FY 1984 implementation. These requirements along with those of FY 1980, FY 1981 and FY 1982 had to be fulfilled in order to bring C-E up to a level that was capable of supporting DARCOM. Requirements totaling a known $23.3 million were programmed into the ATCOGS for FY 1985 implementation. Additional requirements for new system use were programmed, but not cost identified because of insufficient cost data. Known costs of FY 1985 requirements exceeded FY 1984 costs ($17.7 million) by $5.6 million.

(U) Facsimile Communications. High Speed Digital Secure Facsimile (HSDSF) obtained approval in March 1981 for an HSDSF for White Sands Missile Range, New Mexico. Installation began during the 3d quarter, FY 1981, and the terminal became operational in September. This brought the HSDSF common-user TCC network to a total of 25 terminals at 24 locations within DARCOM, which now had the capability to transmit and receive classified data.

(U) In November 1980, the High Speed Non-secure Facsimile added to the ATCOGS FY 1983-87 a submission to replace the existing leased slow speed (4-6 minutes) facsimile devices. In December, we recommended earliest approval/implementation in order to upgrade the outdated, slow speed equipment on which service had gradually and severely been degraded. Approval was obtained from ARCCO in April 1981 to begin leased replacement. During the 3d and 4th quarter, FY 1981, installation of 21 high speed non-secure devices was accomplished out of the total requirement for upgrade of 119 devices for DARCOM. This upgrade would give facsimile users high speed (2 minutes) transmission capability which would reduce Automatic Voice Network (AUTOVON) and commercial toll call holding time by more than 50 percent, improve speed of service, and reduce manual operations and operator overload.

(U) Early approval was obtained for FY 1983 and FY 1984 ATCOGS requirements for non-secure facsimile terminal upgrade throughout DARCOM. Providing upgrade of slow speed facsimile devices to a standard high speed Consultative Committee for International Telephone and Telegraph (CCITT) Group 2 (3 minutes) transmission capability would provide national compability which would enhance the quality of facsimile transmissions and, more importantly, would reduce AUTOVON and commercial toll call holding time by 50 percent. This would reduce manned operations and operator workload. In the total program to upgrade 126 facsimile devices, replacement of 110 devices was accomplished during FY 1981.

(U) Logistics Data Network (LOGNET) PROTOTYPE. LOGNET sought to demonstrate the application of Automated Data Processing (ADP) techniques for the integration of Army Logistics information into the command and control decision environment. It served to improve the responsiveness of the planning process in crisis planning and management in support of troop deployment. This would be accomplished by secure TEMPEST approved data terminals with an interface between the Worldwide Military Command and Control System (WWMCCS) and LOGNET environments and provide on-line interactive data service between HQ, DARCOM; HQDA; HQ, US Army Forces Command (FORSCOM); and the Logistics Evaluation Agency (LEA) via the ADESCOM computer complex. Site surveys had been completed. Implementation was expected during the 3d quarter, FY 1983 for communications and 4th quarter FY 1983 for ADP equipment. Final Government acceptance tests would take place during the 1st quarter, FY 1984.

(U) Video Conferencing. October 1980 identified requirements for full motion digital satellite color conferencing at DARCOM locations to HQDA through the Chief of Staff, DARCOM. HQDA approved the requirement in November 1980 and tasked USACC to address it in their overall teleconferencing study. USACC forwarded the completed report to HQDA in July 1981. It addressed DARCOM requirements, but in modified form. In August 1981, HQDA approved USACCs study, but asked that the DARCOM operational requirement be taken into account. This requirement represented the first of a kind application of modern video/satellite technology in DARCOM and within DA. DARCOM requirements at nine locations were identified as the Army pilot program along with the newly identified HQDA requirement. It would be satisfied via the DCA Commercial Satellite Communication (COMSATCOM) system. Progress toward implementation was made through site surveys at all locations sponsored by the DCA for prospective bidders of COMSATCOM. USACC was given overall project management responsibility with the TASA charged with conference room design and video equipment configuration. Due to the COMSATCOM time schedule for contract award, implementation was expected to begin in the latter half of FY 1983.

(U) On-Line Optical Character Reader Test. A step in the direction to completely eliminate paper tape from the TCCs was taken during October 1982. Using a TEQCOM MAQS4 AUTODIN 1 Quoncentrator as an interface, the tape punch and tape output from the OCRE were bypassed and messages were placed directly on-line to AUTODIN. This process eliminated use of any paper tape in the TCC. Test of this unit would also be accomplished in three other DARCOM sites; such as Rock Island, St. Louis and Fort Monmouth. The use of the interface was highly successful; it would be used during MOBEX 83.

(U) Electronic Switching System (ESS). A new state-of-the-art electronic telephone system was installed at Aberdeen Proving Ground (DBX 5000), Picatinny Arsenal (DBX 5000), Hawthorne Army Ammunition Plant (Dimension 2000) and White Sands Missile Range (two switches, Dimension 400/Dimension 600). A contract was awarded to Mountain Bell for a leased Dimension 2000 to upgrade Rocky Mountain Arsenal Switching System. Cutover date was early November 1982.

(U) Microwave System. Aberdeen Proving Ground obtained a contract awarded to Westinghouse for a new Rockwell-Collins 96 channel Digital Microwave System. A contract was also awarded to Skoggs Communications for a 96 channel Backbone Digital Microwave system for Dugway Proving Ground.

(U) Fiber Optics. The first Fiber Optics System was installed at Fort Monmouth, between the new Hexagon Building and the Main Telephone Exchange.

(U) BASCOP. Although a let down, BASCOP was nevertheless an integral part of FY 1982 history. A master plan for CONUS telephone was a comprehensive switch acquisition plan to replace outdated electromechanical switches with state-of-the-art digital electronic switching systems. This plan was cancelled by the Under Secretary of the Army. A new upgrade plan, with which USACC-DARCOM had a part, was being formulated and was at USACC level and awaiting review/approval by Under Secretary of the Army Ambrose. Included in the FY 1983 priority list were Aberdeen Proving Ground and Picatinny Arsenal, for funding.

(U) RY Consolidation/Collocation Status. The old, troublesome, outmoded teletype equipment (AN/FCG-161s) in the SSO was replaced by the new Teletype Corp Model 40 equipment in the HQ, DARCOM SSO. The MOD 40 terminal gave the SSO a more efficient, fast and accurate communications system. The MOD 40 terminal functioned as an entry point to AUTODIN I and enabled the operator to send messages from the Visual Display Unit, prepared cassettes, or five-level paper tape. The received messages would be on cassette, hard copy and/or five to eight level lue code for transmission. This terminal was restricted to 1200 baud if paper tape punch was not used, and to 600 baud if the paper tape punch was used. Many problems were encountered in the installation of this equipment; i.e., proper TLC-100/MOD 40, TI line use/non-use, modified MOD 40 for SCI operation. Future plans were to collocate the SSO MOD 40 with the HQ, DARCOM TCC to conserve manpower by having the SSO communications operated by the same personnel operating the TCC. The Rock Island local FE was performing an engineering survey of TCC to determine what had to be accomplished to convert the present TCC to anSI (RY) type TCC. Detroit was waiting for DIA accreditation and program mod. At Aberdeen Proving Ground,

all Mod 40 equipment was on hand, awaiting CEEIA inventory and installation date. The Fort Monmouth program mod was completed, and St. Louis was awaiting program modernization.

(U) LCA/LIF Direct AUTODIN Interface. The Logistics Control Activity (LCA) at Presidio of San Francisco maintained the Logistics Intelligence File (LIF), which was accessed by users world-wide via the AUTODIN. The file update was accomplished via direct interface with AUTODIN I over a 4800 bps circuit. Users also inquired the file for requisition status over a separate 4800 baud circuit in the Query/Response mode. The DPI employed a COMTEN front end processor for communications functions.

(U) The LCA used an IBM 370/158 computer with a COMTEN 3650-II controller. The COMTEN interconnected a 4800 baud direct access AUTODIN I terminal (to McClellan ASC) for bulk data transfer. User inquiries interconnected the IBM computer to an AUTODIN Query/Response terminal (McClellan ASC), an ARPANET terminal and telephone dial-in-ports. Traffic volume averaged 25,000 messages (5 mil lbs) per month for both applications.

(U) An additional 4800 baud circuit was planned to Norton ASC to dual-home (overload) the direct access to AUTODIN terminals (2d Quarter, FY 1983) to better accomodate the high traffic volume. Two new programs, SAILS and UPS, would further increase traffic volume. Final planned circuit configuration for FY 1983 was to have two 4800 baud circuits multiplexed to Norton ASC for file update plus two 4800 baud circuits multiplexed to McClellan ASC. One of these circuits would be for file update and the other for query/response users.

(U) A major controversy continued over who (USACC or DARCOM) would provide personnel to support operations/maintenance support to the communications portion of the system.

(U) Interim Telephone System Upgrade--Picatinny Arsenal. The electro-mechanical Telephone Exchange that was in use was obsolete and not capable of providing adequate service to subscribers. The manufacturer of this equipment, Automatic Electric Company, no longer had it in production. The only vendor who manufactured equipment that was compatible with the existing obsolete Telephone Exchange was ITEC, Incorporated, Huntsville, Alabama. This equipment was an electronic direct control switching system that could be added to existing step-by-step systems. It afforded the reliability of electronics with the simplicity of electro-mechanical without the need for computer or software maintenance. The implementation of equipment additions and planned actions were dependent upon availability of funds. TELERs for the interim upgrade of telephone service at Dover had been forwarded to the 7th Signal Command.

(U) DARCOM-Europe ARPANET Access. A DARCOM study developed to determine the feasibility of establishing a satellite data communications link between CONUS and Germany was submitted concurrently to HQ, USACC and DA on 24 August 1981. This DARCOM-funded communications link would provide ARPANET "mailbox" and related data services, including access to various DARCOM data bases, for more than 300 DARCOM, FORSCOM and DA logistics and supply functional users within Europe. DA (DAMO-C4S-C) approved the proposed satellite communications link on 10 March 1982, for activation at 9.6 Kbs vice 50 Kbs in accordance with HQ, USARCCO recommendation. USARCCO RFS, 22 March 1982, was issued for a service date of 18 October 1982 to start sixteen 300 Bps data channels into the HQ, DARCOM ARPANET complex via entry at Munich, Germany.

(U) Pending data link activation, Army Logistics users overseas processed supply actions via letter or AUTOVON telephone calls to CONUS. With activation of the initial 16-channel data system, functional data users in Europe would access a data port in Munich and be connected in real-time mode to DARCOM's CONUS-wide ARPANET system to query automated data bases such as the Logistics Intelligence File (LIF), Presidio, California, or the Catalog Data Agency (CDA) computer at New Cumberland, Pennsylvania, for current-day status on any logistics action. Hardcopy status of materiel shipments and supply reconciliations, among others, could then be obtained in Europe in a matter of minutes, or same-day response, via automated ARPANET interconnects with systems such as LCA or CDA, in a "mailbox" mode.

(U) HQ, DARCOM-Europe was established in Seckenheim (Heidelberg), Germany on 2 July 1982, to improve DARCOM's readiness posture and centralize command and operational control of numerous DARCOM activities now supporting USAREUR. A requirement was concurrently identified to provide the DARCOM-Europe staff with a responsive interconnect capability via HQ, DARCOM's ARPANET community (which included more than 1100 DA, DARCOM, FORSCOM, and other's "mailboxes"), plus ready access to the DARCOM "Cluster" (Narrative Thrust/Electronic Mail system).

(U) The basic 16-channel interface between HQ, DARCOM and Munich, Germany, was expected to be operational by the end of October 1982. System expansion would accomodate a total of 32-channels if required later, and had an integral capability to add other non-DARCOM computer services which USACC desired to add for increased cost effectiveness. Representatives from HQ, USARCCO and DARCOM would be on site at Munich during 18 October through 6 November 1982 for initial activation and orientation to Army users in Germany.

(U) Provision of HQ, DARCOM's Cluster services to HQ, DARCOM-Europe was expected in December 1982. One ONYX microprocessor, which would

handle eight VDU/Printer ports at Seckenheim, was being shipped from Tobyhanna, Pennsylvania. A dial-up MODEM would interconnect this cluster with the DARCOM CONUS community via the Munich data entry mode. Joint HQ, DARCOM and DCA CY83 plans included installation of an ARPANET C-80 mode which, when completed, would permit removal of the Munich Mux system.

(U) All actions were closely coordinated with and approved by DCA principals to insure DDN and MINET integration and compatibility.

USACC-Hawthorne

(U) On 1 October 1977, the US Army Communications Command-Hawthorne was activated at Hawthorne, Nevada per Permanent Order 57-1, dated 18 July 1977. The activation of this unit was in conjunction with the assumption of command of the Hawthorne Army Ammunition Plant by the Department of the Army. Under the Single Manager Plan, dated 27 February 1976, the Department of the Army assumed ownership of the installation from the Department of the Navy, with an authorized strength of 14 civilians, and no military.

(U) The USACC-Hawthorne mission was to plan, program, operate, and maintain a government-owned communications center; telephone system; provide for the unit administration, internal supply requirements and budget execution responsibilities; and to serve as the Communications Electronics Staff Officer (C-E) on the host installation commander's staff.

USACC-Jefferson

(U) USACC-Jefferson was colocated with the Jefferson Proving Ground (JPG) at Madison, Indiana. The unit provided communications support and C-E services for the host, JPG.

(U) A contract was awarded in September 1981, for installation of an Intrusion Detection System (IDS) throughout Jefferson Proving Ground. The system was expected to be fully operational in October 1982, and would link over 500 devices in 120 buildings to a central computer. USACC-Jefferson supported the rapid proloferation of Automatic Data Processing (ADP) equipment on the installation. Along with providing cable pair and coaxial connections, expertise was furnished in network development and diagnostics.

(U) USACC-Jefferson was a direct benefactor of ADP growth, as well as providing support. The first computer terminal/printer installed as a remote operation was received there, and its uses were immediately studied. As an example, the following unit processes/duties were fully automated: (1) Post telephone director--An accurate, sized copy could be in reproduction within one hour of demand; (2) Telephone billing--DA

Form 1194 automated match with telephone bill--provided accounting and managerial output reports; (3) Radio system assets--So accurate it was used by the host installation as a property record; and (4) Committment Ledgering--Fully automated system permitted the organization to accurately commit 100 percent of its funding during FY 1982.

(U) Strength.

| | Authorized | Assigned |
|---|---|---|
| Officers | 0 | 0 |
| Warrant Officers | 0 | 0 |
| Enlisted | 0 | 0 |
| Civilians | 13 | 14 |

USACC-Letterkenny

(U) The mission of USACC-Letterkenny, located at Chambersburg, Pennsylvania, was to provide C-E management to the US Army Depot System Command (DESCOM) and its subordinate depots, and the Director to serve as C-E Officer on the staff of the Commanding General, DESCOM. USACC-Letterkenny reviewed, staffed and validated all telecommunications requirements submitted by the DESCOM depots and evaluated the readiness posture of all C-E activities at DESCOM depots. The Director was to serve as the C-E Officer on the staff of Commander, Letterkenny Army Depot (LEAD); provide C-E Officer on the staff of Commander, Savanna Army Depot Activity (SVDA) and maintain base C-E systems for LEAD, SVDA and tenant agencies. Its mission was also to command the USACC-subelement, Savanna and the USACC Liaison Office, Corpus Christi; to provide communications support for host installation (LEAD, SVDA, CCAD) disaster, contingency, emergency, mobilization plans and operations; and to operate the DARCOM Eastern Region Overseas AUTOVON Gateway and the Eastern Area Modem Repair Facility.

(U) Accomplishments. The upgrade of Master Antenna Television (MATV) on LEAD to nine channels was accomplished. An Installation Telecommunications Plan (ITP) was completed for LEAD. An on-site visit by a Video Conferencing Team was made. The conference room area and ground station antenna sites were selected and the future use of voice (telephone) on satellite link was discussed. On-site visits, preparatory to installation of Worldwide Military Command and Control System (WWMCCS) were made. A major reorganization of HQ, DESCOM was completed. The CG, DESCOM presented a Certificate of Achievement to USACC-Letterkenny for their outstanding support rendered during the move. Preliminary engineering was completed at LEAD for Local Area Network (LAN). The

FTS was working fine. It eliminated one full-period and one measured-time WATS circuit. Savings would surface at the next Telecommunications Control Board (TCB) meeting. With the cancellation of AUTODIN II, new plans were underway to integrate into the Defense Data Network (DDN). A 9600 Baud circuit was established at LEAD (LSSA) to DARCOM for CPO. An RFS action was completed on several AUTOVON reconfigurations and PCP changes were made on SCIPMIS circuits. Review and revalidation reporting had brought circuit usage and justification clearly into focus for USACC-Letterkenny's DMIS community. The SIGSEC Board was well established with membership by all major tenants at LEAD. General comment from attendees was that the Board had been very helpful. The TCB was active with good participation by tenant activities.

(U) The Installation Planning Board (IPB) was active with good feedback for planning purposes. Planning was underway for rehoming of several eastern US area National Guard units of the LEAD AMME. Several Corps of Engineers districts were stated to be homed on the LEAD AMME. In the rehoming process, several units were scheduled to retrofit from their unsecured Interim Remote Terminal to secure Standard Remote Terminal. Planning was also in process for switching from the University of Illinois to the Computer-Based Instruction (CBI) Center at Fort Leavenworth. USACC-Letterkenny hosted the DARCOM-sponsored ITP Workshop in Chambersburg with 16 depots/depot activities participating. A separate trip was made to Corpus Christi to assist in their ITP submission. Another trip was planned to Sierra and Sharpe Army Depots to assist in their ITP submissions. The LEAD AMME COMOPS published monthly had been reviewed by tributaries and should be continued. Of on-going concern was the loss of funding for the ESS and yearend funding for Dial Central Office (DCO) expansion. This unit appreciated the effort put forth by HQ USACC-DARCOM in attempting to resolve this problem. Project LOGNET was progressing. A meeting of users and communicators was held at LEAD. Implementation milestones were established with T and A scheduled for 18 April 1983. The Project AMPMOD staff reviewed the communication portion of Functional Description for AMPMOD Major Item Data Base (MIDB). Installation was scheduled for FY 1985.

(U) Strength.

| | Authorized | | Assigned | |
|---|---|---|---|---|
| | Civilian | Military | Civilian | Military |
| Beginning of Report Period | 57 | 0 | 57 | 0 |
| End of Report Period | 57 | 0 | 55 | 0 |

(U) EEO Program. EEO Goals had been either met or exceeded at both USACC-Letterkenny and USACC-Subelement Savanna.

(U) Projects Completed. At LEAD, an Ammunition Truck Inspection Facility cabling was completed; an SLC-96 Carrier System Contract was awarded; the Nontactical Radios-Fire Department project was completed; AUTOVON Terminating Equipment was obtained; the PNID project was completed; four FTS Trunks were added; and two City Outgoing Trunks were added.

(U) At SVDA, rehabilitation of sole access cable #5 was completed. Available cable pair was increased from 50 to 101 circuits. This project was accomplished by the Tooele Mobile Maintenance Team. An EPABX was installed for the US Army Defense Ammo Center and School, with school funds, by Savanna USACC Subelement. The digital system had 12 different features, allowing entire school direct access through three-digit dialing and tie-lines. It was a good job, and the school was very happy with this upgrade. The PNID project was completed by Savanna USACC Subelement personnel, and it provided priority network dialing for the Savanna Army Depot Activity customers. The Savanna USACC Subelement had saved considerable dollars through use of in-house talent. This type of cost avoidance and savings was considered commendable and in the best interest of the US Army.

(U) Training. Personnel from Virginia, North Carolina and New York Army National Guard visited the AMME for training. In addition, two personnel from the Headquarters received training and AMME personnel visited the Rhode Island and Massachusetts Army National Guard IRT's. OCR training was ongoing. School training, both on and off post, was completed during this period. Frequency Management ADP Security and Satellite Communication Seminars were also attended. Personnel of this unit had taken and completed education courses at the Learning Resource Center (LRC), LEAD, using PLATO and Audio-Visual learning packages.

USACC-Lexington

(U) The basic mission of this unit was to provide communications support for the Lexington Blue Grass Depot Activity, located in Fayette County, and the Blue Grass Activity, located in Madison County. Communications support was also provided to 13 tenants, including one major tenant, US Army Materiel Readiness Command.

(U) Accomplishments. Three cable projects were installed by the 69th Signal Command, a 17-man unit, Army Communications Command, Fort Huachuca, Arizona. Teleprocessing diagnostic equipment was

installed during May 1982. The project provided patch and test capability for data and voice circuits terminating at the data processing sites. Seventeen separate circuits were installed for the Army Oil Analysis Network (AOAP), a mission assumed by a DARCOM tenant, US Army Materiel Readiness Command. The AOAP consisted of 17 oil analysis laboratories throughout CONUS and had the responsibility of processing and diagnosing oil samples from operational aircraft, combat vehicles, and other military equipment.

(U) Strength. As of 1 October 1981, 21 civilians were authorized and 20 were assigned. By 30 September 1982, 21 civilians were authorized and 19 were assigned.

USACC-McAlester

(U) The mission of USACC-McAlester was to provide telecommunications service to the host and tenant activities. These services included: A Government-owned telephone system consisting of a 600-line automatic electric PBX 320 step X telephone exchange; a Government-owned Modular Autodin Terminal Equipment System (MATE); and a leased High Speed Non-secure Common User Facsimile Terminal.

(U) Accomplishments. A Master Antenna Television (MATV) System was installed to provide better TV reception to Government housing. The test and acceptance was completed in October 1981. Telco installed a Southwestern Bell Telephone Company Carrier System in the Dial Central Office at no cost to the Government. This included approximately 12,000 feet of buried cable. This system would increase capabilities from 600 lines, which was 84 percent full, to over 1000, of which the Government would pay only for those lines being used. It would further give us dual routing by retaining the existing aerial cable. The Cable Replacement/Upgrade project was completed in September 1982. The replacement/upgrade replaced deteriorated cable which would provide better telephone service throughout the plant and reduce maintenance substantially. The new cable consisted of approximately 40,000 feet of buried and aerial cable which would provide for future expansion.

(U) Strength. Fifteen civilians were authorized; 13 permanent and three temporary appointments.

USACC-Natick

(U) The USACC-Natick Communications-Electronics support activity was a tenant of the US Army Natick Research and Development Laboratories, Natick, Massachusetts, located 19 miles west of Boston. USACC-Natick functioned under the direction of Mr. A. M. Slomcheck, who was responsible to report to the USACC-DARCOM, commanded by COL E. E. Tabor. In his

dual-hatted role as Staff Communications-Electronics Officer, Mr. Slomcheck served on the staff of two host installations and was under the operational control of the US Army Natick Research and Development Laboratories (NLABS), commanded by COL J. S. Hayes and the US Army Materials and Mechanics Research Center, Watertown, Massachusetts, commanded by COL G. W. Sibert.

(U) The primary purpose and mission of the USACC-Natick was to provide optimum communications-electronics support for developing and maintaining effective communications programs to accommodate future and current plans to achieve essential DARCOM mission milestone objectives and for management and operations of communications activities, facilities, systems and services which would maximize the success of the DARCOM research and development missions at NLABS, the US Army Materials and Mechanics Research Center (AMMRC) and their co-located tenant activities.

(U) Accomplishments. Immediately after implementing the NLABS Dimension System into the DMATS-Boston, the cutover of still another Dimension System at AMMRC became reality on 23 November 1981. Early in December, funds were granted by the 7th Signal Command to renovate the old telephone frame room located in the basement of the Headquarters Building, to provide badly needed administrative office space for the activity. The new office space was completed and occupied in February 1982. Because the space in the Headquarters Building was considered premium for host activities, the NLABS Deputy Commander requested that USACC Natick consider moving to another location on the installation. This relocation was to include the Telecommunications Center located on the first floor of the Headquarters Building. Building No. 8, located on the northwest end of the installation, was suggested for the new site as it was empty and could provide ample space for the entire USACC-Natick activity. The request was initiated to the 7th Signal Command for $75K Operations and Maintenance, Army (OMA) construction renovation funds for the project, and on 2 March 1982, those funds were granted. A request for an on-site survey was honored by the US Army Communications-Electronics Engineering and Installation Agency (USACEEIA), Fort Huachuca, and the survey was completed on 2 April 1982. Contracts for the renovation project let by procurement and contractors were humming along with completion of the building scheduled for mid-February, FY 1983, at which time the new SRT (MATE) communications terminal BOM was scheduled to arrive for installation in the east section of the building. The west section of the building would provide ample space for the Director's office/conference room and the Administrative and Supply Divisions. Continuous coordination was maintained with Intelligence Security Command (INSCOM) and USACEEIA and the new USACC-Natick Communications Building was anticipated to be occupied and operational not later than mid-April, FY 1983.

(U) On 14 December, FY 1982, TELER DRC-NRD-800CN-074, DIDS Remote Terminal Capability NLABS was completed. This requirement would provide a non-secure interface between the Defense Integrated Data System (DIDS) data base, located at the Standardization Management, and Support Sections, located at the US Army Natick Research and Development Laboratories in Natick, Massachusetts. The Standardization Management and Support Sections at NLABS supplied standardization and cataloging information to the commodity laboratories, who in turn provided engineering support to the Defense Logistics Agency (DLA), the Government Services Administration (GSA) and other army activities. The Defense Logistics Services Center (DLSC) Master File was a critical segment of the standardization mission at NLABS and use of a remote access terminal to DLSC would reduce from days to hours or minutes the time required in the submission of data interrogations via the Telecommunications Center. This terminal was anticipated to be operational by mid-April, FY 1983.

(U) During this same period, the Commander, AMMRC tasked this activity to provide a Receive Only communications circuit by which the installation could receive its unclassified traffic and to preclude courier requirements to Natick. Plans were ongoing to provide a TELER to install a Dataspeed 40 for this purpose. An SSO SCIF area to house a DACOM 412G High-Speed Secure Facsimile at AMMRC was also ongoing with the TELER being prepared at this time. This scheduled ATCOGS project had a target date of FY 1984, however, the AMMRC Commander expressed his desire that installation and operational date be targeted for FY 1983. The TELER would reflect this request. The AMMRC outside plant was being expanded to include a partial aerial system to replace the antiquated underground cabling which was plaguing the installation with shorts, noise and levels problems. This project was ongoing by the New England Telephone Company with completion expected in mid-November. Another project started early in FY 1982, was the Energy Monitor Control System (EMCS) scheduled for installation at AMMRC on 27 September, FY 1982. This project was placed in a hold-in-abeyance status. The Military Construction, Army (MCA) Project Number 44 was being delayed until the sole source cable contractor could be determined. The cable distribution network for this system was designed by USACC-Natick and awaited installation.

(U) In the final stages at NLABS was the 75KW Emergency Backup Power Generator, installed to provide power to the DMATS-B telephone system, Security Police, Telecommunications Center, and the Command Section. The unit was installed in the rear of the Headquarters Building on 24 September, FY 1982 and was scheduled for cut-in and testing 6 November, FY 1983.

(U) Strength.

| | Assigned | Authorized |
|---|---|---|
| Enlisted | 1 | 1 |
| Civilian | 8 (1 O/H) | 7 |

USACC-New Cumberland

(U) Situated in the foothills of the Cumberland Mountains, adjacent to the Susquehanna River and five miles south of the Pennsylvania State Capital at Harrisburg, the New Cumberland Army Depot (NCAD) had the distinction of being the oldest Army Depot in continuous operation. Initially constructed in 1917, NCAD began operation as an Army Reserve Depot for reserve storage of Quartermaster, Signal, Ordnance, Medical, Engineer and Chemical Warfare items. Following the armistice in 1918, the installation was used as a receiving point for supplies returned from overseas. NCAD is now an Army Supply Depot. It encompassed 833 acres and employed over 4800 military and civilian employees. Its function being an Area Oriented Depot (AOD) under the Depot System Command (DESCOM), NCAD was responsible for the receipt, storage and issue of all serviceable, secondary items used to support the field activities of army units located in the North Eastern United States and Europe.

(U) Accomplishments. Through an increased planning effort, FY 1982 saw the initiation of over 11 telecommunications projects (TELERs), however, only two projects were implemented. One was the DRC-DSC-615DN-084-79, Precedence Network In-Dial, AUTOVON. This project provided the equipment necessary to permit incoming precedence AUTOVON calls destined for a local DCO subscriber to be connected on an automatic basis rather than operator assisted. In the event the called subscriber number was busy or did not answer, the incoming call would be diverted to the operator after a specified period of time had elapsed.

(U) The other project that was implemented was the Non-Tactical Radio Support (Provost Marshall) DRC-DSC-615DU-120. It provided the Depot Security Police the capability of interface directly through radio communications with their counterparts in the local civilian communities surrounding New Cumberland Army Depot.

(U) During the same period, the formulation and development of the installations first Installation Telecommunications Plan (ITP) was completed. The document of over 500 pages resulted in an extensive and thorough examination of the installations present and future telecommunications requirements. In August, this organization served as host to the annual USACC-DARCOM Commanders Conference.

(U) In the area of cost savings, USACC-New Cumberland was fortunate (through the cooperative efforts of the 211th Electronics Installation Squadron, Pennsylvania Air National Guard, Fort Indiantown

Gap, Pennsylvania; 355th General Support Company, New Orleans, Louisiana; 677th General Supply Company, Camden, New Jersey; and 1003d General Supply Company, Scranton, Pennsylvania) to accumulate an estimated cost avoidance in excess of $53,600 during FY 1982. Some of the services performed included work on the telephone cable air pressurization system, bonding and grounding, plugging manhole ducts and installation work on a dedicated cable between the 54 and 80 series warehouses of the depot.

(U) Strength. Providing the communications support to the New Cumberland Army Depot and its 22 tenant activities was the responsibility of the 34 men and women of the US Army Communications Command at New Cumberland Army Depot.

USACC-Pine Bluff

(U) USACC-Pine Bluff was commanded by CPT Randall G. Catts (P) and reported to USACC-DARCOM. CPT Catts served as the C-E officer on the staff of COL S. R. Olson, Pine Bluff Arsenal Commander. The unit was colocated with the arsenal at Pine Bluff, Arkansas.

(U) The basic mission of the Unit was to plan, program, operate and maintain communications-electronics (C-E) systems for Pine Bluff Arsenal and to provide communications support for host installation emergency operations. Support included operation of post telephone exchange and maintenance of telephone facilities through contractor personnel. The Unit also operated and provided DS/GS maintenance for other special communications systems, such as closed circuit television systems and both fixed and mobile two-way communications networks. In addition, the Unit operated an Emergency High Frequency (HF) Facility, provided C-E support for host installation emergency operations, developed communications requirements for the host commander, and provided C-E support to tenant activities of the post and Reserve Officer Training Corps (ROTC) Unit at the University of Arkansas, Pine Bluff, Arkansas, as well as other ROTC activities located throughout the state of Arkansas.

(U) Accomplishments. The installation of a Dimension 400 Telephone Switchboard in the Pine Bluff Arsenal Chemical Exclusion Area Site Security Control Center (SSCC) was completed 19 December 1981. The system was cutover with 94 lines, expandable to 120 lines. USACC-Pine Bluff coordinated the planning and installation of the system with representatives of the local telephone company, host Security and Facilities Engineering personnel. Proposed floor plans, customer floor space agreement, circuitry requirements, specific console location, among others, were all included in the coordination effort. Due to the combined efforts of all concerned, the cutover went smoothly with no

major problems. The Dimension 400 Switchboard had essentially the same capabilities as the Dimension 2000 (main Dial Central Office) with the exception of access to FTS and Foreign Exchange (FX) lines. However, all calls in and out of the Exclusion Area had to come through the PBX operator at the Dimension 400 switchboard. The initial installation costs and first year monthly recurring costs were paid by MERADCOM, Fort Belvoir, Virginia, but effective 1 October 1982, USACC began funding for the cost of this switchboard.

(U) Through TELER action, an increase of line capacity on the Dimension 200 telephone system from 700 to 836 lines was accomplished. This was done through the installation of additional circuit packs and was completed in September 1982.

(U) Funding was obtaind and coordination was completed for the installation of telephone cable for the Binary Phase I Project. Also, the completion of expanded cable for the US Army Health Clinic was coordinated.

(U) An agreement was reached with Southwestern Bell Telephone Company to replace, at Bell's expense, several spans of old lead cable which had caused outages on some telephone lines on the installation. The actual replacement would be accomplished in FY 1983.

(U) The Pine Bluff Arsenal Nontactical Radio/Pager system was upgraded through completion of three separate TELERs. This action was preparatory to the planning and preparation of a TELER to replace/modernize, through lease of Digital Voice Privacy (DVP) radios, approximately 181 radios which were at or approaching the depreciation guidelines established in AR 235-5 and TB 43-0002-11. That TELER supported the ATCOGS Five Year Plan FY 1983-87, February 1981.

(U) Approval was obtained for staffing and operation of the Unit High Frequency (HF) Facility. Requests were submitted for required items of equipment to be added to the Unit Table of Distribution and Allowances (TDA). The HF Facility was restored to an operational status.

(U) Approval for host installation to provide a Word Processing Terminal for the Unit was obtained. This terminal allowed automation of the installation telephone directory, pager directory, telephone equipment records, Unit Standard Operating Procedures (SOPs), and various other documents which lent themselves readily to automation. It was anticipated the host would provide a printer for the Unit during 1983.

(U) Host and higher headquarters activities were coordinated with on an on-going Contractor Activities (CA) Review of the USACC-Pine Bluff Electronics Maintenance Facility. The Unit met all imposed deadlines and was awaiting a visit by the 7th Signal Command, Command Management Review team.

(U) The USACC-Pine Bluff Unit underwent several major inspections including the Annual COMSEC/Security Inspection (host's major annual inspection), and the 7th Signal IG Inspection with no major deficiencies. The IG recognized the Unit as Commendable in six areas: maintenance management; conversion efforts to new and revised supply forms; TCC operations; planning; fund control; and control of telephone usage. The Surety Operational Inspection Team commended the Unit for outstanding support in the area of communications. USACC-Pine Bluff was the only element on the Arsenal to receive a successive commendable rating from the SOI team.

(U) There were a few major problems encountered. There was a continued shortage of authorized manpower in the clerical area. Although a Communications Clerk was recognized as a requirement on the Unit TDA, there was no allocation for the slot. The problem was solved through higher headquarters approval of a permanent overhire to fill this position. Although this alleviated the problem with the clerical workload, it would have been extremely beneficial from a morale standpoint if the Unit could have received the space as an authorization on the TDA. The incumbent would have felt much more secure in the job and the Unit could better plan for future workload requirements.

(U) Another problem experienced was the continued maintenance problem with the outdated AN-FGC-161 teletypes used for off-line tape preparation in the Telecommunications Center. The problem was never totally solved, but the Telecommunications Center was able to continue operations through maintenance assistance from USACC-St. Louis and through the exchange of inoperable teletypes through the depot repair system. The Unit was looking forward to possible lease of teletypes during FY 1983.

(U) What could have been a problem for the Unit, developed into an area of major accomplishment for both the Unit Commander and the NCOIC. In March 1982, the Commander was selected by higher headquarters to serve on a DA level Automation Management Alternatives Study in Washington, DC. This study took much longer than anticipated--from 8 March through 19 June 1982--during which time SFC Robert W. Long assumed the role of Acting Commander of USACC-Pine Bluff. SFC Long fulfilled his responsibilities in an exemplary manner and CPT Catts received an MSM Award for his contributions to the efficient management of automation.

(U) Strength.

| | Authorized | Assigned |
|---|---|---|
| Military | 8 | 10 |
| Civilian | 5 | 6 |

USACC-Red River

(U) USACC-Red River, located at Red River Army Depot, Texarkana, Texas, continued under the direction of Mr. John L. Douglas, Director. Mr. Douglas also served as the C-E Officer on the staff of the Depot Commander at Red River Army Depot and Lone Star Army Ammunition Plant. The basic mission of this activity was to plan, program, operate and maintain base communications-electronics (C-E) system for Red River Army Depot (AD) and Lone Star Army Ammunition Plant (AAP), and to provide communications support for depot emergency operations. Also, it served as C-E Officer on Commanders' staffs at Red River AD and Lone Star AAP.

(U) Accomplishments. In the Planning Activity, the Installation Telecommunications Plan (ITP) was updated. Project DRC-DSC-618DU-101-82, TCC Reconfiguration, Red River Army Depot, Building 184, was approximately 95 percent complete. On Project DRC-DSC-618CU-073-80, 200 Line DCO Addition, final engineering designs had been completed. A contract was awarded for installation of Project DRC-DSC-618BN-069 (Cable Replacement to General Shops Area) on 16 August 1982. Work was to be completed in the 2d quarter, FY83. Completion of this project would replace the bulk of the remaining lead covered cable at Red River AD. The implementation of Project DRC-DSC-618CU-081 (Optical Character Reader Equipment) in May 1982, had greatly enhanced operations in the TCC. Project DRC-DSC-618DU-102 (Telephone Cable Area "F") was completed in July 1982, and Project DRC-DSC-618CU-082 (Video Display Uniscope-22 Terminal) was completed in March 1982.

(U) In the Logistics/Supply Activity, in accordance with AR 710-2, all property records had been converted to new forms. The activity Supply Technician attended a DARCOM Seminar in Birmingham, Alabama on conversion to these new forms.

(U) In regard to telephone maintenance at the Lone Star AAP, the completion of a new building to house the Fire and Guard Departments involved a move of telephones and special communications equipment from the old I-4 to the new I-71 building. This move was of major importance to preclude total disruption of services to Fire and Guard operations. Approximately 2500 feet of 25 pair cable was buried to upgrade the

present telephone cable system and to provide expansion capabilities to Area "F." Assistance was provided this activity by the Maintenance Assistance and Instructions Team (MAIT).

(U) At Red River AD, in the Area "F" telephone cable expansion project, approximately 7600 feet of 25 pair cable was buried, six pair cable was pulled to some 15 Igloos and three large cable cuts were repaired. The contractor was in the process of installing cable to the General Shops Area. Contractor work was being monitored by the activity cable splicer. Few problems occurred with the Automatic Message Accounting (AMA) since installation in December 1980; four IOM cards were replaced, and one tape drive was replaced. The AMA system was operational with DMIS providing a monthly print-out.

(U) In Electronic Maintenance, due to overage and unreliable equipment, the workload was very heavy for much of the year. Installation of the OCRE helped alleviate the problem by allowing Maintenance to remove over half of the teletype equipment. The Mobile Telephone System was still presenting problems as well as the Security Division's Converta-Com radios. A project to replace 40 of Lone Star AAP's 15 to 17 year old radios was about halfway completed. All of their overage radio equipment was expected to be replaced over the subsequent four years. A Comprehensive Employment Act (CETA) review was in progress comparing contract maintenance with in-house maintenance costs for non-tactical radio, audio-visual, teletype and MODEM maintenance. The personnel in the field of electronics had their job series changed and grades cut as a result of job standard revision by the Office of Personnel Management (OPM). Job performance and service to the customer remained excellent despite the heavy workload and adverse personnel actions.

(U) In the Communications Center, with the Army and our host installation in the midst of the greatest modernization effort since World War II, it was appropriate that record communications move ahead in 1982 with the latest state-of-the-art. Phase II of the Communications Center reconfiguration was completed with the installation of Stand Alone Optical Recognition Equipment (SA OCRE). The Communications Center moved from manually punching paper tape narrative messages on World War II vintage machines to a system that automatically converted a properly prepared DD Form 173/2 into a properly formatted paper tape for AUTODIN input through the DCT 9000. This installation was completed in April 1982. USACEEIA provided new equipment training on 19-23 April 1982. Due to the requirement that students would be relieved of all other duties for the 40-hour course, only two operators could be made available for the entire week. The two operators then were responsible for giving On the Job Training (OJT) to the remaining operators as time

and workload permitted. USACEEIA conducted the final test and evaluation during the period of 26-30 April 1982. The test director considered operator training adequate; however, the material provided for training the user community appeared inadequate.

(U) The automation of narrative message processing was expected to have an unprecedented impact on message drafters/releasers. It was necessary to develop an initial orientation for presentation. This was a joint division (Support and Communications Center) effort. A desk top guide was prepared and printed locally in sufficient copies for handouts. A video cassette tape produced by the Navy for training purposes was borrowed. A total of 193 persons attended orientation sessions. The use of DD Form 173/2 in OCR format would be mandatory by 18 October 1982.

(U) Prior to the SA OCRE installation, a Sperry Univac Uniscope Terminal (U200) was installed as a DCT 9000 peripheral unit to be used as a back-up for narrative message processing. Messages were written and edited on the VDT screen and then transferred to a tape cassette to be used for transmission and history. While not having a customer impact operators experienced extreme frustration when the headquarters mandated do-it-yourself OJT was attempted following initial installation. A Univac "feature" had been omitted rendering the U200 incapable of responding in the manner indicated by the operators manual. Little progress was made until the problem was identified and corrected.

(U) Strength. Thirty-six personnel were authorized and 37 were actual.

USACC-Redstone

(U) General. USACC-Redstone provided total base communications support including Air Traffic Control (ATC) to the US Army Missile Command (MICOM), Ballistic Missile Defense Systems Command (BMDSCOM), and other tenant activities at Redstone Arsenal (RSA) and the Huntsville, Alabama Research Park Complex (RPC). The unit was collocated with the Arsenal at Redstone (Huntsville), Alabama.

(U) Accomplishments. Fiscal year 1982 had been a busy, productive year for USACC-Redstone. Like everyone else, it was plagued by personnel vacancies, the hiring freeze which precluded recruitment from outside the Command, and general economic conditions that had created a cessation of travel for lower grade positions. However, despite the mild irritants, accomplishment of the USACC's mission was made through temporary promotions, details, overtime and musical chairs in an exemplary manner. Belief in this seemed well founded and was greatly reinforced when on 14 September 1982, USACC-Redstone was advised by USACC-DARCOM that it had

been judged the best unit in DARCOM. For this singular honor USACC-Redstone extended its heartfelt thanks and commended the sagacity of COL Tabor and his august panel of judges at USACC-DARCOM.

(U) Consolidation of the BMDSCOM and Redstone Arsenal telephone switchboards was accomplished this year. This action placed all Army activities in the Huntsville, Alabama area on a common switchboard and provided greatly improved service for many. The consolidation resulted in a one time cost of $1803 and yielded a monthly savings of $340. The secure Modular AMME Remote Terminal (MART) became operational at the Research Park Complex this year; thus providing improved TCC support to BMDSCOM, PM PATRIOT, Huntsville Engineer District and other tenant activities of RPC. During FY 1982 12 new TELER projects were initiated, and 10 previously submitted projects came to fruition. In the same period, 73 RFSs were issued while 29 were completed. The AMME-E TCC continued to grow, having logged 1,086,013 messages sent and 795,136 received for the year. This represented a 9.5% increase over last year.

(U) In August 1981, two USACC-Redstone Air Traffic Controllers were chosen to augment FAA personnel in Windsor Locks, Connecticut. SSGs Terry D. Hardin and James L. Seeber did their usual superlative job in support of the FAA, with SSG Hardin attaining partial qualifications in the six months he was there and SSG Seeber becoming fully qualified during his year of duty. Both soldiers received the Humanitarian Service Medal, with Hardin receiving the Army Achievement Medal and Seeber receiving the Army Commendation Medal.

(U) The Corps of Engineers Cincinnati District came on line to the Redstone AMME in September 1982. The Omaha District was working feverishly to come on line by December 1982. These terminals, as well as the BMDSCOM MART, were secure; thus increasing the workload of USACC-Redstone's Maintenance Division.

(U) Most significant among the FY82 accomplishments and source of greatest pride for Mr. Peacock, Chief, COMSEC Maintenance and Mr. Dennis, Chief, AMME TCC was the installation of a new 125KW ONAN generator adjacent to the TCC. This insured that the AMME was never in the dark for more than three seconds.

(U) The USACC-Redstone Supply Section had not been idle this year, as evidenced by the fact that they had: completed changeover of the property book IAW DA PAM 710-2-1; submitted 544 LOGMIS transactions; completed 1003 document register actions; and coordinated the receipt, storage and issue of BOMs associated with 10 TELER projects.

(U) Strength.

| | Authorized | Assigned |
|---|---|---|
| Officer | 1 | 1 |
| Civilian | 57 (75-18YP) | 71 |
| Enlisted | 23 | 29 |
| Permanent Overhire | 2 | 2 |
| Temporary | 0 | 3 |

USACC-Rock Island

(U) General. Physically located at Rock Island Arsenal, an island of 950 acres in the Mississippi River in Illinois, USACC-Rock Island's basic mission was to provide communications-electronics management, assistance, and operations support to HQ, US Army Materiel and Readiness Readiness Command and its more than 30 subordinate installations and activities. Support was also provided to four Class II activities and 17 tenant actvities, as well as over 100 Class B telephone accounts. USACC-Rock Island was under command control of the 7th Signal Command and the operational control of HQ ARRCOM. Functions performed in support of a major subordinate command and its more than 30 subordinates were numerous, but included technical advice and assistance to GOCO operations at Army Ammunition Plants, direct participation in the planning of a major mobilization effort in support of the soldier throughout the world, coordination with other DOD departments (Navy, Air Force, and Marine Corps) in support of the DOD assigned single item management for conventional ammunition, technical assistance and design of telecommunications services for MIS supporting a major DOD logistics mission, record and voice communications in support of a multi-million dollar procurement mission in both OMA and PAA funding programs.

(U) Support provided to Rock Island Arsenal required an adjustment from the normal military and administrative missions due to Rock Island Arsenal (RIA) being an Army Industrial Funded installation. This required competition with industry in the manufacture of major items, secondary items and repair parts for weapons. Rock Island Arsenal also performed depot functions for special Army tool set programs and hydropneumatic recoil mechanisms.

(U) This massive C-E support requirement for headquarters, manufacturing and depot, and both GOCO and GOGO activities created challenging, rewarding situations within USACC-Rock Island. Initiative and determination were the rule, rather than the exception, as USACC-Rock Island provided support to process over 572,000 messages per day in the TCC (approximately 212,000 were narrative messages), maintained

over 8,800 telephone instruments (vast majority are multi-line and key systems), operated TCCs at nine separate installations throughout CONUS, along with an unclassified dial-up Dataspeed 40 network with seven inactive AAPs. It supported 60 special data circuits, 169 MODEMS, 15 multiplexors and over 300 data terminals comprised of both minicomputers and dumb terminals. This was the fastest growing area of support for which USACC-Rock Island was responsible. The Maintenance Division received 1,212 work orders during the fiscal year and completed 1,168 work orders. Additionally, due to the HQ ARRCOM reorganization, a total of 31 weekends and 3,116 overtime manhours were used to support office relocations.

(U) The TCC served 46 key customers (directorates/office/tenant activities) in this area with a total breakdown of 114 distribution points. It had four dedicated tape drives for World Wide Ammunition Reporting System (WARS), Standard Entry Exit System (SEES), Supply and Defense Ammunition required by Data Processing Installation (DPI). Messages for this program totalled 292,744 for the year. In addition to the tape drives, 847 facsimile messages with a total of 47635 pages were processed by the TCC. Continuing equipment problems were experienced throughout the year. The majority of units in the DCT 9000 terminal were replaced during May 1982, with refurbished equipment. However, equipment problems continued. Since the initial installation of 20 Federal Telecommunications System (FTS) circuits in 1981, three additional incoming circuits had been installed due to extremely heavy usage. USACC-Rock Island maintained a 285 page property book with equipment at 17 geographical locations.

(U) Accomplishments. Several projects were completed during the 1 October 1981 through 30 September 1982 timeframe. New leased electronic telephone systems were installed at the ARRCOM GOCO Ammunition Plants: (1) At Sunflower AAP a Dimension 400 was installed on 7 January 1982; (2) At Badger AAP a ROLM MCBX was installed on 11 May 1982; and (3) At Cornhusker AAP a Dimension 400 was installed on 15 May 1982. Also, all leased, six minute per page facsimile terminals in the ARRCOM Transportation and Procurement networks were replaced with non-secure terminals capable of two, four, and six minute operation. The purpose of this replacement was to upgrade obsolete terminals while increasing speed and reducing telephone line transmission time. A total of 22 terminals were replaced on a lease purchase contract with purchase to be completed in FY 1983. A DRC-AMR-540CN-088 Test and Diagnostic Facility (TDF) ADP provided TDF for the Central Commodity Command Standard System (CCSS) computer at HQ ARRCOM. A DRC-ARM-540CN-089 Test and Diagnostic Facility (TDF) (Scientific and Engineering) provided TDF for three Scientific and Engineering prime computers. A DRC-AMR-540CN-110 World Wide Military Command Control System (WWMCCS) Intercomputer Network Terminal was obtained for HQ ARRCOM Emergency Operation Center (EOC). A DRC-AMR-540CN-116 Nuclear Weapons Terminal provided necessary secure equipment in support of the DOD nuclear reporting system.

(U) Strength.

| | Authorized | Assigned |
|---|---|---|
| Office of the Director | 2 | 2 |
| Operations Division | 1 | 1 |
| Telephone Operations Branch | 7 | 6 |
| TCC Operations Branch | 23 | 23 |
| C-E Support SSO | 2 | 5 |
| Maintenance Division | 14 | 14 |
| Support Division | 9 | 9 |
| Plant Division | 19 | 17 |
| Total Strength* | 77 | 77 |

* Three military personnel who were excess in their MOS were assigned to USACC-Rock Island.

USACC-Rocky Mountain

(U) General. The USACC-Rocky Mountain, located at Rocky Mountain Arsenal, Commerce City, Colorado, was commanded by LTC Richard W. Smith, with MAJ Edward R. Ettner, Jr. as his deputy. The Director of this organization was Mr. Roy M. Radecky, who also served as Communications-Electronics Officer on the installation commander's personal staff. The basic mission of USACC-Rocky Mountain was to provide communications-electronics management, assistance, technical and operational support to Rocky Mountain Arsenal's chemical/munitions demilitarization projects and contamination control programs and support of 15 tenant activities. This communications-electronics support included serving as C-E Officer on the RMA Commander's staff, planning, programming, operating and maintaining day to day operations of the base communications systems, equipment and facilities for Rocky Mountain Arsenal; to include providing expanded communications support during Rocky Mountain Arsenal Emergency Operations and RMA's Surety Mission. Moreover, regular installation, telephone, telecommunications, facsimile and non-tactical radio operations were being provided. New tasking and responsibilities involved direct support in COMSEC, and maintenance and logistic support to 6th Army Readiness Region VIII and US Army Health Services, both located at Fitzsimons Army Medical Center, Aurora, Colorado.

(U) Accomplishments. This unit in conjunction with Mountain Bell Telephone Company completed additional telephone cable to ADP/MISO and AFFES for computer/data systems. This involved the installation of remote computer terminals and MODEMS. The work included rehabilitation of old cable pairs and the installation of new telephone cables to each building. Telephone cable was furnished to three remote site locations

for a new ASL weather computer system. C-E support for the World Wide Military Command Central Systems (WWMCCS) was completed. This unit was tasked with establishing and providing COMSEC training, accounting, maintenance, technical installation assistance and logistical support to the WWMCCS. This activity was a new unit and the system was being operated by US Army Health Services, located at Fitzsimons Army Medical Center, Aurora, Colorado. Site preparation (Building 112) was accomplished for a new Dimension 2000 Electronic Switchboard scheduled for cutover on 19 November 1982. Commercial power, battery backup support and the complete renovation of the basement of the Communication Support Building 112 was involved. This demanded support of RMA enginering, procurement, contracting and communication.

(U) Strength. As of 30 September 1982, the total civilian authorized strength was 10; actual assigned strength was nine.

USACC-Sacramento

(U) In FY 1982, UASCC-Sacramento, under the Director, Floyd L. Hoglen, was a tenant activity at the Sacramento Army Depot located in Sacramento, California. Its mission was to plan, program, operate and maintain the Communications-Electronics (C-E) systems for the Sacramento Army Depot and other supported activities. It provided communications support for the host installation emergency operations and developed communications requirements for the host installation Commander. It also provided C-E support to the tenant activities at the post, the Army Audit Agency (AAA), the Sacramento District Recruiting Command and the Reserve Officers Training Corps (ROTC) unit at the University of California at Davis. USACC-Sacramento provided a Mobile Telephone Maintenance Contact Team to support telephone maintenance and limited telephone installation requirements for activities within a geographical region. The Director served as C-E Officer for the host installation and for the Logistics Control Activity (LCA) at the Presidio of San Francisco.

(U) Accomplishments. A cost savings of approximately $26,000 per annum for the District Recruiting Command was achieved by rerouting all telephone service through the Sacramento Army Depot (SAAD) Dial Central Office (DCO). Telephone service via SAAD DCO was projected to average between $1,000 to $1,200 for each month as compared with a $3,344 average monthly cost during the last six months in 1980. Thirteen OPX circuits were added in support of this new service. This service was started, effective June 1982. All costs for the telephone service to DRC would be reimbursed to USACC-Sacramento. No benefits were derived by USACC-Sacramento, but the new service would create additional workload for servicing telephone orders and processing the billings.

(U) The Limited Distance MODEMs (LDM) for Local SPEEDEX Support project resulted in the purchase of eight Racal-Milgo COM LINK III short haul MODEMs at a cost of $6,040, which would save $1,448 during the first year and $31,400 over a five year period against present cost of leasing six MODEMs at $104 per month. These MODEMs replaced all the 4800 bps leased MODEMs and many of the IIC Corporation 2400 bps MODEMs which had been in service for about 10 to 12 years. The project was completed on 20 July 1982.

(U) To upgrade facsimile, a replacement was required to eliminate the slow speed desktop facsimile equipment in use in the TCC, in favor of a higher speed equipment to comply with official facsimile standards. A PANAFAX MV 1200 facsimile set was leased to replace the Xerox Telecopier III. This project was completed on 14 May 1982.

(U) The existing Control Data Corporation (CDC) UT-200 Remote Terminals were replaced with CDC 18-05 terminals at six remote locations at the Sacramento Army Depot. This in turn required upgrading of existing 2400 bps IIC 201B MODEMs with 4800 bps Gandalf LDS 329 MODEMs in order to be compatible with the new data CDC 18-05 terminal equipment and KET frontend microprocessor. Sixteen 4800 bps MODEMs were purchased at a cost of $6,840. This project was completed effective 30 March 1982.

(U) Sharpe Army Depot (SHAD), as the West Coast Area Oriented Distribution (AOD) Depot, had a vital supply mission to perform and required timely ADP support to accomplish this mission. SHAD replaced its remote terminal equipment with newer, faster equipment in an effort to speed up processing, but was limited by the speed capability of the communications lines which had to be upgraded to accomodate the new equipment. This task was accomplished by replacing the existing 2400 bps and 4800 bps MODEMs with 9600 bps MODEMs. This action was projected to save approximately $25,000 over a five year period. This project was completed on 1 July 1982.

(U) The Western District Army Audit Agency (AAA) was transferred from Redwood City, California to Sacramento in July 1982. This agency was tasked to provide communications service which would allow AAA to access WATS, FTS and AUTOVON systems via the switchboard located at the Sacramento Army Depot Dial Central Office (DCO). Eight off-premise extensions were provided AAA for this purpose which resulted in a cost saving action to AAA. This agency provided maintenance and billing service, but all additional costs such as long distance toll and monthly service charges were reimbursed by AAA to this unit.

(U) Strength.

| | 1 October 1981 | 20 September 1982 |
|---|---|---|
| Authorized Civilians | 28 | 28 |
| Assigned Civilians | 28 | 27 |

USACC-Seneca

(U) USACC-Seneca's mission at Seneca Army Depot was to plan, program, budget and coordinate installation of telecommunications requirements as well as to operate and maintain the telecommunications systems, facilities and equipment. USACC-Seneca also provided Communications Security (COMSEC) and developed communications-electronics mobilization requirements. USACC-Seneca was structurally organized with an Office of the Director and two divisions--Operations and Maintenance.

(U) Telephone switchboard operations provided 24-hour, seven day a week service, including holidays. The switchboard was staffed by three telephone operators and a telephone operator supervisor. Administrative city trunks, Foreign Exchange (FX), Federal Telecommunications System (FTS), and operator assistance Automatic Voice Network (AUTOVON) lines terminated at the Depot switchboard.

(U) The Telecommunications Center provided record communications service eight hours a day, five days a week. During non-operational hours they were on call to receive or send high precedence messages. It was staffed with four communications equipment operators.

(U) USACC-Seneca maintained two separate Dial Central Offices (DCO) equipped with Automatic Electric Company (AECO) Dial Telephone Equipment (DTE). The staffing in Wire Maintenance consisted of one telephone mechanic (inside plant), a wire communications cable splicer and a wire communications equipment installer and repairman.

(U) The Telecommunications Center maintenance staff consisted of one electronics mechanic communications equipment installer and repairer who, in addition to the primary function of maintaining COMSEC equipment, also had the responsibility to maintain Seneca Army Depot's Intrusion Detection System (IDS).

(U) USACC-Seneca maintained the Terminal Very High Frequency Omni Range (TVOR) Distance Measuring Equipment (DME) and Non-Directional Beacon (NDB) facilities and ground-to-air radio communications equipment in the flight advisory facility. Maintenance support was provided by one electronics mechanic who also provided the maintenance support to Seneca Army Depot's three separate Master Antenna Television (MATV) systems.

(U) Accomplishments. In October 1981, the 7th Signal Command Inspector General (IG) arrived and, through the period 26-30 October 1981, performed its inspection. Accordingly, all facets of Operations and Maintenance functions were reviewed and evaluated. The overall evaluation was satisfactory. Naturally, there were some minor findings which required corrective actions, but these were confined for the most part to administrative procedures and records maintenance matters. All corrective actions were completed prior to 30 June 1982.

(U) Throughout the 1st quarter of FY82, many hours were spent developing the initial Installation Telecommunications Plan (ITP) for Seneca Army Depot (SEAD). In January 1982, Mr. Don Williams from USACC-DARCOM's Plans Division visited to review and assist in final draft of the initial ITP. Through his efforts and long hours of follow-up efforts, the initial ITP was submitted to the 7th Signal Command on 3 Feburary 1982. As a result, the ITP, Parts 1 and 2, was evaluated and returned for update with only minor changes. In May 1982, Mr. Don Boline, USACEEIA-CONUS, arrived to discuss and develop Part 3 of the ITP. Part 3 contained the engineered proposals for resolving the operational requirements identified in Part 2. Proposals for Part 3 were received mid-August for inclusion in the formal submission of the ITP. By the end of September 1982, the complete ITP package was being staffed through the Seneca Army Depot Commander for his concurrence/approval.

(U) Of major importance in FY82, was the commencement in October 1981 of TELER Project DRC-DSC-624DU-087-80 which provided a new 300 pair cable to service three new Military Construction, Army (MCA) structures being built to support an SEAD mission involving tenancy of the 833d Ordinance Company. The new cable would provide additional cable capacity for wire supported services to other structures in the north area of Seneca Army Depot. The project work started in October 1981, was the first phase in a three-phase, MCA-funded program. The contractor successfully completed the first phase in early April 1982, at which time we accepted his portion of the new cable between the Satellite DCO and the ammunition training facility. On 25 June 1982, after receiving additional MCA funding from the 7th Signal Command, the second and third phase contracts were awarded. The contractor began work on 30 August 1982, and had completed 85 percent of cable project work through the end of September 1982. The final completion date was anticipated to be approximately 1 November 1982.

(U) Site preparation work had been contracted and started in September 1982 for the new Non-Directional Beacon (NDB), Navigational Aid (NAVAID), another facility supporting Seneca Army Airfield. This project was under TELER DRC-DSC-62491-066-79. The NDB was a low

frequency radio beacon which transmitted non-directional radio signals to assist a pilot in determining bearings and "home-in" on the airfield. New NDB equipment would replace a much older (pre-World War II) low frequency/medium frequency (LF/MF) Compass Locator transmitter type TMR which had run out of useful life expectency.

(U) In conclusion, FY82 had been a busy year. Besides the above noteworthy accomplishments, many more routine accomplishments, too numerous to mention, had been achieved daily which had sustained a high level of communications-electronics (C-E) operations and maintenance mission functions without degradation and despite manpower constraints.

(U) Strength.

| | Authorized | Assigned |
|---|---|---|
| Military | 0 | 0 |
| Civilian | 19 | 19 |

USACC-Sierra

(U) General. During FY82, this organization continued under the direction of Mr. Worley H. Evans. The basic mission of USACC-Sierra was to insure readiness by providing cost effective mission essential communications through positive management, command, control and efficient operations and maintenance of the communication facilities.

(U) Accomplishments. During August 1982, a contract was awarded to Delaware-Orcal Cable Incorporated for provisions of Commercial CATV to replace the Government-provided MATV. It was anticipated that the new system would be operational by 1 November 1982. USACC-Sierra started FY82 off with the Telephone Maintenance Section, Outside Plant Personnel installing and recabling the key systems in Facilities Engineers. The Inside Plant Employees worked long hours one cold night in November 1981, splicing a contractor cut cable. After four years absence, Christmas carols once again replaced the dial tone, in December 1981, thanks to an Inside Plant man, Bill Lockwood. In December 1981, an alternate Emergency Operations Center was installed at Security by the Outside Plant Employees. In June 1982, Key Systems in P-2 were cabled and installed to facilitate the move of the Directorate for Administrative Services. In July 1982, cable was spliced for a new building in the Secure Area. Also installed was a key system, and cable was run and phones installed in the building. For the use of the operators, a new Reno FX circuit was installed on the switchboard. In

August 1982, two new AUTOVON circuits were wired in, and the existing AUTOVON jumpers were rerun. At the close of FY81, 156 work requests were processed and at the close of FY82, a drop to 85 requests was seen.

(U) Strength.

| | Authorized | Assigned |
|---|---|---|
| Military | 2 | 2 |
| Civilian | 19 | 19 |

USACC-Sharpe

(U) General. USACC-Sharpe Army Depot provided total communications support to Sharpe Army Depot, a secondary items depot which served the western continental United States, Alaska, Pacific and Far East. Sharpe Army Depot employed approximately 1400 civilian personnel and had permanently assigned approximately 50 military personnel.

(U) Accomplishments. USACC-Sharpe had a busy and exciting year. Foremost were the personnel changes within the activity. The Director, Mr. Pangelinan, accepted a position with USACC-DARCOM in July 1982. The Supply Technician accepted a lateral position with USACC-Aberdeen in April 1982. The Chief of the Operations Division was upgraded to GS-11. A new job as Communications Assistant, GS-7, was authorized as a result of a manpower survey, and an upward mobility General Communications Equipment Operator position was filled. The lone Military Air Traffic Controller was assigned to FAA augmentation of the Reno, Nevada Air Traffic Control Facility.

(U) There were in excess of 10 projects in an active stage, ranging in dollar amounts from $2,400 for Limited Distance MODEMs in support of ADP to a $250,000 Standard Remote Terminal replacing the Sperry-Univac DCT 9000. The latter project would be homed to the Oakland AMME and was projected to go operational in the 2d quarter of FY 1983. In conjunction with the SRT project, site preparation required installation of a raised floor in the Telecommunications Center (TCC); completion estimated in December 1982.

(U) Construction design of a Maintenance Facility had been approved and was being processed along with an ADP project for bid submission. The maintenance Facility cost was at $67,000 plus and would provide modern facilities to the Maintenance Division. The estimated completion date was in the 3d quarter of FY83.

(U) Of particular interest this year had been the proliferation of ADP and office automation within the depot in which USACC-Sharpe had provided the communications support. One of the major projects was the reconfiguration of the Standard Systems Application (SSA) (formerly SPEEDEX) consolidating 10 remote terminals through a Test Diagnostic Facility, providing expansion of the system to 17 terminals but reducing the dedicated circuits to six. These terminals accessed the Central Computer Site at Sacramento Army Depot which provided Sharpe with total ADP support. The reconfiguration provided enhancement of maintenance personnel in sustaining circuit continuity, minimizing downtime, and reducing circuit costs. The maintenance personnel were also directly involved in providing communications support for a Key-to-Disk-to-Tape System, reducing the necessity for handling data cards.

(U) USACC-Sharpe was actively providing for communications support to ARPANET terminals (MODEM and possibly concentrator to the TIP at AMES Laboratory, Moffett Field) and in providing transmission facilities to a WANG WPS-5 (Word Processing System). In addition, the maintenance facility had upgraded the entire radio network for the depot in the amount in excess of $200,000 in the past two years, including a just-completed project for $10,000 for secure radios.

(U) The Operations Division had also been very busy. In addition to the projects within the TCC, they were in the process of coordinating the design and site preparation for a World-Wide Command and Control System Terminal. The terminal would be located adjacent to the TCC for better COMSEC control and would be encompassed within an Emergency Operations Center (ECC). Completion of the site preparation and terminal installation was estimated for the 2d quarter of FY83.

(U) Studies and statistical data collection were progressing in support of the Dial Central Office upgrade. Although deferment of the schedule for upgrade had been directed by higher headquarters, USACC-Sharpe remained active on this project because of the exigencies attendant with an obsolete, costly and slow telephone system.

(U) The Operations Division was providing communications coordinating Support to the depot on the Western Distribution Facility, an MCA Project costing in excess of 75k. The MCA Project entailed a totally automated supply operation encompassing approximately 72,000 square feet, and it was scheduled for start of construction in 1985.

(U) The Air Traffic Control (ATC) Facility had been extremely active, both in providing daily ATC support and in providing expert advice to the depot in all manner of Air Space Utilization. ATC Chief, as the Host Installation Air Traffic and Air Space Officer, had been actively involved with the Depot Commander and his staff in

maintaining a cooperative image in the use of the air space, not only on the depot, but as it affected the local communities. The ATC Facility would be testing and activating a new Non-Directional Beacon in the very near future. All this, in spite of operating at and below Emergency Manning levels, because of personnel fluctuations and the assignment of the one military controller to augment the FAA Tower in Reno, Nevada. In spite of all, the Sharpe Air Traffic Facility was awarded top honors for the best Air Traffic Control Operation within USACC-DARCOM in 1982.

(U) Strength.

| | Assigned | Authorized |
|---|---|---|
| Director | 0 | 1 |
| Communications Assistant | 1 | 1 |
| Secretary | 0 | 1 |
| Chief, Operations Division | 1 | 1 |
| Telephone Operator | 1 | 1 |
| Chief, TCC | 1 | 1 |
| General Communications Equipment Operator | 4 | 4 |
| Chief, Maintenance Division | 1 | 1 |
| Elec Mechanic | 4 | 4 |
| Supply Technician | 0 | 1 |
| Chief, ATC | 1 | 1 |
| ATC | 1 | 2 |
| ATC (MIL) | 1 (TDY-FAA) | 1 |
| Total | 16 | 20 |

USACC-St. Louis

(U) General. On 4 January 1979, this activity was redesignated as the US Army Communications Command-St. Louis (USACC-STL). Its mission was to plan, program, operate and maintain Communications-Electronics (C-E) systems in support of TSARCOM/AVRADCOM and their tenants, RCPAC, DOD and other government agencies in the St. Louis, Missouri area and the Army Plant Representative Office-Bell / TEXTRON (ARPRO-BE), Fort Worth, Texas. It also provided C-E support (planning, programming and management) for the Midwest Scientific and Engineering Computer Center (MWS and ECC) including associated C-E services for the remote terminal user(s) of this system. The USACC coordinated, planned and programed C-E systems in support of TSARCOM and AVRADCOM remotely located subordinate activities. It served as C-E staff officer for the Commander, TSARCOM, C-E Staff Officer for AVRADCOM, provided C-E Officer services for ALMSA and was Area C-E Officer for Metro, St. Louis. All of the Electronic-Mechanical Communications

Equipment and Repairer positions (WG 2614) were surveyed for application of the new classification standards under the Factor Evaluation System (FES). As of 20 August 1982, all of these positions were converted to Electronic-Mechanic (WG 2604). There was no loss of grades or personnel.

(U) Accomplishments. Three major telecommunications projects were initiated by this command during the reporting period. The USACC-STL Test and Diagnostic Facility (TDF) was expanded and reconfigured over 100 percent. The installation of a major communications processing computer (COMTEN) and the complete relocation of host (TSARCOM) ADP equipment were the major factors for the TDF expansion and reconfiguration. This TDF upgrade increased computer port access from 145 to 346. The ever-increasing demand for computer access by commands supported by USACC-STL was successfully met at a fraction of cost that would be required through dedicated circuitry. This installation was accomplished by a five man CEEIA team from Fort Ritchie, Maryland and the maintenance personnel, and was completed on 14 November 1981. The TELER associated with this project was DRC-TAR-900CU-097-82.

(U) A locally controlled data circuit cable plant was installed at the host (TSARCOM) complex. This command (USACC-STL) was tasked by its host to assist in reconfiguration of the computer complex. Twenty-one thousand feet of 100 pair cable was installed throughout the complex and terminated at strategic locations in eight buildings. A total of 1,500 cable pairs were installed through the USACC-STL TDF. The installation was accomplished through the use of a twenty-two-man team from the Missouri National Guard and a three-man instructor team from USACEEIA. Maintenance personnel from this command were responsible for the planning and execution of the project which was completed on 23 March 1982. The expansion and reconfiguration of the host DPI and the resultant interface with the USACC-STL TDF resulted in improved circuit efficiency for computer use as well as improved DPI production for three DARCOM major subordinate commands, and their subordinate activities/tenants. In addition, immediate monetary savings were realized by terminating 160 leased Southwestern Bell Telephone Company (SWBTCO) circuits. Anticipated project costs not to exceed $35,000 were met. Additionally, the first year savings was $41,270, which did not include a $40, one time installation cost per circuit to Southwestern Bell or administrative costs such as ordering circuits, cost accounting and payment of monthly bills. It was anticipated that a $3 million savings would be realized over the life span of the cable.

(U) Initial planning and material coordination requested by RCPAC for installation of data TDF and Data Cable Plant began in April 1982. Equipment layout, duct layout and cable routing diagram were furnished to RCPAC on 15 September 1982. The TDF and Cable Plant were expected to

be completed by January 1983. In March 1982, this command participated in Ivy League 82. This command provided Communications-Electronics (C-E) support and furnished the primary means of communications during the exercise. Both of the major telecommunications centers exceeded the DCA standard allowable error rate of five percent. The TCC TSARCOM maintained a .17 percent error rate, and TCC RCPAC maintained a .13 percent error rate.

(U) Strength.

| | Authorized | Actual |
|---|---|---|
| Officers | 1 | 2 |
| Warrant Officers | 0 | 0 |
| Enlisted | 1 | 1 |
| GS Civilians | 53 | 46 |
| WG Civilians | 9 | 9 |
| Total | 64 | 58 |

(U) On 1 October 1981, the Defense Metropolitan Area Telephone System (DMATS)--St. Louis was established, thereby separating from USACC-STL. With that separation, 31 spaces were transferred. This command continued to provide all of its subscribers/customers with telephone equipment/service assuring that the telephonic operations/activities of the organization were accomplished efficiently and effectively in accordance with established requirements.

USACC-Tobyhanna

(U) Mission. USACC-Tobyhanna's mission was to plan, operate and maintain communications-electronics (C-E) systems; provide communications support for host installation emergency operations; and serve as C-E staff officer on the host installation commander's staff.

(U) Accomplishments. A Customer Administrative Panel (CAP) was installed in October 1981. The CAP interfaced with the telephone system and enabled USACC-Tobyhanna to make rearrangements and changes; for example, move station numbers or change the features and/or restrictions assigned to a station.

(U) Strength. Twenty-one civilians and no enlisted were authorized. The actual strength was 21 civilians and one enlisted.

USACC-Tooele

(U) Mission. Tooele Army Depot, located 35 miles southwest of Salt Lake City, Utah, approximately 20 miles from the great Salt Lake, provided communications support to the host, nine tenant activities and four Depot activities (Pueblo, Umatilla, Fort Wingate and Navajo). Its

mission was to install, operate and maintain all telecommunications equipment assigned to the Depot complex. This consisted of the telephones, record data, cryptofacilities, radio, television, public address, intercom, audio-visual, and other equipment as required. Another part of its mission was to budget and provide all necessary administrative and contractual support for the USACC Depot activities (Pueblo, Umatilla, Fort Wingate and Navajo) of the Tooele Depot complex.

(U) Accomplishments. There was a change of command in 1982. Mr. Allan W. Deware assumed the Director's post on 1 April 1982. He came to Tooele from the 5th Signal Command in Worms, Germany. Mr. Alan C. Dahl, who performed as Acting Director from January 1981 until March 1982, reverted to his former position as the Chief, Operations Division.

(U) The administrative telephone functions, to include both operations and maintenance, had been undergoing a Commercial Activities (CA) Review. This brought on-site visits from USACC-DARCOM, 7th Signal Command, and Headquarters, USACC to evaluate this function and prepare a Statement of Work (SOW).

(U) The Mobile System Support Team (MSST) was performing work in support of other DARCOM installations in the assigned area. During FY82, they performed work at Fort Wingate Depot Activity, Rock Island Arsenal, Red River Army Depot, Lone Star Ammunition Plant, Savanna Depot Activity, Dugway Proving Ground, as well as supported the outside plant during non-travel time at Tooele Army Depot.

(U) On 1 June 1982, the operational control of Navajo Army Depot Activity was assumed by the Arizona National Guard. The communications space was withdrawn by Headquarters, USACC-DARCOM at this time. The incumbent was placed in a job at Headquarters, USACC at Fort Huachuca, Arizona.

(U) During September, the supply offices in Building T-10 were renovated. This renovation was funded by the 7th Signal Command Engineer Office and the work was accomplished by the local Facilities Engineer.

(U) The annual Chemical Surety Operational Inspection (SOI) was conducted by Headquarters, DARCOM on the chemical missions of the Depot. The Depot passed the SOI with communications being given an excellent rating for the portion of the SOI.

(U) Problem Areas. The Mobile System Support (MSST) was in the field much more than was originally anticipated during the conceptual stage. This created a shortage of personnel for the maintenance of the local outside plant. The 50 percent of the time that the MSST was at home base was actually much less because all leave and training came out of "home" time. It created a problem where outside plant maintenance was falling farther behind.

(U) The hiring freeze imposed by Headquarter, USACC created personnel shortages in the Telecommunications Center (TCC) and the Electronics Branch. Where staffing was at a minimum, as in the TCC, the shortage was covered with the extensive use of overtime, which was much more than in previous fiscal years.

(U) The Arizona Army National Guard (ANG) was operating the Navajo Army Depot Activity. The USACC space was withdrawn. The manpower requirements were being accomplished by USACC funding a space being provided by the ANG. In effect, this gave us the same responsibility with no USACC presence there to ensure that the communications were adequate and that we were getting value received for the money spent. This created a less than desirable situation.

(U) The USACC had an ongoing problem with the lack of TMDE to support the non-tactical radio missions. Efforts to get commercial TMDE had been fruitless. The proper TMDE was essential to properly support this mission.

(U) During the report period, the Automatic Message Accounting (AMA) System became operational due to the software support being developed by the host data processing people. This system was extremely valuable as a management tool over authorized use of the telephone. The tape drive failed and it was evacuated to the direct exchange facility at Fort Huachuca. It was sent out for repair and after 90 days it was returned. It was still, however, inoperable when returned from the DX at Fort Huachuca and was returned again for further repair. It was urgently needed to help control the telephone usage.

(U) The CA Review in the administrative telephone area caused morale problems to the personnel that could potentially affect that area. Many of the people had long service and were advanced in age, but with not enough time to retire from Federal Service. The unknowns had caused serious morale problems.

(U) Strength. As of 30 September 1982, 48 employees were authorized and 50 were assigned.

USACC-Watervliet

(U) General. The Watervliet Arsenal, a modern industrial facility with technology and methods recognized throughout the world, had the mission of manufacturing thick wall cannons in support of the Department of Defense and Foreign Military Sales. The Arsenal has been the sole producer in the USA and would continue so during the early stages of mobilization. Included in the mission was the national procurement responsiblity for cannons and components, both realtime and for mobilization. USACC-Watervliet plans, programs, operates and maintains communications-electronics systems for Watervliet Arsenal and provides communications support for emergency operations.

(U) Accomplishments. USACC-Watervliet had been actively supporting the Arsenal's modernization program; MCA Project REARM (Renovation of Armament Manufacturing). The scope of work for Project REARM required demolishing several buildings, constructing two new buildings and renovating six buildings, in a three-phase sequence. With Phase I complete and Phase II 80 percent complete, they were now in the final phase. The tentative completion date was in FY84.

(U) Although extensive planning was required in the early stages to provide five time phased TELERS to support the total MCA Project, the heaviest work load was imposed by site preparation work. This work consisted of relocating 30 key systems, 220 key telephones, 70 standard telephones, telephone cables, data terminals, coaxial cables and associated communications equipment. Fifteen thousand feet of telephone wire and 40 thousand feet of 25 pair cable was run during this period to accomplish the large volume of movement of personnel and communication equipment. Many hours were expended in meetings to schedule work load and coordinate responsibilities to insure a smooth transition of communication services.

(U) USACC-Watervliet's support to Management Information Systems Directorate (MISD) increased dramatically during the past year as functional users required data terminals to interface with the MISD computer main frame; either through coaxial cable of Limited Distance MODEMS (LDM).

(U) The completion of TELER DRC-AMR-543DU-087, Limited Distance MODEMS, immediately generated another requirement for ten additional LDMs. Although this was an unprogrammed requirement, funds were successfully obtained and obligated in FY 1982. Continued growth was expected in the teleprocessing system as functional users' knowledge of the systems potential increased. As the concept of desk side data terminal work stations increased in the MISD area, a similar effect took place in Benet Weapons Laboratory's (a major Arsenal tenant) scientific computer main frame. A dial up MODEM to access the computer

from various laboratories to enhance the present coaxial cable transmission system was being installed and tested. In addition to the foregoing system's growth, USACC-Watervliet had been meeting with the Operations Directorate to plan communications support to meet their needs in the area of data teleprocessing system, robotics, and computer to direct numerical controlled machinery which would require transmission lines.

(U) One of the problems facing the communicator as use of mini-computers, computers and word processing technology progressed, was developing the expertise to keep pace. Only through the support of USACC-DARCOM in recognizing that data technical seminar attendance was a Priority I training requirement, could the manager meet the challenge of expanding technology.

(U) In spite of the additional work described, USACC-Watervliet continued to maintain the POTS (Plain Old Telephone System--1951 vintage), non-tactical radio, crypto, teletypes, PA intercoms, radio paging systems and other ancillary communications devices without any noticeable degradation of services; a noteworthy achievement when considered that the activity was short one manyear, in one slot or another, during the report period. USACC-Watervliet was short the one and only Telephone Installer authorized. The work was accomplished by effective use of the available skills, overtime paid by the host, and the assistance of one TCC operator on an overtime basis. As of August, two military personnel were on board to provide TDY telephone installer assistance. The hiring freeze continued to hamper our efforts to hire a Telephone Installer.

(U) Reorganization at USACC-Watervliet included the appointment of our Director, Gerald G. Butler, on 15 November 1981. Previous to this, he had been the Chief of the Maintenance Division. In January 1982, John D. Baniak was promoted from the position of Electrical mechanical Communications Equipment Installer/Repairer to Chief, Maintenance Division. In April 1982, Thomas E. Billa, Telephone Installer, was promoted to the vacant position of Electrical Communications Equipment Installer/Repairer. In November 1982, the vacant position of Supply Technician was filled by Patricia A.Tymchyn, who had been a Procurement Clerk with the Arsenal's Procurement Directorate.

(U) Strength. As of 30 September 1982, there were 12 assigned personnel and 13 authorized.

USACC-White Sands

(U) General. USACC-White Sands, a tenant activity of the 4,000 square mile White Sands Missile Range (WSMR), located in south central New Mexico, provided engineering, installation, operation, modification, maintenance, and management of range telecommunications, timing

generation and distribution, non-tactical radios, command control/destruct systems, and HF radio systems to support the RDTE operations of WSMR. It also provided radio frequency management, surveillance, and analysis services for WSMR; radio frequency surveillance and interference resolution services for Fort Bliss, Texas, Holloman Air Force Base, and Kirtland Air Force Base, New Mexico; it provided administrative, logistical, fiscal and technical (radio frequency surveillance facilities, laboratory analysis, etc.) support to the DOD Area Frequency Coordinator at WSMR; it operated and maintained the WSMR Telecommunications Center; provided maintenance for all fixed-plant radio facilities throughout WSMR, off-range areas, and for those mobile radios operated by assigned and contractor personnel in the central and north range areas; it operated and maintained base and range dial central offices; and provided communications support to the Holloman Air Force Base High-Speed Test Track facility.

(U) Accomplishments. Communications planning support for the Pershing II Idaho Launch Complex (ILC), Mountain Home, Idaho was completed, and implementation/deployment was on schedule to support the present Pershing II Spring schedule. This required the detailed plans for the establishment of total communications facilities for a completely new missile launch facility to include: Site surveys and layout; system design of microwave trunking, technical control facilities, terminal equipment (such as intercoms, data MODEMS, and telephones), instrumentation interconnect facilities and cable plant; procurement and acquisition of hardware, material and equipment; acquisition, rehabilitation and installation of equipment in five new communications support vans; definition of, and arrangements for, logistical and administrative support; the installation of distribution cable in the Launch Area and the Project Control Area; procurement of a new Electronic Switching System; and establishment and manning of an additional organizational section of 12 personnel.

(U) The Bulk Encryption project, combined with an Air Force associated task, was that of beginning a rehab-replacement of the primary backbone microwave trunking system for WSMR. The encryption portion involved providing KG-81 equipment on four new microwave links being installed on the first phase; i.e., those being installed at Range Control Center, King-I, Salinas Peak, Stallion Range Center and North Oscura Peak. All microwave equipment was obtained from Rockwell/Collins (MW-518 radio, MMX-2 multiplex, and 360-D4 channel banks). The system was checked out and was ready for service, except for the KG-81 interconnectors. Full service was expected in mid-October.

(U) The communications support for high Energy Laser System Test Facility required establishment of communications facilities for the tri-service laser test facility, involving the following sub-tasks: (1) System design of microwave trunking and cable carrier trunking facilities, technical control, power plant, and intercommunications networks; (2) procurement and acquisition of hardware; and (3) installation, which was underway.

(U) A Dimension 400 Electronic Switchning System was installed in the Laser System Test Center (LSTC) to provide telephone service to Army and contractor personnel during the construction phase. The system would be expanded to accomodate the telephone requirements for the fully operational facility by July 1983.

(U) The Navy completed testing of the Automatic Aimpoint Selection and Maintenance (AUASAM) at the High Energy Laser Instrumentation Development Laboratory (HIDL); the communications equipment and facilities would be moved into the completed HELSTF starting approximately January 1983.

(U) The Space Shuttle Landing at WSMR was "a tremendous success." These were the words used to describe the landing of the Space Shuttle Columbia at WSMR on 30 March 1982. Contributing to that success were the efforts of approximately 300 personnel assigned to USACC who worked in direct support of the mission. Shifts were established to provide 24-hour support from launch minus two days through landing plus eight days with an average workweek of 100 hours per employee. USACC personnel installed and terminated approximately 80 telephone lines prior to launch day when the press center in the Post Headquarters Area suddenly swelled to accommodate hundreds of media representatives. At the launch site, USACC installations crews followed USAF construction crews working on buildings flown in from California. As the USAF erected buildings, USACC crews installed 40 telephone lines, approximately 200 instruments, and 7 intercommunications nets. Two telemetry stations were interfaced with the WSMR telemetry system and then connected to Johnson Space Center via satellite ground stations. Opening the closed range to the public required the installation of emergency telephones along the 50 miles of public access roads as well as instrumenting the viewing areas with public address systems and AM radio retransmission systems to provide NASA-control's voice to the range visitors.

(U) WSMR Nontactical Radio System consisted of 36 separate nets (48 repeaters, 206 base stations, 877 mobile, 388 portables, and 284 remotes). All of these nets transmitted unclassified, but OPSEC sensitive information; hence, they had to be protected. The first radios for the WSMR Nontactical Radio System having "Digital Voice Protection" (DVP, a registered trade mark of Motorola, Inc.) were received in April 1981. Four radio nets were using DVP as the means for voice protection. The National Security Agency (NSA) had since determined that the only approved method of protecting OPSEC sensitive information was by implementation of the Data Encryption Standard (DES), Federal Information Processing Standard (FIPS) Publication 46, or the use of NSA approved equipment. Two radio nets using DES were operational, and plans were being confirmed to replace the existing DVP nets with DES.

To date, 10 percent of the WSMR Nontactical Radio Equipment had voice protection (8 percent DVP, 2 percent DES). Plans called for all WSMR nets requiring protection by 1988.

(U) The Frequency Surveillance Stations (FSS) provided frequency surveillance throughout the RF spectrum (30 MHz-18,000 MHz) in support of RDTE and tactical training missions at the Fort Bliss Ranges, Kirtland AFB, Holloman AFB, and WSMR and interference resolution services to Government military and non-military users. The El Paso FSS would be relocated near the Fort Bliss confinement area. The Egyptian Air Force Improved Hawk (I-Hawk) Missile System Training School was established close to the present FSS in June 1982. RF radiations from the I-Hawk radars would saturate the frequency surveillance receivers negating the FSS capability to adequately resolve cases of radio frequency interference in support of Fort Bliss, WSMR, FAA, etc. A temporary transportable building was moved from WSMR to the new location in June 1982. A 90-foot antenna tower was constructed as WSMR, transported via trucks, and placed upright by the WSMR Facilities Engineers in September 1982. The new El Paso FSS was planned to be operational in the temporary structure in November 1982. A Military Construction, Army (MCA) project was initiated in August 1981 for construction of a permanent building and a second antenna tower at the new site. This project was planned to be completed in 1986.

(U) The electromagnetic compatibility (ECM) characteristics of missile systems, ground support systems, communications systems, and instrumentation of C-E systems and equipments at WSMR were measured from 20 Hx to 40,000 MHz. An automatic Electromagnetic Interference (EMI) System which consisted of calibrated receivers, antennas, and a control microprocessor was operational. This unit was specifically designed for laboratory testing (MIL-STD 461/462; Susceptibility and Control of EMI) and field testing (TEMPEST type evaluations) at WSMR. The system was received from Eaton Corporation at a cost of $170,000 in October 1981.

(U) The task of the technical control move at Stallion Range Center involved the rehabilitation and moving of the Stallion Tech Control Center from the Range Control Building to the Main Communications Building. The primary incentive for this was the consolidation of facilities for personnel/operational considerations. The equipment upgrade was nominal and would involve only some padding and conference bridge changes. Implementation was underway with completion scheduled for late CY82.

(U) In June 1982, Western Electric Company installed, and USACC-White Sands communications specialists made final testing and acceptance of a new Dimension 600 Electronic Switchning System (ESS) for Stallion Range Camp. This ESS was wired for 600 lines and 120 trunks and was furnished with all the latest features such as call forwarding, speed dialing, class of service, conferencing, and many more. This was the first ESS installed at WSMR.

(U) Strength. At USACC-White Sands, 301 civilians were assigned and 279 authorized. One hundred and twenty-two military were assigned and 121 were authorized.

USACC-Yuma

(U) USACC-Yuma was established in 1973 to provide communications support throughout the Yuma Proving Ground, and was under the command of USACC-DARCOM. Its mission was to plan, program, operate and maintain the Communications-Electronics (C-E) systems. The Director also served as the C-E officer for the host installation.

(U) Accomplishments. USACC-Yuma was assigned TEMPEST responsibilities for US Army Yuma Proving Ground in January 1982. Mr. Ernie Merrill was appointed TEMPEST Control Officer and attended TEMPEST training at Lackland Air Force Base, Texas. The Technical Control Console was upgraded for separate patch capabilities and battery back-up, to better support range communications requirements. An AUTOSEVOCOM NBST Terminal and the Secure Telemetry equipments were installed in the Range Operations Center (ROC). In post competition, this unit had three Soldiers of the Quarter (SOQ) and two runners-up, and eight Soldiers of the Month (SOM) with three runners-up. Air Traffic Control (ATC) personnel augmented FAA at several civilian sites.

(U) In the Operations Division, ATC personnel augmented military towers at Nellis Air Force Base, Nevada; Redstone Arsenal, Alabama and civilian towers at St. Paul, Minnesota; Erie, Pennsylvania, and Buffalo, New York. ATC requirements at Castle Dome Heliport for support of the Army Attack Helicopter (AAH) were suspended in February 1982, awaiting FY 1983 funding. Support was given to Canada's Parachute Team during their winter training at Yuma.

(U) In the Maintenance Division, the ARPANET, located in the ROC building, was reconfigured and put on-line. A Precedence Network Inward Dialing circuit was installed for AUTOVON lines. Status and Control Alarm Systems were installed in four major sites to report alarms and control video and data circuits. Over 700 programs were supported.

(U) The Telephone Systems Branch began a traffic study of all post telephones. Six 1A2 Key Systems were installed making a total of 48 in operation. Two EPABXs were awaiting installation. The rehabilitation of Officers and Enlisted housing areas was 40 percent complete.

(U) Mr. William Wilcox, Chief of Electronics Systems Branch, had also served as Acting Chief of the Supply Branch since January 1982. A Communications Center Corporation console was installed and retrofitted in the Electronics Systems Branch to support the consoles in use by the

Material Test Directorate (MTD). The same type consoles and mini-consoles were installed for Mission Control at the ROC building and various Range Test sites. Modifications were completed on the AN/GRR-23 and AN/GRR-24 receivers. Phone Duplex Interface equipment was purchased and was installed with various repeaters. An antenna and repeater system was installed at Windy Hill for Environmental Simulation to monitor temperatures for Ammunition Storage sites. Antennas and scanners were also installed at Laser Sites to monitor testing. To upgrade the host non-tactical/tactical radio communications, $90,000 worth of communications equipment was ordered.

(U) The Range Support Branch procurred $70,000 worth of communications equipment for Main Post rehabilitation. Two short AB-216 towers were installed on Windy Hill to accommodate radio repeater antennas and microwave relay dishes. The microwave link between El Centro, California and the ROC building were modified to carry 100 kilobit Pulse Coded Modulation (PCM) data. The microwave link between Site 4 and the ROC building were modified to carry two 100 kilobit PCM data links. Data links were also installed to three new Laser Sites on Cibola Range. A new carrier system and lines in-house were installed for north boundry communications upgrade, the south boundry system was also revamped in-house. The office was changed to provide easier access to communications equipment issued and new policies were set on the issue and return of the equipments. A 99.8 percent accuracy rate for support of all firing programs was maintained. The upgrading of line cards and cable records for both Kofa and Cibola Firing Ranges was in the process.

(U) Strength. As of 30 September 1982, 26 military personnel were authorized and 47 were assigned. Thirty-three civilian personnel were authorized and 30 were assigned.

## DOD Mobile Electric Power Generating Sources Program

### Program

(U) The DOD Mobile Electric Power Generating Sources Program requirements for FY 1982 were as follows:

| | | |
|---|---|---|
| Army | - | $48.7 million |
| Navy/Marine Corps | - | 19.1 million |
| Air Force | - | 28.0 million |
| TOTAL | - | $95.8 million |

Technical Management

(U) Standardization (Class 6115 Projects). Overall guidance, initiation, control, review, and approval of Class 6115 Projects was accomplished for the following fully coordinated Class 6115 standardization projects: Revision of the following documents was effected for MIL-P-52894(ME) for 5 kW, 60 Hz Power Plant--15 October 1981; MIL-G-52902(ME) for 5 kW, 60 Hz Power Unit--17 February 1982; and MIL-G-53010 (ME) for 100 kW, 50/60 Hz Power Unit--29 July 1982. There were six active standardization projects at the beginning of the year, three new projects were initiated and three completed. There were six active projects at the close of the year.

(U) RDT&E Program. The management and funding of 6.3 and 6.4 mobile electric power source development was assigned to the Project Manager-Mobile Electric Power as a result of the Command and Control Systems Program Review (C2SPR) which identified electric power sources as a priority item for accomplishment of the Army mission. A development program with input from MERADCOM and ERADCOM was prepared and coordinated with TRADOC. This program was briefed to and approved by LTG Lunn and General Keith. The portions of the program with activity in FY 1982 follow:

a. Methanol Fuel Cells: Engineering support for the Silent Lightweight Electrical Energy Plants (SLEEP) continued. Fabrication of the 1.5 kW prototype test units was completed and preliminary contractor testing initiated. Software efforts including ILS also continued. The 3 kW advanced development brassboard unit was completed and contractor testing initiated. Lack of funding slowed the design effort on the 5 kW unit. As a result, the emphasis was being placed on the 3 kW set.

b. Thermoelectric Generator (TEG), (MEP-032A): A 500 watt, 28 VDC TEG advanced development program was funded to begin in FY 1983. A low level FY 1982 effort to prepare for a special IPR in November 1982 was underway. A solid-state module to convert the 28 VDC to 60 Hz and 400 Hz power would also begin development in FY 1983. Program responsibility transitioned from ERADCOM to PM-MEP.

c. Thermoelectric Generator (TEG): An exploratory development contract with General Atomic was awarded in September 1981. This contract was to develop a 2 kW thermopile for a 1.5 kW TEG.

d. Thermoelectric Generator (TEG), 100 watt: A combined advanced development-engineering development contract to design a 100 watt TEG to support the XM-21 Remote Sensing Chemical Agent Alarm System was awarded to Teledyne on 30 September 1982.

e. Generator Set, Free Piston Stirling Engine Driven 3 kW, 60 Hz, Tactical Utility: A contract was awarded 29 September 1982 to Mechanical Technology, Incorporated, for two 3 kW Free Piston Stirling Engine Driven Generator Sets for Government test and evaluation.

f. Generator Set, Stirling Engine Driven 5 kW, 60 Hz Tactical Utility: A contract was awarded 15 September 1982, to Stirling Power Systems to lease one 5 kW, 60 Hz, Stirling Engine Driven Generator Sets for Government test and evaluation. Leased unit was in test at MERADCOM.

g. Generator Set, Diesel Engine Driven, 15/30/60 kW Signature Suppressed: Development funds (6.4 fund) were scheduled for the next five years for a program to develop a family of 15/30/60 kW, 50/60 and 400 Hz generator sets which would significantly lower audio and infrared signature. Performance and environmental characteristics already set would be maintained. A goal of weight and envelope size reduction was also established. Preliminary planning for this program was accomplished.

h. Generator Set, MEP-351A, Diesel Engine Driven, 12 kW, 28 VDC, Tactical Utility: Testing of the set identified problems with electromagnetic interference and transient response characteristics being out of specification. Add-on remedies were not worked so a set redesign was being considered by the Navy.

i. Generator Set, MEP-354A, Diesel Engine Driven, 30 kW, 400 Hz, Tactical Precise: The US Naval Air Engineering Center began in-house fabrication of four prototype models for testing. The set was a four wheel, driveable, low profile aircraft support set to support Navy and Marine Corps aircraft including carrier based units.

j. Ground Power Generator (D361A): The RFP for the Phase I (development) of an electrical/pneumatic cart and an air conditioning cart to be powered by the electrical/pneumatic cart, was prepared by the Air Force and coordinated through PM-MEP.

(U) Other Programs. A special task force chaired by PM-MEP, continued its task aimed at alleviating shortages in 0.5 through 10 kW generator sets. The introduction of the 3 kW DED was a project initiated by the task force to improve assets of the 3 kW by standardizing by make and model on an off-the-shelf commercial diesel engine. Action was initiated on the 3 HP MSE used on the 1-½ kW set to go out on procurement for the 3 HP MSE or an equivalent engine that had equal performance and interchangeability of specified parts. This action would promote improved produceability by permitting use of commercial production practices and materials where the performance and interchangeability was not impaired.

(U) An IPR held on 9 September 1982, at Fort Eustis, recommended that the Purchase Description for a Multiple Output Ground Power Unit (D360A) be type classified standard LCC-A and procured as a Non-Development Item (NDI). Testing of a Ground Power Unit (D358A) for possible acceptance as a DOD standard family member was accomplished by MERADCOM. Data had been provided to the Air Force. This item did not meet DOD requirements in several areas. A decision would be made during the next year as to acceptance of item. The Air Force had established baseline performance and fuel consumption data for the Air Start Cart (MEP-356A) and had compared the performance of three units modified with a recouperator. Field testing of the modified sets would be accomplished prior to an Air Force decision. A special IPR was held on 11 February 1982, where voting members concurred with the IPR position that a Generator Set, Aviation Ground Support, 10 kW, 28 VDC that was procured (meeting the purchase description) would be type classified Standard Logistic Control Code "A." Non-development item procurement for 794 units was initiated with technical proposal for the first step received.

(U) The Army type classified the Generator Sets, 3 kW DED, 60, 400 and 28 VDC as standard A. These sets had the advantage over the GED sets of higher reliability, lower fuel consumption, JP-4 capability, electric start and battery system standard, and optional noise attenuation kit. The Marine Corps and distributed the purchase description to industry for comments preliminary to a 1983 buy.

(U) As a result of unsatisfactory field reports from Europe on the PU-625 (two 3 kW sets on a trailer), a PIP effort was underway to retrofit these sets with a breakerless ignition system to improve reliability. The retrofit would also include a larger cranking pully for easier rope starting. The procurement was awarded in May 1982.

(U) As a result of the PU-405 power unit being replaced by the PU-405A/M and wear-out of the SF-15-CIED set used on the PU-405, single phase power used by the AN/TRC-121 radio was not available. After investigation by MERADCOM, the use of a transformer in conjunction with the PU-405A/M was finalized to provide the required single phase power.

(U) A purchase description for a Generator Set, MEP-009B, Diesel Engine Driven, 200 kW, 60 Hz, Tactical, covering the replacement of the engine in the MEP-009A model set was prepared by the Air Force and completed. The procurement package was completed in preparation to solicit bids on the program.

(U) The Power Unit, Auxiliary, Gas Turbine Engine Driven, 10 kW, 28 VDC, which had been developed as a winterization kit for the M1/M60 tanks, underwent the initial dust test. Program requirements were being reviewed to include manual start without batteries, noise reduction, increasing power output to 15 kW and repackaging in smaller envelope.

(U) The contractor had experienced difficulty manufacturing the improved T62-32A engine for the Generator Set, MEP-404B, Gas Turbine engine driven, 60 kW, 400 Hz, Tactical Precise. As this set was in support of two high priority weapons systems, Patriot and GLCM, this project had initiated a preliminary ECP for an alternate engine.

(U) Production contract for the Generator Set, D423A, Gas Turbine Engine Driven 10 kW, 400 Hz, Tactical Utility was terminated on 29 March 1982 for Government convenience. The AN/TPQ-36 Mortar Locating Radar was reconfigurated to a larger trailer which eliminated the need for a small lightweight generator. The MEP-112A, 400 Hz DED generator set was selected to power the radar.

(U) Deliveries on the first production buy of the Generator Set, D424A, Gas Turbine Engine Driven 150 kW, 400 Hz were on schedule with a total of 18 delivered. A sole source contract for an additional 24 generators was awarded to Detroit Diesel Allison.

(U) On the Generator Set, MEP-208A, Diesel Engine Driven 750 kW, 60 Hz, Tactical Utility, the contractor completed the fabrication of two first articles and the first article examination was held and completed during the fourth quarter, FY 1982. The first article testing had been initiated at the contractor's plant and the environmental part of this FA testing was initiated at Eglin AFB, Florida. The air transportability tests were scheduled for Dover AFB, Delaware in mid-November. Fifty-four sets were on contract with initial production deliveries scheduled for fourth quarter, FY 1983.

(U) The initial fielding problems of the Generator Set, MEP-029A, Diesel Engine Driven, 500 kW, 60 Hz, Tactical Utility, with the exception of the recent Circuit Interrupter failures and the preheater failures, had been resolved. The fixes for these original problems had been incorporated into several ECPs, and the resulting modifications were being retrofitted in the fielded units. Investigations were initiated on the circuit interrupter and preheater failures.

Acquisition

(U) One issue of the Five-Year Acquisition Plan was published and distributed in November. The Long-Range Acquisition Estimates (LRAE) were disseminated in May and an update was made in September. Acquisitions in FY 1982 were a 60 kW, 400 Hz, Gas Turbine Engine Driven Generator Set contract awarded to Libby Welding Company in January 1982 and a 72 kW, 400 Hz, Diesel Engine Driven Generator Set contract was awarded to Essex Electro Engineers, Incorporated in June 1982. The terminated contract with Bogue Electric Manufacturing Company for default was still in litigation.

Automation

(U) In FY 1982, this Project began the process of office automation. As a base system, the ONYX C8002 with 10M memory, along with six Concept 108 Smart Terminals, was placed on-line. Graphics capability was also achieved with a Tektronix 4050 system. To enable message communication outside the Project, several terminals were also set up with MODEMS and the ELITE system was funded with two directories.

R&D Program Management

(U) Prior to 3 May 1982, PM-MEP exercised limited management over Projects D194 and D196. Funds for these efforts were provided to MERADCOM for control. Effective 3 May 1982, per DARCOM message 031500Z May 82, subject: PM-MEP Electric Power-DARCOM Annual Review Guidance, PM-MEP was given authority to justify, present and defend the 6.3 elements of the Power Program (Projects 1E463702 DG10 and DG11 and 1E 464714D194 and 196) at the MERADCOM portion of the DARCOM Annual RDTE Review. Subsequent to this action, the PM-MEP assumed management over the aforementioned projects and had control over all related funds. In addition, the PM-MEP had also received direct control over all OMA funds for salaries, equipment rentals and travel, which was previously handled by DARCOM.

Configuration Management/Product Assurance

(U) Staff officers of PM-MEP, through the delegated authority of the PM, were chairing 10 Configuration Control Boards for design control of 41 models of DOD standard family generator sets. During FY 1982, 148 Class I change proposals and major deviations and waivers were evaluated.

(U) ECPs processed:

| Approved | Disapproved | Estimated Cost Increase |
|---|---|---|
| 104 | 17 | $1,420,000 |

(U) VECP and cost reduction proposals:

| Approved | Disapproved | Estimated Cost Increase |
|---|---|---|
| 15 | 4 | $2,665,000 |

(U) Waivers and deviations:

| Approved | Disapproved | Estimated Cost Increase |
|---|---|---|
| 5 | 3 | $ 1,900 |

(U) During FY 1982, Release for Issue authority was delegated to the MSCs by revision of DARCOM-R 700-34. In the spirit of the CAPER Program, this eliminated redundant reporting and eliminated two nodes in the management process flow chart. TSARCOM and PM-MEP coordinated up front in the position formulation rather than in the approval process. Also during FY 1982, the mission and function for tracking and correcting field problems was transferred back from the MM Division to the CM/PA Division. This fit more logically with the dominant media for receiving feedback, i.e., Quality Deficiency Reports, Controlled Data Collection and System Assessment Reports. These latter reporting systems were in the Quality Assurance regime.

## Project Manager For Training Devices (PM TRADE)

### Introduction

(U) Colonel Donald M. Campbell continued as the Project Manager for Training Devices in FY 1982, as chartered and signed by the Secretary of the Army on 5 October 1981. At the beginning of FY 1982, the total military and civilian personnel authorization was 106: 26 officers, four enlisted and 76 DA civilians. A reorganization in December 1981 generated many organizational segment changes. These changes were commented on in the Operations, Research and Engineering Management Division input for this fiscal year.

### Product Manager, Armor Training Devices

(U) Conduct of Fire Trainer (COFT). General Electric was the recipient of the largest training device contract ever awarded, on 24 September 1982. Procurement of these trainers remains within budget and on schedule. In addition, contract had been awarded for production of M1 Maintenance Trainer and developmental prototype of Fighting Vehicle System Maintenance Trainer for test.

(U) Non-Systems Devices. The initial production contract for the M180 Subcaliber Device (Brewster) was delivered in June 1982. An add-on (second buy of 945 units) was awarded in June 1982, with delivery dates from November 1982 through February 1983. The device was to be transitioned to ARRCOM in March through April 1983. The M179 Subcaliber Device (TELFARE) was transitioned to ARRCOM in March 1982. For the Eye-Safe Simulated Laser Rangefinder (ESSLR), Aberdeen was conducting safety tests on both the DECILOG (US) and WILD (European) filters, with safety certification expected by January 1983. The Ammo and Engineer Board, Fort Knox, completed concept testing on the SAAB BT 41, Tank Gunnery and Missile Tracking System (TGMTS). Their final report was to be delivered in November 1982. Xerox had submitted a proposal that would be compatible with MILES.

Aviation Systems

(U) Three flight simulator programs highlighted the activities of the Aviation Systems Division for FY 1982. These were the CH-47 Flight Simulator, the UH-60 Flight Simulator and the AH-64 Combat Mission Simulator.

(U) CH-47 (Chinook) Flight Simulator. The first and second production units of the CH-47 Flight Simulator were delivered to the Army and released for training at Fort Campbell, Kentucky and Fort Hood, Texas, respectively. A third simulator was installed at Coleman Barracks, Germany and was well into final acceptance testing as FY82 drew to a close. Each of these simulators was delivered on schedule and within budget.

(U) UH-60 (BLACK HAWK) Flight Simulator. Operational testing of the UH-60 (BLACK HAWK) Flight Simulator was completed and the decision was made to use the Digital Image Generation (DIG) visual system on all production units.

(U) AH-64 (Apache) Combat Mission Simulator. Decision on an AH-64 Combat Mission Simulator acquisition strategy for a competitive procurement was received from Headquarters, Department of the Army in December 1982 and was followed by an accelerated four-step source selection process which led to the award of a Cost Plus Incentive Fee contract on 23 July 1982. Prototype design work and purchase of parts and materials (25 percent) were accomplished by the end of FY82, Headquarters, Department of the Army guidance was received on 3 September 1982, to proceed with an accelerated production cycle concurrent with the last year of the prototype development. Plans were for four production devices to be built under a contract awarded in February 1984.

(U) The above programs reflected part of the PM TRADE efforts in the areas of Defense Acquisition Improvement Program (DAIP) and Force Modernization. In the Defense Acquisition Improvement Program, the AH-64 Combat Mission Simulator acquisition cycle was to be shortened by nearly three years by: (1) Shortened test program; (2) a production contract awarded before completion of the prototype contract effort (concurrency); and (3) Preprogrammed Product Improvement ($P^3I$) for the visual system.

(U) In Force Modernization, delivery of the CH-47 Flight Simulator to field units of Forces Command had provided those units with a tool for improving individual and crew combat readiness skills.

Technical Support

(U) The Technical Support Division was continually required to defend the accelerated acquisition strategy. By July 1982, it appeared that a TRADOC nonconcurrence would not be overcome. However, the division formulated joint DARCOM/TRADOC operating procedures to be used in concert with the strategy. These procedures were accepted by TRADOC and the nonconcurrence was withdrawn. As FY82 ended, DA finally concurred in the strategy and was preparing policy guidance for its implementation. The division was represented on a DARCOM JWG to examine Contractor Logistic Support (CLS) of Training Devices. Recommendations from the JWG were presented to the DCGMR who requested restaffing at the MRCs and DESCOM. As the fiscal year ended, the restaffing had been completed but not presented because of the retirement of LTG Hardin. The entire study would be briefed to the new DCGMR early in FY 1983. At the close of FY 1982, DARCOM still had withheld concurrence on AR 350-XX because of concerns in the area of CLS.

(U) During FY 1982, the DCSLOG of the Army, LTG Thompson, forwarded a memorandum to the DCSOPS of the Army, LTG Richardson, on CLS of training devices. LTG Thompson expressed concern about the proliferation of contracts managed by numerous DARCOM MRCs. He expressed support for a regionalized CLS concept managed by PM TRADE. Based upon the DCSLOG memo, PM TRADE awarded a study contract to BDM. The study would determine feasibility of the regional concept, would identify and investigate problems which could occur when prosecuting the concept, would provide recommendations for regions, and a single readiness manager and a Statement of Work to be used in subsequent RFPs.

(U) The division was represented on a DA Work Group for Army Training Devices and a DARCOM Study Group for Integrated Logistics Support. The division also established a System PM/PM TRADE data interface procedure with PM M1, M60 and FV. Once refined, the system would be expanded to incorporate other PMs and MRCs, as appropriate. This procedure allowed PM TRADE to track the configuration of the combat system and to determine the impact an ECP to the system would have on the training device. During FY 1982, AH-1 FWS, IRETS, and UH60FS transition plans were approved. No devices were formally transitioned during FY 1982.

(U) FY 1982 was a very active year for the Product Assurance and Test Management Branch of PM TRADE. The branch continued its support effort in the Reliability, Maintainability, Quality Assurance, Test and System Safety responsibilities. Significant events in the Product Assurance and Test area were:

a. The Development Test (DT) II and Operational Test (OT) II were completed on the MILES follow-on systems for Air-Ground and Air Defense Engagement Simulation Systems (AGES/AD). Additionally, some follow-on

check testing was conducted to selected system parameters. The testing allowed the system to successfully complete the DEVA IPR and enter production.

b. Product Assurance and Test Support was provided to the M1/M2/M3 COFT. Test Evaluations and Reliability, Availability, and Maintainability (RAM) analysis of the proposed production configuration were performed to support the DEVA-IPR and in preparation for the production contract. An Independent TECOM Test (ITT) for the COFT was identified as a requirement by DARCOM and preliminary coordination was initiated to conduct the test.

c. RAM requirements for the Signal Intelligence-Electronic (SIGINT/EW) simulator were established via a working group between PM TRADE and TRADOC. The basis for a RAM rationale annex was established to support the RAM requirements to be included in the requirements document.

d. In-plant testing (to include Reliability and Maintainability) on the Alpha Radiac Training Device was started at the contractor's facility and at independent test laboratories. Problems were discovered under some extreme environmental conditions. The contractor was engaged in correction of the problems and a retest was ongoing at the conclusion of FY 1982.

e. The Eye Safe Simulated Laser Rangefinder (ESSLR) was started in eye safety tests at Aberdeen Proving Ground. The test was ongoing at the conclusion of FY 1982.

f. Preliminary test work (i.e., review of documentation, etc.) had been completed on the ROLAND Training Device in preparation for the contractual test phase. The actual test phase would commence in early FY 1983.

g. Acceptance testing (to include a Reliability demonstration) for the CH-47 Flight Simulator was completed at Singer Link Corporation and final on-site acceptance testing was completed.

h. The need to quickly procure Gunfire Simulator for the National Training Center was supported through assistance in defining the requirements for the device (environmental) and the corresponding test requirements to be included in the contract package.

i. An Armor Moving Target Carrier procurement package definition was initiated, and support to finalizing the TDR and establish the corresponding specification and contract requirements for reliability, maintainability, quality and test were ongoing at the end of FY 1982.

(U) The items preceding were significant events. However, significant reliability, maintainability, quality assurance, test, safety engineering, logistics and configuration/data management efforts were expended on systems such as IRETS, VSCDP, AH64, SRTS, STAGS, and ICOFT, to name a few. This effort, while not identifiable as end products, was essential to the future success of PM TRADE's ongoing programs.

(U) During FY 1982, the following nontype-classified devices were fielded:

a. Device Number 07-22, Small Arms Gunfire Noise Simulator--357 devices were fielded.

b. Device Number 5-19, Medium Girder Bridge--procurement of 57 with the first three devices fielded in September.

c. Device Number 06-19, Artillery Mine and Demolition Noise Simulator--34 devices were fielded.

d. Device Number 09-19, 2-to-1 M16A1 Rifle Trainer--13 devices were fielded.

e. Device Number 20-3, Nightvision Shadowgraph--contract was awarded and all 23 devices were fielded.

f. Device Number 7-50, Fast Range Processors--purchased and fielded four devices.

g. Device Number 07-57, Weaponeer--purchased and fielded 17 devices.

h. Device Number 08-14, Casualty Simulation Kit--purchased and fielded 59 devices.

i. Device Number 08-06, Arterial Blood Action Simulator--purchased and fielded 31 devices.

j. Device Number 08-11, Buttocks Moulage Kit--purchased and fielded 19 devices.

k. Device Number 08-10, Colostomy Moulage Kit--purchased and fielded 21 devices.

(U) The Configuration Report on the UH-60 BLACKHAWK Maintenance Trainer Panels was received and would be used as the basic instrument in the updating/modification of the panels to the aircraft configuration.

An independent study was conducted at Fort Jackson, South Carolina, on the effects of lightning on the Gunnery Ranges. This was used as the basis for recommended changes to enhance the ranges. The revision to DA PAM 310-12 was completed during FY 1982. Supply Support for nontype classified training devices through PM TRADE/Tobyhanna Army Depot continued to be responsive to the field with an excess for 85 percent fill rate for requisitions within 30 days. Consumption of repair parts during this period increased considerably and an excess of $688 thousand of replenishment spares was procured.

Operations, Research and Engineering Management

(U) During FY 1982, organizational realignments within PM TRADE combined the former Research and Engineering Division and Program Control Division into a new organizational element. The newly formed Operations, Research and Engineering Management Division was established to harmonize the relationship between long range planning, technology base exploratory development, concept formulation and requirement definition activities. The principle purpose of this alignment was to provide central program control for technical performance characteristics integration of total program work efforts and for the forecasting and allocation of manpower resources.

(U) PM TRADE had continued to expand activities in the role of DARCOM focal point for all training device requirements. This was evidenced through increased numbers of non-system device requirements, Memoranda of Agreement with system project managers and informal advisory services in response to numerous requests. The latest, most significant activity was centered about commercial training device requirements which were established by a DA letter dated 22 December 1980. Acquisition of items under commercial training device requirements were to be accomplished without expenditure of Research, Development, Test and Evaluation (RDT&E) funds. Guidelines for procurement based on commercial training device requirements (CTDR) were developed for incorporation in draft AR 71-9, AR 350-XX and TRADOC Circular 70-82-1. A DA staff/DARCOM/PM TRADE/TRADOC/ATSC working group, in August 1982, established guidelines for determining the need for RDT&E funding expenditure. Under these guidelines, CTDR acquisitions requiring change in performance characteristics exceeding 15 percent of the item unit cost would require expenditure of RDT&E funding.

(U) Concurrent with expanding activities as the DARCOM focal point, concentrated efforts were applied to accelerate the AH-64 Combat Mission Simulator contract award and delivery. A major element in the acceleration was the establishment of a parallel path to develop visual system component technology needed to meet the full simulation of the operational environment for training. Also, there was elevated interest and increased

focus on the simulator and training device technology base during FY 1982. The heavy use of support service contract resources was continued during the year.

(U) Program Management and Requirements. During FY82, the organizational structure of the Program Management and Requirements Division was changed from a separate division to a branch within the Operations, Research and Engineering Management Division. The realignment placed emphasis on central program management structured to characterize new business from external requests and align work efforts within internal operating divisions. Under this organizational structure, the Program Management and Requirements Branch was organized to develop an integrated program originating from training device requirements and technology base initiatives in balance with available funding and manpower resources.

(U) Significant accomplishments toward this end included the establishment of manpower accounting system implemented on an automated program developed by the US Army Construction Engineering Research Laboratory (CERL). A key aspect used for tailoring the CERL system was the development of a generic project work breakdown structure for facilitating central program management. Other accomplishments of the Program Management and Requirements Branch included:

a. DARCOM FY 1983-1985 RDT&E Review--Program Management and Requirements Branch staff provided funding and major milestones data for the PM TRADE portion of the annual DARCOM RDT&E Review. All financial data was coordinated with the Financial Planning and Management Branch prior to submission for the review.

b. Third Annual Interservice/Industry Training Equipment Conference--PM TRADE sponsored the Third Annual Interservice/Industry Training Equipment Conference. The Program Management and Requirements Branch was responsible for the planning and conduct of the conference. The conference was conducted in Orlando with over 1300 participants, including congressmen, military and industry representatives.

c. Program Management and Requirements Branch Audio Visual Support--During FY 1982, the Program Management and Requirements Branch provided visual support for five major conferences, which included the Project Managers' Conference, two PM TRADE reviews for DARCOM, the Third Interservice/Industry Training Equipment Conference, and the annual DARCOM RDT&E conference. Visual support was provided to the divisions and branches of PM TRADE briefing client and potential client organizations Army-wide. More than 1200 slides and viewgraphs were required and procured.

d. Unsolicited Proposal Program; PM TRADE's supplement to DARCOM-R 70-2 was issued on 3 December 1981. This established definitive procedures to be followed within PM TRADE for prompt processing of unsolicited proposals. It also assigned specific responsibilities and provided for an Unsolicited Proposal Coordinator (UPC) and an Unsolicited Proposal Evaluation Review Committee (UPERC). During FY 1982, twelve unsolicited proposals were received.

e. Preparation for PM TRADE Movement to Facilities at the University of Central Florida--The Program Management and Requirements Branch conducted preliminary planning and prepared space and equipment requirements documents to support the indicated PM TRADE move to facilities at UCF. The funding and planning for the move had been coordinated with NTEC, Department of the Army and the Department of the Navy. The anticipated movement date to the UCF facilities was FY 1987.

(U) Engineering Management (EM) Activities. In addition to expanding concept formulation activities, heavy dedication of Engineering Management Branch resources was applied to the AH-64 and Conduct of Fire Trainer programs. A Visual System Component Technology Development program was initiated as a Preplanned Product Improvement (PPPI) as a principle part of the AH-64 program acceleration. The Visual System Component Development Program (VSCDP) was a two-phase effort: Phase I developed system designs, while Phase II would develop actual hardware. The program was a competitive fly-off. Phase I, awarded in FY 1982, limited competition to General Electric, Singer Company, and Honeywell. Phase II was planned to continue with two firms. Unique aspects of this development included new computational systems and display approaches. In addition, contractors had been asked to build upon existing development work in order to achieve a realtime, producible capability by the end of FY 1985.

(U) During FY 1982, deliveries of the prototype Army Maintenance Training and Evaluation Simulation System (AMTESS) were completed. Each contractor, Seville and Grumman, had delivered its version of an AMTESS system for an automotive trainer and a radar trainer. Each system would be evaluated for training effectiveness. The evaluation effort had been assigned to the Army Research Institute (ARI). Several classes of students would be trained on AMTESS and on the operational equipment. All students would be tested on the operational equipment to determine the training transfer associated with AMTESS trained students, compared to conventionally trained students. Future activities of the AMTESS program would depend to a large extent on the evaluation results. Best features of detailed design specifications produced by each contractor would be integrated into a single standard system specification for future maintenance training equipment acquisitions.

The basic AMTESS concept applied to a wide variety of maintenance training skills. The standard system design specification resulting from Phase II of the AMTESS effort would be provided to any qualified contractor to produce a system which would meet any future requirement for maintenance training.

(U) Technology Management Activities. Expansion of the simulator and training device technology base continued through revision of the five-year exploratory development plan into three principle categories. These categories placed emphasis on developing exploratory concepts for individual soldier training equipment, battlefield simulation training equipment, and providing a continuing base of technology supporting training equipment acquisition. PM TRADE Technology base activities were included as part of the soldier-machine thrust area resulting from the Army Science Board summer review. Also, high visibility was given to the subject of training in the technology base through briefings and information presented to the Army Science Board and Defense Science Board during FY82. The Army Science Board was briefed in February on PM TRADE's future planned exploratory development efforts in artificial intelligence and robotics. The thrust of the briefing was that these technologies had tremendous potential payoff in training device applications. Potential applications included "expert systems" to augment Army instructors and surrogate crew members to simulate missing crew members in team training situations. Training and training technology was the topic of study of the Defense Science Board (Summer, 1982). PM TRADE briefed the simulation and training device technology base activities and served with the Training Technology Subpanel.

(U) The major activity during FY 1982 was directed to the Simulation of Area Weapons Effect (SAWE) for developing approaches to include area weapons in the engagement simulation training scenario. PM TRADE awarded the Jet Propulsion Laboratory an exploratory development contract to investigate and develop an indirect area fire capability for engagement simulation. As a result of a Best Technical Approach Study, a lightweight, low cost styrofoam round and a low cost pneumatic launcher were developed and would be demonstrated. The round delivered flash, bang, and smoke cues. Casualty assessment cues would be produced with ultrasonic signals and detectors which would be interoperable with the MILES system.

Ground Systems

(U) The Multiple Integrated Laser Engagement Simulation System (MILES) completed development and was type classified. Logistics support was transitioned to ARRCOM. Production continued to run on schedule. The Ground Systems Division was in Lot II, and it was anticipated that final Basic MILES deliveries would be completed in January 1983. MILES

OPFOR systems for T-72, ZSU, M1974 and BMP were delivered to and were operational at the National Training Center. An ancillary to MILES was the Blank Fire Adapters (BFA) which added realism to exercise by providing realistic weapon effects signatures. The M19 and M20 BFAs for the M2 and M85 machine guns had completed production deliveries and had been transitioned to ARRCOM. Engineering development of the M240 BFA on the M48, M60, and M1 tanks as well as the M2/3 FVS was nearing completion. The production contract would be awarded in the first quarter of FY 1983.

(U) The Air to Ground Engagement Simulation (AGES) and Air Defense (AD) Systems would provide a logical extension of MILES to include Aviation and Air Defense in the engagement simulation exercise. The basic aviation offensive weapon system was the COBRA with simulation of the TOW, 20mm Gun, and 2.75 Rocket Systems. The OH-58A and UH-1H acted as tragets. The Air Defense Systems included the VULCAN (towed and self-propelled), CHAPARRAL and STINGER. The AGES/AD program had completed DT/OTII and all shortcomings noted had been satisfactorily corrected and proven acceptable in follow-on check tests. The DEVA IPR was held in May 1982 with a production contract award in June. The MILES M1 Long Lead Production Contract was awarded in May 1982 with first deliveries scheduled for January 1983. User confidence testing was scheduled for January through March 1983. The MILES M2 and M3 FVS Engineering Development efforts were ongoing. Anticipated production contract awards were for the summer of 1983. The AWESS for the multiple-barrel 20mm Vulcan and the single-barrel 20mm Cobra and 25mm M2/3 were in engineering development and would be tested during February through April 1983. Future MILES technology applications included, but were not limited to, the AH-64 Advanced Attack Helicopter (AAH), the Advanced Helicopter Improvement Program (AHIP), the UH-60 Helicopter, DIVAD Gun and a multi-purpose vehicle engagement system (MITS). Although technology was ready, at this time no funds would be available to pursue these efforts until 1985.

(U) Development of the Army Training Battlefield Simulation System (ARTBASS) continued. The ARTBASS would provide real time, dynamic training in command and control for Maneuver Battalion Commanders and their staffs. The ARTBASS was essentially a conversion and update of the Combined Arms Tactical Training Simulator (CATTS) which was in use at Fort Leavenworth, Kansas. It was planned to convert existing CATTS software from the 1974 large scale computer configuration to the updated multi/mini technology and van mount the system. The prototype was scheduled to arrive at Fort Leavenworth in March 1983.

(U) The Infantry Remoted Target System (IRETS) successfully completed DT/OTI, and an Engineering Development Phase contract was awarded to Sperry Support Services, Huntsville, Alabama on 16 March 1982. The IRETS program objective was to provide the Infantry and Armor communities with a system of threat oriented targets. Targets would

realistically support various small arms marksmanship training exercises as well as tank gunnery training. IRETS would feature major components such as an automated control device, Infantry stationary and moving targets, hostile fire simulators and night muzzle flash simulators as well as Armor target interfaces and a hostile fire simulator. System components would be designed to sense and automatically score small arms and main tank gun service ammunition.

(U) A contract was awarded on 19 March 1981 to Hughes Aircraft Corporation for development of two ROLAND Institutional Trainers (RIT). The program was restructured on 12 November 1982. The Institutional trainer consisted of an Instructor's Console and six student stations, the Field Trainer consisted of a 40-foot trailer with two stations. Each student station had positions for the Commander and Gunner. The trainer would provide a variety of combat scenarios featuring advanced computer generated imagery. The RIT also included self-paced, computer managed training with a hard copy evaluation of the student's progress for record. A contract for a Fire Finder E14, AN/TPQ-37 Radar Trainer was awarded on 30 September 1982. This trainer would contain six stations for operator and organizational maintenance training. The trainer was to be delivered in operational condition to Fort Sill, Oklahoma in FY 1984. A contract was also awarded to AAI Corporation on 16 April 1981 for development of the Radiac Set Trainer. Prototype delivery of five units was scheduled for January 1983. The Radiac Trainer would allow ALPHA and Explosive Ordnance Disposal (EOD) teams to proctice radiation monitoring and survey techniques without being exposed to hazardous radiation. The Radiac Trainer would represent the operational equipment (AN/PDR-56(F)) in appearance and operation. PM TRADE was able to exceed both its RESHAPE Fair Share Goal for FY 1982 of 19 manyears and its internally set operating goal of 64.8 manyears by achieving a total FY 1982 manyear gain of 71.44.

## SANG Modernization Program

(FOUO) The initial modernization program began in 1973. This program had the following objectives: (1) To organize, train, and equip four Saudi Arabian National Guard (SANG) regular light Mechanized Infantry Battalions (MIBs), later reorganized into four 858-man Combined Arms Battalions (CABs); (2) to organize, equip and begin training a limited support base to sustain the first four CABs. The limited support base consisted of a Supply and Maintenance Control Point (SMCP), later termed the Supply Maintenance Control Office (SMCO), and a Direct Support (DS) Maintenance Company; (3) to begin to organize, equip and train the 1st Artillery Battalion Headquarters; and (4) to organize, equip and begin training a Combined Arms School (CAS)/Replacement Training Detachment (RTD).

SANG Follow-On Modernization Program

(FOUO) The SANG Follow-on Modernization Program (1980-1989) was divided into three phases. Phase I (1980-1981) had these objectives: (1) To modernize the First Brigade by organizing and training a brigade headquarters, sustaining four modernized CABs and organizing, equipping and training an artillery battalion, an engineer company and a logistics support battalion; (2) organizing, equipping and training the First Signal Company; (3) organizing, equipping and training the nucleus of a training base; (4) beginning development of a logistics base; (5) making necessary preparations for Phases II and III; and (6) sustaining OPM SANG.

(FOUO) Phase II of the SANG Follow-on Modernization Program, which would run from 1982 through 1985, had these objectives: (1) To complete modernization of and sustain the First Brigade by equipping, completely training and sustaining the First Brigade Headquarters, sustaining four CABs; completely equipping and sustaining the First Artillery Battalion; equipping, completely training and sustaining the First Combat Engineer Company; and sustaining the First Logistics Support Battalion; (2) to modernize and sustain the Second Brigade by organizing, equipping, training and sustaining the Second Brigade Headquarters, four CABs, the Second Artillery Battalion, the Second Engineer Company and the Second Logistics Support Battalion; (3) expanding and sustaining the First Signal Company; (4) completing modernization of and sustaining the Training Base; (5) expanding and sustaining the Logistics Base; (6) making necessary preparations for Phase III; and (7) sustaining OPM SANG.

(FOUO) Although there had been no official request to the US Government for a continuation of the program beyond Phase II, the goals and organization structure for Phase III were recently recommended by OPM SANG, but remained to be approved by HRH Crown Prince Abdullah, SANG Commander, following the scheduled briefing at the Country-to-Country Review meeting to be held in Riyadh in late November 1982. The OPM SANG staff was working on development of a Project Manager's Master Plan (PMMP) for this phase, based on these objectives. Phase III of the Follow-on Modernization Program would span the period 1986 through 1989. The goals and organization structure for Phase III were to transform the modernized First Brigade into a heavy brigade strike force consisting of a mechanized brigade headquarters, one tank battalion, a cavalry squadron, two mechanized infantry battalions, a DS artillery battalion, an engineer company and a logistics support battalion.

(FOUO) Also in Phase III, a third brigade would be organized from elements and resources of the Second Brigade to operate from two military cities; expand the signal company; organize, equip and train a GS artillery battalion, an air defense battalion and an air defense missile battalion.

The brigade would also organize, equip and train a support command, to include a DS maintenance battalion, a heavy equipment transport battalion, an engineer company (construction) and a DS supply and transport battalion. It would expand the Training Base and the Logistics Base; establish garrison headquarters at Khashm Al An, Hofuf and Al Qassim; and sustain OPM SANG.

SANG Medical Services Modernization Program

(FOUO) An initial Project Manager's Master Plan (PMMP) for the SANG Medical Services Modernization Program was developed in August 1980. A Memorandum of Understanding (MOU) for the Medical Program was signed on 24 August 1981 and became the basis for a comprehensive medical modernization program which would be implemented in phases. The first Letter of Offer and Acceptance (LOA) was approved and signed by HQ SANG on 27 October 1981, providing $503 million for the Project Manager to supervise the first phase of the SANG Medical Program in Riyadh. A new PMMP for the Medical Program, as well as a smaller plan regarding the SANG mobile surgical hospital, was handcarried to HQ DARCOM for appropriate staffing and approval on 20 September 1982. It was anticipated that the PMMP would be submitted to HQ SANG in October 1982. The objectives of the phase of the Program in progress were to: (1) Maintain a 500-bed hospital and associated support complexes, as well as manage and operate a 200-bed short-term acute care facility within the complex(es); (2) establish and operate a medical records system; (3) operate, maintain and manage the test and examination facility colocated with the hospital; (4) prepare and subsequently execute a detailed plan for the modernization and development of the National Guard Medical Services so as to provide a comprehensive and efficient service to meet the SANG requirements of peace and war, armed conflict or disaster. Future concepts for an entire military medical system were being developed by HQ SANG. The MOU established the requirement to develop and present a plan for developing a National Guard skill base by training medical specialists and other professionals to work in the hospital with the contractor.

SANG Modernization Program Overview--1 October 1981-30 September 1982

(FOUO) In general terms, the mission of OPM SANG was to modernize the SANG in accordance with conditions and requirements of the MOU signed by the US Government and Saudi Arabian Government in 1973 and 1981. This was more specifically defined in the mission statement as contained in the PM's Charter, signed by the Secretary of the Army on 25 May 1982:

> "...The objective of the program is to modernize the SANG in the areas of management, organization, training, equipment, maintenance, supply, procurement,

> medical care and facilities commensurate with the standards of the US Army and other accrediting U.S. professional organizations appropriately suited to the capabilities of the SANG. (The PM) will exercise principal authority over the planning, direction, execution, and control of the modernization which covers all elements, missions, functions, and requirements of the SANG, and will facilitate increased SANG participation in all aspects of the program, the goal being SANG's eventual capability to unilaterally initiate and sustain modern organizations and systems."

(FOUO) A major goal in the OPM mission was one of assisting the SANG in developing self-sufficiency. This included increasing the active participation of the SANG in all aspects of the program, to include areas previously not emphasized for SANG involvement, such as management and procurement. In addition to the modernization objectives, OPM SANG had assisted the HQ SANG staff with numerous projects outside the overall scope of the program. These projects were important to the modernization effort since they demonstrated HQ SANG's desire to become self-sufficient, and at the same time, improve its management effectiveness. With these facts in mine, and with particular emphasis on those instances in which OPM SANG advanced toward accomplishment of its mission, this section addresses the significant program developments at OPM SANG for FY 1982 by month of occurrence.

(FOUO) The fourth Saudi Arabian National Guard Modernization Program mini-conference was held during the period 27-29 October 1981, in Orlando, Florida. The main emphasis of this conference was focused on required delivery dates (RDD) for all items of FMS equipment for the SANG units. The graduation date of the 1st LSB was rescheduled from 31 December 1981 to mid-April 1982 by HQ SANG at OPM's request. Postponement was necessitated by a complex combination of factors, including a four-month delay in initial assignment of troops by SANG, critical lack of key facilities, major equipment and tool shortages, and a high percentage of untrainable soldiers. The delay allowed the 1st Maintenance Company to accomplish actual field maintenance support for modernized units, greatly enhancing the 1st LSB's capability to support the 1st Brigade in combat operations. The 1st LSB provided, for the first time, 100 percent support for the periodic unit rotation between Khashm Al An (Riyadh) and Al Hasa. This five-day exercise was accomplished without contractor support being required, although it was available for emergency use. Virtually all significant facility actions for the 1st

LSB remained totally stalled at HQ SANG. Funds availability was partially responsible for the hold up, which severely impacted training and the unit's operational capability. HQ SANG delays in acquiring new equipment also adversely affected the unit's performance and mission capabilities. Basic Soldier Skills (BSS) training began in the First Signal Company during this period. During October 1981, the 5th CAB was involved in screening, processing, and assigning personnel to TOE positions. A letter was sent to officials at HQ SANG requesting assignment of one officer from each SANG organization to the Logistics Management Division, OPM SANG, as FMS case officers, marking the beginning of a program to train SANG in Foreign Military Sales procedures and requiring attendance at the DISAM course and tours of DARCOM facilities, and participation in future SANG program review conferences. A recommended Phase III unit organization with unit missions and capabilities was forwarded to HQ SANG for approval. An in-Kingdom, M1 Abrams tank capabilities briefing was conducted by personnel from PM, M1 Abrams Tank System, for the purpose of selecting main battle tank candidates for Phase III of the Modernization Program. The US Government LOA for the Saudi Arabian National Guard Medical Program in the amount of $503 million was signed by HRH Crown Prince Abdullah on 27 October 1981. Personnel strength at OPM SANG (including the Washington Field Office) as of 31 October 1981 was as follows:

| | Officers | Enlisted | GS Civilians | TCN Civilians | TOTAL |
|---|---|---|---|---|---|
| Authorized | 33 | 4 | 55 | 16 | 108 |
| Assigned | 32 | 3 | 99 | 22 | 156* |

*Included 61 overhires.

All new civilian job descriptions and job upgrades associated with assumption of the Medical Program were carried to the Corps of Engineers, Middle East Division, on 29 October 1981 for classification. As a follow-up to the 28 September 1981 briefing concerning the modernization of two Western Province battalions, a second briefing was conducted in late October for the Joint Modernization Committee. As a result of the meeting, a joint HQ SANG-OPM SANG memorandum was later prepared and sent to HRH Crown Prince Abdullah. This document requested further guidance from the SANG Commander and recommended that, if two Western Province battalions were to be modernized in Phase II of the Follow-on Program, they would have to be trained in accordance with the existing Phase II PMMP, with all training conducted at Khashm Al An (Riyadh). Furthermore, if HRH Crown Prince Abdullah desired that the battalions merely be upgraded, and not trained to the level of readiness of the modernized battalions, it was recommended that they be upgraded by the SANG outside of the Modernization Program. No reply was received from the SANG Commander. Executive Development Program (EDP) emphasis increased at the contractor's jobsite during October 1981. Vinnell EDP systems designs Request for Proposal (RFP) was awarded to Systems Research and Applications (SRA) Corporation of Arlington, Virginia.

SRA personnel arrived at the jobsite on 30 October 1981 and started with the development of a functional baseline description of Vinnell's existing situation. During the period October through December 1981, the Technical Management Company (TMCO) of Santa Monica, California continued developmental work on an Automated Training Assistance System (ATAS) and a Training Ammunition Program (TAP) system. These projects were approximately two months behind schedule. The ZAC Master Payment Schedule was revised during the October through December 1981 period with a ZAC-8 amendment to be submitted to HQ SANG in January 1982. The payment schedule was revised to complement the SANG budgetary process and accelerate Phase II payments commensurate with the accelerated Phase II Program Requirements.

(FOUO) The First Brigade Artillery Battalion (105mm) underwent and successfully passed its graduation SANGTEP (Saudi Arabian National Guard Training and Evaluation Program), a modified ARTEP, during the period 7-10 November 1981. This marked the formal end of the 1st Artillery Battalion's training period. A revised TDA for OPM SANG, which was prepared and submitted to HQ DARCOM on 28 September 1981, was approved on 4 November 1981. The approved document reflected 98 additional manpower requirements: 69 for the Phase II training mission (primarily to cover the existing overhire workforce) and 29 for the new Medical Services Modernization Program mission, for a total manpower requirement of 206. No new space authorizations, outside of the 108 already existing, were granted.

(FOUO) Formulation of a milestone schedule for the Project Manager's Master Plan (PMMP) for Phase III of the Follow-on Modernization Program was accomplished. Modification P00055 to the Phase I contract with Vinnell Corporation (DAAG99-79-C-0014) was signed on 27 December 1981, extending the period of contract performance for the SANG First Signal Company, the First Engineer Company, and the SANG School System until 31 December 1982 at no additional cost. Phase I of the Follow-on Modernization Program officially ended on 31 December 1981. With the exception of the 1st LSB and the 1st Brigade Headquarters, the overall objectives for all units undergoing modernization in Phase I were met. The 1st Brigade Headquarters Company was scheduled for graduation in February 1982 and the 1st LSB in April 1982.

(FOUO) A SANG Medical Services Modernization Program announcement was published in Commerce Business Daily and Saudi Arabian newspapers to solicit interested firms prior to issuance of solicitation. Civilian job descriptions for the new Medical Management Division, OPM SANG, which were carried to the servicing civilian personnel office for classification in October 1981, were completed on 13 December 1981.

(FOUO) A proposed Executive Development Program (EDP) system design was published on 19 December, and the design was undergoing joint Vinnell-OPM SANG review as of 31 December 1981. SRA personnel were to return in January 1982 to receive comments and obtain information in reference to in-country EDP support for both hardware and software systems. The final report, to include a complete systems design, hardware specifications, and EDP manning requirements, would be due on 31 March 1982, two months ahead of schedule. During the September-December time period, the publications program underwent a reduction in scope, and the contract was modified to include a computer-assisted translation system. Approximately 200 publications were completed in English by 31 December. Of 146 additional publications, 16 were deleted from the requirements list due to reduction in program scope, leaving a total of 130 publications awaiting, or undergoing, translation. This number included all of the high priority publications identified to date for both Phases I and II of the Modernization Program.

(FOUO) Phase II of the Follow-on Modernization Program officially began on 1 January 1982. A request for Proposal (RFP) for the SANG Medical Services Modernization Program was issued worldwide on 25 January 1982 with a "not later than" reply date of 25 April 1982. During the January-March 1982 time period, the 1st and 3d CABs successfully completed and passed platoon, company, and battalion SANGTEPs and were rated "Combat Ready." The 2d and 4th CABs successfully completed and passed platoon and company SANGTEPs and were rated "Combat Ready." For the first time, the 1st LSB provided total SANG DS logistics support for the two-battalion SANGTEP conducted in late January 1982. The LSB operations throughout were excellent. During the month, the 1st LSB hosted top military officials from SANG during its field deployment, the first time these individuals had observed the LSB in a functional mode. The graduation date of the 1st LSB was scheduled for 20 April 1982. During the January-March 1982 period, a series of briefings on the 1st LSB's mission/capabilities/procedures was held for modernized units. The briefings were highly successful in opening dialogue on DS with the units. The briefings were highly successful in opening dialogue on DS with the units, and all commanders agreed that they understood the LSB for the first time. They also acknowledged that the 1st LSB, although ungraduated, was doing an excellent support mission.

(FOUO) Case WDB-1 (payback for Phase I contractor deployment to Al Hasa) expired in January 1982, and no request for extension of the expiration date was, or would be, made. A request was made for diversion of critically-required tools and equipment for the 1st LSB. Basic skills training for the 5th CAB began on 2 January 1982. The 2d Maintenance

Company and the 2d Supply and Transport Company, which had been undergoing training with the 1st LSB, were transferred from the 1st LSB to the 2d LSB during the January-March 1982 time period.

(FOUO) During January-March 1982, the 1st Brigade Headquarters staff acted as control headquarters during the conduct of SANGTEPs at battalion, platoon, and company levels. Work began in early January 1982 on the PMMP for Phase III of the Follow-on Modernization Program. An increasing number of field commitments made progress slow. During the period 18-22 January 1982, a representative of the Procurement Management Division, OPM SANG, visited Vinnell Corporation's recruiting agent in Manila. No problems were observed, and the recommendation was made to continue use of this agency to meet Vinnell's essential labor requirements in the Philippines. Work continued on the development of an EDP systems design capable of supporting an integrated approach to the management of Phase II activities. Systems Research and Applications (SRA), Vinnell Corporation's subcontractor, returned to the jobsite for the period 11-21 January 1982. During this trip, they received comments, verified and validated their draft system design which was submitted on 19 December 1981, and surveyed the Saudi Arabian market for in-country support of hardware and software systems.

(FOUO) In February 1982, the 1st Brigade Headquarters successfully completed its SANGTEP, concluding this unit's scheduled Phase I modernization training. The 1st Artillery Battalion (Composite) participated in a battalion-controlled FTX conducted 8-9 February 1982, its first tactical training since completion of its graduation SANGTEP in November 1981. This exercise was successful in identifying for the commander and staff those areas requiring concentrated effort before the spring FTX in April 1982. Requirements for additional Phase II equipment were being consolidated by OPM SANG, and a request for an amendment to ZAC would be made in April or May 1982. Among the additional requirements were more V-150D night vision equipment, radar for Vulcan systems, MILES, a camouflage program, various items of equipment to be used by the SANG in the Training Base and as war reserves, and possibly some ammunition.

(FOUO) The Medical Management Division, OPM SANG, was officially assigned on 1 February 1982. LTG Mittemeyer, Army Surgeon General and MG Baker, EUCOM Surgeon, visited HQ SANG and OPM SANG for an update on the Medical Services Modernization Program during the period 15-18 February 1982. The visit demonstrated to SANG the important and supportive role the US Army Medical Department had pledged to the SANG Medical Services Modernization Program. Frank and informative discussions with SANG officials fostered the positive pledges of personnel support and consultative assistance, both from CONUS and

Europe. A 10 February message from DAPE-MBC informed OPM SANG of 29 additional space authorizations to support the Medical Services Modernization Program, bringing the total authorized strength at OPM SANG to 137 (37 officers, 5 enlisted, 75 GS civilians, 20 TCN civilians). Two contracts with Vinnell Corporation were closed out in February 1982: contracts DAAG99-75-C-0007 and DAAG99-78-C-0001 (original Modernization Program). Two contracts with Cadillac Gage Company for the original Program were also closed out: contracts DAAG99-76-C-0001 and DAAG99-78-C-0003. On 10 February, HQ SANG requested information on the academic and military curricula of the US Military Academy at West Point, for the purpose of aiding in the development of the curriculum and training program at the new King Khaled Military Academy, formerly the SANG Military Academy. OPM SANG requested through the US Embassy that representatives from West Point be invited to come to Riyadh to discuss the requirement with the Academy Commandant. The Resource Management Division (RMD), OPM SANG, monitored and consolidated two short-fused budget data gathering exercises for HQ SANG during February-March 1982. The exercises were designed to identify all SANG modernization funding requirements (FMS and non-FMS) for the next five years. This was a "first time request" by HQ SANG for this type of support. RMD planned to provide this support in future years.

(FOUO) In March 1982, all First Brigade units participated in the HQ SANG/Brigade FTX. During the period 12-19 March 1982, LTG Hardin, DCGMR, DARCOM; MG Spence, A/DCSLOG S/A; and MG Kicklighter, CDR, USASAC, visited HQ SANG for briefings and orientation. The ZAC-8 Amendment, revising the Master Payment Schedule at HQ SANG's request, was signed by HQ SANG on 2 March 1982. The month of March 1982 marked the first live-firing conducted by the 5th Artillery Battery as an integrated gunnery team. Two FTXs were conducted by the 1st LSB on 10 March and 23-25 March, and were designed to prepare the unit for participation in the Spring FTX, a preliminary to the unit's 20 April 1982 graduation. During March 1982, the 1st Brigade Headquarters acted as controller for the 1st and 3d CAB SANGTEPs. A revised milestone schedule for the Phase III PMMP was developed in early March 1982. Organization structures of new Phase III units were completed, and personnel and equipment lists finalized for approximately 50 percent of these units. Work stalled on 31 March 1982, pending some major equipment and organizational decisions from HQ SANG.

(FOUO) The newly-organized Medical Management Division at OPM SANG embarked upon an ambitious plan to meet the SANG Medical Services Modernization Program requirements. While opening the Riyadh Hospital was considered essential, the development of an integrated master plan for the SANG Medical Program would be the cornerstone for success in the future. At the end of March 1982, a master plan for the mobile

surgical hospital was under development by a select team from the Surgeon General's Office, the Health Service Command, and the 7th Medical Command. This plan provided for the upgrade of the present mobile surgical hospital to a 50-bed unit as required by the PMMP for Medical Services. It was anticipated that the plan for the mobile surgical hospital would be completed in May 1982. As of 31 March, the computer-assisted translation system was in the implementation stages. Representatives from World Translation Company of Canada, Ltd., were awaiting visas to travel to Riyadh, install the system, and begin training Vinnell personnel on its use. HQ SANG expressed a growing interest in the project and was considering its value carefully before providing visa assistance. Production of English language publications by Vinnell Corporation was progressing smoothly. All manuals required for Phase II would be completed in English on schedule. Some translation into Arabic was being accomplished, but expected to increase substantially when the computer-assisted system began full operation. With regard to contractor EDP support, SRA personnel returned again to the jobsite with a draft copy of their final report. The purpose of this trip was to assure that the final report (received at month's end) met all of Vinnell Corporation jobsite personnel's requirements and expectations and that any hardware options Vinnell/OPM-SANG questioned would be investigated. Vinnell's EDP Center actively supported the Modernization Program's day-to-day requirements, as well as provided assistance, as requested, to HQ SANG EDP personnel. Work continued on the verification of data to be used in developing automated training schedules and ammunition projections.

(FOUO) As of the end of the month, the revised PM Charter for the SANG Modernization Program was approved at DA and awaiting signature by the Secretary of the Army. A mission statement to clarify the need to expand the program into Phase III (1986-1989) was requested by DA and provided by OPM SANG on 31 March 1982. The Logistics Management Control Center (LMCC) of the Logistics Base Headquarters, General Support Logistics Base, was activated during March 1982 and became involved in the initial cataloging effort for SANG. A Pre-proposal Conference for the Medical RFP was held during the week of 1-6 March 1982. Of the 183 firms requesting a copy of the RFP, 65 actually visited the site and participated in the question-and-answer session culminating the conference.

(FOUO) During the period 10-20 April 1982, the entire Imam Mohammed ibn Saud Mechanized Brigade participated in the annual spring FTX (FORCE ON FORCE - three to one ratio) and live-fire exercise. The 1st Logistical Support Battalion successfully completed its SANGTEP during the spring FTX and graduated on 15 April, marking the end of its Phase I modernization. The unit conducted, withoug contractor support, its own formal

graduation in the field, to include all planning, coordination and execution. Both the field graduation and the self-initiated planning were "firsts" in the Modernization Program. Overall objectives for all units undergoing modernization in Phase I of the Follow-on Program (1980-1981) were, therefore, met as of this date, and these units were continuing their training or sustainment under Phase II of the Program.

(FOUO) As of April, the 2d LSB training cycle was 50 percent complete, and the unit was scheduled to graduate in late November 1982. The training plan was undergoing revision to insure that the unit would graduate as scheduled, and noted shortfalls in training were being addressed by Vinnell Corporation. Shortages of equipment and literate personnel continued to produce a negative impact on technical training.

(FOUO) The solicitation for SANG Riyadh Medical Center operation was closed on 25 April 1982 with a total of 17 responses received. Pricing and technical evaluation began a week after closing of the receipt for proposals. LTG Mittemeyer's invitation for selected HQ SANG staff to visit US Army medical facilities was forwarded on 26 April 1982. The invitation was accepted, and HQ SANG proposed that the event be scheduled for March 1983.

(FOUO) In May 1982, the Headquarters and Headquarters Company (HHC) of the 1st Brigade encountered extreme difficulty in achieving its modernization goals and would not be ready for graduation in December 1982 as scheduled. Personnel assignment and utilization were the biggest problems, and the lack of trained personnel, both officer and enlisted, was having an adverse impact on training. As the result of recent requests for diversion of selected items of equipment for the 1st LSB, many items began moving to and through the freight forwarder facilities in Baltimore. Approval for diversion of an additional eight M198 howitzers was received. OPM SANG learned that most TOW missiles in use around the world (including all of the missiles in SANG's inventory) were suspended. Efforts were begun to secure sufficient missiles to train the 5th CAB and to sustain the first four CABs. Medical repair parts acquisition was designated as a British responsibility in October 1981, and to this end, the British team was to provide an uncosted listing of repair parts to OPM SANG for review by 12 July 1982. Procurement of these repair parts by the British would occur by 15 August 1982, with delivery of non-medical parts by December 1982, and medical repair parts by January 1983.

(FOUO) A proposal evaluation team for the Medical Services Modernization Program arrived on 6 May and departed on 17 June 1982. The mobile surgical hospital plan for the Medical Program was initiated on 11 May 1982. A 21 May letter from HQ DARCOM (DRCPT-SA) authorized

OPM SANG the two residual officer spaces (remaining from OPM SANG's 26 September 1981 space request) from DARCOM resources to support Phase II of the Modernization Program. OPM SANG's 28 February 1982 letter to HQ DARCOM/HQDA requesting approval of additional key billet positions for OPM SANG, as well as revalidation of previously approved key billets, was approved by DAPE-MPD-PO on 28 May 1982. Future occupants of most OPM SANG military positions would henceforth be required to serve 24-month tours whether accompanied or unaccompanied by family members. The revised PM Charter, SANG Modernization Program, was signed by the Secretary of the Army on 25 May 1982. Adequate housing for contractor employees was one of the principal concerns viewed as restricting the opening date of the hospital. On 28 March 1982, 3 May 1982, and 28 May 1982, these concerns were expressed by BG Yeosock, PM SANG, to HE Sheikh Tuwaijiri, Assistant Deputy Commander of SANG, and other members of his staff. At each encounter, SANG reassured the PM that this problem would not cause a delay in the proposed opening of the hospital. OPM SANG, through the contractor, would be directed to provide the needed housing from those resources available in Riyadh.

(FOUO) During the April-June 1982 time period, general planning data for the Phase III PMMP was compiled and a course of action considered for the master training schedule. Plans beyond the conceptual stage were stalled due to the need for decisions on Phase III equipment by both the USG and SANG. A briefing to HQ SANG on progress and assumptions as of this date was planned for August 1982. A Medical Organization and Functions Committee was established at HQ SANG on 18 June 1982. The evaluation committee completed the proposal evaluation for operation of SANG's Riyadh Medical Center and forwarded its recommendation to the source selection authority on 26 June 1982. A meeting at Fort Benning, Georgia, was conducted during the period 8-10 June 1982, between representatives of the Training Management Division and representatives of the US Military Academy (USMA), TRADOC and the US Army Infantry School (USAIS) to discuss a proposed curriculum for the SANG Military Academy, as requested by HQ SANG on 10 February 1982.

(FOUO) As of 30 June 1982, Vinnell Corporation was in the process of relocating its corporate offices from Alhambra, California to Fairfax, Virginia. A proposed OPM SANG TDA update, submitted to HQ DARCOM on 13 April 1982, reflected the 29 spaces authorized in February 1982, three additional civilian requirements and minor changes and realignments. The updated FY 1982 TDA, as well as an initial FY 1983 TDA (reflecting the two additional officer spaces authorized for OPM SANG in May 1982), were approved by HQ DARCOM on 16 June 1982. The revised PM Charter, SANG Modernization Program, which was signed by the

Secretary of the Army on 25 May 1982, was received in early June and copies were distributed to appropriate agencies within the Kingdom. The ZAC-9 Amendment was forwarded to HQ SANG for acceptance on 27 June 1982. In order to accomplish separate program funding, the ZAC-9 Amendment established a new case designator WHA ($447,457,500) for contract services and training for the SANG Hospital and Medical City by transferring funds identified for the Medical Program on Phase I training case WDB ($402,746,500). In addition, the amendment transferred $8,331,000, identified for the Medical Services Modernization Program on Phase I OPM management case WDA, to Phase II OPM management case WEI. The amendment was also to change the ZAC Master Schedule of deposits due to slippages in the Medical Services Modernization Program.

(FOUO) On 20 July 1982, Hospital Corporation of America (HCA), Saudi Arabia Ltd., was selected for contract negotiations for the SANG Riyadh Medical Center. The 2d and 4th combat engineer platoons joined the 1st Combat Engineer Company on 22 July 1982, completing the integration of all company elements, which was originally scheduled for May 1982. Testing of the four platoons confirmed a serious lack of training; only eight percent of the 2d and 4th platoon personnel were able to complete 50 percent or more of the required basic combat engineer tasks. A draft PMMP for Phase III was submitted to Vinnel Corporation for review on 31 July 1982. The contractor was tasked with evaluating several alternatives for Phase II scheduling/training and unit organizations. The contractor was also involved in developing an automated Phase III equipment list to become part of the Phase III PMMP. Euro-Systems Health Consortium (EHC) confirmed on 27 July that the spare parts list for the medical equipment in SANG's King Fahd Hospital would be available in the technical library for preliminary acceptance. OPM SANG presented the Commander, King Khaled Military Academy, with a proposed curriculum and developmental methodology, as requested by HQ SANG on 10 February 1982.

(FOUO) The Training Management Division, OPM SANG, developed and presented HQ SANG with an automated training ammunition program based upon approved programs of instruction and projected student density. The Division also briefed HQ SANG on a proposed Military Operation in Urban Terrain (MOUT) facility.

(FOUO) In August 1982, the Fifth Artillery Battery (Composite) collective training was completed with the battery passing its SANGTEP. The lack of an approved Table of Organization and Equipment (TOE) continued to be the most serious problem facing the unit. Basic officer and Non-Commissioned Officer (NCO) classes were conducted for the 6th CAB. Planning and preparation for other classes to support the 6th CAB continued in order to meet the published program. Equipment and facility shortages continued to severly impact on the 2d LSB's ability to train.

The lack of support from the 1st Brigade Headquarters and Headquarters Company (HHC) Commander in requiring personnel to be at training and his refusal to assign personnel to proper TOE positions resulted in the HHC being placed into a new training program, necessitating an additional nine months of training. The equipment status remained poor.

(FOUO) During August 1982, the 1st Combat Engineer Company participated in its first two field exercises. Initial steps toward reorganizing the 1st Transportation Company of the Transportation Command, General Support Logistics Base, into its ultimate "modernized configuration" were taken. The 1st Logistical Support Battalion participated in a brigade FTX during the period 15-18 August 1982. The 1st LSB began its move into a new, temporary DS maintenance facility. The draft PMMP for the Medical Services Modernization Program was completed and handcarried to the Office of the Surgeon General (OTSG) in August. The format of the medical PMMP consisted of health systems component plans and support plans with annexes. The estimated cost advised to the OTSG was $1-1.2 billion for the first three years.

(FOUO) On 31 August, HQ SANG requested that Euro-Systems Health Consortium undertake the necessary support for the preliminary acceptance of the King Fahd Hospital which was to begin on 11 September 1982. The contract for the operation of the King Fahd National Guard Medical Center (Contract DAAG99-82-C-0007) was awarded to Hospital Corporation of America (HCA), Saudi Arabia, Ltd., on 24 August 1982. A letter was sent to HQ SANG on 28 August 1982 confirming the signing of the contract between the USG and HCA.

(FOUO) The Corps of Engineers, Middle East Division (COE-MED) provided a team of six COE personnel to participate in the inspection and acceptance of the SANG Riyadh Medical Center, beginning 11 September 1982. The OTSG provided the medical expertise for the acceptance evaluation process. Preliminary acceptance team members had made several observations: the computer systems were not ready for acceptance, and breakdowns had occurred on three engines at the Riyadh power plant. Recommendations for alternate plans and corrective actions were submitted.

(FOUO) Personnel strength at OPM SANG (including the Washington Field Office) as of 29 September was as follows:

| | Officers | Enlisted | GS Civilians | TCN Civilians | TOTAL |
|---|---|---|---|---|---|
| Authorized | 39 | 5 | 75 | 20 | 139 |
| Assigned | 37 | 6 | 107 | 34 | 184* |

* Included 70 overhires.

(FOUO) Critical shortages of primarily SANG-furnished equipment continued to adversely impact completion of individual and collective training of the 1st Combat Engineer Company. An additional three months of training would be required before the unit would be prepared to graduate. The Logistics Plans and Budget Directorate, the Inspection and Assistance Directorate and the Supply Depot Command of the General Support Logistics Base were activated on 4 September 1982.

(FOUO) A draft concept plan was received from the contractor in July, outlining the Kingdom-wide transportation system proposed for SANG. The plan required extensive technical revision, modification of the command and control arrangement, and expanded narrative explanation giving functions, capabilities and suggested missions for transportation units throughout the Kingdom. In August 1982, the contractor began to integrate required revisions, and the final draft, with modifications incorporated, was received at OPM SANG on 22 September 1982. MICOM was requested to survey HQ SANG's calibration requirements preparatory to development of an FMS case amendment for calibration. The survey was on-going at month's end.

(FOUO) Two personnel from the contractor artillery repair section, DS/GS Maintenance Modernization, were sent to Aberdeen Proving Ground, Maryland, to attend a DS/GS maintenance course for the M198 howitzer. USG approval of some Phase III end items was granted, and price and review data for these items was received. A preliminary Phase III FMS meeting of representatives from OPM SANG, USASAC, and the MRCs was held at HQ DARCOM on 21 September 1982. Vinnell Corporation provided Phase III planning input on 11 September 1982. A detailed review of that input by the OPM SANG staff was ongoing at month's end. An ultimate Phase III organization and training concept would be incorporated into a final PMMP during the next quarter.

(FOUO) The final editing of the Medical Program's PMMP in Riyadh occurred during the period 6-20 September, translation began on 11 September, and printing was anticipated on 16 October 1982. The final PMMP, as well as a smaller plan regarding the SANG mobile surgical hospital, was handcarried to HQ DARCOM for appropriate staffing and approval on 20 September 1982. It was anticipated that the PMMP would be submitted to HQ SANG in October 1982. On 3 September, a letter was dispatched to HQ SANG requesting agreement to modify the HCA contract in order to authorize procurement by HCA of required housing for the project. On 14 September 1982, a contract for a mini-computer to support internal OPM SANG activities was locally awarded. The PDP 11/24 computer was to be installed and operational by 14 November 1982. Application software would also be delivered by the same date. Contract dollar value was $211,697.

(FOUO) The Country-to-Country Review (CCR) between OPM SANG and HQ SANG was tentatively planned for 29-30 November 1982. Delays resulted due to the September Hadj holidays and HQ SANG's desire for further preparatory time. The OPM SANG briefing was in the final stages of development at month's end. Plans were to brief the CCR to Commander, USASAC, and staff it through DA and DOD in October 1982 prior to presentation to HQ SANG. The final draft of the OPM SANG Organization, Missions, and Functions Manual (10-1) was being staffed within OPM SANG for approval by the Project Manager. Approval was anticipated by 2 November 1982. Work began on the development of a Request for Proposal (RFP) to implement the SANG Support System (SSS). Systems Research and Application (SRA) Corporation was awarded a sub-contract to design, develop, and deliver Arabic Automation Processing standards and Foundation Software, both of which would support the SSS. Vinnell actively utilized the TOE builder program in planning for Phase III units.

# CHAPTER VI

# MATERIEL READINESS

## Introduction

(U) In order to better manage DARCOM weapons systems, the establishment of the Directorate for Supply, Maintenance and Transportation as one of two lead directorates was completed during fiscal year 1982. The Director of Supply, Maintenance and Transportation and the Director of Development and Engineering were designated weapons systems directors, and all other directors and office chiefs were to be subordinate under this new system of matrix management. The Director of Development, Engineering and Acquisition was to assume initial responsibility for a new system and following command group approval, designated items would be transferred to the responsibility of the Director of Supply, Maintenance and Transportation.[1] This chapter is concerned with the development of matrix management as it was applied to the Directorate for Supply, Maintenance and Transportation; to the activities of the related Directorates for Readiness and Procurement and Production; and to the Small and Disadvantaged Business Office during this fiscal year. It is first necessary, however, to provide some background for this major development.

(U) During the period of 21 June through 28 September 1979, the Deputy Commanding General for Materiel Readiness (DCGMR) convened a DCGMR Organization and Mission Review Task Force to determine the adequacy of present organizations, missions, and functions for DCGMR mission accomplishment. The task force director was Mr. Maclin, the task force coordinator was Mr. Danner, and key members were Mr. Cox, DRCMM; Mr. Edwards, DRCRE; Mr. Jenkins, DRCPP; Mr. Bockin, DRCPS; and Mr. Murtomaki, DRSAC.[2] This effort commenced with the placement of all DCGMR directorate missions and functions on a contract computer, primarily for the purpose of ascertaining the degree of overlapping of duplicating functions among the DCGMR directorates. This review, although time consuming and relatively expensive, produced little, if any, useful results. The task force subsequently concentrated on a study of directorate responsibilities to ascertain if any functional realignments should be achieved to enhance the effectiveness of DCGMR operations. This portion of the effort resulted in a number of concrete recommendations to the DCGMR for several functional readjustments.

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[1] DARCOM-M 5-2, HQ, DARCOM Weapons Systems Staff Management, 19 Feb 82, p. 1, para. 4; superceded by DARCOM-R 5-6, 2 Nov 82, p. 1, para. 4.

[2] FY 1982 AHR, Directorate for Supply, Maintenance and Transportation, Chapter 1, p. 13.

During October 1979, the DCGMR submitted the changes to the Chief of Staff for implementation approval. Rather than approval of just the DCGMR realignment concept, the Commanding General instead directed an independent review of the total headquarters by a team of three senior SES civilians (Mr. Clemons, DRCPP; Mr. Lorber, DRCQA; and Mr. Griffin, DRCDE). The DCGMR Task Force was dissolved at the end of September 1979

(U) When it was learned the SES panel had been organized with the purpose of evaluating the feasibility of reintroducing weapon systems management within the headquarters, the DCGMR Task Force was reconvened in January 1980 to reexamine the DCGMR structure with the objective of determining the type of structure and additional staffing required to accomodate the weapon systems concept. This initiative resulted in a historical review of the former (1974 and prior years) concepts of Army Materiel System Staff Officers (AMSSOs) and Army Materiel Acquisition Managers (AMSAMs). It was concluded that these concepts had worked well in the past and should be strongly considered for reintroduction within the headquarters, but with a somewhat modest increase in staffing compared to pre-1976 levels (i.e., increase staffing of DCGMR directorates from 453 to a range of 510 (+57), 540 (+87), 524 (+71), 557 (+104), or 556 (+103)). In late February 1980, a package of the DCGMR Task Force study conclusions was provided to the SES panel.

(U) The SES Panel concluded its deliberations during November 1980 and received conceptual approval of its recommendations from the Commanding General. The Commanding General in turn tasked the Deputy Commanding General for Resource Management (DCGRM) to validate the concept and recommend a viable structure with required staffing to accomodate the reestablishment of technical expertise and weapon systems management within the headquarters.

(U) The DCGRM Task Group was convened during December 1980 with representatives from all headquarters elements DCGRM the Commanding General's personal staff (e.g., Chaplain, Surgeon, Inspector General, etc.) which was excluded from study consideration. The DCGRM effort examined multiple organizational alternatives to accommodate the SES concept, reviewed historical and projected workload trends of functional directorates and offices, and developed a computer mathematical model to project staffing requirements for the various organizational alternatives. The most controversial organizational alternative encompassed the establishment of a Directorate for Requirements to manage all appropriations (procurement appropriation (PA), Army Stock Fund (ASF), OMA Programs 7M and P3, and P7S) assigned to the former Directorate for Materiel Management (less execution year except for PA). Also included under the proposal were Research, Development, Test and Evaluation (RDTE) and Military Construction Army (MCA) appropriations. Excluded were other non-OMA appropriations managed by other headquarters

directorates. The Task Force recommended that functional directors should retain their respective resource management responsibilities, but that a new directorate, Program, Analysis, and Evaluation (PAE), should be established to serve as a program balancer and "honest broker" for review of programs and budgets across the board. The Commanding General disapproved a minority report covering the separate Directorate for Requirements in favor of the Task Force recommendations. The recommended staffing increase amounted to 350 civilian spaces with the lion's share being allocated to the Directorate for Supply, Maintenance and Transportation (100); Directorate for Development, Engineering, and Acquisition (144); Directorate for Programs, Analysis, and Evaluation (47); and Directorate for Procurement and Production (52).

(U) Following the Commanding General's approval on 28 February 1981, a series of briefings and a realignment proposal package were presented to DA staff agencies and the Army Chief of Staff. Following Chief of Staff conceptual approval during late May 1981, the headquarters commenced implementation in early June 1981.

## Supply, Maintenance and Transportation (SMT)

### Establishment

(U) Functional Assignments. Decisions emanating from the DCGRM HQ Realignment Study resulted in the following functional assignments and space allocations to the new Directorate for SMT:

| FROM | FUNCTIONS | TDA SPACES MIL | CIV | TOTAL |
|---|---|---|---|---|
| Former Directorate for Materiel Management | All (supply, maintenance, transportation, requirements determination, resource management) | 17 | 153 | 170 |
| Directorate for Readiness | Integrated Logistics Support (ILS), Force Modernization, POMCUS, Equipment Improvement (MWO/EIR Programs) | 6 | 47 | 53 |
| Directorate for Procurement and Production | Procurement Appropriation (PA) Execution and Control | 3 | 11 | 14 |
| Former Directorate for Plans, Doctrine, and Sys | ADP systems development and integration and war reserves | 2 | 15 | 17 |
| | Weapon systems staff management (new mission) | - | 100 | 100 |
| | TOTAL | 28 | 326 | 354 |

(U) Test, Measurement and Diagnostic Equipment (TMDE) and Calibration. From November 1981 through April 1982, a TMDE and Calibration Office of 11 civilian spaces was also temporarily reassigned from the Directorate for Product Assurance to the Directorate for Supply, Maintenance and Transportation, pending the outcome of a DARCOM/DA TMDE Study conducted during November 1981 through March 1982. This study resulted in a decision to establish a separate TMDE Management Office during May 1982 which reported directly to the DCGMR.

(U) SMT Realignment Task Force. On 2 June 1981, an SMT Realignment Task Force was organized to commence with the realignment. The task force was assigned responsibility to develop organizational alternatives; write missions and functions; and to develop Tables of Distribution and Allowances (TDA) (peacetime and mobilization), job descriptions, floor plans, and equipment requirements. The target date for submission of initial mission/functions statements was 2 July 1981, with the balance of documentation by 10 July 1981.

(U) Organizational Structure. On 8 and 9 June 1981, an organizational effectiveness (OE) meeting was conducted by Major General Welch, Director of Materiel Management, among key personnel of all organizational elements designated to comprise the new Directorate for Supply, Maintenance and Transportation (SMT), plus Realignment Task Force members. This session permitted all those present to voice opinions and make recommendations concerning alternative organizational structures, staffing, mission/function assignments, and other appropriate matters. Although the director favored development of a "results-oriented" missions and functions, and had the assembled group develop some samples, he ruled that timeframes for meeting compressed milestones would not permit doing a good job in this regard. Several organizational alternatives were aired, but no final decisions were rendered pending a further task force scrub of the alternatives.

(U) During the fall of 1981, the two key directorates, DEA and SMT, jointly developed a draft concept for converting to a Headquarters, DARCOM weapon systems matrix mode of management which included criteria for the transfer of lead directorate weapon systems staff management responsibility from DEA to SMT. This draft concept was transferred to the Directorate for Management during November 1981 and for staffing and publication as DARCOM Memorandum 5-2, HQ, DARCOM Weapon Systems Staff Management--Concept of Operations, 19 February 1982. Just prior to publication, on 12 February, a steering committee for DARCOM Headquarters Weapon Systems Matrix Management was established jointly by Major General Welch of SMT and Major General Gonzales of Development Engineering and Acquisition. Based upon subsequent operating experience, some changes in terminology and responsibility became necessary and a revised version of the concept was developed and published as a DARCOM regulation on 2 November 1982.

(U) On 16 June 1982, General Welch conducted the second Organizational Effectiveness (OE) meeting to hear arguments in favor of and against the following organizational considerations:

a. The merger of DSS/ALOC/LIF responsibilities with the Supply Policy and Distribution Branch.

b. The merger of secondary items supply management policy and systems with the Supply Policy and Distribution Branch.

c. The separation of ILS between policy, plans, and data management and assign ILS implementation or the "doing" functions to the new weapon systems organization.

d. The merger of the Force Modernization Office (FMO) with the ILS entity.

e. The merger of the MWO/EIR Programs with the Maintenance Division.

f. A separate ADP systems development integration organization versus merger with functional organizations.

(U) After hearing the pros and cons, General Welch directed that DSS/ALOC/LIF be moved from the present Plans and Projects Division and established as a separate branch under the Supply and Distribution Management Division because DSS/ALOC comprised the Army's standard supply distribution system. These functions were not merged with the Supply Policy and Distribution Branch, however, because of the supply distribution monitoring role by the LIF of wholesale customer support. On the other issues, the director ruled against the merger of secondary items management policy with the Supply Policy and Distribution Branch; directed the merger of FMO and ILS; left all ILS functions intact for the time being because of their high visibility and since the ILS organization was fully staffed while the weapon systems organizations were starting from a zero base, he nonetheless directed that ILS be looked at further in a year or two following some operating experience to ascertain if a merger of the operational aspects with weapon systems divisions would be appropriate ; approved the merger of the MWO/EIR programs with the Maintenance Division; and retained ADP systems as a separate entity, less functional coordinating group (FCG) responsibility for maintenance and provisioning, which was transferred with spaces to the Maintenance Division.

(U) It should be noted that this was the first reorganization of this magnitude in the headquarters that employed OE techniques and procedures. Prior reorganizations and functional alignments were

generally directed, based on a study team's or director's decision without adequate involvement of the affected staff members. General Welch's mode of operation assured that all concerned parties and their views were a part of the decision-making process as opposed to having the concept forced upon them without consultation and open debate. The final organizational structure (less TMDE and Calibration) is shown at Chart 1 on the following page.

Staffing

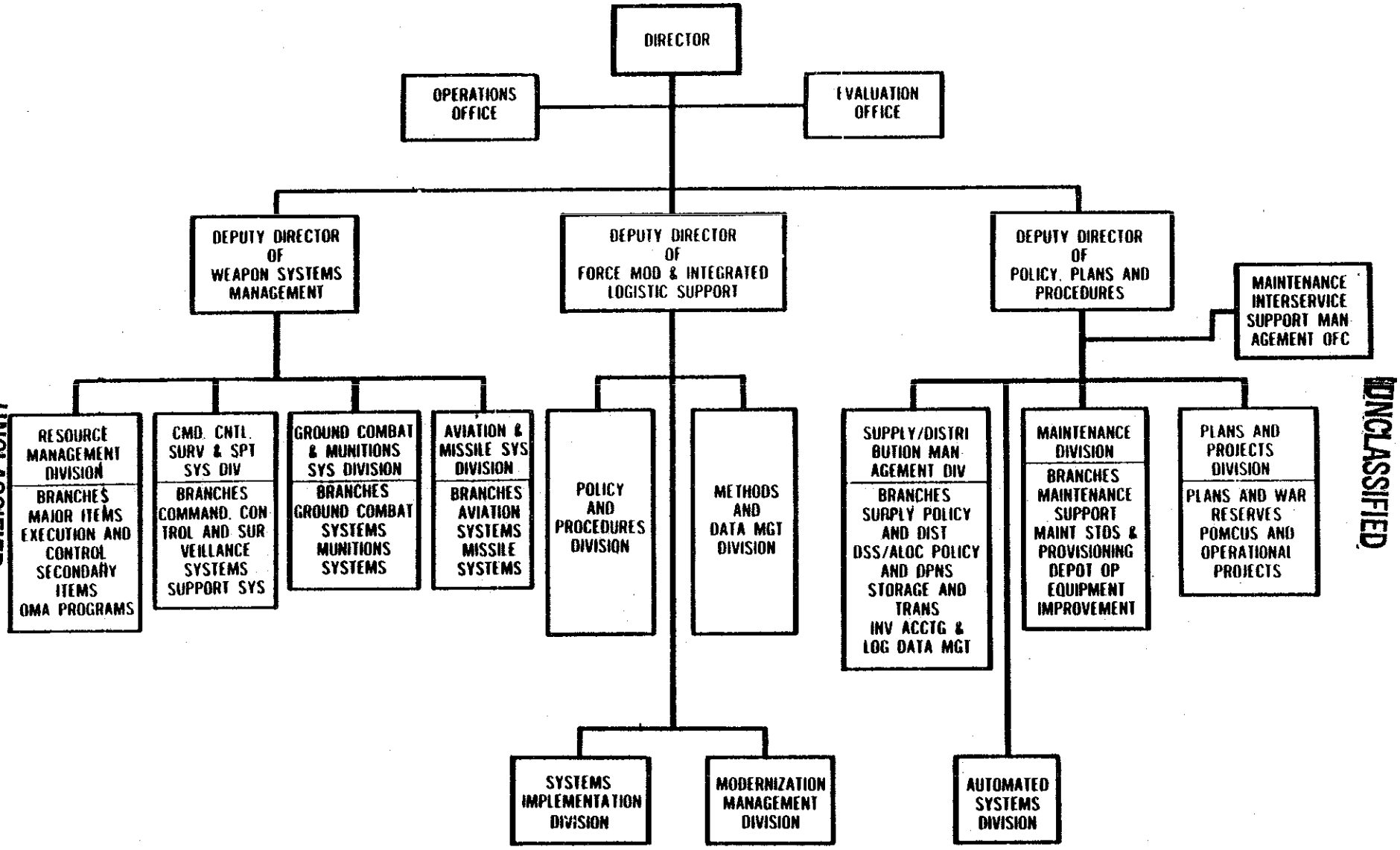
(U) In regard to staffing, personnel turbulence occurred throughout the fiscal year in which this key directorate was organized. While the Director, Major General J. S. Welch, and the Deputy Director, Mr. R. W. Heinbach, continued through the fiscal year, the Deputy Director for Weapon Systems Management, Mr. A. D. Mills, began his duties on 28 February 1982. The Deputy Director for Force Modernization and ILS, COL R. J. Morrissey, retired on 30 June 1982 and was succeeded by COL R. L. Nidever. Mr. Heinbach was also serving as Deputy Director, Policy, Plans and Procedures as of 15 October 1982.

(U) This personnel turnover continued at both the division and branch chief levels, since the positions of eight of the twelve division chiefs were either new or involved changes, and thirteen of the twenty-one branch chiefs were also involved in changes.

(U) Each organizational element was permitted to propose required staffing levels based on present and projected workload requirements, but first priority was given to the newly established weapon systems divisions and Operations Office. Command Group guidance, however, precluded augmentation of military spaces which was unfortunate since military field grade officers in weapon systems organizations would have significantly enhanced operational capability. Based on workload projections, the following staffing allocations were made:

| | MIL | CIV | TOTAL |
|---|---|---|---|
| Office of the Director | 3 | 3 | 6 |
| Evaluation Office | 0 | 12 | 12 |
| Operations Office | 1 | 15 | 16 |
| Deputy for Weapon Systems Management and Subordinate Organizations | 8 | 148 | 156 |
| Deputy for Force Modernization and ILS and Subordinate Organizations | 3 | 34 | 37 |
| Deputy for Policy, Plans, and Procedures and Subordinate Organizations | 13 | 114 | 127 |
| TOTALS | 28 | 326 | 354 |

## DIRECTORATE FOR SUPPLY, MAINTENANCE AND TRANSPORTATION



(U) Military Grades. The following TDA grades were proposed and approved:

| | |
|---|---|
| MG | 1 |
| COL | 13 |
| LTC | 7 |
| MAJ | 4 |
| CPT | 2 |
| LT | 1 |
| | 28 |

Three LTC positions were converted to COL.

(U) Civilian Grades. The following TDA civilian grades were proposed and approved:

| | |
|---|---|
| SES | 3 |
| 15 | 22 |
| 14 | 69 |
| 13 | 94 |
| 12 | 50 |
| 11 | 18 |
| 9 | 5 |
| 8 | 3 |
| 7 | 18 |
| 6 | 21 |
| 5 | 21 |
| 4 | 2 |
| | 326 |

(U) Civilian High Grades. Pursuant to Civilian Personnel Office guidance, the percentage of high grades continued at previous levels despite a 100-space civilian increase:

a. Grades GS-13 and above to total grades prior to reorganization equaled 113 of 226, or 57.5 percent.

b. Grades GS-13 and above to total grades after reorganization equaled 188 of 326, or 57.6 percent.

c. The average grade was 11.66 versus 11.39 prior to reorganization.

(U) Staffing Ratios.

| | HQ Target | Prior TDA | Current TDA |
|---|---|---|---|
| Clerical to action officer | 1:5.5 | 1:4.2 | 1:5.2 |
| Administrative to total | 1:50 | 1:84 | 1:58 |
| First line supervisors | 1:10.00 | 1:10.32 | 1:11.25 |
| Second line supervisors | 1:4.00 | 1:3.66 | 1:3.50 |

(U) Progression Pattern. As could be seen, the civilian grade structure offered good opportunities for growth within the organization. It should also be noted that twenty-two GS-11/12 positions had been earmarked as developmental positions and twelve interns and upward mobility incumbents were assigned to these positions as of the end of FY 1982. This permitted the directorate to provide greater support to EEO/affirmative action programs which otherwise might not have been possible.

(U) Briefings to the SMT Staff. To assure that all personnel slated to be assigned to the new Directorate for SMT were fully informed of realignment plans, the director presented two 1½-hour briefings covering the newly structured organization on 20 and 27 August 1981. CPO representatives were also in attendance, and attendees were permitted and encouraged to raise questions on personnel matters and other subjects as desired. These briefings were highly effective from a personnel morale standpoint. No adverse personnel actions were required as a result of the realignment. To the contrary, a significant number of on-board personnel, both secretarial and action officers, were promoted to the next highest grade level.

(U) Recruitment. Good success was realized in the initial fill of the civilian vacancies within a relatively short timeframe following TDA approval; however, a considerable amount of backfill was necessary to refill vacancies generated by internal promotions. In our weapon systems divisions, most of the GS-12 and above positions were filled by commodity experts with a good representation of women and minorities at all grade levels. All FY 1982 directorate EEO targets were met and, in most cases exceeded in terms of minority and women selection and promotions.

Weapon Systems Matrix Management Training

(U) Recognizing the need for training of the workforce, both old and newly assigned employees, DEA and SMT took the Headquarters lead in developing an in-house course of instruction consisting of 12 hours of pertinent subject matter. The scope of the training, which involved the use of 30 in-house instructors, is reflected at Chart 2, on the following page. Five training sessions were conducted as follows:

2-6 November 1981 (pilot session)
2-4 March 1982
17-19 March 1982
1-3 June 1982
19-21 October 1982

DIRECTORATE FOR SUPPLY, MAINTENANCE, AND TRANSPORTATION
FUNDING GUIDANCE
(MILLIONS $)

| PROCUREMENT APPROPRIATIONS | | FY 81 | FY 82 | PROJECTED FY 83 |
|---|---|---|---|---|
| MAJOR ITEMS | | $13.470 | $17.486 | $20.313 |
| SECONDARY ITEMS | | .860 | 1.050 | 1.765 |
| | SUBTOTAL | $14.330 A/ | $18.536 A/ | $22.078 A/ |
| **ARMY STOCK FUND O/A** | | | | |
| WHOLESALE | | $ 1.574 | $ 1.792 | $ 1.982 |
| RETAIL | | .250 | .257 | .259 |
| | SUBTOTAL | $ 1.824 | $ 2.049 | $ 2.241 |
| **OMA PROGRAMS** | | | | |
| COMSEC - SIG/INT (P3) | | .020 | .021 | .018 |
| MAINTENANCE (P7M) | | 1.356 | 1.528 | 1.832 |
| SUPPLY (P7S) | | .654 | .704 | .790 |
| | SUBTOTAL | $ 1.960 | $ 2.292 | $ 2.640 |
| | GRAND TOTAL | $18.150 A/ | $22.304 A/ | $26.959 A/ |

A/ INCLUDES PRIOR YEAR CARRYOVER

(U) Including the pilot session, a total of 669 Headquarters personnel, military and civilian, attended the training sessions. In addition, DEA sponsored a one-time 20-hour block of instruction in Acquisition Management, 7-10 June 1982, by the Defense Systems Management College. Approximately 175 personnel attended that session. Although the in-house training had generally served its intended purposes, circumstances now dictated that certain subject areas be given broader coverage, additional subjects be added, and the course be conducted by professional instructors to the maximum extent possible. Accordingly, ALMC was tasked to conduct on-site training with some, but minimal guest lecture participation by Headquarters functional personnel. A draft POI was developed by DEA, SMT, and ALMC personnel and the first offering of the new 27-hour course was scheduled for February 1983.

Matrix Management Roster

(U) Among other things, the matrix management concept required a roster of team players to enhance implementation of the concept. SMT took the lead in developing the first three editions (17 March 1982, 16 June 1982, and 22 October 1982, respectively), with each edition undergoing necessary refinements to improve the use of the document. The 22 October edition received widespread distribution outside the Headquarters, including DARCOM MSCs and other field activities, DA Headquarters (DCSRDA, DCSLOG, and DCSOPS), and TRADOC. Distribution of the earlier editions was restricted to HQ, DARCOM, with only a limited number of courtesy copies to selected nonheadquarters personnel. The roster contained 1,004 systems/equipments/programs with the names, office symbols, room numbers, and phone numbers of the Headquarters WSMs and WSSOs which comprised the weapon systems management teams (WSMaTs). The roster also contained a summary of the systems by commodity, the number which were the WSM responsibility of DEA and SMT, and three indexes (alphabetical systems nomenclature, systems acronyms, and systems designators). Of the 1,004 systems lines, 332 were designated as high priority, and they consisted of Army modernization items and items that were reportable under the Program Management and Control System (PMCS) and the Selected Acquisition Reporting (SAR) System. Quarterly updating of the matrix was planned, with total revision annually.

Matrix Management Steering Committee

(U) This previously cited committee was established on 12 February 1982 and continued to carry out its purpose of guiding the actions of Headquarters Weapon Systems Staff Managers (WSSMs), Weapon Systems Support Officers (WSSOs), and Weapon Systems Management Teams (WSMaTs). The committee continued to operate under the joint chairmanship of the Directors of DEA and SMT with membership by the Weapon Systems Support Directors and the Chief, Organizational Effectiveness Office.

Meetings Between Directors of DEA and SMT

(U) To enhance working relationships between the weapon systems lead directorates, DEA and SMT, General Welch and General Gonzales held monthly meetings (and more frequently, when required) to discuss mutual problems and issues which concerned weapon systems/equipment. An MFR was developed following each meeting, including directed actions and followup for resolution of problems. These meetings contributed significantly toward improved DEA/SMT relationships and in problem surfacing and resolution.

Headquarters Realignment Road Show

(U) During July and August 1982, the Directors of DEA, SMT, and Management sent representatives to all DARCOM MSCs, selected Project Management Offices, and to other selected activities to brief the Headquarters realignment and the Headquarters weapons systems matrix management concept. In addition, the SMT representative briefed the SMT portion to DA DCSLOG division chiefs and action personnel on one occasion and the DCSLOG and his directors and assistants on another. At the invitation of the US Air Force Logistics Command, the SMT representative also briefed that command on the new weapon systems matrix management concept. All briefings were well received and cleared up some of the former apprehension and concerns of DARCOM MSCs and PMs that HQ, DARCOM could be impinging upon their assigned weapon systems management responsibilities.

Testing of the Matrix Management Concept

(U) On several occasions during the fiscal year, the Commanding General, DARCOM called upon selected DEA or SMT weapon systems managers (WSMs) to provide status of pertinent weapon systems. Some meetings were successful, while others were not. The unsuccessful meetings usually involved newly assigned and untrained personnel. The training conducted thus far and that planned for the future, should assist substantially in educating the WSMs so they can be more responsive. In addition, so-called "grab and run" books on all systems or groups of systems in the matrix had been or were being prepared and kept up to date to further improve WSM/WSSO responsiveness to all inquiries.

SMT Realignment Plans for the Future

(U) As the result of a DCGMR-directed study of ILS organizations and operating procedures within DARCOM, a three-month study was conducted under the chairmanship of the Commanding Officer, US Army Materiel Readiness Support Activity (MRSA). A decision briefing on the study was presented to the Commanding General on 22 September 1982, during which most of the study recommendations were approved. One of

the study recommendations addressed the need for a more visible and responsive Headquarters ILS organization. The preferred, recommended alternative envisaged the establishment of a separate ILS directorate reporting directly to the Commanding General. This alternative also entailed the transfer of some 35 spaces from the SMT weapon systems divisions and the transfer of two branches from the SMT Maintenance Division (Provisioning and Standards Branch and the Maintenance Support Branch). The operational concept under this alternative required that WSSO ILS support would be provided to DEA by the new ILS directorate and the residual weapon systems divisions would only be concerned with fielded systems. The only interfaces with DEA would involve programing and budgeting of procurement appropriation (PA) funds for new systems procurement and the acquisition of DEA engineering WSSO support for modification to fielded systems. In short, two directorates would be involved in providing logistical support to the DEA WSMs, thus fragmenting basic SMT responsibilities. Accordingly, a more viable and less disruptive alternative was developed by SMT and presented at the 22 September decision briefing.

(U) In summary, the existing Deputy for Force Modernization and ILS would be retitled Deputy for ILS; the deputy position would be upgraded from a military 06 to a civilian SES; the Maintenance Division, Supply Division, and the OMA Programs Branch would be transferred from their deputy organizations to the new Deputy for ILS; and the ILS "doing" organization, Systems Implementation Division with its spaces would be transferred to the weapon systems divisions under the Deputy for Weapon Systems Management. The ILS divisions of Policy and Procedures, Methods and Data Management, and Modernization Management would be converted to branch status under a new division titled FM/ILS Policy and Management Division. This counter proposal was adopted by the Commanding General for implementation and the first notification of realignment plans had been provided to SMT employees on 4 October 1981. This realignment, scheduled to become effective on 17 January 1983, was to be contingent upon the prioritization and allocation of the SES space previously justified for the position of Deputy for Policy, Plans, and Procedures.

First Year Operational Results

(U) Although some of the staff underwent some personal inconveniences due to overcrowding and a short-term furniture and equipment shortage, the first year of SMT operations was thought successful, considering that it was started from scratch in converting to a totally new weapon systems management concept. The new WSMs and WSSOs would require additional training, a more comprehensive data base on their assigned systems and commodities, additional experience in programing and budgeting, and additional operating experience before they could become fully functional

and proficient in their respective positions. The directorate was confident that the workforce would gain the necessary training and experience to make it fully effective by the end of FY 1983.

Evaluation

(U) Early in the fiscal year, the Assistant Secretary of Defense (MRA&L) directed that the method of allocating civilian manpower authorizations within DOD be changed. In the future, instead of viewing efficiencies within the Services as resulting in the need for reduced civilian requirements, improved efficiencies would be rewarded. Each Service's efforts to improve efficiency would be compared; that Service which was making comparatively better use of scarce civilian manpower would be entrusted a larger share of the DOD ceiling.

(U) Within DARCOM, Resources Self-Help/Affordability Planning Effort (RESHAPE) was selected as the primary management tool to accomplish these efficiencies. In a 10 February 1982 DRCDM Memorandum, all Directors and Office Chiefs were tasked to develop implementation plans to increase direct labor. Each plan, geared to specific RESHAPE initiatives, included: (1) The description of the actions to be taken; (2) milestones for accomplishment; (3) quantification of expected results; and (4) associated cost data.

(U) Within the Directorate for Supply, Maintenance, and Transportation (SMT), every division/office developed its own RESHAPE plans for increasing productivity. All final division/office RESHAPE plans were then submitted to the SMT Operations Office for directorate consolidation. While encompassing numerous initiatives, office automation and reduction of sick leave usage were two of the major thrusts.

(U) The bulk of the Office Automation-RESHAPE initiative revolved around the Directorate Office Automation Program. This program, with DRCSM-E (Evaluation Office) acting as the Directorate proponent, was designed to provide word processing, text editing, electronic mail, to establish milestones and appointment calendars, control suspenses, and track budgets and training. Future phases of automation would make existing data bases more accessible, both classified and unclassified. The initial system of 41 communication and 12 printing terminals were scheduled to go on line in January 1983.

(U) Sick leave usage was another important part of the SMT RESHAPE Program. Several alternatives were proposed to reduce the amount of productivity lost due to sick leave. Compensatory time, flexitime, and credit hours were all included in the sick leave initiative as ways to reduce sick leave usage and increase directorate productivity.

(U) Other important initiatives included in the SMT RESHAPE Program were: the evaluation of organization effectiveness; examination of overhire and overtime usage; and the preparation of plans to automate POMCUS reports and WARSL. In addition, efforts were to be made to reduce TDY costs for training, as well as improve training undertaken.

DARCOM Direction ($D^2$)

(U) Since the $D^2$ process began in February 1982, DRCSM had taken steps to institutionalize the $D^2$ products. It was found that the outcome-oriented mission statement for DRCSM improved individual understanding, clarity, and sense of purpose within the directorate. The following results-oriented DARCOM mission statement was proposed for the consideration of the Commanding General: "A combat ready and sustainable total Army and free world forces through acquisition and support of designated materiel." Additionally, $D^2$ results-oriented objectives were used as a basis for updating/modifying performance indicators for use in the directorate R&A. The divisions used the $D^2$ outcomes to develop their respective performance plan for FY83.

Force Modernization and Integrated Logistic Support

(U) Background. In the organizational realignment of FY82, the Office for Force Modernization (FM) merged with the previous Deputy Directorate for Integrated Logistic Support (ILS). Consequently, principal activities within both areas of interest, FM and ILS, are addressed herein. Significant events of interest within the purview of this deputy directorate during the past year, for the FM area, were: publishing of the Army Force Modernization Master Plan (FMMP) in April; distribution of AR 700-10, Force Modernization Milestone Reporting System (FMMRS); and the 1982 Army Modernization Information Memorandum (AMIM) Planning Conference. Particularly significant events within the ILS area included DARCOM input to the revision of AR 700-127, activities in New Equipment Training management, participation in the Joint Logistic Policy Group for ILS (JLPG-ILS), the DARCOM Study on ILS, and input to establishment of DA Displaced Equipment Management Policy.

(U) Army Force Modernization Master Plan (FMMP). The initial HQDA-sponsored FMMP was published in April 1982. The general concept was that the plan would integrate multiple materiel, organizational, and personnel functions and provide an overall assessment capability to determine whether or not the Army could support its reorganization and modernization plans. DARCOM participated in a major executability assessment of the FMMP, providing input to HQDA in July 1982. The second iteration FMMP, scheduled for publication in late November 1982, would contain additional systems and units affected by Army 90 Transition Plans. Successive iterations would continue expansion until all AMIM long and short form systems would be contained in the plan.

(U) AR 700-10, Force Modernization Milestone Reporting System (FMMRS). The document was completed and made available for distribution on 15 June 1982. FMMRS was developed to meet the need for a management system which would enhance the modernization planning for new systems throughout the Army. FMMRS provided the capability to track key milestone events scheduled and/or accomplished for new systems. FMMRS improved the coordination between MACOM-identified players and responsibilities, provided visibility and status of actions and served as a means to manage intensively significant critical events.

(U) Army Modernization Information Memorandum (AMIM). The AMIM, DA Pamphlet 5-25, published annually by HQDA, was a significant management tool used in the Force Modernization arena. While HQDA was the proponent, DARCOM provided approximately 85 percent of the required data. The primary purpose of the AMIM was to provide gaining major commands (MACOMs) with technical and resource information on new materiel systems.

(U) The 1981 AMIM was distributed in August 1981 to assist gaining MACOMs in the preparation of the FY 1984-88 Program Analysis Resource Review (PARR)/Modernization Resource Information Submission (MRIS). The AMIM ensured that the MACOMs received adequate and timely information to justify resources to support the receipt and sustainment of new system fieldings. To enhance DARCOM's support to the planned 1982 AMIM, DARCOM held a 1982 AMIM Planning Conference in December 1981 to bring all the key AMIM participants together to discuss and resolve AMIM issues as well as to provide insight into the anticipated 1982 AMIM effort. HQDA; HQ, DARCOM; DARCOM MSC/PMs; HQ, USAREUR; HQ, FORSCOM; and HQ, TRADOC were in attendance. Through this effort, DARCOM experienced a significant improvement to the 1982 AMIM which was published in August 1982.

(U) Force Modernization Reviews, Meetings, and Conferences with TRADOC, FORSCOM, and USAREUR. Modernization Management Division representatives attended numerous reviews, meetings, and conferences on Force Modernization (FM) during the past year. Issues/topics covered many areas in the FM arena and served to promote cooperative efforts to evaluate and resolve systematic problems/issues of mutual concern. Some of the key conferences sponsored between the major commands to discuss Force Modernization-related issues were: Joint DARCOM/USAREUR Review of New Systems Logistic Support Issues, 8-9 April 1982; DARCOM/TRADOC Force Modernization Meeting, 6 August 1982; and FORSCOM Force Modernization General Officer IPR, 31 August 1982.

(U) AR 700-127, Integrated Logistic Support (ILS). During FY 1982, this Deputy Directorate was heavily involved in development of the revision to AR 700-127, which resulted from DEPSECDEF (Mr. Carlucci)

initiatives to improve the materiel acquisition process. In response to a specific tasking in support of the DEPSECDEF initiatives, the revised draft included an appendix C that was devoted to accelerated acquisition programs. This appendix was initially prepared by HQ, DARCOM (DRCSM-IP) and MRSA. The final draft revision also included a new Chapter 7, entitled "ILS for Displaced Systems." This Deputy Directorate played a principal role in the writing of that chapter.

(U) New Equipment Training (NET) and Training Support Work Group (TSWG) Meetings. During FY 1982, each MSC had two TSWG meetings. In the aggregate, approximately 550 NET plans were reviewed/revised. Redrawing of the instructions and format for the NET plans was started, with a view to provide these as inputs to AR 350-35, New Equipment Training, which would be republished during FY 1983. Preliminary steps were also taken by HQDA toward tasking HQ, DARCOM to determine the feasibility of automating the NET planning and review process. The automated process was intended to interface all Army NET planners, world-wide, and reduce the need for TSWG meetings.

(U) QQPRI/BOIP Processing Flow. DARCOM provided significant input to the new AR 71-2, BOIP and QQPRI. The new regulation provided more specifics regarding the responsibilities for BOIP feeder data/ QQPRI and their processing flow.

(U) Joint Logistic Policy Group - Integrated Logistic Support (JLPG-ILS). During FY 1982, this Deputy Directorate participated as a member of JPCG-ILS. The primary objective of the group was to develop policies which would provide front-end ILS emphasis on multi-service programs, initially through accommodation of each user's ILS needs and eventually to maximize standardization among the Services. By the end of FY 1982, the group had developed and had ready for approval a final draft of the JLPG-ILS Study Plan.

(U) DARCOM Study on Integrated Logistic Support (ILS). In a memorandum dated 27 May 1982, Lieutenant General Hardin had tasked this office to conduct a review of ILS with the objective to examine the ILS system; to identify weaknesses; to provide recommendations; and to overhaul and improve DARCOM ILS. The methodology used was to establish a study group, perform a review of logistic studies, identify high pay-off areas, define results, recommend actions, implement improvements, and follow-up on changes. The results from the subgroups included 50 action items. Ten of these were classified "High Priority" and required immediate high-level management endorsement. Others required high-level management endorsement, to be forwarded later; and the remainder were to be processed through normal channels.

(U) DOD MIL-STD 1388A, Weapon System and Equipment Support Analysis. The office representative participated as a member of the joint service/OSD/industry work group revising the subject MIL-STD. MIL-STD 1388A was staffed with DOD/industry and was expected to be published in 2d quarter FY 1983.

(U) DOD MIL-STD-XXX, Logistic Support Analysis Record (LSAR). The office representative worked through the DOD work group to explore the possibilities of incorporating MIL-STD-1552, Provisioning Technical Documentation, into MIL-STD-XXX. MIL-STD-XXX, LSAR, was under development and would be released for staffing 2d quarter FY 1983. It would be superceded by MIL-STD-1552.

(U) ILS Lessons Learned Program. In continuation of the ILS Lessons Learned Program initiated in FY 1980, the ILS Lessons Learned Report was issued in March 1982. This program received DA recognition in FY 1981 and was established as a continuing requirement in the 1 April 1981 revision to AR 700-127, Integrated Logistic Support.

(U) DARCOM-R 700-13, ILS Performance Evaluation Reporting. The major subordinate commands converted their data bases to include the milestones noted in Appendix B, DARCOM-R 700-13, dated October 1981. Due to revision in Appendix A, Performance Measurement for System Support Package (SSP), Materiel Fielding, and Appendix B, Milestone Control Program, DARCOM-R 700-13, would be reissued in the 1st quarter FY 1983.

(U) CCSS Subcell 4M66, Integrated Logistic Support Milestone Reporting System (ILSMRS). This office was responsible for the control of the ILSMRS automated system through the chairmanship of the Functional Coordinating Group for the CCSS Subcell 4M66. The data base schema would be expanded to add data elements for pertinent points of contact associated with acquisition process, associated equipment LIN, type designation, and fielding code. An effort was initiated on a functional description for an on-line update, edit, and validation process.

(U) Displaced Equipment Management Policy. Successful redistribution of displaced systems to Active and Reserve Component units presented a challenge to the Army logistic community to transfer the equipment with minimum problems and to assure continued support. The planning process, to insure support for the displaced systems, was structured in a manner similar to the Integrated Logistic Support (ILS) management process. During FY 1982, this Deputy Directorate, in concert with DA and FORSCOM, developed Chapter 7, ILS Planning for Displaced Systems, to AR 700-127, Integrated Logistic Support, defining roles and responsibilities of DARCOM, the losing command, and the gaining command.

(U) New Systems Fielded During FY 1982. Major systems successfully fielded during FY 1982, for which this directorate provided significant ILS contributions, included the UH-60 BLACKHAWK helicopter to USAREUR, M1 Abrams Tank to USAREUR, and Bradley Fighting Vehicle System to TRADOC for training. Other significant systems that were fielded during FY 1982 included the Lighter Air Cushion Vehicle - 30-Ton (LACV-30), Position and Azimuth Determining System (PADS), Ribbon Bridge Erection Boat (UK version), M871 22.5-Ton Semitrailer, and the M250 SMOKE Grenade Launcher.

## Policy, Plans and Procedures

(U) Under the Deputy Director for Policy, Plans and Procedures were the Automated Systems Division, the Maintenance Interservice Support Management Office (MISMO), the Maintenance Division, the Plans and Projects Division, and the Supply and Management Division.

### Automated Systems

(U) War Reserve ADP System (Update). The War Reserve ADP Systems project was established by HQ, DARCOM on 13 June 1980. The purpose of the project was to develop a standard automated capability to compute requirements and produce output products for the full range of war reserve and mobilization planning actions. During FY 1982, a Mission Element Need Statement (MENS), concept, and CCSS Functional Description (FD) were prepared for the DODI 4140.47 phase of the project. Work was initiated in developing FDs for the non-CCSS automated systems; system design work was begun; and a meeting was held with all Army MACOMs.

(U) Logistics Automation Master Plan (LAMP). The LAMP was a HQDA (ODCSLOG-PLS) initiative intended for use as the master automation planning document for the total logistics community. The LAMP served as the baseline for future iterations of the Functional System Plan (FSP) as defined in TB 18-101 as well as serving as a vehicle for transition from then current automation architecture to long range goals. The LAMP would provide a basic document for DARCOM staff agencies and supporting activities to use in developing and supporting logistics automation requirements for the Planning, Programming, Budget and Execution System (PPBES), to include the Program Analysis Resource Review (PARR), Operating Agency Automation Plans (OAAP), and the Army Automation Planning, Programming, and Evaluation System (AAPPES). The LAMP addressed retail-level logistics automation. HQDA requested DARCOM input for FY 1983, and future annual iterations of the LAMP in order to incorporate wholesale level logistics automation systems. As a first step in response to the DA tasking, DARCOM automation goals and supporting objectives in the functional areas of supply, maintenance, and service systems were developed. Remaining sections were to be developed with response to HQDA by 15 April 1983.

(U) Total Army Equipment Distribution Program - Modernization (TAEDP-MOD). During FY 1982, a new HQDA initiative was begun to modernize TAEDP. The purpose of TAEDP-MOD was to establish a transaction-fed major item data base with an interactive inquiry capability, reduced computer run time, and a capability for improved major item management. A draft concept, Mission Element Need Statement (MENS) and Functional Description (FD) were prepared and circulated for review and comment.

(U) Logistics Systems Review Committee (LSRC). The Logistics Systems Review Committee (LSRC) conducted four In-Process Reviews (IPRs) of CCSS Releases during the fiscal year. Release 62 IPR I was conducted at the Automated Logistics Management Systems Agency (ALMSA) on 13 October 1981. The results of Division Level Tests were presented by the Functional Coordinating Group (FCG) Chairmen and recommendations were made for prototyping. The LSRC approved moving the release to prototype at the US Army Missile Command. Release 62 IPR II was conducted at MICOM, 3-4 December 1981, for the purpose of reviewing the prototype results. The results for all the functional areas were briefed to the LSRC by Mr. McBride, MICOM, and the release was approved for proliferation. Release 63 IPR I was conducted at ALMSA on 20-21 April 1982 and Release 63 IPR II was conducted at US Army Armament Materiel Readiness Command (ARRCOM). This release was also approved for proliferation upon completion of IPR II. Minutes of each meeting were provided to the primary members of the LSRC within 10 working days following the meeting. These provided all concerned with events of the meeting plus a record of the key decisions and directed actions.

(U) Army Materiel Plan Modernization (AMP MOD) (Update). The Army Materiel Plan Modernization (AMP MOD) project was managed as a Class III system under life cycle management. The Product Manager Charter was approved during the 3d quarter as was the publication of the Draft Functional Description. The project was funded for FY 1984. The functional requirement for an initial increment was finalized during the 4th quarter. Its purpose was to provide a data base and automation of three of the major procurement forms allowing preparation of the AMP within 24 hours rather than the 30 to 90 days required. It was scheduled to be implemented in June 1985. A study to accelerate this increment by approximately 12 months was also being conducted. The remainder of the project would provide expanded capabilities to the Major Item Managers at the MSCs. Included would be: (1) Flexibility to respond in a timely manner to OSD/DA budget guidance changes; (2) immediate inquiry and update of key information via secured interactive terminals in the work force; (3) expeditious transfer of data interchange information between the MSCs, DARCOM, HQDA, and RDAISA; (4) capability to perform "what if" simulations for purposes of redefining and redirecting the procurement program; and (5) capability of analyzing weapon systems in

order to identify components and Associated Support Items of Equipment and provide relationship of assets to requirements. Due to the magnitude of the AMP MOD project, it was planned that the remainder of the project would be designed and implemented incrementally. An Economic Analysis and Acquisition Plan was started in the 4th quarter FY 1982 and was programmed to be completed during the 3d quarter FY 1983.

(U) Logistic Data Network (LOGNET) (Update). The Logistic Data Network (LOGNET) prototype system and subsystem specifications were completed during the 2d quarter. Hardware was installed at TRWs facilities for design purposes and site surveys were completed. CCSS interface programs were designed, tested, and implemented during the 3d quarter. Three critical design reviews were held during the 4th quarter. The final critical design review was scheduled to be held in the 1st quarter FY 1983.

(U) Maintenance Data Management System (MDMS) (Update). System implementation approved for release during Release 64.00 was extended to Release 65.00 to allow for more testing time. ALMSA was scheduled to perform Division Level Testing November 1982 through February 1983. TSARCOM was to support a special "semi-live" data test April through June 1983. Prototyping would now occur at CECOM during May and June 1983. Conditions not encountered during prototyping would be recorded. Thereafter, the first command to successfully experience any of these conditions would announce it by message to all other users.

Maintenance Interservice Support Management Office (MISMO)

(U) Under guidance of the Joint Logistics Commanders (JLC) and the Joint Policy Coordinating Group on Depot Maintenance Interservicing (JPCG-DMI), this office, in conjunction with the other service Maintenance Interservice Support Management Offices (MISMOs), continued to act as a strong advocate to achieve increased interservicing of depot maintenance support among the Services. The Army Director of Supply, Maintenance and Transportation assumed chairmanship of the JPCG-DMI at the 11 March 1982 meeting. Duration of his tour was to be for one year or as agreed to by the members.

(U) During this period, a study of the Joint Aeronautical Depot Maintenance Advisory Group (JADMAG)/MISMOs organizations was made, and recommendations were approved by the JPCG-DMI to realize improvements. The Maintenance Interservice Study Group, Control (MISG-C) was assigned to the JADMAG; a GM-15 Deputy Director position was created for the MISG-C and its name changed to Depot Maintenance Study Directorate (DMSD). The JADMAG was retitled to Joint Depot Maintenance Analysis Group (JDMAG). The MISMO functions remained as a part of each Service's staff, with responsibility to oversee the introduction to DMSD of

candidate workloads for DMI study, to process completed DMSD studies through the Service staffs, to collectively review and approve the DMI study recommendations, and to implement the joint Service decisions. Service Interservice Liaison Officers were returned to their service MISMO offices. These realignment changes were approved in March 1982. Further consolidation was also approved in July 1982 for the DMSD to relocate to the Washington Navy Yard by 1 July 1983.

(U) Aeronautical Depot Maintenance Operational Master Plan. With the realignment of the JDMAG and MISMO functions, the MISMOs picked up service staff surveillance of the development of the Master Plan. In January 1982, two special meetings of the JPCG-DMI were held to resolve some of the issues which arose concerning the objectives of the Operational Master Plan. At the initial meeting, held 6 January 1982 at the JDMAG, the JPCG-DMI was briefed on the content of the data base and the techniques to be employed for analysis, including the use of modeling for assessment of alternatives and the potential offered for specific areas of emphasis. A second meeting was held later at the HQ Naval Material Command in Crystal City and addressed specific objectives of the Master Plan. Selection of the Master Plan products was accomplished.

(U) The input from the November 1981 JDMAG data call commenced in February 1982 with the submission of some personnel and skills data. Subsequent submission of workload data and other items by the Services failed to meet the deadline of 1 March 1982. Data continued to be provided through the month of March, delaying the JDMAG approximately three weeks in the validation and loading of its data base. With no slippage permitted in the June requirement to report to the JLC, a concerted effort was required to meet target dates. A full complement of 13 service personnel reported to the JDMAG on 15 March 1982, for eight weeks of extended TDY to assist in the Master Plan data validation process.

(U) At a JPCG-DMI meeting on 11 March 1982, the JDMAG briefing on the Master Plan noted that the Services' input data did not include the peacetime and mobilization interservice workload requirements and related manhour/shop distribution data. In response to a JPCG-DMI directed action, the MISMOs coordinated actions within their services to obtain the needed data. Most of the interservice input data was subsequently provided to JDMAG and was processed. The JDMAG presented a status briefing to the JLC on the Master Plan at their meeting in Corpus Christi on 31 March 1982, and the briefing was approved by the JLC.

(U) At the 26-27 May 1982 meeting, the JPCG-DMI was briefed on the sample displays of information in the depot profiles and examples of the analysis process. A JDMAG concern was expressed for the present data call system and it suggested a joint regulation requirement. The JDMAG was also tasked to assess the feasibility of completing a Helicopter Study, including staffing, by 31 October 1982.

(U) The JPCG-DMI held a special meeting at HQ, DARCOM on 15 June 1982 to review the taskings assigned at the 26-27 May meeting and to prebrief the Joint Secretariat on the Master Plan development presentation scheduled for the 21 June 1982 JLC meeting. The JDMAG advised that issuance of a special Helicopter Study prior to completion of the Master Plan in December 1982, as requested by the Office of the Assistant Secretary of Defense ADM Management Task Force, would impact on completion of the Master Plan. On the other hand, most of the information for a Helicopter Study would be available in the Master Plan and such a study could be issued as a supplement after completion of the Master Plan. The status of the JDMAG data was also discussed. The estimated slippage of the program was increased to 8-12 weeks, but it was expected that final publication of the Master Plan would still be on schedule as of December 1982. At this meeting, the JDMAG presented a Master Plan Status briefing consisting of a series of graphics on Aeronautical Depot Maintenance posture depicting summaries of Army and Air Force capacity manpower resources. The three Army depots and the two Air Force depots which were displayed, provided a picture of peace and mobilization workload, capacity, surge requirements, and personnel and skills requirements and distribution. An analysis of the resources applied against requirements was employed to reflect potentials for excesses and deficits when measured in conjunction with a 60-hour work week.

(U) A test case was also presented which was initiated by the JDMAG to assess its analysis capability and to gain experience in the use of its simulation methods using available validated service data; and to evaluate the analysis progress. This presentation addressed an assessment of workload, capacity, surge requirements, manpower and skill resources, proposed military construction projects, and other influencing factors at selected Army and Air Force ADM activities which were on the product schedule for the Operational Master Plan 1982. This test case depicted the development of several options which could be used as a basis for recommending reposturing workloads and redistribution of commodity support. Options were identified and a summary of macro-level cost benefit analysis was made.

(U) On 21 June 1982, the JPCG briefed the JLC on the Master Plan, Office of Assistant Secretary of Defense for Manpower, Reserve Affairs and Logistics Decision Memorandum and the JDMAG simulation models for workload reposturing alternatives. Revised charters for JPCG-DMI and JDMAG were available for JLC signature; however, the Navy did not concur in the wording of paragraph II.E of the JPCG-DMI Charter. Therefore, signature of the charters was deferred. It was again reported that the JDMAG was 8-12 weeks behind schedule. Completion of the tri-service data base (1 July) for the Master Plan was of utmost importance. The compression would be in service analysis time, JDMAG simulation time,

and JDMAG preparation time for the final report. The JDMAG member presented information on overall service Aeronautical Depot Maintenance profiles, of selected Army and Air Force depots and the test case presented at the 15 June 1982 JPCG meeting.

(U) Navy, Army, and Air Force data completed validation and first simulations were made on 19 July 1982 with good results, so that the Master Plan became operational for tri-service simulations. The Master Plan was again briefed to the Maintenance Policy Council (MPC) on 5 August 1982. Its status at that time was that depot profiling was nearing completion, posture evaluation and workloading reposturing was being looked at, and special reports capability was being completed.

(U) Reposturing alternatives on engine and helicopter workloads were completed and briefed to the JPCG-DMI on 23 August 1982. In preparation for the September 1982 JLC meeting, the JDMAG was directed to present recommendations on aeronautical engine workloading, electronics workloading in Army, and recommendations to solve manpower/skill problems; also to prepare feasibility studies on closing several named depots.

(U) On 14 September 1982, the JDMAG briefed the JPCG-DMI on the status of the Master Plan and presented recommendations for further microanalyses of the reposturing alternatives by the Service staffs. JDMAG met with Service Logistics Staff representatives on 16 September 1982. The participants were provided with depot profile data for each depot involved in the Master Plan recommended alternative; a shopping list of data available in the JDMAG data base; and the rationale for selecting the recommended alternative. On 21 September 1982, the JDMAG briefed the JLC on the Master Plan reposturing alternatives on engines and helicopter workloads. Feasibility studies were deferred by JLCs, and the JDMAG then presented recommendations for further microanalyses by the Service staffs which were approved.

(U) On 23 September, the service microanalyses of these engine and helicopter alternatives began:

a. Engine workloading was to consolidate helicopter engine overhaul at Corpus Christi and Naval Air Rework Facility (NARF), Cherry Point; the Harrier engine was to remain at Cherry Point; J79 was to be moved from Cherry Point to Oklahoma City Air Logistics Center (ALC), reciprocating engines at NARF, Jacksonville were to be put on contract; J75 at Oklahoma City ALC was to be put on contract; and the T56 engine overhaul was reduced from three to two facilities (contractor and San Antonio ALC) which were to be workloaded at 325,000 to 350,000 manhours each.

b. Helicopter workloading was to be consolidated at Corpus Christi, Cherry Point, and Pensacola.

c. Manpower/skills recommendations were to be made.

(U) OASD (MRA&L) Decision Memorandum - Improving the Management of Aeronautical Depot Maintenance Resources. On 1 June 1982, the OASD (MRA&L) issued a Memorandum to the Services' Assistant Secretaries, forwarding the Decision Memorandum dated 11 May 1982 and approved by the Deputy Secretary of Defense on 13 May 1982. The Decision Memorandum covered seven action topics for "Improving the Management of DOD Aeronautical Depot Maintenance Resources" and included Lead Service responsibility for specific actions within each topic. A JLC Position Paper was developed by the JPCG-DMI and signed by the JLC on 23 June 1982 for use in the service responses. In addition, a JLC letter dated 23 June 1982 was forwarded directly to the Deputy Secretary of Defense and recommended the JPCG-DMI members be included on the DOD Maintenance Policy Council (MPC).

(U) Action 1 of the memorandum required completion of the Master Plan and briefings to the Maintenance Policy Council on JDMAG Master Plan analysis, restructuring proposals, and recommendations. An initial briefing was made on 5 August 1982. Action 2 of the memorandum required completion of Helicopter Consolidation Study by 31 October 1982. The JLC, as well as all service responses, advised that Helicopter Consolidation alternatives would be addressed as a supplement to the Master Plan scheduled for completion in December 1982 and a 1 April 1983 date for completion of the Helicopter Consolidation Study Supplement was established. Action further required the MPC to evaluate JDMAG's prioritization of commodity areas for consolidation. JDMAG was to expand the master plan data base to include communications and electronics data. Action 3 of the memorandum tasked the Air Force to establish a joint ad hoc group, including Defense Logistics Agency, to improve coordination in introducing new technologies, processes, and equipment into depot maintenance activities. The group was established in July 1982 and was called the "Ad Hoc Joint Services Technology Exchange Group," reporting to the JPCG-DMI. They were to review FY 1983/84 technology projects to identify ways to avoid unnecessary duplication in the areas of technology improvements. Action 3 also directed discontinuation of the ADMIT program, and this action was accomplished. Action 4 directed the services to improve and strengthen the MISG-C/MISMO organization by developing a stand-alone joint service regulation on DMI; to construct a disciplined data base on DMI decisions; to expand factors to include transportation, other recurring costs, capacity use, and mobilization workloads; to employ economic analysis methodology of DODI 7041.3; and realignment of interservicing network. All actions to incorporate these elements as integral parts of an improvement program were either completed or were in process. Also, on 28 July 1982, the JPCG-DMI approved the relocation of the DMSD from Tinker AFB, Oklahoma to the Washington Navy Yard where consolidation with the JDMAG was to occur by 1 July 1983. Action 5 of the memorandum directed the services to report on FY 1981 instances of economies/efficiences in Aeronautical Depot Maintenance workloads. In response, the Services reported through service channels to OASD in September 1982. Action 6 of the memorandum

required a joint service ad hoc group to develop a standard depot maintenance decision logic process for assigning source of repair responsibilities. The Air Force was chairing the new group which was established in July 1982 to develop the standard process.

(U) Defense Audit Service (DAS) Audit Follow-up. In follow-up of Report No. 81-133, Review of Interservice Maintenance Support, 30 September 1981, the OSD (Review and Oversight) Memorandum of 26 March 1982 requested that OASD (MRA&L) work with the Services and Defense Logistics Agency to respond to several detailed follow-up inquiries related to the DAS Report. The OASD (MRA&L) Memorandum of 12 April 1982 provided clarification and guidance for certain inquiries and tasked the Services' Assistant Secretaries to respond. A JPCG-DMI coordinated response was developed for use by the Services in replying to OASD (MRA&L) by 7 May 1982.

(U) Military Construction (MILCON) Review Procedures. The JPCG-DMI had reviewed the status and milestones for development of an interservice MILCON review process. On 14 September 1982, they approved the review of DD Form 1391, supporting documentation and additional data required to allow comparisons against the JDMAG Master Plan recommendations which included present and future capacity.

(U) DMI Studies. During the fiscal year, the DMSD completed 51 depot maintenance interservicing studies that would yield $23.1 million of cost avoidance.

(U) Joint Regulations. Three joint publications were issued by the DMI community: Depot Maintenance Production Capacity Measurement and Reporting Procedures, 29 January 1982 (actually issued in April 1982); Methodology for Maintenance of the ADM Combat Support Base, 16 April 1982; and Depot Maintenance Interservicing, 26 March 1982 (actually issued in April 1982).

(U) DMI Decision Record File (DRF). The following actions were completed on the automated DMI Decision Record File: (1) The DMI System Cross Reference file was completed in April 1982 and included new start studies and documentation projects; (2) The DMI file restructure was completed during May 1982 and contained 57,670 NSNs/Part Numbers, including all Ad Hoc and New Start MISMO decisions; and (3) The Management and Item Project File was completed during May 1982 and included all completed New Start and documentation project decisions. A file update was conducted during July 1982 to accommodate MISMO decisions during May and June 1982. The DRF was transitioned to JDMAG responsibility as a result of the organizational realignment. The JDMAG continuance of this effort included loading the DRF data into a programmable data base management system. A smaller data system

considered by the joint MISMOs to accommodate working files on acquisition screening/new start introduction/decision policing, would be continued on an individual service basis.

(U) Combat Vehicle Study. This study examined common Army and Marine Corps Tanks and Self-Propelled Artillery and the two Marine Corps depots supporting these items. The objective of the study was to examine geographical relationships of item generation points and supporting depots, and the potential for transportation savings through interservice support. In examining this potential, workload balance and skill relationships were to be maintained at the four depot sites. Mission-related impacts were to be minimized in any proposed workload shifts. The new Abrams M1 Tank was included in the study to verify the cost effectiveness of establishing depot capability at the Marine Corps Depot at Barstow, California, thus avoiding transportation costs to ship west coast assets to Anniston Army Depot, Anniston, Alabama. Of the various alternative workload distributions explored, one alternative satisfied all objectives of the study. Identified as Option IIIB, this alternative would route tank assets to the Marine Corps depot at Barstow, California and the Army Depot at Anniston, Alabama and Self-Propelled Artillery to Letterkenny Army Depot, Pennsylvania, and to the Marine Corps depot at Albany, Georgia. Workloads at the four depots would remain balanced within acceptable levels, and mission related impacts were minimal. A draft report was issued to the Services on 8 August 1982. Although some concerns were expressed, all Services concurred in the report and any nonconcurrences were withdrawn.

(U) H-60 Helicopter. The Joint Logistics Commanders' Action Team review of the Services H-60 programs and subsequent presentation to the JLC on 31 March 1982 resulted in a tasking that the JPCG-DMI perform a review of H-60 production differences to determine the impact on downstream depot efficiency. Particular attention was to be given to impacts caused by minor production differences (e.g., finishes, specification requirements, etc.). The JPCG-DMI amplified this request to include future rotor blade testing and repair of both the Titanium Spar and composite blade as well as future whirl tower requirements. This all-encompassing H-60 analysis was to be a modification of the ongoing H-60 commonality matrix tasking being performed by the MISG. A study plan was developed with milestones reflecting a final JPCG-DMI Report to the JLC in December 1982.

Maintenance

(U) Site Survey of Air Defense Units (NATO). A team led by Mr. Al Karasz conducted site surveys of Air Defense units in the following NATO countries: France, Italy, Belgium, Netherlands,

Turkey, and Greece from 20 to 30 November 1981. The purpose of the surveys was to redefine the maintenance and logistic support of the AN/TSQ-38 and AN/MSQ-18 operation central fire distribution systems deployed in NATO countries. The team consisted of personnel from HQ, DARCOM, NAMSA, and Lexington-Blue Grass Army Depot.

(U) Reliability Centered Maintenance (RCM) Background. In compliance with DOD imposition of Air Transportation Association Maintenance Study Group (MSG2) principles on the three Services, the Army developed the program of RCM in 1976 and directed all commands to consolidate their maintenance planning efforts under the RCM strategy. Several RCM-related programs had been initiated in recent years which had goals in common with RCM (e.g., reducing cost of maintenance while retaining equipment reliability) or which revised a maintenance activity through similar processing methods. Preventive Maintenance and Checks and Services (PMCS) Review, Depot Maintenance Work Requirements (DMWR) Scrub, and the addition of OCM to tracked vehicles were initiated after RCM was endorsed by OSD. Following DCSLOG approval for Combat Vehicle Evaluation (CVE) the mileage criteria for overhaul of combat vehicles was eliminated. A third evaluation was started in October 1981 and completed in October 1982.

Equipment Improvement

(U) General. The DARCOM Equipment Improvement Program was characterized by significant accomplishments in FY 1982. These accomplishments spanned all activity areas of the program from reports of field problems through corrective action programs to final application of modification kits.

(U) Improvements in the Equipment Improvement Recommendation (EIR) Program. New initiatives were undertaken to make the EIR program more responsive to the user submitter and to insure that significant problems received increased emphasis. The initiatives included incorporation of changes into the Deficiency Reporting System (DRS) to allow other reporting of field data to be entered, coding significant design deficiencies as "Problem Alerts" for increased review and analysis, providing monthly weapon summaries to project/program and weapon system managers. Headquarters output products have been restructured to promote visibility to the type of EIR (configuration changes, changes to technical documentation and changes to maintenance functions). Closure summary data was briefed the Director, SMT during the quarterly Review and Analysis.

(U) Modification Application Program. AR 750-10, Modification of Materiel and Issuing Safety-of-Use Messages, underwent a complete revision in FY 1982. It was brought into compliance with Integrated Logistics Support terminology (AR 700-127) by clarifying the use of

MWO Fielding Plans (MWOFPs) when modifications were implemented. Other major changes were to incorporate policy on Safety Recalls for Commercial Vehicles, to extend the application manhour limit for minor alterations from one to two hours and to extend the time compliance date for limited urgent modifications to 180 days. The revised AR 750-10 had a publication date of 1 December 1982, with an effecitve date of 1 January 1983.

(U) A total of 87,994 kits were applied throughout the Army and National Guard in FY 1982, consisting of 3,495 urgent/limited urgent modification kits and 84,499 normal modification kits. The most important were the limited urgent modifications, including modification of the M747 semitrailer king pins, and the M911 GLADHANDS modification, which permitted one tractor to tow a second disabled tractor, eliminating the requirement for a wrecker. Another important modification to Construction and Materiel Handling Equipment was the application of Roll Over Protective Structures (ROPS) and Noise Abatement (MHE only) to comply with OSHA requirements.

(U) Modification Effectiveness Measurement/Analysis Program. Development of a methodology to measure modification effectiveness analysis, which is required after modification kits have been applied, continued in FY 1982. The brief questionaire developed by AMSAA was non-concurred in by Headquarters TRADOC and FORSCOM. Therefore, the concept of the program was again coordinated with the DARCOM MSCs.

(U) Utilization of the Modification Work Order Record/Status System (MODWORS). Full use of the system was accomplished by some MSCs, but not all. Existing System Change Requests (SCRs) were prioritized during the April 1982 Functional Coordinating Group (FCG) meetings with the three considered essential for full system usage scheduled for implementation in November 1982. Additional emphasis on system usage was gained through command letters and on-site reviews.

(U) Post-Fielding Reviews. The Equipment Improvement Branch served as the headquarters proponent for Post-Fielding Reviews (PFRs). PFRs were independent reviews of fielded weapon systems conducted by the DARCOM Materiel Readiness Support Activity (MRSA) to assure that materiel was suitable and supportable and that problems were identified and corrected early. In FY 1982, three PFRs were conducted by MRSA on the Multiple Integrated Laser Engagement System (MILES), M60A3 Tank, and the UH-60 Helicopter (BLACKHAWK).

(U) AMSAA Field Liaison Division (FLD) Visits to Army Field Units. A result of the Headquarters DARCOM realignment, was the assignment of the AMSAA FLD visits to the Maintenance Division, Directorate for Supply, Maintenance, and Transportation. This mission was unique in that the field liaison teams usually visited three to

five CONUS and two to three OCONUS locations annually. Six locations were visited world-wide in FY 1982, each with a duration of two weeks or less.

(U) The team questioned individuals at unit level and recorded any problems/complaints regarding DARCOM-furnished equipment. These findings were then provided the proponent major subordinate command (MSC) for comment and resolution. If the problem was local, only the individual with the problem was provided a response. However, if it was determined to be widespread, then the finding and resolution were published in an annual AMSAA digest that was mailed world-wide. Quick dissemination of information was made through the PS Magazine. At the MSC, the valid findings were stored in the automated EIR data base (Deficiency Reporting System), used for product improvement justification and data sources for weapon assessments. The field visits were very well received by the commanders visited, and much was learned by the research and development community of the particular users environment of Army equipment.

(U) Centralized Accident Investigation for Ground Accidents (CAIG). On 1 October 1982, the US Army Safety Center was directed by HQDA DCSPER to initiate a test within FORSCOM of the centralized accident investigation concept for ground equipment. This test program was an extension of the successful Centralized Accident Investigation for Aircraft program.

(U) The test was to be conducted over a 6-month period and would involve the investigation of selected on-duty, non-POV, non-aviation class A accidents and other accidents of potential significance to the Army safety program that occurred within FORSCOM. To be classified as a class A accident, the loss must be greater than $200,000 in cost or involve a fatality. The purpose of the test was to determine if CAIG could benefit the Army by accurately determining and documenting causal factors, detecting safety hazards present in Army equipment and providing objective, unbiased input into the chain of command concerning unsafe acts or conditions which caused the accidents to occur. At the completion of the test period, an evaluation would be made to determine if the CAIG concept would be recommended for implementation Army-wide.

(U) HQDA DCSPER officially announced the CAIG program by message on 4 August 1982. A Memorandum of Understanding between USASC and HQ, DARCOM was fully staffed with all the major subordinate commands (MSC). The pilot program was not expected, however, to impact on the malfunction investigations being done at the MSCs. Immediately upon notification of an accident, USASC would dispatch a team to conduct a preliminary investigation. If the cause of the accident could be determined, this would conclude the investigation. However, if the preliminary investigation indicated that the fault might lie with the

DARCOM-provided equipment, a Category I EIR was immediately dispatched to the equipment proponent. In addition, the MSC point of contact, as specified in the MOU, was contacted for a fund cite to ship the exhibits to a specified teardown facility (DARCOM depot or other facility) for analysis.

DA/DARCOM Equipment Publications Program

(U) The Directorate for Supply, Maintenance, and Transportation had the DARCOM mission to develop policy and procedural guidance for the management of the overall DA Equipment Publications Program. Listed below are significant accomplishments which took place in FY 1982.

(U) DARCOM Supplement 1 to AR 310-3, Policy and Procedures. AR 310-3, Preparation, Coordination, and Approval of Department of the Army Publications, was changed in April 1982 to provide clarification of policy and procedures. The most significant changes were the development of new format for Modification Work Orders (MWOs) which improved organization and usability, the addition of a section to institutionalize the Skill Performance Aids (SPAS) Program and the tightening of requirements for DARCOM/TRADOC coordination responsibilities. The DARCOM supplement to AR 310-3 was being revised to render the document compatible with the AR and to include other data that affected equipment publications policy.

(U) ALMC Skill Performance Aids (SPAS) Training Program. The basic in-house training objective for government personnel had been satisified. The technical publications preparing activities in DARCOM were to conduct SPAS training of new employees using existing ALMC course materials and ALMC-certified assistant instructors. The blocks of SPAS instruction in ongoing ALMC sources (Integrated Logistics Support and Materiel Acquisition, and Maintenance Management) would continue to be based on the SPAS orientation briefing.

(U) Army Procurement Research Office (APRO) TM Study. This directorate sponsored a study performed by APRO to determine roles and interfaces of DA elements in TM acquisition, to identify problems and probable causes and to recommend the appropriate DA element to resolve the problems. The study determined that technical manuals were essential to the operational readiness of Army equipment and, thus, must be weighed on a life cycle, not acquisition, cost basis. While it was generally recognized that better quality TMs were evolved from the SPAS program, additional changes needed to be made in the overall TM acquisition process if TMs were to continue to improve. The study identified areas for improved TM acquisition to be pursued by the US Army Training Support Center (ATSC) on behalf of TRADOC and the US Army Materiel Readiness Support Activity (MRSA) on behalf of DARCOM.

(U) Automation of Equipment Publications Preparation. Under the guidance of this directorate, DARCOM conducted an analysis of equipment publications mission requirements and types of production equipment which might assist in accomplishing these requirements. As a part of this analysis, a proposal was developed to acquire, install, and test a prototype publications production system at MICOM. The proposal was approved by the Congressional Joint Committee on Printing (JCP) and was being implemented by MICOM. The overall objective of the test was to validate the production system capability to provide timely, accurate equipment publications in a cost effective manner. A separate element of this project was the analysis of the other Major Subordinate Commands, Materiel Readiness Support Activity, and the Adjutant General's Office publication requirements and interface. A contract study proposal for the analysis was approved by ASA (IL&FM) in August 1982. Results from this study and the MICOM test would guide the acquisiton and modernization of publications production systems at each publications preparing activity starting in 1984.

(U) Commercial Technical Manual (TM) Study. Complaints concerning the inadequacy of many commercial TMs prompted this directorate to initiate a review of Army practices in the procurement of manufacturer's publications. Adequacy, usability, and indexing were study topics, and nondevelopmental items were included. MRSA was performing the study which was due for completion in 1st quarter FY 1983.

(U) Cost/Volume of TM Study. Under guidance of this directorate, MRSA was performing an evaluation of TMs prepared to MIL-M-63036/38 to determine ways of reducing high cost and excessive page volume. A final report was scheduled for 1st quarter FY 1983.

(U) DARCOM Readiness Evaluation System (DRES). This directorate assisted in developing DARCOM-R 700-14, DRES, and was responsible for execution of procedures for the DMWR Availability Report on specific critical items.

(U) Depot Writing Groups Study. In August 1980, the predecessor directorate office acted on a recommendation of the DARCOM Equipment Manuals Council and requested MRSA and DESCOM to undertake a joint management study of the depot writing activities which were directly engaged in the writing of depot maintenance work requirements (DMWR) and TMs. The objective of the study was to determine the optimum use of that portion of the depot resources/facilities supporting the Equipment Publications Program, i.e., preparation of DMWRs and TMs. A summary of the final report was submitted to the DARCOM Equipment Manuals Council during the October 1982 meeting, asking for additional comments not later than 30 November 1982. Upon receipt of these comments, HQ, DARCOM (DRCSM) would formulate a course of action as to

increasing the return on the use of available depot resources for DMWR and TM preparation. This directorate also participated in the revision of DODI 4151.9, DOD Technical Manual Program Management, which was published 4 February 1982.

(U) Equipment Manuals Council. Semiannual meetings of the council were convened in May and October 1982. The council was the means by which DARCOM TM proponents met with this headquarters, MRSA, HQDA, and TRADOC to discuss, plan, and take action on critical issues involving the DA/DARCOM TM community. The council was chaired by this directorate.

(U) Equipment Oriented Publications Data Base (EOPDB). This system to identify for the user all publications required to operate and maintain Army equipment was being developed by MRSA under the management of this directorate. At the end of FY 1982, the system was approximately 95 percent complete. TAGO was already using a portion of their data base.

(U) Expedited Printing Work Group. This group was established by the DARCOM Equipment Manuals Council under direction of this directorate and was working closely with the TAGO Task Force on Force Modernization. Its objective was to pursue recommendations directed toward expediting the printing and distribution of equipment publications. A final report of this group was scheduled for 3d quarter FY 1983.

(U) Illustrators of Equipment Publications. This directorate worked closely with the DARCOM Directorate for Installations and Services to insure proper reporting of illustrator requirements by the MSCs and to maintain TM illustrator classification separate from consolidation with command audiovisual activities.

(U) Management Analysis Report. DARCOM-P 750-10, which was the responsibility of this directorate, contained the semiannual management by objectives report from the MSCs. Publications improvements, status of the DARCOM equipment publications library, the TMSS program, and statistics on trends in the publications program were reported in January and July 1982.

(U) Microfiche for Repair Parts and Special Tools Lists (RPSTL). To determine the feasibility of publishing parts lists in microfiche, this directorate coordinated closely with TAGO to perform a test during FY 1983. The MSCs provided magnetic data tapes to TAGO to determine their mutual interface for transfer of data and were selecting RPSTL to be used in the test. Two test RPSTL were fielded in FY 1982, with additional lists scheduled for fielding in the 2d quarter FY 1983.

(U) New Technology Concepts. This directorate worked with the Army Communicative Technology Office and the Army Research Institute to assist and keep abreast of their efforts to evaluate/develop other than paper methods for transferring technical information from the engineer to the user.

(U) Preventive Maintenance Checks and Services (PMCS). Since PMCS was critical to combat readiness of Army materiel, this directorate was working with HQDA and FORSCOM to insure soldiers had the information for serviceability, operational, and readiness checks in correct and easy-to-use format. New improved formats which were developed were at HQDA for final approval at the end of FY 1982.

(U) Preventive Maintenance (PS) Magazine. This directorate provided HQDA, TAGO with supporting justification to continue publication of PS without budget cuts that would be detrimental to the overall usefulness of this maintenance monthly.

(U) Responsibilities and Interfaces for Equipment Publications Development. To assure that proper coordination was established and maintained between program/project product managers, research and development commands, and materiel readiness/commodity commands for development of equipment publications, this directorate developed DARCOM Circular 20-10, 1 February 1982, on this subject.

(U) Skill Performance Aids (SPAS). In December 1978, the CSA approved implementation of the SPAS Program. DARCOM was designated principal operator and overall manager of the program Army-wide. In FY 1982, two SPAS Working Group meetings were convened and chaired by this directorate. A number of projects were underway to improve the definition of SPAS through regulations, procedures, specifications, and related handbooks. Included among these projects was an on-going independent assessment of SPAS. This assessment was an extension of an effort assigned to AMSAA by the Commanding General, DARCOM, in July 1981. The overall objective of the assessment was to determine what improvements could be made in Army technical documentation by examining the publications for six systems (M1 Tank, M60A1 Tank, M109A1 Howitzer, M220A1 Tow, US-60A BLACKHAWK, and AN/TPQ-36 Mortar Locating Radar). Completion of the assessment with final report was scheduled for January 1983. In addition, DARCOM had proposed certain policy changes which would eliminate the requirement for SPAS ETM as a separate exportable training product and would provide on-the-job training within existing products such as TM, soldier's manuals, and trainers' guides. These changes, under review at TRADOC, would centralize training responsibilities, except New Equipment Training, fully under TRADOC.

(U) Technical Manual Specifications and Standards (TMSS) Program. DA was the lead service for the TMSS program with DARCOM acting for DA in carrying out this mission. MRSA acted for DARCOM as the assignee activity, chairing the TMSS Work Group. Due to the fact that sufficient resources could not be made available by other Services, contract services were being used to develop a set of DOD TM specifications. A contract was signed in September 1982 to analyze

technical manual specifications, standards, and handbooks for identification and isolation of common and service peculiar requirements pertaining to Operation and Operator, Organizational, and Intermediate Maintenance. This analysis was expected to lead to a contractor-developed set of data packages covering the consolidated specifications with delivery scheduled for May 1983.

(U) Technical Manual Writer/Editor (GS-1083) Career Field. This directorate was instrumented in highlighting a serious situation which existed in the recruitment, retention, and training of personnel within the GS-1083 technical manual (TM) writer/editor career field. Projected TM writer/editor vacancies within DARCOM over the next four years will force the fielding and use of less than adequate TMs for new equipment, allow the increase of an already overwhelming backlog of revisions and changes to existing TMs, and lengthen the time to provide TM support to the field soldier. Since these conditions had an adverse impact on the combat readiness of Army materiel, some early remedy was needed. In July 1982, at the request of the Chief of Public Affairs and Director, Supply, Maintenance, and Transportation, the Director for Personnel, Training, and Force Development, initiated a two-phase study to explore the personnel problems being experienced in this career field. The first phase consisted of verifying that job descriptions were correctly and consistently classified throughout DARCOM and this was completed in October 1982. The second phase scheduled for completion in November 1982, would consist of investigating recruitment/retention problems and reviewing the draft supplemental classification standard to determine its possible use as an interim document.

(U) Tri-Service TM/Interservice Group on the Exchange of TM Technology. This directorate had participated in the revision of AR 310-70 which was scheduled for review and release in early 1983.

(U) Waivers to Regulatory Documents. Since HQ, DARCOM had responsibility for developing policy and procedural guidance for management of the DA Equipment Publication Program, this directorate had responsibility for granting or, when applicable, routing through HQDA requests for waiver to established regulations. During the reporting period, waivers were granted to expedite fielding of equipment and to provide timely data to maintain readiness of Army materiel.

## Plans and Projects

(U) Background. The Plans and Projects Division was established under the Directorate for Supply, Maintenance, and Transportation during the HQ, DARCOM realignment in October 1981. The mission of the Plans and Projects Division was to manage POMCUS, Operational Projects, and War Reserve Programs for HQ, DARCOM. It also acted as

the principal logistic planner for the directorate and established policy and provided guidance and direction for: (1) Logistic support plans and concepts in support of military operations and contingencies, and (2) War Reserve, POMCUS, and operational project materiel requirements. This division coordinated and participated in the development and conduct of mobilization, contingency, and emergency planning and operations; established policy and participated in the development and review of regulations and budgets involving assigned functions; and coordinated actions of HQ, DARCOM-Europe.

(U) POMCUS and Operational Projects Branch. The POMCUS and Operational Projects Branch was established as a branch under the Plans and Projects Division, Directorate for Supply, Maintenance, and Transportation during the HQ, DARCOM realignment in October 1981. Functions included accomplishing and/or coordinating actions required of DARCOM in support of DA plans to rapidly reinforce NATO through increased prepositioning of organizational materiel configured to unit sets. Further functions of the branch included monitoring the fill of Army Operational Projects world-wide.

(U) During FY 1982, redefined force requirements resulted in a major restructuring of the POMCUS force. The refined force requirements were contained in the CY 1982 POMCUS Authorization Document published in January 1982. Due to the refinements and revised authorizations, there was a dramatic shift in requirements which resulted in a decline in C-1 EOH readiness for DS-1 and through 4 of approximately 60 percent. Equipment was being redistributed to improve readiness in the higher priority units. It was anticipated that readiness would be at the previous peak by mid-1983.

(U) In January 1982, the Army began a 12-month test to validate the feasibility of prepositioning AH-1S aircraft in Europe to allow for rapid deployment under the POMCUS program. As part of this test, the aircraft were being stored in a humidity-controlled environment. Results of this validation test would determine whether Cobra helicopters could be stored over a long period of time without being significantly affected. In July 1982, seven of the aircraft were removed from storage and flown to Ansbach for technical inspections, and then to Wildflecken for range firing. These aircraft were in excellent condition, with no deterioration so that, to date, the program has been considered an unqualified success. The seven aircraft removed for testing were then issued to the 503d Aviation Battalion. The seven aircraft remaining in storage were to be tested after 12 months in storage.

(U) In April 1982, this headquarters hosted a POMCUS review. Representatives from HQ, USAREUR; 21st SUPCOM; HQDA; HQ, FORSCOM; HQ, DARCOM; and the DARCOM MSCs were in attendance. During the

meeting, USAREUR personnel were provided with update availability of equipment shortages. Also during the review, other problems/issues concerning the POMCUS Program were discussed. Some of the most significant problems/issues were: Prioritizing of POMCUS units; ASL/PLL provisioning for POMCUS; POMCUS Division Sets 5 and 6; the overall storage deficiency for CENTAG POMCUS; the POMCUS uploading program; and the transfer of preparing and publishing the monthly POMCUS analysis reports from DA to DESCOM. During FY 1982, approval was received to use purpose code R for the purpose of reserving stocks for POMCUS. Previously, items designated to go into POMCUS were held by NICPs in purpose code Q, however, there were conflicts in the use of purpose code Q becuase JCS stocks were also held in this account.

(U) During FY 1982, this office became increasingly involved in actions pertaining to the Wartime Host Nation Support (WHNS) Agreement recently signed between the United States and the Federal Republic of Germany. DARCOM was requested by HQDA to prepare implementing instructions in support of the signed WHNS Agreement between the United States and the Federal Republic of Germany. Implementing instructions were to include procedures to be used in requisitioning, procurement, distribution, maintenance, accounting, and reporting of US-furnished materiel. Under the WHNS Agreement, West Germany was to train and equip approximately 93,200 reservists (63,000 for Army) who would provide the US Army and Air Force with combat support and combat service support in the areas of transportation, materiels handling, supply, airfield repair, facility security, POW handling, decontamination, and casualty evacuation. Although some preliminary work had been done by DARCOM, many unanswered questions remained that pertained to equipment authorization documents, positioning of materiel, storage, funding and reporting that must be formalized to finalizing procedures. In the absence of specific guidance, DARCOM developed a strawman based on preliminary information. This information called for supporting a potential for 391 different GE-type units, over 65 TOES, and in excess of 700 types of units of equipment, possibly covering over 142 different locations. Preliminary milestones were established as follows:

| | TARGET |
|---|---|
| Initial Strawman | 1 October 1982 |
| Staffing Completed | 1 December 1982 |
| IPR to Resolve Issues | 1 January 1983 |
| Planning Staffing Completed | 1 February 1983 |
| Final General Procedures | 15 March 1983 |

(U) Operational Projects. The Army Facilities Components System (AFCS) and Base Development Plan (BADEP) operational project was designed as a Military Engineering Construction Support System to meet the Army's world-wide base development requirements as specified

in the theater-coordinated Civil Engineering Support Plans (CESP). Refinement was requested due to difficulties encountered in review of items in the Bill of Materiels. Revision considered the minimum essential facilities required by MACOMs in support of specified LOGPLANS, transportation availability during wartime, and JSCP goals for 1983.

(U) The Tactical Marine Petroleum Terminal (TMPT) operational project was an over-the-shore bulk petroleum receipt, storage and issue facility capable of handling gasoline, diesel fuel and aviation fuel, with a total storage capacity of over two million gallons. The system would provide the distribution capability in support of our mobile force in underdeveloped theaters. FORSCOM was requested to revise the operational project in order to provide this headquarters with total scope for assessment of procurement and storage requirements. The target date for revision was set for December 1982.

(U) In the Plans and War Reserves Branch, programming was begun for implementing DODI 4140.7 as a War Reserves (WR) requirements computation module of CCSS. Systems analysis now included MACOM participation in developing user formats for funds management reports. HQDA directed a freeze of FY 1983 WR requirements, because of erroneous data in the Structure and Composition System (SACS) files. Corrections to the files could not be made in a timely manner to permit the WR Computation Cycle outputs to be available to MACOMs, for the September 1982 POM submissions, with the result that the FY 1984 WR requirements were not computed. As a result, at the direction of HQDA, automated formats and processes were designed to stabilize the Class VII WR requirements, and DESCOM was tasked to develop the required products. A WR workshop was conducted at HQ, DARCOM, 19-23 July 1982, for members of the command and interested personnel from external activities, and a second successful DA/DARCOM/USAREUR WR Conference was hosted by DARCOM during 9-13 August 1982. An effort was also initiated with USAREUR to coordinate and prioritize Secondary Item procurement, which would be expanded to all MACOMs in FY 1983.

(U) DARCOM-Europe. The most recently activated DARCOM element was DARCOM-Europe, located in Seckenheim, Germany. DARCOM-Europe came into being as a result of a study of DARCOM Support to Europe (DSE). The study was initiated to determine the need for a central clearinghouse and planning organization for all DARCOM activities in Europe. The DSE study concluded that DARCOM's involvement on the European continent continued to expand, and involved a wide variety of missions and functions carried out by many different DARCOM major subordinate commands. DARCOM's annual support to the European theater exceeded 4,000 manyears of effort and $200 million. Force modernization efforts continued to increase the number and types of systems that required support and would add to the need for centralized command or control.

The DSE study recommended the establishment of a forward element in Europe, DARCOM-Europe (DARCOM-EUR) to alleviate the specific problem of centralized control and improve the support to Europe.

(U) The concept of DARCOM-Europe was approved by the Commanding General, DARCOM and CINCUSAREUR in March 1981. The implementation plan was approved by the Commanding General, DARCOM and CINCUSAREUR in October 1981, and by the Vice Chief of Staff, Army on 1 December 1981. HQ, DARCOM-Europe was activated in Seckenheim, Germany on 2 July 1982. DARCOM-Europe was commanded by BG Lynn Stevens, who represented the Commanding General, DARCOM as the single DARCOM voice and focal point in Europe. DARCOM-Europe had an authorized strength of approximately 90, with a mix of one-third military to two-thirds civilian personnel.

(U) DARCOM-Europe, as an extension of HQ, DARCOM, commanded or controlled all DARCOM activities in the European theater which involved support of USAREUR, including central direction and control in policy formation, program development, resource allocation and performance evaluation. DARCOM-Europe conducted long range planning for peactime and mobilization, provided a single focal point for USAREUR requirements with DARCOM commands, and also served as a central clearinghouse for DARCOM personnel going to or coming from Europe. In order to accomplish these functions, DARCOM-Europe was organized into five lean directorates that included Resources, Plans, Maintenance, Force Modernization Logistics Support, and Logistics Assistance. DARCOM-Europe's long-term benefit would be improved readiness. DARCOM-Europe's support to the soldier in the field was driven by its readiness and willingness to assist anywhere, at any time.

## Supply and Distribution

(U) Packaging. Approximately 125 people attended the 10th DARCOM Packaging Seminar held in Salt Lake City, Utah from 5-7 October 1982. Its theme, "Packaging, Handling, and Transportation," focused on the interaction between packaging and other important logistical functions. Ammunition and hazardous materials issues were featured.

(U) The DARCOM Packaging Person of the Year Award, an annual award program, was established to select and honor an employee for outstanding contributions in Military Packaging. Mr. Eugene Morgan, TSARCOM, was selected for the first award on the basis of outstanding cost savings actions and direct on-site assistance to Army units. A plaque and certificate were presented to Mr. Morgan at the 10th DARCOM Packaging Seminar by Mr. Paul Hyman, Office of the Assistant Secretary of Defense, Manpower, Reserve Affairs and Logistics.

(U) On 2 August 1982, the Commander, DARCOM made a full delegation of the authority granted him in paragraph 4-2d of AR 18-1 to the Director, Supply, Maintenance and Transportation. This made the Director the primary point within DARCOM for all Logistics Application of Automated Marking and Reading Symbols (LOGMARS) matters. The Director, Supply, Maintenance, and Transportation issued a Project Officer Charter appointing Mr. Francis Toner, Storage and Transportation Branch, as Project Officer for LOGMARS Wholesale Receiving and Shipping Applications on 19 October 1982. In addition, an Army Logistics Symbology Group was established at the DARCOM Packaging, Storage, and Containerization Center to assist in implementing LOGMARS Army-wide. A DOD-wide program to require contractors to bar code packages shipped to DOD activities was initiated 1 July 1982. Implementation of LOGMARS technology in the following areas was being vigorously pursued: Inventory/quality control, shipping and receiving, maintenance parts tracking, property accountability, self-service supply, tool crib operations, and transportation. The LOGMARS applications were supported by the Productivity Enhancing Capital Investment (PECI) Program.

(U) Force Modernization Packaging - Initial Supply Support. Force Modernization Packaging was developed, tested and implemented by this command in response to the concern expressed during the 1978 Army Commanders' Conference regarding the ability of Army units to manage the introduction of many new end items and weapon systems to be fielded in the 1980s. The Force Modernization Packaging procedure involved consolidation of initial ASL/PLL parts, special tools, and TMDE into unit level packages for delivery to the gaining command prior to or concurrent with shipment of the supported end item or weapon system. DARCOM implemented Force Modernization Packaging on a limited scale in FY 1982 to support fielding of such systems as the M1 Abrams and UH-60A BLACKHAWK to USAREUR and FORSCOM units. Army-wide implementation of packaging became effective 1 October 1982. Publication of Chapter 5, AR 700-120, effective 1 July 1982, provided HQDA approval of Force Modernization Packaging Army-wide in support of new equipment fielding.

(U) Storage. In February 1982, the Deputy Assistant Secretary of Defense replied to a 3 August 1981 memo from the Secretary of the Army. His reply stated that the concerns about DOD Standard Warehousing and Shipping Automated System (DWASP) expressed by the Secretary and the Joint Logistics Commanders as well as those in the Defense Audit Service Report and those of the services would all be addressed by the DOD Major Automated Information Systems Review Council (MAISRC) which would meet in March or April 1982. On 14 June 1982, the Office of the Assistant Secretary of Defense (Manpower, Reserve Affairs and Logistics) circulated a draft System Decision Paper (SDP) on DWASP to DLA and the services for comment prior to presenting it to the MAISRC. The Deputy Chief of Staff for Logistics, HQDA, using DARCOM input, replied by memo through the

Army Chief of Staff and the Assistant Secretary of the Army (IL&FM) that the SDP was inadequate, and that the proposed DWASP program was unacceptable because it did not meet Army needs. The other services also nonconcurred.

(U) In August 1982, Headquarters, First Army approached DARCOM with a request for approximately 100,000 square feet of covered storage space for care and storage of cold weather protective clothing and other mobilization stocks for units in their area. An Interservice Support Agreement (ISSA) was signed and stock was being moved into Letterkenny Army Depot at the end of the fiscal year. The First Army expressed a desire to expand this arrangement to include all equipment over and above training needs. An initial shopping list had been received at HQ, DESCOM and was being examined. Facilities at Seneca and Anniston may be offered pending completion of the DESCOM review. The benefits of such an arrangement to the Reserves were considerable. Their materiel would be stored in facilities superior to those they now had; it would be given appropriate care by experienced personnel; and would be readily available when needed. From an Army point of view, such an arrangement would calm the Congressional critics who have in the past expressed concern at underuse of certain Army facilities.

(U) A HQ, FORSCOM representative met with DA and DARCOM personnel on 8 September 1982 regarding availability of DARCOM storage in other regions. FORSCOM was advised that additional storage was available at Lexington-Blue Grass, Kentucky; Pueblo, Colorado; Sacramento, California; and Seneca, New York. HQ, DARCOM was prepared to assist in obtaining these services, if requested. Arrival of supplies and equipment purchased by the Reserves with FY 1982 funds created sizable storage problems at unit level. In an attempt to minimize new construction or use of costly commercial storage contracting, HQDA tasked FORSCOM to identify to DARCOM those units (by location) that anticipateda need for additional storage capability together with their estimated need. DARCOM would serve as a "broker," in that it would use information provided to locate potential storage sites from among those available, DOD-wide, and make preliminary arrangements for use by USAR. Thereafter, FORSCOM would have responsibility to negotiate ISSA and arrange for operation of the building(s) made available. A reply from FORSCOM was anticipated by 19 December 1982.

(U) Beginning in 1974, the Army's depot system underwent a major mission realignment and restructuring based on the revised logistical support requirements of the Direct Supply Support System and economic and effectiveness considerations. This resulted in a configuration

where assemblies and components of equipment and repair parts were supplied primarily from three regional or Area Oriented Distribution (AOD) depots. Projects were identified that would modernize the AODs by providing for an advanced state-of-the-art material handling system and computerized control system that would permit the AODs to: (1) Meet planned mission requirements efficiently on a one shift operation; (2) move to emergency mobilization requirements rapidly; (3) improve readiness posture of units serviced; and (4) operate in modern facilities geared to the Army's needs through the 1990s. The expected benefits of the proposed modernization were improved productivity, reduced operating and maintenance costs, commonality in operation, and better energy efficiency.

(U) The Military Construction, Army, appropriation would be used to fund these projects. Projected costs (exclusive of equipment) were as follows:

| | Program Year | Costs |
|---|---|---|
| Sharpe Army Depot | FY 1985 | $52.8 million |
| Red River Army Depot | FY 1986 | $54.1 million |
| New Cumberland Army Depot | FY 1987 | $88.2 million |

(U) The Austin Company, an architectural engineering firm was selected by HQ, DESCOM to establish the design basis for the optimum depot facility. Austin presented the results of the data collection phase of its contract for equipment optimization selection and design, at an IPR held in August 1982. Proposed facility layouts and materiel handling and ADP/management control systems were discussed. Facility modernization would eliminate the high labor intensive nature of present operations, and would provide better customer service and increase peacetime and mobilization readiness.

(U) Transportation. DA was tasked with the requirement to develop and implement a system to account, for and identify funds provided in the O&MA appropriation for the Force Modernization Program (FMP). Guidance disseminated established reporting periods and channels for MACOMs to identify and track Force Modernization Program expenses. The methodology for capturing second destination transportation for FMP items moving in the Defense Transportation System was not addressed. MILSTAMP Volume II was modified to include the transportation account code A258 to be assigned to FMP items when shipped. Throughout fiscal year 1982, logistics planners were unable to identify the items as they moved so that TAC A258 could be assigned and cost factors applied that would be reported. Information on FMP items being fielded was not in a central data bank from which shippers could identify the FMP item. This situation was being corrected for future reporting by introducing a system change to the AMDF which would permit resident

systems to interrogate for FMP items. Once identified, TAC A258 would be assigned to supply and shipping documents by automated means which would assure a reliable and verifiable audit trail for logistics planners to capture second destination transportation costs for FMP items.

(U) FY 1982 culminated the first 2-year contracting-out of the Sharpe Army Depot consolidation and containerization operations. A commercial firm, Space Age Engineering, was totally responsible for the CCP operation for DSS and ALOC support of Alaska, Hawaii, Japan, Korea, and related Pacific theater positions. At the conclusion of the fiscal year another company, Evaluation Research Corporation, was selected to replace Space Age Engineering. Evaluation Research was expected to perform at a higher level of efficiency and proficiency based on their management experience and expertise.

(U) The Containerized Ammunition Distribution System (CADS), a multi-service program under the overview of DARCOM, continued to enhance the capability within DOD to handle and transport ammunition in intermodal containers. Construction of containerization facilities at Mississippi AAP and Iowa AAP was ongoing and completion expected by the end of 1982. Depots and ammunition plants received container handling equipment from new production. These initiatives within DARCOM would assist in providing a duel handling capability for ammunition, by either container or breakbulk. The construction of container berths at Military Ocean Terminal Sunnypoint during FY 1982, in conjunction with ongoing initiatives in Europe and Korea, would provide needed flexibility in the use of both container and breakbulk ocean vessels to transport ammunition. The shipment of 412 containers of ammunition to Europe, all originating at DARCOM installations during April 1982, demonstrated the continuing evolution of CADS from a developmental to an operational system.

(U) Ammunition. DARCOM Regulation 740-25, Ammunition Stock Location System, was revised and published on 17 May 1982. This revision included creation of a DARCOM Form 1385-1 for storage of mixed ammunition lots on one pallet. This Directorate circulated a message (DRCSM-PST 281440Z JUL 82) stating that DARCOM policy was to support requests by posts, camps, or stations to use storage magazines at DARCOM Ammunition depots for stocks they are unable to store properly at their own installations. This action was taken to reduce the necessity for expensive MCA projects for magazines at user installations. A policy (DRCSM-PST 1st Indorsement to DESCOM letter, 6 May 1982) was also distributed stating that warehouses/above-ground magazines were the preferred structures for storage of Small Arms Ammunition. Issuance of this policy statement was needed to clarify the security requirements of DOD 5100.76M/AR 190-11.

(U) To meet the need for people in various career fields who were knowledgeable in ammunition, the Ammunition Specialist Career Program, a new career program, was submitted to DA DCSPERS by DRCPT. The Supply & Distribution Directorate was the manager for this. Allied to this were two programs concerning wage grade personnel. DARCOM Regulation 350-4 was published to set up a certification program for wage grade employees working with munitions, and DARCOM Regulation 370-7 was established to provide a career progression program for wage grade personnel to advance to GS positions. These two programs were designed to provide technically qualified people to give them an incentive to stay with the ammunition field while advancing their careers.

(U) Inventory Accounting. The DOD Joint Physical Inventory Working Group (JPIWG) which was chaired by OASD (MRA&L), and included members from each service and agency, was a forum for discussion and analysis of physical inventory policy, procedures and problems encountered in accomplishing inventory program requirements. Actions before the JPIWG in FY 1982 included the President's Private Sector Survey on Cost Control (PPSSCC) (Inventory Control Policy and Procedures), the Defense Council on Integrity and Management Improvement (DCIMI) Inventory Accuracy Issue, and the Physical Inventory Control Improvement Program.

(U) During FY 1982, the DOD JPIWG completed the staffing of DODI 4140.35, Physical Inventory Control for DOD Supply System Materiel, and forwarded the final draft to OSD for approval and publication. The JPIWG also met with the PPSSCC Team on several occasions to discuss DOD and Service/Agency policies on physical inventory control and to review PPSSCC team conclusions and recommendations. Additionally, the JPIWG, in response to the DCIMI's concern on inventory accuracy, drafted a Physical Inventory Control Improvement Plan which included review of inventory procedures and performance standards along with on-site visits to service/agency inventory control points and storage activities. The objective of the plan was to assure that state-of-the-art technologies were considered in inventory policies and procedures and to improve inventory accuracy through modernized methods and uniform standards of performance.

(U) DARCOM conducted Inventory Management Reviews (IMR) of inventory control points and depots in which the areas of physical inventory, receipts, issues, adjustments, logistics management data, and related areas were reviewed. The purpose of the reviews was twofold: (1) to find problems that an individual installation was having, and (2) to find problems which had system-wide application. Discrepancies were subsequently resolved and necessary changes made. In FY 1982, the following activities were reviewed: Corpus Christi Army Depot; Sacramento Army Depot; Communication-Electronics Command;

Sharpe Army Depot; Tank-Automotive Command; Anniston Army Depot; Crane Army Ammunition Activity; Troop Support and Aviation Materiel Readiness Command; Tooele Army Depot; Armament Materiel Readiness Command, Single Manager for Conventional Ammunition; and Rock Island Arsenal.

(U) The annual Inventory - Property Accountability Seminar was held on 26-28 October 1982. Jointly hosted by ARRCOM and Rock Island Arsenal, the seminar provided an opportunity for the inventory community to: (1) Review the effectiveness/efficiency of the FY 1981 inventory program; (2) discuss the impact of changes planned for the inventory - property accountability area; (3) provide cross-fertilization of ideas and methods for improving the inventory accounting process; and (4) relate common problems/solutions for a mutual exchange of ideas.

(U) DARCOM Regulation 700-12, Management of Sets, Kits, and Outfits (SKO), was published on 25 August 1982. This regulation provided guidance for SKO management to include review, evaluation and set configuration. An SKO conference was called by HQ, DA DCSLOG on 18 August 1982 at the US Army Logistics Center to discuss problems in SKO management. Attendees represented TRADOC; HQ, DARCOM; MRSA; CDA; GMPA; and DARCOM major subordinate commands. One of the significant actions resulting from this conference was the proposal by DA DCSLOG establish a task force in the 1st quarter FY 1983 timeframe to examine the problems in Army Tool Management.

(U) Largely through the efforts of DESCOM, two applications of bar code technology were initiated. Tooele Army Depot began the functional description and system design of programs which would accomplish ammunition location surveys and physical inventories through the use of portable data collectors. The programs developed would be prototype tested at TEAD and Crane Army Ammunition Activity in FY 1983, prior to export to other depots. New Cumberland was performing a similar role in the development of applications for location survey, physical inventory, and in-storage inspection for general supplies. NCAD would be the prototype site for their programs.

(U) The Assistant Secretary of the Army (Installations, Logistics and Financial Management) expressed concern with the level of dollar value of adjustments. In FY 1981, $2 billion of adjustments were made; the Army accounted for $905 million of these. DARCOM subsequently initiated an urgent systems change request which would provide visibility of adjustments by location, by error cause code. Implementation was scheduled for 3d quarter FY 1983.

(U) Cataloging. DARCOM developed a proposal based upon approval by the Executive Level Steering Group for the Federal Cataloging System and the Defense Integrated Data System to expand the way the Services and agencies would interface and operate during a crisis situation. Upon approval by the Services and agencies, this initiative would be incorporated in the Federal Cataloging System Policy Manual, DOD 4130.2M.

(U) A DARCOM initiative to expand the Defense Integrated Data System was to include Packaging Data. This concept would permit the Services and agencies to exchange packaging data using common formats. DARCOM initiated the Systems Change Request which was being coordinated with the other Services and agencies.

(U) The Catalog Management Data Optimization program was implemented to permit the Army Catalog Management Data to be updated in the Defense Integrated Data System based upon input by the Integrated Materiel Manager. This program would negate the requirement for the Army to make turnaround changes, and would result in monetary savings in addition to improving the edits.

Integrated Materiel Management

(U) Transfer of Consumable Items. In December 1978, the Office of the Secretary of Defense (OSD) proposed that consumable items be transferred from the military services to Defense Logistics Agency (DLA) for management. DLA mission assumption would involve the basic functions of item procurement and item management. OSD contended that the proposed transfer would generate economics by consolidating these functions at DLA. The Army position was that the transfer could degrade supply effectiveness and Army readiness. Moreover, disassociation of consumable item management from total weapon system management and DLA lack of engineering capability and end item visibility systems would have a significant adverse impact. The Deputy Secretary of Defense, in his memorandum of 7 July 1981, directed that an initial increment of 200,000 items be transferred to DLA within six months as a test. After evaluation of test, OSD was to determine the desirability of further transfers. The Army share of the first increment was 35,000 items.

(U) The timeframe for the first transfer was extended from six to twelve months by OSD beginning October 1981, with the last effective transfer date being 31 October 1982 . However, the effective date was extended to December 1982 to allow the necessary roll-up of Army credits for those logistic reassignments that were processed late by the Defense Supply Centers. To date, the Army had transferred approximately 35,000 items to DLA, which consisted of approximately 13,000 Weapons Integrated Materiel Managed (WIMM) items and 22,000 Commodity Integrated Materiel Managed (CIMM) items. Congress, as part of the FY83 Authorization Act, stated that all Weapons Integrated Materiel Managed items should

remain with the services. This was interpreted to mean that all WIMM items involved in the 200,000 item transfer to DLA would be returned to the Army. Those CIMM items transferred to DLA as part of the consumable item transfer would be screened against existing criteria set forth in DOD 4140.26-M. Those properly coded for service retention were to be returned to the Army. However, the OSD memorandum of 14 October 1982, requested each service to provide a consumable transfer back plan with justification for each item to be transferred back to the services.

(U) In anticipation of the OSD memorandum, the Joint Logistic Commanders directed the Air Force to develop a strawman transfer back plan. The key strawman points, as developed by the Air Force were: (1) All WIMM items would be transferred back; (2) CIMM items would be rescreened for return to the services; (3) the transfer back was to be accomplished in an eight-month period; and (4) the readjustment of service end strength personnel authorizations remained an open question subject to future OSD guidance/direction. The Army's initial position was that an item-by-item justification, as directed by the OSD memorandum, was not feasible. DARCOM's preliminary proposal was that WIMM items be reviewed for proper Federal Supply Class (FSC) coding and be transferred back if the WIMM FSC was appropriate. All CIMM FSC items would be screened against existing criteria for service management and be returned, as appropriate. The DARCOM position on the OSD memorandum was to be forwarded to HQDA by 15 November 1982.

Equipment Distribution

(U) DARCOM Support of the National Training Center (NTC). DARCOM continued to take an active role in the support of the National Training Center, Fort Irwin, California. The NTC was established in 1980 and became operational under the provisions of AR 350-50, dated 15 March 1980. The Army's NTC was a facility where realistic, intensified training was conducted and where an assessment of the Army's training readiness within the framework of common tasks, missions, and doctrine was made. DARCOM's role in this NTC mission was to perform materiel acquisition functions to include research, development, testing and evaluation, procurement, and logistics support of designated materiel. In FY 1982, much emphasis was placed in the areas of supply support, maintenance support and logistical assistance. Items in critical short supply were designated as "Hit List Items." Through intensive management by DARCOM and through HQDA out-of-DAMPL approvals, as well as redistribution actions taken by FORSCOM, the hit list items were reduced from 110 lines to 39 lines by the end of September 1982. Of the 39 lines, 21 lines remained to be supplied by DARCOM.

(U) In addition to supplying the required items, DARCOM provided on-site laboratory assistance to the Army Oil Analysis Program Laboratory as well as on-site maintenance and supply support to Direct Support/ General Support units at Fort Irwin. The Depot Systems Command (DESCOM) depots also provided a variety of support/assistance. Sacramento Army Depot provided Military Occupational Speciality (MOS) training, test equipment, and personnel to assist NTC in repair of Communication and Electronic Items. The Sharpe Army Depot direct supply support customers assistance team was made available to assist the 581st Maintenance Company in its storage operations. Tooele Army Depot conducted classes on tire classification. Sierra Army Depot provided storage space for ammunition overflow and Sacramento Army Depot provided supplemental Army Oil Analysis Program support until the NTC developed its own capability.

(U) During the period 17 August through 30 October 1982, the Materiel Readiness Support Activity (MRSA) provided guidance, assistance, and training in many varied areas of supply, including property accountability and property book maintenance, document register maintenance, and physical inventories. The Logistic Control Activity (LCA), Presidio San Francisco, California, also provided support in supplying periodic tailored logistic management information from the logistic intelligence file (LIF) to all concerned (HQ, FORSCOM; HQ, DARCOM; NTC) to aid in tracking of requisitions and in closing out due-in records, among other functions.

(U) Total Army Equipment Distribution Program (TAEDP). The TAEDP process became highly labor intensive, resulting in a lack of timeliness which restricted the usefulness of the product for execution purposes. To remedy this situation, a decision was made in March 1982 to develop a TAEDP Modernization effort. This system was to provide an enhanced capability to manage Major Item data. It would involve the incorporation of the latest state-of-the-art hardware and software support. Some of the major performance objectives of the new system were: To reduce the manual effort required to operate the system; increase timeliness of TAEDP; continue to provide all necessary data; provide flexibility to respond to HQDA guidance changes; and provide visibility of common items, both components and ASIOE. In order to accomplish some of these objectives, it was proposed to provide to TAEDP customers a floppy disk containing the output results of TAEDP, instead of the reams of paper and stacks of microfiche that were being provided. Customers would have micro or mini computers equipped with DBMS where they could run the floppy disk and create their own output products, as required, in a more timely manner. The development of a Mission Essential Needs Statement (MENS) was completed, and the development of the functional description (FD) was in progress.

(U) Part Number Conversion Program. During FY 1982, DARCOM instituted the Part Number Conversion Program. The program was designed to reduce the local purchase burden field units faced. DARCOM MSCs converted over 1,500 part numbers to national stock numbers during FY 1982 and established objectives to convert over 4,000 during FY 1983. The 1,500 part numbers converted in FY 1982 represented approximately 33,000 requisitions and an annual cost savings of over $1.6 million.

(U) Nonconusmable Item Program. The Nonconsumable Item Program (NIP) was established in 1974 by the Deputy Secretary of Defense, to eliminate unnecessary duplication in the management and logistic support of multiused nonconsumable items. Phase I of NIP established for each National Stock Number (NSN) a manager with responsibility limited to single submitter cataloger, procurement and disposal authority, and depot level maintenance authority, completing this phase.

(U) Phase II of NIP expanded the manager's responsibility to include total wholesale financial and asset control. This included: (1) a single DOD wholesale stock; (2) sole development of budgeting and funding of depot maintenance requirements; (3) single budgeting and funding of requirement to support wholesale stock; (4) responsibility for effecting credit exchange; (5) critical item management; and (6) determination, budgeting and funding of DOD wholesale war reserve requirements.

(U) Complete implementation of the NIP involved complex logistics system changes within all of the military services. These changes were identified and actions were underway to modify existing management information and control systems for this purpose. Due to the complex nature of the task, a flexible moratorium was in effect to prevent items from transitioning to fully integrated management arrangements if one or more using services could not support the single manager without exercising extensive manual work around procedures in the requirements determination, budgeting, funding, distribution and maintenance functions of the inventory control process.

(U) On 16 April 1982, the Military Logistics Systems Office (MILSO) approved MILSTRIP Change 98 which, when fully implemented on 1 May 1984, would provide standard DOD guidance for interservice requisitioning, status reporting, and materiel returns of nonconsumable items. With the accomplishment of the above, consolidation of wholesale inventories within the service assigned single manager responsibility could be expected.

(U) Systems Change Requests (SCR). During IPR I for Commodity Command Standard System (CCSS) release 62, the Logistics System Review Committee (LSRC) directed that the four largest Functional Coordinating Groups (FCG), one of which was stock control, to conduct a review/scrub that would eliminate unnecessary SCRs. The stock control FCG, under the leadership of DRCSM-PSP, took aggressive action to accomplish this task. As a result, 93 stock control SCRs were cancelled during FY 1982. This action resulted in a cost avoidance of $684,166. This review became a continuing requirement that would be taken as part of the normal SCR review process.

(U) Requisition Processing Performance. During FY 1982, a comprehensive review of NICP requisition processing performance was initiated with a view towards improving customer support and reducing order ship time. As part of this action, MSC requisition processing cycles were increased to two per day, Monday through Friday, and to one per day, Saturday, Sunday, and holidays. While significant performance improvements were not yet achieved, there were clear indications that significant improvements would soon be realized. In addition to the above system, changes had also been initiated that would allow a requisition processing cycle to be run the same time as MILSTEP reporting and backorder reconciliation/MOV, heretofore not possible.

Air Line of Communication (ALOC)

(U) ALOC provided for resupply by airlift to selected supply support activities (SSA) using the Direct Support System (DSS) procedures. All air eligible Class IX repair parts and maintenance-related Class II materiel were routinely resupplied to the SSAs by military airlift. Materiel was consolidated using 463L pallets at the area oriented depot for direct delivery to the SSA. Accomplishments during fiscal year 1982, by area, were as follows.

(U) Alaska. The order and ship time (OST) for IPD 0915, ASL, non-backordered Army materiel averaged 24.5 days during FY 1982, with a low of 18.0 days in September and a high of 30.5 days in November. During FY 1982, a monthly average of 26.45 short tons of materiel was lifted to ALOC-A DODAACs.

(U) Europe. During FY 1982, the number of ALOC DODAACs rose by 4 to 106. The New Cumberland Army Depot Consolidation Containerization Point CCP shipped 2.6 million lines to Europe in FY 1982, versus 1.8 million lines in FY 1981. Under ALOC were shipped 12,067 463L pallets (23,065 S/T) to USAREUR versus 6,530 463L pallets (18,766 S/T) in FY 1981. A similar growth in surface containers was experienced. The number of DSS-ALOC inbound containers to the CCP increased from 8,802 in FY81 to 11,844 in FY82. The CCP shipped 8,816 DSS containers in FY82 versus 6,530 containers in FY81.

(U) In order to improve support to USAREUR we negotiated with GSA to pre-position selective high-demand lines in our NCAD facility. There were now 117 lines at NCAD. This action resulted in a significant decrease in the GSA order ship time. Prior to positioning the GSA lines in NCAD, the order ship time was 46.9 days; as of 30 September 1982, the OST was 35.1 days. The OST for IPD 09-15, ASL, non-backordered Army materiel averaged 28.6 days during FY 1982 with a minimum low of 24.6 days in August 1982 and a maximum of 36.5 days in June 1982.

(U) Hawaii. The OST for IPD 09-15, ASL, non-backordered Army materiel averaged 28.6 days during FY 1982 with a low of 23.2 days in February and a high of 34.7 days in August. During FY 1982, a monthly average of 85.44 short tons of materiel was lifted to ALOC-H DODAACs.

(U) Japan. ALOC-JAPAN was implemented on 1 July 1982. The ALOC-JAPAN OST objective of 29 days for IPD 09-15, ASL, non-backordered requisitions was met by the Army with an FY 1982 average OST of 13 days, and by DLA with an average of 20.7 days. GSA exceeded the OST objective by 2.8 days, however this was attributed to the low volume of GSA shipments (less than one percent of the ALOC-JAPAN total).

(U) Korea. The ALOC-KOREA 31-day OST objective was reduced by three days in April 1982. The ALOC-KOREA OST objective of 28 days for IPD 09-15, ASL, non-backordered requisitions was met by the Army with an FY 1982 average OST of 25.6 days. DLA averaged 30.4 days and GSA averaged 41.8 days. GSA performance was attributed to the low volume of shipments (less than .5 percent of the ALOC-KOREA total).

The Direct Support System CONUS (DSS-C)

(U) This system provided for resupply of materiel direct to CONUS supply support activities from the wholesale CONUS depots using unitized throughput service. During FY 1982 the extension of DSS to the National Guard was continued. The DSS was implemented in 18 states in FY 1982, bringing the total of states receiving support under DSS to 50 states.

## Weapon Systems Management

### Aviation and Missile Systems

(U) Background. The Aviation and Missile Systems Division was organized on 15 October 1981 under the direction of COL Pierre V. Brunelle, the designated Division Chief. By February 1982, the two branch chiefs selected and on board were Mr. Jim Emahiser, GM-15, and Mr. George Moore, GM-15. Indoctrination, training, and organization were the primary focus of attention in administering the division.

(U) The most critical functional tasks facing the branch chiefs were the transition of the UH-60A BLACKHAWK from Development, Engineering and Acquisition to a fielded system, the concept of placing aircraft into POMCUS, and the tracking of the supportability requirements for PATRIOT, Multiple Launched Rocket System, and the new attack helicopter, AH-64. These were the major weapon systems which demanded immediate action. In the execution of weapon systems staff management, this division was the Weapon System Manager for 48 systems and the Weapon System Support Officer for 83 systems. The following events were significant during the fiscal year.

(U) Prepositioned Aviation Life Support Equipment (ALSE), 22 July 1982. ALSE Project Officer and FORSCOM agreed to preposition ALSE required for deployment of quick reaction requirements in FORSCOM. ODCSLOG aviation requested ALSE project officer review concept for prepositioning ALSE at all MACOMs and to develop alternate plans to keep prepositioned ALSE assets available to the entire Army.

(U) DOD Study Group Meeting on CH-47 Transmission Systems. On 13 September 1982, catastrophic failure of the transmission on a CH-47 in Manneheim, Germany resulted in several casualties. On 19-20 October, DRCSM-WAA participated in a meeting at Corpus Christi Army Depot. The Commander, TSARCOM requested MERADCOM to form a DOD Study Group to provide technical assistance in resolving problems encountered. Objectives of the study group were to: (1) conduct a technical evaluation of the CH-47A, B, and C forward, aft, and combining transmission systems, and (2) make any necessary recommendations that ultimately improved the near and far term operational capabilities of these transmission systems. A series of 10 study actions were developed, each having an action plan, responsible activity, and status of action.

(U) Aircraft Procurement Appropriation (APA) Review. HQ, DARCOM representatives participated in the FY 1984 midsummer AMP Review for the Aircraft Procurement Appropriation at TSARCOM on 6-9 July 1982. Areas that were reviewed included procurement of aircraft, aircraft spares, PIPs, DMPE, TMDE, and training services. No changes were made to the funded lines of equipment. However, two major issues developed that would impact the APA program. First, CECOM felt that they were underpricing avionic spares by approximately 50 percent. This was based on total spares to end item cost which approximated 13-14 percent. New cost data developed by CECOM indicated this cost was now 25-27 percent. Second, the AH-64 PM indicated that unknown DMPE requirements in FY 1984 might be as much as $73 million in a worse case scenario. These requirements were identified to the PM and would be further reviewed/finalized by the PM/TSARCOM/DARCOM/DESCOM.

(U) NIKE-HERCULES. This system was being phased out by US Forces, but would remain as a key air defense system for US Allies into the 1990s. A major Army policy change was staffed and approved which assigned HQ, DARCOM a continuing support role for US Allies after the US phaseout. This policy change was necessary for reasons of nuclear surety and safety. MICOM would provide the allies with support services on a cost reimburseable basis. As the Weapon Systems Manager for this system, this division was responsible for the staffing and approval of the policy change.

(U) ROLAND. HQ, DARCOM was tasked by HQDA, along with TRADOC, FORSCOM, and NGB, to address the feasibility of fielding the ROLAND to the NGB instead of to the active Army. Determination was made that fielding to NGB was viable and a HQDA decision was subsequently made to deploy ROLAND to the NGB, which was the first time in recent history that a new weapon system was designated to the NGB ahead of the active Army.

(U) PATRIOT/MLRS. Common item shortages critical to new deployments were addressed jointly by HQDA and HQ, DARCOM. These efforts resulted in the fill of shortages through directed diversion, redistributions, and substitutions. Offline actions of this type were expected to be necessary in FY 1983 through FY 1985 to compensate for the overall Army shortages of common items and associated support items of equipment.

Command, Control, Surveillance and Support Systems

(U) Introduction. The Command, Control, Surveillance and Support Systems Division was established 15 October 1981, with COL Ronald Baldwin assigned as Division Chief. Mission and function statements for the division and branches (Command, Control, and Surveillance Branch and Support Systems Branch) were those stated in DARCOM-R 10-2 dated April 1982, paragraphs 14-10 through 14-13.

(U) As indicated, the division was given a very diverse tasking. Although the only procurement appropriation to be managed by the division was Other Procurement, Army, the three activities covered in that appropriation were very complex. Major equipment responsibilities included such diverse items as clothing and individual equipment, Army watercraft, power generators, communication security and signals intelligence/electronics warfare devices, command and control systems, and materiel handling equipment.

(U) Early in 1982, at the urging of the DA DCSLOG Staff and as a result of the CACI study, the Clothing and Individual Equipment (CIE) responsibilities were separated and action initiated to create a

Commodity Management Office for Clothing and Individual Equipment (CMO/CIE). The concept of the COM/CIE was approved by the Vice Chief of Staff, Army, on 14 April 1982, along with a reorganized management structure for CIE in the Army. The concept was to establish a central point of operational lifecycle management within the Army for CIE. Temporary and overhire personnel were brought on board to begin the functions while permanent authorization was being obtained. As of 1 October 1982, permanent authorization had not been recieved. The organizational chart was expanded to reflect the CMO-CIE as a third branch. For CIE, assistance was provided to DA DCSLOG in developing the army regulation for lifecycle management of CIE, and the draft was in the process of being staffed at the end of September 1982.

(U) A second division mission statement change occurred in September 1982 when the responsibility for Bulk Petroleum, Oils and Lubricants was transferred to the Support Systems Branch. This change again resulted from DA DCSLOG directly requesting a "Focal Point" for Class III Package POL. The letter advising HQDA of the assignment was signed by LTG Hardin, DCGMR, on 29 September 1982.

(U) During the first year of implementation, much time was spent in finding office space, initiating office organizational files, hiring personnel, and training new employees. The key areas required to support the Army Program Planning and Budget Evaluation System (PPBES) were Army Materiel Plan Reviews (two times per year, nine locations, 3-4 weeks in duration total), Army Modernization Information Memorandum Review, major program review for systems, OSD/OMB hearings, preparations and testimony, and weapon systems management. Specific items of equipment that required intensive management were: Lighter Air Cushioned Vehicle-30; Clean Burning Diesel Forklifts; Materiel Handling Equipment and Commercial Construction Equipment; Petroleum, Oils and Lubricants, Bulk, Packaged and Equipment; Commercial Utility Cargo Vehicle; Battery Proliferation; Decentralized Automated Support System ($DAS^3$); AN/TLQ-17A Reconfiguration; AN/MSQ-103 Teampack; Off-the-Shelf Mini Computer; and SINCGARS.

(U) The CIE Weapon System Management Team was established in June 1982 with individuals from DRCDE, DRCQA, DRCLD, DRCPP, DRCIN, and DRCGC participating. A major issue surfaced concerning how the CMO-CIE would function as a life cycle manager, since the concept was different from the DARCOM concept of Weapons System Managers in DRCDE and DRCSM. After much discussion at the director and lower levels, agreement was reached with DRCDE that functional responsibilities for CIE development and engineering would be conducted by DRCDE and the item would transition to DRCSM upon approval/type classification. Tied into the agreement was the concept that since the CMO-CIE was the overall life cycle manager; all DRCDE actions and decisions would be coordinated

with the CMO-CIE, and the CMO-CIE would be the DARCOM CIE Point of Contact for MACOMs and the ODCSLOG proponent office.

(U) A coordinated effort was initiated with NLABS, TSARCOM, USASPTAP and members of the CIE management team to develop a DARCOM supplement to the army regulation for lifecycle management of CIE. Organizational meetings were held at NLABS, TSARCOM, USASPTAP and DPSC to discuss the functions of the CMO-CIE, interface with these commands, and establish a baseline of data on the CIE items not yet fielded. During June and July 1982, a memorandum of agreement (MOA) was developed and signed between NLABS and DPSC to help bridge the transition from development to procurement of CIE. The CMO-CIE joined DLA in the formation of a Task Force on Clothing and Textile Quality with the Chief, CMO-CIE serving on the Task Force Steering Committee and as chairman of the Innovation Subcommittee. Of 43 initial tasks for the task force, 17 were accomplished during July and August, with the remainder scheduled for completion in FY 1983. A major accomplishment was the decision to make guide samples available at pre-award surveys and post-award conferences for clothing bag CIE items. The Innovation Subcommittee had an initial organization meeting and developed study tasks for FY 1983. During July and August, a new procedure included in the NLABS-DPSC MOA for CIE was implemented, that of field testing initial production items for fit, sizing, and construction as a final check on problems prior to mass production. Expanded first article coats, skirts, slacks, and shirts of the new Women's Classic Uniform were fitted on 150 female soldiers at Fort Dix and worn for four weeks by 20 of the female soldiers. This successful test surfaced a need to make tariff adjustments, minor specification and pattern adjustments, and additional quality checks prior to further mass production of the items. Long range programs were initiated to improve integrated logistics support (ILS), quality and customer satisfaction feedback, and supply system responsiveness improvements. These programs were in the planning and initial coordination stages at the end of FY 1982.

(U) The battle dress uniform (woodland and desert) was the leading CIE problem item during FY 1982. Shrinkage complaints diminished during the last half of FY 1982 with supply shortages being the major cause of concern and management as the 1 October 1982 date approached for possession of two uniforms per soldier. On 30 September 1982, the requirement was extended 60 days to allow the supply system to catch up. Major cause of the shortages were tariff shifts following EDOS. Combat boot failures during test led to program cancellation and direction to develop a walkoff program to test commercial boots. An acquisition strategy was developed and approved. It included solicitation of commercial boots for walkoff testing against the standard and service developed boots. The program was put into action in September as solicitations were sent to 112 boot manufacturers,

both foreign and domestic. Vinyl overboots surfaced as an item with low acceptability and durability in USAREUR. Permission was granted for USAREUR to requisition the five Buckle Black Overboon, which resulted in a 10-month backorder due to unforecasted demands. Chemical protective garments (overgarment, boot, and glove) were reviewed by a DA General Officer IPR and a woodland camouflage version of the overgarment adopted as an interim use item following considerable NLABS engineering and testing. A Mattress Pad replaced the Pneumatic Mattress as a result of the short shelf life (18 months) of the Pneumatic Mattress. Customer dissatisfaction with the bulkiness of the pad and perceived lack of comfort was voiced by the XVIII Airborne and V Corps. TRADOC and NLABS agreed to look for ways to reduce bulkiness and to have the Clothing Advisory Group review the requirements. The Kevlar Helmet was fielded on limited basis. Problems with the chin strap and suspension assembly surfaced. The chin strap drawing did not allow sufficient tolerances and several chin straps came apart during an airborn jump. Some suspension assemblies were assembled wrong--a quality problem. The items were corrected, but the chin strap defects prompted the Chief of Staff, Army to request a review of quality. The review was completed. Cold Weather Hat wholesale assets were depleted during an unforecasted "Plus-up" of Reserve and National Guard units with a broad range of cold weather CIE. Since the hat was an item issued to all recruits during their initial issue of clothing bag items, this item shortage became critical. Assets were redistributed from Guard units to TRADOC to fill some requirements. At the end of FY 1982, the shortages were projected to continue for 90 days.

Ground Combat and Munitions Systems

(U) Introduction. The Ground Combat and Munitions Systems Division was established on 15 October 1981 with Colonel Verle B. Hammond assigned as Division Chief. The Division was divided into two branches, Ground Combat and Munitions Systems, each headed by a GS-15 branch chief. The two branches were further divided into teams. The Ground Combat Branch was divided into the following teams: Tanks, Armored Personnel Carriers, and Weapons. The Munitions Systems Branch was also divided into three teams: Conventional Ammunition, Special Ammunition, and Demilitarization/Disposal. The various job series authorized within the Division allowed for a range of expertise in logistics (maintenance and supply, quality assurance, major and secondary item management, demilitarization and disposal). Within the past year, the Ground Combat and Munitions Systems WSM/WSSOs have participated in and have generated a number of significant weapon systems management actions. Some of these actions will be discussed in more detail.

(U) M901 Improved TOW Vehicle (ITV). The M901 ITV achieved full release status during the 4th quarter FY 1982, after being assessed as fully supportable in the field by the class IX supply system. Fielding

of the ITV began in USAREUR during January 1980, under conditional release. Subsequent releases to USAREUR, FORSCOM and POMCUS continued to be conditional (due to low repair parts availability) until intensive management actions directed by HQ, DARCOM resulted in unconditional release of the ITV on 13 July 1982. In regard to fielding of ITVs in the Army National Guard (ARNG) during FY 1982, 51 ITVs were diverted from FORSCOM Active Army Units to the 48th Brigade. The diversion action resulted from a HQDA decision to deploy ITVs in the 48th Brigade as a round-out to the 24th Infantry Division. ITV hand-off and new equipment training were completed during 4th quarter FY 1982.

(U) M60A2 Tank. In September 1982, the Army Vice Chief of Staff approved a recommendation proposed by the Deputy Chief of Staff for Operations and Plans (DCSOPS), to convert M60A2 tank assets to Armored Vehicle Launched Bridges (AVLB). This recommendation was the result of an extensive analysis weighing the costs and benefits of the various utilization options for the M60A2. As background for this decision, HQ, DARCOM, with Program Manager (PM) M60 assistance, had provided DCSOPS with updated cost data and production schedules for the various M60A2 conversion options in August 1982. DARCOM concurrence with the AVLB option was also provided at that time. Earlier cost and production data had been provided to DCSOPS in January 1982.

(U) M60A3 Tank Thermal Sight (TTS). The M60A3 TTS was the latest configuration of the M60 series tanks. The M60A3 TTS was in new production at the Detroit Army Tank Plant. In addition, older M60A1 tanks were being converted to M60A3 TTSs at Anniston and Mainz Army Depots. The M60A3 TTS had been fielded in Europe since January 1980. As of September 1982, 25 Battalion equivalent issues had been completed in Europe with 98/99 percent of authorized stockage list (ASL), prescribed load list (PLL), and special tools and test equipment (STTE). All of the M60A3s in TOE units were upgraded to TTS configuration. The CONUS fielding of M60A3 TTS tanks began at Fort Stewart, Georgia, in February 1982. During July 1982, 18 M60A3 TTSs were diverted from FORSCOM Active Army Units to the 1/108th Armored Division of the Georgia National Guard (ARNG). All of the CONUS fieldings to date had progressed extremely well with all units receiving 100 percent ASL, PLL, and STTE.

(U) Department of the Army Committee for Ammunition Logistics Support (CALS). Under the auspices of AR 15-16, the CALS was designated to control the allocation, distribution, and redistribution of Army conventional ammunition items identified as being in short supply or having the potential of being a short supply item. CALS meetings were convened semi-annually or as necessary at HQ, ARRCOM. The Munition Systems Branch Chief acted as Chairperson in the absence of the Commander, DARCOM and provided policy and guidance to the committee. An emergency

CALS meeting was held at ARRCOM 1-4 December 1981, with the purpose of focusing on proposed training adjustment for FY 1982 and reviewing 41 specific items for which proposed allocations were approved or adjusted by the committee. Another CALS meeting was held at ARRCOM 9-12 March 1982, specifically to ensure that an equitable share of assets were allocated to the various commands, i.e., WESTCOM and USAEIGHT, for PPWR, basic load, training and operational projects. An in-depth review was conducted on training allocations, specific items for WRSA, Europe Call Forward Program and retrograde. The next CALS meeting convened 10-13 August 1982. Discussion dealt with the Near Term Prepositioned Force (NTPF) ammunition requirements to be loaded on board ships in the September 1982 timeframe. The requirements were initially identified on CALS studies with no proposed allocations. The committee addressed each requirement individually and made allocations as appropriate during the meeting by purpose code to the NTPF. This meeting of the CALS was scheduled to address 92 items. However, an additional 14 items were addressed due to the NTPF requirements which had a potential impact on training or required a decrement of war reserve stock. The DARCOM Chairperson briefed the CALS on the logistic impact of the unforecasted/unfinanced drain to the system and the logistic management initiatives to alleviate the situation.

(U) USAREUR Conventional Ammunition Call Forward Program. The Call Forward Program, Europe, provides for a time phased buildup in stocks to meet USAREUR's contingency requirements. This program was first developed in late 1976 in response to changing combat scenarios, tactics and increased authorizations. Shipments to Europe increased dramatically beginning in FY 1979 (151,000 short tons) and continued thereafter. Against a plan of 86,000 short tons for FY 1982, 82,600 short tons were shipped. For FY 1983, the Call Forward Program was 68,400 short tons. The USAREUR storage capacity is expected to be full by FY 1985. As a consequence, the Call Forward Program was anticipated to be reduced by USAREUR to 70,000 short tons per year, with increasing emphasis on retrograde. ARRCOM has asked USAREUR to provide details concerning their five-year forecast to insure coordination of transportation funding, depot workloading and other related logistics functions.

(U) Demilitarization of Surplus Conventional Ammunition. The conventional ammunition demilitarization inventory was and continued to be a source of Army concern due to its continual growth. The Army has pursued a number of initiatives and has conducted studies to determine the best approach to minimize the inventory considering environmental and economic methods of disposal. The most recent initiative was an attempt to test the market place by offering for sale surplus ammunition. Four test sales were offered, but none were successful in generating interest in commercial demil. Private contractors indicated that perhaps off-post demilitarization would be a potentially feasible approach if quantities offered for sale were large enough to make a profit.

(U) In June 1982, the Assistant Secretary of Defense issued a memorandum to the Secretary of the Army and Navy, and the Defense Logistics Agency stating that there was significant contractor interest in off-site contract ammunition demilitarization, and it should be pursued. As a result of the OSD memorandum, DARCOM organized a Blue Ribbon Panel in August 1982. The task of the panel was to analyze the OSD sales proposal, and if found to be unacceptable, develop acceptable and auditable alternatives. The following assumptions were made in the study: (1) The Government would pay transportation, handling, packaging, and inspection costs (directed verbally by OSD); (2) the Government would provide on-site surveillance and certification; and the capability and capacity of existing in-house facilities would not change and would continue to be used. The Blue Ribbon Panel completed its study in September 1982 and recommended expansion of in-house demilitarization and other initiatives to make better use of fielded ammunition to slow the generation of excess. The recommendation to expand was made in consideration of the estimated, minimum high cost to sell--$107 million. Dr. Webster (OSD(MRA&L)) was briefed on 7 October 1982; however, no decision was made. It appeared that the total proposed sale of 200,000 short tons would not be made due to high cost, government risk, and lack of profit potential for contractors. An Army/OSD decision was expected following a 1-2 December 1982 visit by Dr. Webster and Mr. Orsini to Hawthorne AAP.

(U) HELFAST. The Human Engineering Laboratory Forward Ammunition Supply and Transportation (HELFAST) conferences contributed significantly to initiatives in the ammunition handling enhancement area. Although HELFAST was not an officially chartered Army working group, the free exchange of information and ideas inspired members to willingly accept tasks with the known support of other commands. A major initiative, Battlefield Robotic Ammunition Supply System (BRASS) was a future ammunition supply point system which envisioned the use of computers to simplify field issue and handling under combat conditions. Although not yet determined to be feasible, it was the most modern approach to ammunition handling and had the endorsement of most MACOMs. The clean burning diesel forklift, highly desired by USAREUR for use inside storage magazines, was another issue in which HELFAST assisted by acting as a conduit to expedite testing and procurement. ARRADCOM and MERADCOM teams visited USAREUR to gather additional data on the clean burn diesel and to provide results to the DA, USAREUR, and DARCOM staff.

(U) Packaging of ammunition had also drawn considerable attention in HELFAST conferences. Because this forum offered action officer communication between the user representative (TRADOC) and DARCOM on a continuing basis, packaging issues were made more definitive by users. The effect of this was a trend toward packaging for the user and not solely for the shipping and storage activities. A significant

accomplishment of HELFAST was the visibility it provided. The recently organized Munitions Systems Branch of Supply, Maintenance, and Transportation was heavily involved in all facets of ammunition supply and on occasion briefed the conferees.

(U) Procurement Ammunition, Army. The following data shows the basic information on the available ammunition program in FY 1982:

| | ($ in Millions) |
|---|---|
| Total Available Program | $ 2,517 |
| Obligation Goal | 2,138 |
| Obligation Performance | 2,339 |

The reason for exceeding the goal by a significant amount was the implementation of the Conventional Ammunition Working Capital Fund. This resulted in obligations being recorded when funds were received into the CAWCF instead of upon award of a contract. Responsiveness to the newly implemented Matrix Management concept was demonstrated by the close cooperation of the Munitions Branch's Copperhead WSSO and Ammunition Appropriation Manager with DEA's Copperhead WSM to identify and reprogram in excess of $12.0 million to fund prior year contract cost growth. The appropriation manager and WSSO had also worked closely with the Production Directorate on workloading issues.

(U) Army Mortar Requirements. On 21 October 1982, CACDA briefed the Chief of Staff, Army on future Army mortar requirements. This was the most recent action in a 10-year old issue regarding which mortars, how many and at what level (company or battalion) they should be authorized. The decision would have a lasting effect on ammunition procurement and development including a guidance assisted mortar projectile. The ODCSOPS tasked TRADOC to take the more recent mortar studies, review them and make a recommendation on the types and structure. Among the mortars considered were the Light Weight Company Mortar System (LWCMS) (60mm), the Improved 81mm (I-81), the 107mm (4.2 inch), the Product Improved 107mm and the 120mm. The CSA made the following decisions: (1) Eliminate 120mm from further consideration for Army-wide use; (2) eliminate LWCMS except for ranger battalions and special purpose requirements; and (3) consider 107mm and I-81mm as the only candidates for Army-wide mortar requirements. The CSA deferred decisions on selection of an Army medium and heavy mortar and the mortar force design until a detailed transition plan and personnel staffing plan was presented. The CSA did, however, direct that DARCOM place emphasis on a Product Improved 107mm and urged research on improving the lethality and range of fielded ammunition.

(U) DARCOM Class V Conventional Ammunition Pre-AMP Review. The first HQ, DARCOM Class V Ammunition Pre-AMP Review was held on 8 July 1982 at HQ, DARCOM. Representatives from ARRCOM, ARRADCOM, MICOM, and TACOM were in attendance. As the initial step in establishing a consolidated DARCOM position, the review was considered to be successful. Issues and proposed solutions generated from the DARCOM Pre-AMP also proved to be valuable at the DA/DARCOM Summer AMP Reviews held at HQ, ARRCOM on 15-16 July 1982.

(U) FY 1984 Joint Summer AMP Review - Ammunition 15-16 July 1982. The Joint Summer AMP Review was held at HQ, ARRCOM on 15-16 July 1982 and was chaired jointly by HQDA; HQ, DARCOM; and HQ, ARRCOM. This was the first Ammunition AMP in several years in which HQ, DARCOM was anything but a silent partner. Approximately 216 items were presented for review and discussion. The review was limited in scope with emphasis on the FY 1984 program. However, adjustments were made to the FY 1982 and FY 1983 program. Based on decisions made at the joint session, funds were realigned with emphasis on small arms training requirements and on resolving the imbalance of fuzes and propelling charges to projectiles.

(U) Standards in Training Commission (STRAC). HQ, DARCOM was tasked by DA to make assessment of the supportability of training requirements for Class V Conventional Ammunition. DRCSM-WGM served as an integral member of the DARCOM team that developed the command position for the STRAC requirements assessment. The STRAC weapons committee established standards for 37 separate weapon systems which generated requirements for 106 DODICS. This office conducted a supportability analysis on the 106 DODICS which was used to establish a base line support level with impact through the POM. This information also allowed the STRAC committee to determine what level of training was really viable.

(U) FY 1982 Joint Conventional Ammunition Program (JCAP) Coordinating Group Accomplishments, JCAP Demil/Disposal Functional Group Meeting, Eglin AFB 30-31 March 1982. During FY 1982, emphasis was placed on completing required coordination and publication of the demilitarization and disposal plans, Part 13, DOD 5160.65-M. Part 13 was completed and agreed to by all Services for publication. An effort was also made during the year to finalize the military standard on the development and publication of Depot Maintenance Work Requirements (DMWR). A revised edition was completed during FY 1982 and was in the process of being staffed with the Navy and Air Force. This item was to be carried over into FY 1983 with the publication projected in the second quarter. During FY 1982, a final review and approval of the data item description (DID) was accomplished. All the Services agreed to the DID and the Air Force was taking final action to have the DID

published by the Department of Defense. Also during FY 1982, the mechanism for establishing forecasting requirements was developed, agreed to, and incorporated in Part 13 of DOD 5160.65-M. A carryover action in FY 1983 would be to finalize the specific format to be provided by the Services to the Army, as well as the specific format to be provided to the Services by the SMCA.

(U) Training and Certification Program for Ammunition. During FY 1982, the Munitions Systems Branch worked closely with ARRCOM, USADACS and DESCOM on establishing a training and certification program for ammunition operators. Emphasis was now being placed on having a well trained workforce to enhance safety and operational proficiency at DARCOM installations and activities having an ammunition mission. It was felt that this program would be a valuable asset to the entire DARCOM workforce.

(U) In-House Ammunition Training. As a result of the realignment within DARCOM, a need arose in obtaining additional training for the incoming Munitions Systems workforce. Upon the request of the Munitions Systems Branch (DRCSM-WGM), USADACS presented a one-week ammunition course at HQ, DARCOM, 28 June through 2 July 1982. The course was oriented toward the technical aspects of conventional and toxic chemical ammunition.

## Resource Management

### Introduction

(U) The Resource Management Division was reorganized by Project RESHAPE on 15 October 1981, relocating the former Programs Office of the Directorate for Procurement and Production (DRCPP-P) to the Directorate for Supply, Maintenance, and Transportation (DRCSM) and redesignated it the Execution and Control Branch (DRCSM-WRE). As part of the RESHAPE reorganization, the appropriation managers in DRCPP-P were transferred to the appropriate Weapon Systems Division in the Supply, Maintenance, and Transportation Directorate.

(U) The following shows the basic data on the available program in FY 1982. These figures include direct, customer, and prior year carry-over from the two preceding years.

| | ($ in Billions) |
|---|---|
| Total Available Program | $18,536 |
| Obligation Goal | $14,504 |
| Obligation Performance | $14,525 |

The DARCOM Army Procurement Appropriation goal was accomplished by 100.1 percent to HQDA. In FY 1982, the Program and Fund Control System (PFCS) became the official system for release and control of the Procurement Appropriations program funds from HQDA to HQ, DARCOM and from HQ, DARCOM to the Major Subordinate Commands. The system also controlled all reprograming actions initiated by DA, DARCOM, and Major Subordinate Commands.

Major Items

(U) Activities of this Branch during FY 1982 included the following major actions.

(U) Stratification Report of Principal Items (DD 1138-1). The US Army Finance and Accounting Center (USAFAC) required an annual report of the total dollar value of principal items in storage and in hands of using organizations. USAFAC used this data to compile a report to the Treasury Department. Each July, DRCSM-WRM has provided procedural guidance to MSCs/MRCs for preparation of the stratification report. In November, DRCSM-WRM provided a flash report to DRCCP-FOR that reflected the total consolidated principal item inventory amount. This was followed by an official report, complete with narrative analysis, which was submitted in December 1981. The total reported value of Army stock principal items as of 30 September 1981 amounted to $21.1 billion, an increase of $3.8 billion from the same period in 1980. In addition, the total value of all Army weapons and other military equipment in use as of September 1981, was determined to be $34.8 billion, 15 percent more than the prior year.

(U) Base-Level Commercial Equipment (BCE). Base-Level Commercial Equipment (BCE) was nonstandard Procurement Appropriation, Army (PAA) funded end items of equipment, authorized by TDA/JTA, costing $3,000 or more and not centrally managed or procured by the Army (e.g., commercial radios, lawn mowers, and replacement food service equipment). The program to fund these Operations and Maintenance, Army (OMA) type items with PAA dollars was initiated in the late 1960s when DOD guidance indicated these items would no longer be funded with OMA or the Army Stock Fund (ASF). Full implementation of that guidance, within the Army, occurred in FY 1981 as a BCE dedicated procurement budget line item in the Other Procurement, Army (OPA) appropriation. In general terms, the BCE program required that DARCOM include BCE requirements in its OPA budget requests. Implementation of this guidance obviously eliminated much of the flexibility that DARCOM enjoyed in funding BCE needs via OMA/ASF allocations prior to FY 1981. It also required more definitive forecasts in programing such critical BCE requirements as word processing equipment, nonsystem peculiar training devices, and locally procured facility engineer and GOCO equipment. A detailed list

of BCE items and exclusion was to be found in DA Circular 310-81-11, dated 1 October 1981, and distributed throughout DARCOM on 10 December 1981. A list of BCE items was also provided as a separate microfiche in the Army Master Data File. The DARCOM BCE program for FY 1984 was $4.4 million CORE and $32.7 million unfunded. This discrepancy between the CORE and unfunded resulted in DA taking a harder look at the CORE Total Obligation Authority (TOA). DARCOM obligations for FY 1981 and FY 1982 BCE funds were 52 percent and 10 percent respectively, as of 1 July 1982.

(U) High Technology Test Bed/High Technology Light Division (HTTB/HTLD). While the Directorate for Readiness had primary responsibility for HTTB/HTLD within HQ, DARCOM, DRCSM-WRM had been designated Point of Contact within the Directorate for Supply, Maintenance and Transportation. Development of Modified Tables of Organization and Equipment (MTOE) for the Brigade Slice of the 9th Infantry Division from Automated Unit Reference Sheets (AURS) and input to the Structure and Composition System (SACS) to create documentation for these units was accomplished in conjunction with this office. This office, Force Modernization Division, and Equipment Authorization Review Activity (EARA), helped expedite transition of theories approved under HTTB concept for application to HTLD. Weapon Systems Divisions have provided equipment/hardware expertise which allowed for increased equipment availability through use of standard items for this program.

(U) Support Equipment Requirements/Data Interchange. Several project managers had experienced problems in obtaining common support equipment in sufficient quantities and within timeframes required to meet their system's initial fielding dates. The data interchange process was the means used to identify support equipment required by one MSC but managed and procured by another MSC. In order to get a handle on this support equipment problem, this directorate initiated a manual, semiannual review of support equipment requirements identified via the data interchange process. This review, held in conjunction with the Army Materiel Plan (AMP) reviews, enabled this directorate to relate support equipment requirements to the weapon systems/assemblages that they would support, identify shortages (quantity/dollar) to procurement programs, and balance support equipment requirements with the systems/assemblages that they support. This semiannual review will be conducted in conjunction with the AMP reviews until such time as the AMP modernization effort is functional, which will automate the process--estimated about 1986.

(U) Army Materiel Plan - Modernization (AMP MOD). Even though AMP MOD was project managed by DRCSM-PAS, this branch had been actively involved in development of the Functional Description (FD) for

the AMP MOD project. This involvement was crucial because this office was the functional Point of Contact for the project and, in this capacity, had to assure that the FD fully described all the requirements that were envisioned and provided for the FD. The AMP MOD was vitally needed for the real-time exchange of major item data between and among the HQ, DARCOM Major Subordinate Commands and HQDA. The involvement of this office would be maintained at a very high level until the planned completion of AMP MOD, estimated to be during FY 1986.

Secondary Items - Management and Budgeting

(U) During FY 1982, action was taken to automate the wholesale stock fund and Procurement Appropriation Spares and Repair Parts budgets. This action was determined to be critical in light of continued criticism of the DARCOM budgets by DA/OSD. Boeing Computer Services was awarded the contract for development of the software on 10 March 1982 with delivery to be 9 September 1982. Formal acceptance was accomplished on 3 September 1982. The software package, known as the Wholesale Budget Preparation System (WBPS), had eliminated the mathematical/typographical errors and also a substantial amount of the errors encountered in moving data between budget forms. It gave the budget analysts at DARCOM and the MSCs the time to review the budget contracts in lieu of "crunching numbers." The first budget submitted was to be the FY83 Midyear Review. Due to a sound fiscal year (FY) 1982 stock fund program and management emphasis on program execution, the FY 1982 execution of the DARCOM Division (Wholesale) Army Stock Fund Program continued to improve. The program accomplishment rate was 99.3 percent ($2,049.5 million approved and $2,034.9 actually obligated). The Procurement Appropriation Program for Secondary Items continued to grow dramatically even considering the impact of inflation. This is shown as follows:

| | | ($ in Thousands) |
|---|---|---|
| FY 1977 | - | $ 230.5 |
| 1978 | - | 285.4 |
| 1979 | - | 317.7 |
| 1980 | - | 470.6 |
| 1981 | - | 698.1 |
| 1982 | - | 1,088.0 |
| 1983 | - | 1,765.0 (Proposed) |
| 1984 | - | 1,906.5 (Proposed) |

The growth was primarily due to the introduction of new or modified weapons systems such as BLACKHAWK, AAH, CH-47 mods, M-1, M60-A3, FVS, ITV, Patriot, Pershing, a myriad of communications-electronic systems/equipment, a substantial increase in War Reserve Funds, and inflation.

Not only were program dollars increasing, but the number of Procurement Appropriation secondary items was increasing. Stock Fund and Procurement Appropriation Spares and Repair Parts budgets continued to be very closely scrutinized at DA, OSD and OMB levels for both replenishment and initial provisioning requirements. Areas most closely reviewed continued to be administrative leadtime, production leadtime, and repair cycle times.

OMA Programs

(U) P7M Depot Materiel Maintenance and Support Activities. The FY 1982 funding for Depot Maintenance (overhaul/conversion) hardware programs was $1.114 billion. DARCOM was able to meet congressional guidance of "zero" backlog. In FY 1982, the increased programs were primarily in Aircraft (OH-58/OH-6 and engines and components), Combat Vehicles (M60 Series Tanks and engines and components), Communications and Electronics Equipment, and Missiles. FY 1982 funding for Maintenance Support Activities was $413 million. While this funding level covered approximately 60 percent of the total requirements, it did not keep pace with the requirements. Equipping the Forces systems continued to consume large amounts of resources (manpower and funding) at the expense of the fielded systems/equipment.

(U) During March 1982, OMA Programs Branch prepared testimony in support of the FY 1983 budget for Depot Maintenance and Maintenance Support Activities. The testimony was presented by MG James Welch, Director for Supply, Maintenance, and Transportation, on 15 March 1982, to the Subcommittee on Preparedness, Senate Armed Services Committee. OMA Programs Branch representatives served as backup witnesses to MG Welch and responded to Congressional inquiries following the presentation. The testimony was well received by the subcommittee.

(U) PE 721111 Supply Depot Operations. This provided for the receipt, storage, issue, and related functions of assigned stocks in Army depots and arsenals, and as in past years, receiving and shipping were fully financed. Emphasis continued to be placed on force modernization, prepositioning of materiel configured to unit sets (POMCUS), prepositioned war reserve stocks (PPWRS), and the ammunition buildup in Europe and Korea. There still remained shortages of resources to accomplish the full range of functions in this program element. At year end, the major unfinanced requirements were in the inventory, rewarehousing and other storage functions.

(U) PE 721112 Supply Management Operations. This provided for the operation of CONUS National Inventory Control Points (NICP), Secondary Item Control Centers (SICC), and Service Item Control Activities (SICA). The major functions of actions and directions,

reviews and studies, cataloging and logistic changes, and requisition processing were adequately resourced permitting the timely accomplishment of the major portion of these functions.

(U) PE 728009, 728010, First and Second Destination Transportation, and 728013 Oversea Port Units. All transportation missions were fully funded in FY 1982 and were accomplished. The movement of the hard targets was considered the lowest mission priority and had no significant impact on readiness. Emphasis continued to be placed on prepositioning materiel configured to unit sets (POMCUS), prepositioned war reserve stocks (PPWRS) and the ammunition build-up for Europe and Korea. The oversea port unit mission was fully resourced and the assigned mission was accomplished.

(U) PE 208019 and 381011 Cryptologic Activities. The Electronic Materiel and Readiness Activity (EMRA) provided materiel management, supply, maintenance and support functions for Federal Supply Classification (FSC) 5811, and provided engineering and technical assistance to strategic intelligence units. EMRA was under the operational control of the Communications and Electronics Command (CECOM). The Signals Warfare Laboratory (formerly Signal Intelligence and Electronic Warfare (SIGINT/EW) Research and Development Activity) was under the operational control of the Electronics Research and Development Command (ERADCOM). This laboratory was responsible for the research, development and acquisition of new and improved signals intelligence and electronic warfare equipment and systems to support operational missions. The resourcing of these program elements in FY 1982 met all known requirements.

(U) PE 393401 Communications Security (COMSEC). COMSEC commodity management at Fort Huachuca, Arizona provided for the operation of the inventory control point, the maintenance point and the central point of record for COMSEC materiel. Lexington-Blue Grass Army Depot Activity (LBDA), Kentucky provided for the receipt, storage, maintenance, modification, design control and issue of COMSEC materiel. In FY 1982, the COMSEC functions were adequately resourced to meet field requirements.

## Readiness

### Organization

(U) During FY 1982, HQ, DARCOM Directorate for Readiness underwent various key personnel changes. Mr. Michael C. Sandusky reported for duty as Deputy Director of Readiness on 4 October 1981. With the HQ Realignment on 15 October 1981, the Readiness Directorate experienced considerable personnel turbulence. Four Associate Directors were transferred to the Directorate for Supply, Maintenance, and Transportation.

Two Associate Directors were transferred to Readiness from Plans, Doctrine and Systems. The Directorate had an internal realignment to a Division configuration, and with the transfers effected, the key organizational positions were filled as follows:

| | |
|---|---|
| Director | - MG Arthur Holmes, Jr. |
| Deputy Director | - Michael C. Sandusky |
| Executive Officer | - LTC Laud R. Pitt, Jr. |
| Chief, Operations and Administrative Office | - Vacant |
| Administrative Officer | - Peggy J. Barnett |
| Chief, Concepts and Doctrine Division | - COL Mark L. Reese |
| Chief, Military Plans and Operations Division | - COL Celeste T. Richardson |
| Chief, Readiness Assistance Division | - COL James G. Edge |

LTC Laud R. Pitt, Jr., retired from Federal Service effective 31 October 1981 and LTC Daniel J. Peck was assigned as Executive Officer with a reporting date of 16 November 1981. In May 1982, CPT Robert M. Seitz was assigned as Chief, Operations and Administrative Office, and reported for duty on 30 September 1982. On 20 August 1982, MG Holmes departed the Directorate for his new assignment as Deputy Inspector General for Inspections, HQDA. Mr. Sandusky was named Acting Director pending the arrival of BG William E. Potts scheduled for 4 October 1982.

Key Issues

(U) Thrusts for DARCOM Direction ($D^2$). In support of the DARCOM program for initiating Management by Goals and Objectives, the Readiness Direcotrate participated in the development of three $D^2$ thrusts to outline and better coordinate command actions relative to Readiness Assistance, Mobilization and Emergency Planning, and Support of the High Technology Test Bed. These three thrusts were directed at: (1) Improving command awareness of the Logistic Assistance Program and promoting its ability to positively influence total Army readiness; (2) planning and implementing a realistic and viable wholesale support capability that effectively integrated operational plans, people, equipment, and facilities in response to wartime requirements; and (3) insuring that equipment proposed for the High Technology Light Division was available and supportable for testing under innovative but practical operational concepts.

Concepts and Doctrine

(U) Organization. In October 1981, the Associate Directorate for Concepts and Doctrine, Plans, Doctrine and Systems Directorate, was redesignated the Concepts and Doctrine Division. The Associate Director was redesignated the Division Chief. In May 1982, the Concepts and

Doctrine Division was reorganized from an informal three-team structure to a formal two-team structure. This resulted in a Concepts and Doctrine Team headed by a newly-established GM-15 position and a Studies Team headed by a previously authorized LTC position. No net increase in personnel strength resulted from this realignment, as the establishment of the GM-15 position was offset by the disestablishment of a GS-14 position. This realignment resulted in an overall improvement in management of division resources/workload.

(U) Logistics Research and Development (LOG R&D). On 22 February 1982, the ADMR announced to DA DCSLOG that the Concepts and Doctrine Division, Directorate for Readiness, would be the DARCOM focal point for LOG R&D. During March of 1982, the Under Secretary of Defense, Research and Engineering directed the military services to increase logistics emphasis on Independent Research and Development (IR&D) for improved weapon system support and readiness. On 27 May 1982, DARCOM responded to a DA, DCSRDA tasking to develop an Army implementation plan for adding LOG R&D to the IR&D process. Concurrently, DARCOM provided DA with a proposed definition for LOG R&D. During the 4th quarter FY 1982, actions centered on development of a proposal on how to initiate the development of an Army LOG R&D plan. The Directorate (DRCRE), in coordination with DRCLD, DRCSM, and DRCDE, responded to informal DA requests for support on budgetary input required by OSD. A need was identified for additional manpower (6 spaces) to establish a permanent management structure. Specific projects were identified for increased FY 1984 funding under the LOG R&D program title. These requirements would not be finalized until FY 1983. Carryover actions into FY 1983 included requirements to further refine the existing definition of LOG R&D, define command relationships and responsibilities within the Army, and submit a budgetary requirement for the FY 1985-89 Program Objective Memorandum (POM) in terms of manpower and dollars for initiation of a formal Army LOG R&D program.

(U) Mobilization Base Requirements Model (MOBREM). MOBREM was a computer-assisted methodology to determine mobilization TDA manpower requirements for the CONUS base. The Concepts Analysis Agency was responsible for the development of this model. The DARCOM module of MOBREM simulates the issue of assets against mobilization requirements and converts the tonnages distributed to depot personnel requirements. To feed the model, the Concepts and Doctrine Division had identified data sources within DARCOM and had submitted systems change requests, when appropriate, to institutionalize input of wartime materiel requirements and depot assets data. A crosswalk was completed which would convert MOBREM-generated manpower requirements to functional AMS positions in the TDA. The tonnages generated by the model would be converted to personnel requirements using factors developed by DESCOM.

Various output products had been reviewed to determine the best way to display the workload and personnel requirements reports. Initial report formats were further refined throughout the field test evaluation, which began in April 1982 and continued throughout FY 1982. DARCOM furnished asset data to support this test. The model was scheduled for implementation in April 1983.

(U) Rationalization, Standardization, and Interoperability (RSI). The Concepts and Doctrine Division's RSI readiness initiatives were pursued along several fronts during FY 1982. Meetings of the Supply Systems Sub-Committee (SSS-C) of the NATO Land Forces Logistics Working Party were held on 30 November through 4 December 1981 and 10-14 May 1982. The May SSS-C meeting was hosted by the United States and was held at HQ, MICOM. As a result of this meeting, the United States and Canadian delegations pursued further sessions to draft a concept document which was intended to guide (blueprint) the Logistics Working Party efforts. Discussion of this concept document was to be the first item on the agenda of the SSS-C meeting to be held in November 1982. As a result of participation in the REFORGER '81 exercise, several materiel interoperability initiatives arose which were pursued throughout FY 1982 for implementation on a world-wide basis. The most notable of these initiatives were the Mobile Loading Ramp, the drop side rack concept for the M871/m872 semitrailers, and the Kinetic Engergy Recovery Rope. These initiatives will be kept alive until a valid user requireis provided. A project to develop interoperability matrices was initiated during FY 1982. Completion of all matrices would require a three-year effort. The objective was to document the degree of interoperability of selected materiel used by the NATO Allies. Eleven categories had been chosen for detailed analysis, to include tank recovery vehicles, POL equipment, and tactical wheeled vehicles. Matrix methodology had been developed and forwarded to NATO delegates for review and comment.

## Military Plans and Operations

(U) Organization. In October 1981, the Associate Directorate for Military Plans and Operations, Plans, Doctrine and Systems Directorate was redesignated the Military Plans and Operations Division under the Directorate for Readiness. The Associate Director was redesignated the Division Chief, and the two Assistants, War Plans and Crisis Management, were designated Chiefs of two branches that were formally established as the War Logistics Plans Branch and the Mobilization and Emergency Plans Branch. The division functions were refined and aligned with the two branches. Other than the above organizational changes, no TDA changes resulted from this realignment.

(U) OPLAN Time Phased Force Deployment Data TPFDD Conferences. During FY 1982, DARCOM War Logistics Support planners participated in eight separate TPFDD refinement conferences, hosted by the Joint Deployment Agency, for OPLANS 5000/5001, 5027, 7120, 2200, 2348, 6150, 1002, and 1004. The purpose of the conferences was to refine and finalize OPLAN force and logistics data prior to submission to JCS for approval.

(U) Rapid Deployment Joint Task Force (RDJTF) Logistics Committee. The Readiness Directorate hosted the fifth meeting of the RDJTF Logistics Committee on 2-3 March 1982. DARCOM represented the Army wholesale supplier on the Committee which met three times yearly to address all facets of logistics support for the Rapid Deployment Force. Chaired by RDJTF J-4, the Committee members included representatives of the Army, Navy, Air Force, and Marine Corps planning communities. During FY 1982, the committee convened on 27-28 October 1981, 2-3 March 1982, and 9-10 September 1982. At the latter meeting, DARCOM briefed the membership on the DARCOM concept for retrograde of unserviceable repairables from the joint area of operations.

(U) DARCOM Operations Center Modernization. Plans were developed and command approval was obtained for an extensive upgrading and modernization of the DARCOM Operations Center. Milestones were being developed and modernization would start in FY 1983.

(C) DARCOM LOGPLAN 5027-83. A revised DARCOM LOGPLAN 5027-83, which supported CINCPAC OPLAN 5027 and EUSA OPLAN 5027, Defense of Korea, was published on 20 July 1982. The plan provided for logistics support of the US Army, land forces of the Republic of Korea, and common item support of the USAF, USN, and USMC elements committed to the defense of Korea.

(U) DARCOM LOGPLAN 6501 (6500). DARCOM LOGPLAN 6500 underwent a major revision during FY 1982 to incorporate changes in the force structure and logistics support concept. The revised plan which would be published as DARCOM LOGPLAN 6501-82 was expanded to include OPSEC guidance, Security Assistance guidance, Logistics Assistance support, Test Measurement and Diagnostic Equipment Calibration and Repair support, and Maintenance support. A final plan was scheduled for publication in December 1982.

(U) DARCOM LOGPLAN 1003-82. Work on finalizing DARCOM LOGPLAN 1003-82 continued. The plan, when completed, would reflect guidance contained in draft ARFOR OPLAN 1003-81, published 22 April 1982; RDJTF OPLAN 1003-82, published 30 July 1982; and information papers and briefings provided by the Army Component of the Rapid Deployment Force. Resupply requirements for ARFOR OPLAN 1003-81 were computed during FY 1982.

(C) DARCOM LOGPLAN 7120. DARCOM draft LOGPLAN 7120, which supported CINCRED OPLAN 7120, CINCARED OPLAN 7120, and COMAFOR-AK OPLAN 9600, Defense of Alaska, was published 1 July 1982. The plan provided for logistics support, consisting of supply, maintenance, calibration and logistics assistance to US Army Forces within the Alaska theater. A final plan was scheduled for publication in December 1982.

(U) DARCOM War Emergency Plan (DARCOM-WEP). A revised DARCOM-WEP was published on 22 October 1981. This plan implemented the DA Continuity of Operations Plan, the Emergency Action Procedures, and other plans of higher and lateral headquarters. The plan was revised to consolidate previous changes and document extensive changes in annexes covering Continuity of Operations, the Mobilization and Emergency Actions Checklist, and Logistics.

(U) DARCOM Civil Disturbance Plan (DARCOM-CDP). Change 2 to the DARCOM-CDP was published 30 October 1981. This change added an annex on countering terrorism at DARCOM installations.

(U) DARCOM Mobilization Plan (DARCOM-MP). The revised DARCOM-MP was published 12 February 1982. Primary areas revised were those dealing with the functioning of mobilization stations and those which added guidance in the area of research, development, and acquisition.

(U) Exercise GALLANT KNIGHT 82. HQ, DARCOM and selected subordinate commands participated in USREDCOM Joint Readiness Exercise GALLANT KNIGHT 82 from 11 January to 2 February 1982. The exercise was designed to test the Rapid Deployment Joint Task Force and the deployment and wholesale support communities in a deployment/employment scenario. DARCOM play consisted of processing Class V requisitions through the Commodity Command Standard System (CCSS), Exercise Module (EXCAP) and providing player response to exercise issues via HQ, DARCOM and miscellaneous response cells. The Deputy Director of Readiness and Chief, Military Plans and Operations Division, visited the exercise site at Fort Bragg, North Carolina.

(U) Exercise GALLANT EAGLE 82. DARCOM participated in the JCS Coordinated REDCOM Joint Readiness Exercise GALLANT EAGLE 82, which was conducted at Fort Irwin and Twenty-Nine Palms, California, 15 March through 15 April 1982. The exercise was designed to test the operational capability of the Rapid Deployment Forces in a contingency situation. DARCOM play consisted of: (1) processing real world requisitions to sustain planned operations using Direct Support System/Air Line of Communications (DSS/ALOC) procedures; (2) providing logistics assistance support to Army forces; and (3) providing Test, Measurement and Diagnostic Equipment Calibration and Repair support. The Deputy Director of Readiness and Chief, Military Plans and Operations Division, represented the Commanding General, DARCOM at the exercise site on 5 April 1982.

(U) Exercise SUPPORT VICTORY 82. Selected elements of HQ, DARCOM participated in 310th Theater Army Area Command (TAACOM) exercise SUPPORT VICTORY 82, 10-13 August 1982, at Fort A. P. Hill, Virginia. The objective was to exercise in a mobilization environment Combat Service Support Command Control element under the CAPSTONE program which aligned with the 310th TAACOM. DARCOM provided a six-man, on-site response cell to play the response cell areas of supply, maintenance, logistics assistance, and test, measurement and diagnostic equipment repair support. The Director of Readiness and Chief, Military Plans and Operations Division, visited the exercise site.

(U) LOGEX 82. HQ, DARCOM and selected DARCOM activities participated in JCS directed LOGEX 82, 16-27 August 1982, at Fort Pickett, Virginia. The objective of the exercise was to train COSCOM/Battalion Commanders and their staffs in wartime logistics procedures with emphasis on the interdependence of Combat, Combat Support and Combat Service Support elements under the NATO command structure. DARCOM provided on-site response cell play in the areas of logistics assistance; test, measurement, diagnostic and equipment repair; and supply and maintenance during the full period of the exercise. The Deputy Commanding General for Materiel Readiness and Chief, Military Plans and Operations Division visited the exercise site.

(C) Exercise ULCHI-FOCUS LENS 82. HQ, DARCOM and selected subordinate commands participated in ROK/US JCS coordinated Korea-wide Command Post exercise ULCHI-FOCUS LENS, 19-31 August 1982. The purpose of the exercise was to evaluate and improve procedures and techniques employed in defense of the Republic of Korea. DARCOM provided response cells at HQ, DARCOM and selected subordinate commands to answer message traffic and provide supply status on EUSA/ROK requisitions submitted under the Wartime Standard Support System for Foreign Armed Forces (WSSSFAF). DARCOM provided an on-site representative to the exercise from 19-31 August 1982.

(U) Exercise IVY LEAGUE 82. HQ, DARCOM and selected subordinate commands participated in the Joint Chiefs of Staff sponsored Exercise IVY LEAGUE 82 from 1-5 March 1982. The exercise required implementation of several plans and evaluated communications in a degraded command and control environment.

## Readiness Assistance

(U) Organization. In October 1981, the Associate for Force Status and Customer Assistance was redesignated Readiness Assistance Division to more accurately identify its basic mission. More significantly, a new team was created from existing resources, to monitor and control the DARCOM support of the High Technology Test Bed (HTTB) and the fielding of a High Technology Light Division (HTLD).

(U) Expansion of DARCOM Logistic Assistance Offices (LAO). This was a banner year in physically expanding DARCOM's presence in the field. In January 1982, a subordinate office to LAO-Korea was established at the 2d Infantry Division, headquartered at Camp Casey. In July 1982, the DARCOM DCGMR approved the addition of two new offices in Europe, designated to support the 2d ACR and the 11th ACR respectively. An LAO was also established on 1 February 1982 to support the US Army Transportation Center/School and Fort Eustis, Virginia. Additionally, approval for assigning a DARCOM military chief to oversee the LAO-National Guard Bureau was granted in August 1982. These new offices would significantly improve DARCOM's support to the user community.

(U) Force Modernization. The scope of the Army's Force Modernization efforts had greatly expanded the role of the Logistic Assistance Program during FY 1982. This introduction of vast quantities of new complex weapon/equipment systems had increased the demand for skilled technicians to provide on-site assistance and had added several manyears of effort to manage the varied aspects of the program. An intense effort was ongoing to develop policies to meet these expanding needs and in particular, to properly forecast LAP resource requirements and associated technical training programs. While the Army went through the growing pains of modernization, the LAOs, as the single DARCOM interface to the user, have bridged a vital gap in the complicated integrated logistic support life cycle process.

(U) High Technology Test Bed/High Technology Light Division. During FY 1982, the pace of the High Technology Test Bed/High Technology Light Division (HTTB/HTLD) greatly accelerated. During this fiscal year, it was determined that the Cavalry Brigade Air Attack (CBAA) was capable of accomplishing its mission--if changes to personnel and equipment were made. The 9ID was given the green light to begin transitioning into an HTLD configuration, and a three-phase program was developed to accomplish the building of Modified Tables of Organization and Equipment (MTOE) for the entire division within one year. To provide full and complete support of these initiatives, the scope of the DARCOM HTTB Task Force was expanded to include transitioning to an HTLD. The DARCOM HTTB Materiel Support Activity (MSA) at Fort Lewis was reorganized into two divisions (Materiel Support and Technical Requirements) and its staff was authorized an increase from nine to seventeen. Finally, a Quick Reaction Program (QRP) was initiated, whereby materiel requirements could be quickly identified and the acquisition process expedited.

(U) LAO-E Integration With DARCOM-Europe. Effective 1 July 1982, DARCOM-Europe was established to serve as the single DARCOM focal point in USAREUR and exercise command or operational control of all DARCOM activities located within the European Theater. LAO-Europe became an

element attached to DARCOM Europe and the Directorate for Logistics. There were no changes to the Missions and Functions of LAO-Europe, and the organizational structure remained a separate TDA entity. The Logistic Assistance Program was and would remain an extremely important mission responsibility.

(U) Mobilization Planning. During August 1982, representatives from the Logistic Assistance Branch, Readiness Directorate and the MACOM Logistic Assistance Officers (LAOs) conducted a workshop to discuss mobilization/transition to war. The workshop discussions were centered around a concept of providing logistic assistance that would be compatible with the emerging "how to fight" doctrine. This concept included three major themes. First, the numbers of Logistic Assistance Representatives (LARs) assigned to support deploying forces were excessive; that some theaters might not require the numbers of personnel originally programmed and that the skills and numbers might not be available in the civilian workforce. Second, civilians were not required and should not be deployed in the main battle areas; therefore, the only LAR deployed forward would ba a Military Logistic Assistance Officer. Third, the only way that LARs could be assured of receiving the administrative logistic/communication support that they required, was to include the LAO support plan in the supported command's OPLAN. The concept outlined during this workshop resulted in assigned objectives and actions that insured fully coordinated and executable plans.

(U) Readiness Integrated Data Base (RIDB). The Directorate for Readiness was developing a Readiness Integrated Data Base (RIDB) based upon four primary reporting documents: The Unit Status Report, DA Form 2715; the Materiel Condition Status Report, DA Form 2406; the Missile Equipment Status Report, DA Form 3266-1; and the Aviation Readiness Report, DA Form 1352. These reports would be consolidated monthly into a data base at the Materiel Readiness Support Activity (MRSA) and accessed by HQ, DARCOM via a secure communications link. This data base and secure link would permit rapid access and review of the latest, available consolidated data reflecting the status of Army materiel world-wide. It was envisioned that DARCOM MSCs, HQDA and other MACOMs would eventually be connected to the data base at MRSA. DARCOM had directed MRSA to establish the hardware and software requirements and prepare a secure facility for receipt processing and transmission of readiness data. RIDB implementation was scheduled for the 3d quarter FY 1983.

## Procurement and Production

### Introduction

(U) As a result of the Headquarters, US Army Materiel Development and Readiness Command realignment, on 15 October 1981 several organizational changes were effected in the Procurement and Production Directorate. At that time, the functions and personnel of the Associate Director for Programs were transferred to the Directorate for Supply, Maintenance and Transportation (DRCSM) and a new division, Procurement Management, was established. Associate Directors became division chiefs as follows:

| | | |
|---|---|---|
| Associate Director for Production | - | Chief, Production and Industrial Preparedness Division |
| Associate Director for Procurement | - | Chief, Procurement Policy and Analysis Division |
| Associate Director for Cost Performance Reporting | - | Chief, Contract Cost Management Division |

(U) Key personnel changes which occurred during FY 1982 were: Mr. William L. Clemons, Deputy Director, accepted a position with the US Army Missile Command on 14 August 1982 and his position remained unfilled as of 30 September 1982. COL Ray E. Frye retired 31 December 1981 and Mr. Laurence A. Stone was the Acting Chief of the Contract Cost Management Division until the arrival of COL Ronald C. Baldwin on 14 June 1982. COL William A. Moore was reassigned to the US Army Missile Command on 13 November 1981, and Mr. John R. Jury became the Chief, Procurement Policy and Analysis Division effective 15 November 1981.

(U) Personnel filling key positions in this Directorate as of 30 September 1982 were:

| | | |
|---|---|---|
| Director (DRCPP) | - | MG Robert L. Herriford, Sr. |
| Deputy Director | - | Vacant |
| Executive Officer | - | MAJ David M. Emling |
| Administrative Officer (DRCPP-A) | - | Mrs. Ann E. Arrington |
| Chief, Procurement Policy and Analysis Division (DRCPP-S) | - | Mr. John R. Jury |
| Chief, Contract Cost Management Division (DRCPP-K) | - | COL Ronald C. Baldwin |
| Chief, Production and Industrial Preparedness Division (DRCPP-I) | - | COL Robert F. Bowers |
| Chief, Procurement Management Division (DRCPP-M) | - | COL Donald C. Mullenax |

Procurement Policy and Analysis

(U) Within the Directorate, the Procurement Policy and Analysis Division was concerned with many aspects of the procurement acquisition process. These activities involved review of and improvements in procurement procedures, and staff surveillance visits to several commands.

(U) Business Clearance Review Procedure. The procedure had been established as a critical initiative within HQ, DARCOM and the concept of a business clearance review for non-competitive contracts over $500,000 was first initiated within DARCOM in a 28 March 1980 letter to the major subordinate commands. It originated as an initiative designed to improve the DARCOM acquisition process and required the establishment of business clearance and approval procedures at each DARCOM activity. The procedure was implemented in the DARCOM Procurement Instruction, section 1-403.80. Basically, it required a prenegotiation business clearance after receipt of a contractor's proposal, audit input, field contract administration reports, evaluation of technical aspects and price and contract terms, all prior to the initiation of negotiations with a contractor. It also required setting forth in a memorandum all significant items related to the projected contract negotiation strategy that the buying activity intended to pursue. The business clearance review procedure was intended to result in the establishment of a prenegotiation objective based on the results of the evaluation process, as well as providing parameters for other material business aspects related to the proposed procurement. A contract could then be negotiated within the approved objective. However, if the negotiated agreement exceeded the approved prenegotiation objective, a new business clearance would need to be obtained prior to contract award. All non-competitive procurements over $10 million were candidates for a HQ, DARCOM business clearance review. During FY 1982, 10 reviews were completed by the Procurement Policy and Analysis Division, while 53 reviews were scheduled for FY 1983.

(U) Procurement Automated Data and Document System (PADDS). PADDS was a mini-computer based system designed to automate the procurement solicitation process, the contract award and modification process, and produce selected management reports. The first phase of this system was installed at DARCOM MRCs on 9 March 1981 for the creation of purchase orders, and follow-on installation was implemented in September 1981.

(U) The Procurement Automated Manpower Utilization and Projection System (PAMUPS). As a by-product of PADDS and the Planned Acquisition and Tracking System (APATS), PAMUPS was to have provided an automated procurement personnel productivity measuring system for managing and justifying resources. While it required no direct input to attain

manpower projections on a uniform work measurement basis predicted on engineered and statistical standards, the targeted date for implementation of the PAMUPS was delayed from November 1981 until May 1983.

(U) SANG Medical Program. During the period 4-14 December 1981, representatives of the division accompanied COL Richard Evans, PM-SANG Medical Program, to Riyadh, Saudi Arabia. The purpose of the visit was to develop a draft proposal evaluation plan for the Medical Program Solicitation. It was followed, during the period 27 February through 7 March 1982, by the visit of a representative of the division accompanying Mr. J. Kuykendall, a Facility Engineer with the United States Navy, to Riyadh, Saudi Arabia. The purpose of the visit was to finalize the Facility Engineer portion of the proposal evaluation plan and participate in the SANG Medical Program Pre-Proposal Conference.

(U) ALT/PALT. From 9 February 1982 through 19 March 1982, representatives of the division, SMT, Comptroller, and APRO were tasked with determining what the Administrative Lead Time (ALT) for Army Stock Fund Items at different MSCs was, as well as what accounted for that ALT, and to develop techniques to improve ALT overall. The commands visited were ARRCOM, CECOM, MICOM, TACOM, and TSARCOM. This effort developed into a DARCOM-wide initiative to reduce Administrative Lead Time/Procurement Administrative Lead Time (ALT/PALT) overall and to better the Army Stock Fund posture.

(U) Combat Developments Experimentation Command Scientific Support Laboratory Contract. The large Combat Developments Experimentation Command Scientific Support Laboratory contract was awarded competitively during FY 1982 by the Director for Procurement and Production. Although an option was available to extend the present contractor who had received the contract under the 8(a) Pilot Program, Small Business Act, a decision was made to make it competitive. This decision was based upon the Government's desire to establish a fair market price. It had been over six years since the original competition had been undertaken; and cost growth and changes to the scope of work involved had increased the contract price from $3.5 million to over $9 million. As a result of competition an award was made in the amount of $6.5 million. This represented considerable savings since the Government Fair Cost Estimate was $9.3 million, and the present contractor had bid $8.33 million. DARCOM, as head of Contracting Activity to the Sacramento Army Depot, the contracting office, played an integral part in the procurement.

(U) Staff Surveillance Visits. A staff surveillance visit, in accordance with ADARS 1-401(a) was conducted at the Project Manager, Saudi Arabia National Guard Procurement Office, by division representatives from HQ, DARCOM. Several recommendations were made to include simplifying the award fee process and improving the file documentation, as well as altering award administration. The quality of procurement actions was found to be improved since the previous FY 1981 review. This was partially attributed to recently hired personnel who possessed increased procurement knowledge and expertise.

(U) A staff surveillance visit was also performed at the Sacremento Army Depot during the period 21-25 June 1982, to determine problem areas and to offer guidance. Potential courses of action were identified for providing the related Sierra Army Depot Activity with its own limited procurement capability. A similar visit was made later to the Procurement Division at Sharpe Army Depot during the period 17-22 August 1982. As a result of this visit, all proposed contract awards over $25,000 were to be submitted to HQ, DARCOM for review and notation prior to award. Following demonstrated improvement in procedures, this requirement would be rescinded.

Contract Cost Management

(U) As previously indicated, the name of the Associate Directorate for Cost Performance Reporting was changed to the Contract Cost Management Division, with responsibility for the Should Cost Program being transferred from the Associate Directorate for Procurement to the Contract Cost Management Division. The result was that three branches were established in the division: the Contract Performance Analysis Branch, the C/SCSC Review Branch, and the Should Cost Review Branch, which increased the division's authorized strength from 13 to 22. A Division Organizational Effectiveness Seminar was held on 7 September 1982 to assure that the activities and direction within the individual branches and the division as a whole would line up with and support the HQDA and HQ, DARCOM thrusts. This effort was assisted by the word processing equipment which had been installed to provide for more efficient and effective handling of the administrative/clerical workload.

(U) This division made progress in applying Cost/Schedule Control System Criteria (C/SCSC) as the number of accepted implementations of C/SCSC, involving DARCOM-led reviews, increased at the end of FY 1982 to 194, with 27 being accomplished during FY 1982. There were 38 more applications of C/SCSC in various stages of the implementation process at the end of FY 1982. In addition, the annual C/SCSC Review Directors' Conference was held at Andrews Air Force Base in June 1982, with a follow-up meeting being held at HQ, DARCOM in September. Interpretations of published guidance were discussed which resulted in better capability

to apply C/SCSC more uniformly. HQ, DARCOM also actively participated in several meetings with an industry ad hoc committee, the Management Systems Subcommittee of the National Security Industry Association, concerning their recommendations for changes to C/SCSC and the Government's implementation of it. This resulted in a few changes to be made in established guidance.

(U) In another area, the Army's Should Cost Program for FY 1982 continued to demonstrate the effectiveness of Should Cost as a management tool in contract negotiations that provided in-depth knowledge for establishing and negotiating the Government's position relative to contract cost/price. During FY 1982, 18 Should Cost studies on non-competitive procurements over $25 million were planned. For seven completed Should Cost efforts, the following results were accomplished: Proposed Contract Cost, $3,032.8 million; Negotiated Procurement, $2,360.7 million; Negotiated Reductions - Dollars/Percent, $672.1 million/ 22.2 percent; and Estimated Cost/Study, $250,000.

(U) In addition, a review of 233 procurement actions under $10 million and 52 procurement actions over $10 million resulted in 12-14 percent reductions using the traditional method of establishing and negotiating the Government's objectives. The division was in the process of issuing new DARCOM regulations on Should Cost and revising the DARCOM Should-Cost Analysis Guide. A new Memorandum of Agreement was also being negotiated with the DCAA concerning their participation on should cost teams.

(U) The Performance Analysis Branch was fully staffed at the end of the fiscal year. The office was able to present to the DCGRDA the results of the Branch's independent analysis of cost schedule performance and estimate-at-completion projections eight times during the fiscal year. He also received similar information an additional four times as part of the quarterly review of the Selected Acquisition Reports on 15 programs. This Branch also achieved an in-house automated analysis and briefing chart preparation capability, which considerably improved the depth of analysis and the timeliness of output. The program was running on "Copper Impact," a time sharing computer system which was also being used in other divisions of the Directorate. A study was also begun to determine additional automated analysis requirements in conjunction with the rest of the Directorate. The Branch continued to support the four C/SCSC related training courses conducted by the Army Management Engineering Training Activity (AMETA), Rock Island, Illinois; the Air Force Institute of Technology (AFIT), Wright-Patterson Air Force Base, Ohio; and the Defense Systems Management College (DSMC), Fort Belvoir, Virginia.

Production and Industrial Preparedness

(U) This office saw a major reorganization under the same chief, COL Robert F. Bowers, take place during the year. Designated the Office of Associate Director of Production in 1981, this office had branch chiefs for the Industrial Preparation Policy and Planning Group, the Industrial Base Programs and Budget Group, and the Industrial Base Facilities Group in existence as of 30 September 1981. By 30 September 1982, the office, now Production and Industrial Preparedness Division, was organized into an Industrial Mobilization Branch, a Resources Management Branch, and a Production Branch, all with branch chiefs different from the branch chiefs of the prior office organization.

(U) The Division comprised five military and 38 civilians (plus four temporaries) against a staff authorization of six military and 42 civilians (plus one temporary). There were also eight mobilization officers assigned to this office against an authorization of nine. Significant changes in personnel occurred at various times during the past year, primarily due to the increased emphasis on Production within the Directorate, the use of the stay-in-school program and the use of temporaries, retirements and reassignments. But such changes did not deter the office from accomplishing its assigned missions.

Production

(U) As the result of a reemphasis on the production-function associated with fielding major weapon systems during FY 1982, the Production Branch was established to accomplish this emphasis with a military chief, two military and ten civilian personnel authorized. The primary mission of the branch was to insure that comprehensive, detailed production planning was conducted and that necessary actions were taken to assure a smooth transition from development to production. On-going functions throughout the fiscal year included establishing production management policy and planning guidance, providing lines of communication and mutual understanding within the DARCOM family and with related outside agencies, reviewing and analyzing acquisition strategies, and participation in system assessments to affirm the readiness of the designs for production.

Major Division Subject Areas of Concern

(U) New Legislation (Materials and Priorities). Since there had been little in the way of new legislation during FY 1982, much effort was expended in pursuing implementation of prior year guidance, especially from the National Materials and Minerals Policy, Research and Development Act of 1980. In addition, the Defense Production Act (DPA) had been extended to 1 March 1983. The DPA was the executive level authority for the Defense Materials System (DMS) and the Defense Priorities System (DPS).

Support Activities

(U) Joint Logistics Commanders (JLC) Areas of Interest. The Materials and Priorities Group of the Division provided support to various Joint Logistic Commanders (JLC) efforts during FY 1982 as follows: (1) Ad Hoc Group on Forgings and Castings, DARCOM Contact--Mr. Clark Winner; (2) Ad Hoc Group - Long Fiber Chrysotile Asbestos, DARCOM Member--Mr. Charles Peterson; (3) Subpanel on Emerging Technologies and the need for a large forging press, DARCOM Contact--Mr. Clark Winner; (4) Ad Hoc Group on Foreign Source Dependency, DARCOM Contact--COL Robert F. Bowers; and (5) DOD Beryllium Requirements Steering Committee, DA/DARCOM Liaison--Mr. Clark Winner.

(U) Special Test and Plant Equipment. The JLC chartered a Special Test and Plant Equipment Review Group (STAPERG), which was established to review, analyze and assess the cost effectiveness and adequacy of the military Services procedures for the management and accountability of Government-owned special test and plant equipment in the possession of contractors or stored at Government locations and destined for planned producers, completed the oversight effort in June 1982. The STAPERG concluded that OSD and Service procedures were generally adequate to insure protection of the Government's interest and provide effective support of industrial preparedness, but were in need of improvement in several areas. They further indicated a need for increased discipline and adherence to prescribed policies, and improvement of the spirit of cooperation and understanding between Government and contractors. Ten initiatives were developed for implementation by the Services and OSD, depending on the nature of the task. The STAPERG Final Report was approved by the Joint Logistics Commanders on 22 July 1982 and forwarded through the Military Service Chief to the Office of the Under Secretary of Defense (Research and Engineering). A JLC Sub-Task Group was established to implement those initiatives which were within Service cognizance and authority. In another joint area, the Defense Priorities and Allocations Council (DPAC) and selected personnel from the Army, Navy, Air Force and the Defense Logistics Agency (DLA) met several times during FY 1982 to review proposed drafts of the DOD Priorities and Allocations Program Manual--DOD Series 4400 guidance (also known as Army Regulation (AR) 715-5). Publication of the new manual was anticipated in the 2d quarter of FY 1983.

(U) Support of Executive Level Committees. In addition to the JLC, other organizations received staff support from the Division. These included: (1) The DOD/Industry Standing Committee on Diminishing Manufacturing Sources and Materials Shortages (DMSMS), DA/DARCOM Liaison--Mr. Charles Peterson and Mr. Frank Fiore; (2) the DOD/Army/Air Force/Defense Logistics Agency Focal Point Group on DOD Directive 4005.16, Diminishing Manufacturing Sources and Materials Shortages (DMSMS), DA/DARCOM Members--Mr. Charles Peterson and Mr. Frank Fiore; and (3) the Defense Priorities and Allocations Training Program, DA/DARCOM Contacts--Mr. Clark Winner and Ms. Dorothy Johnson.

(U) Support of DARCOM Committees. The Junior Program Budget Advisory Committee (PBAC) was covered in the DARCOM-R 11-4 series. This was part of Program Planning Budget Support (PPBS) at DARCOM and was composed of key representatives from functional directorates and Comptroller, Personnel Training and Force Development, and Program Analysis and Evaluation, who balanced program dollar and manpower and recommended to Senior PBAC.

(U) Beryllium Requirements. Another requirement to be anticipated was the support of a study on beryllium. The Department of Defense (DOD), in cooperation with the Department of Energy (DOE), had undertaken a comprehensive review of metallic beryllium requirements and production capabilities. An OUSDRE&E Memorandum was initiated 14 September 1982, which established a Beryllium Steering Committee composed of senior OSD and Service representatives. Each Service in turn was expected to form a Working Group composed of subordinate command production and R&D personnel who in turn would be expected to determine their respective Service's future defense requirements for metallic beryllium.

(U) Requirements and DARCOM Compliance Reviews/Audits. In this area, while controlled materials requirements continued to be updated on a quarterly basis, DARCOM continued to make a concerted effort to perform compliance reviews required by DOD guidance. This was an area that had been neglected in the past; however, in FY 1982, 14 compliance reviews were conducted. It was anticipated that approximately 15 reviews would be made in the coming year. Such reviews would be dependent on available manpower and adequate travel funding.

(U) Production Base Support. A record amount of OMA direct funds ($138.223 million) were obligated for Industrial Preparedness Operations (IPO) in FY 1982. This funding was sufficient to finance the recurring and preventative annual maintenance programs at all laidaway GOCOs and laidaway portions of active GOGOs and GOCOs. Also, $12.6 million was applied to correct one-time maintenance deficiencies which occurred during FY 1982 as a result of weather damage, random inspections, and other unpredictable reasons. Through a combination of prior year funding and project validation procedures, there were no unfinanced, known, validated deferred maintenance projects remaining at the laidaway GOGOs and GOCOs. Management initiatives were also undertaken to improve management control of IPE, OPE, ST and STE; to review the Watervliet laidaway base in conjunction with REARM; to intensify planning efforts with industry in response to external critism; and to support automation of the Production Base Analysis.

(U) The Production Base Support (PBS) program by appropriation for FY 1982 was:

| Appropriation | $ Millions |
|---|---|
| Aircraft | $ 35.790 |
| Missiles | 68.805 |
| Weapons and TCV | 171.688 |
| TCV | 84.700 |
| Weapons | 86.988 |
| Ammunition | 301.720 |
| Other | 45.693 |
| Tactical | 5.769 |
| Communications/Electronics | 13.611 |
| Other Support Equipment | 26.313 |
| TOTAL | $623.696 |

(U) Fiscal year 1982 was the second year that the Industrial Preparedness Planning List (IPPL) was prepared from the DA Critical Items List (CIL). Only five items were added to the IPPL that were not on the CIL. The Directorate's experience with the DA CIL had been extraordinary. The previous "bottom up" IPPL did not have the basis of authority that the DA CIL had. In addition, the DA CIL was prioritized and had the monthly mobilization requirements which carried the authority of DA. Since the advent of the DA CIL, all of the questions relative to why a particular item was being planned or why certain quantities were being planned had disappeared. The questions became: what is on the DA CIL and what were the planning numbers? In summary, the DA CIL provided credibility to the Industrial Preparedness Planning Program and put the program in phase with HQDA. The full potential of the DA CIL was not yet realized as more and more applications were coming to HQ, DARCOM's attention. Distribution of the DA CIL was also made to FORSCOM, TRADOC, DLA and the Department of Navy.

Modernization and Expansion

(U) Modernization and Expansion of the Ammunition Production Base. In FY 1982, $186.4 million was released to continue the Army's on-going efforts to modernize and expand the ammunition production facilities. Dollars were divided into three major categories: $96.2 million for the establishment of initial production facilities to support new weapon systems and new ammunition items coming out of development; $43.4 million for expansion of the production facilities to meet Army, Navy, Air Force and Marine Corps needs; and $46.8 million for modernization of obsolete, antiquated and worn-out production facilities. The following is a sampling of the efforts that had been

completed to date: (1) Construction of the most modern nitroguanidine plant in the world at Sunflower AAP; (2) construction of the first computer-aided black powder manufacturing facility in the world at Indiana AAP; (3) modernization of all Army-owned TNT plants; (4) modernization of all facilities for making detonators for all types of ammunition including the ICM rounds; and (5) Establishment of the first integrated ammunition manufacturing facility in the world, containing the latest state-of-the-art, for manufacture of large caliber artillery at an approximate cost of $467 million. Construction of the facility was initiated in FY 1978, and it was approximately 90 percent complete at the end of FY 1982.

(U) Modernization of Cannon Producing Facilities at Watervliet Arsenal. Project REARM, the REnovation of ARmament Manufacturing would more than double Watervliet Arsenal's production capacity. Construction and renovation had begun and were scheduled to be completed in 1984. In addition to the construction program, $121 million would be invested over an eight year period to rehabilitate existing equipment or purchase new plant equipment. A total of $41 million was obligated for this purpose in FY 1982.

(U) Modernization of Rock Island Arsenal (RIA)--REARM. Project REARM at RIA began in FY 1982 with design and other preliminary efforts which were expected to minimize the project's disruption of production. The estimated total cost for REARM at RIA was $22 million, of which $92 million was for MCA and $142 million for the purchase of renovation of equipment. A total of $41 million was obligated for this purpose in FY82. It was anticipated that REARM would reduce mobilization by 10 months and also decrease peacetime production costs.

(U) The Proposed Expansion of Mainz Army Depot, Germany. With the fielding of new weapon systems such as the Abrahms Tank, the Bradley Fighting Vehicle, the Sergeant York, and the MLRS, the workload of Mainz Army Depot in Mainz, Germany was expected to increase dramatically between 1984 and 1990. In order to support these new weapon systems, new depot maintenance plant equipment and additional plant space was required. Mainz Army Depot proposed two alternatives to fulfill the requirement for additional space: (1) selected construction at the Mainz depot and the development of a depot capability at Uhlerborn; (2) selected construction at the Mainz depot plus the acquisition and alteration of the Mageris-Deutz bus plant. The preferred alternative was to acquire the bus plant because the facility was only two blocks from the existing depot and because the cost of equipment, design, and construction of facilities for the Mainz-Uhlerborn alternative was estimated to be $196 million. The Mainz-Uhlerborn alternative was a fall-back position in the event that the Federal Republic of Germany would not or could not buy the bus plant for the use of the US Army. The decision on the bus plant was expected before mid-FY 1983.

Procurement Management

(U) Organization. During FY 1982, HQ, DARCOM Directorate for Procurement and Production activated, resulting from the reorganization, the Procurement Management Division. This Division had 34 positions which were divided into professional and clerical positions. Of the professional positions, five were military, Captain through Colonel, and the remainder were civilian ranging from GS-12 through GS-15. The Divsion Chief, COL Donald C. Mullenax, had been the chief since the date of activation. The Procurement Management Division was organized along commodity lines, in three relatively equal branches. The branches, all with GS-15 branch chiefs, were: Tank-Automotive, Weapons and Missiles, and Communications/Electronics.

(U) Mission. The mission of the Procurement Management Division was to monitor the acquisition process of selected weapon systems. This monitoring process consisted of controlling secretarial Determinations and Findings (D&Fs), contract solicitation documents, and system acquisition plans. Resulting from a change in the Defense Acquisition Regulation, only D&Fs which exceeded $5 million now required approval at HQ, DARCOM. D&Fs for less than this amount were now approved at sub-MACOM level. In controlling solicitation documents, this division conducted formal solicitation reviews for selected system procurements which exceeded $5 million. These reviews were conducted at general officer levels and in most cases prior to industry issuance. The division had responsibility for coordinating and staffing acquisition plans for systems throughout the headquarters and then to HQDA. As an additional mission, the Procurement Management Division had the responsibility for acting on behalf of the director in all matters dealing with Specialty Code 97, the Training With Industry program and the Defense Acquisition Improvement program.

Small and Disadvantaged Business Utilization

(U) Three new Procurement Analysts were selected to fill vacant positions in the Office of Small and Disadvantaged Business Utilization (SADBU). Mr. Lonnie Kelley joined the staff in November 1981, Ms. Vivina McVay in December 1981, and Mr. John Butterfield in May 1982, bringing the total to four professionals and two staff members.

(U) The final FY 1982 goals for Small and Disadvantaged Business Awards were received from the Department of the Army on 18 February 1982. These goals had been negotiated by the Department of Defense and the Small Business Administration. The final goals were distributed to the MSCs, Depots, and other activities on 12 March 1982.

(U) Of the total business dollars, 15.2 percent was awarded to Small Business ($2,616.6 million) in FY 1982. This was 1.0% less than the DARCOM goal of 16.2 percent, but $523.3 million higher than the amount awarded in FY 1981. The Small Business Set-Aside goal for FY 1982 was 6.6 percent. DARCOM actually awarded 6.1 percent ($1,046.4 million) to Small Business. Even though DARCOM did not quite meet its goal, awards were $198.7 million over FY 1981 awards. The category of Small Disadvantaged Business Awards included Section 8(a) Awards with the Small Business Administration and direct awards to Small Disadvantaged Business. In FY 1982, $377.1 million was awarded to small disadvantaged businesses, surpassing the DARCOM goal of $350 million. DARCOM also exceeded the FY 1981 awards which totalled $346.1 million. The goal for awards to Women-Owned Business in FY 1982 was $50 million. Actual DARCOM awards totalled $81.1 million, exceeding the goal by $31.1 million. FY 1981 awards were exceeded by $27.9 million.

(U) A goal for Subcontracting Awards was added in FY 1982. This goal, 40 percent, consisted of the percentage of prime contractor dollars awarded to small business subcontractors. DARCOM prime contractors awarded 41.8 percent of their subcontracting dollars to small business which exceeded the DARCOM goal of 40 percent.

(U) Though no goals were assigned for awards to the Federal Prison Industries (FPI), National Industries for the Blind (NIB), or National Industries for the Severely Handicapped (NISH) these programs were supported by the command and reported to the SADBU office. In FY 1982, $28.6 million was awarded to FPI, $.6 million to NIB, and $2.1 million to NISH for a total of $31.3 million. This was a significant increase over FY 1981 when a total of $17.9 million was awarded to these programs.

(U) To summarize, DARCOM exceeded the FY 1982 goals in the areas of Small Disadvantaged Business, Women-Owned Business, and Subcontracting Awards. Awards to the FPI, NIB, and NISH increased significantly and DARCOM came very close to achieving its goals for Small Business and Small Business Set-Aside Awards.

FY 1982
FINAL DARCOM
SMALL BUSINESS GOALS

| | *Small Business Percent | *Small Set-Asides Percent | **Small Business Subcontracting Percent | ***Small Disadvantaged Business Dollars | ****Women-Owned Business Dollars |
|---|---|---|---|---|---|
| ARRCOM | 18.8 | 7.8 | 42 | 62.5 | 11.4 |
| ARRADCOM | 14.4 | 4.0 | | 13.9 | .6 |
| AVRADCOM | .8 | .3 | 37 | .2 | .08 |
| CECOM | 27.6 | 8.9 | | 63.9 | 12.1 |
| ERADCOM | 9.2 | .7 | | 7.5 | .3 |
| MERADCOM | 31.0 | 8.1 | | 40.0 | .03 |
| MICOM | 7.4 | 3.2 | | 67.8 | 3.6 |
| NLABS | 62.1 | 10.8 | | .9 | .2 |
| TACOM | 13.6 | 5.9 | | 31.5 | 13.5 |
| TECOM | 60.1 | 21.5 | | 10.6 | 1.6 |
| TSARCOM | 24.9 | 12.1 | | 30.5 | 4.2 |
| ANAD | 75.6 | 54.5 | | .8 | .05 |
| CCAD | 84.9 | 29.5 | | .7 | .8 |
| LEAD | 81.9 | 48.6 | | 1.9 | .4 |
| NCAD | 86.4 | 72.3 | | .5 | .08 |
| RRAD | 69.4 | 42.7 | | 1.2 | .08 |
| SAAD | 85.6 | 22.7 | | 11.4 | .5 |
| SHAD | 94.0 | 73.1 | | .3 | .02 |
| TOAD | 92.0 | 39.2 | | 1.0 | .08 |
| TEAD | 81.0 | 72.6 | | 2.0 | .2 |
| AFRTS | 53.4 | 2.0 | | .03 | .005 |
| ARO | 44.9 | | | | .001 |
| MMRC | 48.0 | 9.1 | | .06 | .1 |
| USMA | 78.2 | 40.4 | | 1.0 | .08 |
| TOTAL DARCOM | 16.2 | 6.6 | 40 | 350.0 | 50.0 |

* Percent of total business dollars.

** This percentage is the ratio of small business to total subcontracting as reported on the SF 295.

*** Dollars are in millions. The goals for small disadvantaged business are the sum of direct prime awards, 8(a) awards and subcontracting reported on the SF 295.

**** Dollars are in millions.

# CHAPTER VII

# SECURITY ASSISTANCE

## Introduction

(U) The magnitude of the Security Assistance Program continued to be of major significance during fiscal year 1982. At the end of the year USASAC was involved with programs in 86 countries for which 6,944 Foreign Military Sales (FMS) cases remained open. The total dollar value of materiel involved was $43 billion, of which $21.8 billion was undelivered as of 30 September 1982. USASAC continued to be concerned with coproduction projects in several countries.[1]

(U) In fiscal year 1982, the Directorate for Security Assistance had some personnel changes, and continued to reflect the mission and major functions stated in DARCOM Regulation 10-60. The Director and Commander of the Security Assistance Center, Major General T. F. Healy was succeeded by Brigadier General C. M. Kicklighter early in the fiscal year. General Kicklighter was promoted to the rank of Major General on 4 November 1981.

(U) While most major offices at Headquarters DARCOM reflected continuity throughout the fiscal year, Colonel John Richards replaced Colonel G. Jones as Director, European Directorate; and Colonel Paul Thompson replaced Colonel C. Marshall as Director, Asia/Pacific Directorate on 1 August 1982. Colonel Leo A. Hergenroeder moved from his position as Deputy Chief of Staff/Secretary General Staff to replace Colonel J. H. McAllister as Director of the Program Management Directorate on 1 July 1982. The Chief, Republic of Korea Indigenous Tank Office (ROKIT) continued to be Mr. J. C. Thomas, Sr.; and Plans and Systems Analysis continued to be headed by Mr. F. F. Brott during the entire fiscal year.

## Project Management Establishment

(U) On 13 November 1981, DARCOM provisionally activated a Project Manager's Office (PMO) for the Security Assistance Distributive Data Processing System/Information Network. This system would advance the state-of-the-art in computer technology by linking Security Assistance managers throughout the Army so that they might have realtime access to data for decision-making.

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1 See USASAC PAM 12-1, USASAC Security Assistance Brochure, January 1983, p. 12 & 14.

(U) The USASAC total strength grew very slightly during the fiscal year, from 645 to 647 individuals. Military strength rose from 24 officers and two enlisted to 26 officers and 1 enlisted, while civilian personnel consisted of 616 permanent and three temporary as of 1 October 1981. There were 609 permanent and 11 temporary personnel as of 30 September 1982.

(U) Budget. The DARCOM FMS Administrative Funding and Obligations performance during fiscal year 1982 is reflected in the table below:

DARCOM
FMS Administrative Funding and
Obligation Performance FY 1982
(Dollars in Millions)

| Command | FY 82 Adjusted AFP | Obligations | FY 82 AFP % Obligated |
|---|---|---|---|
| USASAC | * $ 24.50 | * $ 23.43 | 96 |
| MICOM | 15.77 | 15.75 | 100 |
| ARRCOM | 14.02 | 14.02 | 100 |
| TACOM | 12.02 | 12.12 | 100 |
| CECOM | 5.98 | 5.98 | 100 |
| TSARCOM | 4.32 | 4.32 | 100 |
| HQ DARCOM | .72 | .72 | 100 |
| OTHERS | .95 | .93 | 97.9 |
| TOTAL | $ 78.39 | $ 77.24 | 98.5 |

* Includes RODS
(Figures may not total due to rounding)

(U) It was the consensus that USASAC was underpaid for its work, and this belief had an unlikely ally in the Government Accounting Office (GAO). By early October 1981, GAO had completed a draft proposal report which, had it been implemented, would have had a tremendous impact on the DOD FMS program. The report contended that DOD was still unable to determine if its surcharge on FMS was sufficient to recover, as intended by law, the full cost of administering the program. Accordingly, GAO recommended necessary action to ensure full recovery of FMS related administrative cost.

Manpower Shortages

(U) It was also believed that USASAC was overworked. DARCOM adopted this position so strongly that it recommended to DA, in September 1981, that all foreign country requests be withheld until required manpower was made available. DA responded on 14 September 1981, by directing that new FMS workloads be undertaken within existing resources. A DCGRM message, 30 October 1981, requested that HQDA reconsider this direction, and that a DA/DOD policy/procedure be established to insure that manpower resources would be available prior to final case negotiation and subsequent commitment to the foreign customer.

(U) Meanwhile MICOM, a DARCOM Major Subordinate Command, tried to back its headquarters by not supporting the United Arab Emirates case on I-HAWK. However, since the 14 September 1981 guidance from HQDA stated that ". . . workload associated with new Security Assistance initiatives must be undertaken," DARCOM told MICOM on 12 November 1981, that it was no longer feasible to withhold FMS cases until additional resources were provided.

(U) In the same month, DARCOM coordinated a total Command position on FMS personnel shortages. Based upon this update, DARCOM FMS manpower deficits totaled ten military and 868 civilian spaces.

(U) On 7 January 1982, DA approved DARCOM's request for 24 civilian, four officer, and one enlisted manpower spaces required by PM, SANG, to accomplish the Saudi Arabian medical project.

(U) For planning purposes, DCSPER surveyed all Army activities to determine the impact of a Congressional Joint Conferees Report which proposed to exclude from personnel ceilings employees who spent more than 50 percent of their time performing FMS functions for which DOD was reimbursed by foreign customers. On 29 January 1982, PTFD responded for DARCOM, indicating that the number of DARCOM personnel ranged from 1,999 in fiscal year 1981 to 2,312 estimated for fiscal year 1983.

(U) By February 1982, the DARCOM FMS workload position had reached the Assistant Secretary of Defense (ASD) level. ASD Manpower, Reserve Affairs and Logistics (MRA&L) prepared a response to Congress on the Joint Conferees Report proposal. The Assistant Secretary of the Army (ASA) supported the proposal in a letter dispatched to ASD(MRA&L) on 4 February 1982 to try to influence favorably the ASD response on the Congressional proposal.

(U) The problem of the exemption of FMS civilians from manpower ceilings continued throughout the fiscal year, and was still being discussed at the JLC Prebrief for the CG, DARCOM on 16 September 1982.

It was on the agenda again for the 22 September 1982 JLC meeting at Hill Air Force Base, Utah, wherein JLC counterparts were to be asked to support the manditory legislative initiative that would enable subject exemption.

Legislative Matters

(U) On 29 December 1981, President Reagan signed legislation that doubled the threshold for reporting proposed FMS to Congress under section 36(b), Arms Export Control Act, The new thresholds were 36(b) notifications to Congress for $14 million for Major Defense Equipment (MDE) and $50 million for non-MDE. Design and construction services continued to be excluded, for which the thresholds remained at $200 million. Moreover, proposed sales to NATO and NATO-member nations--Australia, Japan and New Zealand no longer required advanced Congressional notification.

(U) Another legislative action, the International Security and Development Cooperation Act of 1981 (Authorization Act), set forth the following issues germane to the 1982 USASAC-managed fiscal year 1982 Security Assistance Program:

> Funds authorized for appropriation to the President for Military Assistance in each fiscal year 1982 and 1983 were not to exceed $238.5 million.
>
> FMS credits authorized were raised from $500 million in fiscal year 1981 to $800 million in fiscal year 1982 and fiscal year 1983.
>
> Loan guarantee limits were set at $3.269 billion in fiscal year 1982 and fiscal year 1983.
>
> Of the aggregate total of credits and loans ($4.069 billion) not less than $1.4 billion should be available for Israel in fiscal years 1982 and 1983.
>
> Of the total credits ($800 million) available in each of the fiscal years 1982 and 1983, not less than $200 million for each year would be available only for Egypt, and Egypt would be released from its contractual liability to repay the US for these credits.
>
> Of the total amount of credits ($800 million) available in each of the fiscal years 1982 and 1983, not less than $50 million for each year should be available for Sudan, and Sudan would be released from its contractual liability to reply the US for these credits.

Of the total available for loan guarantees ($3.269 billion) not less than $280 million for each of the fiscal years 1982 and 1983 should be available only for Greece.

The principal amount of loans guaranteed under this Act for fiscal years 1982 and 1983 with respect to Egypt, Greece, Sudan, Somalia, and Turkey, would (if and to the extent each such country so desired) be repaid in not more than 20 years, following a grace period of 10 years on repayment of principal.

The ceiling on commercial sales was repealed.

A Special Defense Acquisition Fund authorized as a Revolving Fund and established at a level not to exceed $300 million in fiscal year 1982 and $600 million in fiscal year 1983 or any fiscal year thereafter. (An apparent obstacle existed between this Act and the DOD Appropriation Act).

Leases of defense articles to eligible foreign countries (or loans) could be made only under the authority of this Act or the Foreign Assistance Act of 1961, and not under the authority of Section 2667 of Title 10 USC. This will restrict the use of leases by increasing Congressional oversight.

Section 506(a) of the Foreign Assistanct Act of 1961 (Presidential Determination of Emergency Stock Drawdown Authority) was amended from $50 million to $75 million. (Fiscal year 1981 activity under this section included El Salvador and Liberia.)

International Military Education and Training (IMET) was increased from $34 million in fiscal year 1981 to $42 million for each of the fiscal years 1982 and 1983.

Iran

(U) USASAC participated in a 7 December 1981 meeting at the Pentagon, which was convened by the Defense Security Assistance Agency (DSAA). The purpose of the meeting was to advise the Military Departments (MILDEPS) of the Government of Iran's (GOI) $11 billion claim against the US. This claim was submitted to the Iran-United States Claims Tribunal subsequent to settlement of the hostage crisis.

(U) DSAA Program and Comptroller personnel required revised FMS case program data from the MILDEPS by 31 January 1982 in order to refute the nearly $11 billion claim submitted by the GOI. The revision was to focus on $2.9 billion DOD undelivered orders appearing on the DSAA 1200 system report. DSAA advised that the value was inflated and required review. The Army undelivered program value which appeared on the DSAA 1200 system report was nearly $643 million.

(U) DSAA waived the DD Form 1513-2 requirement so that FMS case program values could be more expeditiously reviewed. DSAA was to adjust the DSAA 1200 system to reflect the revised program data reported by 31 January 1982. DSAA emphasized that all DOD financial and logistic systems had to contain Iran FMS case values equal to those submitted to DSAA. That submission replaced the DD Form 1513-2 requirement waived by DSAA. USASAC was to submit a memorandum on this item.

## Program Management

### Diversions

(U) A large amount of program management activity centered around diversion. This meant diversions from production or stocks, and USASAC response was usually favorable, reckoning on minimal imports to Army readiness. Disapprovals were few, primarily based on critical shortages and adverse readiness imports. Diversions were a constant item throughout the period.

(C) The 18-29 November period included six requests to DA. USASAC recommended approval for two PP-7382 battery chargers, on AN/TAM-6 night sight maintenance facility, one AN/TAM-4 bottle cleaning and charging station, one 15 kw generator set, and one 30 kw generator set for Pakistan. USASAC recommended approval, based on minimal impact to US Army readiness. As to eight 4.2" mortars for Equador, USASAC did not recommend approval due to critical shortages and impact to US Army readiness.

(C) DA disapproved two diversions. On one, for 20 TOW practice guided missiles for Japan, DA concurred with USASAC diversion recommendation that missiles not be diverted due to critical shortage and adverse impact to US Army readiness. DA similarly concurred with USASAC disapproval for two TS-3784/TAS boresight collimator test sets for Saudi Arabia. USASAC felt this would have an adverse impact to US Army readiness.

(U) In October 1981, one requested diversion was forwarded to DA, four diversions were approved by DA, and 12 were DA-directed diversions. The forwarded request was from Spain for 47 PU-617 power units, which USASAC did not recommend due to a readiness impact. The four approved diversions consisted of 1,594 105mm High Explosive Projectile-Tank (HEP-T) to Egypt from CONUS depot serviceable assets, with payback to be made in FY83 from Iranian assets, and to Saudi Arabia, 67 PP-7382 battery chargers from CONUS depot assets, with

payback from fiscal year 1984 procurement. Also diverted to Saudi Arabia was one bottle cleaning and charging station from CONUS depot assets, with payback from 4th quarter fiscal year 1983 production; and one AN/TAM-3 night sight test set from 1st quarter fiscal year 1982 production, with payback to be made from 4th quarter fiscal year 1982 and 1st quarter fiscal year 1983 production.

(U) DA directed diversions for Pakistan. All of these were from the US Army, except where indicated:

> 60 M109A2 155mm self-propelled (SP) Howitzers, 2 each (from Taiwan); 100 M485A5 tanks; 2 M88A1 recovery vehicles; 2 AN/TAS-4 night sights; 10 AN/TVS-5 night sights; 1,000 rounds of 105mm APFSDS-T tank ammunition; 5,000 rounds of 105mm high explosive anti-tank - tank (HEAT-T) tank ammunition; 5,000 rounds of 105mm TP-T tank ammunition; 2,500 rounds of 105mm DS-DP-T tank ammunition; 20,000 rounds of 106mm HEAT ammunition; 20,000 rounds of 155mm of high explosive (HE) ammunition; and 1,000 rounds of 155mm rocket assisted projectile (RAP) ammunition from Greece.

USASAC Requisitioning Program

(U) During fiscal year 1982, USASAC processed 739,541 requisitions which exceeded the previous 13 year average of 698,444. The on-time processing performance for fiscal year 1982 was 93.4 percent for the FMS, SSA and Grant Aid Programs. Requisition processing was an essential operational function in support of Security Assistance Programs. USASAC's role in the supply of materiel and service requirements to foreign customers was vital in maintaining international relations by meeting all US commitments based on negotiated agreements.

(U) The control maintained by USASAC on all requisitions submitted by customers for Army managed cases permitted overall visibility of logistics requirements being supplied. USASAC was also a focal point for customer assistance and commodity managers in providing requisitioning data pertaining to total requirements on negotiated agreements. The requisitioning program at USASAC continued to meet the goals of the organization by meeting each challenging special project or exercise and performing all required duties in an expeditious and efficient manner.

Security Assistance Emergency/Expedite Impact Shipments

(U) Fiscal year 1982 saw a series of major emergency/expedite actions, such as impact shipments, take place. An impact shipment was

the result of political/military decisions made at the highest levels of the US Government and tasked the US Army to deliver equipment to foreign nations within specified expedited timeframes. These were high visibility projects, involving the prestige and reputation of the US Government. Actions were necessarily controlled to insure the ordering of and shipment of materiel to meet urgent delivery dates. Control and coordination of these shipments required constant interface throughout DOD to include DARCOM/non-DARCOM inventory managers, shipping depots, transportation activities, and higher DA/DOD authorities to insure rapid reaction to shipment and transport of the materiel. Many of these actions required performance during non-duty hours as well as responses to operational immediate communications received after regular hours to insure that all actions were performed accurately and timely.

(U) The year started off with an impact shipment project for Sudan in October 1981, and continued with impact shipments for El Salvador, the Falkland Islands, Morocco, Somalia, and the ongoing Lebanon program. USASAC served as program coordinator for each of these actions, and with the support of DARCOM/non-DARCOM logistics activities successfully accomplished all assigned missions.

Transportation and Traffic Operations

(U) During fiscal year 1982, USASAC's Transportation and Traffic Operations Division was involved in the coordination of expedited materiel movements by Special Assignment Airlift Missions (SAAM), inland/ocean transportation modes and freight forwarders for United Kingdom, United Arab Emirates, Zaire, Colombia, Honduras, Lebanon, Jordan, Somalia, El Salvador, and Kuwait.

(U) In order to provide trained personnel, the MILSTRIP/MILSTAMP/MAPAD (6 hour) orientation was given in 39 sessions to 607 personnel at various CONUS locations which included DLA defense depots, Trans School, NSC Oakland, DCAS activities, GSA, freight forwarders, carrier representatives, Army depots, foreign country personnel, interns, and USASAC-O personnel.

(U) A cost savings/avoidance of $1,517,032 (representing 470 shipments) was realized through actions redirecting G/A and FMS materiel in the hands of carriers, freight forwarders, MAAGs/missions, and foreign customers. Also, a total of 204 visits were made by the freight forwarder offices East/West and the Transportation Division to various freight forwarder/country representative activities. Eighty-one other visits were made to DCAS activities, MTMC organizations and other DOD representative units.

ROD Study Update

(U) A study on Foreign Military Sales (FMS) Reports of Discrepancy (ROD) was completed in November 1980. The objective of the study was to evaluate the cost effectiveness of processing FMS RODs. Findings were that the maximum cost avoidance varied between suppliers and type of fund such as APA principal, APA secondary, and stock fund. The average ROD value of $650 was used as the cut-off figure for review and adjustment centrally at USASAC. Seventy-six RODs fell below this figure. Eighty percent of the RODs were approved after investigation. By granting credit for RODs less than $650, a new cost avoidance of $820,000 was achieved.

Plans Accomplishments

(U) The USASAC-NCAD War Emergency Plan (WEP) and Mobilization Plan (MP) were rewritten and published. The objective of these plans was to set forth methods and procedures with which to cope, minimize effects, and recover from peacetime mobilization and war emergency situations.

(U) USASAC-NCAD participated in Command Post Exercist Ulchi-Focus Lens. Concentrated effort was placed on the control of requisitions in support of the Wartime Standard Support System for Foreign Armed Forces (WSSSFAF).

(U) Funds were approved for construction of the USASAC-NCAD Emergency Operations Center (EOC), which would provide a secure area for operations during emergencies, exercise play, classified conferences, and briefings.

CLSSA Visibility and Management File

(U) During fiscal year 1982, the Security Assistance Functional Coordinating Group (SAFCG) implemented the Cooperative Logistics Supply Support Arrangement (CLSSA) Visibility and Management File. This file identified CLSSA requirements on an NSN, country and case basis for both DARCOM and non-DARCOM managed items, and provided capabilities for the computation of DARCOM and non-DARCOM CLSSA requirements. It identified pipeline levels on an NSN, country, and case basis, for DARCOM managed items. It also permitted establishment of authorized requisition quantities on an NSN, country, and case basis; and the determination of maturity of DARCOM and non-DARCOM CLSSA requisitions. The file provided identification of candidate items for drawdown by customer countries resulting from both declining demands and/or termination; and the identification of Foreign Military Sales Order (FMSO 1) Parts A and B, and FMSO 2 requirements on a dollar basis while providing detail back-up for renegotiation/termination purposes.

(U) Cooperative Logistics Supply Support Arrangement (CLSSA). CLSSA was a bilateral agreement between the US and a friendly foreign government or international organization setting forth the terms and conditions for providing repair parts support through the US Logistics System. Through this program, the US was authorized to procure and store assets in advance of actual requirements. The fiscal year 1982 program exceeded $657 million. There were a total of 28 successful renegotiations with 27 Security Assistance customers and one agency. Interest for participation in the CLSSA was received from six potential customers--Pakistan, Greece, Kenya, Brazil, Ethiopia and Singapore.

QA Team Pamphlet

(U) DARCOM Major Subordinate Commands (MSC) assigned primary responsibility for a particular end item offer Quality Assurance Teams (QAT) as a line item in DD Form 1513 (US DOD Offer and Acceptance), AR 12-8, as a contracted service paid for by Security Assistance (SA) customers. The line cost was based on all actions that were required in support of the materiel being delivered from the planning phase through after-action requirements. During the past year numerous United States in-country representatives (MILGROUP, MAAG, JUSMAT and/or OMC) reported inconsistencies of operations from one QAT to the next, which were causing misunderstanding and/or confusion to the FMS customer and in-country representatives as to the QAT mission. Subsequent investigation revealed that personnel assigned to QATs from various MSCs, depots, and activities were performing QAT operations/functions in customer countries without standard operating procedures and/or uniform guidelines.

(U) To alleviate the above problems, the USASAC Product Assurance Directorate developed, staffed, gained concurrence, publication, and distribution of a QAT Pamphlet DARCOM-P 12-1. This document provided the necessary working guidance in easily understandable language and enhanced the capabilities of experienced QAT participants, as well as those first time travelers, who were required to provide essential technical support to the Army Executive Agent for Security Assistance. Further, the pamphlet provided valuable information to travelers relative to protection from acts of terrorism while deployed in FMS customer countries.

(U) The QAT functions, operation and overall mission accomplishments prior to and during deployment in customer countries were enhanced and standardized following issuance and utilization of the QAT Team Pamphlet.

Army Customer Order Control System (ACOCS)

(U) During fiscal year 1982, the Army Data Base Administrator (ACOA(F&A), Indianapolis, Indiana) programed two innovative changes in the ACOCS. The first related to DD Form 2061 (Foreign Military

Sales (FMS) Planning Directive), a comprehensive line/subline level document containing forecast and execution data for DA FMS cases recorded in the ACOCS. Data was organized according to the ASD(C) prescribed (DOD 7290.3M) Pricing Element (PE) for use during the life cycle management of the DA FMS case. The USASAC Comptroller Directorate would use the DD Form 2061 as a base line document for the financial portion of FMS case closure program.

(U) Information Processing Family (IPF) - a modular format in the ACOCS monitor, IPF provided FMS case financial management personnel the capability to select defined data elements contained in the ACOCS, construct the data elements in the desired format and generate meaningful output products. USASAC Comptroller personnel used IPF to generate a Special FMS Potential Discrepancy Report, a product, which, when disseminated to the Security Assistance financial management personnel at the Major Army Commands, resulted in expedited FMS case financial management actions required to preclude FMS discrepancies.

Waivers

(U) Granting of waivers was based upon DSAA Memorandum 1-02627/82 dated 8 July 1982, subject: Policy on Waivers of Nonrecurring Cost (NRC) Recoupment and Asset Use Charges. On 30 June 1982, the Deputy Secretary of Defense approved the policy which stated "inter-dia" that for NATO countries for which materiel Grant Aid was approved for the fiscal year, full waivers of charges for nonrecurring cost recoupment and asset use/tooling rental could be granted solely on the basis of (NATO) standardization. The two countries eligible for this consideration were Portugal and Turkey. DSAA intended to waive NRC recoupment and asset use charges which normally were included in FMS offers to these two countries, provided the purchase of the items would enhance standardization. Since waivers had to be granted on a case-by-case basis, rather than as a blanket action, it was incumbent on each Military Department to advise DSAA when a case was being processed, which normally would include an NRC recoupment, an asset use charge, or both. DSAA had to be advised as to the amount of such charges, and whether the item or service involved would enhance standardization

MAP, Processing Program Changes

(U) Changes in the administration of the fiscal year 1982 and prior Military Assistance Programs (MAP) and the Gift Certificate Program necessitated the establishment within USASAC of a MAP RCM Closeout Program.

(U) USASAC was continually striving to reduce the overall internal MAP order processing time. Several new methods were implemented during fiscal year 1982 which resulted in significant improvements and a

reduction of six days from the processing time. Analysis of each step involved in the change process, from the date USASAC determined the need for program changes until receipt of an approved MAP order reflected a total average time of 38 days. Seventeen days of this processing time was identified as being the average time required by DSAA to process changes. It was understood that program changes were processed at DSAA once a week, normally each Friday, reviewed and, if approved, re-input the following Friday to be processed as a MAP order.

Special Defense Acquisition Fund (SDAF)

(U) The law now provides an Obligation Authority for the Special Defense Acquisition Fund (SDAF). The Executive Branch asked for Obligation Authority for the full $300 million which had previously been authorized (PL 97-113), but the new law provided only $125 million for fiscal year 1982. The Conference Report also included the following statement regarding the SDAF:

> The managers on the part of the House and the Senate recognize that the SDAF is a new program and can, if properly used, serve as a valuable management tool in regard to foreign military arms sales. The managers expect that the SDAF will be utilized according to the purposes which were originally presented to the Congress; namely that procurement of items for the SDAF would be those of high foreign demand that were in short supply and in US inventory; would consist of relatively unsophisticated military items such as medium tanks, artillery, ammunition, antitank missiles, and basic communications systems; would have no adverse impact on US defense readiness; and would not stimulate unnecessary foreign arms sales.
>
> Funding for the SDAF would be based upon collections on nonrecurring Research, Development, Test and Evaluation (RDT&E), Production, Asset Use Charges, etc., being deposited to Miscellaneous Receipts of the Treasury.
>
> USASAC Comptroller personnel, reacting to a 1982 fiscal yearend suspense requirement to obligate $105 million in SDAF authorization, provided valuable staff assistance to DARCOM Comptroller personnel in effecting obligation of nearly $85 million by the 30 September 1982 suspense date.

Action Areas

(U) USASAC was concerned with cases and coproduction worldwide, including Asia/Pacific, Europe, Israel, Mid-East, Africa and Latin America.

(U) On 18 September 1981, USASAC requested projected requirements for the M113 Family of Vehicles (FOV) from potential FMS customers. The resulting stated requirements for 456 vehicles for fiscal year 1982 and 185 vehicles for fiscal year 1983. Breakout was as follows:

| COUNTRY | ITEM | FY 82 | FY 83 |
|---|---|---|---|
| Greece | M113 APCs | | 102 |
| Pakistan | M113 APCs | 75 | 75 |
| Taiwan | M113 APCs | 357 | |
| Greece | M106A1 Mortar Carrier | | 8 |
| Pakistan | M901 ITV | 24 | |
| | | 456 | 185 |

TACOM received a copy of the survey results.

## Asia/Pacific

### USASAC Customer Relations Team (Pacific)

(U) During fiscal year 1982, the USASAC Customer Relations Team (Pacific) provided liaison services and logistics management assistance to Pacific and South-East Asian countries. This service was provided to enhance the quality of security assistance support provided by the US Army Materiel Development Command (DARCOM) and other US agencies, and to enhance the defense posture. It was also intended to assist under-developed countries to achieve logistics self sufficiency. The Customer Relations Team (Pacific) was composed of four military officers and six civilian employees.

(U) During fiscal year 1982, nine liaison trips were made to a total of 11 countries, including an initial visit to Fiji. The average visit in each country was five days. The main liaison objective was to evaluate how well the US Army was supporting its approved and implemented security assistance programs.

(U) During fiscal year 1982, logistics management assistance visits included Indonesia, Korea, Malaysia, Pakistan, Philippines, and Thailand.

### Australian AN/TPQ-36

(U) On 8 March 1982, USASAC met with representatives of the Australian Embassy to review Australian interest in coproducing the AN/TPQ-36 Mortar Locating Radar. USASAC asked the Australians to send a letter to DSAA on the subject, and told them that the Army would require a government-to-government MOU covering such items as mutual

obligations for program management, royalties, technical assistance, technical data transfer, software support, configuration management, and security. Progress at the meeting led USASAC to expect further exploratory discussions to ensue.

India

(U) The Government of India decided to accept the M109A2 Howitzer test offered to them by Bowen-McLaughlin-York (BMY). The US Government was leasing the Howitzer to BMY for the test. The lease was signed by BMY on 14 April 1982 and by ARRCOM on 16 April 1982. An FMS case for the ammunition totaling $99,244 was signed by the GOI on 4 May 1982, and implemented on 5 May 1982.

(U) The M109A2 Howitzer, which was demonstrated in India by Bowen-McLaughlin-York, and the ammunition for the test were loaded aboard an Indian shipping line vessel on 15 July 1982. The five 155mm RAP rounds, which were in sealed containers, were signed for by the Captain of the ship. The Defense Attache's Office, New Delhi, met the ship in Bombay and had control of the RAP rounds until they were fired.

Indonesia

(U) On 9 October 1981, DSAA mailed Letters of Offer and Acceptance for 133 105mm M101A1 Howitzers and associated ammunition to Jakarta for presentation to the Government of Indonesia. LOAs were afforded expedited handling before and after Congressional review, based on SECDEF interest in the Indonesian requirement.

(U) The Government of Indonesia accepted FMS case UCH on 9 November 1981 for 133 105mm M101A1 Howitzers (59 from new production and 74 from rebuild). On 2 February 1982, the Government of Indonesia requested early delivery of six Howitzers so they could be displayed during the 5 October Armed Forces Day parade. Those six Howitzers were shipped on 20 July for arrival in Jakarta, Indonesia by 19 September.

(U) The six Howitzers requested by the Government of Indonesia for their 5 October 1982 Armed Forces Day parade arrived in Jakarta on 23 September 1982 and were unloaded 24 September 1982.

Iran

(U) A counter claim rebuttal to our defense against the Iranian claim which was submitted to the Iran-United States Claims Tribunal on 31 March 1982, was expected at the end of August 1982. Legal personnel from the State Department met on 29 June 1982 with DSAA and Service representatives to determine what additional information was available for use in refuting the Iranian counter claim. Specifically, information was requested on case closure data and undelivered items. Heavy workload was expected to validate (to lawyer satisfaction) supply performance/contractual actions.

Japan

(U) On 14 October 1981, Japan accepted an FMS case for 34 COPPERHEAD rounds, associated support equipment, and provisions for a contractor-conducted Compatability Test Program. The test program was designed to assure that COPPERHEAD could be used in Jananese-produced 155mm SP Howitzers. Case value was $4.2 million, with delivery scheduled for October 1983. Japan was the first FMS customer to purchase COPPERHEAD.

(C) A coproduction MOU with Japan allowed coproduction of the entire M110A2 with the exception of the cannon assembly, the others being tube assembly, breech mechanism assembly, and muzzle brake. The Japanese signed the coproduction agreement on 9 February 1982.

(U) AH-1S. On 1 March 1982, DARCOM submitted its recommendations to DA on a Japanese request for coproducing the AH-1S COBRA/TOW. The Japanese wanted coproduction of the airframe, engine, main and tail rotor blades, and the M65 Laser Augmented Airborne TOW. DARCOM recommended that Aircraft Survivability Equipment and armament items be withheld from Japanese manufacture. All remaining avionics and ground support equipment would either be purchased through FMS or procured via appropriate export license requests.

(U) Mr. Takayuki Awa, head of 2d Import Division, Central Procurement Office (CPO), Japan Defense Agency (JDA), Tokyo, visited USASAC, New Cumberland, Pennsylvania on 26-27 May 1982. Accompanying Mr. Awa were Colonel Hiromichi Muromoto, Assistant Military Attache', Embassy of Japan, and Messrs. Sakata and Igarashi, CPO, JDA, Washington, DC. Mr. Sakata presented an overview of the CPO, JDA organization. A bilateral review and reconciliation of 36 FMS cases was accomplished. The visit was concluded with the signing of a Memorandum of Understanding addressing the results of the review and additional actions required.

(U) Japanese Coproduction - AH-1S COBRA. DARCOM was notified that DSAA had been cleared to inform the Government of Japan that they would be allowed to coproduce the US AH-1S COBRA Helicopter. It was understood that the scope of the program would be in accordance with USASAC recommendations made to HQDA (DALO-SAA) on 1 March 1982.

(U) AH-1S Coproduction - Japan. Based upon the results of a 19 May 1982 meeting with a representative of the Government of Japan, US representatives from DSAA, HQDA, and USASAC agreed to develop a draft Memorandum of Understanding for this prospective program. DSAA would designate USASAC as the responsible agency for preparation and staffing of the draft MOU. Negotiations began in July 1982, with a target date of late October 1982 for signature, but the MOU was not signed until 17 December 1982.

Korea

(U) M68 Tank Guns. In October, the Republic of Korea Army (ROKA) reversed a previous decision to acquire rough cannon tube forgings to produce M68 tank guns, and requested US autofrettaged tubes plus rough forgings of 11 other cannon assembly components. An FMS case for 160 tubes and component sets, valued at $1.8 million, was handcarried to DSAA for countersignature on 22 October 1981. On 2 November 1981, the ROK Embassy signed an FMS case for 160 M68 cannon tube forgings, processed through autofrettage, and 160 sets of related rough forgings. The case was to be implemented upon confirmation of receipt of funds from SAAC. Delivery schedule was 20 in November 1981, and ten each month thereafter.

(U) Case KS-B-WYK. In March 1982, FMS Case KS-B-WYK cleared Congress and underwent release to the ROK. This case offered 174 I-HAWK GM Intercept, Aerial XMIM23B and 723 Rocket Motors XM112 with support equipment and services. Estimated total case value was $58.8 million. Korea had until 30 April 1982 to accept the case. If they accepted the case before 15 April, they could save approximately $3 million.

(U) TOW. In January 1982, Congressional review began on a Korean request for 308 TOW guided missiles with related practice missiles, launchers, and support equipment and services. The estimated case value was $58.8 million.

(U) Case KS-B-WZB. On 24 March 1982, the advance notification period to Congress on FMS case KS-B-WZB expired, and an unsigned copy of the LOA was released to ROK. The thirty day formal Congressional review period began concurrently. This case offered 36 AN/TPQ-36 radar sets with support equipment at an estimated total cost of $88.6 million. Expiration date was 23 July 1982.

(U) In February 1981, the State Department informed the American Embassy in Seoul, Korea, that manufacture of M109A2 Howitzers could be approved, with the stipulation that the M185 cannon assembly and M178 mount assembly be procured from the US under FMS procedures. An ROK delegation visited Bowen-McLaughlin-York Corporation (BMY) and discussed production of M109A2 Howitzers. BMY made an offer for a cooperative program to include provision of assistance to the ROK Government, industry, and establishment of a Government-Owned, Contractor-Operated (GOCO) facility in Korea. JUSMAG-Korea indicated that the ROK would accept BMY's proposal. Negotiations were continuing between the ROK Government and BMY Corporation on the subject as of the end of fiscal year 1982.

(C) DALO-SAC, 14 April 1982 letter tasked USASAC to provide the DARCOM position concerning proposed DSAA approval for Republic of Korea 3d Country Sales. The list of items included quantities of radios (AN/VRC-12, AN/GRC-142/122), Night Vision Device (AN/TVS-5), ammunition 105mm HE tank ammunition (M456A1), 155mm projectiles (M107), cartridge 4.2" HE and unlimited radios (AN/PRC-77), gas mask (M9A1), and with the proviso the ROK agreed to purchase equivalent quantities of tubes from the US, Mortars (4.2" and 81mm). DARCOM elements were tasked to provide, by 23 April 1982, justification to support any DARCOM recommended denial.

(U) Case KS-B-WXH offering modification kits to ROK to upgrade 28 I-HAWK batteries to the Product Improvement Program (PIP) configuration was under consideration by ROKA. The case was valued at $55.1 million with an expiration date of 30 April 1982. Concerted efforts by USASAC, MICOM, and JUSMAG-K were made to satisfy ROKA requests and questions regarding this offer. Information from the ROK Embassy, Logistics Service Mission on 21 April 1982, revealed that ROK recognized the criticality of accepting this case, yet raised five conditions or obstacles to acceptance. A coordinated response between USASAC, MICOM, and JUSMAG-K to these items would be presented. The recommendation to ROKA was to accept the case without further delay to avoid inevitable cost escalation rather than to modify the case within allowable constraints.

Pakistan

(U) A change in US policy due to the Afghanistan situation permitted the sale of major defense items to the Government of Pakistan for the first time in twenty years. As a result, on 21 December 1981, the Government of Pakistan signed Foreign Military Sales cases totaling $394 million. Major items included in the sale were 100 M48A5 tanks, 35 M88A1 Recovery Vehicles, 75 M113A2 Armored Personnel Carriers, 24 M901 Improved TOW vehicles, 40 M110A2 SP Howitzers, 75 M198 towed Howitzers, 64 M109A2 SP Howitzers, 10 AH-1S Helicopters, 1,000 I-TOW missiles, 900 Night Visision Sights, total of 68,500 of 106mm, 105mm, 155mm ammunition. Deliveries of these items in fiscal year 1982 consisted of 100 M48A5 tanks, 2 M88A1 Recovery Vehicles, 26 M113A2 Armored Personnel Carriers, 20 M109A2 SP Howitzers, 100 AN/PVS-5A Night Sights, and 59,500 each ammunition.

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(U) The State Department waived the requirement to send an Advance Notification to Congress for five AN/TPQ-36 radars for Pakistan. Formal notification was submitted to Congress on 14 September 1982. Case value was $20 million.

Philippines

(U) FMS PI-UJM was forwarded to the Philippines on 2 June 1982. The case consisted of 15 UH-1H helicopters with a value of approximately $26 million. On 9 August 1982, JUSMAG requested and received an extenion of expiration date to 4 October 1982. On 25 August 1982, JUSMAG requested another extension of 60 days. Request had not been approved at the end of fiscal year 1982. TSARCOM was researching the possibility of a price increase. FMS Case PI-UKE was forwarded to the Philippines on 9 July 1982. The case consisted of 10 battle/crash damaged UH-1H helicopters for repair and return with a value of approximately $5.3 million. On 6 August 1982, JUSMAG requested that PI-UKE be treated as a repair and exchange case. TSARCOM replied that the repair and exchange concept was not acceptable. On 6 August 1982, a message from Chief of JUSMAG, Philippines stated that ". . . It can be expected that UH-1H availability will be an item of discussion during President Marco's forthcoming visit to the US."

Taiwan

(U) Twenty-seven M109A2 SP Howitzers were scheduled to arrive in Taiwan in late May 1982. An eight-man QA team was being fielded to assure items were made fully operational after deprocessing.

(U) On 6 August 1982, DSAA tasked USASAC to provide Planning and Review (P&R) data, to include support package, production line closure dates, and contract deadlines for 15 line items of which 12 were major defense items. DSAA also requested coproduction information for eight line items. The DSAA suspense date was 12 August 1982.

Thailand

(U) In November 1981, the Government of Thailand requested a Letter of Acceptance (LOA) for 24 M167A1 towed Vulcan gun systems. Total value of the Vulcan requirements was estimated at $29 million. Also, the Thais requested LOAs for the following items: 28 M198 Howitzers, 148 M113A2 APCs, and 12 UH-1H helicopters. LOAs for these items would require Congressional notification.

(U) On 29 January 1982, the 30-day formal Congressional Notification period began on the gun portion of the list. The value of this portion was $22.5 million. In that same month, the Royal Thai Army signed a Letter of Intent (LOI) for the guns.



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(U) During the following month, 22 February 1982, 20 REDEYE missiles with support equipment departed Tooele Army Depot, Utah, enroute to Thailand via MAC Channel from Travis Air Force Base. This shipment arrived in Thailand on 27 February 1982.

(U) A shipment of five M48A5 tanks departed Anniston Army Depot by truck for Morehead City, North Carolina, on 13 April 1982. These tanks were to depart from Morehead City by vessel on or about 15 April 1982, eith estimated time of arrival in Thailand 20 May 1982. This was in response to a 4 February 1982 request to show US support to Thailand.

(U) Four M198 Howitzers were scheduled for airlift via MAC from Travis Air Force Base to Clark Air Force Base, Philippines on 3 May 1982. The Government of Thailand requested that the Howitzers be delivered on or about 22 May 1982, with ten days advance notice to allow time for arrangement of reception ceremony and media coverage. To accommodate this request, a special air mission was arranged from Clark Air Force Base to Don Moang Airport, Bangkok. Delivery coincided with delivery of five M48A5 tanks which were in ocean transit at the same time.

(C) The Mobile Training Team (MTT) completed instruction on 13 May 1982, and prior to graduation exercises, a firing demonstration was scheduled. Numerous Thai VIPs, dignitaries, and media representatives were invited. The only US involvement in the demonstration was MTT provided technical assistance prior to the firing. The initial missile was fired at a Remote Controlled Model Airplane trailing a Thai manufactured flare. When the missile was fired, it immediately went ballistic trajectory with no apparent attempt to engage the flare and impacted into a mountain approximately two miles down range. The MTT had recommended against using the flare as a target. A second firing was attempted using a 155mm artillery illumination round as target. The second attempt resulted in a misfire. In addition to the unsuccessful firing, the M76 training set was inoperable due to a defective pneumatic pump. MICOM was requested to dispatch a qualified technician to investigate, resolve problems and assist the Thais in achieving a successful launch. A MICOM technician was dispatched to Thailand on 15 June in an attempt to correct problems.

(U) Materiel required to conduct a second demonstration firing of the REDEYE missiles was received in Thailand. A two-man MICOM team made necessary preparations for the firing and conducted additional training of Royal Thai Army personnel as required.

(U) The second REDEYE firing demonstration was successfully conducted on 22 September 1982. One missile was fired resulting in a direct hit on a BATS target flying at 2,000 feet and 250 knots. The MICOM technicians provided necessary assistance. The target system which was loaned for the demonstration was returned to the United States.

(U) The annual Thailand Security Assistance Review (SAR) for US Army-managed cases was held in Bangkok on 24-28 May 1982. CONUS participants were from USASAC and SAAC. In addition to normal discussions, presentations were given on Quality Assurance (QA) procedures, FMS pricing, and establishment of a Federal Reserve Bank holding account (Thai approval appeared to be imminent).

## Europe

### Belgium

(U) The Minister of Defense (MOD) Belgium, requested US Government approval to manufacture gun mount and breech mechanism for 155mm M109A2 Howitzers in conjunction with on-going commercial negotiations between a Belgium contractor and Bowen-McLaughlin-York (BMY). The request was approved by SECDEF on 10 August 1982. Approval was subject to procuring the M185 cannon assembly under FMS by the GOB. The GOB had pursued the acquisition of the M109A2 Howitzer technology since 1980.

(C) The Belgians were interested in procuring 124 Howitzers, M109A2, SP, 155mm. Initially, the Government of Belgium (GOB) desired to co-produce the thick-walled cannon, and to sell to third countries; but the transfer of manufacturing technology was denied by OSD. On 18-19 March 1982, representatives from BMY met with Belgian Ministries of Defense (MOD) and Economic Affairs (MEA), with ODC representation to discuss the offset/compensation for Belgian acquisition of the Howitzer. The offer made by BMY was unacceptable. BMY agreed to 30 percent offset, and they also agreed to continue their contract to buy $2.0 million worth of Belgian steel for five years. Belgium wanted 100 percent offset. BMY proposed a license to convert 96 M108 (105mm) SP, Howitzers which were in Belgian inventory to a Field Artillery Ammunition Support Vehicle (FAASV) configuration. BMY would buy the M108 vehicles, use Belgian industry conversion, and sell to third country, all contingent on a buyer, USG approval, and Belgian commercial purchase of the M109A2 from BMY. SECDEF responded to ODC Belgium that the USG agreed in principal to the future sales by BMY of M108 on a case-by-case basis, and advised that the USG could not guarantee offset commitments, or be a party to a commercial offset arrangement, but in the interest of achieving NATO Force goals the USG would assist wherever possible.

### Canada

(U) In October 1981, DA approved the diversion of 50 upgrade kits to facilitate the conversion of Canadian SP Howitzers to the M109A3 configuration at Letterkenny Army Depot and Mainz Army Depot. The FMS cases arrived from ARRCOM on 13 October 1981, were countersigned on 16 October 1981, and provided to the Canadian government on that date.

The total net value of the two cases was approximately $6.2 million. Later in the same month, Canada signed the case. On 23 November 1981, Letterkenny began receiving the Howitzers at a planned rate of two per day. The last two, for a total of 24 (for Letterkenny) were due on 14 December 1981. The other 26 were diverted to Mainz Army Depot for conversion there.

(U) The Foreign Military Sales Management Review for the Government of Canada was held 28-30 July 1982 at the Canadian Department of Supply and Services, 2450 Massachusetts Avenue, NW Washington, DC. A total of 276 cases would be addressed during this review with a program value of $325.8 million.

Denmark

(U) The Government of Denmark (GOD), on 3 May 1982, requested a Letter of Offer for 20 cartridge, 76mm APFSDS for test firing. The projectile would be provided by AAI Corporation of Baltimore, with cartridge case (M-88), percussion primers (M68), and M30 propellant provided by Aberdeen Proving Ground. Air transportation was also requested, since the Danes wanted the ammunition in country not later than 18 June 1982. Intense coordination between ARRCOM, APG, DARCOM Transportation, and USASAC resulted in the early arrival of the ammunition at the Danish firing range on 17 June 1982.

(U) The Government of Denmark signed a lease for two batteries of I-HAWK Missile Systems on 8 July 1982. The I-HAWK batteries were to be made available from the US Army in deactivated units and overhauled at Letterkenny Army Depot prior to release to the Government of Denmark. The Materiel was expected to be released in March/April 1983. The total value of the I-HAWK lease was $14.8 million. This included $1.5 million for sale of missiles, $6.5 million for overhaul and transportation, and $6.8 million for rental charges.

Finland

(U) On 20 July 1982, the Government of Finland (GOF) submitted a request to the Defense Security Assistance Agency for P&R data for the Improved TOW Missile System to include training and maintenance. Preparation of the P&R data was in process and was available 20 August 1982, as requested by GOF. The Department of the Army was sponsoring the Exception to National Disclosure Policy and approval was anticipated. Data were to be coordinated with DSAA prior to release to GOF.

(C) As result of approval, Planning and Review (P&R) data for the Improved TOW Missile System was released to the Government of Finland by DSAA. The P&R data covered two options: 20 launchers, 400 missiles at a cost of $9.0 million; and 30 launchers, 600 missiles at a cost of $12.5 million. Necessary ancillary equipment was included in the above dollar values.

Germany

(FOUO) Fuzes. In October 1981, USASAC forwarded a Letter of Offer and Acceptance (LOA) for 35,000 155mm projectiles (M483A1) and 35,000 MTSQ fuzes (M577) to Germany for acceptance. The Office of Defense Cooperation (ODC), Bonn, Germany, advised on 26 October 1981, that Germany Federal Ministry of Defense had requested that this case be reduced to 20,000 projectiles and fuzes, and that a new LOA for an additional 74,000 projectiles and fuzes would be requested in the 1982-1983 timeframe.

(U) In January the US accepted two German sales actions. One, on 4 January 1982, involved Foreign Military Sales Order (FMSO) II requirements for fiscal year 1982 for $14 million. The other, on 7 January 1982, involved an $18 million case for German Army coproduction.

(C) STINGER. Based on 9 November 1981 guidance from Dr. Richard D. DeTaver, Deputy Under Secretary of Defense (Research and Engineering), DOD assumed the following fallback positions on STINGER coproduction negotiations from Germany. With regard to STINGER Passive Optical Seeker Technique Post coproduction, the Memorandum of Understanding (MOU) would be limited to the basic STINGER, but with a fallback to include words to keep Germany apprised of the post development effort and toward potential cooperation on production matters after post development and production approval. Other MOU terms included consortium sales. Germany was apt to sell to consortium members. The USG would give sympathetic consideration to other NATO countries. Fallback position was to allow sale to all NATO in the MOU. Royalty charges were 5 percent to consortium members, and 8 percent to other NATO countries. Non-recurring charges were waived; no fallback given. Other NATO countries joining the consortium should negotiate amendments to MOU agreeing to terms and conditions. Fallback positions were to explore alternatives and refer to OSD for resolution.

(U) The 1982 combined US/German Armed Forces Logistics Conference and FMS Management Review was conducted in Orlando, Florida, during the week of 26-30 April 1982. The US team consisted of representatives from USASAC, SAAC, TACOM, ARRCOM, CECOM, MICOM, TAG, 200th, TAMMC-Europe, and ODC Bonn. During the Logistics Conference a total of 391 FMS cases (202 German Army, 184 German Air Force, and 5 German Navy) with a total value of $1.09 billion were reviewed.

(U) During 1974, the Federal Republic of Germany declined to participate in life-of-type buy for M48A2 and M48A2C tank repair parts. This decision was based on planned phase-out or conversion of their M48 tank fleet. However, during 1980, Germany decided to retain their M48 tank fleet, and requested assistance in procurement of required repair parts

which were no longer in the US Army supply system. Based on this request, a special contract was negotiated with Teledyne Continental Motors to obtain the 234 line items desired. This contract was let on 9 June 1980 at a value of $57.5 million and was funded under FMS case GY-B-BCC.

(U) In response to a German FMOD requirement, and pursuant to 200th TAMMC and HQDA request, USASAC expedited preparation of a lease agreement for one Howitzer, SP, FT, 155mm, M109A3 for a period of six months. The lease was signed by USASAC on 8 June 1982, and the Government of Germany (GOG) on 3 August 1982. The lease would be executed and the vehicle turned over to the GOG on 16 August 1982.

(U) P&R data for a quantity of 50 trucks, semi-trailers, generators, and other support items for PATRIOT System was forwarded to ODC, Bonn for release to the German Air Force. The total dollar value for all items for which data was provided was $154.4 million.

(U) Based on a request from the Government of Germany for a Letter of Offer for 213 radar warning receivers AN/APR-39(V)1 and related support equipment, two Letters of Offer were forwarded to ODC, Bonn, on 15 July 1982. The total value was $5.25 million.

(U) A total of six FMS cases covering fiscal year 1983 training at CONUS Army schools were forwarded to Germany for acceptance. The value of these cases was $9.68 million. They provided for training at Fort Bliss, Fort Sill, Redstone Arsenal, Fort Rucker, and other Army schools. FMS case GY-B-OSD, which covered the support of the German Air Defense School (GAFADS) at Fort Bliss (total value of $3.83 million) had also been forwarded to Germany for acceptance. This brought the total value of Germany's fiscal year 1983 training program to $13.51 million.

(U) ODC Bonn, Germany, message 191527Z Aug 1982, requested a Letter of Offer for 226 M110A2, MOD kits with a 3-year CSP package. Estimated value of the case was $5.9 million.

(U) Each year Germany requested Letters of Offer to provide the following year support for previously purchased equipment and/or for training at US Army schools. As of 27 September 1982, a total of 54 cases had been requested by Germany. As of 1 October 1982, 51 cases had been submitted to Germany for acceptance, and 44 with a value of $41.97 million, had been accepted and implemented. The remaining quantity of seven were scheduled to be accepted/implemented prior to 15 December 1982.

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Greece

(U) Three Greek actions surfaced in November 1981;

TOW. The formal thirty day Congressional notification period for a proposed sale of 1487 TOW missiles, 50 TOW launchers, and ancillary support equipment to Greece ended without Congressional objection. The LOA, with a value of $23.6 million was received by DSAA on 23 October 1981 for signature. Subsequently, on 27 October 1981, DSAA submitted it to Greece for presentation.

M109A2. The formal thirty day Congressional notification period for the proposed sale of 48 M109A2 SP Howitzers and ancillary support equipment to Greece ended without Congressional objection. DSAA signed the LOA, valued at $42.4 million, on 29 October 1981, releasing it to the Joint US Military Advisory Group (JUSMAG) Greece on 30 October 1981.

Radio Sets. Greece requested an LOA worth $15.3 million for 289 AN/VRC-12 radio sets, 876 AN/VRC-46 radio sets, 307 AN/VRC-47 radio sets, 10 AN/VRC-48 radio sets, 92 AN/VRC-49 radio sets, 15 AN/VRC-160 radio sets, 92 AN/VRC-64 radio sets, installation harnesses, and ancillary support equipment. In a message, DSAA advised that the formal thirty day Congressional notification period began 27 October 1981. The message authorized the release of unsigned copies of the LOA, and released these to JUSMAG Greece on 30 October 1981.

(U) An FMS Management Review was planned to be conducted in Athens, Greece, on 27 September through 1 October 1982. Dollar value for the program was approximately $500 million.

Israel

(U) The Government of Israel requested an expedited release of any quantity of projectile M483A1 HE to meet a vessel scheduled for Earle, New Jersey on 15 June 1982. A quantity of 9,342 was released by ARRCOM for shipment from Lone Star AAP. It was anticipated that this materiel would reach Earle, New Jersey on 14 June 1982 for onloading.

(C) Waivers were obtained from the Government of Israel (GOI) to ship 951 TOW missiles under Condition Code N. The missiles were being shipped in two groups; 250 left Anniston Army Depot on 12 June 1982, arrived McGuire AFB on 15 June 1982, and were airlifted by GOI and the remaining 701 were scheduled to depart ANAD on 16 June 1982 to arrive in Earle, New Jersey to meet the vessel departing on 22 June 1982.

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(U) The Government of Israel requested cost data on air transportation for three self-contained medical mobile operating thearers. Approval for use of and airlift of the units was obtained by GOI through State Department channels. The airlift would require two C141 planes on a dedicated SAM flight from Los Angeles to Tel Aviv at a total cost of $390,000 for both planes. The units to be shipped were not US Army assets, but were Navy resources located at Port Hueneme, California. Any subsequent case for transportation and lease for the equipment was to be prepared by the US Navy or Air Force, as appropriate.

(C) Information received about 30 June 1982, in a discussion with a representative of the Israeli Ministry of Defense Purchasing Mission in New York City, indicated that his government was highly satisfied with the M60A3 tank and especially its passive fire control system. He also commented that our 105mm tank ammunition worked well in defeating the T-72 tank in Lebanon.

(C) On 14 July 1982, DSAA suspended delivery of 4,000 M483A1 155mm HE projectiles scheduled for delivery to Israel. The notice of availability, expected for release by Lone Star AAP on 14 July 1982 was stopped. The Israeli freight forwarder was notified on 16 July 1982 not to expect this shipment. An additional 22,000 projectiles were being produced for Israel; scheduled for release to the freight forwarder at a rate of 3,000 to 4,000 each month through December 1982. Release of another 4,000 was scheduled for August 1982.

(U) The Government of Israel accepted an FMS case for 100 I-HAWK Missiles on 12 April 1982. The case was prepared, and Congressional approval obtained. Acceptance and implementation processes were expedited in order to exercise contract option deadline of 15 April 1982.

(U) On 12 May 1982, a Quality Assurance Team (QAT) was requested by the Government of Israel (GOI) due to problems they experienced with the M109A1B Howitzers.

(U) At the request of the Government of Israel (GOI), LOAs were prepared for 800 basic TOW Missiles and 800 I-TOW Missiles. They also requested an LOA for 800 TOW Missiles without warhead. It was the GOI intention to accept only one of these FMS cases after comparing costs. The LOAs for the basic and I-TOW were offered, and an LOA for a practice TOW with dummy warhead was initiated. During a meeting held on 20 May 1982, GOI representatives informed USASAC personnel that they planned to accept the I-TOW case, and to increase the case value from $7 million to $12 million. The quantity of missiles to be delivered was to be approximately 1,295.

(U) In preparation of a response to questions raised by Congressman Stratton regarding high kinetic energy tank ammunition, the Deputy Secretary of Defense was provided information through DSAA.

(U) The US Army kinetic energy tank round was designated the M735. ARRADCOM received the Israeli high kinetic energy tank round (Ctg 105mm APFSDS-T, Model No. M111) for evaluation as part of the Data Exchange Agreement. The evaluation was completed at TECOM and a classified technical report prepared in March 1980. ARRCOM Logistics Engineering Directorate evaluated an unsolicited offer from Israel to produce and provide their M111 tank round for our stock.

Luxembourg

(U) On 5 February 1982, USASAC implemented an LOA for 72 I-TOW missiles. The case was worth $692,692 and reflected a twenty-five month procurement lead time. Luxembourg had accepted the LOA in January 1982.

NATO Maintenance and Supply Agency (NAMSA)

(U) The Foreign Military Sales Management Review for the NATO Maintenance and Supply Agency was held 17-19 May 1982 at the NATO Supply Center, Capellen, Luxembourg. Representatives from USASAC and Security Assistance Accounting Center participated.

(U) At the request of HQDA, MICOM hosted a meeting with NATO and NAMSA personnel 24-26 August 1982 to discuss the plan for future support of the NIKE HERCULES Missile System for NATO/Allied customers. USASAC representatives from Program Management and Europe Directorates participated.

Netherlands

(U) The Netherlands LOA for purchase of the STINGER Missile System was signed by the GON 27 August 1982, and implemented by USASAC 1 September 1982. The LOA was for a quantity of 464 complete missile systems, 182 spare missiles, and associated equipment. Total case value was $50.7 million.

Norway

(U) In a letter to DSAA on 19 March 1982, the Government of Norway (GON) requested preparation of a Letter of Offer for one M48A5 tank for training purposes with expedited delivery in July-September 1982. DA authorized diversion of the tank on 2 April 1982, and requested expedited preparation of an LOA. USASAC forwarded the completed LOA to the GON on 23 April 1982 following DA/DSAA approval. Delivery was anticipated during June-July 1982.

(U) The Government of Norway paid $23.8 million for conversion of their 38 M48 tanks to the M48A5. Delivery of these tanks from conversion was scheduled to begin May 1982. On 23 March 1982, this

Center received an information copy of a letter to DSAA from the Norwegian Embassy requesting the purchase of an additional M48A5 tank. The additional tank was required for training Norwegian instructors and to completely equip three tank companies, each with 13 tanks. The tank was required in Norway during the period July-September 1982.

(U) On 31 August, MG Joergensen, Commander, Norwegian Army Materiel Command visited HQ DARCOM for briefings on several subjects. During General Joergensen's visit to the US he was expected to travel to MICOM, ARRADCOM, BMY, Hughes Aircraft and FMC.

(U) As a follow-up to the 15 October 1981 meeting, a 9-13 August 1982 meeting was held at MICOM to discuss lease of six I-HAWK batteries to Norway. Representatives from the Norwegian Air Force and USASAC attended the MICOM meeting. The meeting was successful and resulted in MICOM's being in a position to prepare a draft lease and supporting letters of offer for Norway.

Portugal

(C) Portugal was involved with Germany, under its military aid program, with providing the Portugese with 43 M48A2 tanks. Portugal planned to convert these M48A2s to M48A5s. Accordingly, it requested, in January 1982, through DSAA, price and availability (P&A) data for conversion kits. The Anniston Army Depot (ANAD) was to do the conversions.

(U) Major Lawrence Johnson, Army Section MAAG, Portugal, visited USASAC 23-26 August 1982. The purpose of the visit was to reconcile MAP/Grant Aid Portugal records, discuss FY 1982 procedures involving MAP/Grant Aid funds and selected FMS requirements.

(U) The largest FMS case for COMSEC material as of yearend 1982, was forwarded to DSAA for countersignature. The total case value was $16.8 million and offered KY-57/58 secure voice equipment and ancillaries. Associated cases for support items, manuals, and spare parts brought the total program value for the purchasing country to $20 million. The case did not qualify for Congressional notification since the offered material was not Significant Combat Equipment. USASAC managed FMS transactions for COMSEC (Communications Security) and SIGINT (Signal Intelligence) equipment sold to 21 foreign governments and three international organizations, with a total program of approximately 500 cases valued at $248 million.

Spain

(U) The US Army Communications Systems Agency Field Office in Madrid, Spain was deactivated in May 1982. This office had been providing assistance to the US Territorial Communications Network (TCN) Mediation Team. The USACSA Technical Director (Ft. Monmouth) and Deputy Project Manager, Telecommunications Automation and Control Systems (Ft. Huachuca) would provide, to DOD General Counsel, any support in TCN technical matters, until the mediation process was completed.

(U) Several types of shelterized communications systems with ancillary generators and air conditioners arrived in Valencia, Spain and were unloaded from the ship Covadonga on 4 September 1982 without incident. The shipment comprised 91 communications systems, 74 generators, and 86 air conditioners. Materiel was moved to inland destinations, and deprocessing begun. The US Quality Assurance Team (QAT) observed or participated in these operations and reported minimal difficulties. Several diversions and substitutions were needed to allow coordinated shipment of communications assemblages, complete with all components and ancillary items. The QAT also planned to aid in deprocessing an additional 10 communications systems, 16 generators, and 10 air conditioners previously received by Spain.

(U) Spain was scheduled to receive two M577A2 command post carriers in 1st quarter fiscal year 1983, complete with all installed communications equipment. Owing to production line stretchout affecting many Security Assistance customers, availability of Spanish vehicles was projected to slip to 2d quarter fiscal year 1983. Timely delivery of MAP materiel was an extremely sensitive issue with Spain, and was the subject of an interchange of letters and visits between the Chief of Staff (CSA), US Army and his Spanish counterpart. Accordingly, contractor, FMC, was contacted in an effort to avoid slippage. FMC agreed to make Spanish carriers available by 15 November 1982. This would allow installation of communications equipment and offer of carriers to transportation by 31 December 1982 in accordance with CSA commitment.

Switzerland

(U) In fiscal year 1981, the Swiss were occupied in tank competition which pitted the US M1 against the German Leopard. The Swiss were using two of each for the tests. On 19 October 1981, in going through dry-runs in preparation for a VIP demonstration on 21 October 1981, one of the US tanks failed to make a mountain curve and crashed some distance down the mountainside. No injuries were reported. The swiss driver reported brake failure. No official report was received as of 23 October 1982, on the status of the tank and cause for the incident. Unofficial reports stated that the gun tube and recoil mechanism were severely damaged.

(C) On 16 December 1981, DARCOM had forwarded its recommendations to DA concerning a 19 November 1981 draft US-Swiss M1E1 MOU. DARCOM's major concern was with regard to the expansion of the potential scope of the Swiss M1E1 coproduction program to include 120mm ammunition. Since wording contained in that draft could be interpreted as giving the Swiss open-ended authority to produce 120mm ammunition, DARCOM recommended that the US set forth terms and conditions for any ammunition coproduction arrangements in a separate supplement to the MOU. In this way, the necessary technology release and production base impact assessments could be made prior to determining the final scope of 120mm cooperation.

(U) In a letter to the State Department on 13 January 1982, the Swiss requested planning and budgetary data on the Basic TOW, Improved TOW, TOW II in quantities of 4,000, 10,000 and 20,000, TOW vehicle, ITV, M-901, TOW jeep M151 with kit M232 in quantities of 200, 400, and 600. They also requested data on TOW launcher in quantities of 200, 400, and 600 to include night signt units. State Department and OSD approved P&R data on 24 February 1982 for all except TOW II which NDP action was being processed. The Swiss would submit a formal planned schedule for the procurement of TOW II. A one year evaluation of the equipment was to begin in Switzerland in March 1983. Purchase was planned in 1984/1985.

(U) Exception to National Disclosure Policy (E-NDP) for the release of pricing and review data on TOW II to the Government of Switzerland (GOS) was approved on 11 May 1982. Approval of E-NDP for basic and I-TOW was previously granted. The TOW II E-NDP approval was subject to three limitations; no coproduction, testing in-country or ECM/ECCM was authorized. The key to a GOS decision by its parlimentary committee was the presentation of test and evaluation. USASAC requested of DA on 25 June 1982, expansion of E-NDP to include an in-country test, thereby waiving this limitation. Test would be conducted in the same manner as the STINGER test with all equipment physically under US personnel control. DA initiated staffing on 19 July 1982 to modify the test prohibition in the E-NDP.

(U) In August 1981, the Swiss also requested approval for commercial export of technical data pertaining to the COPPERHEAD. Martin-Marietta afterward requested an export license. Although the release involved no R&D data, information on hardware or classified military information on the system required an exception to National Disclosure Policy (E-NDP). Therefore, DA initiated staffing on the E-NDP 23 July 1982. The sale depended on applicability of COPPERHEAD to Swiss terrain.

(U) In late 1980, DA had provided the Swiss with planning and availability data on the M1/M1E1 tank for 300 and 450 Abrans tanks. This was updated for the 120mm M1E1 only in June 1981. The Swiss requested by letter of 12 February 1982, P&A for proceeding with their evaluation process by the M1E1. The Swiss Defense Technology and Procurement Group was required to provide its Parlimentary Committees firm price and component price information in April 1982. DSAA directed DA to provide P&A information by 19 March 1982 for 40, 140, 280, and 420 M1E1 tanks.

(C) In August 1981, DSAA and the State Department approved a demonstration of the STINGER system in Switzerland, to begin in June 1982. The demonstration would be limited to three STINGER tracking head trainers, would not involve missile-firing, would not exceed 90 days in duration, and would use the basic version of STINGER. STINGER test assets would at all times remain under the sole control of the US Army team. Storage would be in a Swiss-provided facility to which the US Army team would have sole access. The demonstration would not preclude hands-on operation by Swiss

Army personnel. The Swiss made available their test plans and objectives. From these, the US Army would develop an FMS case to cover costs of the demonstration and personnel. An international agreement covering the technical and security aspects would be concurrently prepared as an annex to the FMS case. The Swiss desired a meeting in Switzerland in late January 1982, to discuss the context of the LOA and MOU.

(U) On 25-29 January 1982, the first progress meeting on the STINGER Missile System test in Switzerland took place in Bern, Switzerland. The test was to be conducted July through September 1982. The US Army would maintain control of the equipment and conduct the test with Swiss participation. All expenses incurred by the US government would be reimbursed by FMS cases. Statements of Accord, test, training, and security plans were negotiated, and agreements finalized. The test did not include post-STINGER. Periodic progress meetings were to be held on this program.

Turkey

(U) In November 1981, the Turkish Land Forces requested planning data for 518 more tank conversion kits. These kits would form the second increment (400 initially) in its M48 tank conversion program.

(C) On 2 November 1981, 50 REDEYE missiles plus ancillary equipment departed McGuire Air Force Base on a Turkish Air Force aircraft, arriving in Ankara on 4 November 1981. These were the first of 500 missiles DA/OSD directed to be sold from US Army inventories. The remainder were to be supplied incrementally from January through July 1983 as safety modifications were applied in accordance with a DA-approved schedule. Because of the serious consequencies which could occur should REDEYE missiles fall into terrorist hands, USASAC policy dictated that they must be moved overseas under armed guard on military aircraft.

(U) On 9 March 1982, a Letter of Offer for 10 search and rescue configured UH-1H helicopters went forward for Turkish Air Force consideration. The Government of Turkey had until 15 May 1982 to sign, and USASAC believed that it would sign.

(U) On 1 March 1982, TACOM hosted a meeting to determine how to provide conversion mortality parts for the Turkish Tank Modernization Program. These parts were required for use during the conversion process and were expected to be on hand before the conversion line was put into operation. As a result of the meeting, it was determined that the supporting requisitions would be input as a package but with different priorities to reflect the required delivery dates (RDD) needed. Priorities 06 and 13 were to be used, depending on US stock priorities. Certain items were to be procured directly from the manufacturer by PM-M60. The parts were to be shipped direct with no consolidation using project code ENO. Costs associated with the supply of these parts would be charted to FMS Case TK-B-UNE.

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(C) In February 1982, with approval of a Turkish FMS case for 15 UH-1H helicopters, Bell Helicopter Textron reopened the UH-1H production line, which had been closed for about one year. Since this reopening could afford many countries an opportunity to satisfy their utility helicopter requirements, DARCOM sent, through DA, a worldwide survey message to possible foreign customers.

(U) The fiscal year 1982 Program Review was to be held at HQ DARCOM from 29-30 April, and at USASAC/NCAD from 3-5 May. Concurrent with the review, discussion pertaining to the EW Helicopter Program was planned at TSARCOM. Also, an anti-tank ammunition facilities tour, sponsored by USDRE was expected to be conducted during the same timeframe.

(U) The 1982 Turkish Command Performance Review was completed on 5 May 1982. All participants viewed the discussions as highly successful. In addition to the FMS case status, the tank modernization, NIKE, EW, and Anti-Armor Ammunition programs were reviewed and future courses of action determined.

(U) A survey team to assess the overhaul and rebuild capabilities of a Turkish Aviation Depot was deployed to country on 6-7 July 1982. The team was in country for approximately two weeks, under the auspices of the Defense Industrial Cooperation Program. Travel and associated costs were paid by the Government of Turkey through an FMS case.

(U) On 27 August 1982, a Letter of Offer for 518 M48A5 tank conversion kits was released to the Government of Turkey. The kits were the second increment in the Turkish Tank Modernization Program. Total value of the case was $128,069,092. On 14 September 1982, the case was implemented for the second increment of M48A1-A5 Tank Coversion Kits for the Turkish Tank Modernization Program.

United Kingdom

(C) The United Kingdom (UK) requested an FMS Case LOA for 4,000 I-TOW missiles. There was a previous request for 157 missiles. Two Letters of Offer and Acceptance were in preparation at the end of fiscal year 1982. The estimated value of these FMS transactions was $50 million.

(U) The UK participated in joint exercise/training in 1979 and 1980, with US troops at Fort Campbell, Kentucky. These exercises were referred to as Hickory Stock and Trumpet Dance I. Trumpet Dance II was expected to be held in fiscal year 1983 at Fort Lewis, Washington, Yakima Firing Center. One or two British Battalions were to participate. Fort Lewis support of the UK troops was to include rations, administrative, billeting, civilian hire (KPs), aircraft, field equipment, and vehicles. All costs incurred by the US was to be reimbursed by the UK under FMS procedures.



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(U) A Letter of Offer was prepared to provide full logistical support for two British Battalions at Fort Lewis, Washington. The proposal was in support of British Exercise Trumpet Dance to be held during the period February through April 1983.

## Mideast, Africa and Americas

(U) During the fiscal year, the Latin America/Africa Division maintained responsibility for 59 countries and one international organization that were eligible to purchase or receive defense articles and services under Foreign Military Sales and/or Grant Aid. Within this eligible total, 34 had active Security Assistance Programs.

## Africa

### Kenya

(U) Representatives of the Government of Kenya (GOK), USG, and Hughes Helicopter/Hughes Aircraft met in Culver City, California on 17 May 1982, to begin a Hughes 500MD helicopter/TOW follow-on provisioning conference. The case represented 32 Hughes 500MD helicopters.

### Mali

(U) The Government of Mali, previously an inactive FMS customer, requested, in November, planning and review data for the following:

44 Clothing and Individual Equipment Items
9 Communications Equipment Items
50 1/4-ton Trucks
40 2 1/2-ton Trucks
20 5-ton Trucks
10 500 gallon Water Trailers

MRCs have been tasked, but no further action took place in fiscal year 1982.

### Somalia

(U) DSAA directed, on 11 August 1982, that six FMS cases valued at approximately $24 million be prepared and implemented on an expedited basis. Letter of Offer and Acceptance included training, publications, and the following equipment: 24 M113A1 APCs, 24 TOW launchers; 431 TOW missiles, 11 106mm recoilless rifles, and 48,000 rounds of .50 caliber ammunition.

(U) Five Special Assignment Airlift Mission (SAAM) flights, grossing 400 tons, were directed into Somalia between 25 and 30 August 1982, to transport this materiel. Quality Assurance and Mobile Training Teams were directed into country prior to receipt of this materiel.

(U) A total of 49 off line priority 03 requisitions for TOW missiles, TOW configured M113A1 APC, major sub-assemblies and ammunition were released by telephone on 17 August 1982 for Somalia. A total of 5,614 concurrent spare parts requisitions were also released via Autodin on 17 August 1982. All items were being expedited to meet required delivery dates.

Sudan

(U) A package of 13 Letters of Offer and Acceptance (LOA), totaling $14.3 million were hand carried to DSAA on 29 October 1981. This package, known as the National Program for the Sudanese Ground Forces, included 2 M88A1 recovery vehicles, 6 M125 mortar carriers, 12 M114A1 Howitzers, 8 AN/PPS-5B radars, 6 heavy equipment transporters with trailers, ammunition, support equipment, spare parts, tool sets, and appropriate training. Cases were accepted by the Military Attache' on 2 November 1981, and implemented the same day. An additional case for 20 M60A3 tanks, valued at $35.5 million was released from Congress on 25 November 1981, and signed by the Military Attache' on 7 December 1981. Over 9,000 requisitions were generated to fill these requirements and materiel was released to freight forwarder on an expedited basis. All major items of equipment were shipped from CONUS ports in January 1982 and arrived in country during February.

(U) USASAC also developed an overall concept (under a total package approach) for the deployment of a survey team to assist the Government of Sudan in determining their maintenance capability and requirements relative to US Government (USG) equipment provided under FMS. A two man pre-survey team, funded under a pre-deployment survey line on case UCF (M60 tanks), was deployed to country between 17 and 24 June 1982 to definitize personnel skills required in the composition of the survey team. The pre-survey team study resulted in defined requirements for the full survey team under case UDD, estimated at approximately $201,000. Case UDD was forwarded to country and acceptance was anticipated at the end of fiscal year 1982.

Zaire

(U) In November 1981, the US Military Mission - Zaire, requested expedite action on FMS cases for clothing, parachutes, and trucks. Requisitions for clothing were raised to priority 03. Letters of Offer and Acceptance were being prepared for 800 parachutes, 35 ¼-ton trucks and 25 2½-ton trucks. The country was requested to authorize the Military Attache', Washington to sign and fund the two LOAs which were being prepared.

(U) The monetary problems of Zaire in December 1981 were affecting that country's ability to pay its military personnel training in CONUS under the IMET program. This left open the possibility of Zaire's having to curtail the number of students allowed to enter the fiscal year 1982 IMET program. Students already in the United States were expected to be offered the option of returning to Zaire or completing their scheduled training, while subsisting only on IMET per diem ($15 per day).

## Latin America

### Argentina

(U) In accordance with the US position on the Falkland Island dispute and advice from DSAA, a USASAC message 30 April 1982, notified NICPs to suspend shipments to Argentina. Under Public Law 95-92, no new FMS cases had been established for Argentina since September 1978. There were, however, five open FMS cases with a total of 19 undelivered items valued at $122,331.

### Brazil

(U) Five representatives from the Brazilian Aeronautical Commission visited USASAC-NCAD on 19 and 20 April 1982 to review the initial stockage proposal for a Cooperative Logistics Supply Support Arrangement (CLSSA) in support of the UH-1H helicopter. The major problem was a request from Brazil Depot Operations to add selected depot rebuild items. A tentative case was agreed upon pending a USASAC negotiation with in-country personnel to resolve the use of other than a CLSSA for depot rebuild support.

### Colombia

(U) On 12 May 1982, six UH-1H helicopters with M23 Armament Systems were shipped to Colombia by two special assignment airlift mission (SAAM) flights from Corpus Christi Army Depot (CCAD). The American Ambassador in Bogota had requested delivery be accelerated by two and a half months to 15 May 1982. Through the dedicated efforts of CCAD and TSARCOM personnel, the requested delivery date was exceeded. Six additional helicopters were delivered on 6 July 1982.

### Dominican Republic

(U) At the express request of the Chief of Staff, US Army, four Letters of Offer comprising 1,062 M16A1 rifles, 162 M60 machine guns, 81 M79 grenade launchers with ammunition, 30 M151A2 utility vehicles, and 10,000 sets of clothing were prepared on an expedited basis, and hand carried to DSAA on 7 January 1982 for countersignature. The total value of these credit cases was approximately $4 million. Materiel had a three month leadtime and all major items of equipment were shipped to country in April 1982.

### El Salvador

(U) Fort Bragg, North Carolina and Fort Benning, Georgia were selected as training sites for El Salvadorian personnel. Approximately 975 El Salvadorian troops were provided light infantry training at Fort Bragg. Initial cadre of 150 officers and NCOs started training on 11 January 1982, and the remaining personnel arrived 30 days later for a 20-week training period. During the same time span, OCS training was conducted at Fort Benning for approximately 500 El Salvadorian cadets.

OCS training began on 18 January 1982 and was completed on 24 May 1982. In order to facilitate this training, equipment had to be identified, requisitioned and be on-hand at these locations within about a two week period. Eight FMS cases were established to provide weapons, ammunition, communications equipment, uniforms and other personnel support items. Materiel, valued at approximately $5 million, was provided on an expedited basis in sufficient time to meet training requirements.

(U) An emergency shipment of UH-1H helicopters and 4,886 M16A1 rifles was requested by OSD on 2 February 1982. Helicopters were air-lifted to El Salvador on 5 and 6 February 1982. M16A1 rifles were delivered in country on 9 and 10 February 1982. Materiel was furnished under drawdown provision of Section 506 of the Security Assistance Act, authorized by Presidential Determination.

(U) On 4 March 1982, DSAA sent DA a materiel MAP Order for the fiscal year 1982 program for El Salvador, with a value of approximately $9 million. This MAP Order only authorized the drawdown of US Army stocks and the provision of non-contractual defense services. The materiel being provided consisted primarily of UH-1H helicopters, M16A1 rifles, ammunition, and related equipment. Presidential Determination No. 82-5, dated 2 February 1982, applied. This MAP Order provided funds to cover materiel previously provided on an emergency basis.

(U) MILGP message of 5 April 1982 requested Special Assignment Airlift Mission (SAAM) for 2,000 rounds of 40mm cartridges, 300 rounds of 60mm cartridges and 400,000 rounds of 7.62mm cartridges. These items were part of a $4.5 million package of ammunition which was being prepared for surface shipment. Airlift of this portion of the total package was to meet in-country shortage. Airlift of the requested ammunition items to country was completed on 16 April 1982.

(U) On 15 April, Fort Bragg requested additional ammunition items for on-going training of El Salvadorian troops. Per DA direction on 16 April, the following items were provided on 19 April to support this training requirement.

| Item | Quantity |
|---|---|
| 40mm HE W/PD Fuze | 1,000 |
| 81mm illum | 2,100 |
| Grenade violet smoke | 210 |
| Trip flare surface | 1,300 |

Grenade red smoke (700) was also part of this requirement but with Fort Bragg's concurrence, delivery date of this item was set for 23 April to avoid expenditure for premium transportation. The value of the total requirement was approximately $335,000.

(U) Presidential Drawdown (506) Authority for El Salvador. A USASAC Comptroller representative met with DA, TRADOC and FORSCOM personnel at Fort McPherson, Georgia, on 27 April 1982 to conduct an Interim Progress Report (IPR) on the status of both 506 and Foreign Military Sales (FMS) elements of the El Salvador training program. Discussions centered on financial procedures required to process credit due the El Salvador program for supplies and equipment not to be returned to El Salvador at the completion of the training program. HQ TRADOC recommended on-site visits to Forts Bragg and Benning to disseminate financial procedures for both the FMS and 506 elements of the El Salvador Training Program.

Honduras

(U) On 6 April 1982, Honduran helicopter pilots, accompanied by Military Group representatives, began ferrying four UH-1B and one UH-1H to Honduras. The four UH-1B helicopters were turned over, directly, to Honduran personnel at Houston, Texas by National Guard units. These were substitutes for four previously offered helicopters. Honduran officials had expressed displeasure at the condition of the original helicopters. The UH-1B helicopters were provided as-is, where-is under FMS. The UH-1H was a leased helicopter returned to Corpus Christie Army Depot for repairs.

(U) On 24 July, USMILGP Honduras requested US SOUTHCOM to expedite delivery of 792 cases of combat rations required to support an emergency field deployment of a Honduran unit. Since the value of the rations exceeded the $15,000 limit imposed on USASAALA FMS cases, USASAC obtained approval to exceed the financial limitation. This action permitted shipment of the rations, supplied from US SOUTHCOM stocks, to Honduras on 27 July.

Panama

(U) MG Claude M. Kicklighter, CDRUSASAC, and COL George K. Todd, Jr., Director, Mideast, Africa and Americas attended the 1982 USSOUTHCOM Military Group Commanders' Conference in Panama City during the period of 6 - 9 January 1982. The purpose of the conference was to discuss and develop coordinated action in Security Assistance. The conference theme was "Security Development for the 80s: Building the Coalition." Other conference participants included senior representatives from the National Security Council, State, Defense and the US Army Chief of Staff.

## Mideast

Bahrain

(U) The Government of Bahrain accepted a case for seven Howitzers and associated CONUS/OCONUS training. The value was $4.7 million. The companion basic load and training 155mm ammunition cases totaling $4.0 million were also accepted by the Government of Bahrain.

(C) Planning and Review for two I-HAWK batteries with one AN/TSQ-73, training and support equipment was provided at an estimated value of $282.8 million. Planning and Availability data for six Bell Model 412 helicopters (equivalent to UH-1H helicopter), with training and support equipment was provided at an estimated value of $15.8 million.

(C) Government of Bahrain was given letters of offer in fiscal year 1982 for CONUS and OCONUS training, six Howitzers and 5-ton trucks (prime movers), ammunition and support equipment. The estimated total cost of this program was $5.9 million, of which $3.5 million involved MDE.

Egypt

(C) On 19 October 1981, OASD, ISA chaired a planning meeting to discuss the agenda and potential dates for the initial meeting of the Joint Egyptian-US Military Cooperation Committee (MCC). The MCC was modeled on the Joint Military Commission concept. The planning date for the MCC was January 1982. Although the meetings were to focus on mutual security planning, FMS programs would be reviewed.

(U) In December 1981, ARRCOM organized and staffed a Special Project Office for the management of the 105mm coproduction program. Initial staffing of the office consisted of four permanent employees, and four personnel detailed for 90-120 days to assist in program organization and planning. Four additional personnel were named in the functional directorates to provide assistance on Matrix Management and its concept. Commander, ARRCOM placed appropriate priority on this program.

(C) Egypt requested, in the same month, Planning and Review (P&R) data for two options to procure M60A3 tanks. Option 1 was to procure 156 tanks in April and 156 tanks in October 1982. Option 2 was to procure 220 tanks in April 1982 and 156 tanks in November and December 1982. The initial deposit for each option was to be paid in cash with the remainder of the funding to be from FMS credit. Tasking instructions were dispatched on 14 December 1981 with a suspense date of 4 January 1983.

(U) An Egyptian training delegation headed by BG Osama El Checmini visited HQ TRADOC and selected installations during 7-17 December 1981 to review the revised training programs designed by TRADOC. The delegation visited Fort Monroe, Fort Knox, Aberdeen Proving Ground, and Anniston Army Depot. To improve training of Egyptian M60A3/M113 students, TRADOC identified students by department, specialty, and job assignment, and matched each student category with appropriate formal schooling and observer training. This action should resolve the training shortfalls that surfaced earlier in the Egyptian M60A3/M113 programs.

(C) On 13-14 January 1982, DOD sponsored the first meeting of the Joint Military Coordinating Committee for Egypt. The committee's function was to perform a joint senior level policy review of security assistance matters between the US and Egypt. In FMS, Egypt identified its equipment needs to support force modernization plans. Discussions centered on the ability to address those needs within FMS credit funding constraints. Those constraints would limit significant Army managed new starts in fiscal years1982 and 1983 to 220 M60A3 tanks. To accomplish this, Egypt would have to add $50 million cash to available credits in fiscal year 1982.

(U) On 26 May 1982, the 1st Battalion successfully completed collective training at Ft. Bliss, Texas by firing two I-HAWK missiles. The first firing was a miss due to missile problem. Raytheon Telemetry team forwarded tapes to Raytheon for evaluation to determine what happened in the missile. This report took approximately six weeks. The second firing was successful. The 2nd Egyptian Battalion reported to Ft. Bliss for training and was scheduled to complete training in February 1983.

(U) On 26 March 1982, Pete Burns, a representative from BMY debriefed the Chief, Egypt Division on his recent visit to Cairo. During the visit he met with MG Shash and key officials of the Artillery Department. The Egyptian officials asked BMY to provide proposals for 100, 200, and 250 M109A2 Howitzers. They also requested BMY provide a proposal for mounting a Soviet 122mm Howitzer on a self-propelled chassis. Finally, they requested a proposal for a track vehicle depot. BMY provided proposals on the sale of M109A2s and on prototype development for a self-propelled configuration for the 122mm Howitzer. BMY declined to give a proposal on a depot, stating that it would be impossible until a survey had been conducted and requirements defined. BMY proposed to conduct the survey for free "if the Egyptians sign a contract for M109A2s."

(U) The first I-HAWK Battery shipped to Egypt departed the United Stated on 7 April 1982. ETA Alexandria, Egypt was 27 April 1982.

(U) Preliminary building drawings for the Egyptian Zone Workshop were delivered to the Egyptian Procurement Office on 31 March 1982. Equipment layout drawings for major plant equipment would be prepared after equipment specifications were available. It was recommended to the Egyptians that the layout drawings be delayed until the Zone Workshop equipment LOA was signed. This would insure that the drawings addressed equipment on the accepted LOA.

(U) COL DeAtkine, Chief, Army Section, visited USASAC during the week of 17-21 May 1982, and Headquarters, TRADOC 24-25 May 1982. During these meetings, anticipated logistic shortfalls in the Egyptian program were discussed, and available solutions investigated. Major areas of

concern were continued funding for the logistic and Armored TAFTs. Additional US technical assistance, increased use of the case management lines to fund Technical Assistance Terms (TATs). Since those meetings, the Egyptians approved all of the above listed activities except TATs. OMC needed to make some concrete proposals to the Egyptians with regard to TATs. Advance copies of the Zone Workshop Equipment LOA were received at DARCOM, and working copies provided to OMC and and the Egyptians for review. The total cost was $38 million which was $13 million over the Rough Order of Magnitude discussed in December 1981 with the Egyptian team which visited the United States. When OMC and the Egyptians were ready, an LOA negotiating team was to go to Cairo to finalize LOA content. The Army Program PMR scheduled for mid-May was postponed by the Egyptians until August. The PMR was to provide the best forum for continued discussion with the Egyptians on program shortfalls.

(U) Deliveries of 311 M60A3 tanks and 29 M88A1 recovery vehicles to Egypt were completed in May 1982. Delivery of M88A1 recovery vehicles resumed in January 1983, and delivery of M60A3 tanks were scheduled to resume in September 1983. OMC Cairo was provided a monthly armored vehicle delivery report. Pending resumption of recovery vehicle and tank deliveries, OMC Cairo would receive a monthly delivery status report for M113 family vehicles.

(U) The Egyptian freight forwarder had, by contract, the exclusive right to handle the shipment of all material to Egypt. Use of US mail to mail to OMC at the American Embassy was rejected in prior instances because of the volume of material that would flow through the FPO and because of the additional responsibility OMC would have to absorb delivery mail. Egypt did not have a pin point distribution account, thus received only changes which were required. Pin point distribution could be established; however, Egypt did not elect to do so.

(U) Contractor technical support price and review data were provided to the Egyptian Air Defense, I-HAWK program manager, 9 June 1982. Estimated cost was $11.8 million and provided for post-IOC technical support as discussed with the Air Defense Command, Egypt.

(U) Of a total of 76 line items of tools for the support of 311 M60A3 tanks delivered to Egypt, partial or complete due outs remained for up to 16 line items. Quantities delivered for five line items provided minimum essential support, and six more line items were scheduled to reach minimum support levels by 30 June 1982. One more line was to be supplied in July and one in August of 1982. Action was still in process to improve the projected delivery dates for the remaining three items.

(U) The Government of Egypt submitted an official request to extend the Logistic TAFT for another year and increase the personnel from four to nine. TRADOC was in process of preparing a new FMS case. GOE action to assign additional Egyptian personnel to Warehouse 67 was still under consideration by the Armor Department in June 1982.

(U) In fiscal year 1982, TAG established open-end FMS cases, and customer countries sent in multi-line requisitions (TAG was exempt from MILSTRIP) which were processed on a fill or kill basis. HQDA and USASAC had arranged with the Deputy, The Adjutant General for TAG to develop a backorder system for FMS. Publications which were not supplied with equipment were identified on major item cases for countries to requisition against their publications case. Deputy, TAG agreed in principle to having USASAC initiate these requisitions for the country on major items cases. The publications would be backordered if not available. The procedures were to go into effect after TAG established the backorder system for FMS. Customer countries desired MILSTRIP-type status which TAG was not programmed to provide. USASAC's approach was for TAG to furnish backorder information to USASAC which would convert the data to MILSTRIP-type status and provide this information to customer countries. TAG briefed DA on proposed backorder system on 8 June 1982. DA was supportive, and requested TAG to prepare a supplemental budget for $275,000 to fund the backorder system. It was anticipated that this system would be in place in one year.

(U) USG and Egyptian management teams for the 105mm tank ammunition coproduction program met 25-30 July at Milan, Tennessee, with the contractors, Milan AAP, Aberdeen Proving Ground, USASAC, and Egyptian Freight Forwarder representatives. Topics discussed included implementation of program cases to initiate production of the four tank rounds, transfer of technology, drawings of buildings and production line layouts, US inspection of installed equipment prior to turn-on, and technical assistance during April-June 1983 production. The Egyptians asked for assurances that the US Government would be responsible for the program through successful testing of the initial production. The US maintained that the structure of the program made it impossible to accept program responsibility. The US would, however, remain fully committed to insuring that the Egyptians successfully produced all four rounds. The US team emphasized early completion of building, storage, and integration of equipment when received in Egypt, shipment of materiel, quality control, test firing, and personnel training.

(U) The Egyptian Program Management Review (PMR) II was held at New Cumberland, Pennsylvania during the period 17-20 August 1982. A total of 66 personnel attended. Attendees included 16 military personnel in the Egyptian delegation, six US representatives from OMC, Cairo, and 44 US representatives from CONUS. The Armor, Mechanized Infantry, TOW, Heavy Airdrop, and CH-47 Programs were reviewed and a total of 78 action items were identified in the five programs.

(U) During the period 23-31 August 1982, a US Army team visited Egypt to discuss and negotiate the final content of the Zone Workshop LOA. GOE elected to reduce a number of items from the case resulting in an overall reduction of $13.6 million in case value. New case value was

$25.2 million. Mr. Ellis, the Industrial Engineer who provided preliminary building drawings to GOE and accompanied the LOA negotiation team, discussed in detail with the Egyptian engineers, the building concepts. Mr. Ellis also reviewed the data requirements for completeness. The Egyptian representatives provided the US Army team an initialed copy of a marked-up case which identified all of the desired deletions. The Ministry of Defense reportedly sent a telex to the Egyptian Procurement Office, Washington, directing them to sign the case. US Army representatives agreed to provide: (1) Equipment layout drawings within 45 days, (2) Power/utility requirements matrix for significant items of equipment within 45 days, (3) Installation drawings and complete specifications on significant items of equipment within 30 days of contracting for those pieces of equipment or approximately 120 days from implementation of the LOA, (4) Complete specifications for drive-through vehicle wash station and monorails, (5) Recommendations for the construction of the concrete pad on which the building was to be built, i.e., aggregate base, reinforcement and concrete thickness requirements. A marked-up copy and initialed case was hand carried back to the US on 31 August, and delivered to the Procurement Office on 1 September 1982.

(U) The Letter of Offer and Acceptance for the GOE Zone Workshop was accepted on 9 September 1982, and implemented on 14 September 1982. The revised dollar value after in-country negotiations was $25.2 million.

(U) During fiscal year 1982, the Armor/Track Vehicle Program expanded to a total of 659 M60A3 tanks and 109 M88 recovery vehicles, program value $1.3 billion, and 1,178 M113A2 family of vehicles, program value $200.1 million. As of 1 October 1982, 311 M60A3 tanks, 16 M88 recovery vehicles, and 710 M113A2 armored personnel carriers had been delivered to Egypt.

(C) Defense Production Assistance. Egypt provided SAM -3, -6, and -7 missiles and associated equipment for repair, upgrading and return. Phase I, April 1981 to April 1982 successfully completed safety and survey program for SAM -6, -7 systems, assisted in establishing a medium level maintenance capability for -6 and -7 systems, and some critical subsystems of -3. Trouble shooting procedures were defined; test equipment designed, fabricated, and verified; -3 components, -6 radar, -6 KIPs van, -7 missiles repaired. Delivery was made of -3 KIPs van mod kits, checkout was accomplished, test and repair stations for -7 systems, and certain -3 and -6 components. Critical spare parts for -3, -6, and -7 maintenance support were defined and deliveries coordinated. Fifteen Egyptian officers were training in various phases of maintenance and repair. Training courses were developed.

(C) Phase II. Phase II, April 1982 - April 1983, continued with prime contractor determining SAM -3, -6, -7 system performance and establishing baselines, assisting in establishing maintenance capability for -6 system, providing a logistics support plan for -6 and -7 systems, and for training 28 Egyptian officers. SAM -7 stockpile sampling, detector analysis and air quality was being performed. A Scientist and Engineer Program Officer position at MICOM was established and filled. Planning was initiated for Phase III.

(C) Soviet Shelka System was provided to ARRCOM with Teledyne-Brown the prime contractor. Maintenance and repair was initiated, engineering evaluation, design analysis, and critical spare parts definition. Prototypes of parts were fabricated. Training was provided for two students, with 18 additional students to be in training during the program. An LOA was prepared and provided to GOE for acceptance for continuation of the program to begin in January 1983.

(U) The program was defined and LOAs were accepted by GOE. A management team was established at ARRCOM. Delivery was initiated of TDPs, materiel and equipment.

Jordan

(U) In February 1982, DSAA forwarded an LOA for one stationary I-HAWK training battery for acceptance by the Royal Jordanian Air Force. The value of the LOA was $22.8 million.

(U) Three LOAs were processed for supply action on 6 April 1982; FMS Case VCM - machine guns M85 and M219 ($717,572); VEF - machine gun M2 ($417,638) and VEH - Ctg caliber .50 ($142,229). Total value of the cases was $1.3 million.

(C) Project Thorny Bush II. The US Government assisted the Government of Jordan (GOJ) in improving their anti-infiltration capabilities. Phase I of this effort consisted of a JCS directed Defense Requirements Survey Team and integration of equipment provided by Lease Agreement. Phase II provided materiel cases, training cases, a transportation case, and a follow-on lease. Materiel, transportation and training cases were implemented during October 1982 through FMS credit. Shipment of materiel also began in October 1982 via scheduled MAC flights. Thorny Bush II team was deployed with their arrival in Jordan scheduled to coincide with arrival of lithium batteries commercially procured by the GOJ to power ground sensors. The team trained on set-up and operation of equipment to include ground surveillance radars and night vision devices. A follow-on five-year lease was also prepared and executed upon expiration of the initial six-month lease. The total value of the project was $4.3 million.

Kuwait

(U) Letters of Offer for 56 ITV vehicles M901, 16 M113A2 personnel carriers equipped with communications equipment, 56 TOW night sights, 4,865 I-TOW missiles, and 62 TOW launchers with support equipment were released for country acceptance consideration on 5 April 1982. The total program value was $98.5 million.

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(U) A contact/repair Technical Assistance Team was being formed to complete repairs of deficiencies encountered during the previous delivery of M109A2 Howitzers, and to perform special weapons technical inspection at the request of the GOK. Some Howitzers received rough handling during off-loading at the Port of Kuwait, and damage incurred was to be a matter of resolution between the Government of Kuwait and their Freight Forwarder. Deployment was planned for 1 May 1982.

(C) Two C-141 aircraft delivered 1,000 basic TOW missiles to Kuwait on 28 August 1982. These missiles were diverted from Condition Code N assets. The case value totaled $9.85 million.

Lebanon

(U) The United States was involved in the reconstitution and modernization of the Lebanese Army. The goal was to build a strong central army which could assure internal stability, and enable the withdrawal of all external armed forces from Lebanon.

(C) Security Assistance requirements were divided into three categories: immediate, near term and mid term. The immediate requirement was to provide materiel and training to equip at 70 percent the first four Lebanese Army brigades. Near term requirements would equip a fifth brigade at 75 percent and upgrade an existing brigade (8th) to 100 percent. Mid term requirements would be to equip two additional brigades.

(C) Numerous Letters of Offer and Acceptance (LOA) were prepared and others were in preparation channels to offer M48A5 tanks, wheeled tactical vehicles from ¼- to 5-tons, communications equipment, personnel support items such as uniforms and tents, generators, .50 caliber machine guns, and the tracked vehicle family of M113A2 armored personnel carriers, M577A2 command post carriers, and M125A2 mortar carriers. Personnel would also be deployed to Lebanon to conduct Quality Assurance functions, conduct training on materiel operation and maintenance, and aid the Lebanese in setting up a more functional logistics system.

Morocco

(U) In November 1981, the last 13 of 26 Moroccan M48A3 tanks to be converted to the M48A5 models by Anniston Army Depot (ANAD) arrived in Morocco. The Moroccans approved the tanks, and stated that their condition was superior. Accordingly, they requested the same Quality Assurance Team (QAT) be used to deprocess 28 tanks to be converted on Morocco Case UKY in 1982. Not only did ANAD provide outstanding equipment and support, but the QAT personnel developed extraordinary rapport with Moroccan personnel.

(U) The first US-Morocco Joint Military Commission OMC to provide an FMS Program was held in Fez, Morocco during the period 26-27 April 1982.



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(U) A list of defined high priority requirements for Parachute Brigade Equipment was received on 14 May 1982 and resulted in the establishment of seven FMS cases. These LOAs were signed/accepted by Moroccan Military Attache' on 28 May 1982, and implemented on 1 June 1982. Morocco's urgent requirement for all immediately available materiel, including CSP and ancillary/support materiel resulted in two expedited impact shipments. Materiel was airlifted from Warner Robins Air Force Base on Moroccan C130 aircraft on 7 and 22 June 1982. Materiel included night vision goggles, night vision scopes with brackets, image intensifier, M14 rifles with ammunition, lensatic compasses, load bearing webbing batteries and CSP.

(U) Expedited action was taken by USASAC to prepare and implement Letters of Offer for a critical requirement for M14 match grade rifles with appropriate concurrent spare parts and 7.62 match grade ammunition to support the Moroccan Parachute Brigade. This materiel for impact shipment was delivered by priority surface transportation into Dover AFB, Delaware, for airlift by a Royal Moroccan Air Force C130. The equipment arrived in Morocco on 21 July 1982.

Tunisia

(U) In November 1981, USASAC implemented a Letter of Offer and Acceptance for 311 improved CHAPARRAL missiles with required ancillary equipment and services for Tunisia. The total case value was $23,846,886. In December the Letter of Offer and Acceptance was implemented on an expedited basis to permit this requirement to be added to an already existing contract, thereby reducing production leadtime from 42 to 24 months.

(U) Five Letters of Offer and Acceptance for 54 M60A3 tanks, associated ammunition, support equipment and training were implemented on 12 April 1982 for the Government of Tunisia. The total value of these cases was $99,396,137. The first delivery was scheduled for June 1984.

United Arab Emirates

(U) Contractors Hughes and Bell purchased I-TOW missiles, 2.75 rockets and 20mm ammunition, and leased a COBRA/TOW helicopter from the US Government to perform a demonstration of the capabilities of the COBRA/TOW in the United Arab Emirates. The demonstration was held during the week of 11 October 1982. The firing from the air went well, but the ground demonstration did not go well. The TOW system was returned to Redstone Arsenal for testing, and results had not been finalized at yearend 1982.

(U) A Letter of Offer and Acceptance was prepared by USASAC for eight I-TOW missiles, 50 2.75 inch rockets and 1,500 20mm cartridges to be used in an AH-1S TOW/COBRA helicopter demonstration which was to be performed by Bell Helicopter in the United Arab Emirates on 1 October 1982.

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Yemen

(U) Yemen, Egypt, and Sudan. A back channel message from MG Toner, USCINCEUR J4/7, inquired as to the possibility of using Mobile Training Teams (MTT) and Technical Assistance Field Teams (TAFT) to remedy the lack of logistic personnel increases to provide the required long term logistic program continuity. MTTs and TAFTs would continue to be used to accomplish specific logistic tasks. It was also pointed out that: MTTs were of short duration; TAFTs and MTTs were expensive, and renewal of MTT and TAFT efforts were subject to approval of the host country. These factors made resident logistics expertise a necessity.

(U) An FMS case involving 7.62mm and caliber .50 linked cartridges and 105mm HEAT-M, HEP-T and APERs cartridges for use with the M60A1 tank was implemented for supply on 19 April 1982. The delivery dates from procurement ranged from 14 to 18 months. The case value was $13.45 million.

(U) No request was received from North Yemen for a Letter of Offer and Acceptance (LOA) to fund a supply and maintenance team. The matter was discussed with the Chief, USOMC on 25 May 1982. He indicated that N. Yemen officials were undecided as to whether they should sign the US FMS credit agreement.

(U) The Office of Military Cooperation (OMC), North Yemen advised both Oman and Jordan of their requirements for Arabic translated manuals. In discussions with Chief, OMC, N. Yemen, he stated that some manuals on the M60A1 tank had been received from Oman, and indications were that Jordan would also provide manuals. The Chief, OMC, indicated that N. Yemen had the capability to reproduce the manuals in the desired quantities.

Saudi Arabia

(U) During fiscal year 1982, the Saudi Arabia Division of USASAC was responsible for three elements of the Saudi Arabia Foreign Military Sales Program: the Saudi Arabian National Guard (SANG), the Saudi Arabian Land Forces (SALF), and the Saudi Arabian Army Ordnance Corps (SAAOC). The total DARCOM program for these elements was $4.6 billion as of 30 September 1982.

(U) SANG Program. The Modernization Program of the Saudi Arabian National Guard (SANG) was growing. In fiscal year 1982, there were 55 active FMS cases which were being managed in support of this program through Phase II. In October 1981, the SANG signed an LOA for a Medical Program with an estimated value of $503 million, bringing the overall Modernization Program value to $2.4 billion. The SANG Medical Program was to be centered in Riyadh, Saudi Arabia and would involve the operation of a 300-bed hospital and gradual training of SANG personnel in certain medical and administrative skills. A SANG Program Review Conference was held in Harrisburg, Pennsylvania in May 1982.





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(C) In July 1982, the Secretary of State approved 16 items for sale to the SANG for Phase III of the Modernization Program. The purpose of Phase III was to upgrade the SANG to a heavy armored capability. Items included for sale are the Division Air Defense System (DIVADS), armored vehicle launched bridge (AVLB), firefinder radars, among various other radar, weapons, and communications equipment. Although requested for sale by OPM SANG through the Embassy - Jidda, authorization to sell the M1 tank and the STINGER was withheld pending further review of the export policies.

(U) SALF Program. The SALF Program encompassed support of the Saudi Arabian Land Forces by the US Army Section, US Military Training Mission and the Ordnance Program Division, Mideast Division, Corps of Engineers. In fiscal year 1982, 295 active foreign military sales cases, valued at $2.2 billion supported the program. Significant combat equipment provided to the SALF included TOW, DRAGON, REDEYE and HAWK missiles, night vision devices for TOW and DRAGON, repair parts for M60A1 tanks and M113 series armored personnel carriers, M198 Towed Howitzers and numerous tactical vehicles. In December 1981, the Saudi Arabian Land Forces Review was held in Springfield, Virginia.

(U) Saudi Arabian Land Forces Army Aviation Program (SALFAAP). The SALFAAP Master Plan was presented for Saudi consideration in December 1981. After approval by the MODA Chief of Staff in June 1982, the plan was presented to HRH Prince Sultan, who approved it in September 1982. The plan was forwarded to the Council of Ministers for final approval and funding.

(C) On 27 January 1982, DALO-SAC authorized the diversion of eight M198 Howitzers to the SANG. Diversion was to be made from 4th quarter CY 1982 Army assets provided that there was no slippage in production.

(C) As result, on 7 June 1982, HQDA (DALO-SAC) approved the diversion of eight additional M198 Howitzers for the Saudi Arabian National Guard with delivery during 2d quarter CY 1983.

(U) On 8 June 1982, an FMS case valued at $24.5 million, for the procurement of uniforms for the Saudi Arabia Land Forces was signed. This was the follow-on to an FMS case valued at $140.7 million.

(U) The Hospital Corporation of America was selected by PM SANG for contract negotiations for the management and operation of the SANG Military Hospital, Riyadh, Saudi Arabia. All firms that submitted proposals were notified by letter of this selection and HQ SANG was briefed on 17 July 1982 by BG Yeosock. HQ SANG concurred with the selection.

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(U) As a follow-on, the Assistant Secretary of the Army for Research, Development and Acquisition granted authority to award the SANG Hospital contract to Hospital Corporation of America (HCA) pending resolution of the protest submitted to GAO by American Medical Institute and Holmes & Narver Services, Incorporated. HCA signed the contract at HQ DARCOM on 24 August 1982.

(C) Demonstration of Operational Capabilities. A demonstration of the operational capabilities of the M1 Abrams Tank and the M2/M3 Bradley Fighting Vehicles was held for the SANG and the SALF at Fort Hood, Texas in August 1982. A follow-on demonstration in Saudi Arabia was scheduled for July 1983.

(C) Phase III of the SANG Modernization Program. On 13 September 1982, DSAA approved the release of P&R for the following 13 lines of equipment for Phase III of the Saudi Arabian National Guard (SANG) Modernization Program:

(1) Thermal Night Sights, AN/VGS-2
(2) 25mm Chain Gun
(3) TOW Weapons Station
(4) TOW Night Sights
(5) SGT York Systems (Division Air Defense)
(6) Med Recovery Vehicle, M88A1
(7) Armored Vehicle Launched Bridge
(8) Armored Combat Earth Mover, M9
(9) Ground Emplaced Mine Scattering System
(10) Meteorological Data Systems, AN/TMQ-31
(11) Position and Azimuth Determining System
(12) AN/GVS-5 Laser Range Finder
(13) AN/TPQ-36 and AN/TPQ-37 Firefinder

(FOUO) The first phase of the Saudi Arabian National Guard Modernization Program had begun in 1973, and had been completed in 1979. During 1982, the Project Manager, SANG, was concerned with completion of the final tasks of Phase I, and the development aspects of Phase II of the follow-on Modernization Program, which would run from 1982 through 1985. The total program, to 30 September 1982, comprised 55 active Foreign Military Sales cases, having a value of $2.4 billion. The Phase II Program had as its objectives:

a. To complete modernization of and sustain the First Brigade as follows:

(1) Equip, complete training of, and sustain the First Brigade Headquarters.
(2) Sustain four CABs.
(3) Completely equip and sustain the First Artillery Battalion.
(4) Equip, complete training of, and sustain the First Combat Engineer Company.
(5) Sustain the First Logistics Support Battalion.





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b. To modernize and sustain the Second Brigade--organize, equip, train, and sustain Brigade Headquarters.

c. To expand and sustain the First Signal Company.

d. To complete modernization of and sustain the training base.

e. To expand and sustain the logistics base.

f. To make necessary preparations for Phase III.

g. To sustain OPM SANG.

(FOUO) Although there had been no official request to the US Government for a continuation of the program beyond Phase II, OPM SANG made explicit recommendations, which indicated goals and organization structure for Phase III. These recommendations, however, remained to be approved by HRH Crown Prince Abdullah, SANG Commander, following their briefing at the Country-to-Country Review meeting in Riyadh in late November 1982. The OPM SANG staff was working on development of a Project Manager's Master Plan (PMMP) for this phase, based on their objectives. Phase III of the follow-on Modernization Program would span the period 1986-1989 and included the following:

a. To transform the modernized First Brigade into a heavy brigade strike force consisting of:

(1) A mechanized brigade headquarters.
(2) One tank battalion.
(3) A cavalry squadron.
(4) Two mechanized infantry battalions.
(5) A DS artillery battalion.
(6) An engineer company.
(7) A logistics support battalion.

b. To organize a third brigade from elements and resources of the Second Brigade to operate from two military cities:

c. To expand the signal company.

d. To organize, equip, and train a GS artillery battalion.

e. To organize, equip, and train an air defense battalion.

f. To organize, equip, and train an air defense missile battalion.

g. To organize, equip, and train a support command, to include a DS maintenance battalion, a heavy equipment transport battalion, an engineer company (construction), and a DS supply and transport battalion.

h. To expand the training base.

i. To expand the logistics base.

j. To establish garrison headquarters at Khashm Al An, Hofuf, and Al Qassim.

(FOUO) An initial Project Manager's Master Plan (PMMP) for the SANG Medical Services Modernization Program was developed in August 1980. A Memorandum of Understanding (MOU) for the Medical Program was signed on 24 August 1981, and became the basis for a comprehensive medical modernization program which would be implemented in phases. The first LOA was approved and signed by HQ SANG on 27 October 1981, providing $503 million for the Project Manager to supervise the first phase of the SANG Medical Program in Riyadh. A new PMMP for the Medical Program, as well as a smaller plan regarding the SANG mobile surgical hospital, was hand carried to HQ DARCOM for appropriate staffing and approval on 20 September 1982. It was anticipated that the PMMP would be submitted to HQ SANG in October 1982. The objectives of the program were to maintain a 500-bed hospital and associated support complexes as well as manage and operate a 200-bed short-term acute care facility within the complex; and to establish and operate a medical records system. It was the further objective of the program to operate, maintain, and manage the test and examination facility collocated with the hospital; and to prepare and subsequently execute a detailed plan for the modernization and development of the National Guard Medical Services so as to provide a comprehensive and efficient service to meet the SANG requirements of peace and war, armed conflict or disaster.

(U) Future concepts for an entire military medical system were being developed by HQ SANG. The MOU established the requirement to develop and present a plan for developing a National Guard skill base by training medical specialists and other professionals to work in the hospital with the contractor.

(FOUO) In general terms, the mission of OPM SANG continued to be to modernize the SANG in accordance with conditions and requirements of the Memoranda of Understanding (MOU) signed by the US Government and Saudi Arabian Government in 1973 and 1981. This was more specifically defined in the mission statement as contained in the PM's Charter, signed by the Secretary of the Army on 25 May 1982:

> "...The objective of the program is to modernize the SANG in the areas of management, organization, training, equipment, maintenance, supply, procurement, medical care and facilities commensurate with the standards of the US Army and other accrediting U.S. professional organizations appropriately suited to

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the capabilities of the SANG. (The PM) will exercise principal authority over the planning, direction, execution, and control of the modernization which covers all elements, missions, functions, and requirements of the SANG, and will facilitate increased SANG participation in all aspects of the program, the goal being SANG's eventual capability to unilaterally initiate and sustain modern organizations and systems."

(FOUO) A major goal in the OPM mission continued to be one of assisting the SANG in developing self-sufficiency. This included increasing the active participation of the SANG in all aspects of the program, to include areas previously not emphasized for SANG involvement, such as management and procurement.

(FOUO) In addition to the modernization objectives previously described, OPM SANG had assisted the HQ SANG staff with numerous projects outside the overall scope of the program. These projects were important to the modernization effort since they demonstrated HQ SANG's desire to become self-sufficient, and at the same time, improve its management effectiveness.

(FOUO) The graduation date of the 1st LSB was rescheduled from 31 December 1981 to mid-April 1982, at OPM's request. Postponement was necessitated by a complex combination of factors, including a four-month delay in initial assignment of troops by SANG, critical lack of key facilities, major equipment and tool shortages, and a high percentage of untrainable soldiers. The delay allowed the 1st Maintenance Company to accomplish actual field maintenance support for modernized units, greatly enhancing the 1st LSB's capability to support the 1st Brigade in combat operations.

(FOUO) The 1st LSB provided, for the first time, 100 percent support for the period unit rotation between Khashm Al An (Riyadh) and Al Hasa. This five-day exercise was accomplished without contractor support, although it was available for emergency use.

(FOUO) Virtually all significant facility actions for the 1st LSB remained totally stalled at HQ SANG. Funds availability was partially responsible for the hold-up, which severely impacted on training and the unit's operational capability. HQ SANG delays in acquiring new equipment also adversely affected the unit's performance and mission capabilities.

(FOUO) A letter was sent to officials at HQ SANG requesting assignment of one officer from each SANG Organization to the Logistics Management Division, OPM SANG, as FMS case officers, marking the beginning of a program to train SANG in Foreign Military Sales procedures and requiring attendance at the DISAM course and tours of DARCOM facilities, as well as participation in future SANG program review conferences.

(FOUO) The US Government Letter of Offer and Acceptance (LOA) for the Saudi Arabian National Guard Medical Program in the amount of $503 million was signed by HRH Crown Prince Abdullah on 27 October 1981.

(U) All new civilian job descriptions and job upgrades associated with assumption of the Medical Program were carried to the Corps of Engineers, Middle East Division, on 29 October 1981, for classification.

(FOUO) A joint HQ SANG-OPM SANG memorandum was prepared and sent to HRH Crown Prince Abdullah. This document requested further guidance from the SANG Commander and recommended that, if two Western Province battalions were to be modernized in Phase II of the follow-on program, they would have to be trained in accordance with the Phase II PMMP, with all training conducted at Khashm Al An (Riyadh). Furthermore, if HRH Crown Prince Abdullah desired that the subject battalions merely be upgraded, and not trained to the level of readiness of the modernized battalions, it was recommended that they be upgraded by the SANG outside the Modernization Program. No reply was received from the SANG Commander during October 1981.

(FOUO) The ZAC Master Payment Schedule was revised during the October-December 1981 period with a ZAC-8 amendment to be submitted to HQ SANG in January 1982. The payment schedule was revised to complement the SANG budgetary process and accelerate Phase II payments commensurate with the accelerated Phase II Program requirements.

(FOUO) In November 1981, the First Brigade Artillery Battalion (105mm) underwent and successfully passed its graduation SANGTEP (Saudi Arabian National Guard Training and Evaluation Program), a modified ARTEP. This marked the formal end of the 1st Artillery Battalion's training period.

(FOUO) A revised TDA for OPM SANG, which was prepared and submitted to HQ DARCOM on 28 September 1981, was approved on 4 November 1981. The approved document reflected 98 additional manpower requirements: 69 for the Phase II training mission (primarily to cover the overhire workforce) and 29 for the new Medical Services Modernization Program mission, for a total manpower requirement of 206. No new space authorizations, outside the 108, then in existence, were granted.

(FOUO) In December 1981, formulation of a milestone schedule for the Project Manager's Master Plan (PMMP) for Phase III of the Follow-on Modernization Program was accomplished.

(FOUO) Modification P00055 to the Phase I contract with Vinnell Corporation (DAAG99-79-C-0014) was signed on 27 December 1981, extending the period of contract performance for the SANG First Signal Company, the First Engineer Company, and the SANG School System until 31 December 1982, at no additional cost.

(FOUO) Phase I of the Follow-on Modernization Program officially ended on 31 December 1981. With the exception of the 1st LSB and the 1st Brigade Headquarters, the overall objectives for all units undergoing modernization in Phase I were met. The 1st Brigade Headquarters Company was scheduled for graduation in February 1982, and the 1st LSB in April 1982.

(FOUO) A SANG Medical Services Modernization Program announcement was published in Commerce Business Daily and Saudi Arabian newspapers to solicit interested firms prior to issuance of solicitation.

(FOUO) Civilian job descriptions for the new Medical Management Division, OPM SANG, which were carried to the servicing civilian personnel office for classification in October 1981, were completed on 13 December 1981.

(FOUO) A proposed EDP system design was published on 19 December 1981, and the design was undergoing joint Vinnell-OPM SANG review as of 31 December 1981. SRA personnel were to return in January 1982 to receive comments and obtain information in reference to in-country EDP support for both hardware and software systems. The final report, to include a complete systems design, hardware specifications, and EDP manning requirements, would be due on 31 March 1982, two months ahead of schedule.

(FOUO) During the September - December time period, the publications program underwent a reduction in scope, and the contract was modified to include a computer-assisted translation system. Approximately 200 publications were completed in English by 31 December 1981. Of 146 additional publications, 16 were deleted from the requirements list due to reduction in program scope, leaving a total of 130 publications awaiting, or undergoing, translation. This number included all of the high priority publications identified for both Phases I and II of the Modernization Program.

(FOUO) In January 1982, Phase II of the Follow-on Program officially began, and a request for proposal (RFP) for the SANG Medical Services Modernization Program was issued worldwide on 25 January, with a "not later than" reply date of 25 April 1982.

(FOUO) During the January - March 1982 time period, the 1st and 3d CABs successfully completed and passed platoon, company, and battalion SANGTEPs and were rated combat ready. The 2d and 4th CABs successfully completed and passed platoon and company SANGTEPs and were also rated combat ready.

(FOUO) The 1st Logistics Support Battalion (LSB) provided, for the first time, total SANG DS logistics support for the two-battalion SANGTEP conducted in late January 1982. The LSB operations throughout were excellent.

(FOUO) During January 1982, the 1st LSB hosted top military officials from SANG during its field deployment, the first time these individuals had observed the LSB in a functional mode. The graduation date of the 1st LSB was scheduled for 20 April 1982.

(FOUO) During the January-March 1982 period, a series of briefings on the 1st LSB's mission/capabilities/procedures was held for modernized units. The briefings were highly successful in opening dialogue on DS with the units, and all commanders agreed that they understood the LSB for the first time. They also acknowledged that the 1st LSB, although ungraduated, was doing an excellent support mission.

(FOUO) A request was made for diversion of critically-required tools and equipment for the 1st LSB, and basic skills training for the 5th CAB began on 2 January 1982.

(FOUO) The 2d Maintenance Company and the 2d Supply and Transport Company, which had been undergoing training with the 1st LSB, were transferred from the 1st LSB to the 2d LSB during January through March 1982.

(FOUO) During these months, the 1st Brigade Headquarters Staff acted as control headquarters during the conduct of SANGTEPs at battalion, platoon, and company levels.

(FOUO) Work began in early January 1982, for Phase III of the Follow-on Modernization Program, although, an increasing number of field commitments made progress slow.

(FOUO) During the period 18-22 January 1982, a representative of the Procurement Management Division, OPM SANG, visited Vinnell Corporation's recruiting agent in Manila. No problems were observed, and the recommendation was made to continue use of this agency to meet Vinnell's essential labor requirements in the Philippines.

(FOUO) Work continued during January 1982, on the development of an EDP systems design capable of supporting an integrated approach to the management of Phase II activities. Systems Research and Applications (SRA), Vinnell Corporation's subcontractor, returned to the jobsite for the period 11-21 January 1982. During this trip, they received comments, verified and validated their draft system design which was submitted on 19 December 1981, and surveyed the Saudi Arabian market for in-country support of hardware and software systems.

(FOUO) In February 1982, the 1st Brigade Headquarters successfully completed its SANGTEP, concluding this unit's scheduled Phase I modernization training.

(FOUO) The 1st Artillery Battalion (Composite) participated in a battalion-controlled FTX conducted during 8-9 February 1982, its first tactical training since completion of its graduation SANGTEP in November 1981. This exercise was successful in identifying for the commander and staff those areas requiring concentrated effort before the spring FTX in April 1982.

(FOUO) Requirements for additional Phase II equipment were being consolidated by OPM SANG, and a request for an amendment to the ZAC would be made in April or May 1982. Among the additional requirements were more V-150D night vision equipment, radar for VULCAN systems, MILES, a camouflage program, various items of equipment to be used by the SANG in the training base and as war reserves, and possibly some ammunition.

(FOUO) The Medical Management Division, OPM SANG, was officially assigned 1 February 1982.

(FOUO) LTG Mittemeyer, Army Surgeon General, and MG Baker, EUCOM Surgeon, visited HQ SANG and OPM SANG for an update on the Medical Services Modernization Program during the period 15-18 February 1982. The visit demonstrated to SANG the important and supportive role the US Army Medical Department had pledged to the SANG Medical Services Modernization Program. Frank and informative discussions with SANG officials fostered the positive pledges of personnel support and consultative assistance, both from CONUS and Europe.

(FOUO) A 10 February 1982 message from DAPE-MBC, informed OPM SANG of 29 additional space authorizations to support the Medical Services Modernization Program, bringing the total authorized strength at OPM SANG to 137.

(FOUO) On the same day, HQ SANG requested information on the academic and military curricula of the US Military Academy at West Point, for the purpose of aiding in the development of the curriculum and training program at the new King Khaled Military Academy, formerly the SANG Military Academy. OPM SANG requested, through the US Embassy, that representatives from West Point be invited to come to Riyadh to discuss the requirement with the Academy Commandant.

(FOUO) The Resource Management Division (RMD), OPM SANG, monitored and consolidated two short-fused budget data gathering exercises for HQ SANG during February-March 1982. The exercises were designed to identify all SANG modernization funding requirements (FMS and non-FMS) for the subsequent five years. This was a first-time request by HQ SANG for this type of support. RMD planned to provide this support in future years.

(FOUO) During March 1982, all First Brigade units participated in the HQ SANG/Brigade FTX.

(FOUO) The ZAC-8 Amendment, revising the Master Payment Schedule at HQ SANG's request, was signed by HQ SANG on 2 March 1982.

(FOUO) A revised milestone schedule for the Phase III PMMP was developed in early March 1982. Organization structures of new Phase III units were completed, and personnel and equipment lists finalized for approximately 50 percent of these units. Work stalled on 31 March 1982, pending some major equipment and organizational decisions from HQ SANG.

(FOUO) The newly-organized Medical Management Division at OPM SANG embarked upon an ambitious plan to meet the SANG Medical Services Modernization Program requirements. While opening the Riyadh Hospital was considered essential, the development of an integrated master plan for the SANG Medical Program would be the cornerstone for success in the future. At the end of March 1982, a master plan for the mobile surgical hospital was under development by a select team from the Surgeon General's Office, the Health Service Command, and the 7th Medical Command. This plan provided for the upgrade of the mobile surgical hospital in use in fiscal year 1982, to a 50-bed unit as required by the PMMP for Medical Services. It was anticipated that the plan for the mobile surgical hospital would be completed in May 1982.

(FOUO) As of 31 March, the computer-assisted translation system was in the implementation stages. Representatives from World Translation Company of Canada, Limited, were awaiting visas to travel to Riyadh, install the system, and begin training Vinnell personnel on its use. HQ SANG expressed a growing interest in the project, and was considering its value carefully before providing visa assistance. Production of English language publications by Vinnell Corporation was progressing smoothly. All manuals required for Phase II would be completed in English on schedule. Some translation into Arabic was being accomplished, but was expected to increase substantially when the computer-assisted system began full operation.

(FOUO) In the area of contractor EDP support, SRA personnel returned to the jobsite with a draft copy of their final report. The purpose of this was to assure that the final report met all of Vinnell Corporation's requirements and expectations, and that any hardware options Vinnell/OPM SANG questioned would be investigated. Vinnell's EDP Center actively supported the Modernization Program's day-to-day requirements, in addition to providing assistance, as requested, to HQ SANG EDP personnel. Work continued on the verification of data to be used in developing automated training schedules and ammunition projections.

(U) As of the end of March 1982, the revised PM Charter for the SANG Modernization Program was approved at DA and awaiting signature by the Secretary of the Army. A mission statement to clarify the need to expand the program into Phase III (1986-1989) was requested by DA and provided by OPM SANG on 31 March 1982.

(FOUO) The Logistics Management Control Center (LMCC) of the Logistics Base Headquarters, General Support Logistics Base, was activated during March 1982, and became involved in the initial cataloging effort for SANG.

(FOUO) A pre-proposal conference for the Medical RFP was held during the week of 1-6 March 1982. Of the 183 firms requesting a copy of the RFP, 65 actually visited the site and participated in the question-and-answer session culminating in the conference.

(FOUO) During the period 10-20 April 1982, the entire Imam Mohammed ibn Saud Mechanized Brigade participated in the annual spring FTX (FORCE ON FORCE 3:1 ratio) and live-fire exercise.

(FOUO) The 1st Logistical Support Battalion successfully completed its SANGTEP during the spring FTX and graduated on 15 April marking the end of its Phase I modernization. The unit conducted, without contractor support, its own formal graduation in the field, to include all planning, coordination and execution. Both the field graduation and the self-initiated planning were "firsts" in the Modernization Program. Overall objectives for all units undergoing modernization in Phase I of the Follow-on Program (1980-1981) were, therefore, met as of this date, and these units were continuing their training or sustainment under Phase II of the program.

(FOUO) As of April, the 2d LSB training cycle was 50 percent complete, and the unit was scheduled to graduate in late November 1982. The training plan was undergoing revision to insure that the unit would graduate as scheduled, and noted shortfalls in training were being addressed by Vinnell Corporation. Shortages of equipment and literate personnel continued to produce a negative impact on technical training.

(FOUO) The solicitation for SANG Riyadh Medical Center operation was closed on 25 April 1982 with a total of 17 responses received. Pricing and technical evaluation began a week after closing the receipt for proposals.

(FOUO) LTG Mittemeyer's invitation for selected HQ SANG staff to visit US Army medical facilities was forwarded on 26 April 1982. The invitation was accepted, and HQ SANG proposed that the event be scheduled for March 1983.

(FOUO) The Headquarters and Headquarters Company (HHC) of the 1st Brigade encountered extreme difficulty in achieving its modernization goals and would not be ready for graduation on December 1982 as scheduled. Personnel assignment and utilization were the biggest problems, and the lack of trained personnel, both officer and enlisted, was having an adverse impact on training.

(FOUO) As the result of requests for diversion of selected items of equipment for the 1st LSB, many items began moving to and through the freight forwarder facilities in Baltimore. Approval for diversion of an additional eight M198 Howitzers was received.

(FOUO) OPM SANG learned that most TOW missiles in use in May 1982 around the world (including all of the missiles in SANG's inventory) were suspended. Efforts were begun to secure sufficient missiles to train the 5th CAB and to sustain the first four CABs.

(FOUO) Medical repair parts acquisition was designated as a British responsibility in October 1981; and to this end, the British team was to provide an uncosted listing of repair parts to OPM SANG for review by 12 July 1982. Procurement of these repair parts by the British would occur by 15 August 1982, with delivery of non-medical parts by December 1982, and medical repair parts by January 1983.

(FOUO) A proposal evaluation team for the Medical Services Modernization Program arrived on 6 May and departed on 17 June 1982. As a September action, the mobile surgical hospital plan for the Medical Program was initiated on 11 May 1982.

(FOUO) A 21 May letter from HQ DARCOM (DRCPT-SA) authorized OPM SANG the two residual officer spaces (remaining from OPM SANG's 26 September 1981 space request) from DARCOM resources to support Phase II of the Modernization Program.

(FOUO) OPM SANG's 28 February 1982 letter to HQ DARCOM/HQ DA requesting approval of additional key billet positions for OPM SANG, as well as revalidation of previously approved key billets, was approved by DAPE-MPD-PO on 28 May 1982. Future occupants of most OPM SANG military positions would subsequently be required to serve 24-month tours whether accompanied or unaccompanied by family members.

(FOUO) The revised PM Charter, SANG Modernization Program, was signed by the Secretary of the Army on 25 May 1982.

(FOUO) Adequate housing for contractor employees was one of the principal concerns viewed as restricting the opening date of the hospital. On 28 March 1982, 3 May 1982, and 28 May 1982, these concerns were expressed by BG Yeosock, PM SANG, to HE Sheikh Tuwaijiri, Assistant Deputy Commander of SANG, and other members of his staff. At each encounter, SANG reassured the PM that this problem would not cause a delay in the proposed opening of the hospital. OPM SANG, through the contractor, would be directed to provide the needed housing from those resources available in Riyadh.

(FOUO) During the April-June 1982 time period, general planning data for the Phase III PMMP was compiled and a course of action considered for the master training schedule. Plans beyond the conceptual stage were sta-led due to the need for decisions on Phase III equipment by both the USG and SANG. A briefing to HQ SANG on progress and assumptions as of thi date was planned for August 1982.

(FOUO) A Medical Organization and Functions Committee was established at HQ SANG in 18 June 1982. The evaluation committee completed the proposal evaluation for operation of SANG's Riyadh Medical Center and forwarded its recommendation to the source selection authority on 26 June 1982.

(U) As of 30 June 1982, the Vinnell Corporation was in the process of relocating its corporate offices from Alhambra, California to Fairfax, Virginia.

(FOUO) A proposed OPM SANG TDA update, submitted to HQ DARCOM on 13 April 1982, reflected the 29 spaces authorized in February 1982, three additional civilian requirements, and minor changes and realignments. The updated fiscal year 1982 TDA, as well as an initial fiscal year 1983 TDA (reflecting the two additional officer spaces authorized for OPM SANG in May 1992), were approved by HQ DARCOM on 16 June 1982.

(FOUO) The revised PM Charter, SANG Modernization Program, which was signed by the Secretary of the Army on 25 May 1982, was received in early June and copies were distributed to appropriate agencies within the Kingdom.

(FOUO) The ZAC-9 Amendment was forwarded to HQ SANG for acceptance on 27 June 1982. In order to accomplish separate program funding, the ZAC-9 Amendment established a new case designator WHA ($447,457,500) for contract services and training for the SANG hospital and medical city by transferring funds identified for the Medical Program on Phase I training case WEB ($402,746,500). In addition, the amendment transferred $8,331,000, identified for the Medical Services Modernization Program on Phase I OPM management case WDA, to Phase II OPM management case WEI. The amendment was also to change the ZAC master schedule of deposits due to slippages in the Medical Services Modernization Program.

(FOUO) On 20 July 1982, Hospital Corporation of America (HCA), Saudi Arabia Limited, was selected for contract negotiations for the SANG Riyadh Medical Center.

(FOUO) The 2d and 4th Combat Engineer Platoons joined the 1st Combat Engineer Company on 22 July 1982, completing the integration of all company elements which was originally scheduled for May 1982.

Testing of the four platoons confirmed a serious lack of training; only eight percent of the 2d and 4th Platoon personnel were able to complete 50 percent or more of the required basic combat engineer tasks.

(FOUO) A draft PMMP for Phase III was submitted to Vinnell Corporation for review on 31 July 1982. The contractor was tasked with evaluating several alternatives for Phase III scheduling/training and unit organizations. The contractor was also involved in developing an automated Phase III equipment list, to become part of the Phase III PMMP.

(FOUO) Euro-Systems Health Consortium (EHC) confirmed on 27 July that the spare parts list for the medical equipment in the SANG's King Fahad Hospital would be available in the technical library for preliminary acceptance.

(FOUO) OPM SANG presented the Commander, King Khaled Military Academy, with a proposed curriculum and developmental methodology, as requested by HQ SANG on 10 February 1982.

(FOUO) The Training Management Division, OPM SANG, developed and presented HQ SANG with an automated training ammunition program based upon approved programs of instruction and projected student density. The division also briefed HQ SANG on a proposed Military Operation in Urban Terrain (MOUT) facility.

(FOUO) The Fifth Artillery Battery (composite) collective training was completed with the battery passing its SANGTEP. The lack of an approved TOE continued to be the most serious problem facing the unit.

(FOUO) Basic officer and NCO classes were conducted for the 6th CAB. Planning and preparation for other classes to support the 6th CAB continued in order to meet the published program.

(FOUO) Equipment and facility shortages continued to severely impact on the 2d LSB's ability to train.

(FOUO) The lack of support from the 1st Brigade Headquarters and Headquarters Company (HHC) Commander in requiring personnel to be at training,and his refusal to assign personnel to proper TOW positions resulted in the HHC being placed into a new training program, necessitating an additional nine months of training. The status of equipment remained poor.

(FOUO) During August 1982, the 1st Combat Engineer Company participated in its first two field exercises.

(FOUO) Initial steps toward reorganizing the 1st Transportation Company of the Transportation Command, General Support Logistics Base, into its ultimate modernized configuration were taken.

(FOUO) The 1st Logistical Support Battalion participated in a brigade FTX during the period 15-18 August 1982, and began its move into a new, temporary DS maintenance facility.

(FOUO) The draft PMMP for the Medical Services Modernization Program was completed and handcarried to the Office of the Surgeon General (OTSG) in August 1982. The format of the medical PMMP consisted of health systems component plans and support plans with annexes. The estimated cost advised to the OTSG was $1-1.2 billion for the first three years.

(FOUO) On 31 August 1982, HQ SANG requested that Euro-Systems Health Consortium undertake the necessary support for the preliminary acceptance of the King Fahad Hospital which was to begin on 11 September 1982.

(FOUO) The contract for the operation of the King Fahad National Guard Medical Center was awarded to Hospital Corporation of America (HCA), Saudi Arabia, Limited, on 24 August 1982. A letter was sent to HQ SANG on 28 August 1982 confirming the signing of the contract between the US Government and the HCA.

(FOUO) The Corps of Engineers, Middle East Division (COE-MED) provided a team of six COE personnel to participate in the inspection and acceptance of the SANG Riyadh Medical Center, beginning on 11 September 1982. The OTSG provided the medical expertise for the acceptance evaluation process. Preliminary acceptance team members had made several observations: the computer systems were not ready for acceptance, and breakdowns had occurred on three engines at the Riyadh power plant. Recommendations for alternate plans and corrective actions were submitted.

(U) Personnel strength at OPM SANG (including the Washington Field Office) as of 29 September 1982 was as follows:

| | OFF | ENL | GS CIV | TCN CIV | TOTAL |
|---|---|---|---|---|---|
| Authorized | 39 | 5 | 75 | 20 | 139 |
| Assigned | 37 | 6 | 107 | 34 | 184* |

* Included 70 overhires

(FOUO) Critical shortages of primarily SANG-furnished equipment continued to adversely impact completion of individual and collective training of the 1st Combat Engineer Company. An additional three months of training would be required before the unit would be prepared to graduate.

(FOUO) The Logistics Plans and Budget Directorate, the Inspection and Assistance Directorate, and the Supply Depot Command of the General Support Logistics Base were activated on 4 September 1982.

(FOUO) A draft concept plan was received from the contractor in July outlining the Kingdom-wide transportation system proposed for SANG. The plan required extensive technical revision, modification of the command and control arrangement, and expanded narrative explanation giving functions, capabilities, and suggested missions for transportation units throughout the Kingdom. In August 1982, the contractor began to integrate required revisions, and the final draft, with modifications incorporated, was received at OPM SANG on 22 September 1982. Receipt of the formal concept document, however, was expected by mid-October.

(FOUO) MICOM was requested to survey HQ SANG's calibration requirements preparatory to development of an FMS case amendment for calibration. The survey was on-going to the end of the fiscal year.

(FOUO) Two personnel from the contractor artillery repair section, DS/GS Maintenance Modernization, were sent to Aberdeen Proving Ground, Maryland, to attend a DS/GS maintenance course for the M198 Howitzer.

(FOUO) US Government approval of some Phase III end items was granted, and price and review data for these items was received. In addition, a preliminary Phase III FMS meeting of representatives from OPM SANG, USASAC, and the MRCs was held at HQ DARCOM on 21 September 1982.

(FOUO) The Vinnell Corporation provided Phase III planning input on 11 September 1982. A detailed review of that input by the OPM SANG staff was ongoing at the end of September 1982. An ultimate Phase III organization and training concept was expected to be incorporated into a final PMMP during the next quarter.

(FOUO) The final editing of the Medical Program's PMMP in Riyadh occurred during the period 6-20 September, and translation began on 11 September. Printing was anticipated on 16 October 1982. The final PMMP, as well as a smaller plan regarding the SANG mobile surgical hospital, was handcarried to HQ DARCOM for appropriate staffing and approval on 20 September 1982. It was anticipated that the PMMP would be submitted to HQ SANG in October 1982.

(FOUO) On 3 September 1982, a letter was dispatched to HQ SANG requesting agreement to modify the HCA contract in order to authorize procurement by HCA of required housing for the project.

(FOUO) On 14 September 1982, a contract for a mini-computer to support internal OPM SANG activities was locally awarded. The PDP 11/24 computer was to be installed and operational by 14 November 1982. Application software would also be delivered by the same date. The dollar value of the contract was $211,697.

(FOUO) The Country-to-Country Review (CCR) between OPM SANG and HQ SANG was tentatively planned for 29-30 November 1982. Delays resulted due to the September Hadj holidays and HQ SANG's desire for further preparatory time. The OPM SANG briefing was in the final stages of development at the end of September 1982. Plans were to brief the CCR to the Commander, USASAC, and staff it through DA and DOD in October 1982 prior to presentation to HQ SANG.

(FOUO) The final draft of the OPM SANG Organization, Missions, and Functions Manual (10-1) was being staffed within OPM SANG for approval by the Project Manager. Approval was anticipated by 2 November 1982.

(FOUO) Work began on the development of a Request for Proposal (RFP) to implement the SANG Support System (SSS). Systems Research and Application (SRA) Corporation was awarded a sub-contract to design, develop, and deliver Arabic automation processing standards and foundation software, both of which would support the SSS. The Vinnell Corporation actively used the TOE builder program in planning for Phase III units.

# CHAPTER VIII

# HIGHLIGHTS AND TRENDS

## Introduction

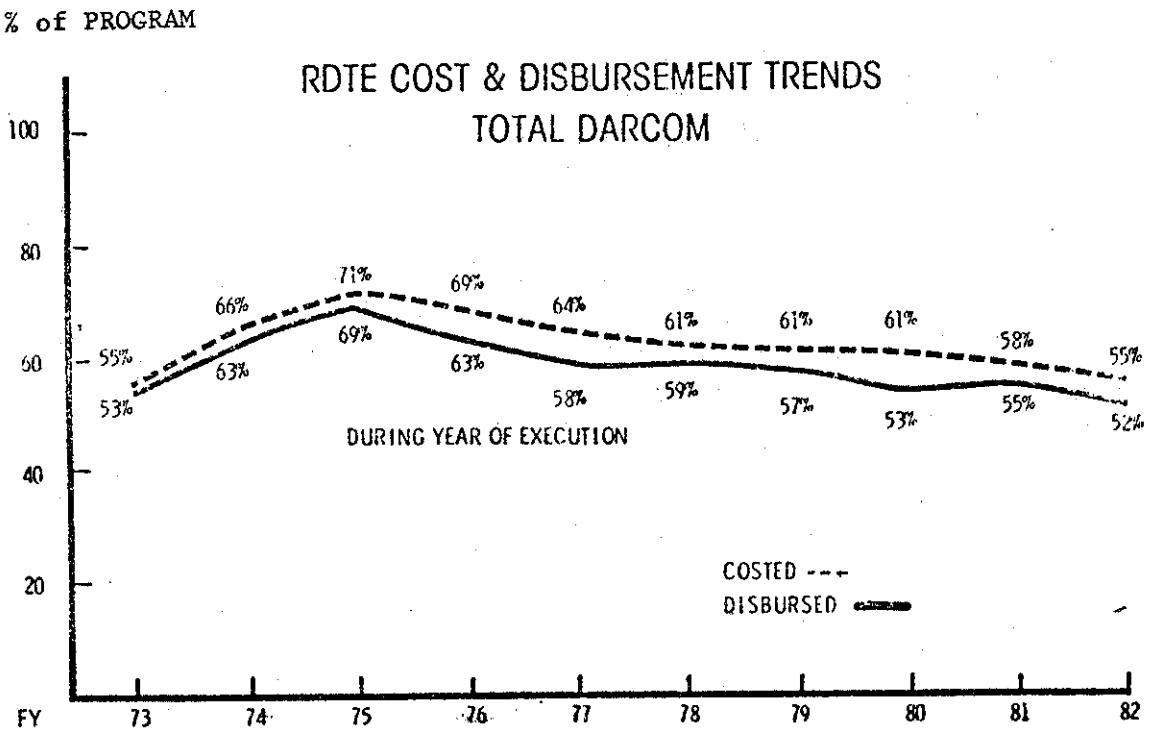
(U) Major management highlights in fiscal year 1982, were force modernization and acquisition. This chapter focuses on trends and highlights of RDTE, Procurement, Readiness, Security Assistance, Conventional Ammunition, Installations and Services, Management, Personnel Training and Force Development, Equal Employment Opportunity, Civilian Personnel, and Product Assurance and Test. Highlighting so many specialized areas will necessarily be done on a selective basis, in order to provide a broad view of trends in these areas.

## Research, Development, Test and Evaluation

(U) RDTE Cost and Disbursement Trends for DARCOM. Since OSD reduced the RDTE Program because of low disbursements, DARCOM had a drive to increase its disbursement rate. DARCOM lost ground during fiscal year 1982, because of a problem in obtaining adequate obligation authority early under continuing resolution authority (CRA). During fiscal year 1982, DARCOM, with the Comptroller, took corrective action so that the problem would not exist in fiscal year 1983.

(U) In November 1982, General McCall sponsored a workshop on RDTE disbursements for all MSC comptrollers. There were many relatively minor reasons for low RDTE disbursements, but there was agreement that the principal contributor was DARCOM's failure to comply with incremental funding. ERADCOM had initiated an ambitious program to enforce compliance with incremental funding. DARCOM suggested that other commands adopt the ERADCOM approach.

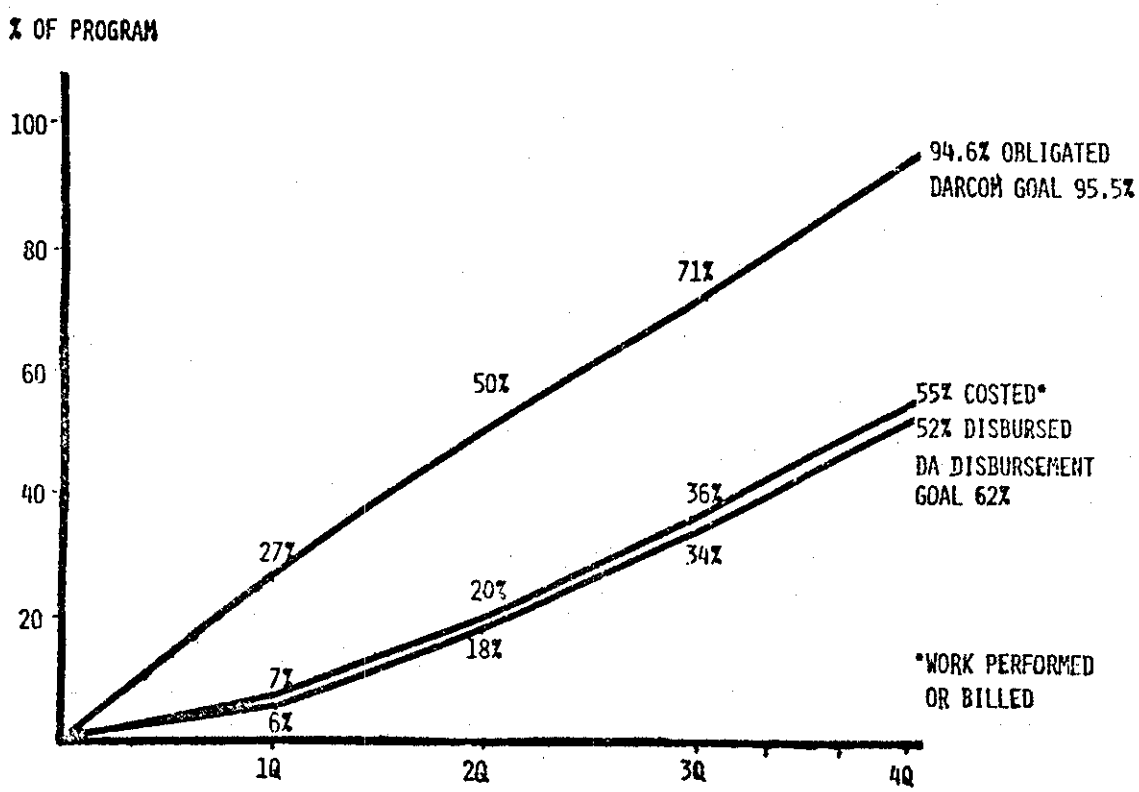
(U) The following charts illustrate how DARCOM closed out fiscal year 1982 for the RDTE appropriation.

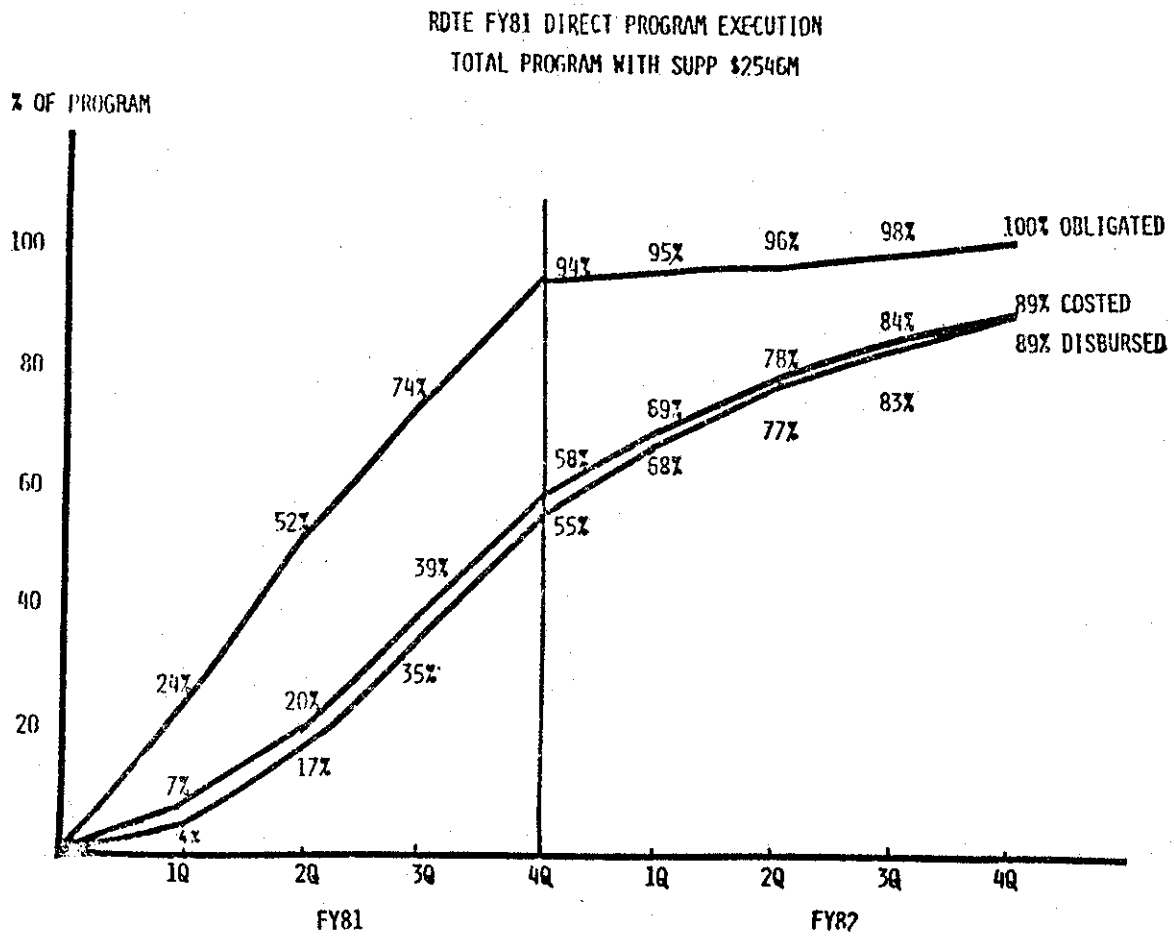



COSTED: WORK PERFORMED OR BILLED DISBURSED: PAID OUT

RDTE FY82 DIRECT PROGRAM EXECUTION

TOTAL PROGRAM $2,771



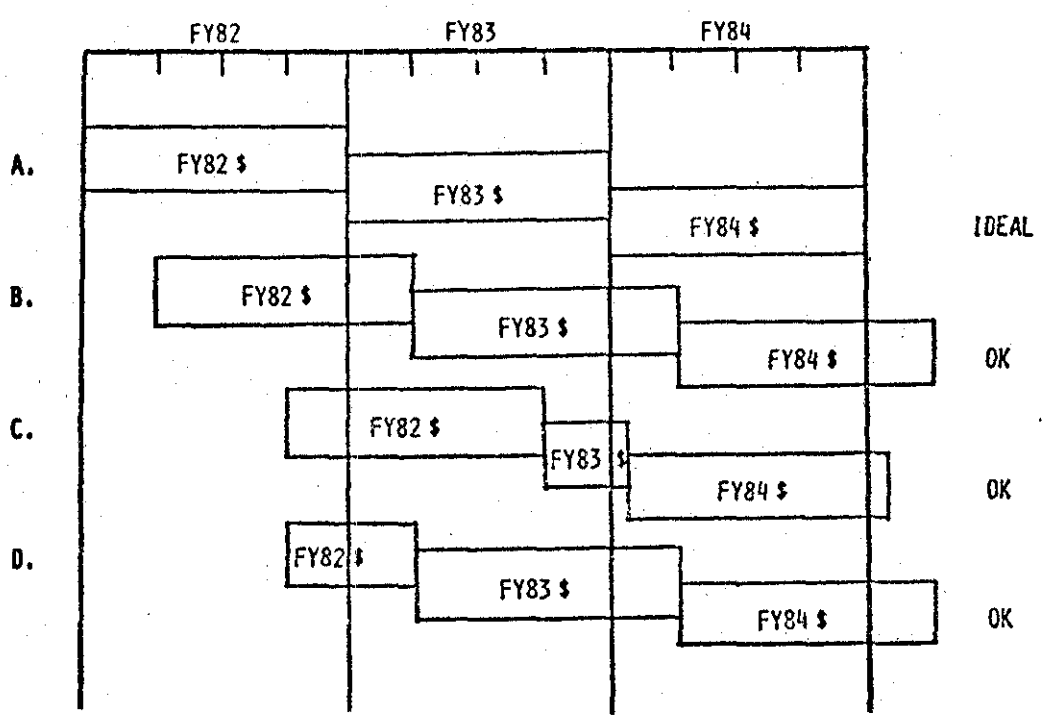

RDTE FY81 DIRECT PROGRAM EXECUTION
TOTAL PROGRAM WITH SUPP $2546M
% OF PROGRAM
100
80
60
40
20
100% OBLIGATED
89% COSTED
89% DISBURSED
94%
95%
96%
98%
74%
52%
24%
7%
4%
20%
17%
39%
35%
58%
55%
69%
68%
78%
77%
84%
83%
1Q
2Q
3Q
4Q
1Q
2Q
3Q
4Q
FY81
FY82

PBD REDUCTIONS

($ MILLIONS)

| | FY 81 | FY 82 | FY 83 |
|---|---|---|---|
| GROSS PBD REDUCTIONS | 51.9 | 39.7 | 36.1 |
| RESTORATION | 20.8 | 15.3 | 18.5 |
| NET PBD REDUCTIONS | 31.1 | 24.4 | 17.6 |

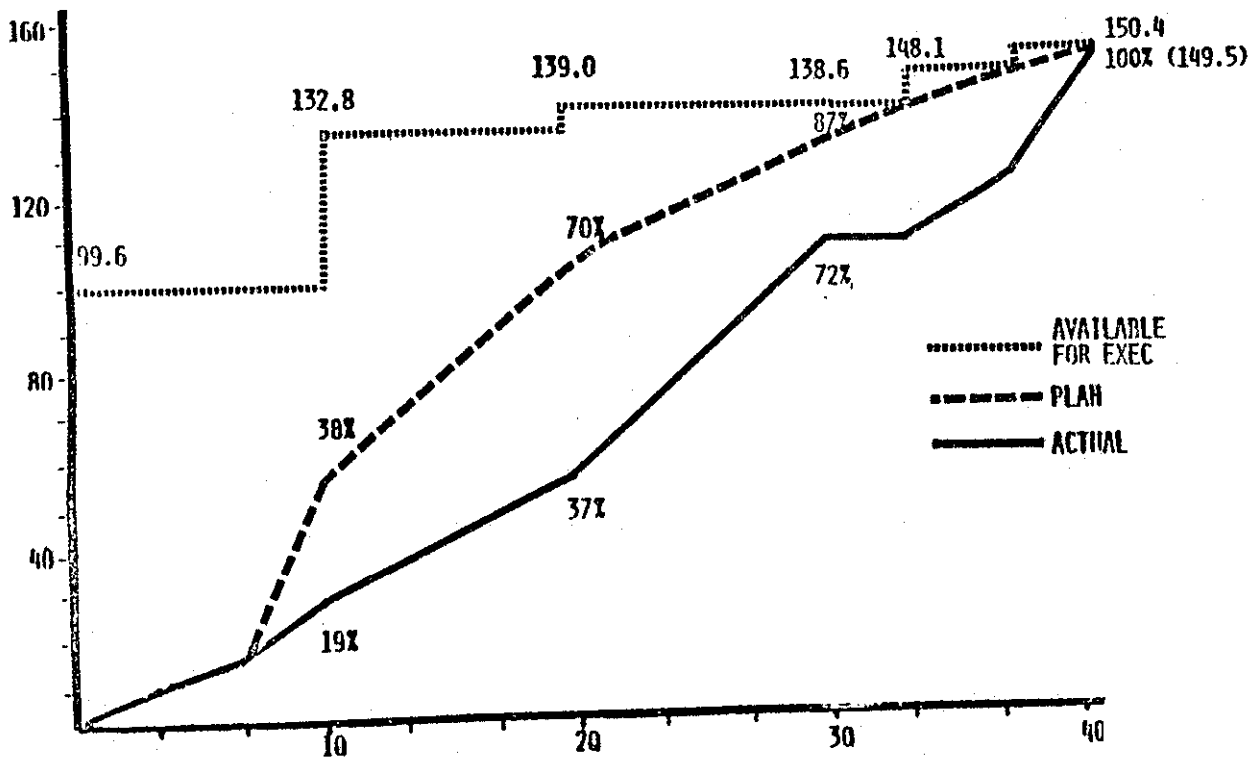
INCREMENTAL FUNDING



(U) The RDTE direct program for obligation in fiscal year 1982 revised plan was based on the program of $150 million. The year ended with RDTE obligations in good shape. All fiscal year 1981 direct RDTE funds were obligated except for $.9 million, which was held for obligational adjustments. This represented an obligation rate of 99.9 percent for the fiscal year 1981 program.

RDTE FY 81 PROGRAM FOR OBLIGATION IN FY 82
REVISED PLAN BASED ON PROGRAM OF $150 MILLION

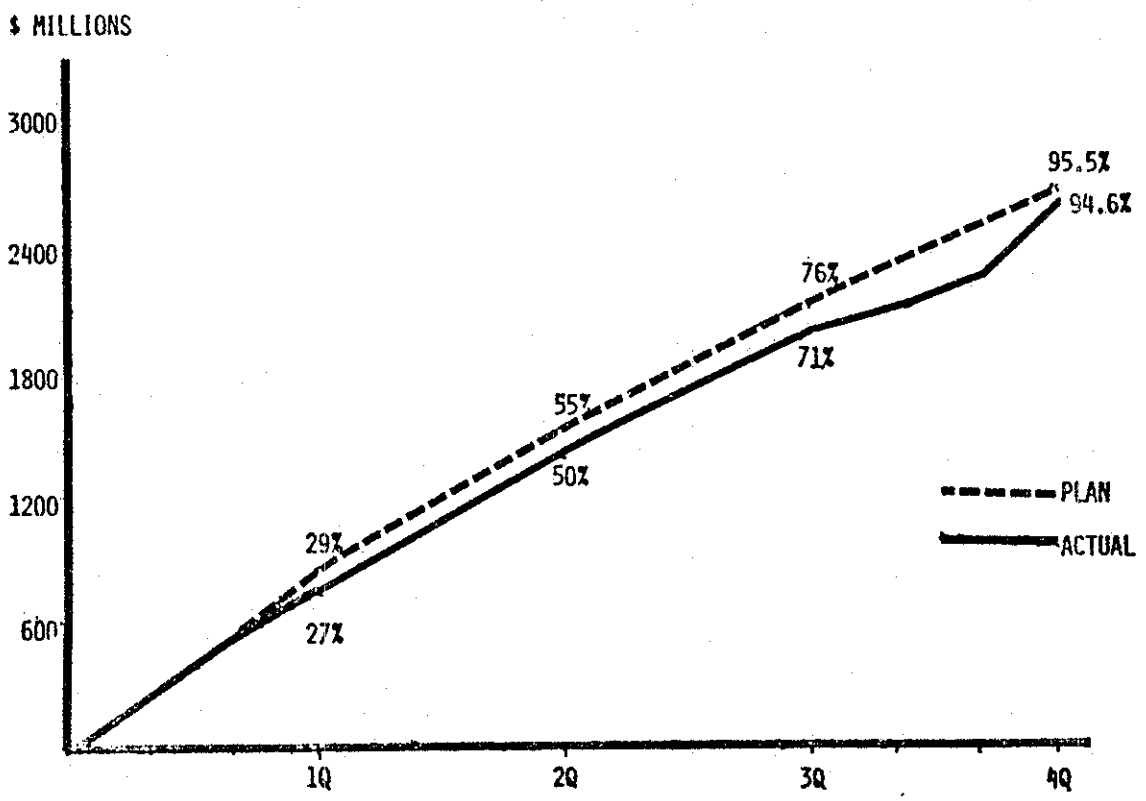
$ MILLIONS



(U) RDTE direct obligations in fiscal year 1982, planned and actual, are shown on chart below. Based on funds released to the commands, a majority of the MCSs exceeded the DARCOM goal.

RDTE FY82 DIRECT OBLIGATIONS

REVISED PLAN BASED ON A TOTAL PROGRAM OF $2771 MILLION



(U) The analytical criteria for the developmental programs of RDTE in fiscal year 1982 was as follows. These programs were color coded green, yellow or red on the basis of the schedule, financial and technical criteria illustrated on the chart below. As a quick reference, a green program was essentially trouble-free during the reporting period. A yellow one had experienced difficulties but remained under control; while red programs had serious problems. This chart is followed by assessment criteria for production programs.

CRITERIA FOR DEVELOPMENTAL PROGRAM ASSESSMENT

| | SCHEDULE | FINANCIAL | TECHNICAL |
|---|---|---|---|
| GREEN | MILESTONES BEING MET | WITHIN PROGRAMMED FUNDING | NO PROBLEMS |
| YELLOW | SLIPPAGE OF CRITICAL MILESTONE 2 QUARTERS OR LESS | UNPROGRAMMED CHANGE WITHIN QUARTER | SOLUTION AVAILABLE, NOT PROVEN IN TEST |
| RED | PROGRAM STOPPED OR SLIPPAGE OF CRITICAL MILESTONE MORE THAN 2 QUARTERS. | UNPROGRAMMED CHANGE 2 PRECEDING QUARTERS | NO FIRM SOLUTION IN HAND |

PRODUCTION
ASSESSMENT CRITERIA

| | SCHEDULE | FINANCIAL | TECHNICAL |
|---|---|---|---|
| GREEN | ON SCHEDULE | WITHIN PROGRAMMED FUNDING | NO DIFFICULTIES |
| YELLOW | SLIPPAGE 1 QUARTER OR LESS | UNPROGRAMMED CHANGE HAVING *MINOR PROGRAM IMPACT | NO COST/SCHEDULE IMPACT |
| RED | IOC CHANGE OR SLIPPAGE MORE THAN 1 QUARTER | UNPROGRAMMED CHANGE HAVING **MAJOR PROGRAM IMPACT | COST/SCHEDULE IMPACT |

* MINOR - WITHIN DARCOM'S AUTHORITY TO RESOLVE

** MAJOR - OUTSIDE OF DARCOM'S AUTHORITY TO RESOLVE

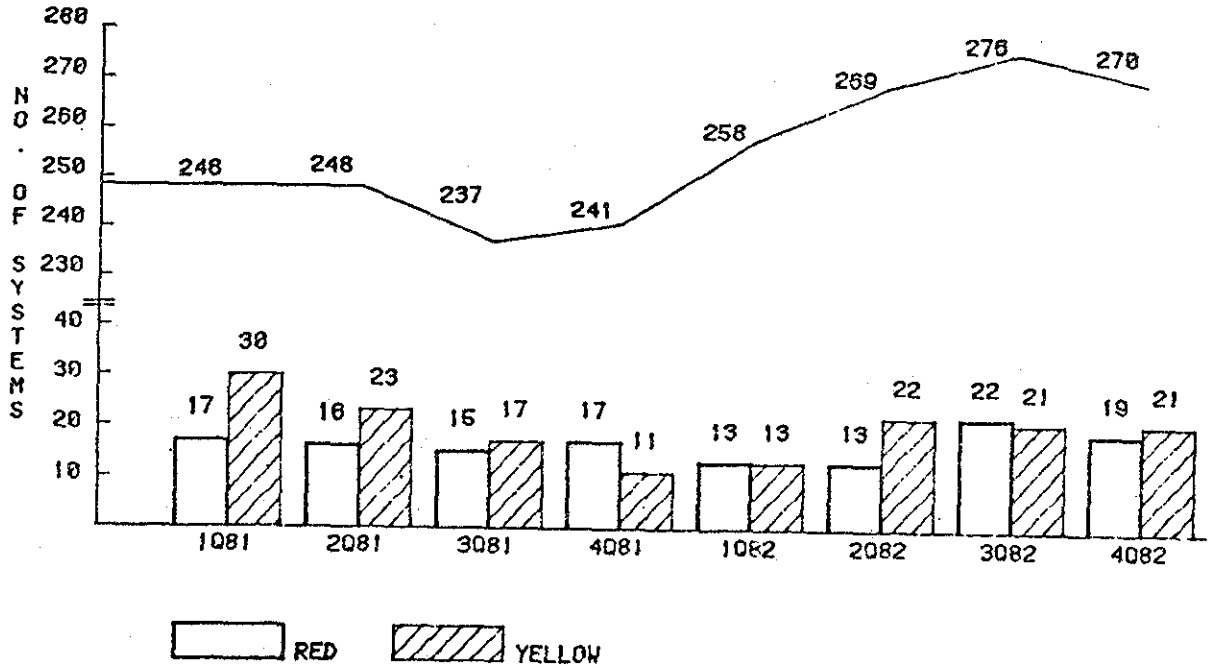
(U) The yellow and red financial criteria were changed. Regarding the Bradley FVS, DARCOM headquarters lacked the ability to solve funding problems of 10 percent or less; thus they reassessed and changed the criteria.

Previous Financial Criteria - Quick Reference

YELLOW - COST INCREASE LESS THAN 10 PERCENT OR $10 MILLION.
RED - COST INCREASE OVER 10 PERCENT OR $10 MILLION.

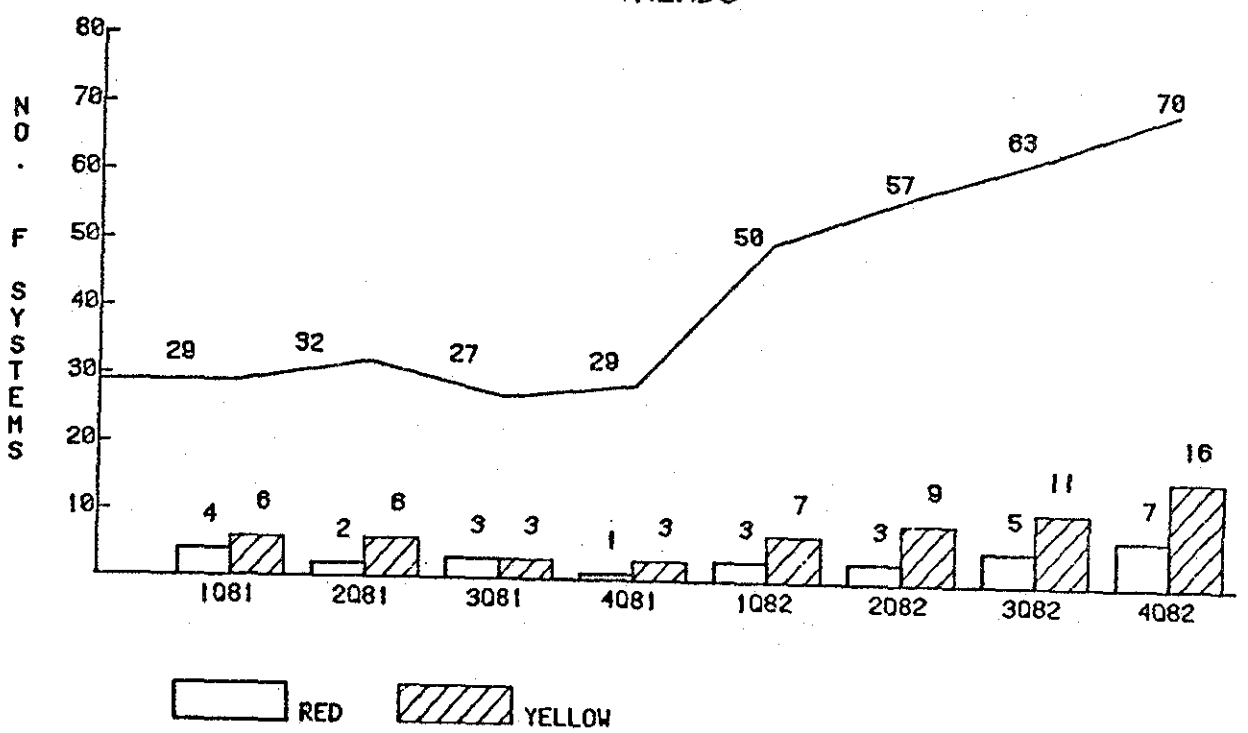
DEVELOPMENTAL PROGRAM ANALYSIS
TRENDS

DEA 9




PRODUCTION PROGRAM ANALYSIS
TRENDS

DEA 9 A



(U) In terms of program analysis trends, DARCOM was tracking more systems in fiscal year 1982 than in 1981, and the quality of the systems had improved.

Aviation Systems

(U) In fiscal year 1982, DARCOM had 38 developmental programs, one of which was red. Of the four production programs evaluated, one was yellow.

(U) The COBRA 2000 lacked program definition, which resulted in the lack of funds. This program was on hold pending an ASARC scheduled for January 1983.

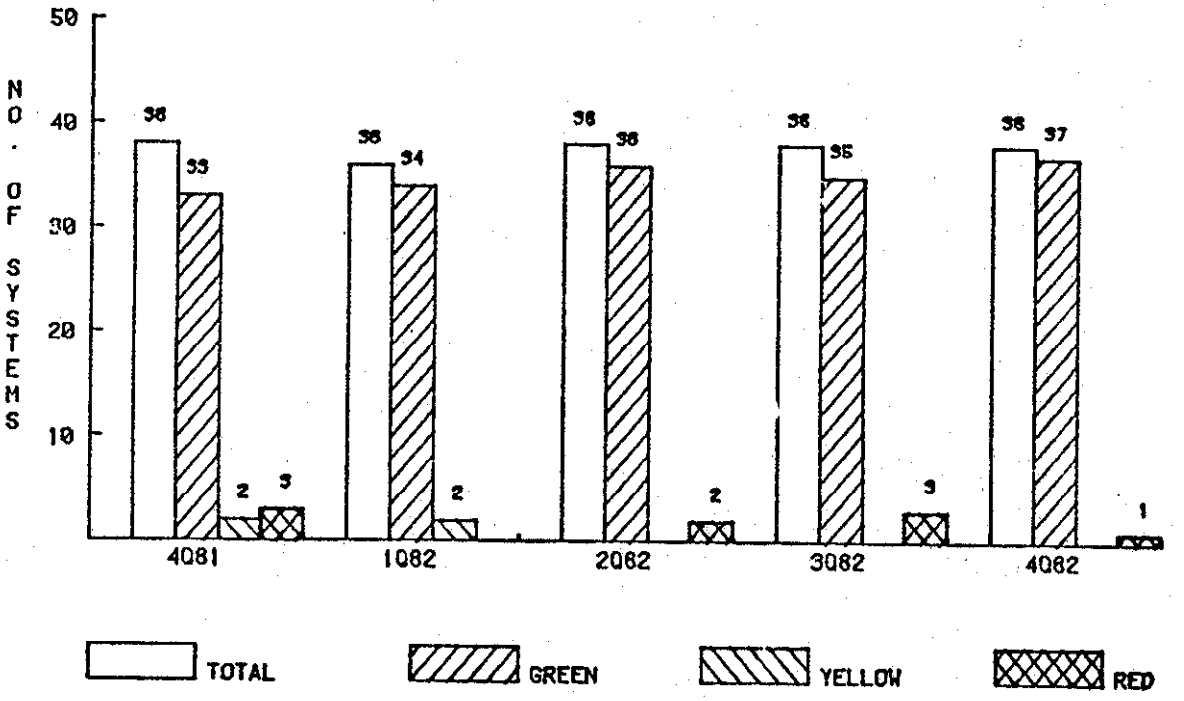
(U) The Advanced Attack Helicopter (AAH) Program encountered problems which resulted in a minor program impact.

AVIATION SYSTEMS

| | |
|---|---|
| DEVELOPMENT | |
| RED | COBRA 2000 (PROGRAM DEFINITION, FINANCIAL) |
| PRODUCTION | |
| YELLOW | ADVANCED ATTACK HELICOPTER (AAH) |

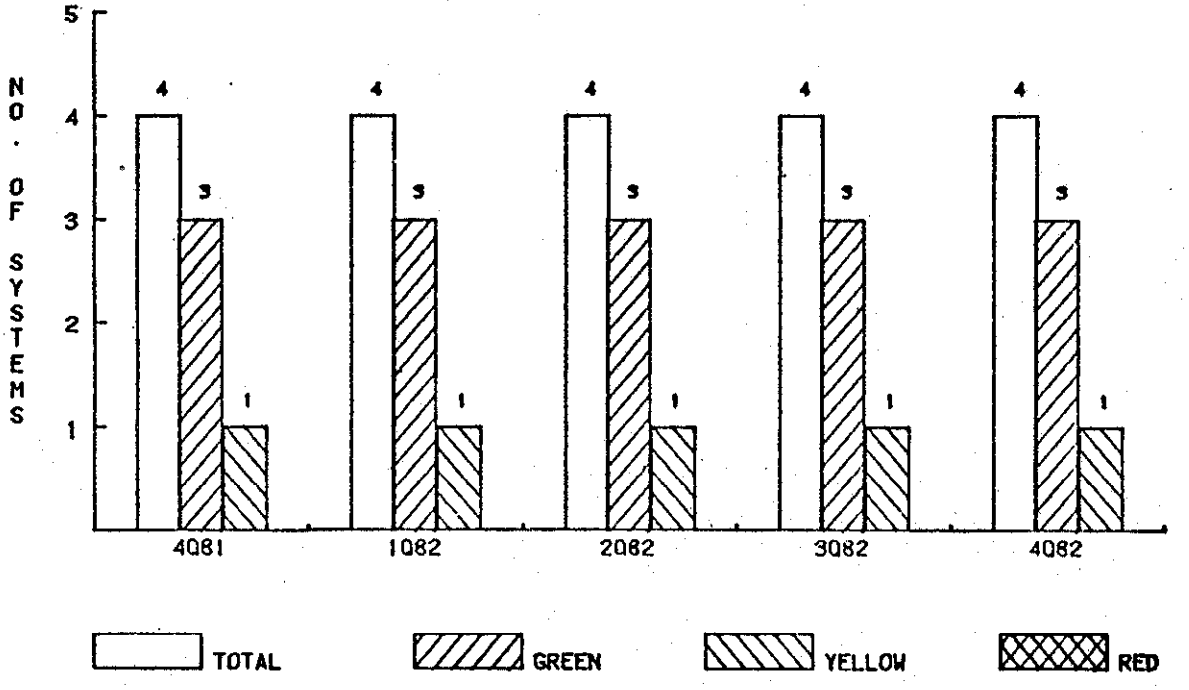
DEVELOPMENTAL PROGRAMS
AVIATION SYSTEMS

DEA 10 A



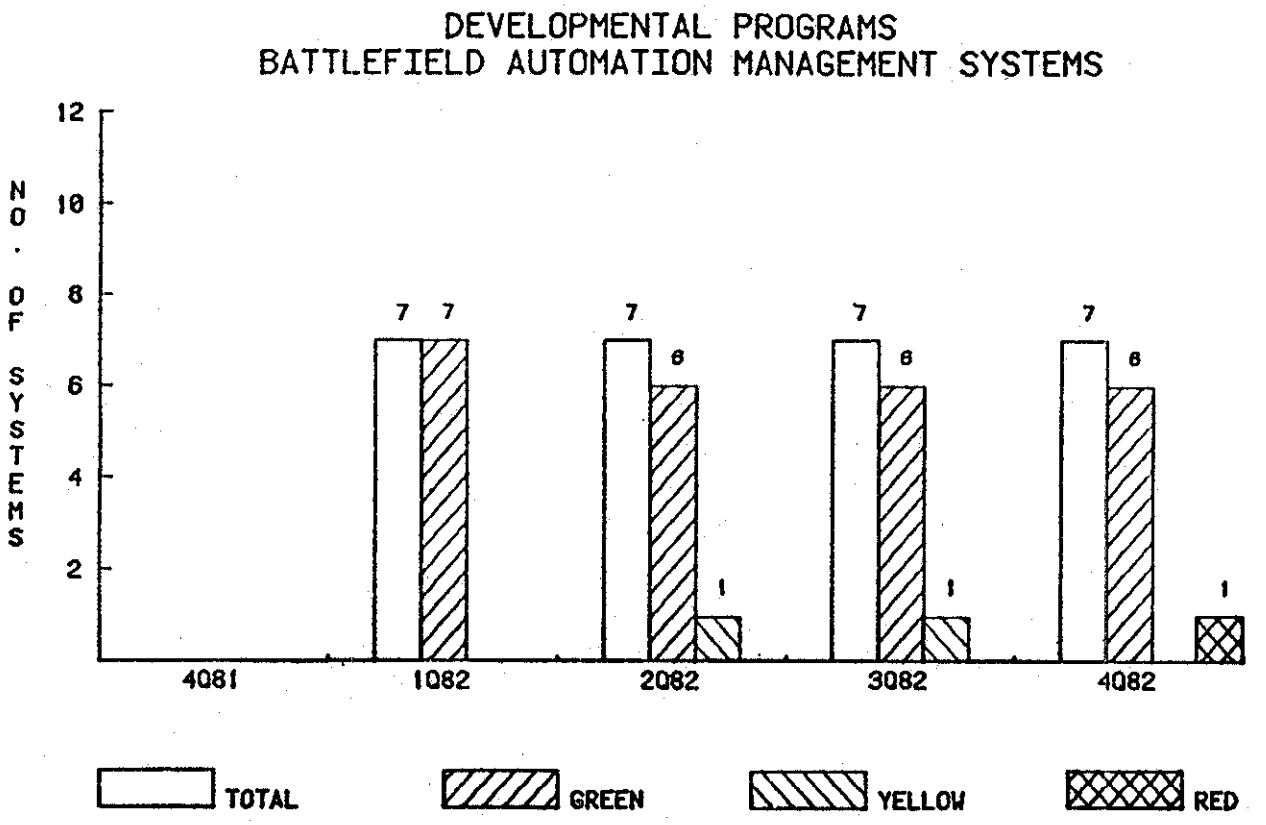

PRODUCTION PROGRAMS
AVIATION SYSTEMS

DEA 10 B



Battlefield Automation Management

(U) In battlefield automation management, all programs were GREEN with the exception of the Military Computer Family (MCF) engineering development program, which is shown as RED due to Congressional action. The committees directed completion of MCF advanced development, but denied fiscal year 1983 FSED funding. The Automation Conference Report directed that an OSD report on computer standardization within the Services be submitted to the SASC and HASC. This report was scheduled to be delivered to Congress by 31 January 1983. DARCOM efforts were directed toward the award of an FSED contract in first quarter fiscal year 1984.



## $C^3$ Surveillance and Electronic Warfare

(U) In $C^3$, surveillance and electronic warfare programs, RDTE funded 74 developmental programs of which three were YELLOW, and four were RED. There were 25 production programs of which three were YELLOW and two were RED.

### $C^3$, SURVEILLANCE AND ELECTRONIC WARFARE

DEVELOPMENT

| | |
|---|---|
| YELLOW | MULTI-RADAR XPDR BEACON |
| | MODULAR INTEGRATED COMM NAVIGATION SYSTEM (MICNS) |
| | EXPENDABLE JAMMER (EXJAM) |
| RED | JOINT SURVEILLANCE AND TARGET ATTACK RADAR (JSTARS) (PROGRAM RESTRUCTURED) |
| | MOBILE SUBSCRIBER EQUIPMENT (MSE) (FINANCIAL) |
| | SHORT RANGE AIR DEFENSE COMMAND AND CONTROL (SHORAD C2) (FINANCIAL) |
| | ALL SOURCE ANALYSIS SYSTEM (ASAS) (MANAGEMENT) |

PRODUCTION

| | |
|---|---|
| YELLOW | POSITION LOCATING AND REPORTING SYSTEM (PLRS) |
| | TACTICAL CONTROL AND ANALYSIS CENTER-DIVISION (TCAC-D) |
| | POSITION AND AZIMUTH DETERMINING SYSTEM (PADS) |
| RED | METEOROLOGICAL DATA SYSTEM (MDS) (FINANCIAL) |
| | MULTI-RADAR XPDR BEACON (FINANCIAL) |

(U) In developments, two systems, REMBASS and PLRS, were moved to GREEN due to funding plus-up for fiscal year 1983. There were four RED development systems, all suffering from affordability. Three were experiencing difficulty from program definition. DA had been advised by DARCOM that the programs were not executable.

(U) Joint Surveillance and Target Attack RADAR (JSTARS) was RED because the OSD-directed Joint Army/Air Force Program was not yet clearly defined or approved by Congress. The common core modular radar studies, providing critical radar design input by four contractor teams, were completed in September 1982. An independent review of these studies was in the final state of preparation by the jet propulsion laboratory and was briefed to the DARCOM CG on 9 December 1982. OSD was also briefed on 9 December 1982 by the JSTARS Project Manager, and expressed concern about the program, particularly costs. The Air Force side of the program was suffering from very loosely defined requirements and this, in turn, hampered overall progress.

(U) Mobile Subscriber Equipment (MSE) remained RED based upon a DA decision of zero funding. The user requirements had been revalidated by HQDA. DA tasked DARCOM to formulate plans for an expeditious system acquisition and to develop funding requirements. The ARSTAF was briefed on 10 November 1982 by DARCOM. The briefing was well received, but the big hurdle was affordability. The ARSTAF made no commitment for fiscal year 1983 or fiscal year 1984. It was expected to be addressed during fiscal year 1985 POM, if it survives the communications architecture scrub, which was recently directed by General Otis.

(U) Short Range Air Defense Command and Control (SHORAD $C^2$) was still RED in both RDTE and OPA funding. Although the 23 September 1982 GO IPR approved the recommendation by the PM (Option 1) for the development of an objective sensor and other hardware/software leading to the evolution of the objective system, the program was still not executable at current POM levels, either in R&D or in production. Also, the HAC zeroed RDTE funding in fiscal year 1983.

(U) All Source Analysis System (ASAS) remained RED. A management scheme and acquisition strategy was approved by the VCSA after more than one year of delay. The final management structure placed the program initially under operational control of ODCSOPS with DARCOM playing a minor role. Jet Propulsion Laboratory was named the system architect, and their late entry into the program placed the 1983 funds at risk. HAC cut $15 million from fiscal year 1983 budget. Air Force pulled out $4.5 million from their fiscal year 1983 budget. DA initiated action to convince the appropriations committees to restore funds for fiscal year 1983.

(U) The Meteorological Data System (MDS) remained RED. An executable production program in fiscal year 1983 required $13.6 million. There was $4.1 million in the fiscal year 1983 budget with an additional $9.5 million to be reprogrammed by DA for the MDS. OSD deferred the $4.1 million pending DA identification of the source of the $9.5 million. DA identified the source for the $9.5 million and it was expected the full $13.6 million would be available in fiscal year 1983.

(U) Multi-Radar XPDR Beacon remained RED. The program was estimated to be ready for production by fourth quarter fiscal year 1984; however, there were no OPA funds programmed until fiscal year 1988. TRADOC had sent a message to DA emphasizing the need to fund production in fiscal year 1984 in the amount of $5.33 million. ERADCOM would request funds be programmed in fiscal year 1985.

## $C^3$ SURVEILLANCE AND ELECTRONIC WARFARE

### DEVELOPMENT

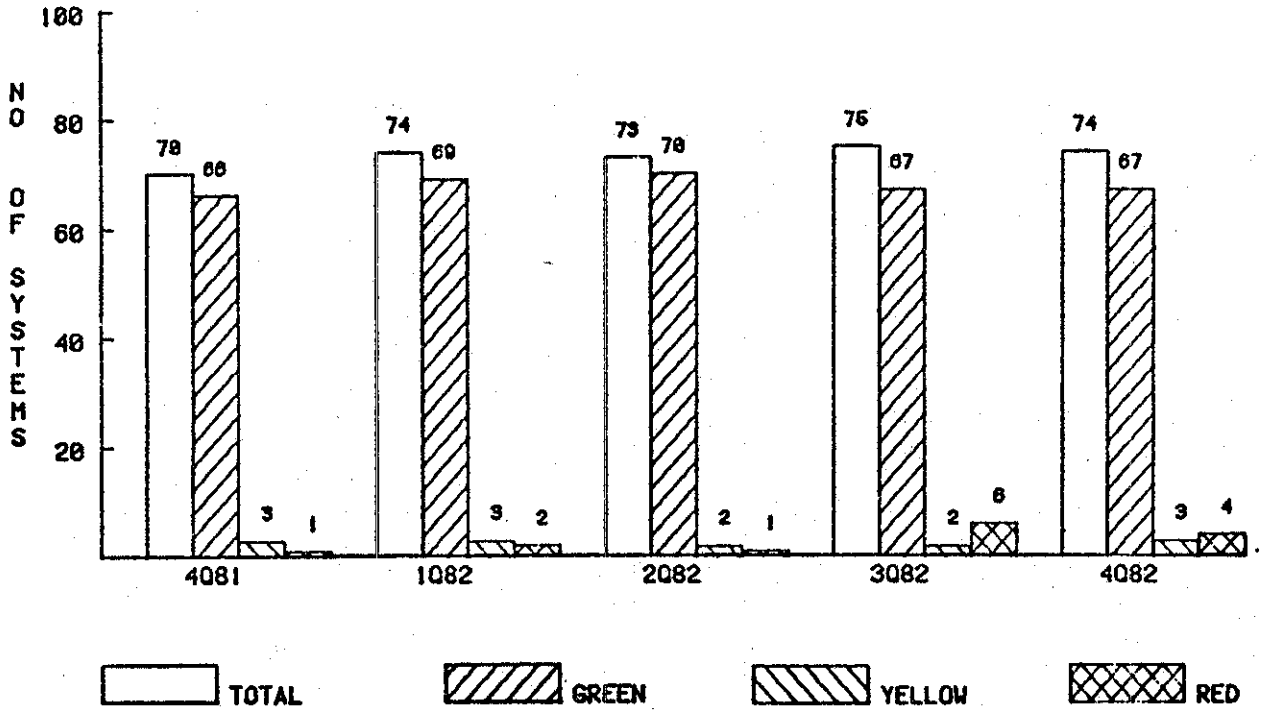
| | |
|---|---|
| YELLOW | Multi-Radar XPDR Beacon.<br>Modular Integrated COMM Navigation System (MICNS).<br>Expendable Jammer (EXJAM). |
| RED | Joint Surveillance and Target Attack Radar (JSTARS) (Program Restructured).<br>Mobile Subscriber Equipment (MSE) (Financial).<br>Short Range Air Defense Command and Control (SHORAD $C^2$) (Financial).<br>All Source Analysis System (ASAS) (Management). |

### PRODUCTION

| | |
|---|---|
| YELLOW | Position Locating and Reporting System (PLRS)<br>Tactical Control and Analysis Center-Division (TCAC-D).<br>Position and Azimuth Determining System (PADS). |
| RED | Meteorological Data System (MDS) (Financial).<br>Multi-Radar ZPDR Beacon (Financial). |

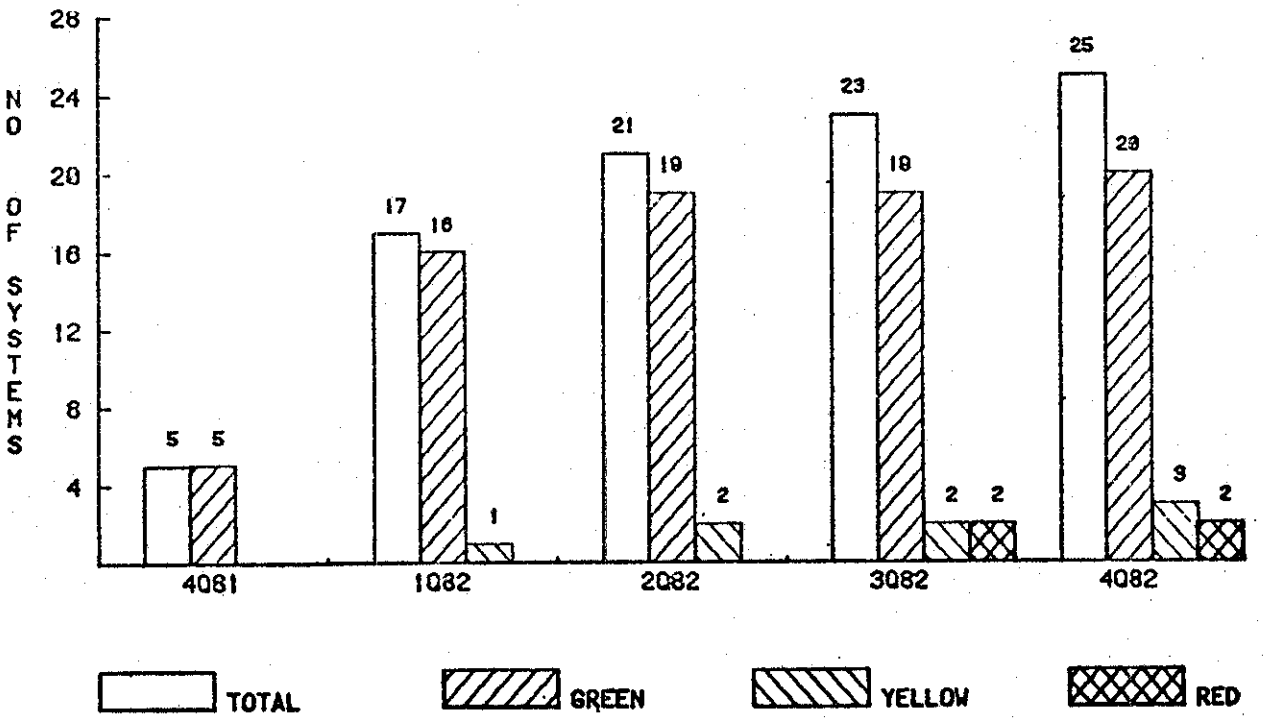
DEVELOPMENTAL PROGRAMS
C3, SURVEILLANCE AND ELECTRONIC WARFARE SYSTEMS

DEA 12 A




PRODUCTION PROGRAMS
C3, SURVEILLANCE AND ELECTRONIC WARFARE SYSTEMS

DEA 12 B



Missiles and Air Defense

(U) The Missiles and Air Defense Systems Division added two development programs in the fourth quarter fiscal year 1982. These were Targets and Army Development and Acquisition of Threat Simulators or (ADATS). Also, the Air Defense Targets Procurement Program was added to the Division's list of production programs.

(U) Of the 18 Missiles and Air Defense development programs, four had experienced problems but were under control, and six had serious problems.

(U) The DIVAD gun (SGT York) had severe problems because of a funding shortfall. The engineering development preproduction contract was funded only to target and the contractor was going to ceiling. The Army had three fixed price incentive production options tied to that contract which for the sake of economy would have been better if not opened for renegotiation. The shortfall was $33 million in RDTE in fiscal year 1982, and sources were identified in a request by DARCOM to HQDA for Congressional reprogramming. DARCOM was in the process of withdrawing funds earmarked for the reprogramming action. One of the bill payers was BFVS for $11.8 million. There was conversation with the Under Secretary of the Army to the effect that the $11.8 million might be required for BFVS. As a result, the reprogramming was at a standstill.

(U) The Advanced Rocket Control System (ARCS) and Antitactical Missile (AIM) both had serious development problems. ARCS was in trouble because of the authorization action to zero out the funds for fiscal year 1983. The Antitactical Missile (AIM) program was in trouble because of Congressional actions on the funds in fiscal year 1983, lack of requirements definition, and lack of manpower. However, the conference committee language indicated that Antitactical Missile (AIM) funds could be applied to ARCS with the Army to decide on apportionment. The SAC Mark zeroed both programs. HAC zeroed ARCS but funded AIM. DARCOM was expected to stretch the funding over both programs for fiscal year 1983, if Congress agreed to the $19.6 million.

(U) Corps Support Weapons System (CSWS), RATTLER and Light Air Defense System (LADS) were all three in serious trouble because of lack of an approved requirement, shortage of funds and shortage of manpower. All were suffering from the "the platter too full syndrome."

(U) The CSWS system task force had taken the lead in developing a joint requirements document from the Army CSWS requirements and the Air Force Conventional Standoff Weapon (CSW) requirements. The Air Force funding which was needed to initiate the joint program was insufficient to meet the 50/50 funding agreement in the proposed Army-Air Force Memorandum of Agreement. A DARCOM out of cycle manpower request for the proposed Joint Missile Program Office was approved by HQDA; however, no high grade relief was included.

(U) The proposed RATTLER ROC was at DA for approval at the end of fourth quarter fiscal year 1984. Although the CSA approved an OSDSOPS Decision Memorandum in May 1982, to fully fund an accelerated RATTLER program, the ARSTAFF would not approve the ROC or initiate the program until the Under Secretary's concerns about a viable and affordable acquisition program was satisfied. Another ARSTAFF General Officer review was scheduled for 1 December 1982, and a briefing to the Under Secretary on 2 December 1982. Unless HQDA would commit to the program funds and manpower spaces required, DARCOM could not execute the program.

(U) Progress was being made in defining the LADS requirements, but no resolution was yet in sight. The authorization bill deleted fiscal year 1983 funds and the PM DIVAD recommended acquisition strategy depended on some reprogramming in fiscal year 1982, plus the requested amount in fiscal year 1983 to do concept definition. The LADS planning effort was being executed by two officers in the DIVAD office as an overload task. This program would likely remain in trouble until after the fiscal year 1983 appropriation was approved and ARSTAFF program guidance was provided.

(U) PATRIOT had serious problems due to fiscal year 1983 and 1984 funding shortfalls. The SAC fiscal year 1983 reduction would reduce the number of fire control sections and missiles produced. The fiscal year POM reduction would delay deployment to Europe and full operational capability. Each reduction also caused a total systems cost increase. Fund restoration was not expected, therefore the PATRIOT PMCS submission was being revised accordingly. PATRIOT program status was expected to improve sharply when DA approved the PMCS submission.

(U) PERSHING II had serious problems in production, and almost as serious in development. Reasons were technical and financial. The House had zeroed funds pending demonstration of test success. The subsequent flight test was scheduled for 16 December 1982. DA had designated PII as the number one priority for complete fund restoration. A Congressional game plan was staffed and approved, and conferees were being contacted by selected members of the ARSTAF and the Secretariat.

## MISSILES AND AIR DEFENSE

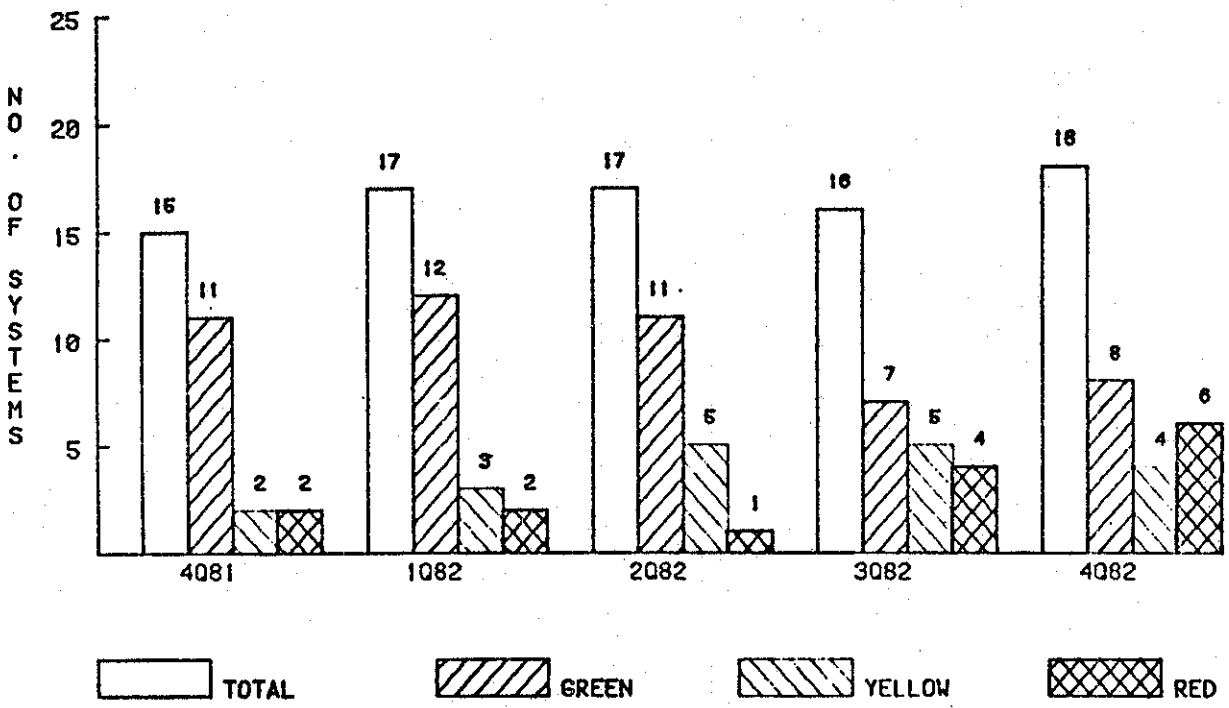
**DEVELOPMENT**

| | |
|---|---|
| YELLOW | STINGER (POST) |
| | PATRIOT (SAM-D) |
| | PERSHING II |
| | CHAPARRAL (FLIR-POST) |
| RED | DIVAD GUN (SGT YORK) (FINANCIAL) |
| | ADV RKT CONT SYS (FINANCIAL) |
| | ANTI TAC MSL (ATM) (USER REQTS, FINANCIAL, MANPOWER) |
| | CORPS SUP WPN SYS/JOINT MSL PROG (USER REQTS, FINANCIAL, MANPOWER) |
| | RATTLER (USER REQTS, FINANCIAL, MANPOWER) |
| | LTWT AD SYS (USER REQTS, FINANCIAL, MANPOWER) |

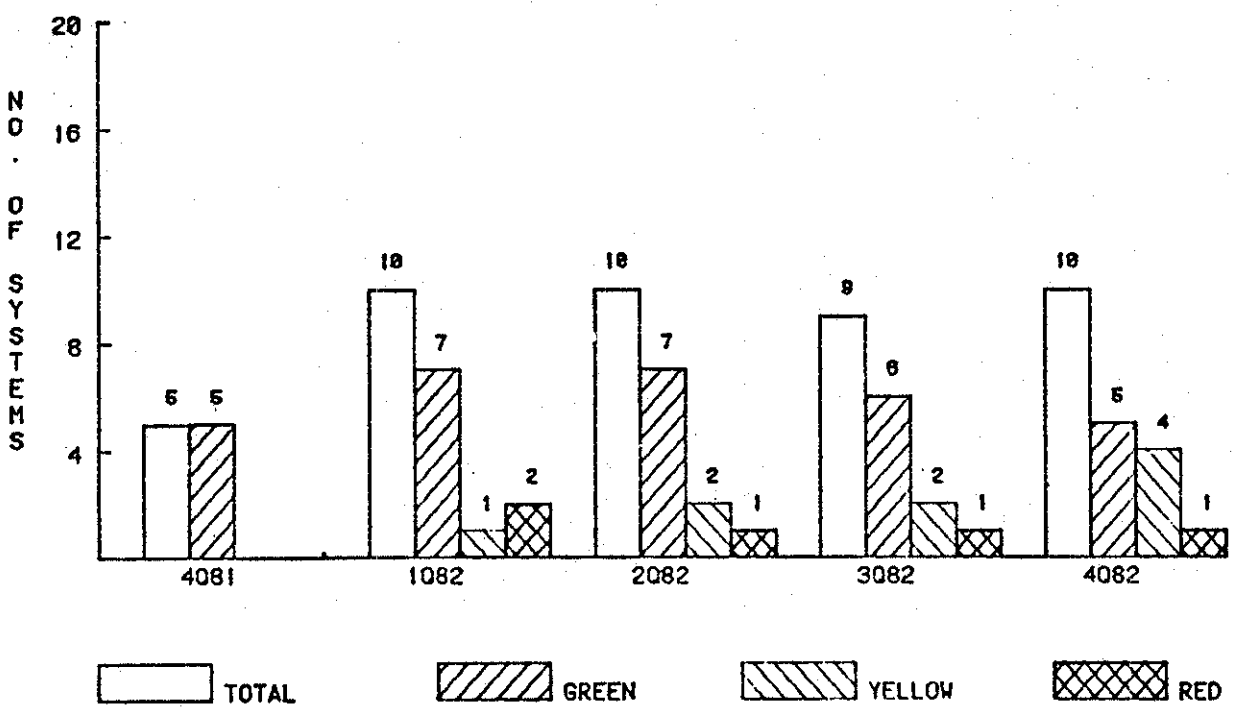
**PRODUCTION**

| | |
|---|---|
| YELLOW | US ROLAND |
| | MLRS |
| | DIVAD GUN (SGT YORK) |
| | AIR DEF TGTS |
| RED | PATRIOT (SAM-D) (FINANCIAL) |

DEVELOPMENTAL PROGRAMS
MISSILES AND AIR DEFENSE SYSTEMS




PRODUCTION PROGRAMS
MISSILES AND AIR DEFENSE SYSTEMS



Ground Combat Systems

(U) Ground Combat Systems had serious problems with one development program and three production programs. There were seven other programs with problems which were significant but not so severe.

(U) The Mobile Protected Gun System (MPGS) was plagued by problems because of the lack of a firm schedule, and the continued lack of funding in fiscal year 1982, and reduced funding in fiscal year 1983. On 7 July 1982, DARCOM recommended to DA that the program be terminated until it could be adequately and continuously funded. A 9 November 1982 Army-Marine Corps joint program review recommended deferral of IOC from 1990 to 1992 due to funding constraints. The Army Staff received a PBD on this program and responded by recommending a deferred IOC date of 1992. The final OSD response had not been received at year-end fiscal year 1982.

(U) The 9mm Personal Defense Weapon Program was at a standstill pending clarification of the intent of the Congress. The acquisition plan was being held by the Under Secretary of the Army until the conflicting Congressional guidance was clarified. The schedule for testing and procuring new handguns was slipping on a day-by-day basis pending approval of the acquisition plan.

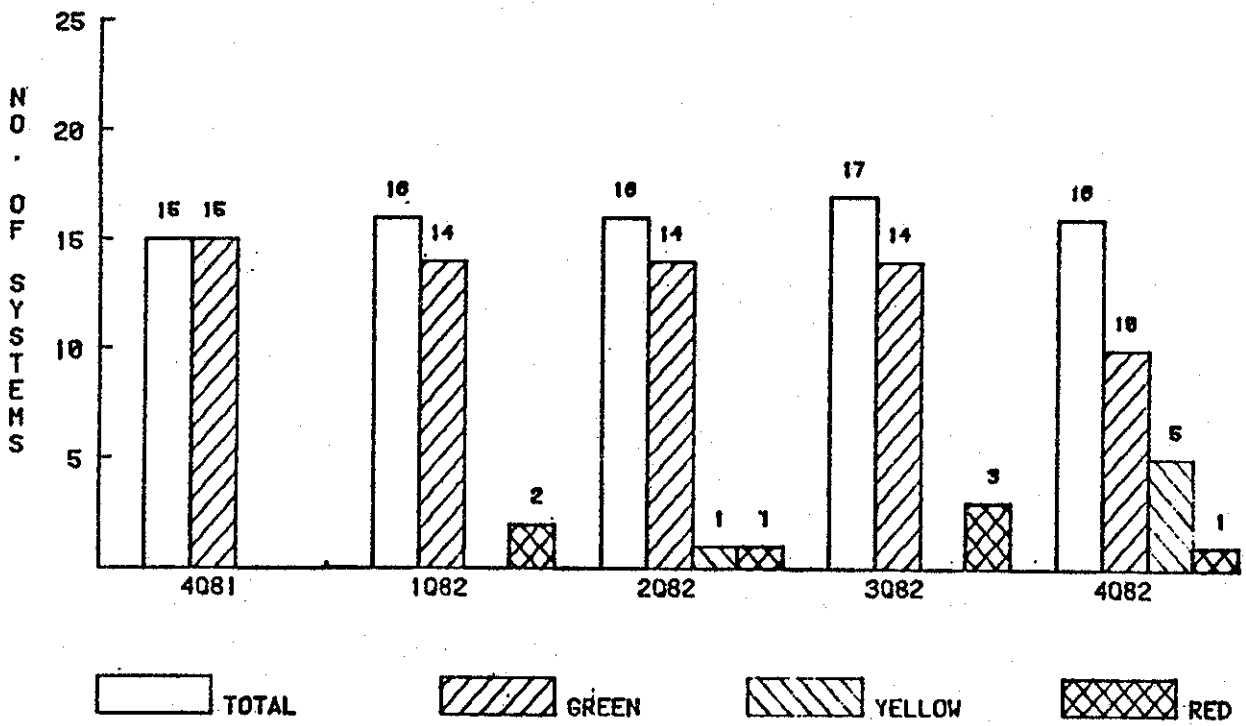
(U) Procurement of the Mortar Ballistic Computer had been stopped as a result of a GAO ruling in favor of Litton on their protest of the Army's contract award to Magnavox, and related Federal District Court action. The program was slipping on a day-by-day basis. If ARRADCOM was required to award the contract to Litton, an additional nine-month delay was anticipated in the first-unit-equipped date. A court decision was expected in December 1982.

(U) The Improved 81mm Mortar procurement was being restructured due to the lack of funding in fiscal year 1984, and the Senate Appropriations Committee removal of the fiscal year 1983 funding. Indications were that the Army Staff would not push for restoration of the fiscal year 1983 funding in joint conference. TRADOC's recommendation to the Chief of Staff was that the 4.2 inch mortar be retained as the Army's heavy mortar. Total quantity of 81mm mortars needed would not be known until a final Chief of Staff decision was made on the number to be used in each rifle company. However, it was expected to be less than the 4,000 the US agreed to buy from the United Kingdom in order to receive the data rights. A briefing to the Army Staff on the restructured procurement program was requested for December 1982.

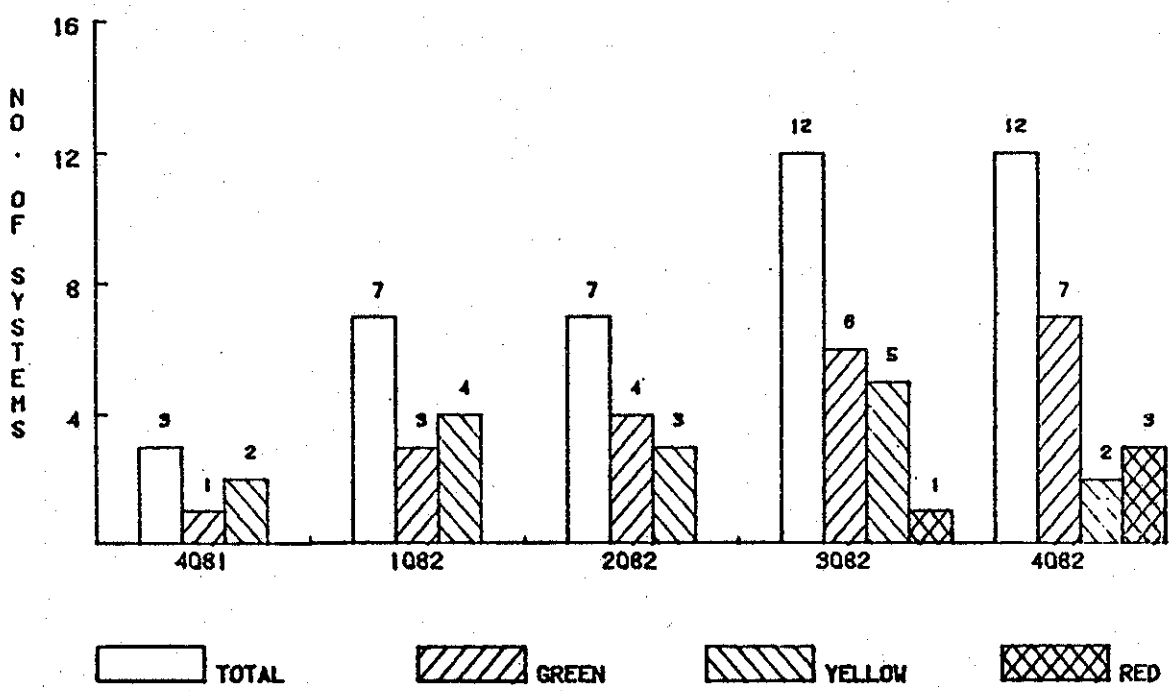
## GROUND COMBAT SYSTEMS

| | | |
|---|---|---|
| DEVELOPMENT | | |
| | YELLOW | UK MORTAR (I-81) |
| | | BRADLEY FVS |
| | | M-1 ABRAMS TANK |
| | | TANK GUN INTEGRATION |
| | | MK 19, 40MM GRENADE MG |
| | RED | MPGS (SCHEDULE, FINANCIAL) |
| PRODUCTION | | |
| | YELLOW | BRADLEY FVS |
| | | M-1 ABRAMS TANK |
| | RED | PERS DEF WPN, 9MM (SCHEDULE) |
| | | MORTAR BALLISTIC COMPUTER (SCHEDULE) |
| | | MORTAR, 81MM XM252 (I-81) (FINANCIAL, SCHEDULE) |

DEVELOPMENTAL PROGRAMS
GROUND COMBAT SYSTEMS




PRODUCTION PROGRAMS
GROUND COMBAT SYSTEMS

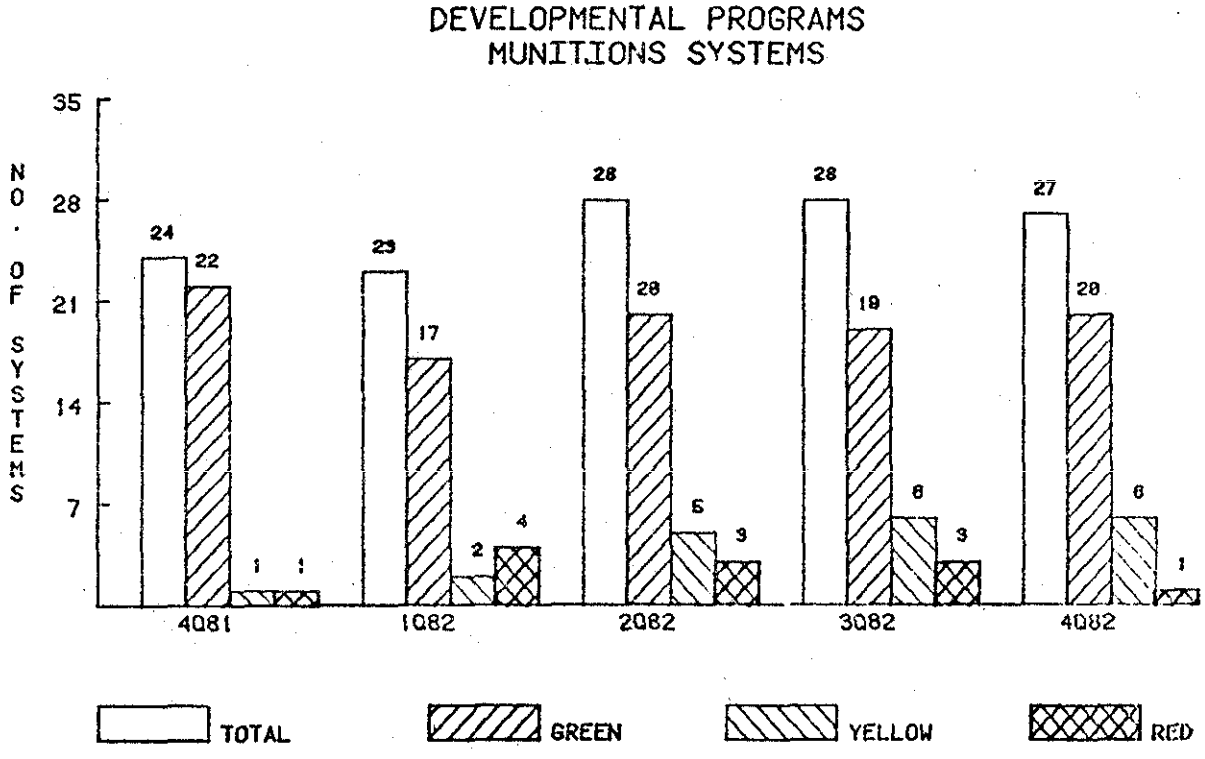


## Munitions Systems

(U) The Munitions Systems Division had 27 programs in development. The Vehicle Mounted Road Mine Detector remained in trouble due to poor detection performance during Operational Test (OT) II. The independent technical assessment to determine the cause of technical difficulties was continuing at the end of fiscal year 1982. A special IPR was scheduled for second quarter fiscal year 1983, to determine future program direction. The program was not funded beyond fiscal year 1982, awaiting results of the special IPR.

MUNITIONS SYSTEMS

| | |
|---|---|
| **DEVELOPMENT** | |
| YELLOW | 120mm Tank Ammunition.<br>XM797 Tank Target Practice (105mm).<br>Multiple Delivery Mine System (VOLCANO).<br>XM78 High Explosive Anti-Armor Grenade (HAG).<br>25mm Multi-Purpose Ammunition.<br>COPPERHEAD. |
| RED | Vehicle Mounted Road Mine Detector (Technical). |
| **PRODUCTION** | |
| YELLOW | COPPERHEAD<br>VIPER |


DEVELOPMENTAL PROGRAMS
MUNITIONS SYSTEMS
NO. OF SYSTEMS
35
28
21
14
7
24
22
1
1
23
17
2
4
28
20
5
3
28
19
6
3
27
20
6
1
4Q81
1Q82
2Q82
3Q82
4Q82
TOTAL
GREEN
YELLOW
RED

Support Systems

(U) In the area of Support Systems, there were 90 funded development programs. No new development programs were started in the fourth quarter of 1982, and five were terminated or transferred, reflecting an overall change of five programs since third quarter fiscal year 1982. There were 13 production programs. Two of these were transferred and five new ones were added, for a total change of three production programs after third quarter.

(U) The CVC Ballistic Helmet program was terminated by joint TRADOC/DARCOM decision, because of technical problems which could not be overcome. The 8-inch IVA projectile and the medium altitude proximity fuze were both terminated as a result of OSD reduction in the retaliatory chemical weapon RDTE budget.

(U) The NBC Protective Mask - XM30 program was terminated because of technical difficulties, and was not compatible with Army sighting devices. The Air Ground Engagement System/Air Defense (AGES/AD) program was transferred to production.

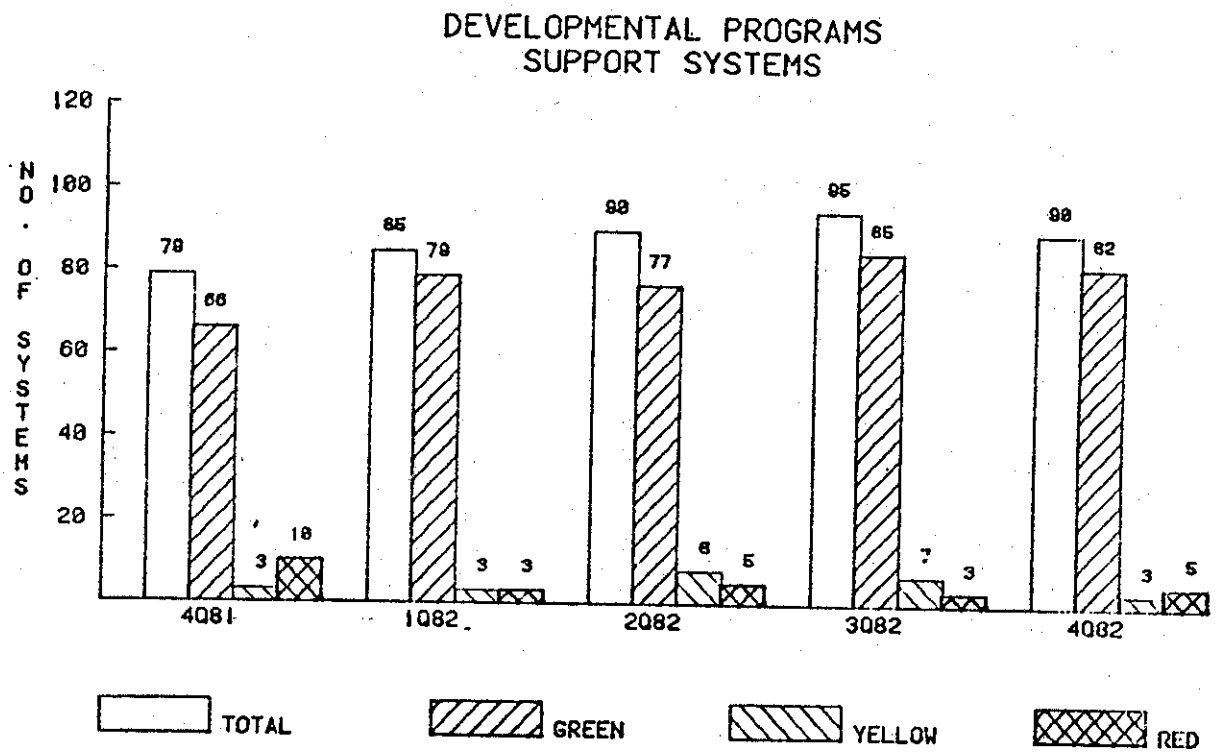
(U) Five production programs were added. These were Dragon Launch Environment Simulation; Multiple Integrated Laser Engagement System; Air-Ground Engagement System/Air Defense; Simulated Tank Anti-Tank Gunnery System; and 150K Gal/Day Reverse Osmosis Water Purification Unit.

(U) The Ribbon Bridge Erection Boat and the 350 GPM POM Pump were production programs which were transferred.

(U) The 50 Gal Automatic Weapons Effects Simulator Program was stopped pending developer/user agreement on interpretation of the requirements. The key issue was the use of a simulated weapon versus the use of actual weapon. A meeting between representatives of PM Trade and the Commander, Army Training Center was scheduled to address the issues. If the problems were not resolved, Headquarters DARCOM was expected to intervene with Headquarters TRADOC.

(U) The Biological Detection and Warning System was experiencing reliability problems, and consequent need for subsystem redundancy made the system too bulky and too heavy to meet the operational requirements. There was a schedule slip, a need for additional funding and an expected change in the operational concept.

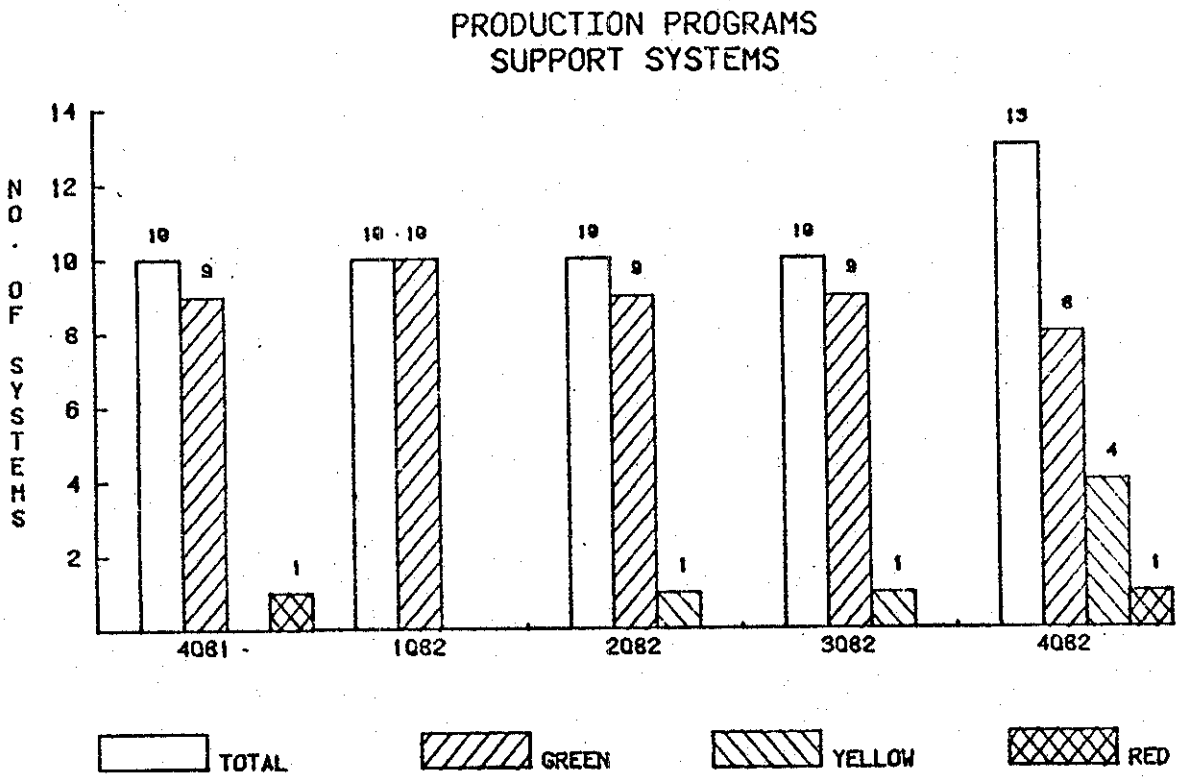
(U) The Simulated Tank Anti-Tank Gunnery System Program was stopped pending resolution of a pre-award protest. A lengthy delay was not anticipated.




DEVELOPMENT

YELLOW
- ARMY TRAINING BATTLE SIMULATION SYSTEM (ARTBASS)
- FACE MASK COMPONENT OF GROUND CVC SYSTEM
- REMOTE SENSING CHEMICAL AGENT ALARM XM21

RED
- POL PROTECTIVE HANDWEAR, COLD WEATHER (TECHNICAL)
- GLOVES, FLYING, EXTREME COLD WEATHER (TECHNICAL)
- IMPROVED INSULATED CANTEEN FOR COLD REGION (TECHNICAL)
- 50 CAL AUTOMATIC WEAPONS EFFECTS SIMULATOR (AWESS) (TECHNICAL)
- BIOLOGICAL DETECTION AND WARNING SYSTEM XM19/XM2 (SCHEDULE, FINANCIAL)




**PRODUCTION**

YELLOW
- LIGHT AMPHIBIAN AIR CUSHION VEHICLE (LACV-30)
- HEAVY EXPANDED MOBILE TACTICAL TRUCK (10 TON) (HEMTT)
- AIR GROUND ENGAGEMENT SYSTEM/AIR DEFENSE (AGES/AD)
- 150K GAL/DAY REVERSE OSMOSIS WATER PURIFICATION UNIT

RED
- SIMULATED TANK ANTITANK GUNNERY SYSTEM (STAGS) (SCHEDULE)

## Acquisition

(U) At yearend the program acquisition cost history was relatively stable. There was a net increase of $306.6 million. This represented about one-third of a percentage point increase of total program acquisition cost for all SAR systems. The only significant change was in CH-47 modernization. The $279.2 million increase, which represented an eight percent change, resulted primarily from an increase in the estimate for recurring production costs.

SELECTED ACQUISITION REPORTS (SAR)
30 SEPTEMBER 1982
INCREASES/DECREASES
($IN MILLIONS THIS YEAR)

| | |
|---|---|
| PROGRAM ACQUISITION COST CHANGE | $ +306.6 |
| APACHE | 8.6 |
| BLACK HAWK | 2.8 |
| CH-47 | 279.2 |
| COPPERHEAD | 35.2 |
| PERSHING II | -2.1 |
| STINGER | .5 |
| BFVS | -17.6 |

## Product Improvement

(U) DARCOM took actions to instill more discipline in the Product Improvement Program (PIP) process. DARCOM elements were directed to conduct an out of cycle scrub of the entire program in July and August 1982 to identify previously approved PIPs which needed to be cancelled.

PRODUCT IMPROVEMENT

MANAGEMENT ACTIONS

- WEAPON SYSTEMS STAFF MANAGER REVIEWS
- DARCOM GENERAL OFFICER REVIEWS (11 JUN AND 12 NOV)
- SPREADING THE WORD
  - DARCOM COMMANDWIDE LETTERS (2 JUL AND 9 JUL)
  - PRESENTATION TO PM CONFERENCE (16 NOV)
  - $P^3I$ ORIENTATIONS
- SPECIAL OUT OF CYCLE REVIEW OF TOTAL PROGRAM

PIPS RECOMMENDED FOR CANCELLATION BY MSC'S/PM'S

| RATIONALE | NUMBER RECOMMENDED | HQDA/TRADOC CONCUR | HQDA/TRADOC NONCONCUR | CONCURRENCE PENDING |
|---|---|---|---|---|
| UNNEEDED OR NOT COST EFFECTIVE | 12 | 10 | 2 | |
| NO USER REQUIREMENT | 1 | 1 | | |
| TECHNICAL PROBLEMS | 1 | 1 | | |
| OTHER ALTERNATIVE | 5 | 2 | 3 | |
| CONSOLIDATION | 3 | 3 | | |
| LONG TERM UNFUNDED | 3 | 2 | — | 1 |
| | 25 | 19 | 5 | 1 |

(U) At the joint DA/TRADOC/DARCOM Product Improvement Review, DARCOM MSCs/PMs recommended that 25 PIPs be cancelled. HQDA and TRADOC concurred with 19 cancellations and nonconcurred with five. One was pending assessment of HQDA or TRADOC. DARCOM was expected to continue to pursue this action until completed.

(U) The active PIP file decreased by 8 percent (856 to 786) from the previous year. This reflected DARCOM emphasis on better management of product improvement. DARCOM was moving in the right direction. Increased attention was given to the Product Improvement Program by all management levels, thus DARCOM anticipated seeing greater use of the block improvement concept and better planning through $P^3I$. With continuing DARCOM emphasis, a more disciplined Product Improvement Program was expected to evolve.

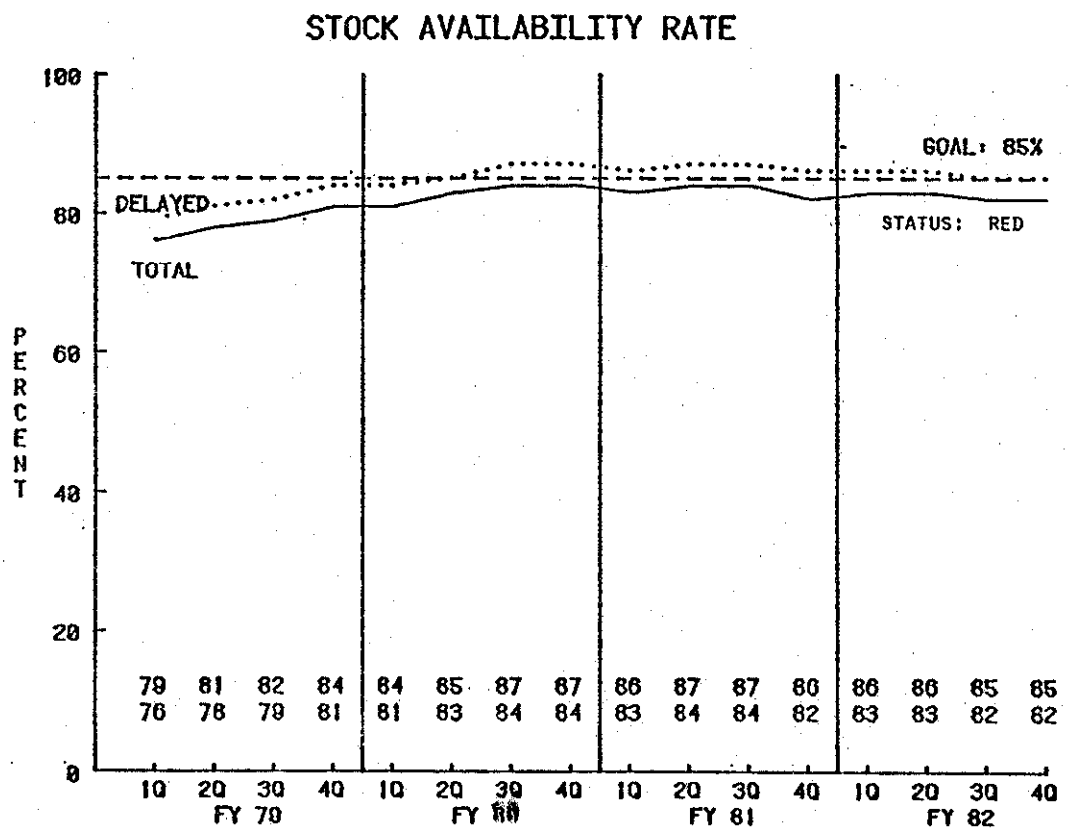
DIRECTORATE FOR SUPPLY, MAINTENANCE, AND TRANSPORTATION
FM & ILS REVIEW & ANALYSIS SUMMARY
4TH & 1ST QTR

| | TOTAL | REVIEW | RED | AMBER |
|---|---|---|---|---|
| ARRADCOM | 16 | 12 | 2 | 3 |
| ARRCOM | 6 | 3 | 0 | 0 |
| AVRADCOM | 4 | 4 | 0 | 1 |
| CECOM/PM DCS | 58 | 25 | 2 | 3 |
| ERADCOM/PM JTFP | 23 | 11 | 1 | 0 |
| MERADCOM | 9 | 7 | 0 | 1 |
| MICOM/PATRIOT | 29 | 21 | 0 | 7 |
| TACOM/MI/BFVS | 26 | 20 | 1 | 5 |
| TSARCOM/PM SEMA | 14 | 6 | 2 | 0 |
| PM TRADE | 12 | 10 | 0 | 5 |
| TOTAL | 197 | 119 | 8 | 25 |

(U) The Integrated Logistics Support (ILS) Review in fourth quarter fiscal year 1982, included 197 systems. Of these, 119 systems had actions which were current at that time, and were reviewed using inputs from the MSCs/PMs and MRSA. Twenty-five systems had ILS problems that were recognized and were being addressed, while eight systems which were designated RED had problems that would have a major effect on fielding.

Stock Availability

(U) Stock availability, because of rounding, actually increased slightly in fiscal year 1982, although there was little change in fourth quarter. Increases were experienced in both ASF and PA-2 availability, with PA-2 increasing two full percentage points for the quarter. Compared with fiscal year 1981, stock availability was down by a little over a percentage point. The largest drop experienced during the year was by TACOM (-3.5 percent).

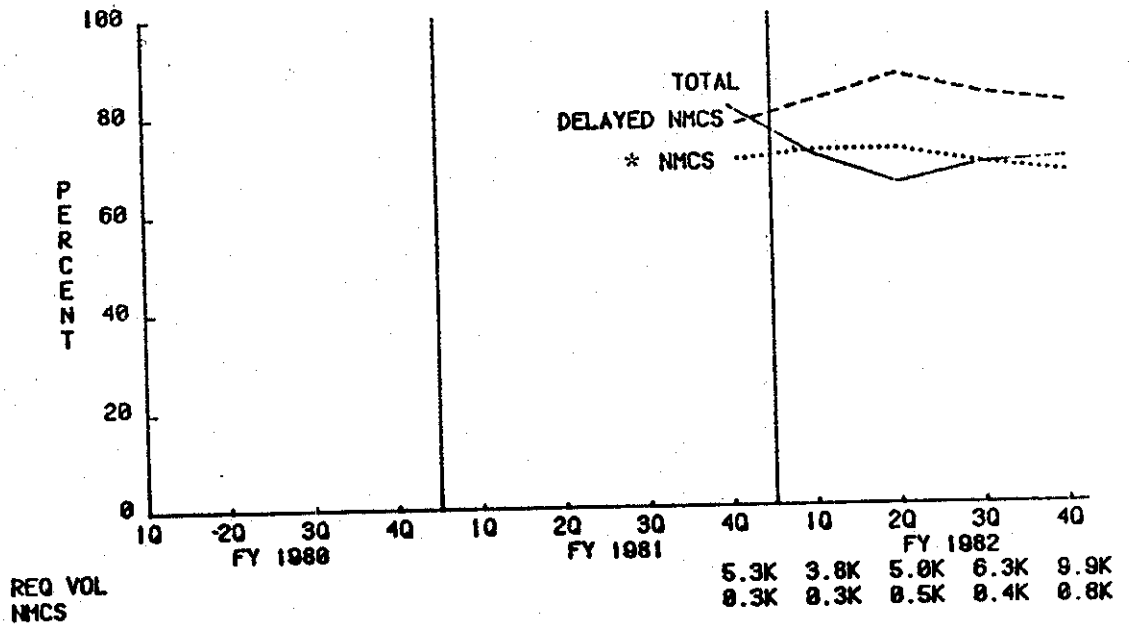


(U) The decrease in both requisition volume and stock availability for the 1/4-ton and 1/2-ton tactical vehicles could be partly attributed to the transfer of accountability of 600 repair parts to the Defense Logistics Agency (DLA). The TACOM 1/4-ton truck office had 31 of its top 100 demanded items transferred to DLA, and 89 percent of the total transferred were fully stocked through the reorder cycle.

(U) The USAREUR sustainability program and the worldwide body program had generated substantially more requisitions than TACOM had projected receiving. Forty-five 1/4-ton vehicle items were on TACOM's top 200 backorder items list. Forty of these items were projected to get well in the first six months of fiscal year 1983.

(U) M1 Stock Availability. Stock availability for the M1 Program improved slightly during the fourth quarter of fiscal year 1982 for a combined ARRCOM/TACOM PSA of 70 percent. This performance was considered very credible in view of the supply pipeline strain resulting from a slowdown/strike at General Dynamics, design changes, late deliveries from contractors, REFORGER support and continued fielding of the M1 tank. There were 20-25 major and 300-400 minor design changes that had to be incorporated into technical data packages, all of which would impact on production, delivery, and stock availability. The stockage level was expected to gradually improve as fielding continued, experience was gained in the factory and field, design changes were reduced, and contractor production capability increased.

STOCK AVAILABILITY - M1 TANK

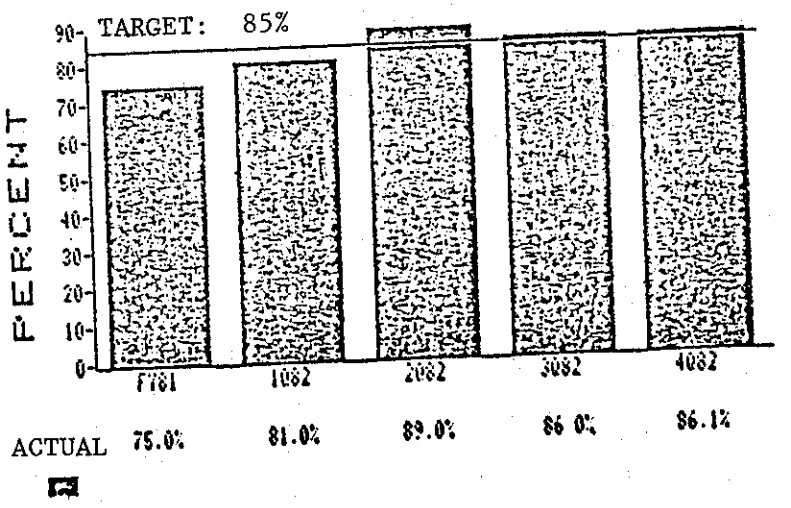



* Non-Mission Capable Supply (NMCS)

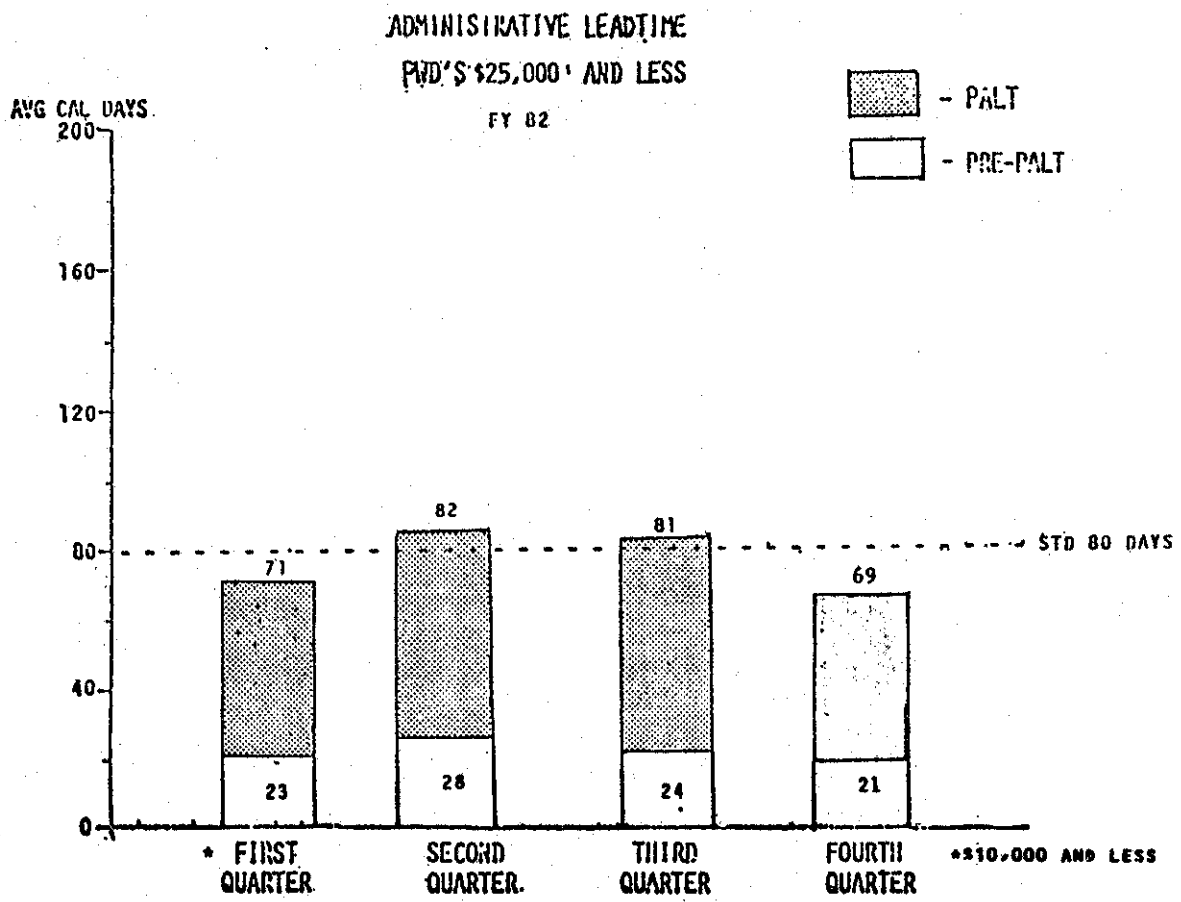
(U) Force Modernization Packaging. The Force Modernization Packaging Program transitioned from a test to operational implementation in the third quarter of fiscal year 1982. The peak work load level for fiscal year 1981 testing was 5,000 lines delivered in the third quarter. In fiscal year 1982, the peak work load was 7,308 lines delivered in the fourth quarter. Projections of package lines for fiscal year 1983 were expected to reach 150,000 lines. The work load was expected to level off after fiscal year 1983.

(U) The performance effectiveness target represented the number of lines required to be in the initial package deliveries. The performance effectiveness target was set at 85 percent of the lines requisitioned. The 7,308 lines delivered in fourth quarter fiscal year 1982 represented an effectiveness rate of 86.1 percent against the 85 percent target.

FORCE MODERNIZATION PACKAGING EFFECTIVENESS

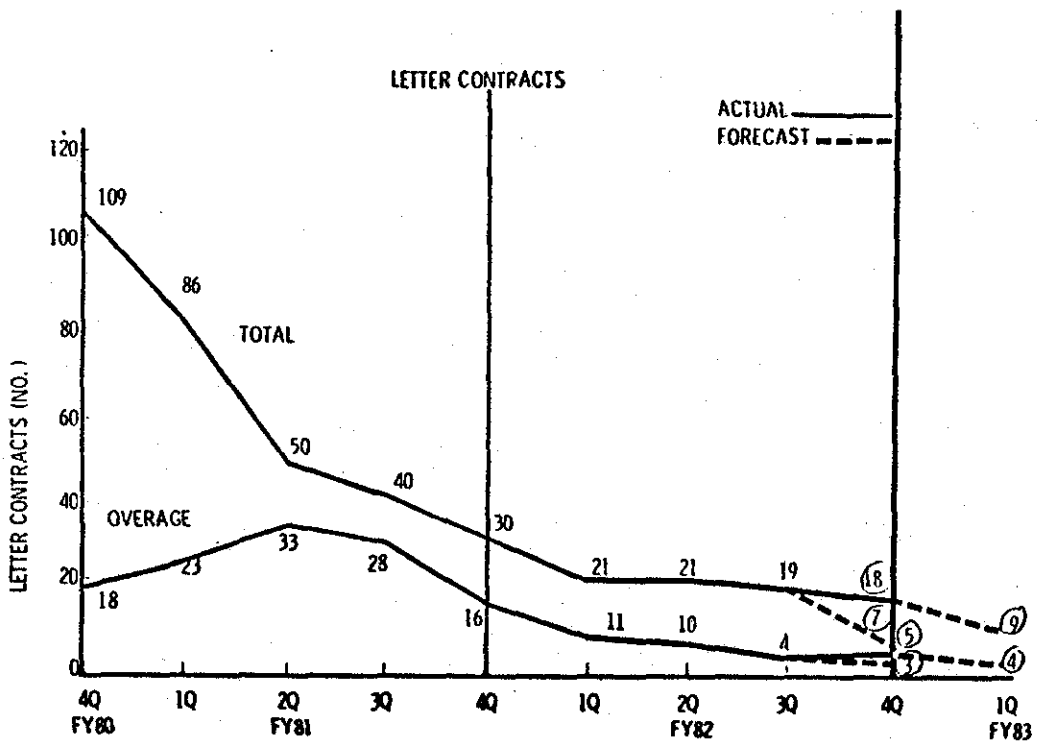


(U) Six commands failed to meet the Administrative Lead Time (ALT) standards in the $25,000 and less category. Of these commands, four experienced delay in the pre-PALT portion of the ALT, with TACOM's and TSARCOM's delay due primarily to PALT problems. The major reasons for the delays were TDP problems and increased workload.




(U) Three of the DARCOM commands did not meet the ALT standards in the over $25,000 category. All three commands' excesses were due to problems experienced in the PALT portion of ALT. The shortfalls were caused primarily by increased workload. Five of the MSCs (AVRADCOM, CECOM, MICOM, TACOM, and TSARCOM) failed to meet the PALT standard for competitively negotiated small purchases.

(U) Letter Contracts. The DARCOM forecast for the end of the fourth quarter of fiscal year 1982 was seven letter contracts on hand, three of which would be overage. The actual performance was 18 on hand, five of which were overage. The projection for the end of the first quarter of fiscal year 1983, was nine on hand, four of which would be overage.



Improved Acquisition Process

(U) The goal of improving the acquisition process was to provide the Army with the materiel needed in a timely, efficient and economical manner. To accomplish this goal, efforts were underway to review, eliminate or improve where possible regulatory and statutory requirements which effected DARCOM's ability to provide goods and services.

(U) In the effort to improve the acquisition process, a POC network was established, and actions were taken to identify potential problems in the supporting activities. Milestones were developed for each activity and a series of quarterly reviews were to be conducted to monitor the progress of the activities.

Small Business Awards

(U) DARCOM did not quite meet the total Small Business goal of 16.2 percent, but the fiscal year 1982 awards percentage was somewhat higher than achieved in fiscal year 1981.

DARCOM FY 82 SMALL BUSINESS PERFORMANCE SUMMARY
($ MILLIONS) OR (%)

| | FY 81 ACTUAL | FY 82 ACTUAL | | FY 82 GOAL |
|---|---|---|---|---|
| SMALL DISADVANTAGED BUSINESS | $346.1 | $377.1 | + | $350.0 |
| SMALL BUSINESS SET-ASIDE | 6.1% | 6.1% | (-) | 6.6% |
| WOMEN-OWNED BUSINESS | $53.2 | $81.1 | + | $50.0 |
| SMALL BUSINESS SUBCONTRACTING AWARDS* | | 41.8% | + | 40.0% |
| DARCOM TOTAL SMALL BUSINESS AWARDS | 15.1% | 15.2% | (-) | 16.2% |
| DARCOM TOTAL SMALL BUSINESS ACTIONS | 79.4%* | 80.1% | | |

* NOT REPORTED IN FY 81

SMALL BUSINESS AWARDS
(% OF TOTAL U.S. DOLLARS)

| | FY 81 | FY 82 | | |
|---|---|---|---|---|
| COMMAND | ACTUAL | ACTUAL | | GOAL |
| ARRCOM | 20.0 | 16.6 | (-) | 18.8 |
| CECOM | 21.1 | 20.3 | (-) | 27.6 |
| MICOM | 7.5 | 5.5 | (-) | 7.4 |
| TACOM | 11.3 | 16.6 | + | 13.6 |
| TECOM | 46.3 | 47.4 | (-) | 60.1 |
| TSARCOM | 28.4 | 16.7 | (-) | 24.9 |
| ARRADCOM | 11.9 | 10.8 | (-) | 14.4 |
| AVRADCOM | .6 | .4 | (-) | .8 |
| ERADCOM | 6.6 | 6.7 | (-) | 9.2 |
| MERADCOM | 27.5 | 39.0 | + | 32.0 |
| NLABS | 47.8 | 43.8 | (-) | 62.1 |
| DESCOM | 71.9 | 68.8 | (-) | 82.0 |
| OTHER | 54.5 | 47.3 | (-) | 63.7 |
| TOTAL DARCOM | 15.1 | 15.2 | (-) | 16.2 |

(U) Small Business Set-Aside Awards. DARCOM did not quite meet the Small Business set-aside goal of 6.6 percent, but the fiscal year 1982 awards percentage was the same as in fiscal year 1981.

SMALL BUSINESS SET-ASIDE AWARDS
(% OF TOTAL U.S. DOLLARS)

| | FY 81 | FY 82 | | |
|---|---|---|---|---|
| COMMAND | ACTUAL | ACTUAL | | GOAL |
| ARRCOM | 6.6 | 5.7 | (-) | 7.8 |
| CECOM | 7.1 | 9.4 | + | 8.9 |
| MICOM | 2.7 | 1.5 | (-) | 3.2 |
| TACOM | 4.9 | 6.5 | + | 5.9 |
| TECOM | 17.8 | 24.7 | + | 21.5 |
| TSARCOM | 15.3 | 8.6 | (-) | 12.1 |
| ARRADCOM | 3.3 | 2.7 | (-) | 4.0 |
| AVRADCOM | .16 | .3 | + | .3 |
| ERADCOM | .45 | .9 | + | .7 |
| MERADCOM | 6.7 | 9.7 | + | 8.1 |
| NLABS | 21.0 | 14.7 | + | 10.8 |
| DESCOM | 48.5 | 44.1 | (-) | 46.5 |
| OTHER | 24.7 | 15.1 | (-) | 22.2 |
| TOTAL DARCOM | 6.1 | 6.1 | (-) | 6.6 |

SMALL DISADVANTAGED BUSINESS AWARDS
($ MILLIONS)

| COMMAND | FY 81 ACTUAL | FY 82 ACTUAL | | FY 82 GOAL |
|---|---|---|---|---|
| ARRCOM | 50.6 | 54.8 | (-) | 62.5 |
| CECOM | 69.9 | 44.7 | (-) | 63.9 |
| MICOM | 51.7 | 66.9 | (-) | 67.8 |
| TACOM | 29.2 | 36.9 | + | 31.5 |
| TECOM | 11.1 | 18.3 | + | 10.6 |
| TSARCOM | 56.9 | 51.7 | + | 30.5 |
| ARRADCOM | 10.1 | 18.8 | + | 13.9 |
| AVRADCOM | .2 | .6 | + | .2 |
| ERADCOM | 10.3 | 3.3 | (-) | 7.5 |
| MERADCOM | 32.1 | 58.2 | + | 40.0 |
| NLABS | .9 | 1.5 | + | .9 |
| DESCOM | 21.9 | 20.1 | + | 19.8 |
| OTHER | 1.2 | 1.4 | + | 1.1 |
| TOTAL DARCOM | 346.1 | 377.1 | + | 350.0 |

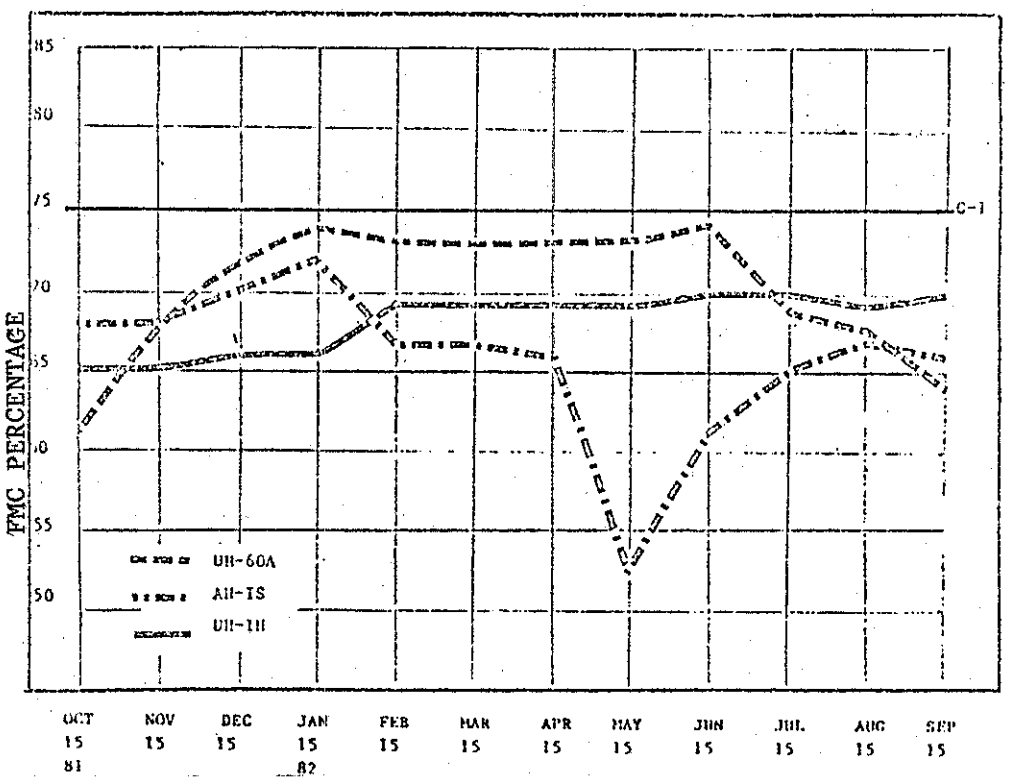
(U) Small Disadvantaged Business. This category of awards was a combination of the section 8(A) and direct Small Disadvantaged Business awards. DARCOM did exceed the fiscal year 1982 goal, and also exceeded the fiscal year 1981 actual Small Disadvantaged Business awards.

## Readiness

(U) Of 44 major combat units tracked, 30 of them achieved their Authorized Level of Organization (ALO) in equipment readiness. Twelve of the major combat units did not achieve their ALO. The 1st Infantry Division and the 3d Armored Cavalry Regiment (ACR) were exempt from unit status reporting by Department of the Army because of exercise REFORGER requirements.

(U) The following chart shows the full mission capable rate, worldwide, for fiscal year 1982, for the UH-60 (BLACKHAWK), AH-1S (COBRA) and UH-1H (HUEY). The solid bar, labeled C-1 shows the 75 percent FMC rate necessary for a C-1 rating.

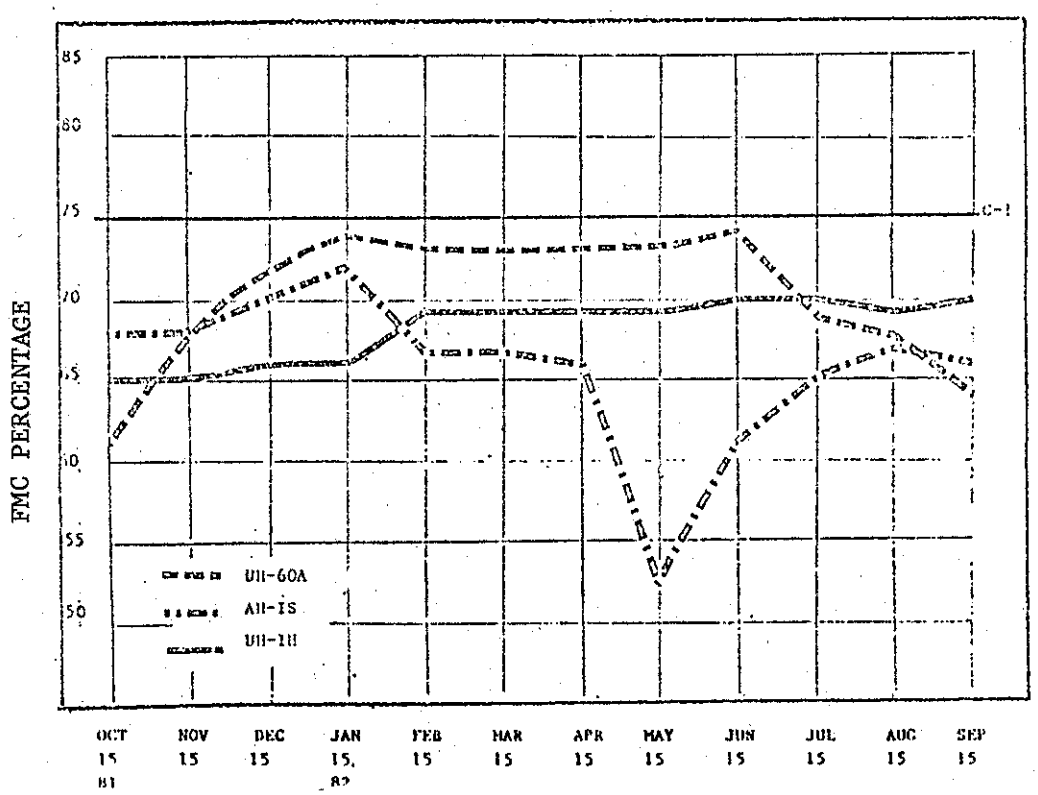
FULLY MISSION CAPABLE RATES



AIRCRAFT FLEET PERFORMANCE

WORLDWIDE ROLL UP

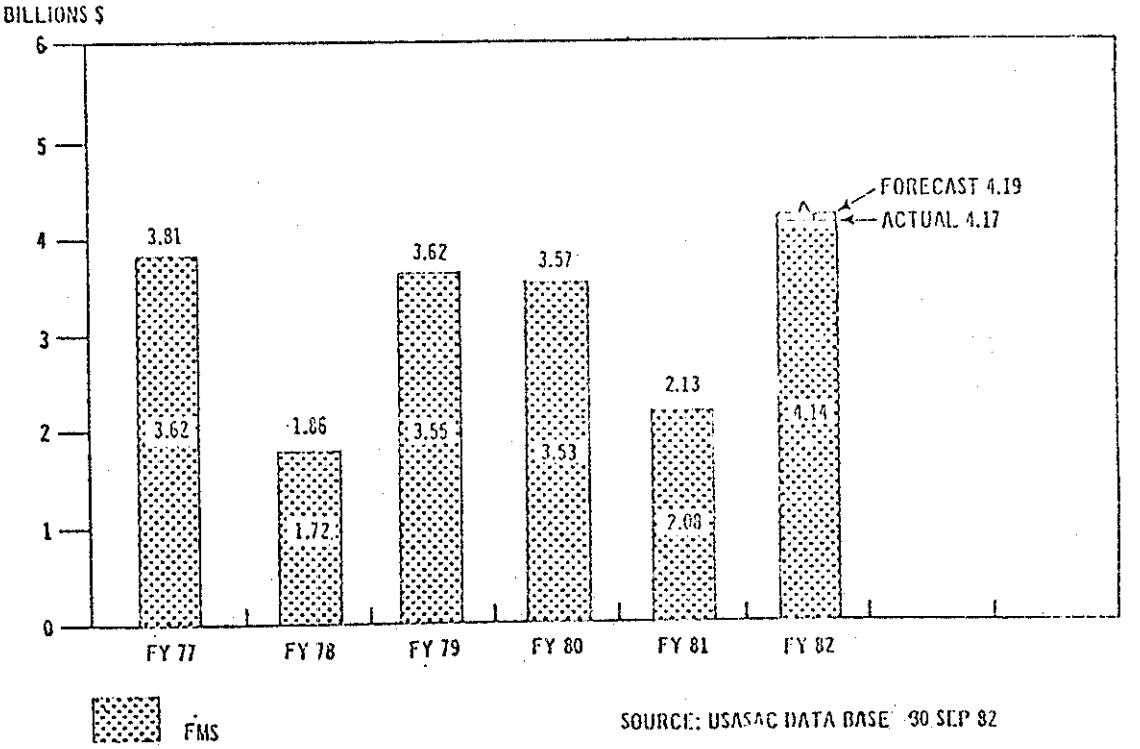
FULLY MISSION CAPABLE RATES



## Security Assistance

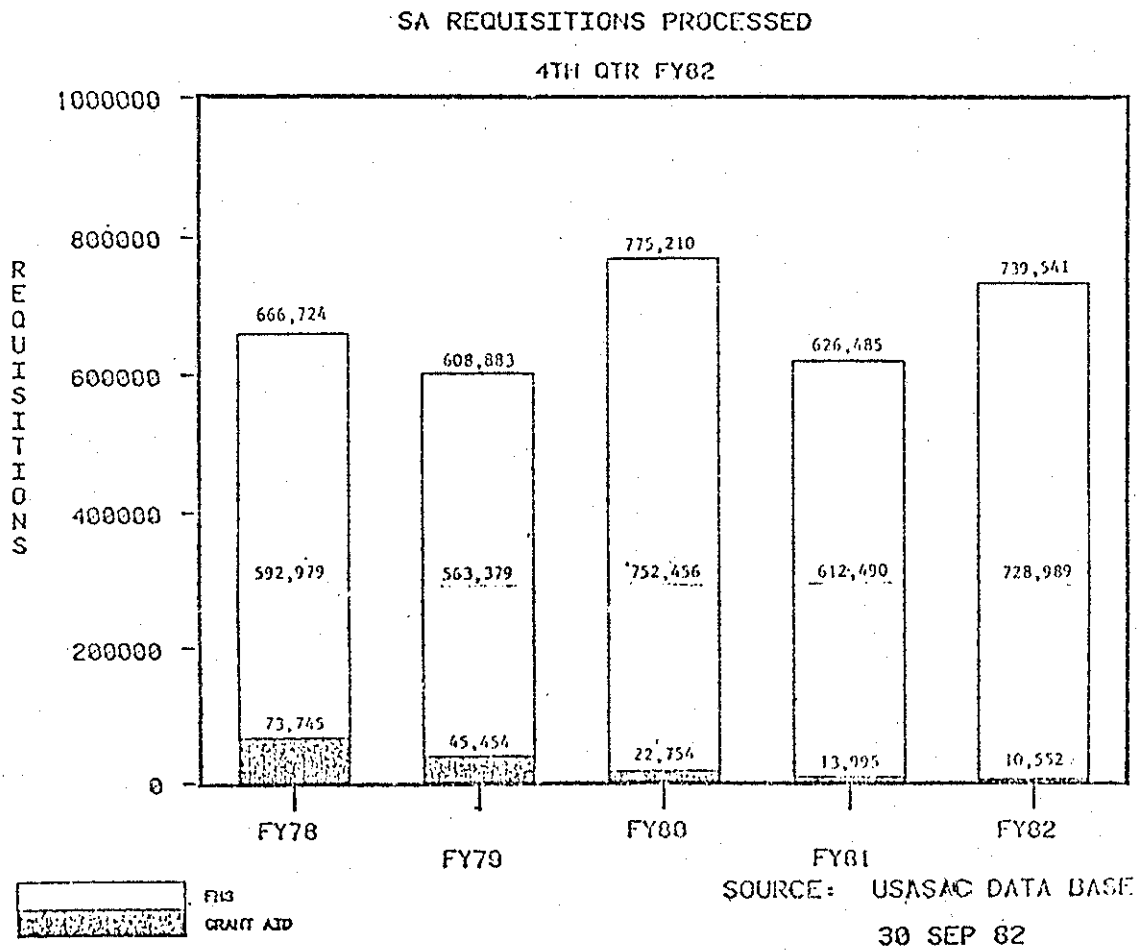
(U) Security Assistance New Business. During fiscal year 1982, 1,521 new cases in Security Assistance totaling $3.534 billion and 1,516 amendments and modifications totaling $.605 billion were implemented and added to the data base. DARCOM's total new business projection in June 1982, was $4.19 billion, and the actual new business value of $4.17 billion was very close to the estimate.

CHART 4
SECURITY ASSISTANCE
NEW BUSINESS
4TH QTR FY 82

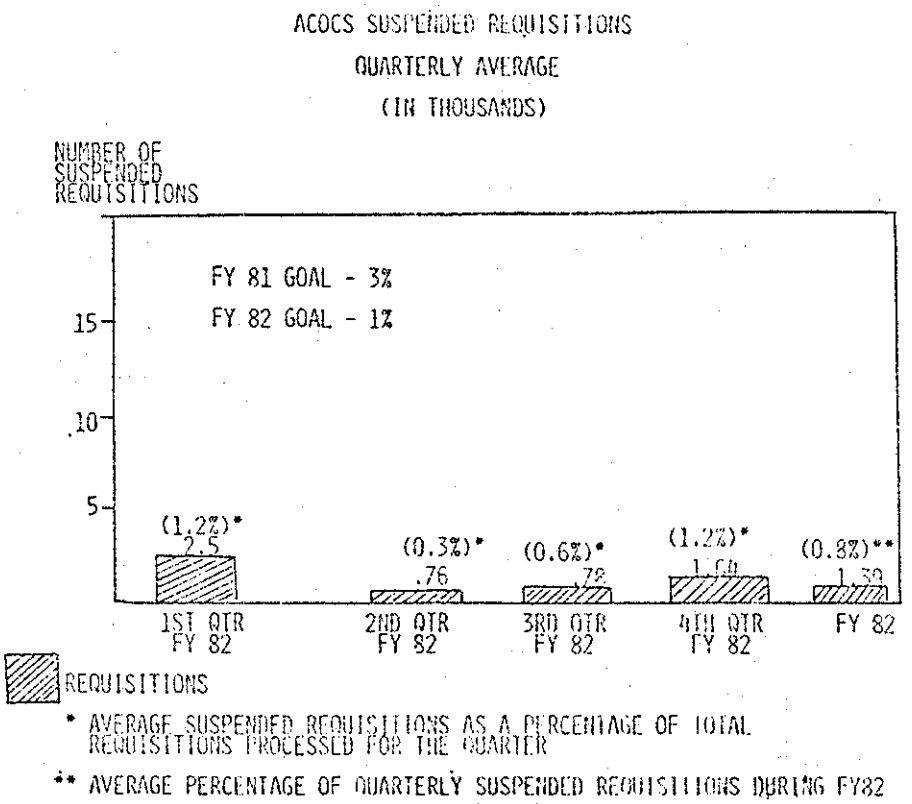



SOURCE: USASAC DATA BASE 30 SEP 82

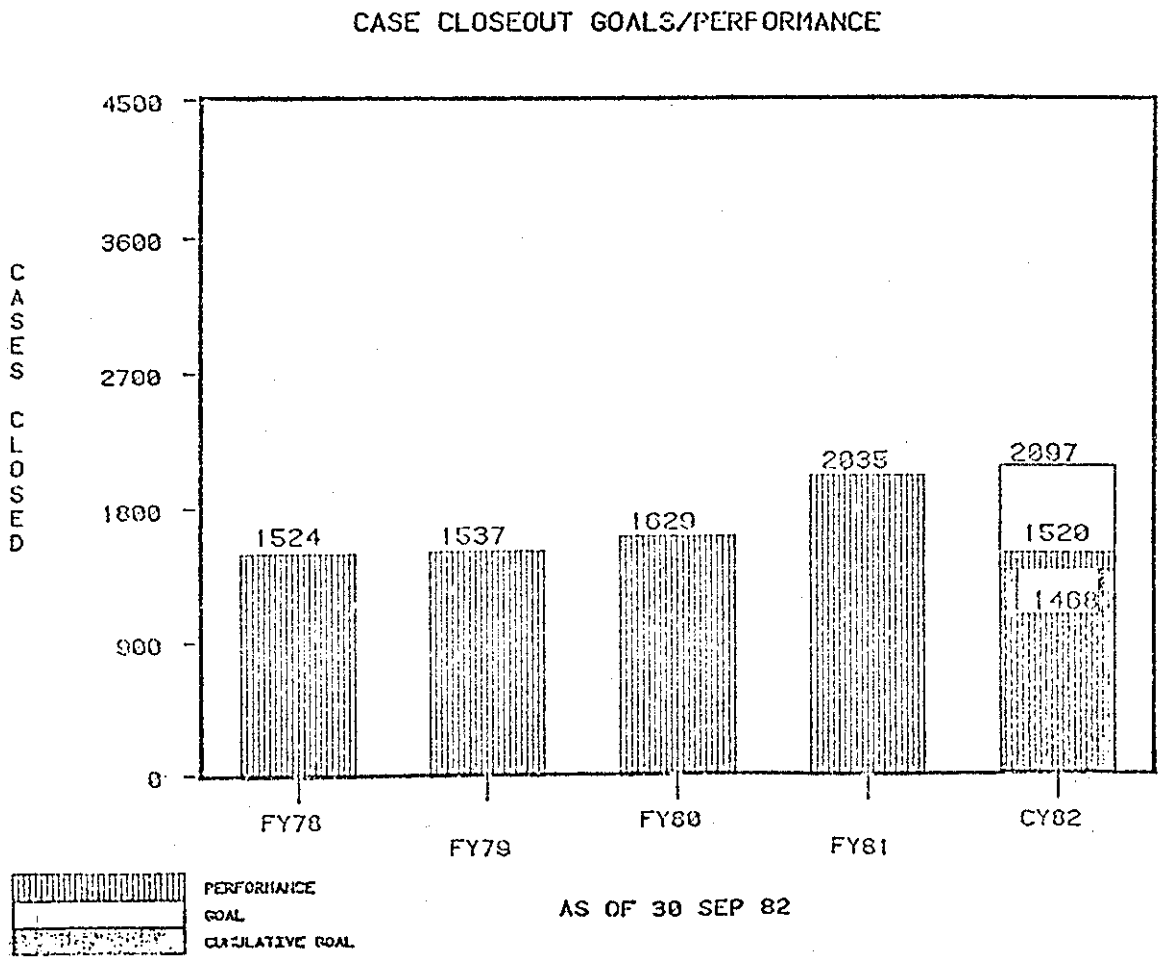
NOTE: GRANT AID INCLUDED IN ALL FYs (FY 82 GA $0.03 BILLION)



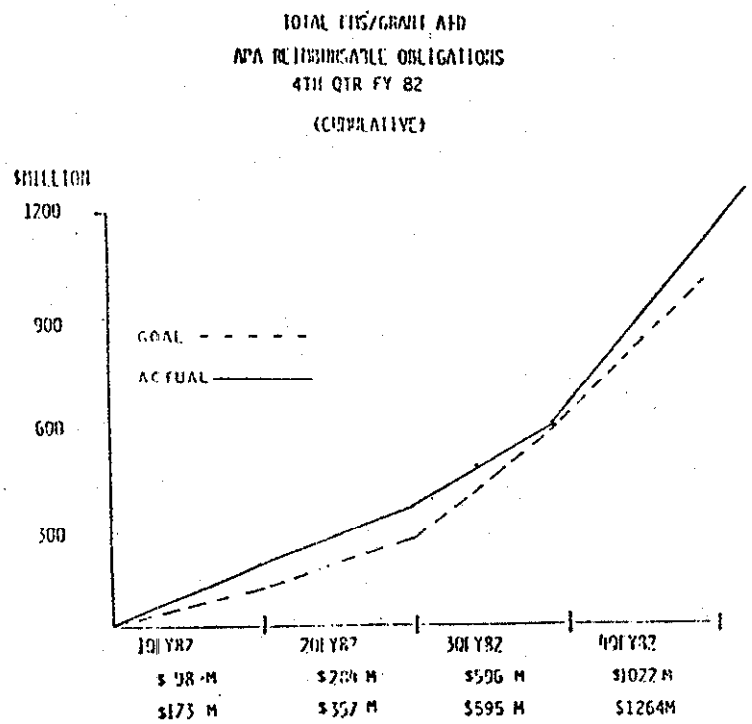

(U) Security Assistance Requisitions Processed. A total of 739,541 requisitions were processed during fiscal year 1982, with 143,749 of these processed during the fourth quarter. The totals were a combination of country and USASAC initiated MILSTRIP and NON-MILSTRIP requisitions for the military sales and grant aid programs. Military sales cases accounted for 98.6 percent of the requisitions with the balance of 1.4 percent in grant aid.




(U) Army Customer Order Control System (ACOCS) Suspended Requisitions. During fiscal year 1982, DARCOM's goal for acceptable performance was suspension of not more than one percent of the total Foreign Military Sales (FMS) requisitions as compared with FY 81 goal of not more than three percent. During the fourth quarter, fiscal year 1982, 1.2 percent or 1,639 of the 142,371 FMS requisitions were suspended, which was primarily due to a computer processing problem which was subsequently corrected, and DARCOM was back on track. The quarterly suspension rate during fiscal year 1982 was 0.8 percent.




(U) Case Closeout Performance. Case closure performance from fiscal year 1978-1981 increased each year with a significant increase shown during fiscal year 1981. The 1,520 certificates submitted during the first four quarters of the five-quarter calendar year 1982, (Oct 81-Dec 82) program represented 104 percent of the 1,468 cumulative goal established. This represented a significant accomplishment by USASAC the MRCs, and non-DARCOM activities.




(U) As of the end of fiscal year 1982, the actual obligations performance stood at 124 percent, which exceeded the goal of 99 percent by 25 percent. USASAC tracked performance on a monthly basis and worked with the MRCs to solve execution constraints.

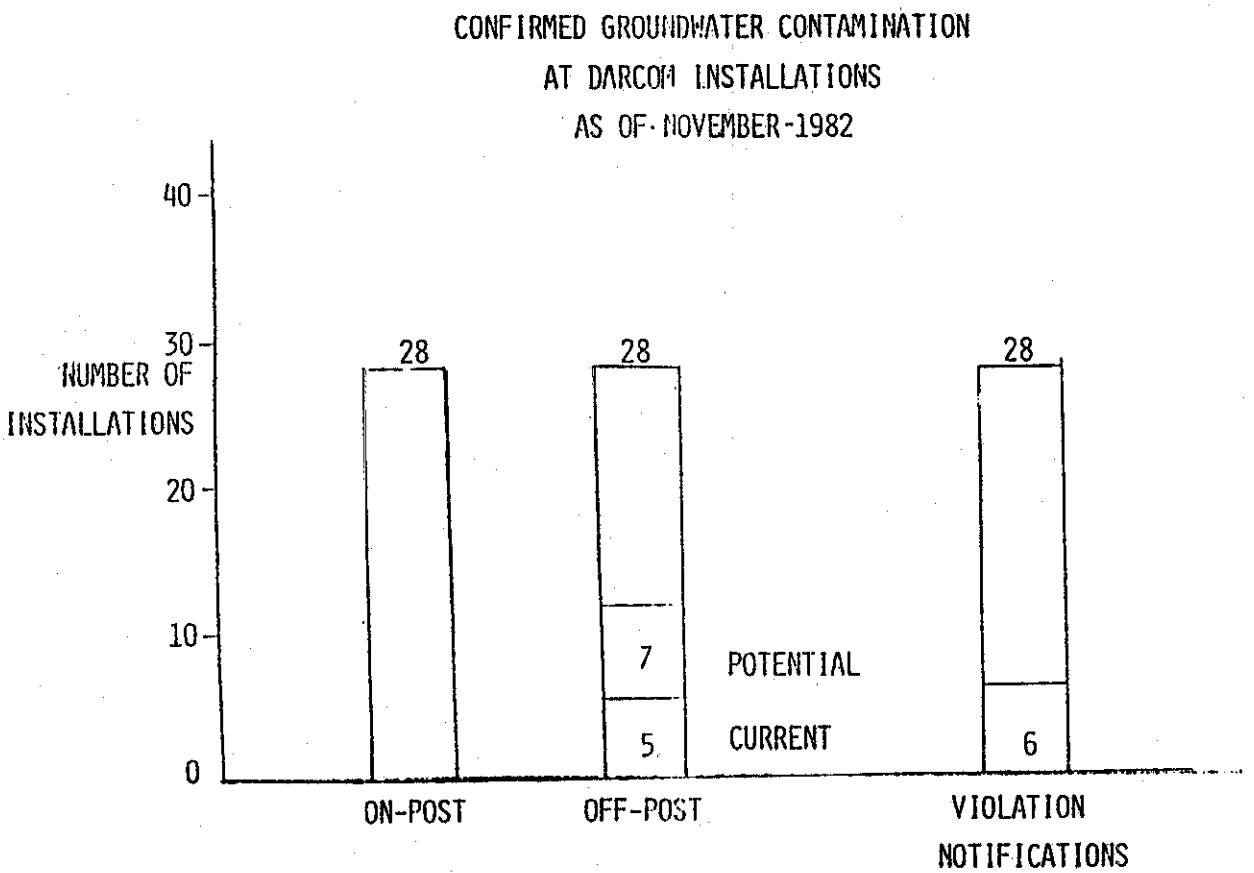
(U) In the area of FMS administrative funding, the overall average of DARCOM obligations performance was 98 percent against a year end target of 95-99 percent.

FMS ADMINISTRATIVE FUNDING
FY 82 OBLIGATIONS PERFORMANCE
THROUGH THE 4TH QUARTER FY 82
(DOLLARS IN MILLIONS)

| COMMAND | FY 82 ADJUSTED AFP | 4TH QTR OBLIGATIONS | FY 82 AFP % OBLIGATED |
|---|---|---|---|
| USASAC | * $ 24.50 | * $ 23.43 | 96 |
| MICOM | 15.77 | 15.75 | 100 |
| ARRCOM | 14.02 | 14.02 | 100 |
| TACOM | 12.12 | 12.12 | 100 |
| CECOM | 5.98 | 5.98 | 100 |
| TSARCOM | 4.32 | 4.32 | 100 |
| HQ DARCOM | .72 | .72 | 100 |
| OTHERS | .95 | .93 | 97.9 |
| TOTAL | $ 78.39 | $ 77.24 | 98.5 |

* INCLUDES RODS
(FIGURES MAY NOT TOTAL DUE TO ROUNDING)

(U) The suspension of requisitions under the Army Customer Order Control System (ACOCS) and USASAC requisition performance were for the most part attributable to a computer processing problem which was corrected. One of USASAC's remaining problems was FMS billing performance, which was interrupted by computer down-time required to implement a system change to add the surcharge for stock fund to the price of the materiel. This change was implemented and USASAC was again meeting its objective at year end fiscal year 1982.




Groundwater Contamination at DARCOM Installations

(U) The Resource Conservation and Recovery Act (RCRA) required that installations monitor groundwater around treatment, storage, and disposal sites for hazardous wastes. The results of DARCOM's monitoring effort were beginning to come as of year end fiscal year 1982, indicating the number of sites with groundwater contamination was 28 total. It was expected that the list would continue to grow.

(U) The confirmation of groundwater contamination did not automatically make an installation a noncomplier, for the contamination could have been caused by past, at that time acceptable, hazardous waste disposal practices. (e.g. Anniston Army Depot, because of its chemical sludge disposal trenches, and New Cumberland Army Depot because of its leaking underground waste solvent storage tanks). It was expected that regulators would require remedial action regardless of the technicality of noncompliance.

(U) Groundwater Contamination at DARCOM Installations. The following two charts identify by name those 28 installations with contamination of groundwater, and list type of contamination. Note that RCRA required action if indicator parameters were at higher levels than background. Of the 28 DARCOM installations with confirmed groundwater (GW) contamination, five did not have specific contaminants, but did exceed the RCRA indicators. Of the 28 DARCOM installations with confirmed GW contamination on-post, five also had GW off-post, with seven more the potential for off-post GW contamination.

CONFIRMED GROUNDWATER CONTAMINATION AT DARCOM INSTALLATIONS

| | INSTALLATION | ON POST | OFF POST | VIOLATION NOTIFICATION | TYPE OF CONTAMINATION |
|---|---|---|---|---|---|
| 1. | ABERDEEN PG | X | P | | EXPLOSIVES |
| 2. | ANNISTON AD | X | P | SEP 81 | CHLORINATED SOLVENTS |
| 3. | BADGER AAP | X | | JAN 81 | CHLORINATED SOLVENTS |
| 4. | CORNHUSKER AAP | X | P | | EXPLOSIVES |
| 5. | HAWTHORNE AAP | X | X | | EXPLOSIVES |
| 6. | HOLSTON AAP | X | | | NITRATES |
| 7. | IOWA AAP | X | | | EXPLOSIVES |
| 8. | JOLIET AAP | X | | | EXPLOSIVES |
| 9. | LAKE CITY AAP | X | | | EXCEEDS RCRA INDICATORS |
| 10. | LETTERKENNY AD | X | X | | CHLORINATED SOLVENTS |
| 11. | LONE STAR AAP | X | | | EXCEEDS RCRA INDICATORS |
| 12. | LONGHORN AAP | X | | | EXCEEDS RCRA INDICATORS |
| 13. | LOUISIANA AAP | X | | | EXPLOSIVES |
| 14. | MILAN AAP | X | X | | EXPLOSIVES |
| 15. | NEW CUMBERLAND AD | X | | DEC 81 | CHLORINATED SOLVENTS |
| 16. | PICATINNY ARS | X | P | | CHLORINATED SOLVENTS & HEAVY METALS |

P = POTENTIAL OFF POST

CONFIRMED GROUNDWATER CONTAMINATION AT DARCOM INSTALLATIONS

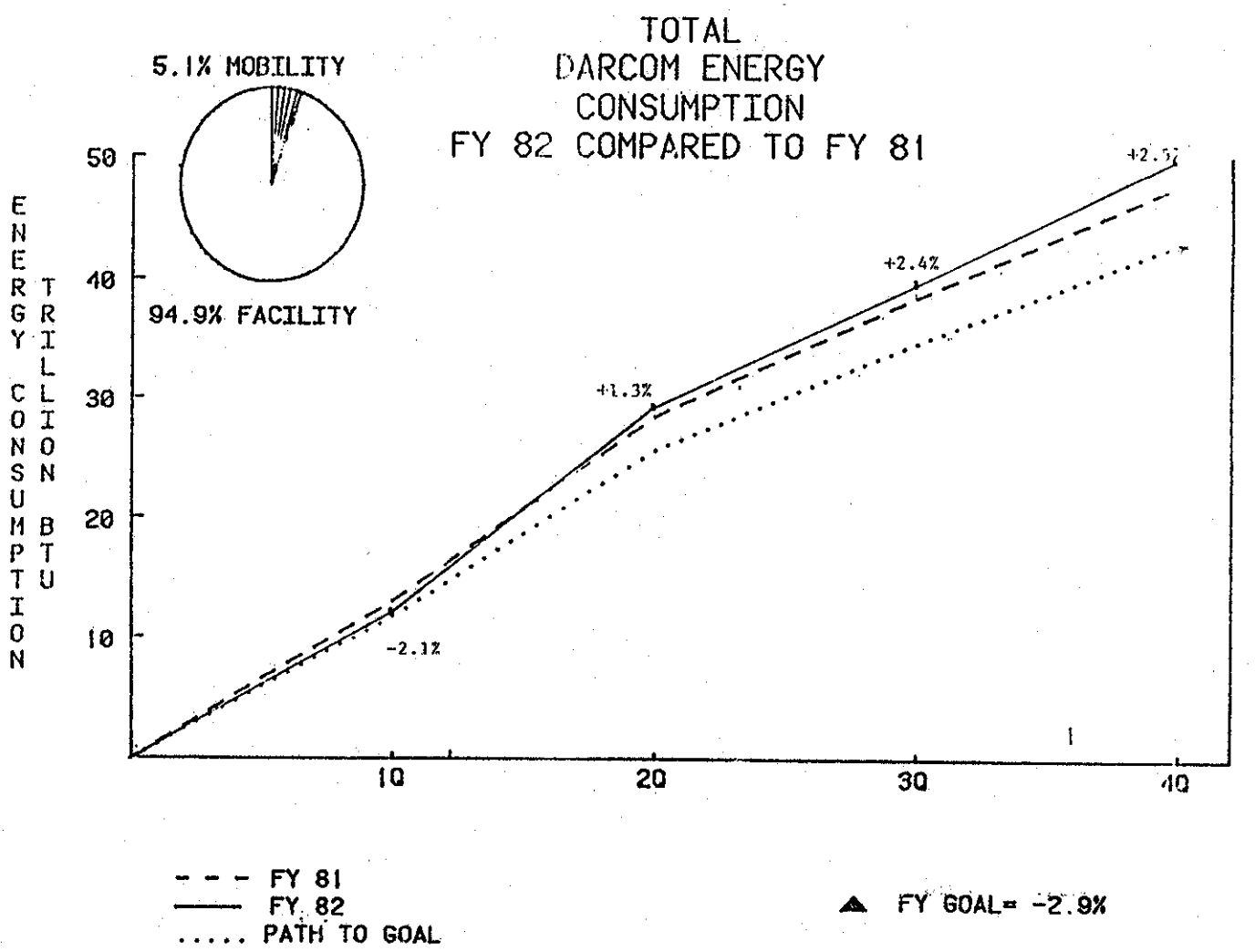
| | INSTALLATIONS | ON POST | OFF POST | VIOLATION NOTIFICATION | TYPE OF CONTAMINATION |
|---|---|---|---|---|---|
| 17. | PINE BLUFF ARS | X | | JUL 81 | HEAVY METALS & PESTICIDES |
| 18. | RADFORD AAP | X | P | | NITRATE, FLUORIDE SULFATE, TDS, SODIUM & FUEL OIL |
| 19. | RAVENNA AAP | X | | | EXPLOSIVES |
| 20. | RED RIVER AD | X | | | EXCEEDS RCRA INDICATORS |
| 21. | RIVERBANK AAP | X | | | EXCEEDS RCRA INDICATORS |
| 22. | ROCKY MT. ARS | X | X | AUG 81 | PESTICIDES & PESTICIDES BY PRODUCTS |
| 23. | SACRAMENTO AD | X | | | SOLVENTS |
| 24. | SAVANNA AD | X | P | | EXPLOSIVES |
| 25. | SHARPE AD | X | X | | CHLORINATED SOLVENTS |
| 26. | TOBYHANNA AD | X | | AUG 81 | CHLORINATED SOLVENTS |
| 27. | TWIN CITIES AAP | X | P | | CHLORINATED SOLVENTS |
| 28. | UMATILLA AD | X | | | EXPLOSIVES |

P = POTENTIAL OFF POST

(U) Cornhusker Army Ammunition Plant was added to the list of installations with groundwater contamination after third quarter fiscal year 1982. The type of contamination was from explosive waste, on-post, with the potential for off-post contamination.

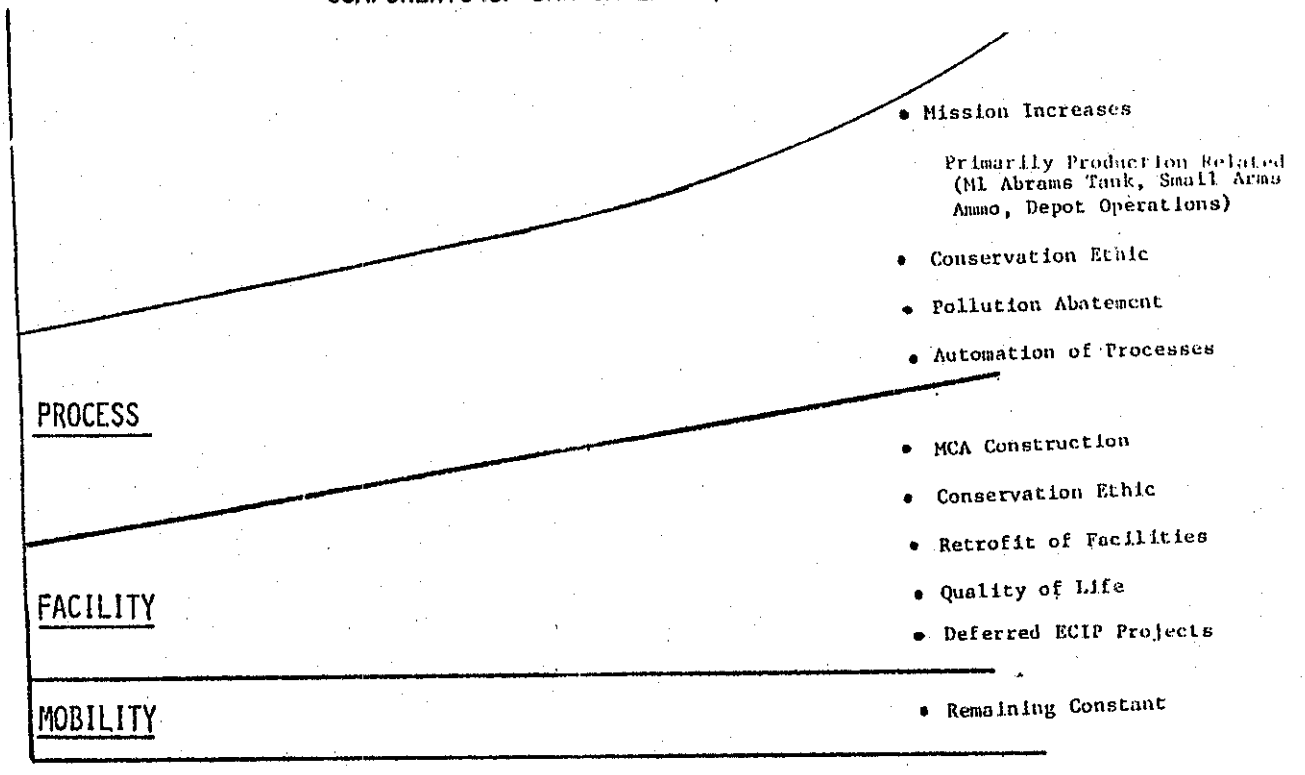
Total Energy Consumption

(U) The cumulative energy consumption increase in fiscal year 1982 was 2.9 percent above that of fiscal year 1981. Six of 11 reporting MSCs had increased consumption for fiscal year 1982. ARRCOM, DESCOM, MICOM, and CECOM, representing about 75 percent of DARCOM's total consumption, had increases of 3, 6, 2, and 9 percent respectively. This increase by DARCOM represented a consumption of 205,000 barrels of oil which could run Radford for three months, Iowa for a year, or Fort Monmouth for nine months. It was also the equivalent of one day's input to the Strategic Petroleum Reserve.



(U) The three components of DARCOM's consumption show graphically where the problems lay. Mobility consumption continued to be no problem. Increased missions (M-1 Tank production, ammo production, depot operations, etc.), pollution abatement requirements and automation of processes increased the process energy consumption. Some MCA construction, needed retrofits, improvements for quality of life, and deferred ECIP projects were adversely affecting the facility energy consumption. It was felt there was a weakening of the conservation ethnic command-wide. On the plus side, DA adjusted DARCOM's 85 target based on corrections to the 1975 baseline. The new target was very close to projections for the same period.

COMPONENTS OF DARCOM ENERGY CONSUMPTION



DARCOM $D^2$ Thrusts

(U) DARCOM $D^2$ Thrust efforts were being implemented, although progress appeared slow in some areas. Headquarters realignment was complete, a steady state of working relationships associated with WSM/MATRIX management was emerging. Physical space was still a problem at year end fiscal year 1982.

DARCOM DIRECTION ($D^2$) THRUSTS

SCHEDULED EVENT ▽
COMPLETED EVENT ▼

| SLIPPED/RESCHEDULED | 4QFY82 | 1QFY83 | 2QFY83 | 3QFY83 | 4QFY83 |
|---|---|---|---|---|---|
| 1. DIR. MGMT-TASKED TO MANAGE EFFORT | ▼ | | | | |
| 2. MATRICES VALIDATED | ▼ | | | | |
| 3. ELEMENT INDICATORS DEVELOPED | | ▽ | | | |
| 4. MATRICES MODIFIED TO INCLUDE INITIATIVES IN CSA LETTER | | ▽ | | | |
| 5. $D^2$ MATRICES PUBLISHED | | ▽ | | | |
| 6. CHANGES TO $D^2$ MATRICES PUBLISHED | | | ▽ | ▽ | ▽ |
| 7. REVISED DARCOM-R 11-4, VOL 2, PUBLISHED | | | ▽ | | |
| 8. PROGRESS REPORTING INCLUDED IN CPIR | | ▽ | ▽ | | |

Equal Employment Opportunity

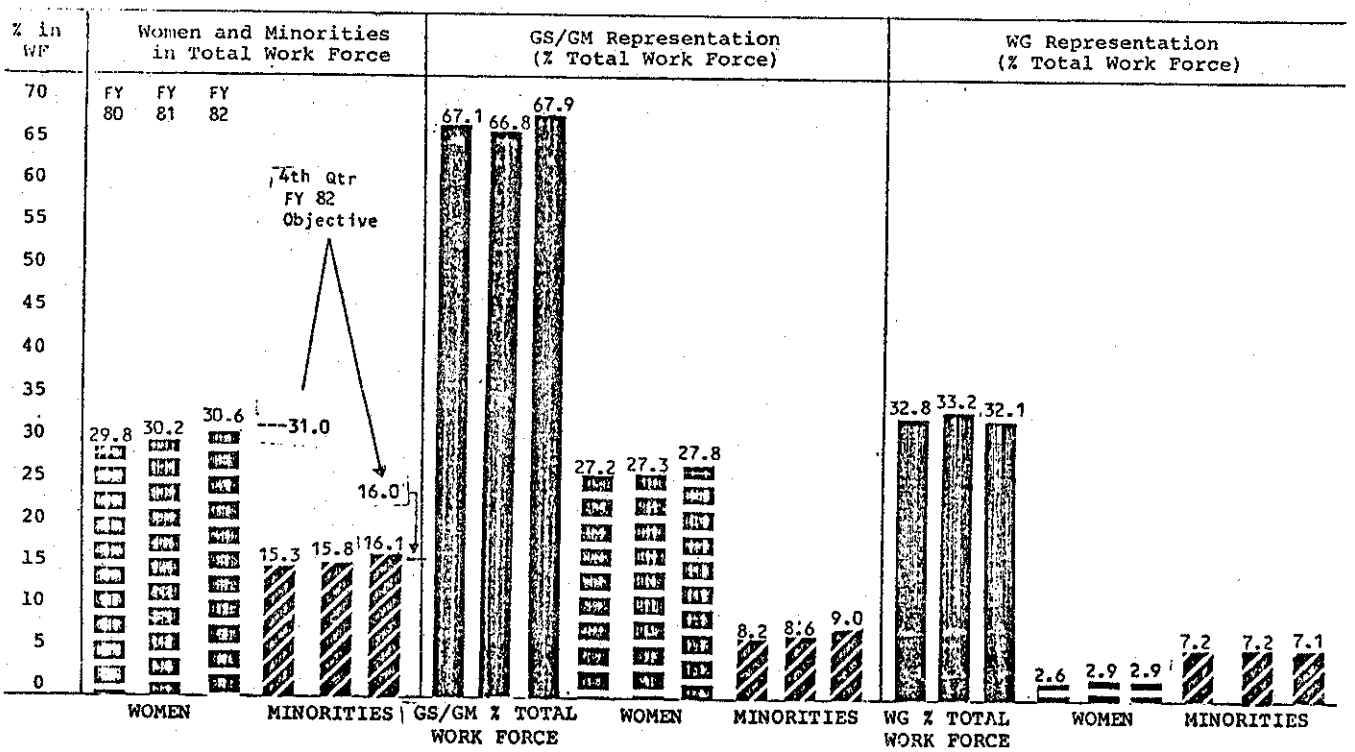
(U) At year end fiscal year 1982, DARCOM had achieved 11 of its EEO goals. The goals missed were women in total workforce, minority women, GS/GM-15 and SES women and minorities, and women in WG positions.

COMMAND PERFORMANCE INDICATOR REVIEW 4TH QTR FY 82
EQUAL EMPLOYMENT OPPORTUNITY
SUMMARY OF GOALS
REPRESENTATION OF WOMEN AND MINORITIES IN THE WORK FORCE
AS OF 30 SEPTEMBER 1982

| CATEGORY | | GOAL | ACCOMPLISHMENT |
|---|---|---|---|
| TOTAL WORK FORCE (GS & WG) | WOMEN | 31.0 | 30.6 |
| | MINORITIES | 16.0 | 16.1 |
| MINORITY WOMEN | | 5.5 | 5.2 |
| GS-9 | WOMEN | 32.1 | 34.2 |
| | MINORITIES | 14.8 | 15.0 |
| GS-11 THROUGH 12 | WOMEN | 17.2 | 17.4 |
| | MINORITIES | 11.0 | 11.3 |
| GS/GM-13 THROUGH 14 | WOMEN | 4.6 | 4.9 |
| | MINORITIES | 6.6 | 6.8 |
| GS/GM-15 AND SES | WOMEN | 2.0 | 1.3 |
| | MINORITIES | 4.5 | 3.8 |
| WG SUPERVISOR | WOMEN | 1.6 | 2.1 |
| | MINORITIES | 17.1 | 18.3 |
| WL-8 AND ABOVE | WOMEN | 1.5 | 2.1 |
| | MINORITIES | 15.8 | 17.2 |
| WG POSITION | WOMEN | 9.6 | 9.0 |

TOTAL NUMBER GOALS: 16 NUMBER GOALS MET: 11

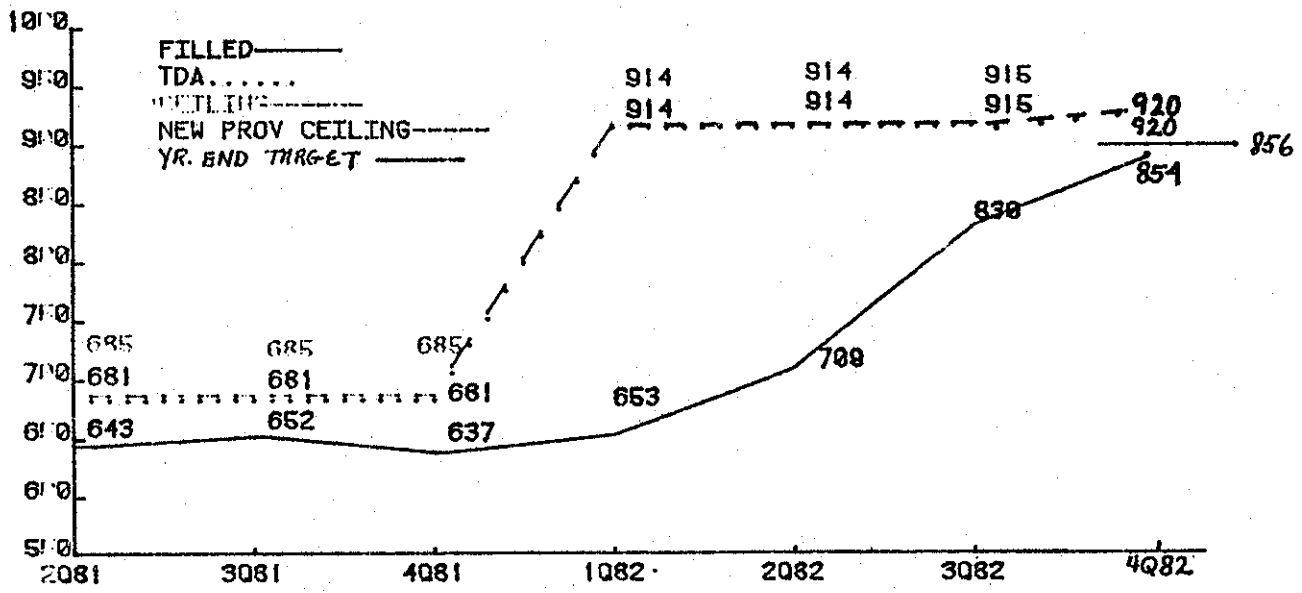
COMMAND PERFORMANCE INDICATOR REVIEW 4TH QTR FY 82
EQUAL EMPLOYMENT OPPORTUNITY
REPRESENTATION OF WOMEN AND MINORITIES IN THE WORK FORCE
(TREND IMPROVEMENT, 30 SEP 80 TO 30 SEP 82)




(U) The above chart shows three-year trends for the representation of women and minorities to the total work force. The goal for women in the work force was not achieved. The problem was identified as large losses of women temporaries at the end of the fiscal year, and a continuing need to expand areas of consideration when recruiting for career positions. Corrective actions which were either planned or in progress were: $D^2$ Thrust initiative should be directed toward expanding areas of consideration; on-going 18-month test on decentralized referral designed to help increase outside applicants through local merit promotion procedures; and rehiring temporaries released at end of fiscal year.

HQ DARCOM

TRENDS OF HIGH GRADES (FY 81/82)




| | TDA | PROV CEILING | FILLED |
|---|---|---|---|
| C/S | 137 | 137 | 128 |
| DCGRM | 248 | 248 | 237 |
| DCGMD | 211 | 211 | 188 |
| DCGMR | 324 | 324 | 301 |
| TOTAL | 920 | 920 | 854 |

(U) High Grade Trends. The number of TDA high grades was 920 as of 30 September 1982. This increase over the 30 June level was caused by five additional high grades for TMDE. The provisional ceiling was 920 high grades. If any directorate needed another high grade it would have to identify a trade-off. As of year end 1982, 854 high grades were filled.

## Product Assurance and Test

(U) Unissuable Materiel. Total dollars in unissuable materiel increased from third quarter fiscal year 1982 at $1,838 million to $2,119 million in fourth quarter, for an increase of $281 million or 15.28 percent. ARRCOM showed a decrease in total dollars unissuable of .7 percent. CECOM, MICOM, TACOM, and TSARCOM showed increases in total dollars unissuable of 28.01 percent, 25.35 percent, 49.51 percent, and 5.89 percent respectively. Of the $281 million total dollars increased, 81.5 percent could be identified to 17 items.

### UNISSUABLE MATERIEL PROGRAM

STATUS

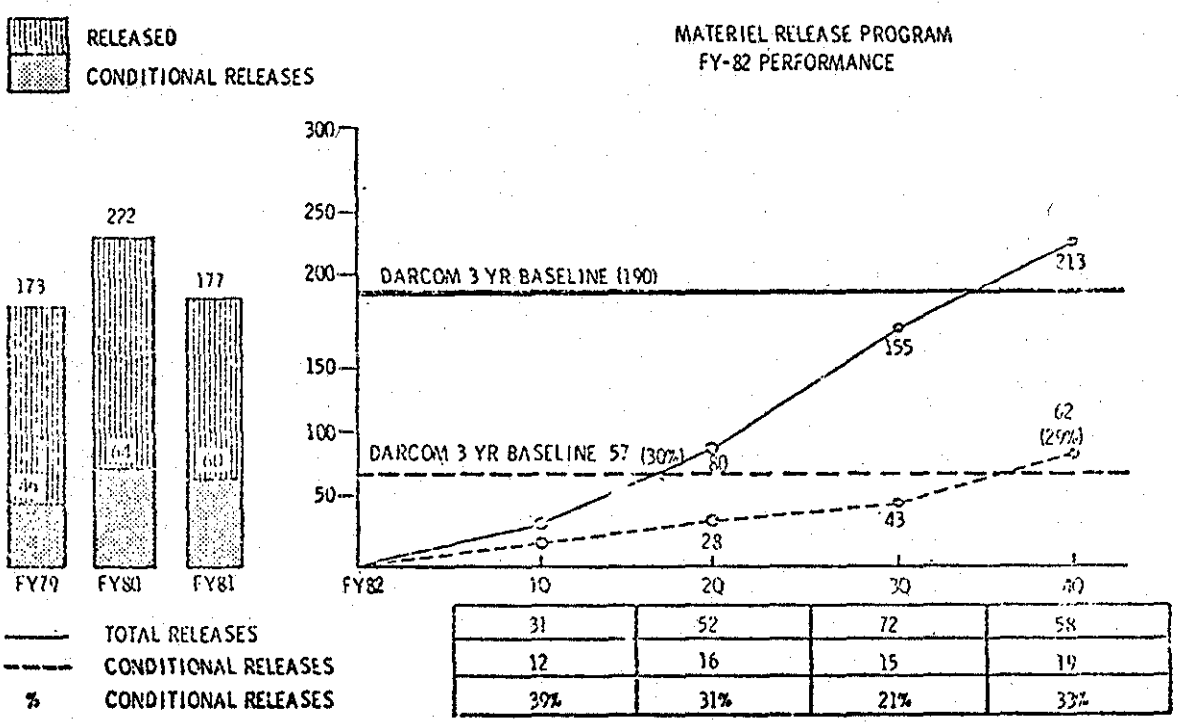
- o DCGMR TASKER TO PROVIDE VISIBILITY AND CONTROL OF UNISSUABLE MATERIEL
- o ESTABLISHED MRC REPORTING SYSTEM
- o MRC's SUBMISSION OF SELF IMPOSED TARGETS FOR REDUCTION
- o QUARTERLY REPORTING OF LINES AND DOLLAR VALUE OF UNISSUABLE MATERIEL

ACTIONS UNDERWAY

| | |
|---|---|
| o ON-SITE REVIEW OF MRC's MANAGEMENT OF UNISSUABLES | 2 QTR 83 |
| o DEVELOP OVERALL MANAGEMENT PLAN | 2 QTR 83 |
| o REVISE REPORTING REQUIREMENTS | 2 QTR 83 |
| o PUBLISH POLICY FOR MANAGEMENT, CONTROL AND REPORTING OF UNISSUABLE MATERIEL | 3 QTR 83 |
| o ESTABLISH FUNCTIONAL COMMITTEE GROUP FOR EVALUATION, AUTOMATION OF UNISSUABLE MATERIELS | 3 QTR 83<br>CONTINUE |

(U) The above chart illustrates the actions which were underway to control and manage unissuable materiels.

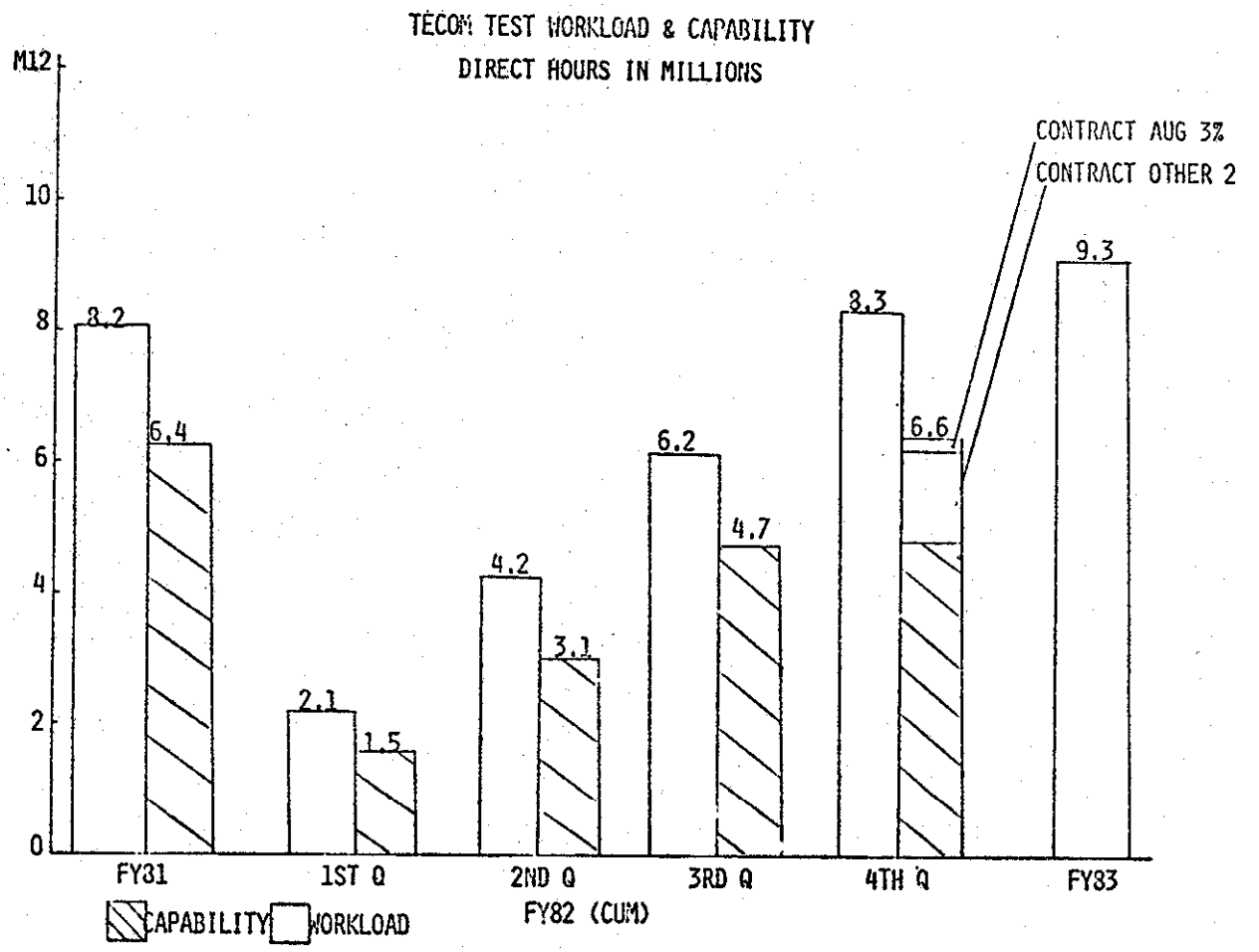
(U) Materiel Release Program. Fiscal year 1982 saw a total of 213 full or conditional releases approved; an increase of 17 percent over fiscal year 1981, and a 12 percent increase in activity over the previous three year baseline. There was also an improvement in the percentage of conditional releases approved during fiscal year 1982. While the total number of conditional releases (62) was five over the previous three year baseline, when compared with the increased activity, the percentage of conditional releases dropped to 29 percent; one percent below the previous three year average baseline.




| | | | |
|---|---|---|---|
| 31 | 52 | 72 | 58 |
| 12 | 16 | 15 | 19 |
| 39% | 31% | 21% | 33% |

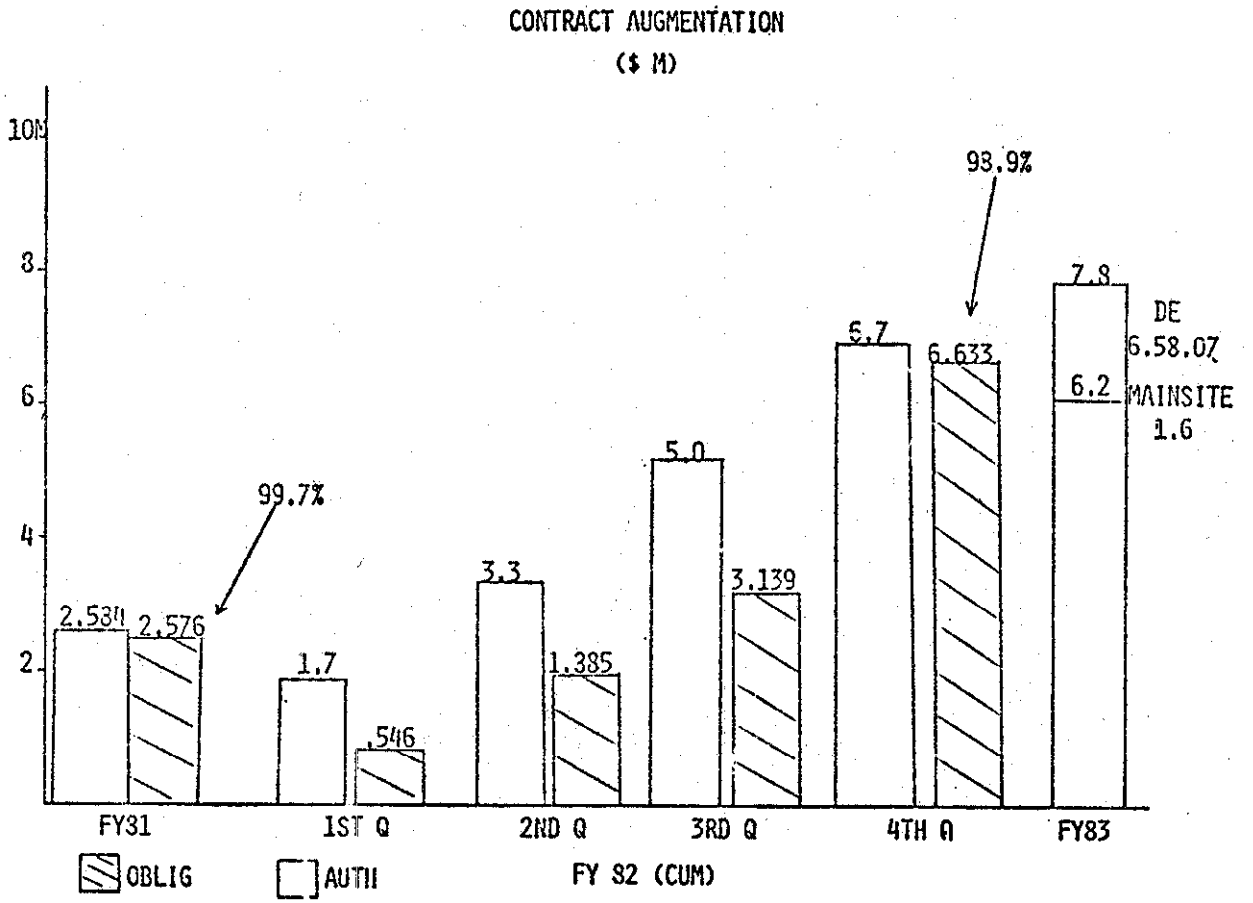
(U) Test Workload and Capability. TECOM installations and field operating agencies performed 78 percent of the projected fiscal year 1981 workload. Total contractor hours amounted to 19 percent (1.2 million) of which two percent (132,000) were contract augmentation hours. Workload for fiscal year 1982 increased by one percent over fiscal year 1981, whereas performance showed a three percent increase. Use of contractor hours represented 24 percent (1.6 million) of the total performance hours, and contract augmentation hours amounted to three percent (187,000). TECOM achieved the goal of performing 30 percent of the workload.

(U) The fiscal year 1983 workload was projected at 9.3 million hours. Projections by subordinate installations and field operating agencies were being refined. The level of workload for fiscal year 1983 was expected to be in line with fiscal year 1982.



(U) Contract Augmentation. Augmentation of the TECOM in-house technical testing capability by contract represented the most feasible and perhaps the only viable alternative for increasing the available testing capability essential to reducing the already excessive and building test workload backlog. Contracts had and were being acquired to increase the capability of the three most overloaded facilities--Aberdeen, Dugway, and Yuma Proving Grounds.

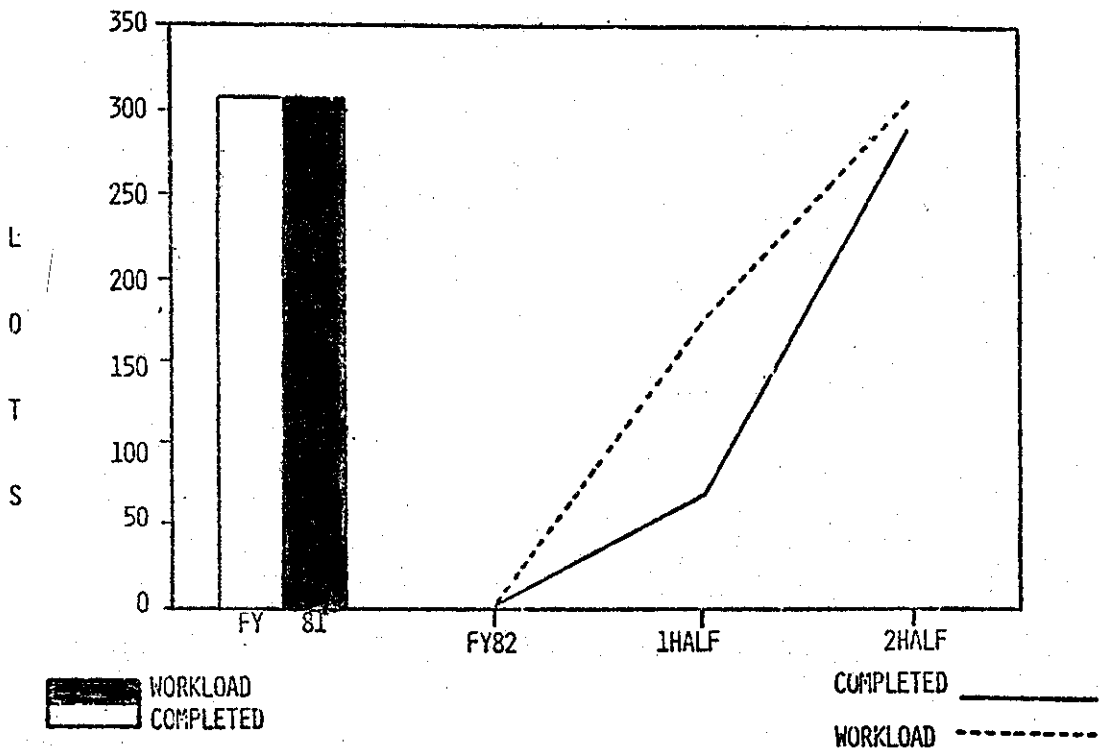
(U) It was felt that without contract augmentation, DARCOM and the Army would have to be prepared to accept a catastrophic outcome in terms of test slippages and deferrals between fiscal year 1983 and fiscal year 1985. It was necessary to be ready to test when hardware was delivered for test. TECOM was minimizing the risks involved in contracting through constant, intensive monitoring and management review, so that appropriate adjustments in resource requirements, workload alignment/adjustments, and accounting for effort could be accomplished in a timely and adequate manner.



(U) Conventional Function Firing Program. The actual fiscal year 1982 schedule for the conventional function firing program was 303 lots. As of 30 September 1982, 284 lots were completed, and eight additional lots were completed 14 October. Nine lots were started 21 October, and were expected to be completed by mid-November. Testing of two lots of 8", M650, was started in September; however was suspended due to down-range premature.

(U) The very hard winter of 1982 curtailed activities at Proving Grounds, causing large early slippage. Other workload such as production acceptance testing had higher priority, resulting in delays throughout the year. The anticipated fiscal year 1983 schedule was: first half - 159 lots; second half - 79 lots; and total 238 lots. A four item ASRP was scheduled to be performed in Germany during fiscal year 1983.

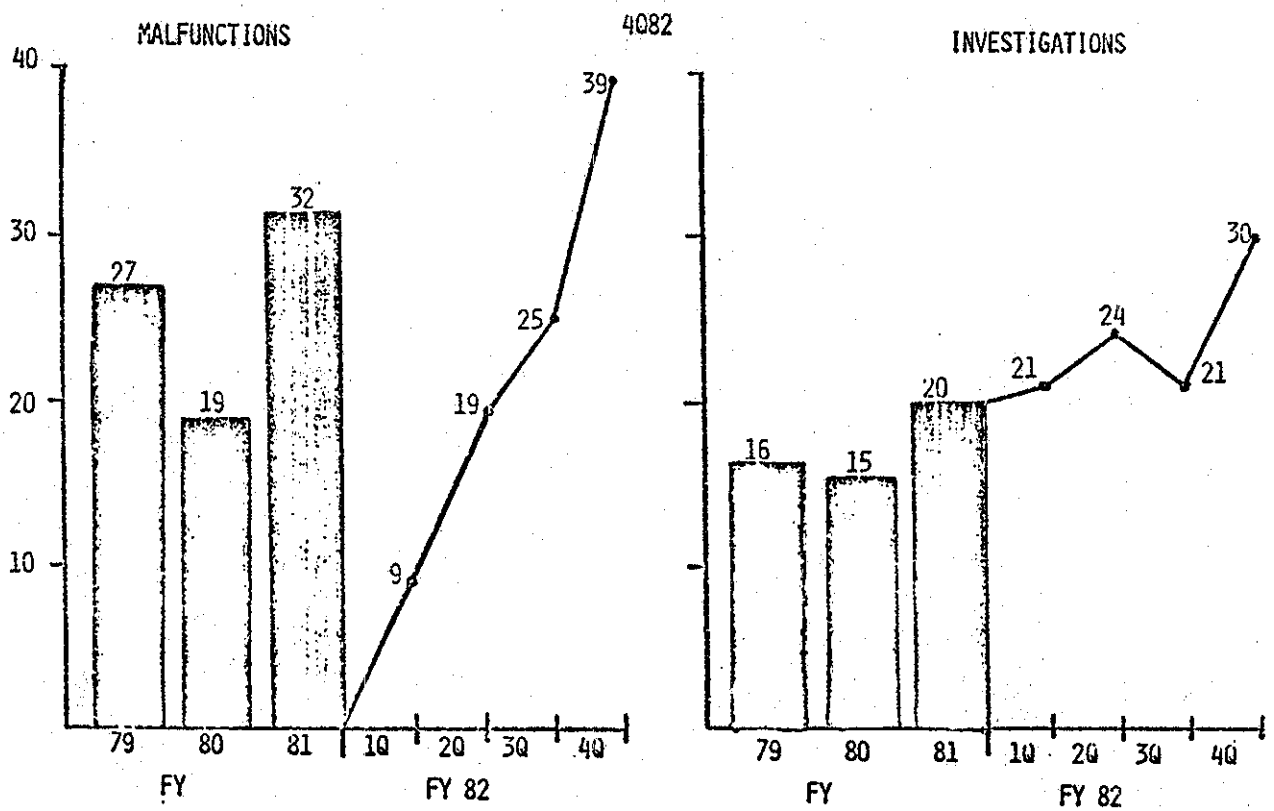
CONVENTIONAL AMMUNITION FUNCTION FIRING PROGRAM



(U) Honest John Rocket Motor Reliability. In May 1982, Project Manager, Nuclear Munitions surfaced a possible problem with the Honest John motor reliability based on results of Honest John (HJ) nuclear stockpile flight tests. DARCOM twice requested MICOM to provide available data on HJ rocket motor firings so that assessment of the problem could be made. MICOM response each time indicated conclusive data were not available because analysis of Honest John rocket motor SRP firings had ceased prior to 1978, after the US no longer deployed the HJ.

(U) Class A Malfunctions. A Class A malfunction was one in which life and/or property were endangered. The following chart shows Class A malfunctions for fiscal years 1979, 1980, 1981, and fiscal year 1982 through fourth quarter, and status of investigations which followed these malfunctions. Fourteen Class A malfunctions occurred during fourth quarter 1982. In almost every instance of malfunctions involving ammunition simulators, the cause was determined to be human error. Per DRCQA request, ARRCOM, in conjunction with TRADOC, studied this issue. The conclusion of the study was that increased emphasis would be placed upon training and field supervision.

CLASS A MALFUNCTIONS AND INVESTIGATIONS



(U) Surveillance of Toxic Chemical Munitions. HQDA outlined priorities for toxic chemical maintenance programs. Some items were deleted from upgrade maintenance programs/plans; however none of these items were declared obsolete or excess. During August 1982, binary production funding was deleted by Congress from the DOD Authorization Bill.

(U) Due to these circumstances HQDA was requested, in October 1982, to furnish guidance as to the extent and nature of the surveillance program requirements to satisfy the chemical munitions stockpile retention and demilitarization priority determinations. Specifically, DA was requested to furnish guidance on requirements for deleted items retention on the periodic inspection schedule, and retention in the SUPLECAM Program.

(U) In November 1982, HQDA, DCSLOG furnished guidance which specified that until a deleted toxic chemical munition was declared excess to requirements, the surveillance program should continue uninterrupted.

GLOSSARY

| | |
|---|---|
| AAO | Authorized Acquisition Objective |
| AAP | Army Ammunition Plant |
| AD | Army Depot |
| ADCCS | Air Defense Command Control System |
| ADP | Automatic Data Processing |
| ADS | Ammunition Delivery Systems |
| AERP | Army Educational Requirement Board |
| AFV | Army Fighting Vehicle |
| ALMC | US Army Logistics Management Center |
| AMETA | US Army Management Engineering Training Agency |
| AMP | Army Materiel Plan |
| ANFO | Ammonium Nitrate Fuel Oil |
| AOAP | Army Oil Analysis Program |
| APA | Army Procurement Appropriations |
| APC | Armored Personnel Carriers |
| APDS-T | Armor Piercing Discarding Sabot-Tracing |
| ARRCOM | US Army Armament Materiel Readiness Command |
| ARSTAF | Army Staff |
| ARTADS | Army Tactical Data Systems |
| ASARC | Army Systems Acquisition Review Council |
| ASC | Air Standardization Committee |
| ATCAP | Army Telecommunications Automation Program |
| AVRADCOM | US Army Aviation Research and Development Command |
| AVSF | Automatic Voice Switching Facility |
| BII | Basic Issue Items |
| BMDSCOM | Ballistic Missile Defense System Command |
| BMY | Bowen-McLaughlin Company |
| CAA | Concepts Analysis Agency |
| CADS | Containerized Ammunition Distribution System |
| CAM | Computer Aided Manufacture |
| CAO | Central Accounting Office |
| CAO | Customer Assistance Office |
| CASPER | Conventional Ammunition Special Review |
| CCB | Configuration Control Boards |
| CDAC | Cost Discipline Advisory Committee |
| CECOM | US Army Communications-Electronics Command |
| CEGE | Combat Equipment Group Europe |
| CEP | Civilian Employment Projection |
| CERCLA | Comprehensive Environment Response Compensation and Liability Act |
| CERCOM | US Army Communications and Electronics Materiel Readiness Command |
| CFA | Central Field Agency |
| CIS-IL | Centralized Integrated Systems-International Logistics |
| CIVR | Configuration Item Verification Review |
| CMO | Configuration Management Office |
| COA | Current Operating Allowance |
| COB | Command Operating Budget |
| COBE | Command Operating Budget Estimate |

| | |
|---|---|
| COEI | Components of End Items |
| COFT | Conduct of Fire Trainer |
| CORADCOM | US Army Communications Research and Development Command |
| COSIS | Care of Supplies in Storage |
| CPT-1 | Comparative Production Test - 1 |
| CPX | Command Post Exercise |
| CRT | Cathode Ray Tubes |
| CRTC | Cold Regions Test Center |
| CSC | Combat Support Center |
| CSP | Concurrent Spare Parts |
| CSSR | Cost Schedule Status Report |
| CTDR | Commercial Training Device Requirements |
| | |
| DA | Department of the Army |
| DAAS | Defense Automatic Addressing System |
| DAMWO | DA Modified Work Order |
| DARCOM | US Army Materiel Development and Readiness Command |
| DAS | Defense Audit Service |
| DCS | Dial Central Offices |
| DCSPER | Deputy Chief of Staff, Personnel |
| DCSRDA | Deputy Chief of Staff for Research, Development and Acquisition |
| DEB | Digital European Backbone |
| DEPSECDEF | Deputy Secretary of Defense |
| DESCOM | US Army Depot Systems Command |
| DFSR | Detailed Functional System Requirement |
| DID | Data Item Description |
| DMIS | Directorate for Management Information Systems |
| DMS | Defense Materials System |
| DMSMS | Diminishing Manufacturing Sources and Materials Shortages |
| DMWR | Depot Maintenance Work Requirement |
| DOD | Department of Defense |
| DPAD | Defense Priorities and Allocations System |
| DPM | Department of Project Management |
| DPS | Defense Priorities System |
| DRES | DARCOM Readiness Evaluation System |
| DRMS | Discrepancy Report Monitoring System |
| DSCS | Defense Satellite Communications Systems |
| DSETS | Direct Support Electrical Test Set |
| DS/GS | Direct Support/General Support |
| DTPG | Defense Technology and Procurement Group |
| DWASP | DOD Standard Warehousing and Shipping Automated System |
| | |
| ECCCS | European Command and Control Considerations System |
| EDCA | Executive Director for Conventional Ammunition |
| EEO | Equal Employment Office |
| EF | Essential Force |
| EIR | Equipment Improvement Recommendations |
| EMI | Electro-Magnetic Interface |
| EOH | Equipment on Hand |
| ERADCOM | US Army Electronics Research and Development Command |
| ESSS | External Stores Support System |
| EW | Electronic Warfare |

| | |
|---|---|
| FACC | Ford Aerospace Communications Center |
| FASCAM | Family of Air Scatterable Mines |
| FAT | First Article Test |
| FAT-C | First Article Test - Contractor |
| FCG | Functional Coordinating Group |
| FDMA | Frequency Division Multiple Access |
| FDTE | Force Development Testing and Experiments |
| FEP | Front-End Planning Program |
| FFP | Firm Fixed Price |
| FMC | Ford Manufacturing Corporation |
| FMC | Fully Mission Capable |
| FMO | Force Modernization Office |
| FMS | Foreign Military Sales |
| FPIF | Fixed Price Incentive Firm |
| FRA | Funded Reimbursable Authority |
| FTX | Field Tactical Exercise |
| FYDP | Five-Year Development Plan |
| GAF | German Air Force |
| GLLD | Ground Laser Locator Designator |
| GOE | Government of El Salvador |
| GOG | Government of Greece |
| GOI | Government of India |
| GOI | Government of Iran |
| GON | Government of Netherlands |
| GOS | Government of Switzerland |
| GPS | Global Positioning System |
| GSA | General Services Administration |
| HA | Hellenic Army |
| HACS&I | House Appropriations Committee Surveys and Investigations |
| HCA | Head of Contracting Activity |
| HEDP | High Explosive Dual Purpose |
| HEI | Highly Explosive Incendiary |
| HELIP | HAWK European Limited Improvement Program |
| HF | High Frequency |
| HFE | Human Factors Engineering |
| HQDA | Headquarters, Department of the Army |
| HWM | Hazardous Waste Material |
| IOC | Initial Operational Capability |
| IPO | Industrial Preparedness Operations |
| IPPL | Industrial Preparedness Planning List |
| IPR | In-Process Review |
| IPT-G | Initial Production Test - Government |
| IRAC | Interdepartment Radio Advisory Committee |
| ITPF | Individual Tank Precision Fire |
| JCMC | Joint Crisis Management Capability |
| JPIWG | Joint Physical Inventory Working Group |
| JR | Joint Review |
| JRSC | Jam Resistant Secure Communications |

| | |
|---|---|
| KAA | Khashm Al An |
| LAD | Logistics Assistance Details |
| LAF | Lebanon Armed Forces |
| LAP | Load, Assemble and Pack |
| LCA | Logistic Control Activity |
| LIN | Line Item Number |
| LOGAMP | Logistics and Acquisition Management Program |
| LP | Limited Production |
| LSSA | Logistic Systems Support Activity |
| MACOM | Major Army Command |
| MAP | Military Assistance Program |
| MARDIS | Modernized Army Research and Development Information System |
| MARED | Materiel Acquisition and Readiness Executive Development |
| M-Day | Mobilization Day |
| MENS | Mission Needs Statement |
| MEP | Mobile Electric Power |
| MERADCOM | US Army Mobility Equipment Research and Development Command |
| MFA | Materiel Fielding Agreements |
| MFP | Materiel Fielding Plans |
| MFR | Memorandum for Record |
| MICOM | US Army Missile Command |
| MICOS | Management Information Control System |
| MILES | Multiple Integrated Laser Engagement System |
| MILPERCEN | US Army Military Personnel Center |
| MIRADCOM | US Army Missile Research and Development Command |
| MIRCOM | US Army Missile Materiel Readiness Command |
| MISMO | Maintenance Interservice Support Management Office |
| MLRS | Multiple Launch Rocket System |
| MMBF | Mean Miles Between Failure |
| MMT | Manufacturing Methods and Technology |
| MOBREM | Mobilization Requirement Model |
| MOS | Military Occupational Specialty |
| MTT | Materials Testing Technology |
| MUL | Master Urgency List |
| MWO | Modification Work Order |
| MWOFP | Modification Work Orders Fielding Plan |
| NAGE | NATO Air Defense Group Environment |
| NAMSA | NATO Maintenance and Supply Activity |
| NATPATMO | NATO PATRIOT Management Office |
| NAVCON | Navigation/Control Systems |
| NBC | Nuclear, Biological and Chemical |
| NCO | Non-Commissioned Officer |
| NDP | National Disclosure Policy |
| NDT | Nondestructive Testing |
| NET | New Equipment Training |
| NIP | Nonconsumable Item Program |

| | |
|---|---|
| NMCS | Non-Mission Capable Supply |
| NSN | National Stock Number |
| NTC | National Training Center |
| NUWAX | Nuclear Weapons Accident Exercise |
| NWSSC | Naval Weapons Station/Successful Completion |
| ODC | Office of Defense Cooperation |
| ODCSPER | Office, Deputy Chief of Staff, Personnel |
| OJCS | Office of the Joint Chiefs of Staff |
| OPR | Office of Primary Responsibility |
| OSD | Office of the Secretary of Defense |
| OST | Order and Ship Time |
| OTEA | Operational Test and Evaluation Agency |
| P&A | Price and Availability |
| PBAC | Program Budget Advisory Committee |
| PBC | Program Budget Guidance |
| PCCS | Program Cost Control System |
| PDO | Property Disposal Officer |
| PLL | Prescribed Load List |
| PMSC | Preventive Maintenance and Checks and Services |
| PMMP | Project Manager's Master Plan |
| PNVS | Pilot Night Vision Sensor |
| POL | Petroleum, Oils, and Lubricants |
| POM | Program Objective Memorandum |
| POMCUS | Prepositioning of Materiel Configured in Unit Sets |
| PPL | Programed Priority List |
| PPP | Package Processing Point |
| PQT-G | Prototype Qualification Test - Government |
| P&R | Planning and Review |
| PRONS | Procurement Request Order Numbers |
| PRR | Production Readiness Review |
| PSCT | Product Specification Component Testing |
| PVT-C | Production Verification Test - Contractor |
| PWD | Procurement Work Directive |
| QAT | Quality Assurance Teams |
| RBL | Recommended Buy List |
| RCM | Reliability Centered Maintenance |
| RDF | Rapid Deployment Force |
| RDF-A | Rapid Deployment Force - Army |
| RESHAPE | Resource Self-Help/Affordability Planning Effort |
| RFP | Request for Proposal |
| ROD | Reports of Discrepancy |
| ROKIT | Republic of Korea Indigenous Tank |
| ROPS | Roll Over Protective Structures |
| RPSTS | Repair Parts and Special Tools |

| | |
|---|---|
| SAG | Study Advisory Group |
| SALF | Saudi Arabian Land Forces |
| SALFAAP | Saudi Arabian Land Forces Army Aviation Program |
| SAR | Selected Activities Report |
| SBA | Small Business Act |
| SEAD | Suppression of Enemy Air Defense |
| SIDPERS | Standard Installation/Division Personnel System |
| SKO | Sets, Kits and Outfits |
| SMCA | Single Manager for Conventional Ammunition |
| SOA | Statement of Accord |
| SOQAS | Statement of Quality and Support |
| SOTAS | Stand-Off Target Acquisition/Attack System |
| SPA | Special Priorities System |
| SQT | Skill Qualification Test |
| SSA | Supply Support Arrangements |
| SSMA | Spread Spectrum Multiple Access |
| SSN | Standard Study Number |
| STE | Simplified Test Equipment |
| STS | Systems Technical Support |
| SUH | Start-Up Handoff |
| SVGC | Secure Voice Graphic Conferencing |
| SWHQ | Static War Headquarters |
| TAC | Tank Agency Checks |
| TACOM | US Army Tank-Automotive Command |
| TADS | Target Acquisition Designation Sight |
| TAEDP | Total Army Equipment Distribution Program |
| TAFT | Technical Assistance Field Teams |
| TALWOG | Technical and Logistics Work Group |
| TARADCOM | US Army Tank-Automotive Research and Development Command |
| TARCOM | US Army Tank-Automotive Materiel Readiness Command |
| TCATA | TRADOC Combined Arms Test Activity |
| TCC | Telecommunications Center |
| TCN | Territorial Command Network |
| TDMA | Time Division Multiple Access |
| TDP | Technical Development Plan |
| TDS | Turret Drive System |
| TECOM | US Army Test and Evaluation Command |
| TMAS | Tank Main Armament Systems |
| TMDE | Test Measurement and Diagnostic Equipment |
| TOA | Total Obligation Authority |
| TOE | Table of Organization and Equipment |
| TPA | Total Package Approval |
| TPFDL | Time Phased Force Development List |
| TPS | Test Program Set |
| TRADOC | US Army Training and Doctrine Command |
| TRE | Transient Radiation Effects |
| TRW | Thompson, Rams, Woolridge, Inc. |
| TSARCOM | US Army Troop Support and Aviation Materiel Readiness Command |
| TSCA | Toxic Substances Control Act |

| | |
|---|---|
| TSIR | Test Set Incident Report |
| $T_2SS$ | TOW and Improved TOW Sub-Systems |
| TSTS | Thermal System Test Set |
| TSWG | Training Support Work Group |
| TTS | Tank Thermal Sight |
| TWG | Technical Working Group |
| USACEEIA | US Army Communications-Electronics Engineering Installation Agency |
| USACSA | US Army Communications Systems Agency |
| USASAC | US Army Security Assistance Center |
| USG | United States Government |
| VTAADS | Vertical the Army Authorization Documents System |
| WHS | Warhead Systems |
| WRSA | War Reserve Stocks for Allies |

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# HEADQUARTERS US ARMY MATERIEL DEVELOPMENT AND READINESS COMMAND

5001 EISENHOWER AVE., ALEXANDRIA VA 22333

APRIL 1982
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| HQ Mpr Ofc | MR P R ZEKAN | 2N46 | 48974 | DRXMM SM |
| HQ Mil Pers Ofc | CPT C G CONRAD | 2N45 | 49333 | DRXMM MR |

### DIRECTORATE FOR INSTALLATIONS & SERVICES DRCIS

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| **Director** | **COL L H SAVAGE** | 5W12 | 49041 | DRCIS |
| Deputy Di ector | MR J W BOUCHER | 5W12 | 49041 | DRCIS |
| Plans & Prog ams Ofc | MR J A LUGER | 5W18 | 49026 | DRCIS P |
| Enginee Div | COL C H MITCHELL | 5W06 | 49390 | DRCIS E |
| Energy Off ce | LTC S J CROW | 5N07 | 48492 | DRCIS C |
| Environmental Qual ty Division | MR W N HASSELKUS | 5N10 | 48656 | DRCIS A |
| Services Div | MR D W DIETRICH | 5S06 | 49389 | DRCIS S |
| Housing Mgt Div | MR W H McDONALD | 5W20 | 49282 | DRCIS H |
| Installations & Services Activity | COL R E SCHRODER Rock Island IL | AV | 793 5018 | DRCIS RI |

### DIRECTORATE FOR MANAGEMENT DRCDM

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| **Director** | **COL H L HARRISON** | 4N24 | 48676 | DRCDM |
| Deputy Di ector | MR R G SILVEY | 4N24 | 48676 | DRCDM |
| Execut ve Officer | LTC R R ZOGLMAN | 4N24 | 48874 | DRCDM |
| Admin Office | MR J ALLEN | 4N09 | 48945 | DRCDM |
| Mission & Org D v | MR C SCHIPP | 4S18 | 48848 | DRCDM O |
| Studies Mgt Div | MR R VERBEKE | 4N16 | 48854 | DRCDM S |
| Resource Analysis & Eval Div | MR R JAMESON | 4N17 | 48155 | DRCDM R |

### DIRECTORATE FOR PROGRAM ANALYSIS & EVALUATION DRCDP

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| Deputy Director | MR W J FLAHERTY | 9S28 | 48747 | DRCDP |
| Executive Officer | LT M T PEARL | 9S28 | 48747 | DRCDP |
| Admin Office | MRS B LINSEY | 9S22 | 48748 | DRCDP A |
| P og am Integration Div | COL R W BOES | 4S30 | 47517 | DRCDP I |
| Plans Policy Rev ew Div | LTC W A HENRY | 4S21 | 48854 | DRCDP P |
| Info mation Resource Mgt Div | MR P STERNBERG | 4S39 | 48546 | DRCDP R |

### OFFICE OF THE COMMAND COUNSEL DRCGC

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| **Command Counsel** | **MR B M BLAIR** | 7E06 | 48046 | DRCGC |
| The Depu y Command Counsel | Vacant | 7E06 | 48046 | DRCGC P |
| Deputy Command Counsel Command Staff Judge Advocate | COL J C SU BROWN | 7N56 | 48003 | DRCGC S |
| E ecu ive Off | MR J K GAISER | 7E06 | 48046 | DRCGC A |
| Adve sary P oceed ngs D v | MR R I BARDAVID | 7N48 | 48080 | DRCGC B |
| M l Law Legal Svc D v | COL J C SU BROWN | 7N56 | 48003 | DRCGC S |
| Patent Law Div | MR N EDELBERG | 7E06 | 48031 | DRCGC L |
| Procu ement Law D v | Vacant | 7E06 | 48046 | DRCGC P |
| Plans & Operations Ofc | MR J K GAISER | 7E06 | 48046 | DRCGC A |

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| Deputy D ector | MR J CIANFLONE (Act) | 4E16 | 48626 | DRCMS |
| Execut ve Off | LTC C O WALTERS | 4E16 | 48626 | DRCMS |
| Administrative Off | MR L L JOHNSTON | 4E13 | 48310 | DRCMS A |
| Ma Dev Sys D v | MR R T EDWARDS | 4E08 | 48946 | DRCMS I |
| Mat Rd Sys Div | MR J E SMITH | 4N52 | 49140 | DRCMS E |
| Resou ces D v | MR E J FORNASAR (Act) | 4E22 | 49480 | DRCMS T |

### OFFICE OF THE CHAPLAIN DRCCH

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| Staff Chaplain | **COL J A DeVEAUX JR** | 10S29 | 49432 | DRCCH |
| Chaplain | LTC G H GRAY | 10S29 | 49432 | DRCCH |
| Chaplain | MAJ J J KAISING | 10S29 | 49432 | DRCCH |

### OFFICE OF THE SURGEON DRCSG

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| **Surgeon** | **COL T NOWOSIWSKY M D** | 10S24 | 49470 | DRCSG |
| Occupational Medicine | LTC R J CHLOUPEK M D | 10S24 | 49470 | DRCSG O |
| Env onmental Qual ty | LTC K W VORPAHL | 10S24 | 49470 | DRCSG S |
| Medical Phys cs | MAJ G W GASTON | 10S24 | 49470 | DRCSG R |
| Medical Entomolog st | MAJ C W JOHNSON | 10S24 | 49470 | DRCSG E |
| Industrial Hygienist | Vacant | 10S24 | 49470 | DRCSG I |

### PUBLIC AFFAIRS OFFICE DRCIN

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| **Chief** | **COL R L HORVATH** | 10S35 | 48010 | DRCIN |
| Deputy Public Affa rs Office Industry Relations | MR J J FOLEY | 10S35 | 48010 | DRCIN |
| Lia so Comd Info | Mr E V DUGGAN | 10S35 | 48019 | DRCIN CI |
| DARCOM News | MS G HARRELL | 7C55 | 49526 | DRCIN CI |
| Inte change | MS G HARRELL | 7C55 | 49526 | DRCIN CI |
| Public Info | MR J W PENTON JR | 10S35 | 48012 | DRCIN PI |
| Commun ty Relat ons & Special P ojects | MS E P HANCE | 10S35 | 48013 | DRCIN CRSP |

### ORGANIZATIONAL EFFECTIVENESS OFFICE DRCOE

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| **Chief** | **LTC R L GRAGG** | 1N20 | 48532 | DRCOE |
| OE Staff Off | MR R A KLAUS | 1N20 | 48532 | DRCOE |
| OE Staff Off | DR L NELSON | 1N20 | 48536 | DRCOE |
| OE Staff Off | MR S C SHIELDS | 1N20 | 48536 | DRCOE |
| OE Staff Off | MAJ R D HILL | 1N20 | 48536 | DRCOE |
| OE Staff Off | CPT M M GETTYS | 1N20 | 48536 | DRCOE |

### SAFETY OFFICE DRCSF

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| **Chief** | **MR L L MOTHERSBAUGH** | 10N36 | 49475 | DRCSF |
| Aviation | LTC B L OWENS | 10N36 | 49475 | DRCSF A |
| Chemical | MR J G PERRY | 10N41 | 49340 | DRCSF C |
| Engineering | MR P J RUTLEDGE | 10N41 | 49340 | DRCSF E |
| Health Physics | MR D N TARAS | 10N41 | 49340 | DRCSF P |
| Occupational Safety & Health | MR J E RANKIN | 10N36 | 49475 | DRCSF S |
| F eld Safety Ac iv ty | MR J D LLOYD IAAP Ch a lestown IN | AV | 366 7415 | DRXOS |

### SPECIAL ASSISTANTS DRCSA

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| Joint Act vities | LTC W FEDOROCHKO JR | 10S18 | 49694 | DRCSA JS |
| Congress Affai s | MR C R SMITH | 10S32 | 48263 | DRCSA C |
| Technical Relations | MR H HANDLER | 10E14 | 49630 | DRCSA T |

### AVIATION OFFICE DRSTS X

| | | | |
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| **Chief** | **COL R A SMITH** St Lou s MO | AV | 693 2618 |

### NUCLEAR CHEMICAL OFFICE DRCNC

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| **Chief** | **COL C M GRIFFIN** | 10W18 | 49610 | DRCNC |
| Nuc Affairs | MR R L MILLER | 10W18 | 49554 | DRCNC |
| Nuc Affai s | LTC R C HUNT | 10W18 | 49406 | DRCNC |
| Chem Retal & Demil | LTC S L WORLUND | 10W18 | 49406 | DRCNC |
| Chem Surety | LTC M E BURGE | 10W18 | 49406 | DRCNC |
| Chem Equipment | LTC J V PITTMAN | 10W18 | 49610 | DRCNC |

### SENIOR ADVISORS DRCSA

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| SA US ARNG | COL D E WILSON | 10S49 | 49670 | DRCSA NG |
| SA/USA RESERVE | COL C L JIMMO | 10S38 | 49689 | DRCSA AR |

### PROGRAM/PROJECT/PRODUCT MANAGERS

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|---|---|---|---|
| Mobile Elect c Powe (MEP) | | | |
| COL M HIGGINS PM | Ft Belvoir AVN | 354 3031 | DRCPM MEP |
| MR G E BURCHETTE Deputy PM | Ft Belvoi | 664 1147 | DRCPM MEP D |
| Advanced Attack Helicopter (AAH) | | | |
| LTC C PROPP | 7N45 | 48939 | DRCPM AAH WFO |
| PATRIOT | | | |
| COL C C NEELY JR | 10N54 | 48886 | DRCPM MOW |
| SANG Modernization Program | | | |
| BG J J YEOSOCK PM | 9N18 | 49126 | DRCPM NG |
| LTC S L LEISHNER Ch Wash Ofc | 9N18 | 49126 | DRCPM NGW |
| US ROLAND | | | |
| LTC R M HIGGINS | 10N54 | 48240 | DRCPM ROL W |
| M1 ABRAMS Tank | | | |
| LTC W R RITTENHOUSE | 2S40 | 49837 | DRCPM GCM WF |
| F ghting Veh cle Systems (FVS) | | | |
| MR J SARAPULSKI Chief | 3N09 | 49079 | DRCPM FVS W |

### MISCELLANEOUS NUMBERS

| | | |
|---|---|---|
| STAFF DUTY OFFICER | G2C60 49223 | |
| AMBULANCE | | |
| (During Duty Hours Call the Clinic) | 1S51 48296 | |
| (Afte Duty Hours Call the Guard) | Lobby 9 557 1144 | |
| OSD BLDG ADMINISTRATOR | 1S34 48099 | OSD |
| DARCOM OPERATIONS CENTER | G2C60 48586 | DRCOC |
| LSSA HQ SUPPORT DIVISION | 4N43 49151 | DRXLS LH |
| DARCOM PERS SPT ACTV | 2E18 48499 | DRXMM P |
| CIVILIAN EMPLOYEE HEALTH SVC (Clinic) | 1S51 48296 | |
| CLASSIFIED MAIL CENTER | G2W07 49585 | DRXAM AMC |
| COMMAND CONFERENCE ROOM | 10N48 48988 | DRXAM PA |
| BATTLEFIELD ELECTROMAGNETIC ENVIRONMENT Ofc | G1C02 48515 | TECOM |
| CONFERENCE ROOM SCHEDULING | 1N57 48485 | DRXAM PA |
| CONUS Travel Sec | 1S48 49006 | DRXAM GT |
| OCONUS Travel Sec | 1S48 48115 | DRXAM GT |
| CREDIT UNION/DARCOM | Lobby 48311 | |
| DARCOM EDUCATION CENTER | 7S15 48484 | ANPE HRS H |
| DARCOM MICO DATA MGT BR | 4S51 49322 | DRXLS LHD |
| DRIVERS SERVICE | G1S01 48091 | DRXAM GD |
| DSSW ALEXANDRIA VA | 7N28 48878 | |
| FORMS MANAGEMENT OFFICER | 1E06 48151 | DRXAM ABE |
| GUARD OFFICE | Lobby 9 557 1144 | |
| LOCATOR SERVICE (MIL PERS) | 2C45 49339 | DRXMM MR |
| LOCATOR SERVICE (CIV PERS) | 2C33 49491 | DRCCO TS |
| PHOTOGRAPHIC FACILITY | 1C44 48486 | USA AVC |
| PRINTING & DUPLICATING | G2C37 49603 | DRXAM ABP |
| PUBLICATIONS EDITORIAL SECTION | 1E06 48149 | DRXAM ABE |
| PUBLICATIONS STOCK ROOM | G3C21 49663/4 | DRXAM ABS |
| RECEPTIONIST | Lobby 49191 | |
| RESERVATIONS & TICKETS (OFFICIAL) | 1S38 48108 | USASCAF |
| SPECIAL SECURITY COMMAND DARCOM | G2C63 48986 | IASSG DRC |
| TELECOMMUNICATIONS CENTER (Msg) | G3C24 49010 | CCNC BHA O |
| TELECOMMUNICATIONS CENTER (DATAFAX) | 45451/2 | |
| TELEPHONE Service Control Off | G3W18 49000 | CCNC BHA S |
| TOP SECRET REPOSITORY | G2W09 49590 | DRXAM AMT |
| UNCLASSIFIED MAIL CENTER | G2C16 49594 | DRXAM AMI |
| USA EQUIP AUTHORIZATIONS REV ACTV | 9C32 49292 | DRXEA C |
| USA PROJ SPT ACTV | 7N13 48585 | DRXSO |
| USACC C E SVCS DIV | 7N32 48787 | CC OPS CE |
| WESTWOOD MANAGEMENT OFFICE Rm G1 | Lobby 751 5590 | |

### OFFICE OF THE INSPECTOR GENERAL & DARCOM IG ACTIVITY DRCIG DRXIG

| | | | | |
|---|---|---|---|---|
| **Inspector General** | **COL C HENNE JR** | S12 | 48070 | DRCIG |

**DARCOM INSPECTOR GENERAL ACTIVITY**

| | | | | |
|---|---|---|---|---|
| **Chief** | **COL C HENNE JR** | 1S12 | 48070 | DRXIG |
| Coordination & Control Division | MR R V MURPHY | 1S14 | 48072 | DRXIG X |
| Administ ative Officer | MRS T R KASTROBA | 1S14 | 48079 | DRXIG X |
| Invest gat ons Division | LTC J T ELLIS | 1S08 | 48064 | DRXIG V |
| Eastern Inspection Division | COL W E TRENT | | 664-6511 | DRXIG E |
| P ocu ement Inspection Div | LTC D O WISSINGER | | 664 6611 | DRXIG P |
| Western Inspection Division | COL J E ALEXANDER | Autovon | 693 3441 | DRXIG W |

### HISTORICAL OFFICE DRCHO

| | | | | |
|---|---|---|---|---|
| **Chief** | **DR D BIRDSELL** | G1W18 | 48191 | DRCHO |
| Histor cal Monographs/Studies | MR M G MARKEN | G1W18 | 48192 | DRCHO |
| Annual Historical Reviews | MR G J STANSFIELD | G1W18 | 48192 | DRCHO |
| H sto ical Services/Special Studies | MR A A PUTIGNANO | G1W18 | 48192 | DRCHO |
| Historical Sources/Archives | MR M F COPPOLA | G1W18 | 48192 | DRCHO |

### DIRECTOR OF COMM ELECTRONICS & US ARMY COMM COMMAND DARCOM DRCCE CCNC

| | | | | |
|---|---|---|---|---|
| **Directo** | **COL E E TABOR** | 3S10 | 49050 | DRCCE |
| **Commander** | **COL E E TABOR** | 3S10 | 49050 | CCNC C |
| Deputy Commander | Vacant | 3S10 | 49055 | CCNC DC |
| SGT Majo | SGM J HEININGE | 3S10 | 49056 | CCNC SM |
| Ope at o s Div | MR A SCHWARTZ | 3S19 | 49073 | DRCCE O |
| Plans Div | MR J E GOTTFRIED | 3S06 | 49063 | DRCCE P |
| Resou ces D v | MR T D HOPE | 3S14 | 49071 | DRCCE R |

### USA DARCOM SERVICE SUPPORT ACTIVITY DRXAM

| | | | | |
|---|---|---|---|---|
| **Director** | **LTC D E BAUER** | 1E14 | 48134 | DRXAM |
| Dep ity D rector | MR L F KORTUM | 1E14 | 48134 | DRXAM |
| Admin Off | MS P S ELLIOTT | 1S46 | 48999 | DRXAM |
| Admi Svc Div | MAJ J L TILT | 1E10 | 48139 | DRXAM A |
| Postal Ope ations Br | MR K W DAVIS | G2W07 | 48693 | DRXAM AM |
| P inting & Publications Br | MR E S NAZZARO | 1E10 | 48141 | DRXAM AB |
| Adm nist ative Management B | MR E M THORNE JR | 1E06 | 49141 | DRXAM AR |
| Aud o Visual P esentations Div | MR B W ADKINS | 1C22 | 48481 | DRXAM P |
| Audio Visual Spt Br | MR J GOODMAN | 1N57 | 46914 | DRXAM PA |
| G aphics Br | MR B W ADKINS (A t) | 1C22 | 48490 | DRXAM PG |
| Gene al Services Div | MR F WELSH | 1S58 | 49005 | DRXAM G |
| Space & Sup | MRS R ELSER | 1S58 | 49095 | DRXAM GA |
| Equip Mgr | MS J JACKSON | 1S58 | 49095 | DRXAM GA |
| T avel | MR J H BARGET | 1S48 | 48110 | DRXAM GT |
| HQ Budget & Prog Ofc | MS M J KRUYER | 1E18 | 48128 | DRXAM B |
| HQ Secu ty O c | MRS B E MILLER | 1E22 | 49066 | DRXAM S |
| Staff C E Off | CPT T GRAHAM | G3C20 | 48061 | DRXAM CE |
| Staff Librar an | MS I O OMDAHL | 7S35 | 48087 | DRXAM L |
| HQ Tech Library | MR J FRAGALE JR | 7S35 | 48152 | DRXAM TL |

### OFFICE OF EQUAL OPPORTUNITY DRCEE

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| **Chief** | **MR G L JONES** | 10S15 | 49690 | DRCEE |
| EO Ofc | Vacant | 2S55 | 49138 | DRCEE |
| DARCOM Fed Women s Prog Mgr | MS A G BENNETT | 10S15 | 49691 | DRCEE |
| DARCOM Hispanic Emp P og Mgr | MR R A MIRABAL | 10S15 | 49692 | DRCEE |

### HQ OFFICE OF EQUAL OPPORTUNITY DRCEE H

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|---|---|---|---|---|
| **Chief** | **MR R D SHANKS** | 7S44 | 49836 | DRCEE H |
| HQ Fede al Women s Program Manager | MRS JOYCE A WILLIAMS | 7S44 | 48021 | DRCEE H |
| HQ Hispanic Emp Prog Mgr | MR R E BLAKELY | 7S44 | 49836 | DRCEE H |
| HQ Equal Oppor Staff Off | Vacan | 1W07 | 49478 | DRCEE H |

### HQ CIVILIAN PERSONNEL OFFICE DRCCO

| | | | | |
|---|---|---|---|---|
| Civ lian Personnel Officer | **MR A C HALL** | 2S32 | 49427 | DRCCO Z |
| Management Employee Relations | MR B H FLEMING | 2S36 | 49106 | DRCCO ML |
| Position & Pay Management | MR D SHEEHAN | 2S25 | 49495 | DRCCO PC |
| Recruitment & Placement | MR R A LOWELL | 2S24 | 49446 | DRCCO RP |
| Technical Services | MS V SHEPPARD | 2C33 | 49491 | DRCCO TS |
| Training & Development | MR A D HYSLOP | 2W18 | 49412 | DRCCO TD |
| Learning Resource Center | MS M L CROSBY | 1S17- | 48214 | DRCCO TD (LRC) |

### SECURITY OFFICE DRCSS

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| **Chief** | **COL C A HAMMAKER JR** | 10N34 | 49033 | DRCSS |
| Assistant Chief | MR B KUTCH | 10N34 | 49454 | DRCSS |
| Arms/Ammo Explosives | MR M MULLER | 10N44 | 49714 | DRCSS |
| ADP/Personnel Scty Classification Mgt | MR G WHITE | 10N34 | 49454 | DRCSS |
| C ime Prevention/Law Enfo cement/Resource Mgt | MR R VALIMAKI | 10N44 | 49714 | DRCSS |
| Info mation Scty/OPSEC | MR B SCHILPP | 10N44 | 49714 | DRCSS |
| Physical Security/Law Enforcement | LTC D REED | 10N34 | 49454 | DRCSS |
| Spec al Weapons Secu ty/IDS | MR B WARNOCK | 10N34 | 49454 | DRCSS |
| Te rorism Emergency Planning | MRS L TELFORD | 10N44 | 49714 | DRCSS |
| Security Support Activity | LTC R JOHNSON Ft Gillem | AUTOVON | 797 5670 | DRXPX |

### DIRECTORATE FOR DEVELOPMENT ENGINEERING & ACQUISITION DRCDE

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| **Director** | **MG O E GONZALES** | 8E08 | 49490 | DRCDE |
| Deputy Director | MR D L GRIFFIN | 8E08 | 49493 | DRCDE |
| Executive Officer | COL J H RICHARDS JR | 8E08 | 49494 | DRCDE X |
| Dep Dir — Sys Mgt | COL G S KOURAKOS (Act) | 8N54 | 49850 | DRCDE S |
| Asst Dep | COL J N TRAGESSER (Act) | 8N54 | 49851 | DRCDE S |
| Avn Sys Div | COL W H MALONEY | 8N28 | 48392 | DRCDE SA |
| Msl & Ad Sys Div | COL W V MURHY | 8N31 | 49651 | DRCDE SD |
| Gnd Cbt Sys Div | COL F W McDONALD | 8N48 | 49870 | DRCDE SG |
| Spt Sys Div | COL P N KANE | 8N42 | 48605 | DRCDE SS |
| Nuc Bio & Chem Br | MR C RUBEN | 2S17 | 45617 | DRCDE SSN |
| Spt Eqr Br | MR W KRACOV | 8N42 | 48604 | DRCDE SSE |
| Mun Sys Div | LTC J B ZIMMERMAN (Act) | 8N48 | 49870 | DRCDE SM |
| CCC & Surv Div | COL D W ODIORNE | 8N28 | 48698 | DRCDE SC |
| Elec Warfare Br | MR G T MYERS | 8N28 | 48118 | DRCDE SCE |
| Com Br | MR R C DORING | 8N28 | 48698 | DRCDE SCC |
| Su v B | MR D R SAWYER | 8N28 | 48698 | DRCDE SCS |
| Cmd & Con Br | MR B F HOWARD | 8N28 | 49060 | DRCDE SCM |
| Btfld Auto Mgt D v | COL J F CAMPBELL | 4S38 | 49144 | DRCDE SB |
| Dep Dir — Prog Mgt | MR R D GREENE (Act) | 8N22 | 49815 | DRCDE P |
| R&D Pgm Bud/Cont Div | COL D P PARK (Act) | 8E14 | 49849 | DRCDE PB |
| Pgm & Bud Br | Vacant | 8E14 | 49860 | DRCDE PBB |
| Cont ol Br | MR R M GRUBENMANN | 8E14 | 48975 | DRCDE PBC |
| Auto Info Div | Vacant | 8E14 | 49855 | DRCDE PA |
| Pgm Integ Div | COL G W ROSTINE | 3W14 | 49200 | DRCDE PI |
| Integ Br | Vacant | 10N25 | 49581 | DRCDE PII |
| Prod Impr Br | MR S O RICHEY JR | 3W14 | 49201 | DRCDE PIP |
| Pol & Proj Mgt Div | COL W J WALTON | 10N18 | 49571 | DRCDE M |
| OP & Spt Div | COL G J HEHEMANN | 8N23 | 49586 | DRCDE O |
| OPNS Br | Vacant | 8S57 | 48978 | DRCDE OO |
| A my RDA Mag | MR V L NAISAWALD | 8S57 | 48977 | DRCDE OOM |
| Pgm Spt B | MS J M LYNCH | 8N55 | 48537 | DRCDE OP |
| Word Processing Ctr | MS G D GREER | 8N41 | 48570 | DRCDE OPW |
| Fgn Sc & Tech Div | MR B G PALES | 8N47 | 48853 | DRCDE F |
| Fg Intel Ofc | MS M F MANBY | G2C63 | 48931 | DRCDE FIO |
| Acq Assess Div | COL O B SMITH | 8N22 | 49811 | DRCDE A |
| Intl RD & Std Div | COL H G GLOCK | 9W14 | 48367 | DRCDE I |
| Europe Br | MR R C COOK | 9W14 | 48367 | DRCDE IE |
| Mid/Far E & So H Br | MR R J FACEY | 9W14 | 48367 | DRCDE IM |
| Pol P og Std Agr B | MR M E WESTMORELAND | 9W15 | 48554 | DRCDE IP |

### DIRECTORATE FOR TECHNOLOGY PLANNING & MANAGEMENT DRCLD

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| **Director** | **MR J BENDER** | 10N24 | 49561 | DRCLD |
| Admin | MRS D LATHAM | 10N24 | 49561 | DRCLD |
| PM TRADE/HEL | MR T SHIRATA | 10N24 | 49562 | DRCLD |
| ARO ILIR | DR G BUSHEY | 10N24 | 49562 | DRCLD |
| ARRADCOM MICOM | MR R LANGWORTHY | 10N24 | 49562 | DRCLD |
| ERADCOM | DR H GIESKE | 10N24 | 49562 | DRCLD |
| CECOM | DR J STEKERT | 10N24 | 49562 | DRCLD |
| NLABS AMMRC | DR L HAGAN | 10N24 | 49562 | DRCLD |
| MERADCOM TACOM | DR W COLLINGS | 4S50 | 49147 | DRCLD |
| AVRADCOM | DR E K BASTRESS | 4S50 | 49147 | DRCLD |
| Long Range Planning | DR G ANDERSEN | 9C10 | 45696 | DRCLD |
| Facil & Equip | MR C CLIFFORD | 10N24 | 49565 | DRCLD |
| Personnel (E&S) | MR M SYKES | 10N30 | 47676 | DRCLD |
| IR&D Manager | MR R MLINARCHIK | 4S50 | 49147 | DRCLD |
| T Svc Ind Info Ctr | | | | |
| Army/Navy A r Force | MS D MAHON | 8S58 | 48948 | DRCLD TILO |
| Tech Info Ofc | MR E J KOLB | 8N14 | 49828 | DRCLD |

### DIRECTORATE FOR MANUFACTURING TECHNOLOGY DRCMT

| | | | | |
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| **Director** | **MR F J MICHEL (Act)** | 9N08 | 48299 | DRCMT |
| Ammo MMT PE | Vacant | 9N08 | 48285 | DRCMT M |
| APESO | DR R DELMAR | 9N08 | 48284 | DRCMT P |
| APESO | MR R SPANGENBERG | 9N08 | 48289 | DRCMT P |
| Aviation & Msls MMT | MR G SCHUCK | 9N08 | 48284 | DRCMT M |
| Capital Investment | MR J GIBSON | 9N08 | 48288 | DRCMT P |
| Electronics MMT | MR G WAGNER | 9N08 | 48288 | DRCMT M |
| PEP | MR P CHERNOFF | 9N08 | 48285 | DRCMT M |
| Special Equipment | MR W CAMPBELL | 9N08 | 48285 | DRCMT |
| Specs & Stds | MR J KICAK | 8N14 | 49828 | DRCMT S |
| Value Engineering | MR H MLODOZENIEC | 9N08 | 48284 | DRCMT P |
| Value Engineering/Design to Cost | MR L DeVAUGHN | 9N08 | 48289 | DRCMT P |
| Wpns/Vehs | MR J BAER | 9N08 | 48284 | DRCMT M |

### DIRECTORATE FOR PRODUCT ASSURANCE & TEST DRCQA

| | | | | |
|---|---|---|---|---|
| **Director** | **MR S J LORBER** | 4W22 | 48929 | DRCQA |
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