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US ARMY MATERIEL DEVELOPMENT
AND
READINESS COMMAND

ANNUAL REPORT OF MAJOR ACTIVITIES

FISCAL YEAR 1974

CLASSIFIED BY: CHIEF OF STAFF
DECLASSIFY ON: 31 DECEMBER 1980

HEADQUARTERS
US ARMY MATERIEL
DEVELOPMENT AND
READINESS COMMAND
ALEXANDRIA, VA. 22333

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AND READINESS COMMAND

ANNUAL REPORT OF MAJOR ACTIVITIES

FISCAL YEAR 1974
(RCS-CSHIS-6 (R3))

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Preface

This Annual Report of Major Activities (redesignated in 1977 as the Annual Historical Review), prepared in accordance with the provisions of AR 870-5, covers the twelfth year of the U.S. Army Materiel Command's existence. The history is based in part upon submissions and documents furnished by historical officers of the Headquarter's staff elements and project manager offices discussed in the text, and in part from sources referenced in footnotes which were assembled through the operation of the AMC (DARCOM) Historical Sources Collection Program (Archives) and other special research efforts.

Fiscal Year 1974 was another year of declining resources, both in headquarters and in field elements, and also a year of double digit inflation which was beginning to cause major concerns for the command. Yet, it was a year in which AMC support to the Army force reached new highs and the improvement of the AMC materiel development and acquisition processes was continuing to be emphasized. It was the first of AMC operations under the new TOAMAC (The Optimum Army Materiel Command) realignments which involved, directly, several of the major subordinate commands. It was also the year which saw the Direct Support System become fully operational in Europe and the Pacific and the CONCISE actions, looking to reduce and optimize depot and other operations, initiated. And, it was the year in which the AMARC (Army Materiel Acquisition Review Committee) reviewed the AMC and made recommendations which would result in numerous changes in the AMC structure and processes.

In addition to support for U.S. forces, FY 1974 was the year that saw execution of AMC's largest International Logistics Program involving a huge portion of the total AMC procurement budget and the program was expected to grow impacting greatly on U.S. programs. It was a year of continuing solid accomplishment but one also of continuing major problems and concerns. All of the above are discussed and/or reflected in the text. Multi-author preparation of the annual history, as was the practice in previous editions, was not adhered to for the FY 1974 history for various reasons relative to other program requirements. The single author is Myles G. Marken, Sr., Senior Historian and Senior Action Officer for DARCOM Annual Historical Reviews. Time was not available for critical and analytical review of the structure and content of the history.

The manuscript was edited and graphics arranged by Mrs. Betty J. Thomas. It was prepared for printing, including the assembly of the glossary, by Mrs. Thomas and Mrs. Guyanne Parker.

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U. S. ARMY MATERIEL DEVELOPMENT
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CHAPTER I

COMMAND MANAGEMENT

Army/AMC Reorganization

(U) On 11 January 1973, Secretary of the Army, Robert F. Froehlke and General Creighton W. Abrams, Chief of Staff of the Army, announced a series of actions designed to modernize, reorient, and streamline the Army's CONUS organization. Though efficiency was the aim of the proposed realignments, it was also estimated that $1 billion would be saved over the next five year period following reorganization. Called from his duties as AMC Deputy Commanding General for Logistics Support, Major General James G. Kalergis directed the study that was ordered by the Army Secretary in April 1972. Specifically, the plan proposed: elimination of the Continental Army Command (CONARC), the Combat Developments Command (CDC), and the Third United States Army; the creation of the Forces Command (FORSCOM), a single field headquarters to supervise the unit training and combat readiness of Army units to include the Army Reserve and the Army National Guard; the creation of the Training and Doctrine Command (TRADOC), a single field headquarters to direct all Army individual training, education and the development of organizations, materiel requirements and doctrine; the consolidation of the Munitions Command and the Weapons Command into an Armaments Command; the consolidation of the major headquarters elements of the Electronics Command; the consolidation and realignment of the Army Depot system; the elimination of major administrative levels between all major Army posts and the Department of the Army; increased responsibility, authority, and flexibility for installation commanders; the establishment of a major active Army organizational framework organized solely to improve reserve component readiness; the improvement of the quality and administration of the ROTC program; the creation of a new command to provide improved delivery of Army health care in the United States; the improvement of responsiveness to individual needs and goals in handling personnel matters within the Army; and the improvement of weapons development and procurement processes by up-dating managerial practices and organizations in recognition of technological advances.[1]

(U) The key action involving the Army support structure was the organizational realignment of the Army Materiel Command. This realignment was expected to improve the organizations on which the Army

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[1] News Release, US Army Electronics Command Information Office (Reprinting DA News Release of January 11, 1973), Fort Monmouth, January 11, 1973.

depended for the design development, procurement, distribution, and support of its combat and support materiel. The package of reorganizations, consolidations, and realignments impacting upon AMC were the result of the TOAMAC I (The Optimum Army Materiel Command) studies initiated in conformity with the 1973 Army Reorganization announced on 11 January. (See Chart 1 for the evolution of AMC through 1973).

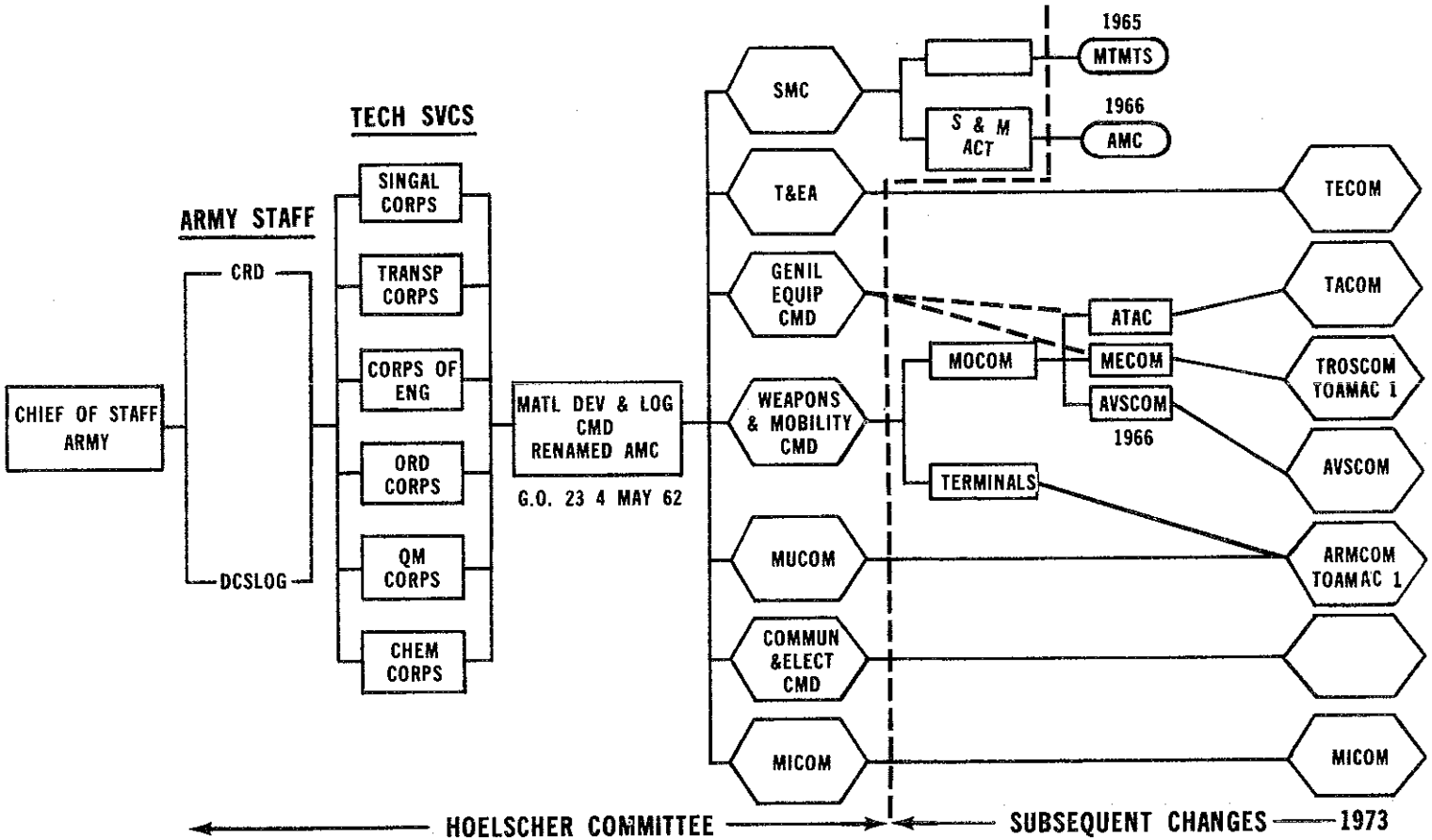
(U) Actions within this overall package, effective 1 July 1973, included the consolidation of the Munitions Command and the Weapons Command into a single command, the Armaments Command at Rock Island, Illinois. This action effectively merged the splintered "guns and bullets" responsibilities within the Army Materiel Command, increasing the effective use of available limited resources at a time when this was becoming increasingly critical to the Army.

(U) Another project within the overall AMC reorganization was the consolidation of elements of the Electronic Command Headquarters located in Philadelphia, Pennsylvania with the bulk of the headquarters located at Fort Monmouth, New Jersey. This long overdue consolidation eliminated the geographical dispersion of major ECOM organizations, improving necessary day-to-day coordination, management efficiency and providing substantial manpower savings.

(U) The Mobility Equipment Command in St. Louis, Missouri was converted into the Troop Support Command dedicated primarily to improving the personal equipment and environment of the individual soldier. Initially, Natick Laboratories and other personnel equipment related activities were assigned to this command. Later, responsibilities for materiel handling equipment, construction equipment, and industrial engineers were transferred to the Tank-Automotive Command in Detroit, Michigan.

(U) A realignment of the Army Depot system reflecting managerial improvements and reduction in workload were also accomplished. Also, under TOAMAC I, depot operations at the Atlanta Army Depot were discontinued and the Umatilla Army Depot, Oregon, was subordinated under the Tooele Army Depot, Utah. Several other depots were scheduled for phase down, placement in reserve status, or closure, but this phase of the AMC realignment merged within the general reorganization of the Army in 1973 and became known as the CONCISE realignments. This came about when, in late 1973, the Army developed a series of studies called TOAMAC II that led to a number of recommendations that were approved by DA and known as Project CONCISE. Project CONCISE realignment was made necessary because excess physical capacity, a reduced maintenance workload, and a need to improve services called for the disestablishment of the AMC Land Warfare Laboratory and the AMC Advanced Concepts Agency plus the relocation (subsequently disestablishment) of the Coating and Chemical Laboratory,

EVOLUTION OF AMC



ACRONYMS

AMC-ARMY MATERIEL COMMAND
CRD-CHIEF OF RESEARCH AND DEVELOPMENT, DA
DCSLOG-DEPUTY CHIEF OF STAFF FOR LOGISTICS, DA
SMC-SUPPLY AND MAINTENANCE COMMAND
T&EA-TEST AND EVALUATION AGENCY
MUCOM-MUNITIONS COMMAND
MICOM-MISSILE COMMAND

S&M-SUPPLY AND MAINTENANCE
MOCOM-MOBILITY COMMAND
WECOM-WEAPONS COMMAND
MTMTS-MILITARY TRAFFIC MANAGEMENT AND TERMINAL SERVICE
ATAC-ARMY TANK-AUTOMOTIVE COMMAND
AVSCOM-AVIATION SYSTEMS COMMAND
TECOM-TEST AND EVALUATION COMMAND

TACOM-TANK-AUTOMOTIVE COMMAND
TROSCOM-TROOP SUPPORT COMMAND
ARMCOM-ARMAMENT COMMAND
ECOM-ELECTRONICS COMMAND
TOAMAC-THE OPTIMUM ARMY MATERIEL COMMAND

Chart 1

all of which were scheduled and effected for 30 June 1974. In November 1974, the remaining CONCISE realignments were announced and included: the closure of Frankford Arsenal; the reduction of Savannah, Lexington-Blue Grass, and Pueblo Army depots to activity status; and the transfer of maintenance responsibilities of Sharpe Army Depot to the Corpus Christi and New Cumberland Army Depots. The US Army Depots of Sierra, Savanna, and Seneca were to reduce levels of activity. These CONCISE realignments, reductions, and closures would begin 1 July 1975 with anticipated accomplishment over a period of several years.[2]

(U) Other AMC realignments scheduled of lesser import, but still of considerable importance to logistics efficiency included: the termination of the mission, functions and organization of the US Army Maintenance Board at Fort Knox, Kentucky; the termination of the AMC Maintenance Support at Letterkenny Army Depot, Chambersburg, Pennsylvania; the termination of the AMC Logistics Data Center at the Lexington-Blue Grass Army Depot at Lexington, Kentucky; and the termination of the AMC Test Measurement and Diagnostic Equipment Technical Coordinating Office, Rock Island, Illinois; and the establishment of the AMC Maintenance Support Agency at Lexington, Kentucky. Later redesignated the US Army Maintenance Management Center (USAMMC), the USAMMC was to provide operational support in the management of Army maintenance programs worldwide which included the operation of a logistic technical data base in support of the development, acquisition, and operation of materiel. It was to be user oriented in the areas of maintenance management and provisioning and was also vitally concerned with problems regarding the modernization of depot maintenance facilities and the centralized management of the Army-wide Test, Measurement and Diagnostic Equipment and Army Oil Analysis Programs. In addition, the Jefferson Proving Ground was to receive increased mission responsibilities, the Army Support Center at Richmond was to be disestablished, and Deseret Test Center elements then located at Fort Douglas, Utah, were to relocate to Dugway Proving Ground, Utah.[3]

(U) Within AMC, it was recognized that the 1973 Army reorganization would bring AMC into closer day-to-day actions with two new Major Army Commands: TRADOC (Training and Doctrine Command), FORSCOM (Forces Command), and the Army Logistics Center, that were created by

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[2]Annual Report, Plans and Analysis Directorate, HQ AMC, FY 1975, submission to AMC Historical Office, 7 Nov 75.

[3]Bulletin, US Army Materiel Command News, 11 Jan 75; DF, AMCPA-O to HQ AMC Directorates, Project Managers, Separate Staff Offices, 15 Mar 73, from AMC CofS, BG Robert L. Kirwan, Subj: Implementation of TOAMAC I.

the Army reorganization. There were also indications that AMC would need to interface more closely with the other services, DSA and GSA, particularly in the areas of maintenance and supply interservicing and cooperative use of research and development activities and management capabilities. It was seen that AMC, FORSCOM, and TRADOC would have direct interface at the installation level since each of the new commands and AMC would contain major installations, and in many cases there would be host-tenant relationships between and among these commands.

(U) Specifically, AMC saw its main thrust with FORSCOM as in the readiness area with most interface arising over the availability of major items for TO&E fill, test sets, modifications, repair parts availability, technical assistance, and support for contingency plans. AMC viewed interface with TRADOC thrusting primarily in the development of ROC's (Required Operational Capability), materiel requirements, support requirements for new systems, and increased attention for hardware testing. AMC expected the Army Logistics Center to present a prime area for interface in that the responsibilities of the center were of major interest to AMC. Responsibilities of interest to AMC included: development of logistics systems, doctrine, supporting organizations from industry to the soldier; assuring that retail logistical systems were compatible with AMC, DSA, and GSA; development of materiel concepts; placing approved logistical doctrine into the school system; and acting as principal advisor to AMC on logistical matters, including career development of logistical personnel.

(U) Areas of existing interface expected to increase with the reorganization were with the overseas commands in the area of Direct Supply Support (DSS), Direct Exchange Wholesale (DXW), possible relocation of overseas stockage to CONUS, a shifting depot maintenance posture, and deployment of and technical support for new weapons. Interface would continue with the other services mostly through the activities of the Joint Logistics Commanders; however, these activities were expected to increase and consideration was being given to include DSA and GSA within these deliberations. International logistics interface was on the increase in areas of quality assurance, and in such unique projects such as PM-SANG with the possibility of a PM for Iran on the horizon. AMC was beginning to view such PM's as "Mini-MAAG's."

(U) Realizing that AMC would be operating in a new environment following the Army and AMC realignments, the AMC Chief of Staff, MG Joseph W. Pezdirtz, directed that AMC review its relationships and

determine requirements for AMC interface and how these were being met with a progress report required not later than 1973.[4]

AMARC - Army Materiel Acquisition Review Committee

(U) Short on the heels of the 1973 Army reorganization and while AMC was trying to implement and/or digest changes resulting from the Army reorganization and its own TOAMAC and CONCISE realignments, the Secretary of the Army established the Army Materiel Acquisition Review Committee (AMARC) in December 1973 to make a comprehensive review, analysis and critique of the Army's materiel acquisition process and to submit recommendations for improvement, with concentration on organization (especially AMC) and procedures. In addition to searching out key problems and acquisition system fundamentals that may have led to problems, the AMARC group sought solutions. The AMARC group was also challenged to search out strengths as well as weaknesses and to make recommendations looking to improve on weaknesses.[5]

(U) The AMARC group was preponderantly a non-governmental and non-military body. Several members were drawn from industry having experience with working with the services, NASA and AEC. Several of the members also had ongoing high-level corporate responsibility commensurate with that of top Army managers. Many of the AMARC group had experience attacking the materiel acquisition process for various DOD committees or for such private agencies as the National Security Industrial Association. The group admitted to several preconceptions (pre-bias). These pertained to a view that the Army had lagged behind the other services in updating its materiel acquisition process, that the Army had its share of weapon development failures, that the Army had a long history of rejecting ideas not originating in its own laboratories and arsenals, that within AMC, vestiges remained of the old technical service approach to materiel development, that the Army weapon development cycle was too long, that the Army placed less dependence upon contractor capabilities than other services, and that the Army's custom of rewarding its top combat commanders with top DA assignments involving considerable managerial and business type functions was anachronistic.[6]

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[4]Memorandum for AMC Director, Plans and Analysis, from AMC CofS, MG Joseph W. Pezdirtz, 25 Jul 73, Subj: AMC Interface with Other Commands/Agencies.

[5]Report of the Army Materiel Acquisition Review Committee (AMARC) Vol. I, Precis, 1 Apr 74, p. 1

[6]Ibid, p. 2; Memo, Dr. W.B. Sell, AMARC Director to Under Secretary of the Army, 17 Jan 74, Subj: Debriefing of Secretary of the Army on recent AMARC meeting.

(U) The instructions given to Dr. Wendell B. Sell who was named to direct the AMARC investigations on 6 December 1973 by General Fred C. Weyand, Vice Chief of Staff, and the Honorable Herman R. Staudt, the Under Secretary of the Army, via memorandum of that date included the goal to recommend and organize a procedure that would: be responsive to the needs of the Army in the field, assuring that effective equipment is introduced into the inventory in an efficient and timely manner; would require less personnel, and Army owned or operated facilities; would have a proper balance of headquarters and field personnel; would contain a proper balance between in-house and contractor operations; and would be conducive to assuring development, fabrication and user verification of hardware items more closely meeting established requirements prior to heavy production. Working within a short deadline, by mid-January, Dr. Sell made known some preliminary perceptions. He found that the materiel process was probably overmanaged but morale was high.[7]

(U) At the time that Dr. Sell transmitted the final AMARC report and recommendations to the Secretary of the Army, an AMC planning group was engaged in a TOAMAC III effort continuing to examine the AMC structure and organization with the aim of achieving further improvement in materiel management with reduced resources.[8] Consequently, many of a total of 81 AMARC recommendations assigned to AMC were already either under contemplation or at various stages of implementation.[9] The AMARC group had been divided into teams exploring: Requirements and Concepts, Development, Production, Costing, Testing, and Science and Technology. The report released to the Secretary of the Army on 1 April 1974 included recommendations in all of these areas plus some general recommendations. Some of the AMARC recommendations already implemented Army-wide included: strengthening the Army organization for materiel acquisition by designating a single DA staff agency (Chief of Research, Development and Acquisition), which was created in a May 1974 Army staff reorganization to monitor the process;[10] directing the US Army Operational Test and Evaluation Agency

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[7] Op. Cit., AMARC Precis, p. A-2.

[8] Ltr, AMCPA, to LTG Edward M. Flanagan, Jr., Comptroller of the Army, from LTG W.W. Vaughan, DCS, AMC, signed Woodie, dated 4 Mar 74.

[9] Annual Report of Major Activities, AMC Plans and Analysis Directorate, FY 1974.

[10] Ltr, DAAG-PAP-A (M) (1 May 74) DACS-XSM, to Army Staff Offices and TAG Major Commands, 6 May 1974, Subj: Reorganization of the Army Staff, signed MG Verne L. Bowers.

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to report directly to the Army Chief of Staff; transferring the US Army SAFEGUARD System Evaluation Agency analytical capability from SAFEGUARD to TRADOC; and improving the materiel acquisition personnel posture through a personnel development program which would grant proper recognition to the project manager because of his value as a resource manager.[11]

(U) The AMARC recommendations that had already been implemented by AMC included: linking schedule estimating efforts to the cost estimating effort; recognizing the presence of estimating bias and uncertainty in the design-to-cost goals; appointing the project manager or higher level as the determining official in administration of award fee contracts; experimenting in the use of commercial warranties; reporting utilization rates for new machine tooling for the first five years (or until the investment is amortized) after installation of the new equipment in order to validate the benefits stemming from the investment; and maintaining a climate for innovation in acquisition.[12]

(U) The AMARC report was a comprehensive and detailed document covering practically all phases of materiel acquisition and logistics management generally. Though a vast majority of the numerous recommendations made were approved by the AMC commander, yet throughout FY 1975 and beyond, the proposals would be studied by Army and AMC planners. By far, the most important changes proposed were in the areas of development, science and technology, and testing. Under consideration in the testing area was the recommendation to split developmental testing and operational testing, keeping developmental testing in AMC but shifting operational testing to TRADOC and the Operational Test and Evaluation Agency (OTEA) at Fort Belvoir, Virginia. The testing plan also called for transfer of the Modern Army Selected Systems, Test and Review (MASSTER) from FORSCOM to TRADOC and the test boards from US Army TECOM to TRADOC.[13]

(U) In the area of development, major proposals were made to: define requirements concisely with users participating actively in the development process; to avoid locking into a materiel requirement or a Required Operational Capability (ROC) before prototype hardware demonstrates the required performance capabilities; and to have AMC evolve toward separating the management of new weapon systems and major product improvements from logistics management. This was the major proposal of the AMARC committee and called for the establishment

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[11] "DA Makes AMARC Study Public," AMC NEWS, September 1974, pp. 2, 7.

[12] Ibid.

[13] Ibid.

of six development centers. The committee recommended that AMC slowly consolidate: its laboratories; its installation and commodity command research, development and engineering (RD&E) elements, project managers; support elements; selected user elements; and command elements into mission-oriented development centers. Logistics and readiness functions would be performed in logistics centers according to the AMARC suggestions. Implementation of the development center concept was envisioned by the AMARC team as follows:[14]

> "Create new Armaments Development Center at a single location through evolutionary process, by consolidating selected elements of Frankford, Picatinny, Rock Island, and Watervliet Arsenal RD&E activities together with Ballistics Research Laboratory and portions of ARMCOM RD&E Directorate. Incorporate Edgewood Arsenal missions without relocation. Retain minimum essential engineering functions at other arsenals to support required production activities.
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> "Establish a Communications Development Center by consolidating Communications ADP Laboratory, Electronics Technology and Devices Laboratory, Electronics R&D Technical Support Activity, SATCOM RD&E elements, and portions of ECOM RD&E Directorate.
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> "Evolve to Combat Support Development Center in Washington/ Fort Belvoir area by assigning Harry Diamond Laboratories additional missions of combat surveillance and target acquisition, and consolidating with Night Vision Laboratory, Mobility Equipment Research and Development Center (MERDC), Natick Laboratories (without relocation), possible Human Engineering Laboratory (HEL), and minimum elements from TROSCOM RD&E Directorate. Appoint project manager for Tri-Service Food RDT&E Program located at Natick to report directly to AMC.
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> "Evolve to Air Mobility Development Center at Moffett Field, California, as long-term goal by consolidating AVSCOM RD&E Directorate, Air Mobility R&D Laboratory, and an engineering and systems integration facility. Early actions to support this evolution would be: (a) consolidation of Eustis Directorate mission with other portions of Air Mobility R&D Laboratory now collocated under cooperative agreements with NASA, (b) transfer of airdrop equipment R&D mission from Natick to AVSCOM, and (c) transfer of Avionics R&D mission from ECOM to AVSCOM.

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[14] Op. Cit., AMARC Precis, p. 26.

"Create Ground Mobility Development Center by modifying mission of existing TACOM Laboratory to establish: (a) a government-staffed engineering and test facility; and (b) a contract-operated R&D facility.

"Transfer Electronic Warfare (EW) Laboratory and mission to Army Security Agency, except that AMC should retain electronic counter-counter-measures (ECCM) and vulnerability activities for missiles, communications, and non-communication systems."

(U) At the close of FY 1974, MG George Sammet, Jr., then AMC's Deputy Commanding General for Materiel Acquisition, confirmed that AMC agreed with more than 90 percent of the recommendations and was moving toward implementation of these.

General Miley's View of AMARC

(U) A short time before the actual AMARC exercises kicked off in December 1973, General Abrams, Chief of Staff of the Army, called the AMC commander, General Miley, to the Pentagon to discuss the AMC's materiel acquisition program. General Abrams told General Miley that he was "getting some unhappy noises out of the Secretary of Defense (Schlessinger) relating to the Army's acquisition business."[15] General Abrams had been present when Mr. Schlessinger had made uncomplimentary reference to the problems AMC had had with the Cheyenne helicopter program, the main battle tank program, and the M-16 Rifle program and others.[16] The Chief of Staff wondered what could be done about this, about improving the acquisition process and quieting criticism. General Miley offered two immediate suggestions. He suggested that a group be formed to study the whole materiel acquisition process volunteering also to serve on the study group and he also suggested that it would be of value for General Abrams to "get out and around and take a look at AMC in light of the allegation."[17]

(U) The matter was seemingly dropped for a time and then one day General Abrams called General Miley to inform him that he was going to make a series of visits to elements of AMC. When General Miley offered to accompany the Chief of Staff, General Abrams replied that he wished to make the visits alone. When General Abrams returned from the trip which took about three weeks, he informed General Miley that he was very favorably impressed with what he had seen. He was

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[15]The M-16 Rifle had had problems in Vietnam and the Cheyenne and Main Battle Tank programs were discontinued and then reoriented in 1972.

[16]Transcript of interview, 19 Dec 75, Gen Henry A. Miley, Jr. by LTC's Harbuck and Stephansen, DA Oral History Program in conference room of American Defense Preparedness Association in Archives of the US Military History Institute, Carlisle Barracks, PA, p. 76.

[17]Ibid.

pleased with the sharpness and enthusiasm he had observed at the places he visited. The interpersonal relationships between General Miley and his field commanders and the dedication of the AMC work force to a high level of performance had impressed General Abrams. General Miley was pleased with the report from General Abrams.

(U) Shortly following the visits to AMC, General Abrams became ill. He had major surgery and died within a short time. The pressure regarding AMC and materiel development and acquisition continued in the Pentagon and finally General Miley was informed that the Army Materiel Acquisition Review Committee was being put together composed primarily by people from industry, academia and other places external to the Army. Each person considered was referred to the Secretary of Defense for approval. After the group was put together, they came over to AMC where they were given a series of briefings by General Miley before they went in to the field to survey the commodity commands and other installations and activities of AMC.

(U) The man chosen to head the AMARC group, Wendell Sell, had been a classmate of General Mileys at West Point who left the Army following World War II and became president of Hoffman Electronics, a corporation that did business with AMC. Hoffman Electronics had been engaged in procurement controversies with the AMC's Electronics Command and General Miley "sensed in the beginning, that he (Sell), if the words 'bore a grudge' are wrong, it was something like that. He had his own thoughts about the way AMC, or at least ECOM, did its business, vis-a-vis, the Hoffman Electronics Company."[18] General Miley never could tell whether Sell's animosity extended into his evaluations of AMC during the AMARC studies.

(U) The principal finding of the AMARC report submitted in April 1974 was that AMC, as a structure, was so involved with and concerned about readiness of the Army force, which was also an emphasis coming down from DA, that inadequate attention was being paid to the research, development and materiel acquisition job. The numerous findings and recommendations, some of which were little things and some which General Miley found quite acceptable and useful, in the AMC commander's view, reflected what had been coming down directly and indirectly from Mr. Schlessinger whose view was, according to General Miley, that AMC, and particularly the Armament Command and the arsenals and laboratories were set in their ways and impervious to new ideas from the outside.[19]

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[18] Ibid.

[19] Ibid.

(U) General Miley was in a poor position to deny the findings regarding readiness of the force since, at the time, the US Army was measuring the highest state of readiness of its divisional elements that had been achieved in many years. AMC was spending a lot of time on logistics support and readiness but General Miley did not believe that AMC was spending too much time on readiness to the detrement of materiel acquisition. In fact, General Miley was spending 80 percent of his time with management of project managed weapons and equipment systems and a great percentage of the command's time and effort was being applied to the materiel research, research and acquisition processes which had been under continuous emphasis since the creation of the command in 1962. In more recent years, special emphasis and special management controls had been applied to certain high visibility and high interest systems. Such systems were under constant monitoring. Also, General Miley believed that he was, and had been for some time, carrying out the orders of General Abrams who had died a short time before the AMARC group completed its 100-day study and submitted its report. He had been refining and tightening the operations of AMC through the TOAMAC and CONCISE realignments. Both of these consisted of reducing the places where operations were conducted, and working toward a better way producing weapons and supporting the readiness of the Army. General Miley also believed that the AMARC recommendation to split each of the AMC commodity commands into two separate commands, one each for research and development and for readiness, was running counter to General Abrams instructions to proceed with CONCISE which consolidated elements of ECOM and ARMCOM for better and more efficient management. Earlier, in July 1973, MUCOM and WECOM had been consolidated as ARMCOM for similar reasons and for increased management control of weapons and munitions development, acquisition, and distribution.

(U) TOAMAC and CONCISE were moving toward less organizations, less installations, less people, and whole systems management and AMARC was moving toward many more organizational elements reporting to the AMC commander. CONCISE also looked for a continued reduction of the personnel strength of Headquarters, AMC, which had been reduced rather steadily since its birth in 1962 by some 50 percent, during a period of the increased demands of the Vietnam war. In General Miley's view, the AMARC plan to split the command would lead to increased management problems probably requiring increased numbers of personnel than would be the case otherwise. General Miley was a great believer in life cycle management of materiel and of whole weapons systems development and the AMARC concept proposed to split this down the middle In General Miley's view this was kind of a return to a system that had been tried before with questionable success. The AMARC concept was a kind of return to the Army Materiel Command/Supply and Maintenance Command setup that had been created in 1962. One of the failings of this system was that SMC had no procurement function to support its supply and maintenance activities. Adopting the AMARC structure

would present the problem of where to place the procurement function since it was required in both areas, materiel acquisition and readiness, and/or at what point does a piece of equipment transition from the development side to the readiness side of the house?

(U) During the Spring of 1974, General Miley raised his objections to AMARC and offered alternatives in briefings to the Army Chief and Vice Chief of Staff and the Under Secretary of the Army but he never believed he was getting a hearing. He always felt that his objections were viewed as after the fact. As a counter to the AMARC proposals and to meet the objectives of the perception of AMARC that a more concentrated "stovepipe" attention was required for research and development, General Miley recommended that AMC assign a general officer as the director of development at each commodity command with the research and development elements placed under him with a straight shot from this general officer to the AMC Headquarters but keeping this component a central part of the rest of the commodity command.[20]

(U) In presenting his case to DA, General Miley went in with less than complete support from his own headquarters staff and with some parochial opposition from some field elements. For example, many of the scientists in his headquarters research, development and engineering directorate had, in General Miley's words, "spilled their guts" to the AMARC study group. By this, the AMC commander meant that they had allowed old prejudices and petty jealousies to cloud and control their objectivity regarding their mission responsibilities and had taken the opportunity of AMARC to air their complaints which were really very petty matters. General Miley saw their attitude as that of the annoyed scientist who was forced to become involved with such matters as accounting for expenditures and preparing housekeeping reports and papers to the detrement of research and development. Also, some of the laboratories presented a picture preferring a kind of autonomy with respect to mission performance rather than working under a commodity command. For example, General Miley believed that the people at Natick Laboratories had resented their being consolidated with and placed under the direction of the Troop Support Command as part of TOAMAC I in 1973 and these views were aired to the AMARC people very probably in the hope that they would be made a separate research and development command. Such complaints fell on fertile ears. There was a great deal of enthusiastic non-support throughout AMC for the on-going TOAMAC and CONCISE realignments which sought to reduce and tighten the vast AMC complex. General Miley's protestations regarding the difficulty of command and control over twice the number of subordinate commands, as proposed by AMARC, fell on deaf ears.

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[20] Ibid., Interview #4, 19 Dec 75, Tape #2, Transcript, p. 2.

(U) General Miley was sure that at the time AMARC was presented to him, that the Army staff, which had already reorganized itself and had created a new Deputy Chief of Staff Research and Development, DCSRDA, was determined "to execute AMARC, just as it was written, with a few fringe recommendations . . . but outside of that it was pretty much a shotgun affair."[21]

(U) General Miley took the AMARC report very personally. He had been the AMC commander or deputy commander since December 1969 and much of his own personal philosophy had gone into the way AMC was organized/managed so he could only conclude that "at least as perceived by AMARC, that a poor job of management of AMC had been done in the acquisition area."[22] General Miley was particularly distressed that the image of AMC was so poor in the Pentagon. The AMC commander had knowledge that "there was no doubt in the minds of the Army Staff and the Secretariate that Mr. Schlessinger regarded AMC, and particularly the ordnance part of AMC, as pretty much a sad show."[23] So, after General Abrams died, whose TOAMAC and CONCISE programs were under implementation at the time, there remained no friendly ear or articulate voice in the Pentagon to serve General Miley's position regarding AMARC. Defense Secretary's influence was paramount. Once he had made his position known, those under him fell into line and what represented General Miley's day in court was merely a command performance. One could say that General Miley had his day in court but in his words, "it didn't accomplish anything."[24] He was opposed to the AMARC realignments, in respect to splitting the commands.

AMC Management Decentralization Policy

(U) In December 1973, AMC officially announced a policy to decentralize operations. Originally discussed at the AMC commander's conference of 29-31 October, the basic policy established for Headquarters, AMC would: (1) practice decentralization by deeds by taking positive action to delegate functions, activities, and tasks to the lowest appropriate operating level; (2) eliminate unnecessary reporting and attendant paper work; (3) allow subordinate commands to assume and exercise greater authority and; (4) eliminate authority for making decisions at the AMC Headquarters staff element level wherein there was no attendant responsibility. The basic functions of Headquarters, AMC, in the new policy were to provide broad policy and basic guidance

[21] Ibid, p. 7.
[22] Ibid, p. 10.
[23] Ibid, p. 6.
[24] Ibid, p. 12.

to accomplish major planning, to establish and coordinate major problems, to evaluate AMC programs and operations, to allocate resources for mission accomplishment, and to resolve corporate level problems.

(U) To implement the new basic policy, current and future Headquarters, AMC, functions, procedures, activities, and/or practices which conflicted with the policy, or which duplicated those of subordinate commands, were either to be eliminated or transferred, or delegated to appropriate subordinate elements. In announcing the new policy, the AMC Chief of Staff, MG Joseph W. Pezdirtz, reminded each major subordinate commander to take personal attention to see that the policy would be infused into management thinking throughout each level. Each subordinate commander was to develop policies, procedures, and practices to implement the policy.[25]

(U) To achieve the AMC goal to decentralize management to the lowest practical level, major subordinate commanders submitted 130 proposals covering 99 areas where they believed decentralized management would be more effective. HQ AMC approved 57 proposals that were within its area of responsibility. Sixteen proposals were forwarded to DA/DOD with recommendations for approval. The remainder of the proposals required detailed study and were being staffed at the close of the fiscal year, or the subordinate commands had been notified of disapproval. In line with Command Group guidance, directors were required to furnish complete justification for denying the sought delegation of authority. The fact that an AR or other higher authority directive precluded such delegation was not considered adequate justification to reject a decentralization proposal. All disapprovals were briefed to the Command Group. Of the proposals received, 15 percent covered organization and personnel; 10 percent fiscal and funding; 21 percent administration and support; 14 percent materiel management; 13 percent procurement and production; and 27 percent maintenance and engineering.[26]

Mission and Structure Realignments

(U) Throughout FY 1974 other mission and organizational changes were being planned within AMC in great numbers not only to reduce personnel and overhead expenses through realignments and consolidation, but also to achieve a command objective of a stronger systems orientation in its operations. This orientation was reflected in on-going special studies regarding mission and organization. The decentralizing

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[25] Ltr, HQ AMC, AMCPA-P, 19 Dec 73, to HQ AMC Subordinate elements, Subj: Policy to Attain AMC Goal #4, "Decentralize Operations in AMC."

[26] Annual Report of Major Activities, HQ AMC Directorate for Plans and Analysis, FY 1974.

impulse, which has so strongly infected recent command philosophy, was furthered in amendments to AMCR 10-1, "Organization Control, Concepts, Policies, Responsibilities, and Documentation." This regulation was revised and published on 26 April 1974 to provide for the delegation of authority for approval of organization changes below directorate level in AMC subordinate commands and field activities. Such a policy change advanced the trend of the command to invest as much authority as possible in the people and agencies actually solving problems in the field. It also relieved the Mission and Organization Division of the HQ AMC Directorate for Plans and Analysis of the responsibility of approving comparatively minor organizational changes.

(U) The Mission and Organization Division developed, reviewed and concurred in numerous changes in the mission assignments and organization structure of AMC during FY 1974. Included was a recommendation to reorganize and redesignate the Army Aeronautical Depot Maintenance Center (ARADMAC) as the Corpus Christi Army Depot assigned to HQ AMC rather than to HQ AVSCOM. By eliminating ARADMAC's subordinate relationship to a commodity command, it was expected that this activity would be able to perform its depot-type mission with less red tape and in a fashion similar to the other Army depots. In other such developments, the transfer of responsibility for Missile Warheads from ARMCOM to MICOM was studied and recommended. A coordinated staff position on a support agreement between TROSCOM and TACOM concerning the transfer of RD&E functions for construction and material handling equipment from TROSCOM to TACOM was also developed. Approval to create a new Facilities Engineering Directorate at Yuma Proving Ground was granted following negotiations assuring that no new costs or personnel would be required.

(U) In the area of consolidation and closure, approval was obtained for consolidation of MERDC's Fuel Handling Equipment Division, Mechanical Technology Department and Materials Research Division, Military Technology Department with Coating and Chemical Laboratory (redesignated Fuels, Lubricants and Coating Division) located at Aberdeen Proving Ground to form a new Petroleum and Materials Department at MERDC. The Advanced Materiel Concepts Agency was disestablished with only its function of providing initial concept definition and project description of Army Space Programs being transferred to Headquarters, AMC. Similarly, the Land Warfare Laboratory was disestablished, transferring only its functions for maintaining direct contact with Army materiel users to (1) ascertain specific requirements for improvements, (2) evaluate such requirements, and (3) to establish appropriate projects. These functions were assigned to the Army Materiel Systems Analysis Agency. The Logistic Control Office - Atlantic was consolidated with the Logistic Control Office - Pacific

to form the USA Logistic Control Office. The Intelligence Materiel Development Office and Intelligence Materiel Supply Office were combined into an element of ECOM. Finally, a number of DCSLOG programs, including the Strategic Trade and Munitions Control, Radioactive Materials Control, Priorities and Allocations Systems, and Management of Aircraft Distribution, were transferred to various AMC staff elements.

Mobilization Planning

(U) In January 1974, the AMC Chief of Staff directed the Plans and Analysis Directorate would be responsible for the approach to be taken to control the entire mobilization effort within AMC. The objectives would be to provide a focal point for mobilization planning to include industrial mobilization and the control and visibility of mobilization implementation by the AMC Operations Center. The Chief of Staff indicated that the Plans and Analysis focal point should know all requirements for mobilization plans, who in the headquarters was responsible for the pieces of the plan and the status of these pieces, and how the pieces would be pulled together to successfully implement AMC mobilization.[27] Shortly thereafter, the Plans and Analysis Directorate drew up plans that the Chief of Staff approved for the control, discipline and preparation of a master mobilization control document. Subsequently, the Chief of Staff approved the Plans and Analysis Directorate as the "overall executive secretary" for the master mobilization control document and for maintaining general surveillance of the mobilization control activities.[28]

Arab Israeli War

(U) The Arab Israeli War began on 6 October 1973. On 12 October 1973, the AMC operations center was activated with the mission of coordinating US Army materiel being delivered to Israel. At the time of activation, the AMC operations center was transferred from the AMC Logistics Office to the Directorate for Plans and Analysis. The Chief of Military Plans Division was given the responsibility for controlling and administering the activities of the operation center.

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[27] Directed Action By: Chief of Staff, Case No. 1274, 24 Jan 74; Memo for Record, AMCPA-M, 26 Feb 74, Subj: Proponency of Master Mobilization Control Plan (MMCP).

[28] Memo for Record, AMCPA-M, 6 May 74, Subj: IPR Briefing for Chief of Staff, AMC on Master Mobilization Control Document.

(U) During the next six weeks, the operation center accomplished the command and control necessary to move required materiel from AMC depots to the aerial and sea ports; coordinate land, sea, and air transportation; make emergency repairs to equipment and to track the operation in a manner that provided rapid visibility to high level Commanders. On 22 October 1973, the declaration of an increased state of readiness of the US Armed Services further increased the workload of the AMC Staff. The operations center continued a daily routine of 24 hour operation in three shifts until deactivation on 15 November 1973.

Management By Objective (MBO)

(U) AMC had been in the business of managing by objectives with varying degrees of success since early in 1964. Although the original MBO system had been modified on several occasions, it had not deviated from the management philosophy of decentralized operations with centralized management control. Under this philosophy, the "hot" areas were pinpointed; measurable, time-phased actions were scheduled; responsibilities were delegated; and progress was tracked through management information feedback loops, culminating in progress reports to the Commanding General from HQ AMC directors or office chiefs during staff reviews.

(U) A change to the MBO system was initiated on 15 August 1973 when the Chief of Staff provided the Director of Plans and Analysis with new command-approved goals and directed the revision of the MBO system. The basic faults of the old system were that the system produced too many objectives which often were too narrow in scope and some did not lend themselves to measurement. The revised system provided for the development of a small number of objectives for each of the Commanding General's goals and the subsequent development of implementing tasks by HQ AMC staff elements. After several attempts by the staff during the remainder of CY 1973 and early part of CY 1974 the Commanding General approved 60 implementing objectives for FY 1975. These were distributed to the staff and implementing program tasks were developed which were submitted for Command Group approval on 22 May 1974. They were subsequently approved and published in the FY 1975 HQ AMC Program Plan on 1 July 1974.

FY 1976-1980 Program Planning Directive (PPD)

(U) During the 3d and 4th Quarters of FY 1974, the second annual edition of the AMC Program Planning Directive was developed, consolidated, staffed, approved, published and distributed throughout AMC.

Its purpose was to provide guidance and direction to the HQ AMC staff for the development of objectives, programmed tasks, and narrative guidance for inclusion in the FY 1976 HQ AMC Program Plan; to provide field commanders with the level of resources for use in development of the (FY 1976) Command Budget Estimate (CBE); and to provide field commanders and selected HQ AMC staff members with definitive guidance for the development of command impact memoranda assessing the impact of resource constraints during FY 1977-1980. The significant improvements of this directive over its predecessor were that it reflected the new system of management by goals, objectives and programmed tasks directed by the Chief of Staff in FY 1974 and, for the first time, contained both program planning and program budgeting guidance.

Select Committee (SELCOM)

(U) During the 1st Quarter of FY 1974, the major subordinate commands and corporate laboratories submitted impact statements in response to the HQ AMC Program Planning Directive (PPD) FY 1975-79, setting forth their plans for allocation of resources to accomplish their missions.[29] The Impact Memoranda underwent in-depth analysis by the HQ AMC Plans and Programs Division and the HQ AMC Program Directors. The results of the Impact Memoranda analysis were presented to the AMC Select Committee (SELCOM) on 9 October 1973. The SELCOM did not make any changes to the FY 1975 Budget Manpower Guidance (BMG), since the Plans and Analysis recommendations were very close to the FY 1975 BMG.[30]

Army Stationing and Implementation Plan (ASIP)

(U) The primary purpose of ASIP was to provide a basis for programming Military Construction Army (MCA) and family housing appropriations required to support personnel and activities at Army installations. The objective of the ASIP was to reflect the long range strength at each Army installation, to include authorized personnel of Army, other military services, and government agencies. The ASIP was aligned with the Five Year Defense Program (FYDP). It was updated annually to reflect changes in force levels and stationing with changes published as they occurred. The HQ AMC Plans and Analysis Directorate's Plans and Programs Division was charged with the task of annually updating the AMC portion of the ASIP. This was accomplished by reviewing the most current TDA/MTOE and updating the prior year ASIP. The updated version was forwarded to AMC installations for their input relating to personnel distribution to other

[29] Ltr fr DCG, AMC, AMCPA-P, Subj: Headquarters, US Army Materiel Command Program Planning Directive, FY 1975-1979, dated 26 April 1973 (S).

[30] Minutes of the SELCOM, 9 Oct 73, dated 15 Oct 73.

than parent installations. This data was compiled and forwarded to DA, Chief of Engineers (DAEN-ZCI) who incorporated it into the total ASIP.

Environmental Control

(U) AMC developed and implemented a comprehensive plan for pollution control early in 1970. The plan was kept viable and responsive to the changing requirements for control of hazards to persons and the environment at the Federal, State and local levels. AMC experienced a high degree of success in compliance with published standards and requirements pertaining to development and production of materiel as well as operation of facilities.

(U) In response to requirements of the National Environmental Policy Act (NEPA) of 1969 and implementing directives, appropriate aspects of AMC's operations were analyzed for their impact on the environment. The total effort resulted in the following accomplishments:

(U) A total of 2000 Environmental Impact Assessments (EIA) were completed. Included were EIA's which considered each item in AMC's portion of the Army Procurement Program in the FY 1974 procurement budget. This exercise also considered the environmental effects of procuring aircraft, missiles, weapons, ammunition, vehicles and other equipment. In addition to EIA actions, more detailed Environmental Impact Statements (EIS) required by NEPA were processed in 14 instances by AMC. Most of these were concerned with munitions demilitarization. Preparation of the 14 EIS cost $1,006,339; they are included in the total of 18 EIS submitted by the Army, excluding those submitted by the Corps of Engineers.

Aircraft

(U) The USA Aviation Systems Command investigated low emission combustors, small combustor design methods, Army aircraft turbine emission characterization, turbine emissions guidelines, T53, T55, and T63 gas turbine engine exhaust measurements and measurement of the GE12 generator engine exhaust emissions. A modified T63 combustor was fabricated and demonstrated significantly reduced emissions.[31] Emission measurements were completed on all three of the programmed engines, the T53, T55 and T63. These were used as a base for the development of draft guidelines for emissions from aircraft engines. In-house proposed emission control guidelines for engines were being held in abeyance pending the release of the proposed EPA aircraft standards. Upon release of the standards, the USA Aviation Systems Command guidance was to be formalized.

[31] For details, see FY 1974 Annual Report of Major Activities, Plans and Analysis Directorate, HQ AMC.

(U) In the area of low mass emissions gas turbine combustors, further development of both the modified conventional and the pre-chamber combustor operating in two modes, a wall fuel film and a pressure atomizer mode, were to be conducted in order to meet the conventional T63 exit temperature profile. Further testing was also conducted to verify the reliability and performance of the combustors in an actual engine development. Testing of the small combustor to measure engine emissions and the pneumatic impact fuel nozzle modification to increase combustion efficiency was to be continued. Thus far, tests indicated very good combustion throughout the entire operating cycle of the engine.

(U) Currently, military aircraft were excluded by law from having to comply with exhaust and noise emission standards. The on-going efforts described above, although directly related to pollution abatement, were primarily to improve the signature of the aircraft to lessen the possibility of detection by the enemy. Because these efforts were mission oriented, no funds are included in the Pollution Abatement Program for this work.

Military Vehicles

(U) AMC measured pollutant tests of its tactical vehicles indicated that most of these vehicles were in need of correction to meet the requirements of Executive Order 11507 and the Clean Air Amendments of 1970. A concerted engineering effort thereafter resulted in reduced emission levels to such a degree that military vehicles and engines being produced at the end of FY 1974 were in compliance with the standards. Four vehicles were of primary concern, the 1/4 Ton, 1¼ Ton, and 2½ Ton Trucks and the M746 Truck Tractors.

(U) The 1/4 Ton and 2½ Ton Trucks constituted the majority of the Army's fleet of wheeled tactical vehicles. In May 1972, the LDT 465 engine for the 2½ Ton Truck was certified as having met applicable standards. In January 1973, the 1/4 Ton Truck was similarly certified. Prior to certification of these two vehicles, exemptions were granted by Environmental Protection Agency (EPA).

(U) The M715 1¼ Ton Truck was powered by the OHC 6-230 engine. About 1,000 engines on purchase were undergoing testing at EPA. Certification was required as of date of manufacture. The M746 Truck Tractor powered by a DD12V71T engine was modified to meet 1973 emission standards and a Certificate of Conformity was issued.

(U) In addition, the question of whether a total of 29 other special purpose vehicle types, such as cranes and tractors, were

"motor vehicles" within the meaning of The Clean Air Act had to be determined. AMC had taken the position that such special purpose vehicles were covered by the Act. DA, DOD, and the Environmental Protection Agency had been considering this matter for over a year. Meanwhile, the Army Materiel Command General Counsel determined that such vehicles may be procured until the Environmental Protection Agency reached a decision on whether or not the vehicles were covered by the Act.

Industrial/Military Engines

(U) Efforts were under way to reduce exhaust and noise emissions from conventional internal combustion engines and to find suitable new, less polluting power sources. This work was under pollution abatement Executive Order 11507 but not a requirement under The Clean Air Act. Efforts were under way to evaluate the impact on performance, maintainability and reliability caused by various modifications to conventional power sources. Also, new power sources, such as fuel cell systems, Rankin cycle engines, hybrid (electro-mechanical) systems and high performance batteries were being evaluated. One task, applicable to continuous combustion systems, had as its objective the examination of the phenomenon of catalytic combustion, whereby combustion could be maintained below flame temperature; i.e., flameless combustion. Other tasks were the selection, development and adaptation to generators of various alternate power sources. Engine test cells were being equipped with new instruments for monitoring gaseous emissions. The tests required by Environmental Protection Agency (EPA) for certification of engines required endurance tests which were similar to those of the Qualified Products List (QPL) engine tests. Engine manufacturers had registered complaints about having to perform similar but separate tests for two government agencies. In meetings with the Engine Manufacturers Association and EPA, AMC proposed a combined test procedure which, when accepted, would enable the engine manufacturers to get credit for EPA performance and QPL performance under the same endurance test.

Fuels and Lubricants

(U) Attempts to develop a bench-scale capability to assess the effectiveness of gasoline dispersant/detergent additives continued to provide basic data on fuel performance. Once these data were obtained, tests were to form the basis for scaled-up evaluation of these materials. It was expected that a proposed draft military specification, MIL-F-(MR), "Fuel, Diesel, Referee Grade," would be issued. Upon receipt of comments based on review by government activities and industry, the specification was to be completed. Additionally, MIL-SPEC VV-G-001690, "Gasoline, Automotive, Low Lead and No Lead," was prepared

and distributed. In accordance with this, 198 samples were obtained throughout the United States. These showed a wide variation in octane quality, hydrocarbon composition and in other properties. Detailed analysis showed that hydrocarbon composition varied widely and that large variations existed in fuels marketed under a single brand name.

(U) Laboratory testing of Low - No Lead fuels in military engines, including generator sets, indicated that little or no effect on these engines was caused by use of this fuel. Field tests were being conducted to verify the results of laboratory evaluations. This field evaluation with unleaded gasoline had commenced. Four Army sites were selected with one site having logged some 2,500 miles per vehicle. A total of 4,787 administrative and tactical vehicles were to be tested, with a proposed completion date of 1974. Thus far, this field evaluation of unleaded fuel and the laboratory data appeared to be compatible. The test was continuing and was expected to be completed next year. No problems were encountered.

Noise Control

(U) Considerable progress was made in noise abatement during the year. Of significance was the publication of a comprehensive military standard for noise control and abatement (MIL STD 1474(MI)). This standard established noise levels for design of materiel. It provided equipment design criteria for prevention of hearing loss, improved speech communication in the noise environment, decreased possibility of aural detection of materiel by the enemy, and assurance that the materiel meets applicable state and federal noise limits. In preparation for impending federal noise control regulations and the new military noise standard, the tactical vehicle noise abatement program was updated and projects were being initiated for noise reduction of engine driven generator sets, tractors, rock crushing plants, cranes, rollers, air conditioners and other items.

Watercraft

(U) The Refuse Act of 1899 prohibited the discharge of refuse matter and the Federal Water Pollution Control Act Amendments of 1972 prohibited the discharge of harmful quantities of oil from watercraft into the navigable waters or contiguous zone of the U.S. The Federal Water Pollution Control Act also set forth proposed federal standards of performance for marine sanitation devices and prohibited the discharge of untreated sewage. These laws were applicable to military watercraft. AMC actions to conform to these laws and regulations were being closely coordinated with Navy, Coast Guard and Corps of Engineers. AMC's efforts in the area of harmful oil discharges consisted of projects for the preparation of military specifications on oil/water

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separators, filter elements for the separators and a monitoring system for determining the oil content of bilge and ballast water. Four projects were under way pertaining to the handling of watercraft sewage. Three of the projects pertained to the provision, via modification work order, of on-board holding tanks for 177 watercraft (18 different types) falling under AMC responsibility. The fourth was an RDTE-funded waste water treatment project which had been modified to include the design and development of equipment for pumping the sewage to shore and treating it in areas where regular sewage treating facilities were unavailable.

Sewage and Waste Treatment (Non-Fixed Facilities)

(U) Efforts in this area consisted of developing methods and equipment to satisfactorily treat and dispose of waste waters, human wastes and effluents from field showers, laundries, kitchen units, as well as concentrated sewage derived from watercraft holding tanks. Studies of various processes such as reverse osmosis, aeration/pyrolysis, electro-coagulation, ozonation, incineration, centrifugation, and microwave radiation were under way. Other efforts included the development of collagenenzyme membrane modules for removal of urea from waste waters and the optimization of waste water treating procedures involving coagulant addition, sludge dewatering, biological regeneration, and reuse of used carbon. No on-board sewage treating equipment was being developed for watercraft.

Water Purification

(U) The Army's approved QMDO plan for a family of water treatment equipment called for water reuse. The Army was to have the capability of recycling the wastewater from laundries, showers, latrines, and food service equipment. Experience gained from developing the Air Force Bare Base water treatment system and assisting the Surgeon General in the water and waste management complex for The Medical Unit Self Contained Transportable System provided an invaluable data base from which to initiate development of effective mobile waste water treatment system for the Army. The greater portion of this development effort was scheduled for the out years, mainly because of higher priority work.

Fixed Facilities

(U) Implementation of the Clean Air Act Amendments of 1972 by the states resulted in more stringent standards for combustion facilities, waste disposal facilities and industrial processes for particulate and sulfur oxide emissions. The Federal Water Pollution Control Act amendments of 1972 (P.L. 92-500) required permit applications and new

compliance schedules for corrective actions related to discharges to water courses. The Act also required a nationwide upgrading of sewage treatment procedures. Projects designed to meet these new requirements were being processed and integrated into the fixed facility program. Fuel conversions to gas and oil at AMC facilities were being reviewed in light of the national fuel shortage. The disposal of refuse by incineration was also under continued question. Both were causing program modifications. The Administrator of the Environmental Protection Agency was required to report to the President by October 1, 1973 on Federal facilities compliance with the Clean Air Act and Executive Order 11507. Federal facilities covered by Federal, State or local air quality standards and limitations were required to either be in compliance or to have corrective action proceeding in accordance with an approved compliance schedule. To comply with these requirements, there were within AMC 69 air and 74 water pollution abatement projects under way at 45 AMC installations having a $103 million estimated cost for the FY 1973 - 1978 period. In the face of difficulties imposed by the new requirements, the increasingly more stringent standards, the necessity of having to satisfy pollution control organizations at regional, state, and local levels whose requirements differ from location to location, AMC took action to comply with the laws at its fixed facilities.

Applied Technology in Support of Production

(U) The PEMA effort in applied technology bridged the gap between prototype production and mass production through the application of practical new production processes and plant modernization to assure increased efficiency in procurement. This effort was carried on under one omnibus project having 45 subtasks at 20 AMC installations, with a funding level of approximately $5 million per year.

(U) The process work was conducted under the PEMA Manufacturing Methods and Techniques Program while changes in plant design were conducted under the PEMA Modernization Program. Under the former, improvements in production processes for end items, assemblies, and components planned for future PEMA procurement were accomplished. The latter effort provided for the establishment, rehabilitation, modernization, conversion and expansion of government-owned industrial facilities to support current production and in critical areas, to expand the production base for use during mobilization.

(U) A Five Year Plan (1974-1978) was developed which encompassed this total effort. This included control of air and water effluents from manufacturing facilities and preliminary and in-depth plant surveys and coordination activities at GOCO plants. Modification of incinerators and other measures to assure compliance with federal, state and local regulations pertaining to pollution control were also part of the program.

Management Information Systems

Army Materiel Command Logistics Program Hardcore - Automated (ALPHA)

(U) ALPHA had been operational at AVSCOM, the prototype site, since January 1972. Extension of ALPHA was accomplished at MICOM and TROSCOM and both were currently operating the system in a full production environment. Phase A was to be operational at the remaining commands by September and Phase B by November 1974. Full implementation of ALPHA at all commands was expected to be completed in FY 1976.

ALPHA Remote Terminal Interactive System (ARTIS)

(U) The ARTIS system was designed to complement ALPHA requirements for a responsive teleprocessing system to support the functional managers. MICOM designed, developed and tested the ARTIS system, employing the IBM 3270 terminal equipment. A DA Systems Readiness Review was conducted at MICOM with recommendation to approve the prototype and extend the ARTIS system to the other commodity commands.

Military Standard Contract Administration Procedures (MILSCAP)

(U) DOD-wide implementation of MILSCAP continued in deferred status during FY 1974. However, Army activities pursued the Army internal implementation effort through contract file-build and maintenance. Changes and refinements to MILSCAP were recommended to ASD(I&L) in a DOD Report on Management Review of Contract Administration and Materiel Acquisition Information Systems, dated March 1974. This report was accomplished by a task group composed of representatives of OASD(I&L). OSD had these recommendations under consideration as the fiscal year ended.

(U) Six Army activities participated in a joint-Service test of experimental procurement and contract forms which were designed for source data automation applications. Use of these forms permit bypassing of the keypunch process in entry of data in the computerized file. The test proved successful, with the result that revised versions of the test forms would ultimately be authorized for optional use throughout the Department of Defense.

Depot Management Information Systems (DEPMIS)

(U) DEPMIS was operational at all AMC Depots in FY 1974. This system was designed to provide current management information appropriate for the requirements of the command and directorate level of depot management. Only that information documented as a specific requirement by depot management was included in the system. All

information was presented at this time as Cathode Ray Tube (CRT) displays. Each display was based on performance indicators which were developed through the coordinated action of depot representatives. The displays were comprised of data which could be retrieved economically from SPEEDEX files, summarized and computed on demand. Provisions were made for future automatic printout of display data when out of tolerance conditions exist. Plans for the future also provided for the periodic printout of historical data.

Advanced Hybrid Computer Systems (AHCS) Project

(U) In December 1972, AMC pulled together a team of headquarters and laboratory specialists in analog/hybrid computation to study recent technological developments (autopatch, hybrid compilers, etc.). Following the in-house study, contracts were released in January 1974 to Applied Dynamics, Electronics Associates, Inc., and Denelcor, Inc. to evaluate the latest state-of-the-art technology that would lead to the development of fourth-generation Advanced Hybrid Computer Systems with the capability of operating in a network environment. The contracting efforts were completed in May 1974. Participating in this project were the Air Force, Navy, and NASA. It was hoped that three AHCS prototypes would be operational by the end of 1978.

Systems for Support of Scientific & Engineering (S&E) Functions

(U) As a result of the adoption of the Plan for an AMC Scientific and Engineering Computer Network, the Computer Network Steering Committee was appointed jointly by the Deputy for Laboratories, Dir/RD&E and Dir/MIS. Policies were developed by the Dir/MIS and the Computing Network Steering Committee (CNSC) concluded its initial process of review, analysis, and recommendation. The CNSC recommended release of prepared policies to be effective in FY 1975, including concepts of wholesale and retail computing services as a basis for organization and procedures to be inaugurated.

(U) All actions by AMC managers directly or indirectly influencing the installation and operating methods of S&E Computer Systems and their utilization by customers, caused a continuation in the downward trend of S&E Unit Costs from $9.11 per Job Program Run to $7.72 during the year. This was a 15 percent decrease, and resulted from a $896,400 decrease in annual operating costs and 8.4 percent increase in utilization.

Headquarters Management Information System (HQMIS)

(U) The HQMIS system involved remote display of selected information from existing Data Bases. The first MARS III prototype application of the HQMIS was implemented on 7 January 1974 in the Directorate

for Requirements and Procurement, AMC, using the PEMARS data file. The second prototype application was implemented on 23 January 1974 in the Supply Directorate, AMC, using a MILSTEP Format 1A data file. The terminals in these two directorates were connected with the LSSA data bank.

(U) In March 1974, the third and fourth prototype applications were installed in the Office of the Comptroller and Directorate for Personnel, Training and Force Development, AMC. The Comptroller terminal was used for budget displays. The PT&FD terminal was used for manpower displays. The terminals in these two directorates were connected with TOAD data banks. The remote terminal at HQ AMC, Directorate for Management Information System, was operational and was used for ADP budget and inventory displays. This terminal was connected with LSSA and TOAD data banks.

Reports Management

(U) The FY 1974 emphasis in the Reports Management Program has been placed on obtaining an up-to-date inventory and costs of all RCS reports and ADP output products produced within AMC. The inventory and costs will be obtained as of 30 June 1973.

(U) Management of all AMC ADP output products was added during this fiscal year to the AMC Reports Management Program. This management includes an annual review of each ADP output product, to include justification for the product.

(U) Commodity Command Standard System (CCSS). Continuous management of CCSS output products was started in October 1973 with 473 products approved for retention. From then until June 1974, 154 products were added and 46 were deleted for a net increase of 108.

(U) Data Banks. Continuous management of the AMC Data Banks ADP output products was started in January 1974. From then until June 1974, one product was added and 15 were deleted for a net decrease of 14.

(U) TEAMUP. A one-time review of the ADP output products produced by the standard Test & Evaluation Command (TECOM) System (TEAMUP) was completed on 30 June 1974. There are 676 output products in TEAMUP. This results in 2,632 output products being produced by the various TECOM activities; 154 of these were cancelled for an annual reduction of $263,000.

(U) SPEEDEX. In January 1974, a joint HQ AMC/LSSA/Depots effort was initiated to review and evaluate ADP output products currently generated in SPEEDEX. The purpose of this review was to eliminate those SPEEDEX output products determined to be nonessential or of marginal value. There were 944 ADP output products being generated from SPEEDEX. Reviews have been completed on 360 of these output products; five have been deleted to date.

(U) Project FASTCUT. The HQDA Project FASTCUT established the objective of reducing a selected number of RCS reports by 30 percent, both in terms of number of reports and the annual cost of preparation. AMC achieved a reduction of 196 reports (43%) and $2,950,063 (44%) under the project thereby considerably exceeding the DA established goal.

(U) Inventory of RCS Reports. During FY 1974, AMC headquarters accomplished a net reduction of 30 RCS reports, reducing AMC report costs by approximately $1½ million dollars.

NUMBER OF REPORTS

	1 Jul 73	30 Jun 74	Net Change
AMC Internal	226	196	-30
AMC External	49	49	0
Higher Authority	572	572	0
Total	847	817	-30

COSTS

	1 Jul 73	30 Jun 74	Net Change
AMC Internal	$7,928,275	$6,793,806	-$1,134,469
AMC External	3,156,810	2,926,040	- 230,770
Total	$11,085,085	$9,719,846	-$1,365,239

Nuclear Management

(U) During FY 1974, Headquarters AMC was responsible for a variety of chemical warfare/biological defense research (CW/BDR) programs, which encompassed practically every functional area of AMC staff responsibility; i.e., research, development, testing, evaluation, procurement, storage, distribution, demilitarization, quality assurance, public information, security, and safety. These programs were complex, politically sensitive, and required intensive management. Since AMC was a functional organization, this resulted in a division of policy decisions and staff supervision of the programs and there was no element in the Headquarters charged with their overall management.

(U) During the latter half of the 1960's and early 1970's the general public became increasingly aware of military chemical/biological (CB) programs. As awareness of the program grew, the Congress and a variety of interest groups throughout the country began to monitor CW/BDR activities. Two events occurred which had a major

impact on these programs. In 1969 sea dump of chemical munitions was cancelled and plans had to be developed to dispose of obsolete and unserviceable chemical items in another fashion. Then, on 25 November 1969 and on 14 February 1970, President Nixon directed that the entire U.S. stockpile of biological agents, munitions, and toxins be destroyed. During a briefing on management of CB programs world-wide by ACSFOR on 21 July 1971, the Chief of Staff, US Army (CSA) stressed the continuing requirement for close management of these programs and directed that ACSFOR act as the DA focal point for overall coordination of all Army CBR activities. CSA also expressed interest in how AMC managed its CB programs. In order to provide a single focal point for CW/BDR programs in HQ AMC, the Office of the Special Assistant was established by HQ USAMC Special Order 217, dated 20 December 1971. Effective 30 June 1973, DA Manpower Utilization Survey authorized an additional officer to the TDA.

(U) The missions and functions of the Office of the Special Assistant for Chemical and Biological Affairs were to: serve as a principal advisor to the Commander and staff on policy matter pertaining to Chemical Warfare (CW) and Biological Defense Research (BDR) activities; monitor AMC CW/BDR activities to assure coordination and proper management of CW and BDR plans and programs; advise the Command Group of overall CW and BDR program status and potential problem areas; and provide staff supervision for demilitarization of chemical agents and munitions.

(U) The major activities of the office during FY 1974 included the participation in a Chief of Staff directed study group which was to review the security of nuclear weapons, lethal chemical munitions and agents and sensitive conventional weapons within the AMC complex, to determine deficiencies and to recommend and schedule appropriate corrective action. SA-BC was instrumental in the development of a letter signed by Commander, AMC, to Chief of Staff, Army, which requested Open Air Testing for the chemical binary round. The Commander, AMC signed the first annual update of the Charter for the Program Manager for Demilitarization of Chemical Materiel. The disposal operations for the bulk chemical agent mustard stored at Rocky Mountain Arsenal (RMA) was successfully completed on 18 March 1974. Starting in September 1972 the program was concluded approximately three months ahead of schedule with no lost time accidents. It involved the destruction of approximately 5.8 million pounds of agent stored in 3407 ton containers, using procedures developed in strict compliance with public laws regulating the disposal of toxic agents.

(U) The demilitarization and disposal of 21,115 M34 cluster bombs, stored at RMA, started on 29 October 1973. These bombs which weigh approximately 1000 pounds contain 76 individual M125 each

filled with 2.6 pounds of GB nerve agent and a 0.55 pound central tetryl central burster. The demil operation was being conducted in a total containment building, using remote control equipment to disassemble the munition. The demilitarization and disposal of 19 defective M55 rockets (18 filled with nerve agent GB, 1 filled with nerve agent VX) was started on 28 October 1973 and completed on 14 November 1973, successfully, without incident, and ahead of schedule at Johnston Island.

(U) On 13 October 1973, the Deputy Secretary of Defense directed that all residual stocks of chemical agents at RMA be demilitarized as soon as possible. Based upon a plan prepared by the Program Manager for Demilitarization of Chemical Materiel and approved by the Secretary of the Army all these stocks would be disposed of by 1 September 1976. The disposal of these residual stocks was scheduled to start 3 September 1974. A plan for the demilitarization and disposal of unserviceable toxic filled munitions without explosives at US Army installations was staffed at AMC and submitted to the DA for approval on 9 July 1974. The concept plan for disposal of all remaining CONUS stocks of bulk mustard agent contained in one ton containers was staffed at AMC and submitted to the DA for approval on 14 June 1974.

(U) The following chemical warfare/biological defense research program areas which require continuing surveillance in the future included: decontamination, lessons learned from the Yom Kipper War, binary chemical munitions, smoke, and a new protective mask.

Command Equal Employment Opportunity Management

(U) During FY 1974, the Equal Employment Opportunity Office continued to implement the requirements of Executive Order 11478 to provide equal employment opportunity in Federal employment without discrimination because of race, color, religion, sex, or national origin. During this period, 1592 employees were counseled, the first step in the regulatory complaint procedure. Of the 1592 counseled employees, 551 cases or about 35 percent were resolved by corrective action.

(U) The Command Headquarters Equal Employment Opportunity Offices were physically separated in January 1974 to accommodate the expanding staffs of the two offices. At the beginning of FY 1974, the Command Equal Employment Opportunity was staffed with only two employees. At the end of the fiscal year, five full-time employees were employed. Also, in April 1974, a Program Monitor was appointed to monitor the Affirmative Action Plan implementation and decision compliance regarding equal employment opportunity.

(U) On 18 December 1973, the Federal Women's Program Coordinator was assigned to this office to handle that portion of equal employment dealing with enhancing employment and advancement opportunities for women. Little measurable progress had been accomplished in this program in FY 1974.

(U) A full-time Spanish Speaking Program Coordinator was assigned in April 1974 to implement the provisions of FPM Letter No. 713-18, dated 23 January 1973, directing agencies to take specific steps to implement the President's Sixteen-Point Program (renamed the Spanish Speaking Program). There were 31 Spanish Speaking Program Coordinators appointed at AMC installations - three full-time and 28 part-time, at the close of FY 1974.

(U) A new regulation, Public Law 93-259, signed by the President on 9 April 1974, provided for establishment of a system for processing complaints of discrimination based on age. This regulation was effective 1 May 1974. Complaints of discrimination based on age were to be accepted only from persons who were at least 40 and less than 65 years of age at the time the discriminatory action was alleged to have occurred.

CHAPTER II

RESOURCES MANAGEMENT

Funding and Programs *

Overview

(U) Ever mindful of the tight budget situation which persisted during FY 1974, and the need for greater efficiency in the management of resources, the AMC Comptroller Budget Division continued to pursue policies which would lighten the workload in the field and make more effective the procedures in HQ AMC. In the face of decreasing manpower, the Division was reorganized for more productive functioning. The AMC Resource Management Report was amended to provide for mechanization of the Base Operations portion, an essential section of the submission; and a new method of receiving pertinent 159 Report information in the most expeditious manner from Tobyhanna AD was put into use by the Budget Division through the operation of a Multi-Access Retrieval System (MARS III). With resourceful imagination and the testing of new procedures and operations, the Budget Division met the challenge of the economic unrest of the mid 1970's.

(U) The Cost Analysis Division of the AMC Comptroller directed effort toward responding to expanded cost analysis study requirements and program activities associated with the DA and OSD materiel acquisition management process. The division continued coordination, direction and participation in the preparation of Independent Parametric Cost Estimates (IPCE's) for major weapon systems and implementation of a HQDA requirement for expedited completion of Cost and Operation Effectiveness Analyses (COEA's) on a number of weapon systems now in the acquisition process. It reviewed and validated many weapon system cost estimates, particularly Baseline Cost Estimates (BCE's). The division also participated in Review and Command Assessments of Projects (RECAP's), Required Operational Capability (ROC) papers, Product Improvement Proposals (PIP's) and other weapon systems support studies. It participated in the development and implementation of Army policy and guidance for the cost considerations through program cost controls, design-to-cost development including AMC Flyaway unit cost, and operation and support costs. It supported the Joint Logistics Commanders in developing the Contractor Cost Data Reporting (CCDR) system and publishing the "Joint Design-to-Cost Guide" and

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* The material in this portion of Chapter II was furnished by the HQ AMC Comptroller Office

continued improvement of policy and guidance relating to inflation factors, operation of Cost Estimate Control Data Centers (CECDC's), cost definitions and data formats.

(U) The AMC Comptroller, Finance and Accounting Division's major emphasis during FY 1974 was directed toward improving and strengthening the finance and accounting structure to effect a more efficient utilization of resources. Evidence of this major thrust was seen in actions such as: continued progress in the attempt to obtain GAO approval of AMC accounting systems; initiation of a concept for centralized allotment accounting for arsenals and a standardized AIF accounting system to be utilized by all arsenals; finalization of plans to centralize the administration and control of the OMA Funded Reimbursements related to IL programs at AMC Headquarters; accomplishment of policy applicable to reimbursement to OMA for PEMA procured items; and the transfer of the fiscal operation function of the International Logistics program from the US Army Finance Support Agency to AMC. In addition, during FY 1974, the SPEEDEX Civilian Pay and Leave Accounting System was operational at all USAMC depots.

(U) The AMC Comptroller Internal Review and Audit Compliance Office took a leading part in the second annual Internal Review and Audit Compliance Workshop held in St. Louis, Missouri, 11-13 September 1973. AVSCOM hosted the workshop which proved to be of considerable value to all participants. The Army Audit Agency reported that AMC has a viable and efficient Internal Review Program far surpassing the programs of other Army Commands.

(U) The audit compliance workload increased 35 percent over the previous fiscal year. AMC reply timeliness records revealed that 90 percent of the 258 position statements prepared in FY 1974 were processed to DA staff offices or agencies on time. DA advised AMC headquarters that command replies to 106 audit reports were satisfactory and that further reporting to DA under the provisions of AR 36-6 was not required.

(U) The Army Audit Agency assessed the 1973 Army/AMC reorganization. During FY 1974, the agency focused on the progress of implementation. In FY 1975 and beyond, as required, emphasis is to be placed on an assessment of the management and operations of the restructured CONUS organizations. FY 1974 marked the third consecutive year in which the Army Audit Agency requested AMC assistance in developing annual Armywide audit programs. As in the past years, AMC's response was positive. In August 1973, several audit topics were suggested by AMC for inclusion in the agency's FY 1975 Armywide audit program. The Chief, US Army Audit Agency formally expressed his appreciation to AMC for command's participation in developing the FY 1975 program.

(U) One major accomplishment made by the Comptroller, Management Division during FY 1974 was the implementation of a system to increase depot and MSC efficiency and effectiveness. Activities were compared over a period of time in relationship to a base. The system enabled managers/commanders to pinpoint problem areas. By use of this system, AMC was recognized as a leader in the productivity measurement field.

(U) During the second half of FY 1974, the Management Division engaged in another major effort, i.e., establishing a Productivity Enhancing Capital Investment Program (PECIP). This program, successfully established at the GOCO ammunition plants, resulted in productivity increases. A fund was set aside for purchasing capital tools and equipment that had two-year self-amortizing potential. By investing in these "Quick Return" projects, productivity increased to offset the investment cost. This concept was to be expanded to cover MSC's and other Class II activities during FY 1975.

(U) The DIMES program objectives during FY 1974 sought to expand the utilization of productivity data outputs for management purposes. The implementation of SPEEDEX throughout the depot system in FY 1974 aided in accomplishing the objective. Standardization of work units, methods and standards was expected to be one of the FY 1975 DIMES program objectives.

(U) Another major innovation developed and implemented during FY 1974 by the Management Division was the management evaluation of all functions in the MSC Comptroller offices. The purpose of this evaluation was to assist the Comptrollers in determining the effectiveness of their offices. The program was considered successful and was to be expanded to evaluate depot operations during FY 1975.

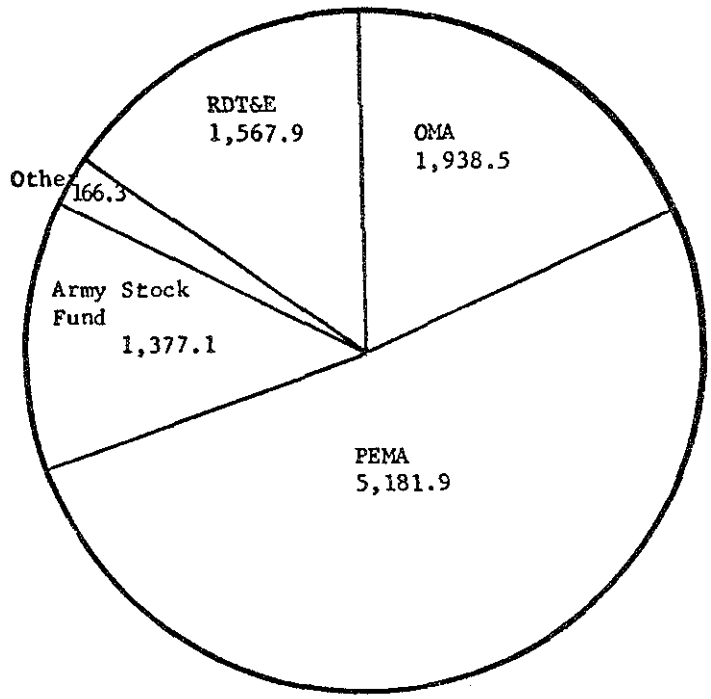
(U) The major emphasis of the Comptroller, Review and Analysis Division was directed toward sharpening of requisite techniques used in evaluating overall AMC mission accomplishment with special emphasis on the AMC Research and Development program. The thrust of these latter evaluative efforts were aimed at the basic research and exploratory development area with the goal of establishing measures that would provide continuous visibility, thus enabling the Command Group, AMC, to effectuate better control over development of Army hardware.

(U) Emphasis continued on improving the quality and scope of review and analysis activities in the field as well as the technical competence of program analysts. In addition to staff visits to field installations, meetings were held with new installation Commanders and Comptrollers where mutual problems were discussed and resolved. Review and Analysis Cost Reduction Program, managed and coordinated by the Division for eleven years, was transferred in its entirety to the Management Division on 17 August 1973. The AMC Comptroller funding programs for FY 1974 are shown in charts 2-9.

TOTAL ARMY PROGRAM RECEIVED
(MILLIONS OF DOLLARS)

TOTAL FY 74: $10,231.7

As of 30 Jun 7



FISCAL YEARS	TOTAL PROGRAM RECEIVED	OMA	PEMA	RDT&E	ARMY STOCK FUND	OTHER
71	9,091.4	1,703.5	4,980.0	1,225.7	1,045.7	136.5
72	9,288.0	1,826.9	4,898.6	1,461.2	986.1	115.2
73	9,520.7	1,845.7	5,042.2	1,362.9	1,126.9	143.0
74	10,231.7	1,938.5	5,181.9	1,567.9	1,377.1	(1) 166.3

(1) Includes 34.4 million Family Housing Management Account, 85.6 million programmed reserve to Army Industrial Fund from orders funded outside AMC complex, and 22.0 million for Advanced Research Projects Agency Orders.

Chart 2

PROGRAM DISTRIBUTION BY COMMAND
FY 71 THRU FY 74
(MILLIONS OF DOLLARS)

COMMAND	FY 71	FY 72	FY 73	FY 74
HEADQUARTERS	1,190.0	1,512.1	1,522.2	1,612.7
O&MA	749.8	1,078.3	1,096.1	1,155.5
PEMA	2.6	2.6	13.8	9.9
RDT&E	133.0	131.2	112.5	94.0
STOCK FUND	290.5	276.1	256.0	261.7
OTHER	14.1	23.9	43.8	91.6
ARMY TANK AUTO CMD	1,062.4	848.2	1,064.4	1,823.0
O&MA	87.6	95.8	105.6	98.3
PEMA	704.9	491.1	598.5	1,255.6
RDT&E	65.4	81.8	78.5	110.1
STOCK FUND	203.1	178.5	281.2	357.9
OTHER	1.4	1.0	.6	1.1
TROOP SUPPORT CMD	297.9	320.0	366.7	485.0
O&MA	63.2	67.4	69.5	102.5
PEMA	161.0	179.1	200.8	203.9
RDT&E	48.9	59.0	52.3	71.7
STOCK FUND	22.4	13.4	41.9	102.4
OTHER	2.4	1.1	2.2	4.5
AVIATION SYSTEMS CMD	1,039.0	769.6	1,147.5	914.9
O&MA	346.6	91.7	91.7	88.1
PEMA	330.2	213.2	664.7	296.5
RDT&E	144.8	281.7	195.8	301.3
STOCK FUND	217.0	182.4	194.1	227.4
OTHER	0.4	.6	1.2	1.6
MISSILE COMMAND	877.8	981.1	1,265.5	1,482.3
O&MA	105.9	105.5	101.1	110.4
PEMA	474.5	562.4	777.7	906.3
RDT&E	250.2	260.9	304.7	354.3
STOCK FUND	45.6	50.7	64.8	75.8
OTHER	1.6	1.6	17.2	35.5

Chart 3

PROGRAM DISTRIBUTION BY COMMAND (CONTINUED)
FY 71 THRU FY 74
(MILLIONS OF DOLLARS)

COMMAND	FY 71	FY 72	FY 73	FY 74
ARMAMENT CMD	3,076.5	3,268.5	2,556.1	2,481.4
O&MA	204.5	225.3	224.1	229.2
PEMA	2,673.8	2,770.0	2,070.0	1,942.6
RDT&E	129.3	171.3	150.8	153.5
STOCK FUND	65.2	98.8	108.0	149.5
OTHER	3.7	3.1	3.2	6.6
ELECTRONICS COMMAND	942.8	885.5	800.5	816.3
O&MA	129.2	136.0	141.9	132.6
PEMA	509.5	403.4	296.7	293.0
RDT&E	217.2	264.2	271.1	276.5
STOCK FUND	83.7	78.9	84.4	101.0
OTHER	3.2	3.0	6.4	13.2
TEST & EVALUATION CMD	255.7	253.5	218.0	220.0
O&MA	12.4	11.5	14.1	12.9
PEMA	1.0	1.5	1.6	2.0
RDT&E	209.8	209.0	185.7	180.7
STOCK FUND	29.3	27.2	10.7	12.2
OTHER	3.2	4.3	5.9	12.2
AMC TOTAL	8,742.1	8,838.5	8,940.9	9,835.6
O&MA	1,699.2	1,811.5	1,844.0	1,929.5
PEMA	4,857.5	4,623.3	4,623.8	4,909.8
RDT&E	1,198.6	1,459.1	1,351.4	1,542.1
STOCK FUND	956.8	906.0	1,041.2	1,287.9
OTHER	30.0	38.6	80.5	166.3

NOTE: ARMAMENT COMMAND PROGRAMS FOR FYs 71, 72 and 73 were derived from combined programs distributed to the former Munitions and Weapons Commands.

Chart 4

OMA BY COMMAND FY 74
(MILLIONS OF DOLLARS)

COMMAND	PROGRAM	OBLIGATIONS	EXPENSES	DISBURSE
HQ, AMC	1,155.5	1,154.9	1,154.9	692.6
AVSCOM	88.1	88.1	88.1	68.3
ECOM	132.6	132.5	132.5	110.2
ARMCOM	229.2	225.7	225.7	172.1
MICOM	110.4	110.3	110.3	91.3
TROSCOM	102.5	102.4	102.4	67.9
TACOM	98.3	98.2	98.2	81.1
TECOM	12.9	12.9	12,9	11.2
SUB-TOTAL	1,929.5	1,925.0	1,925.0	1,294.7
UN-ISSUED	9.0			
TOTAL	1,938.5			

Chart 5

308-582 O - 80 - 5

UNCLASSIFIED

PROCUREMENT BY COMMAND
(MILLIONS OF DOLLARS)

CURRENT YEAR ONLY				COMMAND	ALL PRIOR YEARS			
DIRECT ARMY		OTHER CUSTOMER			DIRECT ARMY		OTHER CUSTOMER	
PROG	OBLIG	PROG	OBLIG		PROG	OBLIG	PROG	OBLIG
9.2	.6	--	--	HQ AMC	.7	.6	--	--
114.8	94.7	138.2	75.2	AVSCOM	26.7	10.6	16.8	7.3
147.1	105.0	51.5	39.5	ECOM	79.1	49.1	15.3	7.4
173.5	147.8	8.5	7.3	TROSCOM	21.2	13.6	.7	.5
464.1	385.9	367.4	245.5	MICOM	62.2	51.5	12.6	5.9
1,044.5	884.9	739.8	524.6	ARMCOM	58.0	49.1	100.3	71.5
279.7	252.7	961.3	905.1	TACOM	14.6	7.1	0.0	(4.1)
1.8	1.6	--	--	TECOM	.2	.2	--	--
2,234.7	1,873.2	2,266.7	1,797.2	SUBTOTAL	262.7	181.8	145.7	88.5
11.0	--	113.0	--	UNAPPLIED	42.5	--	19.5	--
43.9	--	(102.2)	--	UNDISTRIB	9.7	--	--	--
2,289.6	1,873.2	2,277.5	1,797.2	TOTAL	314.9	181.8	165.2	88.5

Chart 6

UNCLASSIFIED

RDT&E BY COMMAND FY74
(MILLIONS OF DOLLARS)

COMMAND	CURRENT PROGRAM YEARS PROGRAM	CURRENT PROGRAM YEARS OBLIG	PRIOR PROGRAM YEARS PROGRAM	PRIOR PROGRAM YEARS OBLIG	DISBURSE
HQ AMC	88.8	86.3	5.2	2.5	101.6
AVSCOM	292.7	280.5	8.6	8.4	301.8
ECOM	252.3	237.6	24.2	19.7	288.8
TROSCOM	68.5	66.0	3.2	3.1	71.3
MICOM	348.3	321.0	6.0	5.8	361.4
ARMCOM	149.4	143.7	4.1	3.3	165.0
TACOM	106.6	102.0	3.5	3.2	109.3
TECOM	175.5	171.2	5.2	3.8	179.7
SUBTOTAL	1,482.1	1,408.3	60.0	49.8	1,578.9
UNDISTRIB	17.5		8.3		
TOTAL	1,499.6		68.3		

Chart 7

AMC DIVISION STOCK FUND BY COMMAND - FY 1974
(MILLIONS OF DOLLARS)

COMMAND	PROGRAM	OBLIGATIONS	SALES
HQ AMC	91.5	91.0	81.4
AVSCOM	175.2	159.6	175.4
ECOM	72.8	61.0	50.4
TROSCOM	100.5	78.0	32.5
MICOM	48.9	41.1	37.6
ARMCOM	149.5	110.7	101.8
TACOM	355.0	277.8	205.8
SGO	4.6	4.6	5.6
UNDISTRIBUTED	--	--	--
TOTAL	998.0	823.8	690.5

Chart 8

AMC INSTALLATIONS DIVISION STOCK FUND BY COMMAND
FY 1974
(MILLIONS OF DOLLARS)

COMMAND	PROGRAM	OBLIGATIONS	SALES
HQ, AMC	170.2	167.1	133.9
ECOM	28.2	27.2	24.7
MICOM	26.9	25.0	23.5
TACOM	2.9	2.6	2.0
AVSCOM	52.2	52.2	48.9
TECOM	12.2	12.0	11.5
STRATEG COMM	23.6	23.5	22.3
TROSCOM	1.9	1.5	1.5
HSC	52.0	51.6	48.7
ASA	6.1	6.1	6.2
UNDISTRIBUTED	2.9	--	--
TOTAL	379.1	368.8	323.2

Chart 9

Army Industrial Fund (AIF) Operations and Budget

(U) During FY 1974, AMC operated the following installations and activities under the Army Industrial Fund system: one subordinate command, seven arsenals, fourteen depot activities, and four research and development facilities. The AIF operating program totalled over $1.5 billion, involving approximately 66 percent of total AMC personnel.

(U) The FY 1975 AIF Budget Estimates as submitted to DA, which included the extension of AIF to total depot operations in FY 1974, reflected the following operating data:

	(Million Dollars)		
	FY 1973 Actual	FY 1974 Est	FY 1975 Est
Orders	1,234.6	1,462.6	1,490.9
Revenue	1,195.1	1,573.7	1,596.6
Costs	1,244.8	1,558.9	1,589.6
Civilian End Strength	56,624	72,414	76,904
Civilian Man-Years	57,249	75,802	77,392

(U) Adjustments made by DA and the Program Budget Decision issued by OSD revised the budget estimates as follows:

	(Million Dollars)	
	FY 1974	FY 1975
Orders	1,507.7	1,453.9
Costs	1,559.4	1,597.1
	FY 1974	FY 1975
Civilian End Strength	75,128	75,695
Civilian Man-Years	76,330	76,411

(U) The AIF installations achieved a near break-even result with a composite operating gain of $372,656. This represented an insignificant 0.02 percent of the total costs incurred by AIF during FY 1974.

(U) Starting in FY 1974, all depot operations were brought under AIF Depot Activities at Atlanta, Georgia, and at the Army Support Center at Richmond, Virginia, were closed out. Savanna, Seneca and Sierra Army Depots for ammunition became part of the AIF Depot Activity Group. The cash requirement for the extension of AIF at depots totalled $26.5 million. Of this amount, $4.9 million was available from within AMC and the balance of $21.6 million was provided by DA in the form of advances from the OMA appropriation. The latter sum was replaced by AIF cash allocation furnished by DA during the latter part of FY 1974.

(U) As a result of reorganization within DA Headquarters, AMC was made responsible for the Army's review of the Command's AIF Budgets and for the subsequent presentation and justification thereof to OSD/OMB. Thus, OCA's new responsibilities as AIF Director related mainly to coordination; DCSLOG was relieved of its responsibility as AIF Activity Director. In addition, AMC was to prepare the Command's portion of the AIF reports required by OMB Circular A-11, Preparation and Submission of Budget Estimates.

Fair Share Financing of Major Subordinate Command Headquarters

(U) DA approved charging the RDTEA appropriation for general and administrative expenses in support of research and development activities at all major subordinate commands having major R&D missions except at installation/activity level and at Headquarters DA to become effective in FY 1975. Consistent with this policy, the Budget Division concluded that RDTEA was not paying its fair share of Management Headquarters costs (Command and Staff) at the major subordinate commands. Accordingly, AMC proposed and DA approved that RDTEA absorb a larger proportion of these costs beginning in FY 1975.

Overhead Reduction in AMC

(U) In 1974, as a result of a request from the Secretary of the General Staff, Army, to the CG, AMC, a Tech Force was formed to compile and analyze factual data on how AMC has reduced overhead since FY 1963. The resulting pamphlet, titled "Overhead Reduction in AMC 1963-1973", contained information on AMC's personnel, operating costs, and facilities. Among the more significant facts illustrated by the pamphlet were: (1) AMC's strength decreased by 25 percent compared with a 14 percent decrease in total Army strength; (2) Taking inflation into account, AMC had fewer dollars in FY 1973 than in FY 1963.

Productivity Enhancing Capital Investment Program (PECIP)

(U) The PECIP program was given a great deal of attention by the Budget Division during FY 1974. The program, which was begun in FY 1972 at the ammunition plants, with notable success, was officially extended to all AMC activities in February 1974. The objective of the program was to identify investment opportunities, particularly TDA tools and equipment items that had high potential for a quick return. Some specific actions taken by the Budget Division in connection with the PECIP program during FY 1974 were as follows: (1) Step-by-step instructions were issued to all AMC activities for acquiring quick payment equipment with particular emphasis on funding procedures; (2) authority was requested from DA to raise the limitation from $1,000 to $25,000 on the purchase of equipment from AIF capital; and (3) approval was requested from DA to raise the

limitations on AMC's authority to procure Commercial and Industrial Type Equipment (AR 235-5) from the current $25,000 and $50,000 limitations to $200,000 and $300,000, respectively.

Quantitative Budget Analysis (QBA)

(U) The Command Analysis of OMA Funding System was expanded into the working conceptional philosophy of QBA. Instead of a rigid system, QBA was based on one phrase, "workload justifies resources". Under this philosophy any and all analytical techniques may be used. QBA seminars, outlining many of the analytical tools available and their proper use, were given to all Commodity Commands, Depots, and MIDA. Instructions in these techniques were also given to HQ USAREUR, HQ USARPAC, and HQ SOCOM. Other elements of the Federal Government were interested and received information briefings.

Multi-Access Retrieval System (MARS III)

(U) In the first quarter of FY 1974, a Cathode Ray Tube (CRT) was installed in a Comptroller office, enabling budget analysts to gain access to installation or Program Element details through a budget data Multi-Access Retrieval System (MARS III).

(U) Using this system, it was found that data could be displayed and mathematical calculations could be employed at AMC against any of the data stored in the Tobyhanna AD computer. At the end of FY 1974, only the OMA and AIF 159 Reports (Appendices A and B of AMCR 37-19) were on the line for test purposes. Evantually, the entire AMCCP-159 Report (OMA, OMAR, AIF, Base Ops) was to be available on the CRT as well as Program and Budget Guidance (PBG) data.

Cost Analysis

(U) Army Regulation 37-18 Revision. A revision to AR 37-18 incorporating the concepts of the new Materiel Acquisition Guidelines specified in AR 1000-1 and HQ AMC current philosophy concerning key cost definitions, design-to-unit-production cost and budget guidance was prepared and submitted to COA. The significant aspects of the revision included reorganization of the cost element structure display and Flyaway and Weapon System Cost definitions aligned with current budget guidance as interpreted by the cost analysis community. A budget guidance display, predicated upon MIL-STD-881 revision as the budget guidance base and the inclusion of all PEMA funds in procurement cost was recommended as an appendix.

(U) AMC Data Base Seminar. In August 1973, cost analysis representatives from this Office and the major subordinate commands met at this headquarters to discuss cost data base activities, organizations and programs. A follow-on conference was held at MICOM in

September. After the conferences, the commands focused on summarizing costs for systems identified under the comptroller objectives.

(U) Weapon System Historical Data Base. In August 1973, AMC cost analysis initiated a command-wide effort to improve cost data bases used for weapon system cost estimating. Impetus for this program was provided by the increased demand for historic cost information at this headquarters and major subordinate commands. Specific improvements were made in the methods of data collection by identifying detailed data structure requirements (both cost and performance) peculiar to each type of commodity. Emphasis was placed on documenting cost and performance data, in structured format, for a definite list of historic systems. Each subordinate command provided summary level data for use at HQ AMC and other agencies.

(U) Contractor Cost Data Reporting (CCDR) System. On 3 October 1973, the Joint Logistics Commanders were briefed on the history and status of the CCDR system. The guide was published as Army Materiel Command Pamphlet AMCP 715-8, Naval Materiel Command Pamphlet NAVMAT P-5241, Air Force Logistics Command Pamphlet AFLCP 800-15 and Air Force Systems Command Pamphlet AFSCP 800-15, effective 5 November 1973. The system will be used to collect contractor cost and performance data for non-firm-fixed price contracts greater than two million dollars. The AMC Comptroller, Cost Analysis Division sponsored a CCDR Seminar held at MICOM on 30-31 May 1974. The purpose of the seminar was to provide Army personnel with a common ground for exchanging information related to the CCDR system and its implementation. Participants from Department of Defense components including Air Force, Navy, OSD, and Army discussed the philosophy behind CCDR, the relationship between CCDR and other management systems, its application to programs and contracts and the uses of the data obtained from the CCDR system.

(U) Design-To-Unit-Production-Cost (DTUPC). Design-to-Cost requests from the DA early in FY 1974 highlighted the lack of consistent understanding of what cost elements were included or excluded in design-to-unit-production-cost (DTUPC) data. To identify the specific problem areas, a request for detailed DTUPC data was made to selected project managers. Data on the Advance Attack Helicopter (AAH), Armored Reconnaissance Scout Vehicle (ARSV), Bushmaster, Heavy Lift Helicopter (HLH), Mechanized Infantry Combat Vehicle (MICV), SAM-D, STINGER, Utility Tactical Transport Aircraft System (UTTAS) and XM-1 Tank were received, reviewed and compiled for submission to the Comptroller of the Army.

(U) This Office provided development and coordination which led to the publication of the Joint Logistics Commanders (JLC) Design-To-Cost Guide, AMCR 700-6, dated 3 October 1973. The guide

provides information and guidance for application of the Design-To-Cost concept throughout the Army, Navy and Air Force, carrying the weight of the JLC as it points the way for future evolution of the concept within the defense community.

(U) Visibility and Management of Support Costs. AMC Cost Analysis supported the OSD Task Force concerned with developing a cost effective system to identify maintenance and other support costs by weapon system. The study was initiated by the Deputy Secretary of Defense on 25 January 1974 and focused attention on providing greater visibility and management to work and performance data and the design of a uniform system to collect cost by weapon system rather than by organization and function. The Army briefed the OSD Task Force on 2-3 April 1974. Assistance with regard to depot maintenance and central supply information was provided by AMC. Continued Cost Analysis support will be provided through FY 1975.

(U) Technical Risk Assessing Cost Estimates (TRACE). In April 1974, an analysis was completed of five Army SAR systems utilizing the TRACE technique, including in addition to technical risk, management and economic uncertainty to provide visibility for the assignment of risk to decision delays, schedule stretchouts, technical problems and economic factors. The TRACE technique is a method proposed by the Assistant Secretary of the Army (R&D) for identifying additional program dollars as a reserve against future risk and uncertainty. The AMC analysis provided risk factors which were weighted averages reflecting cost growth dollar values for each of the five systems. Copies of this analysis were provided to all major subordinate commands and project managers. Further analysis of other SAR systems for TRACE factors were intended for FY 1975.

(U) Computer-Aided Indexing. The Cost Analysis Document Center computer-aided indexing project was expanded into an overall plan for the Cost Data Base System (CDBS) during the fourth quarter FY 1974. The CDBS preliminary plan included computer-aided indexing linked to potential microfilm and computer processing of cost data base materials complementary to the DDC and DLSIE data banks. First implementation of the plan included computer-aided printing of a "List of New Materials Received" for the first half of CY 1974 for a Cost Analysis Information Exchange. The implementation of Keyword-in-Context (KWIC) or Keyword-out-of-Context (KWOC) Indexes was scheduled for first quarter FY 1975. Materials indexed by the system were limited to those for which DDC and DLSIE data banks were too broad to serve the needs of the cost estimating community.

(U) Materiel Acquisition Guidelines. The basic policies for materiel acquisition for DA were in the process of major revision to accommodate changes recommended by various study groups such as AMARC.

The impact of the issuance of new policy guidelines on existing AMC cost analysis requirements and basic policy for program cost controls within the materiel acquisition process were assessed. Major policy changes include the following: (1) a Letter of Agreement jointly negotiated by the materiel developer and the combat developer would provide rationale for the continued interest in a system concept and constitute a requirement document for an advanced development program, and (2) a Required Operation Capability (ROC) document would not be considered as the basic document for securing the Army's commitment to pursue full-scale development of a system. The newly developed materiel acquisition policy revisions and their implementation guidance, were expected to be formalized during the early part of FY 1975.

(U) Inflation History Guidance. There were two revisions to the OSD price level indices in FY 1974. The price level indices were increased in August 1973 and reflected in guidance issued by AMC in September 1973. Then in December 1973, OSD revised the price level indices downward and this change was reflected in AMC guidance in January 1974. A change in expenditure, or outlay, rates was issued by OSD in March 1974 which AMC implemented the same month. Since both price level indices and outlay rates were included in the composite indices published by AMC, three different sets of composite rates were issued by AMC in FY 1974.

(U) Continuing concern over the inadequacy of OSD price level indices in reflecting experienced cost inflation resulted in studies of price increases in AMC procurement. Cost Analysis participated in and provided analyses of studies finalized in September and December 1973 and in May 1974. The September study revealed substantial price increases, but the ranges of price increases were quite widespread, and efforts to reduce variances in increases of similar items in studies finalized in December 1973 and May 1974 were unsuccessful. At year end, a letter advising project managers to develop and use specific data in reflecting current and prior year inflation was in preparation. Also, a two-phase DA/AMC study was initiated to compare FY 1974 actual costs with FY 1974 budget estimates. Phase I of the DA/AMC study was to be completed by 5 August 1974.

(U) Product Improvement Program. There were two major procedural changes in the development, review and approval process for the Product Improvement Program. These were: (1) recision of the requirement to resubmit on an annual basis PIP's which had been approved in prior years - except for those projects where there was a significant change in original cost estimates (25% or 1 million) on scope of work; (2) AMC approval thresholds as prescribed by AR 700-35 were increased to $1 million for one year or $3 million over five years for an out-of-production items, and $3.5 million for one year and $17.5 million over five years for an in-production item. In addition, AMC was authorized to approve urgent deficiency correcting product improvements

separately from the annual Product Improvement Program submission. This reduced the number of complete PIP's which had to be prepared and processed through the system. Increased Comptroller involvement especially at the MSC level in the validation of cost estimates and Economic Analysis resulted in improved program submissions.

(U) Cost Study Analysis/Support. During FY 1974, the Cost Analysis Division conducted reviews and analyses of costs for major materiel systems and otherwise provided coordination and validation support for DA cost effectiveness studies and special cost studies. Independent Parametric Cost Estimates (IPCE's), Baseline Cost Estimates (BCE's), DA Program Report (DAPR) presentations, other special studies and study support are summarized in the following topics.

(U) Independent Parametric Cost Estimates. DOD policies governing the materiel acquisition process required an Independent Parametric Cost Estimate (IPCE) for each major weapon system undergoing a milestone review by the Defense Systems Acquisition Review Council (DSARC). The IPCE is prepared within Comptroller Cost Analysis channels independent of the influence and control of either the contractor(s) or Project Manager concerned. It is used to assess the reasonableness of the PM's estimate of the cost resources required to complete the program. IPCE activity during FY 1974 included three completed studies and four in-process as follows:

Completed.

(1) XM-198 - on current program.
(2) HLH - in support of a special ASARC on the HLH program. The study addressed three development and three procurement options.
(3) AN/TTC-39 - to support a decision regarding the program's entry into full scale development phase. The study addressed four different development and procurement options.

In-Process.

(1) Bushmaster (VRFWS).
(2) TACFIRE.
Advanced Scout Helicopter (ASH)
Utility Tactical Transport Aircraft System (UTTAS)

(U) Baseline Cost Estimates (BCE's) and BCE Reassessments. Baseline Cost Estimates are normally prepared by the Project Management Office and reviewed and coordinated by the Cost Analysis Office at the

major commodity commands and HQ, AMC. Initial BCE's form the basis for a cost trail/track throughout the life cycle of a weapon system. Reassessments are made at major decision points and tracked to the initial BCE. The following systems required BCE's or reassessments during FY 1974:

AAH	ADAM Projectile XM-692E1
AEWSPS	Air Traffic Control AN/TSQ-97
AN/TSQ-73	Artillery Munitions
BUSHMASTER, GOCO & COCO	DRAGON
FAMECE	FATT
Hand Held Thermal-IR Viewer	HET
HLH	Improved HAWK
Medium SAM-D	MICV Firing Port Weapon
Non-Nuclear LANCE	PERSHING
Position/NAV COEA Cost Input	Radars AN/TPQ-36, AN/TPQ-37
REMBASS	SINGAR ROC
STARCOM	STINGER
Tactical Landing System/AN ARQ-21 and AN/TRQ-33	
Tactical Operating System (TOS)	TACSATCOM
TOW COBRA	Tri-Tac Switch AN/TTC-39
152mm Ammunition	155mm Binary Projectile XM-687
XM-1 Tank	XM-198 CAWS
XM-204 Howitzer	XM-224 Mortar
XM-700 Ammunition	XM-712 CLGP Ammunition

(U) Department of the Army Program Report (DAPR's) Presentations. AMC was tasked during FY 1974 to develop in coordination with Department of the Army a new approach for briefing appropriate members of the Army Secretariat and the General Staff. DAPR's covering technical performance, schedule and cost information on selected weapon systems are prepared each quarter coinciding with the SAR submission by the Project Managers. In addition to the written DAPR, three weapon system PM's will be called upon each month to brief the Under Secretary of the Army and selected DA staff members. The cost information provided for 20 major weapon systems was reviewed, evaluated, and commented on by the Division during FY 1974 including:

AAH (Advance Attack Helicopter)
AN/TPQ-37 (Mortar/Artillery Locating Radars)
AN/TTC-39 (Multi-Service Communications Systems)
BUSHMASTER (Vehicle Rapid Fire Weapons Systems)
CLGP (Cannon Artillery Weapons Systems)
DRAGON (DRAGON Missile System)
HELLFIRE (HELLFIRE Missile System)

HLH (Heavy Lift Helicopter)
IMPROVED HAWK (HAWK Missile System)
LANCE (LANCE Missile System)
MICV (Mechanized Infantry Combat Vehicle)
NAVSTAR-GPS (Satellite Communications)
PERSHING II (PERSHING Missile System)
SAM-D (Surface to Air Missile - Development)
SHORADS (Short Range Air Defense System)
STINGER (STINGER Missile System)
TACFIRE (Army Tactical Data Systems)
UTTAS (Utility Tactical Transport Aircraft System)
XM-1 (XM-1 Tank System)
XM-198 (Cannon Artillery Weapons Systems)

(U) Special Studies of Cost and Operational Effectiveness Analysis. A major unexpected workload this year was generated by the so called "COEA Catch-up" program. This was a HQDA requirement to complete, on an expedited basis, Cost and Operational Effectiveness Analyses on a number of weapons systems now in the acquisition process. Costing effort in support of COEA's was considerable because of the large number of alternatives involved in such study. Major studies completed or in progress during FY 1974 were:

Armored Reconnaissance Scout Vehicle (ARSV). Cost inputs to support a preliminary HQDA program review were prepared for seven vehicle and eleven weapon system alternatives. Following an early FY 1975 IPR, more refined costs were to be required on a reduced number of alternatives.

BUSHMASTER (VRFWS) COEA. Seven system alternatives were costed in support of this study, which in turn supported a DOD review of the program scheduled for early FY 1975.

BUSHMASTER "Long Range-Short Range". Cost estimates were developed and provided to DA for new foreign candidate weapons and modified versions of existing developmental weapons for both long-range and short-range requirements.

CH-47 Modernization Program. A cost and economic analysis to compare five alternative CH-47 fleet variations involving modernization of existing aircraft versus new procurement of aircraft was completed in September 1973.

CHAPARRAL-VULCAN Air Defense System. Updated cost data and estimates for the FAAR competitive second procurement and Product Improvement Program proposals for CHAPARRAL and VULCAN were provided to DA.

Division Air Defense System (DIVADS) Study. DIVADS was a follow-on to SHORADS and assessed the Division Air Defense System requirements. The study was scheduled for completion during FY 1975.

FOREIGN VEHICLES. Cost estimates were provided to DA for captured Russian vehicles.

HELLFIRE. An alternative COEA study being performed by CDC/TRADOC was supported by providing cost data from the command. Cost studies were also in progress for input to the HELLFIRE and CLGP COEA's.

Infantry Weapon Cost Estimates. Acquisition cost estimates for MICV Firing Port Weapon and the Squad Automatic Weapon (SAW) were provided to DA.

Positioning Navigation (POS/NAV) Study. Developing costs and measuring the relative effectiveness of various methods of military surveillance and navigation equipment were conducted. This included types of devices, methods of deployment, optumum mix and time phasing of systems, as well as the cost for each alternative.

Short-Range Air Defense (SHORAD) System Study. The SHORAD cost study was completed during FY 1974. The study assessed the requirement for a SHORAD missile in the Army. It involved life cycle costs for 12 systems at various force structure levels.

TACFIRE COEA. Costs were being provided for the COEA supporting the December 1974 TACFIRE program review. This study compared the cost-effectiveness of TACTIFE in its nine variations with the present manual operation.

Finance and Accounting:

(U) Accounting Systems Approval by the Comptroller General. Documentation of the SPEEDEX Accounting System was submitted to GAO for their initial review. Part II (Systems Design-Accounting) was approved for informal submission and Part III (Systems Design-ADP) was under review by GAO-ADP personnel and HQ USAMC-D/MIS personnel. Cross-referencing of the TEAM-UP Accounting System to the GAO Review Guide has been completed. Initial submission was scheduled for FY 1975. Cross-referencing of ALPHA documentation to the GAO Review Guide began late in FY 1974 with the initial submission scheduled for December 1974. The GAO Review Guide for USAMC Arsenals/Laboratories Accounting Systems were to be submitted to GAO as soon as documentation became available to cross-reference to the GAO Review Guide. Submission was scheduled to be NLT FY 1976.

(U) Standardization of Accounting at Arsenals. This Headquarters initiated a concept of centralized allotment accounting for arsneals and a standard AIF accounting system to be utilized by all arsenals.

ARMCOM has been given responsibility for development and implementation of the above. Work on the above will begin early in FY 1975 with implementation at a prototype cite on 1 July 1975 and total implementation on 1 July 1976.

(U) AMC Accounting Surveillance Program. During FY 1974 the AMC Accounting Surveillance Program continued to receive command emphasis. Eighteen visits were conducted during the year to MSCs, depots and installations which report directly to HQ AMC.

(U) Centralization of OMA Funded Reimbursements in Support of International Logistics. During FY 1974 plans were finalized to centralize the administration and control of the OMA Funded Reimbursements related to IL programs at AMC Headquarters, effective 1 July 1974. This centralization was expected to provide greater visibility and flexibility in utilizing the OMA earnings generated in support of the International Logistics Programs. Under these procedures NICP's would report monthly, orders received and earnings to Headquarters, AMC. ILC would report collections on a monthly basis. F&A Division was to consolidate these data into the CSCAA118 report.

(U) OMA/PEMA Split. During FY 1974, revised DA policy applicable to reimbursements to OMA for PEMA procured items shipped to IL customers from stock prescribed that new items and first time issues would be entirely credited to the PEMA account with no reimbursements to OMA. To implement this policy guidance was developed and disseminated as follows: (1) for secondary issues, a formula was developed for establishment of new percentage factors to be applied to determine the OMA/PEMA split; (2) issues of PEMA principal items would be treated on an individual basis to determine whether items shipped from stock were first time issues (new) or rebuilt. Only on rebuilt items will there be reimbursements credited to OMA.

(U) Test and Evaluation Cost Accounting and Reporting System TECARS). AMCR 37-54 pertaining to TECARS was developed by direction of the Commanding General. TECARS was designed to provide command-wide cost data for utilization in the financial management process of Test and Evaluation (T&E) resources. The report formats were designed to display cost data in the following stratifications: (1) In-house/out-of-house T&E funded and military personnel costs; (2) total T&E cost incurred by each benefiting appropriation; and (3) total T&E cost incurred in the improvement of testing methodology, procurement of instrumentation, consumption of end-items, and performance of each individual type of test . Systems enhancement effort was continuing to increase reporting frequency and to develop a project manager stratification.

(U) Transfer of International Logistics Function from US Army Finance Support Agency to AMC. During FY 1974, USAMC assumed the fiscal operation function of the International Logistics program. This operation was transferred from DA effective 1 January 1974 and was assigned to ILC. AMC accepted account balances based upon December 1973 status reports prepared by FSA. This new function was primarily involved in the billing and collecting for FMS, controlling Grant Aid funds and reimbursing the MSC's for materiel and services furnished under Grant Aid and FMS programs. Since assuming this mission, considerable effort was devoted to reducing the backlog in billings and collections and reconciling balances transferred from FSA.

(U) SPEEDEX Civilian Pay and Leave Accounting (Standard System). During FY 1974 the SPEEDEX Civilian Pay and Leave Accounting System was implemented at the remaining USAMC depots and at the close of FY 1974, this system was operational at all USAMC depots. Since this system was accepted by COA to be the basic Standard Army Civilian Pay System (STARCIPS) a users manual and DFSR was required. Functional assistance was provided the task group at LSSA by representative of the Conptroller Directorate. In August 1973 these manuals were printed and furnished to DACA.

(U) Financing of Tenant/Satellite Activities through AIF. Current DOD Instruction (DODI 7410.4) precludes the financing of tenant/satellite direct mission costs through the host installation's industrial fund. The separate accounting treatment afforded tenants' direct costs is tantamount to operating an additional system and not consistent with standard (single) accounting system concepts. The AMC Comptroller, Finance and Accounting Division is the action office responsible for submitting a request to OSD through DA to rescind or revise the DODI. A request was forwarded to DA in May 1974, but it was returned for further action. DA desires data which would more fully explore the impact of the requested change. Accordingly, Finance and Accounting Division was to study the matter further and prepare an economic analysis and forward it to DA for evaluation. The study was scheduled for completion by 3rd Quarter FY 1975. If favorably adopted, it was desired that the revised procedures become effective in FY 1976.

(U) Standard Accounting System for TECOM Proving Grounds. TECOM initiated a request to HQ AMC in January 1974 for improving its accounting systems for Proving Grounds. TECOM currently uses several different systems for financing tests under TEAM-UP. TECOM proposes the industrial fund system as being the one which can best serve its purpose, and has requested a charter change for the AIF. The AMC Comptroller, Finance and Accounting Office was the action office responsible for obtaining the charter. Several briefings were made which include Deputy Commander, AMC, Office of Chief Research And Development, DA, Office of Comptroller of the Army and AMC Directorate for RD&E. A charter change request was forwarded by AMC to DA in July 1974. The target date for implementation was set for 1 July 1975.

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(U) Uniform Maintenance Cost Accounting. In 1972, a joint logistics panel with representatives from Army, Navy, and Air Force was formed, (LSPC Task Order 1-73) to develop a uniform accounting system for DOD-wide depot level maintenance cost accounting and production reporting. The Finance and Accounting Division assisted the joint panel in developing new and revised policies and a manual to be used by the three Services. These efforts were primarily in staffing and comments. With the manual in hand, Finance and Accounting Division provided a full time representative to a sub-panel to determine the impact of revised procedures upon AMC's maintenance planning, programming, accounting and reporting. The study of impact was to be completed in 1st Qtr, FY 1975 and presented to the joint panel. The joint panel in turn was required to report to the Joint Logistics Commanders. For planning purposes, implementation was being scheduled for the FY 1979-1980 timeframe. Concurrent with these efforts, revised policies and procedures were being formulated for contract maintenance under national maintenance contracts.

(U) AIF Inventory Management Study. A cost/benefit study was completed of three alternatives for financing and management of retail supply support at AMC installations, all of which were under AIF or scheduled to be financed by AIF. Finance and Accounting Division represented AMC on a DA Task Group and provided the input needed for DA presentation to OSD. One alternative was to extend the retail ASF management and financing system to all AIF installations. The second and third alternatives provide for the discontinuation of the ASF retail financing system but retaining in full or in part certain management features of ASF, viz., stratification of inventories under financial inventory procedures and cash controls. The AMC position, which was to be presented to DA in September 1974, was to provide a standard AIF system of financing and managing retail inventories through revised AIF procedures that would provide asset visibility above AMC level while maintaining essential internal control features for sound inventory management. It was expected that DA would forward the AMC study to OSD, and if approved, implementation of the accepted alternative will commence by 1 July 1975 at all installations except the ARMCOM arsenals. The arsenals were to be scheduled for FY 1977.

(U) Army Industrial Fund (AIF) Activities - Additions and Reductions. Three depots, Seneca, Savanna, and Sierra, were added to AIF due to its extension 1 July 1973. Three depots had been or were in the process of being dropped from AIF. Granite City's AIF was closed. The AIF operations at the US Army Support Center and Atlanta Army Depot ceased as of 30 June 1973 and 30 June 1974, respectively. The books at both depots were to be closed during FY 1975. Phase II of the AIF extension into depots was primarily concerned with the capitalization of the AMC Installation Stock Fund into the AIF. Although policy guidance was issued, implementation of this phase was contingent upon DA/OSD approval of an AIF Inventory Management System. The AMC Comptroller, Finance and Accounting Division with LSSA, Letterkenny, was working on this phase.

Internal Review and Audit Compliance

(U) Internal Review and Audit Compliance Workshop. The second annual Internal Review and Audit Compliance Workshop was held in St. Louis, Missouri 11-13 September 1973, hosted by AVSCOM. The 89 participants represented AMC Installations, DA, STRATCOM and FORSCOM. The purpose of the workshop was to provide interchange and resolution of problem areas impacting on AMC both currently and in the foreseeable future which were of concern to AMC Comptrollers. The program included guest speakers, case study problems and general discussion of potential problem areas.

(U) U. S. Army Audit Agency Evaluation of Internal Review Functions. The US Army Audit Agency in its reports on the "Evaluation of Internal Review Functions" covering the various Army Commands, conducted during the past two years, reported that the AMC had a viable and efficient Internal Review Program that far surpassed all other Army Commands. Subsequent to its first report, the then Comptroller of the Army, in a letter to the Comptroller this Headquarters, expressed a great deal of pleasure upon learning of the commendable manner in which this Headquarters'functional element was being performed. He stated that the AMC Internal Review Function ranked with the best in the Army. There were certain areas in the field program that were in need of improvement. The Army Audit Agency, in its last report on its Evaluation of Internal Review, 1 February 1974, emphasized the problem of undercutting staffs as well as assigning non-professionals in auditor positions. AMC strove constantly to avert adverse actions whenever known. Another significant point raised by the AAA was the cancellation over a year ago of the internal review course offered by the US Army Finance School. There no longer exists a centralized source of resident training for internal review personnel. The AAA recommended that DA assume responsibility for establishing formal audit training programs for all grade levels.

(U) Timeliness of AMC Responses to External Audit Reports. Audit compliance workload for FY 1974, in terms of preparation and coordination of command replies to audit reports issued by the General Accounting Office (GAO), the Army Audit Agency (AAA), the DOD Deputy Comptroller for Audit Operations (DCAO), and public accounting firms, increased 35 percent over the previous fiscal year. Despite this sizeable increase in workload, 90 percent of the 258 replies prepared during FY 1974 were processed to DA staff offices or agencies on or before established suspense dates. The improvement in AMC reply timeliness over the past three fiscal years is reflected in the following tabulation:

Fiscal Year	On Time To DA	Late To DA	Total No. Of Cases	Percent On Time
1972	208	47	255	82
1973	167	24	191	87
1974	233	25	258	90

(U) The trend toward attainment of AMC's timeliness goal (92 percent) was attributed to commandwide response to continuing AMC Command Group and Comptroller efforts to upgrade the quality and timeliness of command replies to external audit reports. In a climate of reduced manpower and increased workload, AMC's challenge in the field of audit compliance for FY 1975 was greater than at any other time during the previous twelve years of the command's existence.

Management

(U) Comptroller Evaluation Surveys. The Comptroller, HQ AMC, established the avaluation of all MSC Comptroller Offices as a major program objective for FY 1974. The evaluation covered all functional areas of the Comptroller and was intended to assist the MSC Comptrollers in determining the effectiveness of their offices. The objective of the surveys was successfully completed. Each Comptroller received a comprehensive report of his office and, in addition, a "LESSONS LEARNED" paper covering all the surveys was prepared and distributed to all MSC Comptrollers. The evaluation of depots is scheduled in FY 1975.

(U) Defense Industrial Management Engineering System (DIMES). The emphasis of the AMC DIMES/Work Measurement Program during FY 1974 was on the utilization of data for management purposes. Standardization of work units, methods, and standards throughout Major Subordinate Commands was one of the major objectives in AMC during FY 1974 and was to be a continuing effort during FY 1975. The System-wide Project for Electronic Equipment at Depots Extended (SPEEDEX), standardized Management Information System was implemented by all major depots during FY 1974. Ammunition depots implemented SPEEDEX on 1 July 1974.

(U) Efficiency Effectiveness Evaluation System. A system to measure the efficiency and effectiveness of AMC depots and commodity commands was devised and implemented during FY 1974. This unique AMC approach to productivity measurement evaluates activities on the basis of how resources are utilized (efficiency) as well as mission accomplishment (effectiveness). Activities are compared with themselves over time in relation to a FY 1969 base period. Through a pyramiding technique the system enables managers/commanders to pinpoint problem areas. Data from the DIMES Program is integrated with

selected workload factors to arrive at productivity indices of dollars and manpower and a performance efficiency index. The functions of supply, maintenance, base operations and central procurement are evaluated. AMC has been recognized as a leader in productivity measurement as a result of the above system. Briefings have been given at all levels of government including Elmer B. Staats, Comptroller General of the United States. Continued expansion and refinement of the system is expected to promote improved productivity throughout AMC.

(U) Comptroller Career Program. The Comptroller initiated action to establish a Career Executive Group which would consist of comptroller careerists having potential to reach executive/managerial positions, as well as those incumbents in such positions. During FY 1974, the criteria were established for comptroller executive/managerial positions and 85 executive/managerial positions were identified. An additional 123 individuals were identified as having the potential to fill these positions. The number of executive/managerial positions and individuals with the potential to fill these positions was to be updated during FY 1975 based on field submissions.

Review and Analysis

(U) Command Management Review and Analysis (CAMERA) Briefings. The principal activity of the AMC Comptroller Review and Analysis Division was to provide the Command Group with in-depth analysis, corporate and indicator reviews of selected organizations (or collective groups of organizations such as AMC Major Subordinate Commands or Depots), Major Weapons/Equipment Systems or Functional Programs. The purpose was to focus attention on or facilitate command decisions on critical situations. The following CAMERA briefings were presented to the Command Group in FY 1974:

MONTH	CAMERA NO.	TITLE
(1973)		
Jul	1-74	Major Weapons Systems Review
Jul	2-74	Engineering Changes
Oct	3-74	AMC Overall Performance Indicator Review (4th Quarter, FY 1973)
(1974)		
Jan	4-74	Equal Employment Opportunity (Phase I)
Jan	5-74	AMC Overall Performance Indicator Review (1st Qtr, FY 1974)
Feb	6-74	RAM Program
Mar	7-74	Depot Maintenance and Related Services
Apr	8-74	Ballistic Research Laboratories (BRL)
Apr	9-74	Review of Basic Research and Exploratory Development at MICOM
Apr	10-74	AMC Overall Performance Indicator Review (2d Qtr, FY 1974)
May	11-74	AMC Overall Performance Indicator Review (3d Qtr, FY 1974)
Jun	12-74	RDT&E College and University Contracts

(U) Evolution of Quarterly Reviews. During FY 1974, the techniques for the quarterly Overall Performance Indicator Review and Analysis (OPIRA) presentations were refined and polished and received considerable attention throughout AMC and other federal agencies. Major improvements in the OPIRA's themselves included the development of a composite indicator to evaluate installation and activity performance in the Equal Employment Opportunity program, as well as an indicator to reflect the Supply Operational Readiness of the several commodity commands on a weighted and equitable basis. Both of these indicators were accepted by the Command Group and have become standard features of the OPIRA's. During the year, the indicators used for comparative performance ratings and rankings of the commands and depots were stabilized to a great extent, as were the weights applied. Because of widespread interest among field commanders in their relative standings, the techniques developed for these rankings have been widely emulated throughout the Command, and each further refinement or change is thoroughly evaluated for its relevance and significance. These actions have also stimulated several of the Headquarters functional directorates into developing their own, more detailed but similar, evaluation systems. Formal presentations of OPIRA's were made at the overall AMC Commanders' Conference at St. Louis in October, 1973 and at the Depot Commanders' Conference at Red River Army Depot in May 1974. In addition, the review covering FY 1973 was presented in November 1973, at a DOD symposium sponsored by the Benefit/Output Determination Committee of the Defense Economic Analysis Council. This presentation was made jointly with the Management Division to reflect AMC progress in the measurement of efficiency and effectiveness, as part of the government-wide drive to enhance productivity in operations.

(U) Reliability, Availability, Maintainability (RAM) CAMERA. During the Second Quarter, FY 1974, the Comptroller conducted a review and analysis of RAM requirements in contracts having a cost of one million dollars and over. The review covered a sampling of contracts awarded during the period July 1972 through June 1973 by each of six commodity commands of the Army Materiel Command. The results of the review and analysis were presented to the Commanding General, AMC and the AMC Command Group in a RAM CAMERA on 27 February 1974. It was shown that approximately half of the contracts reviewed did not specify RAM requirements. The conclusion was presented that contracts placed by AMC do not specify RAM requirements (goals, objectives, or stated values) in all cases where it is possible to do so. Based on the CAMERA presentation the Commanding General directed the following. First, that a RAM presentation be included on the agenda for the Conference of AMC Commanders to be held at MICOM, 22-24 April 1974. The Director for Quality Assurance, HQ AMC, made the presentation. Second, that new policy guidance on RAM in contracts be developed by the Director, Quality Assurance and the Director, Requirements and Procurement. The policy guidance was issued in AMC

Procurement Circular No. 715-4-74, Subject: RAM Requirements in Solicitations and Contracts, dated 4 April 1974. Finally, the Comptroller was directed to make a follow-up review of the results of implementation of the RAM policy guidance in FY 1975.

(U) Improving Review and Analysis AMC-wide. As part of a continuing effort to improve the accomplishment of review and analysis in the field, the Division Chief visited one depot and four Class II activities. In addition to staff visits to field installations, meetings were held with several new installation commanders and their comptrollers at which time mutual problems were discussed and resolved. One visit was made by the Chief, Command Management Review and Analysis Branch to the Army Materiels and Mechanics Research Center to further the Review and Analysis Program and four staff visits were made to MSC's as part of the Comptroller Evaluation Survey Team.

(U) Cost Reduction Program Transfer. The Cost Reduction Program, managed and coordinated by the AMC Comptroller Review and Analysis Division for eleven years, was transferred in its entirety to the AMC Comptroller Management Division on 17 August 1973 where it was incorporated into the new Department of Army Management Review and Improvement Program (DAMRIP).

Installations and Services *

Overview

(U) During FY 1974, the Directorate for Installations and Services continued its responsibility for the management of the physical facilities at the major subordinate commands and installations and activities in the AMC complex and for the logistical support required to maintain and operate the 140 AMC installations and activities throughout CONUS. Significant actions during FY 1974 of the Real Property Management, Installation Logistical Support, and Communications-Electronics Divisions are highlighted below.

(U) The structure of the directorate was not changed during FY 1974; however, there were changes in functions and related personnel spaces. The Communications-Electronics Division remained under the Director of Installations and Services for administrative support, but was assigned to the Director of Communications-Electronics for operational control. The position of Transportation Operations Specialist in the Installation Logistical Support Division was abolished.

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* The material in this portion of Chapter II was furnished by the HQ AMC, Directorate for Installations and Services.

(U) The authorized and on-board strengths by organizational element, as of 30 June 1974, were as follows:

	Military		Civilian	
Element	Auth	Asgd	Auth	Asgd
Office of the Director	1	1	2	1
Plans, Programs and Admin Ofc	0	1	7	6
Real Property Mgt Div	1	3	24	21
Installation Log Supt Div	0	0	10	10
Com-Electronics Div	0	0	22	20
Total	2	5	65	58

AMC Energy Coordinating Center

(U) An AMC Energy Coordinating Center was established on 26 November 1973 and consisted of one commissioned officer and a Specialist-Fifth Class, Administrative Assistant. The office responsibilities included: development of AMC Energy Policy; coordination of energy requirements with staff directorates and major and direct reporting commands; preparation of Weekly Energy Situation Reports; and management of the AMC Energy Conservation Program.

(U) An AMC Energy Conservation Plan, signed by the Chief of Staff, AMC, was published on 11 December 1973. This plan provided specific goals, objectives, and guidance necessary to function effectively within energy constraints applied by higher headquarters.[1]

(U) An AMC Award for Energy Conservation was established to recognize worth-while efforts in energy conservation.[2] This award provides recognition to the major subordinate command with the largest percentage reduction in energy consumption; the Depot with the largest percentage reduction in energy consumption; and to the employee or group of employees offering the most significant energy saving achievement. The award consists of plaques for the organizational winner and schrolls to the individual or group winners.

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[1] Headquarters, AMC, Energy Conservation Plan, 11 December 1973.

[2] Headquarters, AMC, Letter, Subject: Awards for Outstanding Achievements in Energy Conservation, dated 7 May 1974.

(U) An AMC pamphlet on Energy Conservation, suitable for distribution outside of AMC and DOD channels, was published.[3] The purpose of the publication is to relate the lessons learned and experiences of AMC in dealing with the energy crisis and to convey to outside organizations that AMC is taking aggressive steps to solve the major problems facing us in the short, mid and long term.

(U) Two major energy briefings were presented by the Director of Installations and Services.[4] The purpose was to examine the present situation and their look into the months and years which lie ahead. During these briefings the standings of commands on Energy Conservation performance for the first nine months of FY 1974 were presented. In looking ahead to the future, plans to seal up leaking plants and the tackling of technology were discussed.

Military Construction

(U) The FY 1974 Military Construction, Army (MCA) Program for AMC, consisting of 64 projects with an estimated cost of $68.2 million, was being reviewed by Congress for authorization and funding. Hearings before the Congressional Committees were in progress. The AMC FY 1975 MCA Program was undergoing review by DA and contained 57 projects at an estimated cost of $115.9 million. The program guidance for the FY 1976 MCA Program was developed and forwarded to the field.

(U) The AMC segment of the FY 1974 Military Construction, Army Program, authorized and funded by Congress in December 1973, contained 49 projects at an estimated cost of $52,507,000 as follows:

Category	No. Projects	$000
Bachelor Housing	9	$21,731
Community Support	1	1,602
Pollution Control	27	9,513
Maintenance and Production	3	5,244
Research and Development	2	3,153
Supply	1	5,196
Administration	2	1,205
Utilities	2	2,157
Land Acquisition	1	2,706
Total	49	$52,507

[3] Pamphlet, "AMC meets the Energy Crunch," undated.

[4] Energy Update Briefing at Commanders' Conference, Huntsville, AL, 23 Apr 74 and at Depot Commanders' Conference, Red River Army Depot, 7 May 1974.

(U) Congress denied fifteen projects as follows:

INSTALLATION	DESCRIPTION	$000
Aberdeen PG	Human Factors Engr Research Lab	$2,962
	Chapel Center	1,500
AMMRC	Dynamic Deformation of Mat Lab	325
Frankfort Arsenal	Barracks Modernization	73
Fort Monmouth	Alter Classrms for Language Lab	2,097
	R&D Electronics Instal Fac	590
	Dental Clinic	1,198
Picatinny Arsenal	Explosive Lab Addn	2,660
Savanna AD	EM Barracks w/mess	859
	BOQ	1,774
	Security Lighting	113
White Sands MR	SAM-D Remote Area Test Fac	116
	Post Library	339
	Addn to Bell Gym	157
	Water Wells	316

(U) Department of the Army funding guidance to AMC for the FY 1975 MCA program was $90 million plus an overprograming limit of 125 percent which increased the dollar guidance to $112 million for FY 1975. AMC submitted 57 projects with an estimated cost of $115.9 million. The Department of the Army and the Department of Defense approved and submitted to Congress 41 projects totaling $58.6 million. Congressional Committee review was underway but no reports had been published. Significant projects in the program included:

INSTALLATION	DESCRIPTION	$000
Anniston Army Depot	Depot HQ & Admin Fac	$2,260
	Vehicle Maint Support Fac	5,388
Ft. Belvoir	Night Vision Sys Lab	9,031
Letterkenny AD	Care & Preserv Fac, C&T Veh	4,726
Picatinny Arsenal	Explosive Lab	2,820
Redstone Arsenal	Hospital (New 40 bed)	10,322
Rock Island Arsenal	Alt Adm Fac	2,731
Sacramento AD	Industrial Plating Shop	2,599
Watervliet Arsenal	Weapons Quality Test Fac	2,272
White Sands MR	Mobile Optical Sites	1,542
	Range Power	1,766
Yuma Proving Ground	Igloo Magazines	1,859

(U) Based on Department of the Army funding guidance, the Intermediate-Range MCA FY 1976 Program was developed and submitted.[5] Within the $141.3 million proposed for FY 1976, the following was submitted to DA for approval:

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[5] Ltr, AMCIS-MD, 15 Feb 74, subj: FY 1976-1980 MCA Program.

CATEGORY	NO. PROJECTS	$000
Troop Housing	2	$6,205
Community Support	18	19,079
Pollution Abatement	27	41,870
Research & Development	14	25,350
Maintenance & Production	9	19,002
Security	6	2,032
Supply	5	2,119
Administrative	5	11,549
Utilities	8	8,017
Operations	3	1,290
Land Acquisition	1	4,805
Total	98	$141,318

(U) As in the previous fiscal year, to preclude unnecessary expenditure of funds and effort on a multitude of projects that could not be considered within the proposed DA funding guidance, the AMC Military Construction Work Group prepared a staff developed Intermediate-Range FY 1977-1981 MCA Program[6] from data submitted for the FY 1976-1980 MCA Program. Variance from the proposed program, however, was permitted, but only upon prior approval at the AMC proponent or the Military Construction Working Group.

(U) Urgent minor MCA Projects for FY 1973 and self-amortizing minor construction projects ($50,000-$300,000) funded for construction for AMC installations or activities amounted to $1,754,551. Nine projects were funded at an average cost of $195,561. Thirty-three projects were received during the Fiscal Year. Twenty-one of the thirty-three projects were received during the 4th Quarter.

(U) By the end of Fiscal Year 1974, $16.4 million,39 percent of the FY 1974 PBS Construction Projects were awarded. For the prior year construction programs (FY 1971-73), $185.4 million or 19% of the projects were awarded. All construction projects prior to FY 1971 had been awarded.

Design and Construction Surveillance, FY 1974

(U) Construction related activities within AMC continued with significant increases evident in both the MCA and PBS Programs. The MCA Program did not progress as rapidly as anticipated because of changes required by the energy shortage (fuel conversion), incomplete

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[6] Ltr, AMCIS-MD, 29 May 74, Subj: FY 1977-1981 MCA Program.

technology associated with incinerators, and delays in accomplishing design of air/water monitoring equipment due to scheduling of Army Environmental Hygiene Agency assistance visits. Progress later became evident in the design of both the fuel conversion and air/water monitoring projects. Design evaluation and market research of inert waste incinerators suggested that these incinerators were consistently being overdesigned. Efforts toward standardization of the incinerators and cost avoidance were strengthened.

(U) The PBS Program, particularly the plant modernization portion, represented an ever-increasing workload due to the intense program management by the AMC Project Manager and the Huntsville Division, Corps of Engineers. An increase of 46 special visits over FY 1973 was primarily due to on-site reviews/evaluations of criteria and concept design to expedite approvals. The planned modernization program increase from $300 million to $500 million annual was expected to generate additional workload.

(U) Design criteria for 315 MCA and PBS funded projects, estimated to $708.1 million were reviewed. Ninety-six projects, estimated to cost $231.3 million, were on hand at the end of FY 1974. Concept design for 108 MCA and PBS funded projects, estimated to cost $160.1 million were reviewed. Six projects, estimated to cost $3.1 million, were on hand. One hundred sixty three man-visits were made in FY 1974 primarily for on-site reviews/evaluations of criteria.

(U) Office and on-site review of projects in FY 1974 resulted in an estimated total cost avoidance of $10,411 million on 32 projects at 16 installations. Office and on-site review of projects in FY 1974 resulted in recommendation with potential total cost avoidance of $9,926 million on 13 projects at nine installations.

Production Base Support Program

(U) Throughout FY 1974, quarterly production Base Support meetings were held at various installations to keep abreast of significant actions. Representatives of the Assistant Secretary of the Army (Installations and Logistics), the Office of the Chief of Engineers, the Office of the Deputy Chief of Staff for Research Development and Acquisition, US Army Materiel Command and its Major Subordinate Command Headquarters attended the meetings. Facility Working Group meetings, first held during FY 1973 but reaching full implementation during FY 1974, have been beneficial in improving local-level coordination between the Ammunition Plants and the Engineer Districts.

(U) FY 1974 also saw the involvement of the Huntsville Engineer Division in the Modernization and Expansion. The Division was assigned overall responsibility for management of the construction effort. The impact of their contribution will not be evident until next year.

(U) A new milestone chart, superceding the one in AR 700-90, was approved by DA late in the Fiscal Year. The major change is that it permits AMC to authorize the Corps of Engineers to initiate design prior to the pre-budget review. The benefits will first be realized in the FY 1977 program.

Cost Reduction Program for Real Property Management

(U) The objective of the Cost Reduction Program was to improve management and operating practices at all levels of the DOD and to stimulate the initiation of positive management improvement actions which would assure the achievement of military capability at the most economic cost. In implementing these directives, the HQ AMC Installations and Services Directorate had the responsibility for complete monitorship of the program in the areas of AMC Real Property Management, which included the establishment of specific quantitative goals, reporting performance against these goals on a regular basis. During FY 1974 savings in excess of $3 million were realized against a goal of $1 million.

Maintenance and Management of Real Property Facilities Program

(U) A FY 1974 Command Objective was to reduce the Backlog of Maintenance and Repair (BMAR). The objective included phased actions as follows: evaluate BMAR to exclude any projects not required; attain an AMC-wide target ration of seven percent between costs for minor construction (.L0000) and maintenance of real property (.K0000); and assure that available year-end funds were applied to maintenance and repair work. A listing of unfinanced high-priority facilities projects was forwarded to the AMC Comptroller for year-end funding consideration. Program target of 10 percent reduction in BMAR was achieved.

Air and Water Pollution Abatement Program (MCA)

(U) The revised MCA Air and Water Pollution Abatement Program for Fixed Facilities at close of FY 1974 was:

FY 1966-70	Authorized and Funded -	Air	(4 projects)-	$3,734,000
		Water	(21 projects)-	8,303,000
FY 1971	Authorized and Funded -	Air	(3 projects)-	2,893,000
		Water	(14 projects)-	8,101,000
FY 1972	Authorized and Funded -	Air	(27 projects)-	22,388,000
		Water	(26 projects)-	30,185,000

FY 1973	Authorized and Funded -	Air	(16 projects) -	28,184,000
		Water	(26 projects) -	23,924,000
FY 1974	Authorized and Funded -	Air	(6 projects) -	4,074,000
		Water	(2 projects) -	5,445,000
FY 1975	Submitted to Congress -	Air	(1 project) -	500,000
		Water	(5 projects) -	2,342,000
FY 1976	Proposed by AMC -	Air	(4 projects) -	2,091,000
		Water	(22 projects) -	29,703,000
Total Air pollution Projects (61)				63,864,000
Total Water Pollution Projects (116)				108,003,000
Grand Total of Air and Water Pollution Projects (177)				171,867,000

(U) AMC participation in the environmental monitoring program at Army installations was as follows: FY 1973 participation at $2,870,000 for 15 air monitoring stations submitted as one project, and $1,130,000 for four water monitoring stations submitted as one project in totals above. FY 1974 participation at $1,063,000 for seven air monitoring stations submitted as one project, and $3,216,000 for 14 water monitoring stations submitted as one project in totals above. FY 1975 participation was $1,460,000 for water monitoring only. Quarterly reviews of AMC pollution control program for fixed facilities were accomplished under AR 11-21, as revised.

Real Estate

(U) Many of the Real Estate actions in Fiscal Year 1974 were the result of the issuance of Executive Order 11724, "Providing for the Identification of Unneeded Federal Real Property". This order required a continuing and critical review of all Federal property to assure that each real property holding was promptly released when no longer required to support the mission. Four types of real estate surveys are being conducted as a result of the order. These were: an annual survey by the commanding officer of each installation; "in-house" surveys conducted by personnel of Headquarters, AMC; studies by Office, Secretary of Defense, teams made up of representatives of the three Services; and studies performed by General Services Administration (GSA) personnel.

(U) As a result of these various studies, 4,473,294 acres of land were surveyed, and 62,534 acres declared excess by AMC. Disposals vary in size from one acre at Rock Island Arsenal, Illinois to 32,480 acres at Yuma Proving Ground, Arizona.

(U) After almost seven years of research and study into a possible relocation of Headquarters, US Army Aviation Systems Command, the Secretary of the Army announced on 31 January 1974 that AVSCOM would remain in its present location in St. Louis. The announcement

further stated that retention of the command and its 4,000 employees in St. Louis will "continue favorable economic impact on the city and support the goal of keeping central cities viable." There were, however, plans to improve the current headquarters facilities.[7]

(U) The following major changes in AMC installations became effective during this reporting period: Atlanta Army Depot was discontinued effective 30 June 1974;[8] Charleston Army Depot was placed in an inactive status 10 June 1974;[9] The US Army Aeronautical Depot Maintenance Center was redesignated the US Army Depot, Corpus Christi, effective 1 July 1974;[10] the transfer of the Alameda Annex of Sharpe Army Depot to Department of the Navy was approved by the House Armed Services Committee on 22 May 1974; the House Armed Services Committee approved the disposal of the Alabama Army Ammunition Plant on 4 December 1973 (6,411 acres);[11] Cleveland Army Tank-Automotive Plant facility was accepted by the General Services Administration, 3 December 1973, with the entire plant to be disposed of by GSA; Burlington Army Ammunition Plant was reported to Department of the Army as excess to AMC on 17 October 1973; and Lawndale Army Missile Plant, which was reported excess to DA in 1970 was disposed of by General Services Administration except for approximately nine acres.

Family Housing Management

(U) Army Central Welfare Fund (ACWF) Guest House Loan Program. The ACWF Guest House Loan Program terminated effective 5 March 1974. AMC ACWF loan agreements for guest houses at Aberdeen Proving Ground and Redstone Arsenal remain in force.[12]

(U) Request for Authority to Waive the Involuntary Assignment of Acquired Wherry Housing in St. Louis. DA was requested to grant authority to waive involuntary assignment of military personnel to the marginal adequate off-post Government-owned Wherry housing units located in a high crime rate area of St. Louis. Commanders of various activities in the St. Louis area felt that it was unjust and not in keeping with modern Army concept to force assignment. DA reply was unfavorable and required the assignment of these units as long as they were designated adequate.[13]

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[7] Message 301405Z, HQ DA, Jan 1974, UNCLAS.

[8] AMC GO 88, 8 May 1974.

[9] DA GO 18, 10 June 1974.

[10] AMC GO 26, 22 Feb 1974.

[11] Disposal Report 470, 30 Nov 1973.

[12] Msg, AMCIS-MH, 101209Z Apr 74, subj: Army Central Welfare Fund (ACWF) Guest House Loan Program.

[13] Summary Sheet, AMCIS-MH, 28 May 74, subj: Involuntary Assignment of Acquired Wherry Housing in St. Louis.

(U) Navy Occupancy of Military Housing at Ft. Monmouth, New Jersey. The Department of Navy requested consideration of assignment and allocation of family housing quarters at Fort Monmouth to Navy personnel. Navy was homeporting an ammo ship at the Naval Ammo Depot, Earle, Colts Neck, New Jersey, which included 250 Navy families. ASD (I&L) would not consider construction of new housing until the possibility of utilizing available housing at Fort Monmouth was exhausted. DA was furnished AMC position by letter indicating no excess housing at this time.[14]

(U) FY 1976 Military Family Housing Requirements. The AMC FY 1976-1980 Family Housing New Construction Program by fiscal year and priority was forwarded to HQDA (DAEN-ZC) requesting approval of 230 new housing units.[15] The CY 1974 Family Housing Requirements Survey of the St. Louis Area supporting requirements for 100 units of officer housing was forwarded to HQDA on 4 June 1974.[16]

(U) FY 1975 Family Housing Command Operating Budget. The Family Housing FY 1975 COB was transmitted to COA on 22 April 1974. The COB requested an increase of $1,800,000 over the DA BMG of $13,520,000 for a revised program of $15,320,000.[17]

(U) Washers and Dryers for Bachelor Housing. Based on individual AMC installation reports HQ AMC accounted to DA for the expenditure of $267,000 for procurement and maintenance of washers and dryers during FY 1973 and 1974. Also furnished was an AMC request for approximately $53,000 to support FY 1975 requirements.[18]

(U) Certification of FY 1975 and Prior Year Mobile Home Spaces. By letter, 17 June 1974 HQDA (DAEN-ZCP) was furnished recertification of mobile home spaces requirements for AVSCOM, ECOM and TECOM.[19]

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14 Ltr, AMCIS-MH, 29 May 74, subj: Navy Occupancy of Military Family Housing at Ft. Monmouth, NJ.

15 Summary Sheet, 31 May 74, subj: FY 1976 Military Family Housing Requirements.

16 Summary Sheet, 3 June 74, subj: CY 74 Family Housing Requirements Survey-St. Louis Area Support Activity.

17 Ltr, AMCCP, 22 Apr 74, subj: FY 75 Command Operating Budget w/one incl (COB).

18 Ltr, AMCIS-MH, 2 May 74, subj: Washers and Dryers for Bachelor Housing DD Comp (AR) 1092.

19 Ltr, AMCIS-MH, 17 Jun 74, subj: Certification of FY 75 and Prior Year Mobile Home Spaces, FHMA.

Commercial and Industrial-Type Activities

(U) During FY 1974 the Adjutant General advised AMC of a recent General Accounting Office (GAO) report to Congress, indicating that the Commercial and Industrial-Type Activities (CITA) Program had been hampered by ineffective supervision, and DOD components were deficient in obtaining new start approvals. As a result, AMC commanders were instructed to establish: (1) A single organizational element to monitor and manage an effective CITA Program. (2) Controls at each level of command to identify conditions requiring submissions of new start proposals.

(U) AMC examined in detail all directives covering the CITA Program, with the objective of simplifying and clarifying administrative requirements and procedures. Recommendations for procedural changes included: (1) Increase in dollar thresholds. (2) Revision of CITA codes in order that a correlation between the cost account codes can be made. (3) Elimination of codes titled "Other". (4) Development of a cost analysis that would satisfy the requirements of AR 37-13 and AR 235-5.

(U) Significant changes in reporting requirements of the annual inventory of CITA and contract support services were received from the Department of the Army (DA). In October 1973, the USAMC inventory of approximately 1,000 activities to be evaluated under the CITA Program was submitted to DA. In accordance with current OMB, DOD, and DA directives the inventory needed to include all activities regardless of the capital investment involved and all contract support services with an annual cost of $50,000 or more. Activities in the inventory involved an annual expenditure of approximately $971.7 million in in-house operating costs, government investments of $2.8 billion, and over $263.5 million in contract support services.

Communications Programs of the Communications-Electronics Division

(U) Automatic Digital Network (AUTODIN). AUTODIN [20] is a worldwide common user digital communcations network for transmission of record traffic. It is a major element of the Defense Communications System and the principal system for transmission of record communications. At the beginning of FY 1974, there were 54 AUTODIN data terminals operating in the command. The data terminals provide a combined service of both data transmission (card magnetic tape) and teletypewriter transmission (narrative). The terminals fall into two categories; government-owned and leased terminals. A total of 29 government-owned terminals are operating in the command, plus 26 leased systems for a grand total of 55 systems at years end. Preliminary requirements data was developed and forwarded to higher headquarters for the new AUTODIN system announced by the Defense Communications

[20] AMC Five Year Mid Range Nontactical Telecommunications Plan Target FY 1977, 3 Jun 74.

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Agency. Major restructuring of system serving the AMC was anticipated for late FY 1975 with intensification expected in FY 1976 to utilize the new system. The new AUTODIN system was to be known as the Integrated Data Network.

(U) Communications Center and Message Centers. The Secretary of Defense issued a Memorandum in July 1968 referencing a Congressional committee report[21] that criticized the excessive message center functions in the Army and Air Force. Accordingly, DA issued the policy and supporting objective to expeditiously achieve the consolidation and integration of communications center and message center functions, with responsibility assigned to the communications-electronics staff officer. USAMC attained the DA objective by completing the integration, consolidation, and placement of management responsibility for this function under the staff communications-electronics officer. The significance of this completed action within USAMC was related to the existence of the capability to apply automation to an integrated/consolidated functional area performing message processing, with responsibility placed under a single manager. In addition, the USAMC was now in a position to further support the overall communications objective of "moving the message from the writer's desk to the reader's desk in the absolute minimum of time" as presented in DA letter guidance pertaining to establishing the Army Telecommunications Automation Program (ATCAP). During FY 71 the message centers were physically integrated and consolidated with the telecommunications center. Planning for automation and distribution to enhance writer-to-reader delivery was to be followed under the ATCAP program by installation of Automated Telecommunications Center systems.

(U) Automated Telecommunications Center (ATCC). During FY 1972 a specification for competitive procurement of 20 ATCC's was approved by DA and forwarded to the contracting officer for processing. The contract for the Redstone Arsenal ATCC was awarded in April 1973 with an installation date of October 1974. Installation of the system began in late FY 1974 and was on target for the October activation date. The system for Letterkenny Army Depot was approved during the 2d Quarter FY 1974 and plans were formulated for site preparation and subsequent installation and operational dates. Preparation of justification for automation of telecommunications was in various stages of completion for HQ AMC, AVSCOM/TROSCOM, Aberdeen/Edgewood, TACOM, Sacramento, New Cumberland, LCO, Red River, ECOM, ARMCOM, Tobyhanna, and Lexington. Approximately six months would be required to prepare each justification document, with 12 to 18 months additional for final DA/DOD approval.

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[21] House Appropriations Committee Surveys and Investigative Staff Report, "Effectiveness of DOD Communications World-wide", US GPO, Wash Feb 68.

(U) Communications and Automatic Data Processing (ADP) Disk Interface. The working group, formed in FY 1969 for development of a system design and software program to interface the ALPHA computer to an AUTODIN terminal, made significant progress toward completion of its task. The group consisted of representatives from the USAMC Installations and Services Agency, Automated Logistics Management Support Agency, Logistics System Support Agency, and the US Army Aviation Systems Command (USAAVSCOM). The USAAVSCOM was tasked to augment their present communications equipment with a disk and communications links for disk interface testing. During FY 1971 a magnetic tape program was developed for over-the-counter service to ADP. The AUTODIN terminal at USAAVSCOM was expanded in FY 1972 to accommodate the test. Software development of both C-E and ADP equipment was completed. The test of system design and software programs was scheduled for December 1972. The test was successful and full implementation of the operational interface was made at USAAVSCOM. The next phase would be the development of a channel-to-channel interface involving unlike computers to an AUTODIN ATCC. The Army Communications Command (ACC) was scheduled to participate in this program. The on-line interface was planned to be installed at all ALPHA, SPEEDEX, TEAMUP, data banks, and large computer operations requiring AUTODIN service.

(U) Automatic Voice Network (AUTOVON). The AUTOVON is the principal long-haul, voice communications network for the DOD. The network was under the operational direction of the Defense Communications Agency. The AUTOVON handles essential command operations, intelligence, logistics, diplomatic, and administrative traffic. The Automatic Secure Voice Network (AUTOSEVOCOM) is a subsystem of the AOTOVON. AUTOSEVOCOM terminals were installed at USAMC major subordinate commands and installations on a selective basis. At the close of FY 1974, USAMC installations and activities were supported by 1068 AUTOVON circuits as compared with 1108 AUTOVON circuits at the close of FY 1973. DOD/DCA[22] budgetary restrictions on AUTOVON service limited the number of circuits to be installed. During FY 1973, approximately fifty-eight common-user AUTOVON circuits were discontinued due to reconfiguration of the network and inactivation, consolidation, and placing on stand-by some AMC installations. Some of the disconnected AUTOVON circuits were reused as trade-offs for circuits required at other AMC installations. The AMC Command and Control (C&C) requirements were being provided by four AUTOVON voice circuits terminating in a 608 switchboard located in the AMC Operations Center.

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22 Message, ACSE-E, DA, 220247Z Aug 70, subj: Effect of Budgetary Restrictions on AUTOVON service.

(U) Telephone Exchanges. AMC installations were in the process of modernizing and mechanizing their exchanges by installing night answering telephone turrets and rotary hunt connectors. All exchanges were converted to Network In-Out Dialing (NIOD) of AUTOVON. By the end of FY 1974, 24 exchanges had converted to Direct In-Out Dialing of local city trunks. Some installations were encountering abnormal tariff costs which had to be resolved by higher headquarters.

(U) Centralized Management of Communications in AMC. Pursuant to DA direction, Communications-Electronics (C-E) in AMC was reorganized. Effective 1 July 1973 the US Army Communications Command (ACC), then known as the Strategic Communications Command or STRATCOM, assumed operation and maintenance of CONUS communications, including those of AMC. AMC retained command operational control of communications and staff management of the AMC audio-visual functions. The communications portion of the Installations & Services Agency, Rock Island Arsenal, was transferred to AMC HQ. Most of the transferred personnel formed the nucleus of ACC Command-AMC collocated with AMC HQ.

(U) Audio-Visual Activity. The 21st Annual US Army Visual Media and Instructional Technology Conference was held at the Sheraton Park Hotel, Washington, DC, 5-7 November 1973. In conjunction with the DA sponsored conference, the Audio-Visual Branch, Communications-Electronics Division, hosted the First AMC Audio-Visual Workshop held at the Headquarters AMC Building, Alexandria, Virginia on 8 and 9 November 1973.[23] Approximately 60 persons attended the workshop representing 33 AMC activities. Audio-Visual managers were afforded the opportunity to meet their counterparts and to participate in discussions of common interest for a better understanding of mission requirements.

(U) The Audio-Visual Instructional Technology Master Plan - 1974 [24] was received from Department of the Army and distributed to all AMC activities. The plan contained updated and/or future objectives and provided guidance for use in planning, coordinating, and accomplishing audio-visual instructional technology objectives.

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[23] Schedule for AMC Audio-Visual Workshop 8 and 9 November 1973.

[24] Letter, AMCCE-CA, 14 Mar 74, subj: US Army Audio-Vidual Instructional Technology Master Plan 1974.

Personnel*

Force Development Overview

(U) With the announced Vietnam cease-fire in January 1973, and the withdrawal of US Forces from Southeast Asia, the management of manpower resources within the Army Materiel Command (AMC) in FY 1974 became one of transition from supporting wartime operations to that of improving the design, development, procurement, distribution and logistics support of the Army during peacetime. AMC's civilian manpower allocation was reduced by 7,602 with an actual strength reduction of 1,459 from end FY 1973 to end FY 1974. Over the same period, AMC's military authorization was reduced by 134 to an actual end FY 1974 military strength of 10,292.

(U) During FY 1974, AMC activities were delegated unlimited Temporary or Part Time (TPT) hiring authority. Additionally, AMC activities were provided 2,335 Full Time Permanent (FTP) overstrength authority for end FY 1974. This was subsequently amended by withdrawing the overstrength authority and granting an increase of 3,566 FTP positions with a corresponding decrease of 2,912 TPT positions in order to more nearly align AMC staffing with the workloads of a continuing nature. In March 1974, DA established military and civilian strength ceilings for AMC's Army Management Headquarters Activities (AMHA), entailing significant reductions in AMHA by end FY 1975. Effective 1 July 1973, the Project REFLEX test was expanded and for the first time took in non-R&D activities by adding an arsenal (Picatinny Arsenal, Dover, New Jersey of the US Army Armanent Command) and a depot (Red River Army Depot, Texarkana, Texas).

Manpower Management

(U) The initial Civilian Employment Projection (CEP) for AMC at the beginning of FY 1974 was 119,220, which included a 2,500 threshold. Of this CEP, 114,870 were Full Time Permanent (FTP) spaces and the balance (4,350) Temporary or Part Time (TPT) spaces. The January 1974 DA Budget and Manpower Guidance (BMG) reduced AMC's CEP by 4,992 for a new total CEP of 114,228. Of this, 107,842 were FTP and 6,386 were TPT positions. In April 1974 AMC informed DA that due to the imbalance of FTP versus TPT positions it was increasingly difficult to accomplish continuing, non-temporary mission-essential workloads utilizing TPT positions. Additionally, the problems encountered with the Civil Service Commission (CSC) governing the use

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* The material in this portion of Chapter II was furnished by HQ AMC Directorate for PT&FD.

of temporary appointments and the extension of such appointments for long-term workloads was emphasized. As a result, DA increased the end FY 1974 FTP limitation by 3,566 on 6 May 1974. This resulted in an end FY 1974 CEP of 114,228 (111,508 FTP; 2,720 TPT), amended at year end to 111,618 (108,903 FTP; 2,715 TPT). Actual civilian strength was reduced from 115,981 at end FY 1973 to 114,522 at end FY 1974, a reduction of 1,459. This actual strength of 114,522 at end FY 1974, consisted of 109,936 FTP positions and 4,586 TPT positions. AMC absorbed reductions in FY 1974 by management improvement actions; implementing base/activity closures/realignments; implementing civilian personnel Reduction Plans; and attrition and early retirements.

(U) The military authorization for AMC (including Project Manager, Saudi Arabian National Guard Modernization Program, PM SANG, non-chargeable-reimburseable) at the beginning of FY 1974 was 11,460 (3,478 officers; 283 warrant officers; 7,699 enlisted) and at the end FY 1974 the authorization was 11,326 (3,460 officers; 285 warrant officers; 7,581 enlisted) for a net loss of 134 military spaces (-18 officers; + 2 warrant officers; -118 enlisted). The net loss of 134 military spaces consisted of several major adjustments. The major reduction being the transfer of communications-electronics resources to USA Strategic Communications Command (USASTRATCOM), redesignated USA Communications Command (USACC), 1 October 1973; 275 spaces (13 officers; 3 warrant officers; 259 enlisted). The major increases were the transfer of Deseret Test Center (Dugway Proving Ground, Utah) to AMC, 201 spaces (42 officers; 4 warrant officers; 249 enlisted), and 91 enlisted spaces provided for additional Military Police security of nuclear weapons.

(U) During the 4th Qtr, FY 1974 AMC received from DA the annual officer by-grade authorizations for FY 1975. This was in connection with the Management of Officer Grade Authorization (MOGA) Program introduced in 1973 to align the Army officer grade structure with the Officer Grade Limitation Act (OGLA) of 1954. This new management by DA changes the manpower authorization in TAADS to the legal authorization permitted by OGLA. These new grade ceilings established for AMC were to be reflected in TAADS documents submitted against FY 1975 authorizations. It would require a further down-grading of 207 LTC and 143 MAJ positions to company grade positions. This represented a reduction of approximately 26 percent in LTC and 22 percent reduction in MAJ positions. In essence, this new grade authorization in TDA's would more closely reflect what was available for distribution from DA resources and what could be reasonably expected to be assigned in response to requisitions.

Manpower Guidance/Ceilings

(U) In March 1973, some relief from the DA reductions was granted in that ceilings on Temporary or Part Time (TPT) positions were lifted by DA. Flexibility in employment of TPT's was with the proviso that they be mission essential and fully supportable within approved funding. This flexibility was initially retained at HQ AMC and TPT increases were granted on a case by case basis. In August 1973, this TPT flexibility was delegated to all AMC activities provided workload and funds were available.[25]

(U) In January 1974, an analysis of reported actual civilian strengths in AMC including both overstrengths and understrengths in FTP and TPT categories revealed that, if projected to 30 June 1974, AMC would be considerably below strength when compared with the then current CEP. In February 1974, at the annual HQ AMC Personnel, Training and Force Development Conference, AMC managers were enjoined to fill FTP vacancies and to hire necessary TPT under delegated authority where required by workload and supported by funds. This was necessary to insure the attainment of programmed levels in on-board strengths for 30 June 1974; to minimize the extent of under-utilized critical manpower allocations; and to preclude possible withdrawal of shortfall by DA. Due to the hire-lag at certain AMC activities, a shortfall of 2,397 FTP positions were projected for 30 June 1974. Accordingly, based on a study of estimated on-board strengths for end FY 1974, an overstrength authorization of 2,335 FTP positions was made to selected AMC activities. To the maximum extent, in utilizing this special authorization, temporary employees were to be assigned to FTP positions and action initiated to convert their appointments to career or career-conditional appointments.

(U) In May 1974, in response to a General Vaughan, DCG, AMC letter to DA of 19 April 1974,[26] relative to the imbalance of AMC's authorized FTP versus TPT CEP, DA approved an AMC increase of 3,666 FTP for end FY 1974; simultaneously a 3,666 decrease was made to AMC's TPT allocation. As a result, the 2,335 FTP overstrength authorization granted to selected AMC activities (see above) was withdrawn. In lieu thereof, based on a subsequent study of FTP requirements at AMC activities, FTP allocations were increased by 3,566 positions for end FY 1974 (Sub-MACOM's +1,337; Depots +2,189; miscellaneous +40) and 2,912 TPT positions were withdrawn (Sub-MACOM's -901; Depots -1,995; miscellaneous -16). As with the overstrength authorization,

[25] Ltr AMCPT-SA,Dir,PT&FD,AMC to AMC field cmdrs, "Ans to Manager's Questions About Authority to Hire Civilians-II", 31 Aug 73.

[26] 1st Ind, DAFD-MFP-S, DA, to CG AMC, "Request for Increase for FY 73 Manpower Guidance - Civ, FTP Category", 6 May 74 to Ltr AMCPT-SA, DCG, AMC to OACSFOR, DA, same subj 19 Apr 74.

this increase in FTP authorizations was to be used to the maximum extent in converting temporary employees to career or career-conditional appointees is assigned to FTP positions. Notwithstanding the reductions in TPT positions levied upon AMC by DA as a result of the FTP/TPT trade-off referred to above, the authority delegated to AMC commanders to hire any number of TPT employees to accomplish necessary funded workloads of a truly temporary nature remained unchanged. Subsequently, at end year, DA reduced AMC's authorization by 2,611 FTP that had been added by the January 1974 DA guidance for improving Army readiness. Thus, under the guidance prevailing during the last half of FY 1974, AMC would have been only about 300 over the DA program in total, and about 2,500 under in FTP strength. However, the year end revision in guidance resulted in an AMC authorized versus actual end FY 1974 CEP as follows:

	TOTAL	FTP	TPT
Authorized	111,618	108,903	2,715
Actual	114,522	109,936	4,586
Difference (+/-)	+2,904	+1,033	+1,871

(U) On 5 March 1974, DA established military and civilian strength limitations for AMC's Army Management Headquarters Activities (AMHA).[27] These activities consisted of all of AMC Headquarters and its eight Staff Support Activities (Installations and Services Agency, Personnel Support Agency, IG Field Offices East and West, Service Support Agency, Field Safety Agency, Security Support Agency and the Surety Field Office), and the headquarters management portion of the six Commodity Command Headquarters (ARMCOM, AVSCOM, ECOM, MICOM, TACOM and TROSCOM). TECOM being primarily RDTE oriented was exempt from the AMHA ceiling. All of the above activities were within the FY 1974 limitations but a 4.4 percent or 232 position reduction was necessary to meet the FY 1975 ceiling. All activities were notified of their required FY 1975 adjustments during March 1974. Within the DA established ceiling, AMC may make adjustments between activities except that the AMC Headquarters cannot be increased without DA approval. Adjusted for DA/AMC approved reorganizations since 5 March 1974 the FY 1975 limitation stood at 5,062 (446 officers/warrant officers, 103 enlisted and 4,513 civilians) of which 2,125 (213 officers/warrant officers, 14 enlisted and 1,898 civilians) were earmarked for AMC Headquarters.

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27 Message, DAFD-MFP, "Army Management Headquarters", 052045Z March 1974.

DOD Project REFLEX Test

(U) By DOD direction, on 1 July 1970, AMC initiated Project REFLEX (DOD), a three year demonstration (pilot) project to test the concept of using fiscal controls instead of both fiscal and manpower controls to manage the operations of selected in-house RDTE laboratories.[28] On 30 June 1973, the third year of the three year test was completed. An evaluation of the results of the test by the Office, Chief of Research and Development, DA (redesignated DCS Research, Development and Acquisition, effective 20 May 1974) resulted in an indefinite extension of the test. The FY 1974 civilian space authorizations withheld for this test by DA, totalled 6,111 including 129 temporary summer hires. Actual Project REFLEX (DOD) strength as of 30 June 1974 totalled 6,431 including 303 temporary.

Headquarters Manpower and Organization

(U) During FY 1974, HQ AMC was reorganized from a base authorization of 250 military (230 officers, 2 warrant officers and 18 enlisted) and 2233 civilians for a total of 2483 to a new authorization of 243 military (224 officers, 1 warrant officer and 18 enlisted) and 1967 civilians for a total of 2210. This reorganization involved: implementation of the DA Manpower Utilization Survey of 10 October 1972; transfer in of the US Army R&D Information Systems Office (USARDISO); establishment of Race Relations/Equal Opportunity element; officer grade adjustments based on DA guidance for management of officer grade authorizations (MOGA) for FY 1974; implementation of DA budget and manpower guidance (BMG) for FY 1974; and reduction in General Schedule overall average grade from 10.97 to 10.75.

(U) In order to implement the Headquarters' fair and equitable portion of a five percent reduction in civilian employment by end of FY 1974, a total of 100 civilian positions were scheduled for elimination. This reduction in spaces resulted in organizational realignments and position structure changes to achieve improvements in management effectiveness and economy. In addition to the manpower reduction program, a reduction of the average grade of the Headquarters by end of FY 1974 was required. Moreover, the Advance Materiel Concepts Agency (AMCA) was scheduled by the Department of the Army to be disestablished by the end of the fiscal year.

(U) One hundred and fifty employees in grades GS-15 to GS-2 in HQ, AMC were affected in the realignment and resultant reduction-in-force. Consistent with AMC policy, and because a number of vacant positions were available, placement actions significantly minimized the adverse effect upon employees within HQ, AMC. Of the 150 employees adversely affected, 116 retained the same grade and were reassigned within HQ, AMC and 23 were changed to a lower grade with pay savings provision for two years. The remaining 11 received transfers or retired. No HQ, AMC employee was separated by reduction-in-force action.

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28 Chapter I, Historical Summary, Dir, Personnel, Training and Force Development FY 1971, FY 1972 and FY 1973.

In addition, improvements to initial offers were continually made as vacancies created through retirements and other voluntary losses occurred.

(U) Fifty-five employees were affected in the disestablishment of AMCA. The grades of these employees ranged from PL 313 to GS-5. Twenty-one of these were placed in vacant positions within HQ, AMC and 17 others in vacant positions elsewhere in the Department of the Army. Placement efforts resulted in nine employees transferring to Federal activities outside of the Department of the Army and in four retiring or resigning. Four employees were still awaiting placement as the fiscal year ended.

Army Project REFLEX Test

(U) On 7 September 1972, DA granted the authority to place selected RDTE activities under the REFLEX management concept to be known as Project REFLEX (Army). Accordingly, effective 1 October 1972, eight AMC laboratories were chosen for this test.[29] Civilian authorizations for all Project REFLEX (Army) laboratories were withdrawn from the activities and held at HQ AMC. The number of civilian authorizations withheld in October 1972 by AMC totalled 5,705; actual Project REFLEX (Army) strength as of 30 June 1974 totalled 5,773 including 170 temporary.

Army Project REFLEX (Extended)

(U) Implemented 17 October 1973 and effected 1 July 1973, the Project REFLEX was expanded to include non-R&D activities by adding Picatinny Arsenal and Red River Army Depot. The test was to be known as Project REFLEX (Army) Extended. The ground rules for Project REFLEX (Army) and Project REFLEX (Army) Extended, were similar to those for the DOD test project in that: military spaces continued to be subject to authorization; the laboratories, the arsenal and the depot were exempt from manpower management surveys for the period of the test; and all manpower reporting procedures continued in effect. Under the DOD test, civilian spaces were withdrawn from AMC and returned to DA control, whereas under the Army test (both laboratory and arsenal/depot), AMC retained control of the civilian spaces. The number of civilian authorizations withheld by AMC for this third test, totalled 10,492 (Picatinny Arsenal 5,402; Red River Army Depot 5,090). The actual Project REFLEX (Army) Extended strength as of 30 June 1974 totalled 11,008 (Picatinny Arsenal 5,705; Red River Army Depot 5,303.) In FY 1973, the Army test laboratories under Project

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[29] Chapter I Historical Summary, Dir, Personnel, Training and Force Development FY 1973.

REFLEX (Army) were placed under a civilian personnel ceiling as a result of reductions imposed on AMC by DA Budget and Manpower Guidance (BMG). In FY 1974, however, since both Project REFLEX (Army) laboratories, and Project REFLEX (Army) Extended (arsenal and depot) were to operate under workload and fiscal controls only, no ceiling was imposed on these activities. Any further increase in REFLEX (Army) may require corresponding drawdown in AMC non-REFLEX activities to stay within the Full Time Permanent Civilian Employment Projection (FTP CEP) included in the AMC BMG from DA.

The Army Authorization Documents System (TAADS)

(U) During Fiscal Year 1974, the training and orientation in the new Vertical The Army Authorization Documents System (VTAADS) continued. Personnel of the Department of the Army (DA) and the Computer Systems Command (CSC) conducted VTAADS training for HQ AMC functional and ADP personnel. Additionally, personnel of the Logistics Systems Support Activity (LSSA) and Installations and Services Activity (I&SA) also attended the training. Starting 26 July 1973, the Assistant Chief of Staff for Force Development DA and the CSC each provided one representative on a full-time basis until the initial VTAADS tape was submitted to DA. LSSA placed selected personnel on TDY at the HQ AMC ADP terminal to provide operating personnel to work between the North East Computer Center and the HQ AMC Manpower TDA Branch. Headquarters, AMC conducted additional training for key personnel in force development, equipment and management information of sub-MACOM's, major depots, and activities.

(U) The target date was 1 August 1973 for the 360 Computer at North East Computer Center and the HQ AMC terminal to be operative was not met. Additionally, the terminal at Rock Island Arsenal to serve the Installations and Services Activity was not tested during the first quarter of the fiscal year. These and other factors caused an unexpected slippage in the program to convert all The Army Authorization Documents System (TAADS) documents to the new VTAADS with the following impact: late submission by the field of the Initial FY 1974 TDA/MTOE documents under TAADS. Delay in completing FY 1974 documents at HQ AMC, the ADP facility at Tobyhanna Army Depot and HQ DA; problems in the ADP application of preconversion edit of TAADS documents required extensive manual adjustments; numerous breakdowns after the ADP facilities became operative; and delay in DA approval and return of authorization documents on the VTAADS conversion tapes.

(U) The new system created an unprecedented demand for preparation of implementing directives. Additionally, the conversion targets required an unprogrammed acceleration of the processing of all the Initial FY 1974 documents under the old system to provide the base for

the conversion to VTAADS. Concurrent with the processing of TAADS documents, as an individual unit TDA/MTOE was completed, it was moved into the final refinement and conversion process. This resulted in the operation for many months under two separate procedures both for the functional and ADP processing.

(U) Notwithstanding the unavoidable delays and additional workload, significant accomplishments were made in FY 1974 in the management of the command authorization documents. The required ADP facilities were installed and tested and system problems were resolved. The slippage in the VTAADS conversion program resulted in a pile-up of authorization documents in process. In order to meet the DA schedule for the document cycles, the update FY 1974 documents and the Initial FY 1975 submission had to be called-up prior to the completion of the conversion. It was necessary for DA to approve the conversion documents before update changes could be injected. The result was that update FY 1974 and Initial FY 1975 documents had to be held in-house, in many instances for up to five months, until the conversion action was complete.

(U) Early in the planning for VTAADS it became evident that the system, as presented by DA in the Users Manual, did not provide for the extraction from the VTAADS data base of a number of reports which were considered essential to AMC needs in the management of manpower, personnel and equipment. Consequently, Department of the Army was requested in FY 1973 to allow AMC to extract the information needed for 26 management reports unique to AMC needs. DA, in mid FY 1973, authorized AMC to design and program its required unique reports and indicated that some of our reports were being considered for system adoption. Due to the time lag, a further review of the unique management report requirement was made which resulted in the elimination or combination of reports to reduce the number to 20. Work was not started until mid FY 1974 by personnel of the Logistic Systems Support Agency to write the programs for the unique reports. At the close of FY 1974, eight of the 20 programs had been completed and were being produced.

(U) In FY 1974, the extensive closure, consolidation, realignment and reduction actions in implementing the Optimum Army Materiel Command (TOAMAC) plan announced by the Secretary of the Army on 11 January 1973, were continued to completion. The actions under TOAMAC resulted in requirements for wide scale major TDA/MTOE adjustments and the creation of a number of new authorization documents. Most significant among these actions was the final merging of the HQ Munitions Command, APSA and the HQ Weapons Command to form the new

HQ Armament Command. This action alone involved approximately 48 separate units and 28,144 personnel spaces.[30] The Directorate for PT&FD established the procedures and time frame for the move of TAADS ADP support from Tobyhanna Army Depot and Letterkenny Army Depot to the North East Computer Center, Fort Monmouth, New Jersey, for the new VTAADS requirements. The branch was also instrumental in the planning for remote terminals to be located in the Headquarters building and at Rock Island for the Installation and Services Agency. This required the development of new and centralized control of the ADP actions in the VTAADS System. An additional new requirement under VTAADS was the extensive coding required for the ADP portion of the system. This responsibility was transferred to the Manpower TDA Branch from the Logistics System Support Agency (LSSA) during FY 1974. The Manpower TDA Branch made repeated requests and outlined the extensive and/or unique requirements under the VTAADS System. Consequently, a new LSSA HQ AMC ADP Center was established in the building with major effort being to support of the VTAADS program. This branch was successful in having programmers assigned to the center who were dedicated to VTAADS.

(U) Reacting to a briefing presented to him on 7 November 1973, the Commanding General instructed that the authority delegated to AMC Commanders to approve TAADS actions be further expanded. The Directorate for PT&FD was the office charged to develop the proposed expanded delegation and preparation of the directive to apprise all concerned dispatched on 30 November 1973.[31] The directive, a letter from the Director of PT&FD, delegated authority to the field commanders to approve all TDA/MTOE actions which had been delegated to the CG, AMC by DA except: conversion of civilian positions to military or military positions to civilian; deviations from standards of grade authorizations for military positions; changes to positions on which the Civil Service Commission, HQ DA or HQ AMC has previously provided a specific classification evaluation decision; and change in status of a unit, such as organization, activation, discontinuance, inactivation, redesignation, relocation, or reassignment.

(U) This extended delegated authority was expected to be of significant assistance to the commanders in approving and implementing changes to their authorization documents. At the time of their

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30 (1) List, AMC Units Organized 1 Jan-20 May 74; (2) List, AMC Units Discontinued 30 Sep 73-30 Jun 73; (3) List, AMC Units Redesignated 26 Sep 73-31 May 74; (4) List, AMC Units Reassigned/Relocated 17 Aug 73-17 Oct 74.

31 Letter, AMCPT-S, 27 Nov 74, subj: Increase in Designated Approval Authority.

next authorization document submission the approval actions taken would be the subject of a post audit to assure conformity with the governing regulations.

(U) At the beginning of FY 1974 AMC had a total of 210 units, 13 of which were MTOE. The year ended with 207 which included 13 MTOE. During the year, 12 units were discontinued and nine units were organized. All types of TDA submissions received during the year for active units totalled 454. This did not include the action to convert 205 TAADS documents to VTAADS. At the close of the year, AMC had completed its processing of the 205 conversions and had forwarded them to DA. DA approved and returned all except 11.

(U) The establishment of initial Mobilization TDA for 195 AMC units was completed by 1 September 1972. During the period 1 July 1973 to 11 February 1974, 17 MOB TDA documents were processed under the TAADS system. This included both update documents and new documents for units established during the year. DA guidance required the conversion of all MOB TDA to the VTAADS format during FY 1974. The slippage of the target dates for the conversion of the active units impacted adversely on the MOB TDA conversion. However, at the end of FY 1974, 120 MOB TDA had been forwarded to DA for approval and DA had returned 92 approved. There were 71 additional MOB TDA in the conversion process.

Manpower Survey Program

(U) Thirty-six manpower surveys or reviews were conducted by HQ AMC during FY 1974 covering approximately 30,600 spaces. In addition, post audit reviews were performed and forwarded to DA of 38 manpower surveys conducted by the AMC major subordinate commands. A representative was provided to monitor four surveys which were conducted by major subordinate commands: General Materiel and Parts Center (TROSCOM); Pine Bluff Arsenal (ARMCOM); Communications Security Logistics Agency (ECOM); and Rocky Mountain Arsenal (ARMCOM). The FY 1975 schedule of manpower surveys was developed.

Utilization Studies: Force Development and Military Personnel Office Studies

(U) In May 1973, the Directorate, PT&FD requested manpower and workload data from each of the depots, arsenals, proving grounds, and sub-MACOMs for the purpose of reviewing the utilization of PT&FD manpower resources. An analysis of the data indicated considerable differences in the ratio of manpower to workload in the Force Development and Military Personnel organizational elements. For example, one depot serving a population in excess of 4,000 had a total of nine people in Force Development; another, serving a population of

less than 2,600 had 12 people. Similar differences existed in the Military Personnel Offices. These disparities raised questions as to how large the Force Development and Military Personnel organizational elements should be and whether or not an acceptable correlation exists between population served and workload. The Force Development and Military Personnel Office Utilization Studies were designed to provide answers to such questions.[32] The Force Development Utilization Study was completed in February 1974. The results which were presented at the AMC Personnel Conference were being incorporated in the DA Staffing Guide and were being used to review manpower survey results.

The Military Redistribution Plan (Also Titled the AMC Military Restructuring Plan)

(U) On 2 May 1973, the DCG AMC, LTG W. W. Vaughan, approved a three year plan to redistribute approximately 1,100 military positions within AMC from support/administrative positions to "hardcore" mission assignments with the depots receiving the majority of the new military spaces. The memorandum covering the briefing, attendees, and distribution of spaces was approved by the DCG AMC on 11 May 1973.[33] On 13 June 1973, the DCG advised all sub-MACOMs and depots of the plan and the redistribution goals.[34] On 10 September 1973, a letter to each command gaining or losing military was signed by the Dir, PT&FD which required gaining commands to submit a list of new military positions for nomination and approval by this headquarters.[35] An indorsement to each participating command approving the nominated positions was dispatched during the 3rd Quarter of FY 1974.[36] A total of 76 new officers and 252 new enlisted positions were distributed and approved during FY 1974, the first phase of the three year plan.

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32 (1) Ltr, AMCPT-SU, C, FDD, HQ AMC to sub-MACOMs, Depots, Arsenals and Proving Grounds, "Force Development Utilization Study," 23 Nov 73; (2) Ltr, AMCPT-SU, C, FDD, HQ AMC to AMC Military Personnel Ofc, "Military Personnel Office Utilization Study," 3 Jan 74.

33 Memo, AMCPT-SU, subj: Mil Redistribution Plan Briefing, 11 May 73.

34 Ltr, AMCPT-SU, subj: Restructuring the Allocation of AMC's Mil Personnel Resources, 13 Jun 73.

35 Ltr, AMCPT-SU, subj: Implementation of Mil Pers Restructuring Plan and the Supply and Maint Ofcr Position Improvement Prog, 10 Sep 73.

36 1st Ind, AMCPT-SU, subj: Proposed Distribution of Additional Supply and Maint Mil Spaces, 7 Feb 74.

(U) In association with the Military Redistribution Plan, an analysis of the utilization was proposed to and approved by the Command Group, AMC. AMC military personnel were grouped into three categories: CategoryI, hardcore mission assignment positions; Category II, essential administrative positions; Category III, all others. All AMC sub-MACOMs and directly reporting installations and activities were directed to perform a three category analysis of their authorized military personnel spaces and report the results to Headquarters, AMC.[37] An overall analysis of the results was provided to the Command Group, AMC.[38] The results showed a net shift of 4 percent of the total AMC authorized spaces from Category II to Categories I and II from March 1974 to 30 May 1974. Manpower Surveys and TDA reviews were expected to continue to question the use of military in any but hardcore or essential administrative positions. AMC Commanders were directed to aggressively further implement this policy.[39]

Manpower Policy and Standards

(U) AMCR 570-4 was published 30 April 1974. This regulation prescribes policies, and responsibilities for AMC-wide application for: determining requirements for military and civilian positions required in commands, installations, and activities of US Army Materiel Command (AMC); eliminating organizational fragmentation or layering and maintaining economical supervisory and clerical ratios; staffing morale and welfare activities; establishing a framework which would assure optimum utilization of resources for essential functions and operations, and would also assure timely and effective accomplishment of the AMC mission; and negotiating the manpower aspects of new or revised agreements between AMC and other Department of Defense (DOD) elements.[40]

Civilian Executive and Management Development

(U) Considerable emphasis was given by top management to executive and management development. The stimulus came in large part from the Office of Management and Budget and the US Civil Service Commission. A total of 1036 AMC employees were identified for executive development in FY 1974. These employees represent the priority

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[37] Msg, AMCPT-SU, 121953Z Apr 74, subj: Force Development & Manpower Mgmt Policies for TDA Organizations.

[38] Memo for: CDR AMC, 25 Jun 74, subj: Utilization of Mil Personnel (3 category analysis).

[39] Msg, AMCPT-SU, 101953Z Jun 74, subj: AMC Manpower.

[40] AMCR 570-4, 30 Apr 74, subj: Manpower Support, Staffing Standards, Patterns and Policies.

participants for whom appropriate training and developmental opportunities were to be provided by 30 June 1974. Under the guidelines applicable to the FY 1974 program, identified supergrades and equivalent personnel required a minimum of one week of training, and mid-managers in grades GS-13 through GS-15 required two weeks of training. Each of the priority participants identified was tracked by the US Civil Service Commission to determine if the requisite training and development was provided to the personnel identified.

AMC Career Intern Program

(U) On 30 June 1974, the US Army Materiel Command Career Intern Program (CIP) completed the third year of centralized control of budget (P7S and P7M funds), manpower spaces, recruitment, selection and placement of engineers. For FY 1974, authorized career intern manpower spaces were increased from FY 1973's 1259 to 1486. The AMC CIP distributed $13,969,300 in four AMS fund codes for salaries, benefits, PCS and TDY for training in FY 1974. As of 30 June 1974, there were 1351 AMC Career Interns on board. There were 402 AMC Career Interns recruited and entered on duty in FY 1974 of which 26 percent were minorities and 18 percent were females. AMC Career Intern losses for FY 1974 were 88 of which eight were minorities and 23 females.

(U) The FY 1974 planned input, as of 1 July 1973, was 352 overall. Input for all career fields was reduced in comparison to the two previous years of centralization due to the TOAMAC reorganization lowered manpower and fund ceilings and the expansion of the AMC CIP to a three-year program. Comptroller, Procurement, Education and Training, and Librarian career fields planned no input at all due to overages and/or budgetary complications. However, in the 4th Quarter, FY 1974, the Comptroller and Procurement career fields, respectively, added requirements for 10 and 15 career interns. Other career fields, including ADP and Ammo Surveillance, slightly increased their desired and funded input during the year. The overall revised input for FY 1974 was 404.

(U) For estimating FY 1975 career intern input requirements, a Career Intern Projection Model was developed. The model incorporated current workforce data and projected losses and gains to arrive at career field replacement needs that can best be met through the input of career interns. It provided Command Career Program Managers with a field of data which, when incorporated with manpower information available at HQ, AMC, results in realistic projections of needs.

(U) AMC Pamphlet 690-3, Administration of the AMC Career Intern Program, dated September 1973, was issued as a single publication guide delineating specific functions assigned to organizational

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elements of AMC in the effective operation of the program. Six appendices provided specific information which expanded on the basic pamphlet guidance. The programs of Instruction (POI) for fifteen career fields were revised to reflect the accurate on-going program based on the changes which evolved in FY 1973 and FY 1974.

(U) The AMC Field Placement Offices continued their mission of recruiting in their respective regions to provide a continuous input of qualified external and internal candidates to meet career intern staffing requirements. In October 1973, the Western Office in San Francisco was abolished and its manpower spaces and mission were absorbed by the Southern Office in Atlanta and the Midwest Office in Davenport, Iowa. The Northeast Office servicing agreement was transferred to Frankford Arsenal with the closing of ECOM, Philadelphia. The Southern Office servicing agreement for civilian personnel management was taken over by Fort McPherson and the remaining support agreement was transferred to Anniston Army Depot with the closing of Atlanta Army Depot.

Civilian Personnel Program Evaluation and Assistance

(U) Full-scale management surveys were completed during the year by Department of the Army, Deputy Chief of Staff for Personnel field teams accompanied by one or more representatives from the Personnel Support Agency. Surveys were held at the following AMC depots: Anniston, Lexington-Blue Grass, Sharpe and Tobyhanna, plus two activities, Foreign Science and Technology Center and Automated Logistics Management Systems Agency. Representatives were furnished to the US Civil Service Commission in connection with special EEO inquiries and follow-up services conducted at Sacramento Army Depot and New Cumberland Army Depot. A new survey procedure was given its pilot trial at Seneca Army Depot. After moderate revisions of procedure, the method was applied also in the full-scale survey at Red River Army Depot, a survey under the Civilian Personnel Support Division chief.

On-Site Staff Assistance Visits

(U) Representatives visited Atlanta Army Depot and Charleston Army Depot in connection with phase-out milestone activities. Merger of US Army Munitions Command and US Army Weapons Command to US Army Armament Command in August 1973 necessitated visits to several installations, including Picatinny Arsenal, HQ MUCOM, and Pine Bluff Arsenal. Relocation of the Philadelphia support function of the US Army Electronics Command required a visit to HQ ECOM at Fort Monmouth, New Jersey, the site of the transfer-of-function. Headquarters, Troop Support Command was visited in connection with reassignment of Natick Laboratories to that command. A representative also visited the Defense General Supply Center to address problems related to inactivation of the US Army Support Center, Richmond, Virginia.

(U) A special survey was made of the Headquaeters, AMC training function and a PSA representative participated as a member of the US Civil Service Commission Team when it surveyed US Army Materials and Mechanics Research Center. Later, a study was conducted to assess the feasibility of combining civilian personnel administration for the Army Materials and Mechanics Research Center and Natick Laboratories, and recommendation was made that they maintain separate civilian personnel offices. Special support was provided concerning the reorganization of Logistic Assistance Offices-Continental United States (LAO-CONUS). A total of 26 weeks' on-site assistance was also provided 15 AMC activities in connection with position alignment problems.

Position and Pay Management

(U) As a result of the requirement levied by the Office of Management and Budget upon DA of a .15 reduction in average grade in FY 1973 and an additional .15 in FY 1974, AMC was required to reduce the GS average grade by .155 in FY 1973 and again by .155 in FY 1974. An extension of the .155 reduction target dates from FY 1972 to FY 1973 and from FY 1973 to FY 1974 was granted due to the impending DOD-announced reorganizations and resultant strength reductions. The assigned average grade reductions were to be achieved notwithstanding strength reductions, mission adjustments, or any other factors, in order to avoid further mandatory restrictions such as the placement by DOD of a blanket freeze on promotion actions. The average grade objectives were to be achieved through improved position management. As of 30 June 1973, AMC was successful in meeting the assigned end FY 1973 average grade reduction objective. During FY 1974, AMC commands and activities achieved varying amounts of progress toward their assigned reduction objectives. As of 30 May 1974, a substantial AMC-wide average grade reduction remained to be achieved in order to meet the AMC end FY 1974 average grade objective. As of 18 June 1974, DA assigned to AMC a new average grade ceiling which superseded all previously assigned average grade objectives. Command-wide, the AMC average grade requirements for FY 1974 were met.

AMC Award for Outstanding Achievements in Energy Conservation

(U) An AMC Energy Conservation Award was established in May 1974 to provide meaningful recognition to both organizations and individuals within AMC who had achieved a place above the rest in the field of safeguarding our energy resources. All AMC major subordinate commands as well as all depots were eligible for consideration for the Energy Conservation Award, based upon the greatest percentage reduction in energy consumption for the reporting period. One major subordinate command and one depot were to be designated to receive the award on a quarterly basis. In addition, AMC commanders could nominate eligible individuals or groups for the annual AMC Energy Conservation Award.

Awards Approved

(U) The USAMC Incentive Awards Review Board considers incoming award nominations requiring approval by AMC, DA, DOD or non-Federal organizations and makes appropriate recommendations to the CG, AMC. During fiscal year 1974 the following high level incentive awards were approved:

4 - Decoration for Exceptional Civilian Service
2 - Secretary of the Army's Equal Employment Opportunity Award
14 - Army Research and Development Achievement Award
2 - AMC Systems Analysis Award
1 - Daedalian Weapons Systems Award
1 - Finalist, DA Handicapped Employee of the Year, 1973

Secretary of the Army's Equal Employment Opportunity Award

(U) AMC was honored to have two of its members selected as recipients of the third annual Army EEO Award, bringing the total number of AMC winners to five. Normally, only one individual is recognized each year but DA determined that Mrs. Yolanda R. Peronis, EEO Assistant, ARADMAC, Corpus Christi, Texas and Mr. Rudolph J. Redd, Supervisory Chemist, Edgewood Arsenal, were both deserving of this award in recognition of their individual efforts in support of the EEO program.

AMC Systems Analysis Award - 1974

(U) The AMC Systems Analysis Award, in its second year, has been established to provide meaningful recognition of and motivation for noteworthy achievements in support of the operations research/ systems analysis effort. Winner of the award for individual achievements was Mr. Gerald L. Moeller, ARMCOM. Dr. William J. Sacco and Mr. Wayne S. Copes were selected as joint winners of the team award.

Daedalian Weapons System Award - 1974

(U) The Daedalian Weapons System Award is sponsored by the Order of Daedalians and presented annually on a rotating basis to the individual, group or organization of the Army, the Navy and the Air Force making the most significant contribution to weapon system development. AMC's nomination of the TOW Project Office, US Army Missile Command and the Ballistic Research Laboratories was selected to receive the 1973 award.

DA Handicapped Employee of the Year Award - 1973

(U) The DA Handicapped Employee of the Year Award is designed to recognize individual achievements by handicapped employees. The

courage, perseverance and initiative exhibited by Mr. Fred C. Lilley, a totally blind Services and Benefits Administrator, AVSCOM, is indicative of the top-quality work the handicapped are able to perform. Mr. Lilley was selected from among 14 finalists in the Army-wide competition as runner-up to the Department of the Army Handicapped Employee of the Year and subsequently named AMC's Handicapped Employee for 1973.

Decoration for Exceptional Civilian Service

(U) The highest honorary award was conferred upon four members of AMC for exceptionally meritorious accomplishments within their respective fields of endeavor. Those honored were Mr. Morris D. Kaplan, TECOM; Mr. Daniel Katz, ARMCOM; Mr. Norman L. Klein, HQ, AMC; and Mr. Robert P. Whitley, MICOM.

Military Personnel Management

(U) During FY 1974, a downward trend in assigned military personnel continued as a result of consolidation, realignment, reduction and closure of commands and activities. Though personnel turbulence reduced the statistical level of AMC military personnel, efforts were increased to improve the quality of personnel. For example, in accordance with the newly implemented Officer Personnel Management System (OPMS) the DA Command Position Selection Board designated the commander position of each of AMC's 17 active ammunition plants, Umatilla Depot Activity, and the 1st Transportation Battalion (Seaborne), for the DA centralized management of LTC's selected for command.[41] Also, at the beginning of FY 1974, there were 805 TDA officer positions validated for masters degrees by the Army Educational Requirements Board (AERB) as requiring officers with graduate level education other than professional degree requirements such as doctors and lawyers.[42] During the fiscal year, recommendations for 275 (new and/or renewals) positions were submitted to the AERB. As of 30 June 1974, results of the AERB had not been released.

(U) Further, the AMC Command Personnel Management Inspection Team conducted inspections of AMC command/activities during FY 1974 to evaluate the effectiveness of military personnel management within this command in accordance with AR 600-61 and DA Pamphlet 600-7.

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[41] Ltr DAPC-OPS-PD-OPMS, 12 Jun 74, "Centralized Command Selection System for LTC," 12 Jun 74.

[42] AR 621-108, "Military Personnel Requirements for Graduate Level Education."

Assistance was provided the individuals in the military personnel offices to insure compliance with the new changes in personnel management that became effective in February 1974. The personnel management accuracy for FY 1974 averaged 86 percent per record.

(U) Regarding Mobilization Designation (MOBDES) positions, the total percentage of those filled did not increase to any measurable extent during FY 1974. This was due to the large number of junior officers tranferring to Standby Reserve or being discharged upon eligibility, plus the mandatory retirements of senior officers. The number of gains and losses were each approximately 400 for the year. This turnover generated an extremely heavy workload for this office, with small gain compensated. This trend program had continued over the past several years despite the assumption by USA Reserve Components Personnel and Administration Center, St. Louis, of the centralized assignment of eligible Reservists to MOBDES vacancies.[43]

(U) Consolidation of Military Personnel Activities (COMPACT). COMPACT was designed as a DA MILPERCEN plan for the consolidation of active Army military personnel offices (MILPO) on an installation. The objectives were to provide a centrally located one-step customer service activity, improve quality of service, conserve manpower staffing, and reduce flow of communications through layers of command. Principal AMC installations/commands affected by implementation of this concept, which interfaces with non-AMC elements as tenants on AMC installations, and vice-versa, plus personnel space adjustments are:[44]

	O	WO	EM	CIV
ECOM	+2	+2	+24	+21
MICOM			+23	+13
TECOM	-4	+5	+60	+ 3
TOAD			+ 2	
NET	-2	+7	+109	+37

43 AR 140-145, "Mobilization Designations".

44 1st Ind, AMCPT-MT, 12 Jun 74, to ltr DAAG-PAP-A(M) (8 May 74), DAPC-PSF-M, "Implementation of the Consolidation of Military Personnel Activities (Short Title - COMPACT)"

Logistics Training Activities

(U) During FY 1974, demands for training of AMC schools continued to increase. The renovation of Building 56 at the Army Management Engineering Training Agency was approved. The renovation of this building will accommodate much of this increase.

Schools

(U) US Army Management Engineering Training Agency (AMETA) Expansion Plan. On 28 May 1974, the Urgent Minor Construction Project (renovation of the first floor of Building 56) at AMETA was forwarded to Department of the Army.[45] This project would increase the classroom capacity of AMETA from 15 to 20 and increase the resident student capacity by some 2,650 beginning with fiscal year 1976. This expansion plan would give AMETA a total student output capacity of 11,883 which would be sufficient to meet the annual training requirements of the Department of Defense.

(U) A major hurdle preventing enrollment of AMETA was TDY and travel costs. One of the major reasons cited for persons cancelling training quotas at AMETA had been "lack of funds." To remedy this deterrent to training, effective 1 January 1974, TDY and travel costs of AMC military and civilian students attending AMETA resident courses were to be funded by AMETA.[46] The overall effect of centralized funding was expected to result in a higher percentage of fill of AMC students into AMETA courses.

(U) Florida Institute of Technology (FIT). On 30 March 1973, DA approved the establishment of two cooperative degrees, one in Logistics Management and the other in Contract and Procurement Management. The first commencement exercise for the Masters of Science in Logistics Management Degree was held at ALMC on 30 November 1973, with two students graduating. The second commencement was held on 24 June 1974, with sixteen students graduating.

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[45] Ltr, AMCIS-MD, from Dir, I&S to HQDA (DAEN-FEZ), Urgent Minor Construction Project - Alter Building 56 for Defense School, Rock Island Arsenal, PR 42-74, 28 May 1974.

[46] Msg, AMCCP-BP from Cdr, AMC to AMC Field Commanders, "Funding for TDY and Travel Costs of AMC Military and Civilian Students Attending USAMETA Resident Courses," DTG 191747Z Dec 73.

New Equipment Training

(U) AMC-TRADOC Training Interface. On 22 May 1974, a task group was convened to develop procedures for commodity commands to provide input and to influence service schools MOS training.[47] This requirement originated from the AMC Interface Study, Void 2-4, which identified a void in coordination between AMC commodity commands and TRADOC service schools in development of training programs for new equipment. On 29 May 1974, ARMCOM was tasked to establish and chair the task group with return of the completed study by 15 July 1974.[48]

(U) Foreign Military Training Program. As a result of request from CJUSMMAT Turkey, AMC was tasked by DA to provide an International Logistics Management Course specifically tailored for a newly formed 12-member Turkish Armed Forces Permanent Foreign Military Sales Mission.[49] This Headquarters subsequently tasked ALMC to provide necessary training and also to use appropriate sections of this training to establish an on-going one week course for all foreign nationals.[50]

Race Relations/Equal Employment Opportunity (RR/EEO)

(U) FY 1974 was the first year in which the RR/EEO program was administered as a major AMC program. The first half of the year was devoted to organizing and implementing the Command program, accomplishing initial RR training, upgrading the quality of RR instructor personnel through formalized schooling and filling RR/EEO positions with both military and civilian personnel. In order to integrate the USAMC military and civilian workforce and intensify Command efforts to identify and eliminate discrimination, the training program was expanded to include EEO subjects and Equal Opportunity programs received increased emphasis during the second half of the year.

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[47] DF, AMCPT-A, from C, Plans & Admin to Chief, S&NET Div, "AMC Interface Study," 22 May 74.

[48] Ltr, AMCPT-TN, fm C, S&NET Div to Cdr, ARMCOM, "Military Occupational Specialty (MOS) Training," 29 May 74.

[49] (1) Msg TCH from CJUSMMAT Ankara Turkey to USCINCEUR, "Turkish Armed Forces Permanent Foreign Military Sales Mission Wash, DC" DTG 291506Z Mar 74. (2) Msg, DAMO-IAS, fm HQDA to Cdr, AMC, "Training for Turkish Armed Forces Permanent FMS Mission Personnel" DTG 042043Z Apr 74.

[50] (1) Msg, AMCPT-TN, fm Cdr, AMC, to COMDT, USALMC, "Training for Turkish Armed Forces Permanent FMS Mission Personnel," DTG 121941Z Apr 74. (2) Ltr, AMXMC-AM, fm Comdt, ALMC to Cdr, AMC,"Training for Turkish Armed Forces Permanent FMS Mission Personnel," 26 Apr 74 with 1st Ind, AMCPT-TN, fm C, S&NET Div to Comdt, ALMC, 16 May 74.

(U) During FY 1974 28 Staff Assistance Visits regarding EEO were made to AMC subordinate activities. These visits encompassed all MSC's and Depots. (Chart 10) The first AMC RR/EEO conference was conducted at Rock Island, Illinois from 29-30 November 1973.[51] LTG W. W. Vaughan, Deputy Commander, AMC, was the keynote speaker. On 8 March 1974 the second AMC RR/EEO Affirmative Actions Plan was finalized and disseminated to AMC subordinate activities.[52] Because of a DA directed military reduction in the RR/EEO program, AMC lost five officers and eight NCO spaces during FY 1974.[53]

(U) The initial USAMC Race Relations training program terminated 31 December 1973 with 17,138 USAMC military and civilian personnel receiving instruction in the program of which 503 were from HQ USAMC and 3,247 personnel from other Commands. Policy execution of the CY 1974 RR/EEO training was disseminated to AMC field activities on 7 February 1974.[54]

(U) Martin Luther King, Jr. Memorial Services were held throughout AMC on 15 January 1974. National Black History Week was celebrated from 11-15 February 1974. The continued thrust of the RR program during FY 1974 was RR Instructor training. Instructor training was provided by two sources. The course and the number of individuals trained were as follows:

	OFFICER	WO	ENLISTED	CIVILIAN
DRRI	12	1	18	0
URRDLC	22	1	18	9

(U) In an effort to satisfy the need for trained RR and EEO facilitators in AMC subordinate installations, a 40 hour course was developed and conducted by HQ AMC RR/EEO personnel during the months of May and June 1974 at RRAD, SAAD, PUAD, and NCAD. A total of 87 facilitators were trained.[55]

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[51] Summary Sheet, AMCPT-HR, from Dir, PT&FD, to DCG AMC, "USAMC RR/EEO conference," 31 Aug 73.

[52] AMC RR/EEO Affirmative Actions Plan, 8 Mar 74.

[53] Msg, AMCPT-SA, 042010Z Mar 74, "Adjustment to USAMC Manpower Program," 4 Mar 74.

[54] Msg, AMCPT-HR, 071800Z Feb 74, "CY 74 USAMC RR and EEO Training Program,"7 Feb 74.

[55] Summary Sheet, AMCPT-HR, from C, HRD to D, PT&FD AMC, "RR and EEO Facilitator Course", 17 Apr 74.

RR/EO STAFF ASSISTANCE VISITS
FY 74

Jul 73	TECOM
Sep 73	MICOM
Oct 73	ANAD, LBAD, RRAD
Oct 73	ECOM, TECOM
Oct 73	TACOM, ARMCOM
Nov 73	AVSCOM, TROSCOM
Nov 73	SHAD, SAAD, SIAD, TEAD
Nov 73	LEAD, NCAD, TOAD, SEAD
Mar 74	PUAD, AVSCOM, TROSCOM, SVAD, TACOM
Apr 74	ECOM, TECOM
May 74	FSTC
Jun 74	AMMRC

Chart 10

Alcohol and Drug Abuse

(U) During FY 1974, AMC's Alcohol and Drug Abuse Programs were able to develop a significantly higher level of effectiveness than has been heretofore demonstrated. The acquisition of qualified program administrators and counselors, plus increased efforts in the fields of education, training, and staff assistance visits, resulted in a dramatic increase of program visability in FY 1974.

(U) The HQ AMC Alcohol and Drug Abuse Program became functional in October 1973. Supervisory orientation seminars were begun in October 1973, and were normally held at two week intervals. During the period October 1973 to 30 June 1974, 16 such seminars were conducted which were attended by 250 supervisors. The sessions were well received, and were regarded as the base of the program.

(U) Hiring of qualified personnel continued since 96 full time positions were authorized in February 1973. At the close of FY 1974, AMC had 65 of these positions at Depots, MSC's, Arsenals and Proving Grounds filled. Active recruitment was underway to fill the remaining slots. In most cases, fill had not been achieved because of a shortage of qualified personnel. Heavy emphasis placed on this program, not only by HQ DA but the entire Federal Establishment and private industry, created a serious shortage of specialists in the Alcohol and Drug Abuse field.

(U) During FY 1974, heavy emphasis was placed on the education and training aspect of the program. AMC received a significant 50 percent increase in DA and Health Services Command (HSC) sponsored courses. This increase still fell short of the quotas requested for field programs. AMC utilized 100 percent of the DA and HSC allocated quotas in the following courses: (1) US Army Alcohol and Drug Abuse Team Training - 19; (2) US Army Alcohol and Drug Abuse Rehabilitation Training - 20; (3) UCLA Counselors Course - 3; and (4) National Training Labs Alcohol and Drug Counselors Course - 6.

(U) In addition to the training provided by HQ DA and HSC, this Headquarters sponsored attendance at the following courses: (1) Johns Hopkins Alcohol Counselors Course - 1; (2) Civil Service Commission Program Administrators Course - 1; and (3) Rutgers University Summer School of Alcohol Studies - 9.

(U) HW AMC, MSC's and HQDA intensified their field assistance visits to functional Alcohol and Drug Abuse Programs during the fiscal year. These visits formed an integral part of the overall management of the program by assuring compliance with applicable policies and regulations, maintaining Command interest and emphasis and, most importantly, providing on-site assistance where needed. HQDA made 11 visits, HQ AMC made 23, and MSC Program Coordinators and Alcohol and Drug Control Officers made 16.

(U) In February 1974, the Alcohol and Drug Abuse Branch was given approval to undertake the production of a film on the role of the supervisor in the detection and prevention of alcoholism. The film will be produced by the Army Film Agency at Huntsville, Alabama. Script revision was taking place at the end of the fiscal year with actual shooting to begin in August-September 1974.

Annual Program Progress Report

(U) The results of the Annual Alcoholism Program Report (USCSC 1149) showing the number of employees who were referred to Command programs, and the number returned to duty without subsequent job impairment due to alcohol consumption, reflected a decidedly positive trend. During FY 1972, 184 individuals of 290 persons referred for AMC programs were returned to duty. During FY 1973, the figures were 460 returned of 748 referred. In FY 1974, of 897 individuals referred, 600 were returned to duty.

CHAPTER III

RESEARCH, DEVELOPMENT AND ENGINEERING *

The Environment

(U) The RDTE environment was one emphasizing peacetime methods with particular stress on firm requirements followed by an orderly methodical cycle of development. Austerity coupled with inflation characterized the funding of programs and led to an increased stress on cost effectiveness in all areas. Several events had far-reaching effect on the RDTE environment. Among these were: (1) adoption of recommendations of the Army Materiel Acquisition Review Committee (AMARC); (2) reorganization/realignment of HQDA which also resulted in revision of most RDTE regulations; (3) a fuel shortage, reaching its critical point in January, forced many commands to modify programs to meet critical schedules. Many man-hours were expended in coping with this monumental problem that affected most of the Army operations; and (4) many resources were expended in meeting Environmental Protection Agencies (EPA) statutes.

RDTE Objectives, Major Problems

Command Objectives

(U) The RDE Directorate had eight FY 1974 Objectives under AMC Goals as follows: (1) conduct an effective pollution abatement program in AMC's RDE Program; (2) insure the timely obligation of RDTE funding; (3) improve AMC's performance in completing technical milestones (type classification, development phases, in-process reviews and tests) during development; (4) improve reliability of tactical vehicles by improving reliability of components and eliminating basic causes of vehicle unreliability; (5) increase the use of prototypes during exploratory development, advanced development or early in engineering development in order to accelerate the application of promising new technology feasible projects prior to full-scale development; (6) improve delivery rate of materiel and associated maintenance test packages to the Army's independent test agency (TECOM) for initiation of scheduled tests (development suitability tests, engineering tests, expanded service tests, check tests, preproduction tests and initial production tests); (7) structure the AMC RDTE program to include all areas of major thrust and assure that these areas receive the highest priority effort and optimum funding resources; and (8) apply RDTE resources to Research, Exploratory Development, Advanced Development and Engineering Development projects for the express purpose of reducing the ultimate acquisition, maintenance and operation costs of developed materiel.

*The material in this chapter was furnished by the HQ AMC Directorate for Research, Development and Engineering.

Problems

(U) Prime consideration on which much attention was focused and reported on in prior years was forecast delivery rate. Prior year projections were 90 percent; however, since the actual rate, 66 percent, fell well below the objective, the projection was carried over into the FY 1974 time frame. The main goal was to obtain accurate, timely and complete forecast data from the applicable development commands.

(U) Problems were encountered in the timely updating of test regulations because of the Army Staff reorganization of 1973 and the delay in promulgating a revision to Army Regulation AR 70-10, which had been in the process of updating for more than two years.

(U) The National Fuel Crisis, which had impacted on the military, required that all possible action be taken to reduce the consumption of petroleum fuels on AMC installations. As a result, TECOM was directed to take certain steps to minimize fuel consumed in testing. Use of fuel was quickly reduced in some administrative areas. There were several incidents where it appeared that the test program was going to be seriously affected by the shortage of fuel, but fortunately these were subsequently minimized. A recommended order of rank for tests consuming POL to the end of FY 1974 was prepared, looking to the event that priorities for fuel would be established.

(U) Funding limitations continued to exert a serious impact on development during year and RIF's, coupled with retirements of key individuals, produced a situation that necessitated major reorganizations within the AMC divisions.

Resources

FY 1975-1980 RDTE Program

(U) The USAMC Five-Year RDTE Program for FY 1975-1980 was submitted to the Chief of Research, Development and Acquisition, Department of the Army, in March 1974. The following tabulation shows the successive changes in guidance and the program approval by the Chief of Research, Development and Acquisition, DA, as of 17 May 1974:

	FY 75	FY 76	FY 77	FY 78	FY 79	FY 80
Sep 73	1,478,399	1,435,982	1,547,367	1,519,553	1,550,652	1,550,652
Jan 74	1,415,534	1,509,249	1,623,532	1,661,349	1,759,484	1,759,484
May 74	1,415,534	1,526,863	1,660,730	1,681,632	1,714,756	1,515,764

AMC Projects

(U) The FY 1975 RDTE Program consisted of 319 DA projects with 558 tasks. The following restructuring was accomplished during FY 1974.

(U) OCRDA restructured the existing FY 1975 program elements into 160 program elements which were totally or partially for AMC. In addition, two new AMC program elements were established in the FY 1975 program over and above those resulting from the foregoing expansion and twelve new program elements in later year programs. Two new projects were established in the FY 1975 program and 23 new projects were established in later program years. OCRDA initiated restructuring required to expand the single element funding concept to cover virtually all of the Exploratory Development program and took an initial step toward purification of the Research program in recognition of the lead laboratory concept.

Program Control

(U) The FY 1974 RDTE Program Apportionment Request, June 1973, was $1285.1 million. As of 30 June 1974 the RDTE program released to AMC totaled $1343.2 million. In addition, during the fiscal year, OCRDA increased the FY 1973 program by $2.8 million. During the fiscal year, this office reviewed on a quarterly basis 14 Selected Acquisition Reports for submission to DA, OSD, and/or Congress.

(U) The FY 1974 PEMA Production Base Support Program released by DCSLOG to AMC totaled $67.7 million. There were 212 funded projects in the program, of which 22 were late starts.

Increment Funding

(U) The Senate Armed Services Committee Report No. 93-385, dated 6 September 1973, authoriging FY 1974 RDTE appropriations, revised and clarified incremental programming principles. The new guidance generally provided greater flexibility for RDTE program management. Significant changes were: (1) principles were extended to cover first-tier subcontractor costs on reimbursable type contracts of $5 million or more for major weapon systems (development programs in excess of $100 million) and limits increments to 12 months; (2) major weapon systems and other major development programs were limited to 12-month increments that needed to coincide with the fiscal year. The Secretary of the Army, on an exception basis, could approve in specific cases, an overlap up to three months. The initial increment for new starts in major programs was limited to the costs which could be incurred after the Congress had passed the appropriations bill. For planning and programming purposes this normally would represent a nine-month or lesser period; (3) the new Congressional guidelines, as implemented by OSD and DA, allowed more flexibility during program execution when the start of an annual increment was delayed for legal, administrative,

or technical reasons. It recognized that the two-year availability of the RDTE appropriation would permit such flexibility occasioned by these infrequent circumstances.

Program Execution

(U) Program data to support the FY 1975 RDTE President's Budget was prepared in accordance with requirements set forth by higher authority. This data was used as back-up information for the basic RDTE program and all anticipated RDTE carryover of funds into FY 1975. Data furnished was based on the input received from the major subordinate commands and laboratories in response to a directive issued by the HQ AMC Directorate for RDTE adjusted to conform with the latest program guidance from higher authority.

(U) Support material for inclusion in the FY 1975 RDTE Apportionment Request to Congress was prepared and forwarded to higher authority. The support material included data for the basic FY 1975 RDTE program and all anticipated RDTE carryover funds into FY 1975. The data submitted was based on information furnished by the major subordinate commands and laboratories adjusted to conform with the latest program guidance from higher authority.

(U) The FY 1974 RDTE funding document (DA Form 1323) was received in August 1973 from the Comptroller of the Army. After receipt of funds, a program directive (AMC Form 1006) was released to the field to cover the approved plan for each project and/or task. The Forms 1006 were forwarded to the Finance and Accounting Division, Comptroller, Army Materiel Command, along with Schedule I and AMC Forms 20 requesting issuance of funds to the major subordinate commands and laboratories. Program directives were issued throughout the year for the current and prior fiscal years. These program directives were used to reprogram, issue released funds, and withdraw unobligated funds excess to current requirements. An average of approximately 36 program directives were issued each working day. In addition to this, numerous program revisions for each subordinate command were processed within AMC headquarters with approvals being returned to the subordinate commands.

(U) With the approval of the FY 1972 DOD-wide RDTE Program, Congress stipulated that all FY 1971 and prior year funds could not be used for obligation after 30 June 1972. In view of this directive, Project "Scorecard" was initiated by this headquarters to obtain the unobligated balances of prior year funds at each major subordinate command by fiscal year at project level. At the outset of this project unobligated balances were obtained by telephone on a monthly basis, at mid-year they were obtained on a bi-weekly bases, and during the last quarters of FY 1974, unobligated amounts were obtained on a weekly basis. The CG, AMC required a daily status beginning 25 June through 3 July. Charts were prepared and updated after receipt of

each major subordinate command's report, the unobligated amounts at the commands were plotted and numerous briefings conducted to assess the progress made by each major subordinate command to reduce all prior year programs to an ultimate goal of zero.

(U) The total unobligated balance of AMC for FY 1973 and prior years at 30 June 1973 was $50.7 million. The following chart reflects the total FY 1973 and prior year program of each major subordinate command as of 30 June 1973:

COMMAND	PROGRAM ($1,000)	UNOBLIGATED ($1,000)
AVSCOM	$195.7	$11.1
ECOM	228.1	17.8
MECOM	36.8	4.2
MICOM	294.0	3.8
MUCOM	92.4	1.3
TACOM	76.6	2.0
TECOM	157.8	4.6
WECOM	49.2	4.4
AMC HQ	105.1	1.5

(U) In addition to obtaining FY 1973 and prior year unobligated amounts on a weekly basis, the same intensive Scorecard telephone reporting was initiated at mid-year for the FY 1974 RDTE program, and the major subordinate commands progress in obligating the FY 1974 program was reviewed and assessed after each report was received. A formal AMCR 11-39 covering Scorecard reporting under Reports Control Symbol RCS 134 was published in June 1974.

(U) During FY 1974, 1,052 non-AMC RDTE Customer Orders were processed. The work was accomplished throughout AMC major subordinate commands and laboratories where orders from ARPA, NASA, DASA, Air Force, Navy, Marine Corps, AEC and other government agencies were programmed in accordance with the respective missions. The dollar level for FY 1974 was $111.1 million.

Centralization of Laboratories

(U) The US Army Land Warfare Laboratory at Aberdeen Proving Ground, Maryland, was disestablished on 30 June 1974 as part of a continuing program to improve organizational effectiveness and eliminate activities no longer required. Approximately 18 military and 17 civilian spaces were transferred to the Army Materiel Systems Analysis Agency (AMSAA) to carry out selected residue functions of the LWL.

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(U) With the conclusion of the Vietnam conflict, increasingly heavy emphasis was focused on attaining improved training devices for the Army. After review of AMC's performance in support of the US Army Training and Doctrine Command (TRADOC) requirements, a Project Manager for Training Devices (PM TRADE) was established on 23 November 1973. PM TRADE was delegated direct control of the US Army Training Device Agency (USATDA).

Personnel

(U) The AMC Headquarters RD&E Directorate restructured its divisions to compensate for RIF actions, retirements and reductions in grade necessitated by Department of Army reorganization and Manpower Utilization Surveys during FY 1974.

Armament Systems

(U) RDTE FY 1974 funding for crew served weapons was approximately $35 million. There were eight engineers within this commodity area.

(C) The total resources managed by the CB Branch for the FY 1974 CB RDTE Program were $28,399 thousand. This covered the RDTE Program activities at Edgewood Arsenal, one project at MICOM, and one project at TECOM (DPG). Programs under cognizance of the D/RD&E, Weapons Branch included 17 elements comprising 43 active projects. Manpower involved with this RDTE program were five on board personnel from the Directorate for RDTE Chemical and Biological Branch, with extended TDY assistance from EA personnel.

(U) The RDTE resources for the D/RD&E Individual Weapons/Mine Warfare Branch were split into three programs: Mine, Mortar, Countermine and Barrier. The resources for the Mine Program were as follows:

	AUTH	OBLIG	UNOBLIG	% OBLIG 6/30/74
Army Mines	14.1	14.1	0	100%

(U) The resources for the Mortar Program (ARMOP) were barely adequate. The facilities and personnel resources within the AMC complex were adequate to accomplish most program tasks in ARMOP. Funding, however, has been the determining factor in level of effort for those programs. The 6.1 and 6.2 areas were funded at levels which have severely limited advancement in state-of-the-art for mortar materiel. The consequences of this inadequate funding were expected to become more serious if this condition continued.

(U) The funding for the Countermine Program for FY 1974 was as follows:

RDT&E		$8,794,000
PEMA		455,300
O&MA		257,600
Customer		40,000
	TOTAL	$9,546,900

(U) The funding for the Barrier Program for FY 1974 was as follows:

RDT&E		$815,000
PEMA		370,000
O&MA		85,000
Customer		385,000
	TOTAL	$1,655,000

Missiles Systems

(U) The Missiles Systems Division of the HQ AMC Directorate for Research, Development and Engineering provided staff supervision, technical direction and analysis for over 65 missile development projects. During FY 1974, 21 of these efforts were actively funded with approximately 300 million dollars expended in the active areas. The following is a tabulation of active projects allocated funds in FY 1974:

Program Category	Number Projects	Dollar Level
6.2	5	$ 23,000,000
6.3	7	35,000,000
6.4	4	224,000,000
6.7	5	18,000,000
	21	$300,000,000

(U) Facilities available and used in support of the Division programs during FY 1974 were:

MICOM	PA	AMSAA	HDL
ARMCOM	Watervliet Ars	BRL	TECOM
ECOM	AVSCOM	HEL	WSMR
FABF	AFETR	AMMRC	NWC

Research

(U) The Research Division of the HQ AMC Directorate for RD&E was charged with the staff supervision of 47 DA projects which spanned categories of research, exploratory development, advanced development, and management and support programs. These diverse and broad activities were structured to increase the Army's knowledge and explore the application of new knowledge in the mathematical, environmental, physical, chemical, material, biological, and behavioral sciences and associated technologies and engineering disciplines to the solution of Army problems and the advancement of its capabilities. The division served as a focal point within the RDE Directorate for activities of the US Army Materiel Concepts Agency, and its planned disestablishment at the end of FY 1974. In addition, the division provided the personnel who were actively engaged in coordination, review, evaluation and overview of the AMC RDTE Military/Civil Disturbance Program, the Joint Technical Coordinating Group for Munitions Effectiveness, the Army's Independent Research and Development (IR&D) activities, bi-lateral and multi-lateral technical exchange programs with other countries and numerous other efforts. The Research Division scientific staff coped with problems and activities which covered a very wide range of scientific and technological disciplines with limited personnel resources. The Research Division started the fiscal year with 19 authorized and filled spaces which consisted of 14 professionals, one military R&D coordinator, and four secretarial positions.

(U) The project effort monitored and staff supervised by the Research Division totaled about $100 million in FY 1974. The projects support effort performed in 25 subordinate commands, corporate laboratories and agencies throughout AMC. The summary of Research Division project funding by program categories follows:

Program Category	No. of Projects	FY 74 Funding in Thousands
Research 6.1	19	$34,757
Expl. Dev. 6.2	20	43,270
Adv. Dev. 6.3	2	1,774
Engr. Dev. 6.4	1	3,221
Mgmt & Supt. 6.5	5	16,410
	47	$99,432

NOTE: The discussions that follow concerning research projects under 6.1 - Basic Research; 6.2 - Exploratory Development; 6.3 - Advanced Development; and 6.4-6.7 - Operational Systems Development pertain to selected projects only. Many more are detailed in the HQ AMC Directorate for RDE Annual Historical Summary deposited in the Archives of the HQ DARCOM Historical Office.

Basic Research (6.1 Project)

Air Systems

(U) Ongoing Projects included:

(1) 1F161102A35A - Research in Aircraft Aerodynamics; (2) 1F161102A35B - Research in Low-Speed Aerodynamics; and (3) 1F161102A35D - Research in Aircraft Structures.

Mathematician's Office

(U) A long standing Army problem concerned the way in which fatigue life was established for large gun tubes. Because of time and resources, the safe firing life of such weapons have, historically, been established on the basis of a very small sample. Watervliet Arsenal has instituted a more economic program involving hydraulic-pressure cycling of tubes in the laboratory in order to measure fatigue life. At the present time, it is beyond the state-of-the-art in fracture mechanics to precisely relate the propagation of fatigue cracks due to firing with those induced by laboratory cycling. As a result, numerous statistical models have been put forth to give various statistical descriptions of the correlation between the number of fired rounds and the number of laboratory cycles required to produce tube failure.

(U) The Office of the AMC Chief Mathematician constructed a diffusion approximation to crack depth as induced by both live firing and laboratory cycling. These models were to be fitted, with data being collected, and used to compare the distributions of the rounds/cycles required to produce tube fatigue. This method was expected to be capable of answering more general statistical questions concerning the relationships between these two types of fatigue than could be made on the basis of correlation alone.

(U) As a result of reviewing recently suggested methodologies concerning scheduled maintenance policies, the Office of the AMC Chief Mathematician developed several new mathematically expressed cost criteria for choosing optimal routine maintenance times. The determination of these times according to each of the criterion involved both exact and diffusion approximation techniques. The results of this analysis were being compared to those in the existing literature.

Research Projects

(U) The HQ AMC Directorate/RDE Research Division activities and accomplishments in FY 1974 were diverse, challenging and significant. In addition to the project activities and programs, there have been many special activities involving Research Division personnel, some of which are highlighted below.

(U) Independent Research and Development Program (IR&D). A continued high rate of activities occurred in this program during the past year. An up-to-date report was completed on "Objectives and Effects of IR&D" as assigned by the Department of Defense IR&D Policy Council. This report, after an additional year of effort, provides a very complete and comprehensive detailed study on all aspects of IR&D including a survey of selected IR&D contractors. For the third year in a row, the GAO conducted investigations of the IR&D Program. One of these was concerned with the IR&D Data Banks which were located at MICOM, and at the Defense Documentation Center (DDC) in order to determine if there was duplication. The GAO had recommended that the experimental DDC data bank be allowed to continue for one more year and assessment of its cost effectiveness determined. In the meantime a tremendous amount of evidence had accumulated which demonstrated the unique value of the particular IR&D data contained at MICOM to all the military services, several government agencies, and especially to the AMC technical community. A second GAO investigation assisted in providing inputs to the DOD's Policy Council concerning the Army's position and procedures relative to 22 questions asked by the GAO. Included in these was the cost for the IR&D technical evaluation by the Army which annually amounts to $350,000 and the cost of the annual negotiation with IR&D contractors by the Army which is approximately $35,000.

(U) Energy. There was continued emphasis on energy systems which depended upon lithium. Batteries were being studied which utilized lithium in both organic and inorganic electrolytes. Since this element was the most energetic, the problem was finding compatible electrolytes and significant progress was made in this area. In one application of lithium batteries operating at high temperatures, a Manufacturing Methods and Techniques (MMT) project was initiated. This action would be concerned with the study of production lines to determine problems that could arise in the assembly of these special batteries. They needed to be manufactured free of moisture and capable of operating at high temperatures. Initial application was to be aimed at powering fork lift trucks for the handling of ammunition, but broad applications existed for this high energy system.

(U) One of the most promising systems for the reduction of energy requirements as well as reduction of atmospheric pollutants continues to be the electrochemical fuel cell concept which was under study by the Army and which might employ in some cases non-logistic fuels such as alcohols or hydrogen--types which could relieve the strain on conventional fossil fuel supply.

(U) US/UK Fuel Cell Program. In order to attack the formidable barriers limiting fuel cell efficiency, the US and the UK had collaborated in a cooperative research program during the previous four years.

The emphasis under a Memo of Understanding was on the fundamental mechanisms involved in fuel cell electrochemistry. As a result of this cooperation, in which no funds are exchanged, AMC laboratories determined that a savings of more than one million dollars had been realized in the Army program merely on the basis of avoiding duplication in the two countries. The program was completed and it was expected that greater financial savings would be achieved.

(U) US/France Cooperative Program. A Data Exchange Agreement (DEA) was established with France which was oriented toward cooperation in the fundamental aspects of battery and fuel cell electrochemistry. The unique feature incorporated in this agreement was that specific tasks had been accepted by each government to complement the national program of the other. Extensive coordination was achieved through a visit of the Army project office to France during this period, which resulted in a detailed plan of the program to avoid duplication of efforts. A French group visited the US later in the year to finalize the details of the program.

(U) US/Japan Cooperative Program. A Data Exchange Program (DEA) has been established with Japan in the area of fuel cell and battery technology in order to utilize results of the very broad Japanese programs in these areas and to capitalize, especially in fuel cells, on Japanese technology in micro-miniaturization which could prove valuable in improving the energy density of these systems. Again, this cooperation will be formalized through a unique DEA which will specify particular tasks to be carried out in each country to complement the other and minimize duplication of effort. No funds would be exchanged.

(U) Structural Mechanics. Analytical studies were made on optimization of structural joint design in bolt or pin fastened composite plates to determine combinations of joint geometry and material parameters providing high structural efficiency. Results of a related analysis helped to control low speed impact damage in composite skis honeycomb sandwich configurations appropriate to rotor blade applications.

Exploratory Developments (6.2 Projects)

Tank and Automotive Technology

(U) TACOM consolidated all exploratory development (6.2 category funding) into one single program element funded (SPEF) project with the title: Tank and Automotive Technology. The purpose of this project has been to develop a technology base to design, produce and acquire tank-automotive systems at low risk for low cost with short lead times.

(U) Six main technical thrust areas are identified in the SPEF project; i.e., Mobility Evaluation Methodology, Combat Vehicles, Special Purpose Vehicles, Tactical Vehicles, Power Plants and Armor. Four additional classes of program activities rounded out the FY 1974 program as follows: Component Development, Suspension Development, Diagnostic Techniques for Automotive Equipment and Compliance with Regulatory Requirements. The high dollar in-house areas for FY 1974 included: Dynamic Simulation Studies ($425,000), Track, Sprocket and Drive ($380,000), TEAM ($150,000), Fire Extinguishing ($99,000), and Combination Armor ($85,000). Principal contracts for FY 1974 concerned Mine Protection ($150,000), Driveline Vibration ($75,000), Combat Vehicle Fragment Protection ($68,000), Armor Design ($60,000), Diesel Injection ($62,000) and Vehicle Survivability ($60,000). Total funds for FY 1974 were $5,385,000.

(U) Major thrusts of this project are TACOM's principal efforts to implement the Land Mobility Technology Coordinating Paper approved by DDR&E in 4th Quarter FY 1974. Reports for the SPEF Project are via DD Form 1498m Research and Technology Work Unit Summary and DD Form 1634 Research and Development Planning Summary available from the DDC Data Bank. These are updated semi-annually.

(U) Principal accomplishments for FY 1974 were as follows: (1) updating of AMC 71 Mobility Model to AMC 74 version and stressing the methodology thrust; (2) integration of the LMTCP into TACOM's technical staff arena as a common work plan; (3) completion of computer analyses for armor design vs the AP threat and completion of improved math model for predicting HE fragment perforations; (4) completed design of test simulator for suspension components; (5) established new design philosophy for track design to require only three track systems in the fleet; (6) structured new high mobility tactical fleet as major components to implement the "WHEELS" Study. Voids in the fleet were identified as 5/8 ton trucks and 4 ton trucks; and (7) the Maintenance Indicator System (MIS) tested for 20,000 miles installed in 2½ ton trucks at Fort Knox. The results were favorable.

Project Number 1G061102A35C - Research in Propulsion.

(U) In-house research was being conducted jointly by NASA Lewis and the Lewis Directorate of AMRDL in fundamental areas of aerodynamics, heat transfer, materials sciences, lubrication, etc. as applied to Army aviation propulsion interests. Specifically, projects are being pursued on (1) research on high temperature combustors; (2) aerodynamic research in high work output turbines involving elevated gas temperature operation; (3) structural and aerodynamic design and analysis of high pressure ratio small axial and centrifugal compressors; (4) evaluation of high speed, high DN bearings; and (5) research in materiel properties through alloying, dispersion strengthening, power metallurgy, etc.

(U) Various turbine cooling schemes were investigated and computer techniques for analysis of airfoil temperatures were made available. Regarding operation at high temperatures, a significant finding from materials research has shown a marked progress in recovering mechanical properties of coated superalloy sections, typical of their castings for turbine airfoils of small gas turbines. The resources for the project were: FY 1974 - $945,000, FY 1975 - $685,000.

Project Number 1G262207AH89 - Aircraft Propulsion Technology

(U) Exploratory Development programs were being conducted under this project on advanced technology components for aviation gas turbine engines, helicopter transmissions, thrust producers and other propulsion systems. The work was performed in the following major areas: (1) Power Devices - R&D on various major gas turbine components is accomplished under this effort. Included are centrifugal and axial compressors, combustors, turbines, bearings, seals, pumps, fuel controls, fuel systems, electrical systems, starters, environmental and operational problems, etc. and (2) Propulsion Components - R&D on transmissions, gears, shafting, bearings, seals, clutches, propeller, fans, secondary power, thrust devices, etc.

(U) This project has been redesignated for FY 1975 as Technical Area III, Propulsion Technology, under project 1F262209AH76, Aeronautical Technology.

(U) Progress on improved gas turbine components and transmission system designs included the demonstration of an advanced centrifugal compressor in which a pressure ratio of 10/1 was achieved in a single stage at high efficiency and the validation of the free planet transmission concept in back to back rig testing. The centrifugal compressor performance exceeded the contract goals while also giving promise for potential cost savings through the use of an inducer capable of being cast. Further testing of the compressor will be accomplished under the 6.3 STAGG program. The transmission program verified the feasibility of the free planet concept which appears to have potential for both significant weight reduction and reliability improvement.

(U) Typical of other progress in the program were the development of laser techniques for determining turbine tip clearance and the development of radiation pyrometry for measuring turbine temperatures. The resources for the project were: FY 1974 - $3,285,000 and FY 1975 - $2,470,000.

Project Number 1X163203DB75 - Heavy Lift Helicopter Engine

(U) This project supports the development of a turboshaft engine for use in the Heavy Lift Helicopter (HLH) program. Included in the project would be (1) the development of a flight representative engine to power the Advanced Technology Component Dynamic System Test Rig (DSTR); (2) the continued development of the DSTR engine through a PFRT to support the HLH prototype flight program;and (3) the follow-on development of the prototype engine through full Military Qualification.

(U) The XT701 engine completed its initial engine design and following a critical design review released all drawings for manufacturing. A final mock-up review was held to establish installation features and the engine mock-up was shipped to Boeing Vertol in the 3d Quarter FY 1974. The first engine test of the XT701 was initiated and by the end of FY 1974 three engines were in test with approximately 200 hours of engine operation accumulated. Additional major component tests were also run during the year. An intensive design to cost effort involving over 26 studies was conducted with a potential cost savings of $28,000 per engine identified. The resources applied to the program were: FY 1974 - $20,585,000 and FY 1975 - $9,300,000 (released).

Project Number 1X264206D189 - UTTAS Propulsion System

(U) The sole task under this project in FY 1973 was to provide a lightweight, high performance, easily maintained, highly reliable engine in support of the Utility Tactical Transport System (UTTAS). The tasks completed prior to FY 1973 under this project included the development of the T64-GE-16 engine used to power the AH-56 helicopter.

(U) The award of the development contract for the T700-GE-700 engine supporting UTTAS was preceded by a demonstrator engine program during which the feasibility of the required engine performance improvements was proven. Demonstrations of 22-25 percent improvements in specific fuel consumption and 30 percent improvements in specific weights verified the veracity of the advanced engine technology sought in the UTTAS development.

(U) The contract development schedule for the T700 progressed essentially on schedule. The test program accumulated in excess of 2200 hours of engine operation by the end of FY 1974. The Preliminary Flight Rating Test (PFRT) was initiated in late FY 1974 with anticipated official completion by September 1974 as specified in the contract.

(U) When successfully completed, the development of the UTTAS engine would provide the Army with a propulsion system that was significantly improved when compared with presently operating systems. Advancements would be achieved in the areas of engine specific weight, specific fuel consumption, reduced maintenance, reduced vulnerability and improved reliability and operating life.

Project Number 1G762708DF01 - Combat Engineer Technology

(U) This project pertains to bridging for the 1980's: The International Concept Study Team (ICST), with members from West Germany, United Kingdom and United States, established in FY 1971, completed formulation of Bridge Concepts for the 1980's. The final report was prepared and presented to participating national authorities during May 1974. The United Kingdom furnished the facilities and administrative services at Christchurch, Hauts, England. Following these national presentations, the concept recommended by the International Steering Committee will be studied by National Authorities to decide whether further collaboration should be undertaken. Work was initiated by US on an MOU setting out the principles for the definition and development phase. The work of the International Steering Committee was concluded in May 1974.

(U) The 90 foot Armored Vehicle Launched Bridge consists of two ramps and a center section and was to be transported on the current main battle tank. Fabrication of the Exploratory Development Prototype was completed. The design uses the orthotropic plate in a deck truss configuration with latest design techniques and material technology providing a 50 percent weight reduction over the current standard design. Some problems have been encountered due to stress corrosion cracking and corrective actions were continuing to enable tests to proceed.

(U) Tests continued to determine hull form and propulsion system for a new, shallow draft Ribbon Bridge Erection Boat. Test data was being evaluated on tests of water-jet and conventional propeller propulsion systems. Technical assessment and cost and economic analysis data were developed to support a DPROC for a new Ribbon Bridge Erection Boat.

(U) Earthmoving Science and Technology Evaluation continued on the potential of an air-transportable bulldozer. Evaluation also continued on the technical feasibility of a thermomechanical concept for hard rock breakage, a cooperative effort with the Bureau of Mines. The Limited Warfare Laboratory (LWL) effort in research of soil excavation by means of tool oscillation was assumed by MERDC.

(U) The High Speed Excavation Equipment research effort was continued with Projectiles fired from conventional Army artillery (90 and 105mm). Work also continued with high frequency percussive water jets.

(U) Contract action was initiated for the design, fabrication and demonstration test of a prototype air-transportable bulldozer to be completed in FY 1975. Theoretical studies were completed and small scale field apparatus constructed for quarry demonstration in FY 1975 of a thermomechanical rock breaker. The resources applied to combat engineer technology were: (1) Bridging: Funds allocated and expended were $580,000; and (2) Construction Equipment: Funds allocated and expended were $316,000.

Battlefield Command and Control

(U) On-going Projects in this area were: (1) 1S762703 DH93 - CSTA & Identification; (2) 1S762705 AH94 - Electronics and Electron Devices; (3) 1S762709 DH95 - Night Vision Investigation; (4) 1S628010 D152 - ECOM Spt (TRI-TAC); (5) 1X620501 D450 - Satellite Communications Exploratory Development; (6) 1S021101 A042 - Studies and Investigations, EW; and (7) 1S620501 A448 - Info Transmission.

(U) Completions and Significant Results in these projects included:

(1) Night Vision. These are continuing programs to provide for Advanced state-of-the-art components, improved testing methods and facilities, and visionics knowledge and systems analysis techniques for optimum design of night vision systems.

(2) Tactical Narrowband Security Techniques. Two exploratory development models of the GREATER ROLE small narrowband voice equipment were delivered by Philco Ford in April 1974. This is an improved channel vocoder with a multi-tone phase shift modem and security simulator. Along with candidate equipments using other approaches, it will be tested by the DOD Narrowband Consortium beginning in August 1974. It is planned, in the next phase, to determine the feasibility of building this equipment in the 20 lbs, 20 watts, 600 cubic inch package required by the Army ROC for Small Narrowband Security Device, approved 8 May 1974.

(3) Tactical Wideband Security Techniques. Work continued in support of wideband requirements for future systems such as Single Channel Ground/Airborne Radio System (SINCGARS). This includes construction of a SAVILLE test bed using chips and hybrid received from NSA. An exploratory development contract was let in May 1974 (Magnavox) for a COMSEC controller for Multiple Radios.

(4) Electronics and Electron Devices. Exploratory development of electronics technology and electron devices to provide the technological base for future generations of military equipment and systems with advanced functional capabilities. It encompasses a broad-based internal and contractual program in the areas of integrated circuits, semiconductor devices, microwave and signal processing devices, power sources, frequency control and filter devices, electron tubes, display devices, electronic materials, nuclear hardening and wire and cable. A significant achievement has been the in-house design of a new high pressure oxidation process for integrated circuits (IC) which offers promise of materially improving the reliability, producibility and availability of microelectronic large scale integration (LSI) devices. Utilizing specially designed equipment operating at higher pressures (150-1000 atm), researchers have achieved the required oxidation thickness in shorter time at temperatures 400° C lower than the 1000-1250° C currently utilized in industry. At the lower temperature the number of metallurgical defects and undesired chemical reactions are drastically reduced, improving both the yield and subsequent reliability of complex IC's. The process is expected to be particularly applicable to dielectrically isolated and silicon on sapphire circuits use to achieve nuclear radiation hardening in military equipments and systems.

(U) Resources, Funds Allocated and Expended.

(1)	Night Vision	$3,825,000
(2)	Electronics Warfare	1,570,000
(3)	Combat Surveillance Target Acquisition and Identification	4,265,000
(4)	Communications	1,103,000
(5)	Electron Devices	10,273,000

Air Systems

(U) On-going Projects in this area included: (1) 1F262202AH85 - Aircraft Avionics Technology; (2) 1F262203AH86 - Aircraft Vehicle Technology; (3) 1F262205AH88 - Aeronautical Technology; and (4) 1F262201DH96 - Aircraft Weaponization Technology.

(U) There were no new start projects in FY 1974. However, the Single Program Element Funding (SPEF) concept was initiated. Efforts in prior years were conducted under a number of separate projects. For FY 1974 work previously performed under Project 1F162201D035 Aircraft Systems Effectiveness was incorporated under the new SPEF Project 1T65706M541, AMSAA monitored by the Research Division. SPEF Project 1F262201DH96, Aircraft Weaponization Technology was initiated to incorporate efforts previously conducted under the following projects: (1) 1F162201D023 - Aircraft Weapon Fire Control;

1F162201D025 - Gun Type Aerial Weapons; and (3) 1F162201D036 - Aerial Weapons Warheads.

(U) There were no project completions in FY 1974; however, significant activities included:

(U) Technology Area I, Guns and Mounts. Completed firing test from a rigidly mounted AH-1G wing stub and compiled data quantifying contribution to error of recoil-induced structural flexure. Completed design of impulse generator which will permit exploitation of constant recoil principle leading toward a gun/recoil system capable of long-range point fire against lightly armored targets from a helicopter platform.

(U) Technology Area II, Fire Control. Determined the advantages and disadvantages of millimeter wave radar, including effects of rain and fog backscatter and attenuation, through incorporation of test results from a related effort, to establish the potential of this radar approach for aircraft fire control applications. Designed and fabricated a breadboard target cueing test bed which will permit automatic detection and recognition of ground targets from helicopters. Completed error budget flight test of the Multi-Weapon Fire Control System which will permit a determination of the source and nature of open-loop fire control concepts.

(U) Technology Area III, Aerial Munitions. Demonstrated spin insensitivity of shallow cone-shaped charge liner which will result in automatic cannon anti-armor warheads with non-degraded performance in engagements at ranges other than the range for which the design is optimized. Demonstrated the penetration potential of a shallow cone-shaped charge liner as being comparable and potentially superior to a conventional shaped charge. Demonstrated a 70% reduction in base drag with existing pyrotechnic compositions of fumer. Assessed the best fumer mixer and means of bare ejection, to provide reduced time of flight with attendant improvements in performance through increase in probability of hit and in striking velocity.

(U) Resources. FY 1974 funding on 6.2 Projects was as follows:

(1)	Armor Weapon Systems	1,230K
(2)	Field Artillery Systems	4,576K
(3)	Infantry Support Weapon Systems	1,775K
(4)	Improved Conventional Ammunition	319K
(5)	Demolitions Technology	655K
(6)	Hypervelocity Cannon	795K
(7)	Cannon Launched Guided Projectile Technology	600K

Chemical-Biological Projects

(C) On-going projects were divided into three general categories: CB Defense, Chemical Offense and Combat Support. The CB Defense was sub-divided into areas of Chemical and Biological Warning and Detection (alarm), Medical and Physical Protection, Protective Clothing, and Decontamination. In the alarm area of CB defense the Remote Sensing of Airborne chemical agents continued to show promise. The Remote Raman System offered much promise for detecting chemical agents and as an atmospheric pollutant monitor. Studies on laser fluorescence showed some promise for the remote detection of biological agents. Feasibility Evaluation of these concepts was continuing. Work under contract at Stanford Research Institute indicated the feasibility of Field Ionization Mass Spectrometry for rapid identification of micro organisms.

(C) Medical aspects of immunization against chemical agents was an on-going, complex, challenging program showing great potential. An ASAP panel was convened to review this area.

(C) In the area of Physical Protection, work was continued on experimental confirmation of the predictive equations for equilibrium vapor sorption by activated carbons using the vapors of various organophosphorus compounds. Studies were continued on the mechanisms of aerosol filtration by fibrous filter mats. Work was continued on improving the chemisorption capacity of sorbents with emphasis on C.K. Work was initiated on an improved Gas Life Testing Apparatus and Techniques. Studies on promising leads to measure residual gas life were continued. XD efforts on the new Mask with emphasis on improved sorbents, elastomers and mask components was completed in preparation for initiation of advanced development in FY 1975. A ROC for this Mask was approved by DA on 6 May 1974. The primary objective of the protective clothing program is to maintain the current protection level while reducing the heat stress and logistics associated with protective clothing. Two approaches are being exploited to achieve the objective as follows: (1) studies were continued on a non-sweat degradable carbon for use in a single layer cloth; (2) the Spacer Concept of protective clothing utilizing a highly air permeable fabric spaced away from the skin has had its protection feasibility demonstrated with a marked improvement over non-spaced material. However, the preliminary results of the ARIEM evaluation indicated that there is a significant increase in the heat burden associated with the wear of this system when compared against a garment of the same system but not spaced away from the skin or the undergarments. Work on a decontamination system to emphasize the prevention of contamination to the maximum possible extent was continued. To protect those surfaces, which are covered by agent soluble coatings or are agent sorbable, work was continued on a supplemental coating which will make the surface agent impermeable. A hot water soluble, cold water insoluble

polyvinyl alcohol formulation is currently being studied for this purpose. Work was continued on a thixotropic paste, made with alcohol, active carbon sorbents and fumed silica, for use as a skin decontaminant. Work was completed on an agent insoluble polyurethane paint. A specification was prepared and a small production was obtained. Tests of this paint vs alkyd paint showed it to be superior to the alkyd in ease of decontamination and quicker use of equipment after contamination. Studies were continued on DS-2 type solutions to improve reactivity and low temperature characteristics and reduce toxicity. A JTCG/ME Triservice group was convened to review decontamination and provide recommendations on all aspects of the area.

(C) A new binary VX reaction system to date consistently produces VX in yields between 70 and 80 percent by weight. This was being considered for the 8" VX development program. A binary simulant reaction which produces a non-toxic product was required for ballistic and dissemination tests. Candidate simulant mixtures were tested thoroughly and selections made. Exploratory efforts continued on a 155mm projectile to disseminate an intermediate volatility agent (IVA) for both inhalation and percutaneous effects.

(C) The combat support category was divided into two areas, Flame and Incendiary and Riot Control Systems.

(C) The effort in Flame and Incendiaries includes Research studies which have confirmed that rapid application of heat energy - heat flux - is the most effective method for destroying or damaging military targets. The controlled fireball process is being utilized by tailoring of triethylaluminum (TEA) to achieve calculated reaction rates in specific weapons. The first approach was successful with the M202/M74 Flame Weapon and confirmatory tests demonstrated its effectiveness against the standard Army field bunker and against 5-gallon drums of diesel oil at 40°F. Predictive mathematical models indicate that this controlled fireball technique can be weaponized in an unlimited number of concepts since the flame agent can be tailored to specific operational requirements. A large pyrophoric filled round is under investigation. The 152mm round was being used as a prototype carrier. This round uses a carry-through case which eliminates cartridge case disposal problem.

(C) The Exploratory Development effort on a 105mm flame round for the US Marine Corps was also demonstrated with good results and the advanced development phase of the program was begun in FY 1974.

(C) Shaped charge technology was extended to include the exploitation of injected organic fuels in hard target inclosures in order to generate an internal fuel-air-explosion as the defeat mechanism. Controlled fuel/air experiments were conducted in order to

establish baseline requirements and effectiveness data. Candidate fuels such as pentane and propylene oxide were aerosolized and ignited in a bunker and simulated tank crew compartment. Thermal and pressure measurements indicate that fuel/air mixes richer than stoichiometric are desirable and that the order of detonation is in the deflagration region. Current efforts are directed to improve the fuel injection efficiency by the use of explosive drivers. Concept follow-through devices are being tested and evaluated to select a prototype round for full scale testing against real targets containing biological specimen.

(C) In the Riot Control agent area, the main effort was concentrated in the continued development of a new concept in munitions design known as Ring Airfoil Grenade (Soft Rag). Because of its airfoil shape the principles of aerodynamics are utilized to achieve a significant increase in range with an essentially flat trajectory. The Soft Rag is a non-lethal projectile made of soft resilient, rubber-like material filled with micropulverized CS-2 agent. The projectile requires no fuzing; it uses the forces produced by spin, to achieve gyroscopic stability, augmented by impact force to rupture the casing and disseminate the agent. A launcher/adapter for the M16A1 rifle has been designed, fabricated and successfully test fired. The Soft Rag system will provide users with a non-lethal capability to engage point-type targets at ranges of 40-200 meters. Advanced Development was initiated in FY 1974. This is a companion round to the Sting RAG which entered ED in FY 1974.

Missile Systems

(U) The Technology Branch has monitorship responsibility for 6.2 Exploratory Development and the 6.3 Advanced Development programs in the Missiles Systems Division and is responsible for resolving technical problems associated with systems. This Branch further supervises, reviews, evaluates, and technically coordinates research and engineering activities for all missile subsystems components, and related technology.

(U) Continuing efforts are made to fill and identify gaps in Army capabilities for support of AMC major thrust areas. Significant increases in Army capabilities have been provided thru advancing the state-of-the-art and by insuring timely availability of technology for future missile system requirements. The 6.2 Missile Technology SPEF includes 13 technology area groupings for FY 1974. Funded were sensors, guidance and control, propulsion, experimental systems, nuclear weapons effects, system concept and analysis, simulation research, hybrid micro-electronics, and lasers. In addition, this branch managed the Short Range Man Portable Anti Tank Weapon Technology (SMAWT) for the Deputy for Laboratories which involved several corporate laboratories and the laboratories of several major subordinate

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commands. This program was directed at advancing the technology for the successor to LAW. With the exception described above individual programs are as follows.

Terminal Homing Systems - 1M362301A117

(U) The primary program objective in this project was the identification and evaluation of all factors in the tactical environment which are critical to Army terminal homing systems performance. The program covers measurements and analysis of all target and tactical environmental conditions affecting terminal homing systems, including laser, infrared, and millimeter guidance sensors.

(U) Program efforts have been in the following areas: Tactical Operations Assessment which has focused on the collection and analysis of data from full-scale tactical field exercises conducted by the Army and Marine Corps; Tactical Measurements which are laboratory quality field experiments designed to obtain accurate data on target signatures and environmental conditions as they affect guidance performance; and the Terminal Homing Data Bank which is an automated system for collection and dissemination of terminal homing data for all qualified users.

(U) In the Tactical Operations Assessment area, emphasis was given to analysis of previously collected battlefield environmental data, including terrain effects, smoke, dust, and tactical conditions. Results of observations made during the military potential test for a Laser Guided Missile System (LAGUMS) were published in Technical Report RB-73-1. A presentation on "Assessment of Battlefield Environments for Laser Terminal Homing Systems" was presented at the NATO seminar on lasers held in Ottawa, Canada, 26-28 September 1973. The Canadian Defense Research Staff and the Canadian Mobile Forces Command were briefed on the program in December 1973.

(U) In the Tactical Measurements effort, laser target reflectivity data were taken with the Airborne Measurement System (AMS) on target vehicles including tanks and APC types. Data were also taken and analyzed on the "fringe," or off-axis, radiation characteristics of current laser designators. Collection of data has also continued on atmospheric attenuation, background and foreground reflections, and other environmental factors.

(U) Both Airborne (AMS) and tower measurements of infrared characteristics of armored vehicles were taken, using 3-5 micrometer and 8-14 micrometer radiometers, and an AGA thermovision instrument in the 1-5 micrometer range. These measurements were part of a continuing effort on terminal homing signatures investigation.

(U) Millimeter measurements in the 35 GHz band were made on various domestic armored vehicles including tanks and armored personnel carriers. Test data was taken on both signatures and background and for various modes of operation including passive and active radiometric modes, and the active pulse mode. Tests were conducted from both towers and the Airborne Measurement System (AMS) helicopter.

(U) The Terminal Homing Data Bank now has a data base of approximately 12,000 documents on terminal homing technology. During FY 1974, 395 retrospective data searches were made for DOD and industrial agencies. Thirty-one DOD agencies are now actively served by the Data Bank. The FY 1974 funding was $1,000,000 with $761,965 In-House including $646,965 MICOM, $90,000 BRL, and $25,000 BRL. Contracts totaled $238,035.

Non-Nuclear Warheads for Guided Missiles and Rockets - 1M362301A210

(U) The objective of this ARMCOM/PA program was to investigate methods of providing effective non-nuclear firepower for all Army guided missiles and rockets against air, space and surface targets. Efforts were initiated based on technological advances derived from basic research programs and/or new concept arising from exploratory development activities. This effort was directed toward providing a technology base for future missile warhead development; and was a continuing multi-year effort for demonstrating concept feasibility.

(U) The major FY 1974 shaped charge (SC) effort was directed toward providing smaller and lighter weight SC warhead designs without loss of penetration ability. The multi-parameter study investigated a shortened warhead concept with a wide angle liner, peripheral initiation and high energy pressed explosive. Activities for Indirect Fire, Anti-Armor warheads investigated the explosive fragmentation concept for four inch diameter munitions. Penetration was evaluated against RH Armor as a function of plate materiel thickness, standoff, and explosive. In addition, studies were conducted for self-forging fragments (modified ballistic disc) as an anti-armor kill mechanism and in heavy (high density) tungsten alloys for armor penetration. The Advanced Air Defense Warhead Studies concentrated on the investigation of warhead concepts that have the potential for enhancing the velocity and mass density of fragments in a focused direction. The FY 1974 effort included fabrication and static testing of explosive initiation systems and warhead deformation systems for several warhead designs. These concepts have potential of increasing total fragments in a preferred direction by 25 percent. Additional details on these studies are published in the semi-annual progress reports for April 1973 thru September 1973 (IR WRDS-13); October 1973 thru March 1974 (IR WRDS-14), Title: Exploratory Development of Non-Nuclear Warheads for Guided Missiles. The total funding for FY 1974 was $1,545,000 with $180,000 awarded in contracts and $1,365,000 in-house at Picatinny Arsenal.

Missile Technology - 1M362303A214

(U) The objective of this project was to conduct exploratory development in the following areas of technology pertinent to future weapon systems for which the Army Missile Command has prime responsibility.*

(1) Sensors Technology
(2) Guidance and Control Technology
(3) Terminal Guidance Technology
(4) Propulsion Technology
(5) Aerodynamic Technology
(6) Ground Support Equipment Technology
(7) Nuclear Weapons Effect Technology
(8) Structures Technology
(9) Experimental Systems Technology
(10) Systems Concepts and Analysis Technology
(11) Hybrid Microelectronic Technology
(12) Simulation Research Technology
(13) Laser Technology

Advanced Development (6.3 Projects)

Project 1F263206D043 - Aircraft Weapon Fire Control

(U) Ground test and thorough design review of the Baird Atomic Scene Stabilization Device was successfully conducted. Aircraft integration and test was scheduled to be conducted early in FY 1975. Flight tests of various laser range finder mounting concepts were conducted, including successful development of pantograph mounted laser range finder inside an AH-1G cockpit. A laser range finder was developed at Frankford Arsenal for the XM65 TOW Cobra sight, was integrated and entered into flight test and debugging sequence.

(U) Low level flight tests of reconfigured SMASH aircraft with reversed cockpit arrangement (pilot in front seat) was successfully conducted. Original display glare problem has been solved. As a result of effort, an AH-1G Cobra with full flight test instrumentation is available for future test programs.

(U) An automatic tracking technique for original AN/AAQ5 SMASH FLIR was tested. Owing to availability of other techniques, required improvements were not implemented. Improvement of FLIR stabilized gimbal performance for use with other sensors was initiated.

*Accomplishments of, and resources applied to, these projects are detailed in HQ AMC Directorate for RDTE Annual Historical Summary deposited in Archives of the HQ DARCOM Historical Office.

(U)The Multi-Weapon Fire Control System was modified and successfully used to support turreted 20mm firing test of automatic cannon technology error budget analysis program.

(U) An ultrasonic sensor helmet sight and helmet mounted Cathode Ray Tube (CRT) display was developed and delivered for testing early in FY 1975. A PLZT (lead, lanthaneum-doped, zirconium titanate) heads up display was developed and integrated with a laser range finder and used for 2.75 inch rocket firing tests during the first half of FY 1975.

(U) A multi-mode cathode ray tube heads up display was accepted and integrated on an AH-1G helicopter late in FY 1974. This item will be used to determine symbology requirements for pilot fire control and as the basic pilot sight for the SEAS fire control aircraft.

(U) The fixed forward-firing fire control system for free rocket delivery using components such as a laser range finder, computer, air data sensors, a relative wind sensor and pilot heads up display was developed and integrated on an AH-1G helicopter. This system will be used for firing 2.75 inch rockets and/or SEAS.

Project 1F263206D044 - Aircraft Gun Type Weapons

(U) Investigation of the lockless gun concept continued. Two phases of a four phase program were completed. The lockless system has demonstrated functional feasibility of ammunition and weapon system. The second generation weapon and third generation ammunition was under test. A burst firing capability in excess of 25 rounds was demonstrated. Lockless design simplicity and utilization of non-critical low-cost ammunition case material offered the potential for significant improvement in the areas of space, weight and cost when compared to its conventional counterpart.

(U) Development of a 30mm Advanced Medium Caliber Weapon Subsystem (AMCAWS) continued. Two phases of a four phase advanced development cycle were completed. The concept phase was completed and the validation phase initiated. The gun development was handled in-house at Rock Island Arsenal and the ammunition was being developed under Frankford Arsenal contract. The AMCAWS round offers potential for substantial weight and volume savings over conventional ammunition, and reduced receiver size and gun length were attendant advantages.

(U) Efforts for the reduction of recoil force transmitted to the aircraft vehicle to a low and constant level while tolerating misfires and compensating for operational variations was continued. An analysis was made of an active hydraulic servo system with appropriate sensors utilizing the M197 20mm Gatling Type Gun as a test

vehicle. The conclusions of this analysis led to the selection of active recoil control concept. A firing test fixture was designed and fabricated. Firing tests were conducted which demonstrated concept feasibility. The peak recoil loads normally experienced with the M197, of approximately 2600 lbs., were effectively averaged to 450 lbs over the entire firing burst.

(U) Efforts initiated in previous years on hydrofluidic control to stabilize helicopter armament turrets continued in FY 1974. Firing tests using a two axis stabilized M28 turret were conducted. The tests involved ground and hover firing of the M28 armament system with and without the fluidic stabilization in the control loop for comparative purposes. The general concept was verified by the tests in that the fluidic sensors were immune to recoil distrubance while still sensing the angular rate inputs. Significant dispersion reductions were demonstrated. Some problems were surfaced in the basic stabilization scheme which require further investigation. With this definition of system characteristics, work was to continue using the XM97 20mm turret as a test vehicle.

Project 1X163203D156-Heavy Lift Helicopter

(U) The critical components were being designed, fabricated and tested by Boeing-Vertol and the Cargo Handling System, Flight Control System and Aft Rotor/Drive System. These efforts were originally scheduled to be completed by 30 June 1974. The Flight Control and Cargo Handling Systems were essentially complete. There was expected to be a 5-month slippage in completion of the Rotor/Drive test. The prototype and engine programs were several weeks behind schedule after 18 months of a 37 month program. Estimates were that the component, prototype and engine programs could be completed within the originally approved funding threshold of $189.9 million.

(U) A special ASARC was being convened during the latter part of July to consider the recently completed cost and operational effectiveness analyses and the results of the component program. It was expected that this ASARC would determine the future course of the HLH program.

Project 1F163203DB157-Advanced Rotary Wing Aircraft

(U) First flight of the Advancing Blade Concept (ABC) was completed on 26 July 1972. The first aircraft suffered major accident damage on 24 August 1973 postponing completion of the second aircraft and further flight test pending results of the accident investigation. A proposal was being evaluated on the modifications necessary for continuation of the flight test evaluation.

Project 1X463403D656-NAVSTAR Global Positioning System

(U) In accordance with recommendations of the Defense System Acquisition Review Council (DSARC) the Deputy Secretary of Defense on 22 December 1973, approved Phase, Concept Validation of the program to develop a Navigation System Using Time and Ranging (NAVSTAR), Global Positioning System (GPS) and authorized the military services to proceed. AMC (PM SATCOM) was responsible to insure that Army User Equipment was developed in accordance with specified Army requirements for airborne, waterborne, ground vehicular and dismounted applications which require positioning and navigation information. The Army position to participate in this joint service development program was preceded by approximately one year of comprehensive study of all Army positioning and navigation systems conducted by the Department of the Army Special Task Force on Positioning and Navigation POS/NAV. The USA Electronics Command, USA Engineer Topographic Laboratories (POS/NAV). USA Materiel Systems Analysis Agency, US Army Satellite Communications Agency and PM NAVCON participated in the POS/NAV study effort.

Project 1G763702DG10-Electrochemical Power Sources

(U) On-going Projects in this area included: (1) Size and performance of the lithium organic electrolyte battery to be subjected to the field feasibility tests for REMBASS and communication-security equipment was finalized and hardware obtained; (2) The program emphasis of zinc-air batteries was changed from secondary types to primary due to operational tests performed in FY 1974; (3) Performance capabilities of the alkaline 60 watt fuel cell was evaluated for military use; (4) A contract was awarded for an altitude insensitive, totally sealed hybrid metal hydride low power fuel cell with deliveries expected in 1Q FY 1975; (5) A contract was awarded for four different sizes, ranging from 1.2AH to 7AH, of 6 volt sealed nickel-cadmium batteries; (6) Efforts continued on the improvement of the cracker catalyst used in the 1.5KW fuel cell power system; (7) A 1.5KW fuel cell power source was assembled. This power source uses methyl alcohol as its fuel; and (8) The development of fuel cells for sensor applications continued to meet the field feasibility test requirements for the REMBASS.

(U) There was $782,000 allocated to this project. All funds were expended except $95,000 allocated for a 1.5KW thermoelectric stack. There were no bids on this proposed contract. There were no completions or significant results during the year.

Project 1G763702DG11-Electromechanical Power Sources

(U) The on-going Projects in this area were: (1) Advanced Development efforts on a future 60KW compressor and turbine was

completed; (2) Advanced Development efforts continued on the AD model Rankine Cycle 1.5KW generator set. Completion is scheduled in FY 1975; (3) Contractual efforts continued on the development of a new concept centrifugal compressor, gas bearings, high speed clutch, rotor dynamics and bearings for small turbo-generators; (4) Final prototypes of the 10 and 20 HP diesel engine were delivered. Final drawings were completed; (5) Evaluation of small commercial engines for the military 1.5 and 3KW generators continued; (6) 15 KVA power conditioner was delivered and is undergoing evaluation; and (7) The Development of a 30KW-100KW DC link feasibility study using subsystem circuit elements was completed.

(U) Specifications were prepared for a 1.5KW inverter for a fuel cell and a contract was awarded for this item. There were no completions or significant results. There was $1,468,000 allocated to this project. All funds were expended.

Battlefield Command and Control

(U) On-Going projects in this area included: 1S163210DK61 Remotely Piloted Vehicles/Drones; 1S663719DK70 Night Vision Devices; 1S663719DK72 Radars; 1S663719DK73 Unattended Ground Sensors; 1S663719DK75 STANO; 1S663729DK83 Artillery Locating Radar; 1X663722D104 TRI-TAC; 1S635801D437 Subsystem Reliability; 1S663703D654 ADPE Development; 1X333111D149 Support of DCS; 1X634301D245 Strategic Communications Development; 1S663718D267 Missile EW; 1S763711D653 AEWSP Equipment; 1X6318010D512 Tactical Operations System; 1S663718D626 C-E EW Vulnerability; 1S634201D243 IFF Developments; 1S634301D244 Communications Development; 1S634301D246 Tactical Communications Development; and 1S634701D251 Non-Communications ECM Development.

(U) A physical security project was initiated and funded to meet the requirements of the Materiel Need (MN) for a Facility Intrusion Detection System (FIDS) approved 5 March 1973. Planned effort was divided into two phases; basic FIDS to allow for the exploitation of existing technologies to meet immediate needs in an earlier time-frame whereas the Advanced FIDS allows for the incorporation of additional capabilities to meet requirements of the MN not covered by the basic FIDS. Primary emphasis was placed on the basic FIDS leading to the completion of concept formulation effort which was reviewed in a Concept Formulation In-Process Review 4 June 1974 and approval obtained to proceed into Full Scale developments for the basic FIDS.

(U) The Aircraft Survivability Equipment ROC was approved on 17 May 1974. This would serve as a requirements document for both 6.3b and 6.4 effort for both passive and active aircraft survivability equipment.

(U) A Tri-Service effort was initiated to develop a minichaff dispensing system for protection of aircraft threats of radar guided ground-to-air missile. Significant achievements were made in this program resulting in an 80 percent commonality of these systems.

(U) The EW Lab at the Sandia Test Range conducted static and dynamic evaluation tests on six different IR and Radar Missile Launch Detectors. The primary purpose was to determine the optimum system to start a 6.4 engineering development effort. The result showed that none of the systems evaluated qualified for further engineering effort.

(U) An active infrared countermeasure advanced development effort was evaluated for the CH-47 Medium Lift Helicopter. The effort was named "HOT BRICK." This effort was considered an improvement over the model developed for the OV-1D in that it was omni-directional.

(U) In April 1974, the modification of an Air Force NKC-135 Aircraft via contract with General Dynamics of Fort Worth, Texas, was completed. Work had been initiated in January 1973 to convert the aircraft into, essentially, a flying EW Laboratory (BIG CROW). With this capability the Missile Electronic Warfare Technical Area (MEWTA) of ECOM/EWL is better able to carry out its mission of determining the vulnerability of all Army Missile Systems to Electronic Countermeasures (ECM), to recommend means to reduce vulnerability, to determine vulnerability of Foreign Missile Systems, and to develop ECM Systems for Field Army use.

(U) Compromising Emanations, Suppression, and Tests (TEMPEST) - Assistance (consultation, testing, advice) to communications developers continued during FY 1974. Two additional engineers were added to the ECOM TEMPEST team during the fourth quarter of the year. TECOM has ordered a TEMPEST test van (ADD-ON to ASA contract) for use as a mobile facility. Delivery was originally scheduled 3Q 1974; now estimated as 1Q 1975. Four test personnel were given classroom training during FY 1974, and will receive OJT-type training at ECOM during 1Q 1975. Operational date for the mobile facility is now estimated as December 1974 if no further delays occur in delivery of the van.

(U) Delivery of competitive advanced development models of the Miniature Infrared Alarm (MIRA) and Vehicular Infrared Alarm (VIA) was accomplished during FY 1974. Delivery of an advanced development feasibility model of the ATGM-ECM System, developed by Illinois Institute of Technology, Research Institute (IITRI) was accomplished in June 1974.

(U) Tactical Operations System (TOS). TOS is an automated information processing system designed to aid tactical commanders in the conduct of combat operations. The objective of TOS is to provide an improved command and control capability to commanders from battalion to field army level. The Development Concept Paper (DCP) for TOS was approved by DOD in September 1972. The USACSA plan for the software development for the TOS Operable Segment (TOS^2) was approved in September 1972. TOS^2 is an R&D militarized test bed to be tested at MASSTER to validate the TOS concept. Hardware and software development continued throughout FY 1974. The final increment of equipment for the Software Support System was delivered to USACSC, Falls Church, Virginia and Government acceptance accomplished in April 1974. The program encountered a nine month slip due to a slip in the software development effort. Efforts were initiated by the user representatives, USATRADOC, through the TOS User Requirements Committee, and various study programs, to define TOS^2 alternatives for testing at MASSTER, to refine and establish ultimate TOS requirements and applications for considerations of the TOS ASARC/DSARC.

(U) Remotely Piloted Vehicle Program. As a means for providing increased management emphasis to this program, a Systems Manager, LTC Davies Powers, at AVSCOM was established. Flight tests at Fort Huachuca were flown to obtain experimental data on aircraft and sensor performance. A revised Army RPV program was developed and approved by HQ DA.

(U) Remotely Monitored Battlefield Sensor System (REMBASS). During FY 1974, considerable advanced development was directed toward the high risk technical problems of accurately classifying and locating targets. Prototype technical approaches were developed and are scheduled for competitive field evaluation in FY 1975. Documentation to support a decision to enter full scale development is being prepared and an IPR is scheduled for late FY 1975 following completion of DT/OT I Validation Tests.

(U) Night Vision Devices. The shoot-off tests of the Turret Integrated Night Thermal Systems (TINTS) models, hereafter called the Tank Thermal Systems (TTS) were conducted in First Quarter FY 1974 which concluded that neither system met the specification. As a result, the Texas Instruments and Hughes prototypes are being upgraded and will again be competitively tested. Efforts continued on commonality of components for Universal Far Infrared Systems (UFIRS). These components will be incorporated into the various thermal systems, as they become available and are applicable to the respective system.

(U) Tactical Radio Communications System (TRCS). Late in the fiscal year secure and reliable communication was established as a Major Thrust area. Advanced development of a manpack, vehicular, airborne VHF FM system (AN/VRC-78), with associated life cycle cost of ownership study, continued to near completion. Input and participation was provided to a DA study group on Single Channel Tactical Radio Communications (SINCTRAC), which addressed a consolidated approach to meeting future Army tactical net Radio requirements. A resulting proposed ROC for a VHF FM system (SINCGARS) for manpack, airborne, vehicular use was processed to DA with the recommendation that it be designated a major system. Development of a new field Army tactical teletypewriter was completed and the equipment type classified for Army use. The item will increase speed of traffic handling and greatly reduce O&MA costs.

(U) The resource funds allocated and expended were as follows:

Night Vision	$7,985,000
Combat Surveillance, Target Acquisition and Identification	$26,445,000
Communications	$18,683,000
Electronic Warfare	$11,511,000

Chemical-Biological

(C) For on-going projects in the advanced development effort, the CB defensive aspects were: numerous improvements on the Chemiluminescence Biological Detector (XM19) have resulted in lower power requirements and increased operational capability.

(C) In the infrared area, Passive Long Path Infrared (LOPAIR) and the Carbon Dioxide Laser were extensively evaluated and the LOPAIR was selected as the next candidate for advanced development.

(C) A Liquid Agent Detector (LAD) is being developed consisting of a low cost, expendable, adhesive backed, durable tape or badge containing a dye. This material is to be worn by individuals or placed on equipment to detect chemical agent droplets.

(C) In the Chemical Offensive Weapon area developments were: advanced development continued on a 155mm artillery projectile, for the dissemination of a non-lethal, incapacitating chemical agent, EA3834. This system was designed to rain many small submunitions down on the target area with an effective agent concentration. As a result of a conceptual safety study which was conducted in accordance with AR 385-61, the present design does not meet the safety requirements

of the regulation. AMC directed Edgewood Arsenal to prepare a plan for orderly termination of the project. However, in June 1974 DAMO-RQR stated that a decision on the TRADOC recommendation to terminate the NM be held in abeyance pending a decision by 1 September 1974. This is also the case for the 155mm Tactical CS round.

(C) Work continued on the 9-inch binary VX projectile, XM736, which progressed to the final stage of Advanced & Engineering Development. This binary projectile was being designed for the dissemination of a persistent, low volatility, percutaneously-active agent VX. The bulk-explosive configuration has been selected as the preferred design because of cost effectiveness considerations. The process involves two liquid reactants. During FY 1974, experimental munitions and components were designed, fabricated and tested for ballistic characteristics, functional performance and reliability, metal parts integrity, materials compatibility, etc. Other efforts involved the optimization of the binary reaction, selection of a standard fuzing, and the selection of suitable simulants and/or simulation techniques for parametric studies of munition effectiveness. This round entered Engineering Development in FY 1974 with type classification in FY 1978. This represented a slippage of approximately one year because of congressional funding reductions in FY 1975.

Long Range Precision Designators - 1M363306D070

(C) The objective of this project was to develop the Ground Laser Locator Designator (GLLD) and the Airborne Laser Locator Designator (ALLD) to fulfill a class of DOD requirements for target designators/rangefinders. The GLLD consists of a laser designator, rangefinder, daysight, nightsight interface, tracking aid, tripod mount and battery power source. The ALLD consists of a laser designator, rangefinder, laser spot tracker, nightsight, TV target tracker and inertially stabilized mirror. Both systems have the inherent precision necessary to satisfy the Army's HELLFIRE and CLGP requirements.

(C) Completion and significant results in this project included: continued Tri-Service coding efforts; continued in-house counter-countermeasures efforts and sponsored joint AMC-TRADOC Field Experiment Designator Survivability (FEDS) test; completed Advanced Development of the GLLD; and awarded contract for additional Advanced Development models of the ALLD and extended Advanced Development through FY 1975.

(C) The total FY 1974 funding was $8.5M of which $6.1M was obligated to contracts and the remainder expended in-house; i.e., HDL, NVL, HEL, Frankford Arsenal, AVSCOM and MICOM.

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Radar Area Correlation (RAC) - 1M363306D077

(C) The objective of this program was to determine the performance capabilities of a radar area correlation system for use in missile guidance, and to demonstrate these capabilities in a missile flight environment.

(C) The completion and significant results in this area were that captive (on board helicopter) flight tests were conducted at sites near Orlando, Florida and WSMR at altitudes of 3,000 and 15,000 feet. The results indicated that RAC in helicopter environment could meet accuracy requirements. The results of these tests were to be used to design configuration for use in further helicopter and high speed aircraft captive flight tests in FY 1975. The FY 1974 funding was $12 million with approximately $9 million awarded on contracts and approximately $3 million in-house.

Heliborne, Laser, Fire and Forget Missile (HELLFIRE) - 1X263310D074

(U) The basic objective of this project was to finalize concepts leading to application of laser semiactive terminal guidance devices into an anti-tank weapon system concept. This was to be done by defining terminal homing weapon system concepts and conducting the operational hardware demonstrations required to establish technical feasibility and cost effectiveness of the weapon concept.

(U) A decision was made to continue advanced development until completion of Operational and Technical Tests. The technical tests are being performed at MICOM and the operational tests at CDEC. Computer model for the Cost/Operational Effectiveness Analysis (COEA) will utilize the results of these tests.

(U) A Terminal Homing Accuracy Demonstration (THAD) program has continued. Lock-on after launch from moving helicopter and indirect fire, ground launched, missile flights from an AH-1E helicopter have been successfully conducted. A revised draft Development Concept Paper (DCP) No. 118 for Advanced Anti-Armor Missile, Terminal Homing, HELLFIRE Modular Missile System, which includes an Air Defense Suppression Missile (ADSM) module and a "Fire" and "Forget" module was prepared.

(U) The FY 1974 funding was $6,140,000 with $3,403,637 awarded on contracts and $2,737,363 in-house.

Non-Nuclear Warheads Advanced Development - 1M363312D691

(U) The objective of this project was to provide Non-Nuclear warheads for all Army surface-to-surface, surface-to-air guided missiles and rockets. During FY 1974 developments were accomplished in four work areas as follows:

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(U) Submissile Release & Dispersion. Two dispersion approaches were tested in FY 1974. Tests were made to determine submissile survivability at warhead release, minimize dud rate, and to determine dispersion characteristics of several munition concepts. Five clamshell warheads with auto-rotating canisters were flight tested at WSMR. In addition, one sled test at NWC and three flight tests at WSMR were conducted on the DART subpacks. Submissiles in this design are loaded into long cylinders having folding fins and are dispersed from warhead using the blanket ejection technique.

(U) Anti-Materiel Munitions. Initially, two approaches were investigated; a thin wall fragment bomblet and a combined effects bomblet designed to ignite inflammable fluids. Contract based on industry solicitation was awarded for thin wall bomblet design capable of projecting fragments of various masses.

(U) Anti-Armor Warheads. Rockeye Bomblets were tested which have a capability against armor. Dispersion patterns at supersonic speeds and submissile survival were tested with flight tests at WSMR. Second approach was the design, fabrication, and testing of the unitary heavy fragment warhead. Heavy 1½ lb fragments, launched at high velocity, have damaged armor targets. Contract awarded late FY 1974 for two designs which will be arena tested in FY 1975.

(U) Air Defense Warhead. This effort was initiated in March 1974 for the purpose of optimizing the Focused-Blast-Fragmentation (FBF) Warhead for defeat of both aircraft and missile targets. Catastrophic damage is to be radar detectable. Engineering plan for the advanced development of FBF warhead section was prepared and implemented with award of two contracts on 30 June 1974. Initial coordination between HDL, BRL, PA and AMSAA has been completed. Detailed work on all areas is fully described in two Picatinny Arsenal semi-annual progress reports for this project, April 1973 thru September 1973 (IR-1A-10) and October 1973 thru March 1974 (IR 1A-11).

(U) The FY 1974 funding was $1,911,000 with approximately $1,000,000 contracted out-house and $911,000 in-house.

Operational Systems Development (6.4-6.7 Projects)

Project Number 1G764717DH01 - Combat Engineer Equipment.

(U) The UK Medium Girder Bridge, The Advanced Production Engineering (APE) Program was completed and a Technical Data Package was released for quantity procurement of the bridge and erection equipment. The pier for UK Medium Girder Bridge was developed by the UK. A pier set was ordered from the UK firm manufacturing the item as a non-

development item and was to be delivered in late FY 1975 for U.S. evaluation. Tests began for the Cable Kit Set for UK Medium Girder Bridge that would increase the bridge capabilities from 100-foot to 160-foot spans. Static tests of 160-foot span were initiated resulting in high stresses in the span junction member in the area of the cable connection beam. Tests were suspended to permit redesign of the basic span junction member which was being accomplished by the UK. Also at this time, the ramp panel was being redesigned to reduce the ramp approach angle to correct a shortcoming reported during TECOM tests of the basic bridge. Components were to be fabricated and tests resumed in 2d Q FY 1975.

(U) Two cradles for use with Bridge Erection Boat were fabricated and provided to TECOM and evaluation was completed. The cradle was type classified STANDARD, LCCA in April 1974. A Technical Data Package was released for quantity procurement of the cradles and a contract was awarded by TROSCOM for cradles to be fielded concurrent with the Ribbon Bridge.

Project 1G764728DH08 - Family of Military Engineer Construction Equipment.

(U) Both contractors (Lockheed and Clark) completed fabrication of prototypes, and initiated contractor demonstration test in September 1973. The prototypes were then delivered for TECOM DT I/OT I test in December 1973. Tests were completed in June and Maintenance Teardown Evaluations were initiated. The RFP (Request for Proposal) for FSD (Full Scale Development) was issued to the Validation Phase contractors on 4 March 1974. Proposals were due for submission on 10 July 1974.

(U) The draft coordinated Program Memorandum was submitted by DA Staff to OSD in February 1974. OSD approval was expected in July 1974. The Source Selection Authority, Advisory Council and Evaluation Board were appointed in preparation for evaluation of full scale development proposals.

Project 1F264202D133 - Aircraft Gun Type Weapons

(U) During the latter part of FY 1974, effort was initiated to acquire test data on performance characteristics and operational parameters on two contractor developed candidate 30mm gun type weapons, the XM188 and the XM230, in both hardstand and aircraft simulated test fixtures. Contractual actions were initiated with General Electric and Hughes Helicopter for the procurement of two weapons with necessary repair parts and technical support from each contractor. The design of weapons mounting fixtures was approximately 80 percent

complete with fabrication approximately 50 percent complete. Instrumentation for the test was approximately 50 percent complete. Fabrication of prototype disintegrating projectile cartridges was initiated. Efforts continued for the improvement of the 30mm cartridge XM552 in the areas of graze sensitivity, cartridge case material, and extending the range at which optimum penetration occurs.

(U) In the areas of grazes sensitivity two contractors submitted 500 samples of improved graze sensitive fuzes to the government for evaluation. Government evaluation indicated that neither contractor satisfied the criterion for release of the follow-on development contract. Contractors were asked to correct deficiencies and submit another sample for government evaluation. Samples were submitted, evaluated and the Fairchild design selected for further development. Upon selection of Fairchild design, Bulova protested the selection with the result that all contractual effort are in the state of suspension. A day-for-day slippage in the program was occurring. Resolution of this problem was being vigorously pursued.

(U) Aluminum cartridge cases were subjected to induced failure test in an XM140E3 gun mounted in a Cheyenne turret to evaluate the efforts of an aluminum case failure on the system. The test consisted of firing cases that had been notched so as to induce case failure in a specific area of the case sidewall. The results correlated very well with the Mann barrel tests with regard to the magnitude of flash and barrel damage. In addition, the test showed that aluminum case failures do not result in damage to the turret or the associated weapon hardware.

(U) The spin-compensated shaped charger liner was redesigned in that it has been compensated for the extended range and the liner standoff has been increased. The redesigned liner in contractor test has out performed the old liner and a quantity of these liners is being manufactured for government test.

Project 1F164206D378 - Utility Tactical Transport Aircraft System (UTTAS)

(U) The UTTAS will provide the primary means by which the Army will conduct airmobile operations in all intensities of conflict. This capability will enhance and extend the capabilities of ground commanders to initiate, conduct and sustain combat operations by providing the means for tactical air movement of troops, supplies and equipment at division or lower echelon. The UTTAS would be a squad carrier used primarily in forward areas for movement of combat troops and their organic mission-essential equipment in the assault and resupply of those units while in contact.

(U) To satisfy this requirement, the US Army has contracts with General Electric, Lynn, Massachusetts for the T700 Engine, and with Sikorsky Aircraft Division of United Aircraft, Stratford, Connecticut and Boeing-Vertol Company, Philadelphia, Pennsylvania. Both contractors are conducting tests on their Ground Test Vehicle (GRV). Both contractors have completed the fabrication of their static test article (STA) and have completed their shake tests. The number one flight articles are in final assembly and functional check prior to release to contractor flight test.

Project 1X264207D425 - Advanced Attack Helicopter (AAH).

(U) The AAH is a twin engine rotary wing aircraft designed as a stable, manned aerial weapons system. It would be capable of defeating a wide range of targets, including armored vehicles. It would provide responsive direct aerial fires as an integral element of the ground units and be capable of performing its mission at night and under adverse weather conditions. This weapon system would contribute highly mobile and effective firepower to the anti-armor capability of the Army in the field. Aircraft armament includes the TOW anti-tank missile system, 30mm automatic gun and 2.75" rockets. The AAH will become the primary attack helicopter and will be complemented by the AH-1 Series Attack Helicopters. Contracts were awarded to Bell Helicopter Company and Hughes Helicopter on 22 June 1973 for Phase I Competitive Air Vehicle Engineering Development. Each contractor was to develop and fabricate one ground test and two flight test vehicles. Following government test and evaluation of the competitive vehicles, one contractor was to be selected to perform Phase 2, fabrication of three complete aircraft with total subsystems integration.

(U) Both contractors had completed mock-up and critical design reviews. They were engaged in detailed design layout and fabrication and testing of components. The General Electric T700 engine, which would be used by both contractors, was on schedule and XT engines to support subsequent contractor ground testing were to be delivered starting in October 1974.

Project 1F264212D639 - Cobra TOW

(U) The Cobra TOW Program was initiated to provide the Army an interim airborne anti-armor capability after cancellation of the Cheyenne Program and pending production availability of the AAH. Eight prototypes YAH-1Qs were produced by BHC, the prime Weapon System Integration contractor (Hughes Aircraft - TOW Missile System and Sperry Univac - Helmet Sight Subsystem were major subcontractors). Development and operational tests indicated the system was adequate to meet Army needs and production was ordered in January 1974. The

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The production program would modify 290 (two segments of 101 and 189) current AH-1G aircraft to the AH-1Q configuration, with plans to procure an additional 305 new production AH-1Q's over FY 1975-1979 time frame. Initial testing revealed some deficiencies in the system which were corrected by redesign and the improved systems scheduled for retest by MASSTER and TECOM.

(U) The Improved Cobra Armament Program (ICAP) or TOW/Cobra was highlighted in FY 1974 by a series of successful tests and by a production contract award. Tests completed during this period include Operational Test II (Oct 73), the Engineering Test (Feb 74), and the Follow-on Evaluation by MASSTER (Jun 74). User acceptance of the TOW/Cobra was established during OT II and a production contract was awarded to Bell Helicopter Company in January 1974 for modification of 101 Cobra aircraft to the TOW configuration with an option for an additional 189.

(U) Another important aspect of the Cobra's history was that of the performance improvement known as ICAM or Improved Cobra Agility and Maneuverability Program. Due to changing missions and tactics for the Cobra and a gradual erosion in performance as a result of the weight of added equipment over the years, the ICAM program was established to improve aircraft performance. This was to be accomplished with an uprated engine, transmission, and the necessary structural modifications to accommodate the increased power. Development contracts were awarded to Lycoming in April and Bell in May 1974.

Battlefield Command and Control

(U) Physical Security. Development of improved and new subsystem components of the Joint Services Interior Intrusion Detection System (J-SIIDS) continued during the fiscal year for providing J-SIIDS with a greater capability. Effort was also directed toward maximizing the use of the basic J-SIIDS components, which was type classified for Arms Rooms, 5 June 1973, for other applications such as ammunition and explosive storage areas, communication centers, chemical storage areas, etc. Primary concern in this effort is to avoid improper and indiscriminate use of J-SIIDS which could lead to a safety hazard or false security for a particular application. Full scale development was initiated for the basic FIDS, as result of the Concept Formulation In-Process Review held under the Advanced Development Physical Security project. This effort is directed toward meeting the requirements of the Materiel Need (MN) for a Facility Instrusion Detection System (FIDS). To avoid duplication of effort, the J-SIIDS will be used as the basic building block insofar as feasible and practicable to meet the requirements. Coordination of the Army's requirements for exterior physical security and participation

in the joint-service Base and Installation Security System (BISS) program continued through the fiscal year; the Army's Required Operational Capability (ROC) for a Fixed Installation Exterior Perimeter Sensor System (FIEPSS) was approved 24 May 1974.

(U) Tactical Air Control System/Tactical Air Defense System Interface Program (TACS/TADS). The Army system participating in the TACS/TADS program is the Army Air Defense Control and Coordination System, AN/TSQ-73 (Missile Minder). The AN/TSQ-73, TACS/TADS prototype entered joint interface testing in January 1974 and will continue participating in interface testing through FY 1975. In the Spring of 1976 the Army system will be shipped to the East coast to participate in the TACS/TADS Operational Effectiveness Demonstration (OED). The OED will be conducted as part of the joint exercise "Solid Shield 76." To date, the Army system has performed exceptionally well during joint interface testing.

(U) TACFIRE. During FY 1974, the Find, Fix, Test Mode was completed and DT/OT II initiated in mid-May 1974 at Fort Sill, Oklahoma. Initial results are looking favorable, especially regarding reliability. A proposal for Low Rate Initial Production (LRIP) was received from the contractor in June 1974, and negotiations initiated. An ASARC/DSARC IIa decision on TACFIRE production is expected late CY 1974/early CY 1975.

(U) GAMO. The GAMO program has completed the Conceptual Phase and entered the Planning Phase 4th Qtr FY 1974. The Joint Interface management plan and Joint Technical Interface Concepts document have been completed. Contracts were awarded late in 4th Qtr FY 1974 for development of the Joint Technical Interface Design Plan and Joint Interface Implementation Plan. Army efforts have been initiated for developing the Army Implementation Plan. Current schedules show joint interface testing beginning late FY 1978 and extending through FY 1985.

(U) Joint Tactical Communications (TRI-TAC Programs). The competitive prototyping contracts for the TRI-TAC voice and message Switch (AN/TTC-39) were completed and the switch was designated as a major system. The winning contractor for the following phase was selected and the engineering development contract was placed. Participation continued on joint working groups in developing requirements for associated items such as technical control facility, mobile subscriber access, digital group multiplexers, and short range wide band radio.

(U) Tactical Satellite Communications System - TACSATCOM. The on-going project is to develop a 1¼ ton shelter and a 1¼ ton trailer mounted TACSAT terminal to operate at SHF. In the UHF band, a Manpack

and a vehicular terminal will be developed. The SHF TACSAT terminals will provide both point to point and multipoint receive and transmit capability for up to 96 channels. The SHF terminals will accommodate voice or data in a multi-channel or single channel mode. These tactical terminals are fully militarized and can be set-up for operation in 20 minutes. Both the Manpack and Vehicular terminals provide satellite communications and Line-of-Sight operation. The Manpack weighs 25 pounds and provides single channel netting communications to a maximum range of 9000 miles. The UHF Vehicular terminal also provides burst, data, teletype and paging. The TACSAT terminals are anticipated to be fielded in FY 1976. The advance development hardware of TACSATCOM terminals is controlled by the 235th Signal detachment and is provided, on request, to support military and civilian requirements. The 235th has provided a back-up capability to Apollo Space missions, OCONUS Presidential travel and many training exercises within the Army.

(U) Night Vision Devices. The Commonality Program for far infrared man-portable systems was approved by Department of the Army in September 1973. This guidance directed that two technical approaches (parallel scan and serial scan) be pursued through the research and development acceptance tests. A decision would then be made on the optimum technical approach for continuation through Engineering Development. Texas Instruments and Hughes were awarded contracts for the TOW Night Sight in December 1973 and contracts were awarded in July 1974 to the same contractors for commonality of the DRAGON Night Sight and the Night Observation Device Long Range. The Drivers Night Vision Goggles, AN/PVS-5 are being procured under a LRIP contract awarded in March 1974. A DEVA IPR was held in June 1974 and the goggles were type classified standard on 10 July 1974. Other night vision equipments scheduled for DEVA IPR in First Quarter FY 1975 are: AN/PVS-4, Night Vision Sight, Individual Served Weapon; AN/PAS-7, Night Vision Viewer Infrared (Hand Held Thermal Viewer); and AN/TVS-5, Night Vision Sight, Crew Served Weapon.

(U) Army In-Flight Data Transmission System (AIDATS). During FY 1974 the Army awarded a contract for continuance of the In-Flight DTS formerly identified as the JIFDATS program. System will provide the OV-1D aircraft with the capability of transmitting SLAR Surveillance data to a surface terminal in real-time. Phase I of this program will provide the SLAR only capability to Europe. This R&D effort is programmed for completion in late CY 1975 at which time LRIP contract is programmed for the European requirement.

(U) AIMS (Air Traffic Control Radar Beacon System, Identification Friend or Foe, Mark XII System). This DOD program was designed to acquire a secure IFF system capable of positive identification of friendly aircraft. USAF acts as DOD Executive Agent. The Army

portion of the program has progressed to where all hardware associated with the airborne portion has been type classified except for the AN/APM-305 Test Set. Effort on the ground portion of the program continued and included Standard Type Classification of the AN/TPX-46 Interrogator. A contract was awarded for the AN/TPX-46 adaption to SAM-D.

(U) Mortar Locating Radar AN/TPQ-36. After a 16 month delay due to contract protest, an award was made to Hughes Aircraft Corp in October 1974 for five engineering development models. During FY 1974 the major effort was placed on completing design interactions against a Design-to-Unit-Production-Cost goal. Brassboard models were also fabricated and design simulation studies were initiated by Technical Services Corporation.

(U) Surveillance Radar Set AN/TPS-58. This is a French/German developed radar for detection of moving personnel and vehicles. In October 1973, the ED models failed the reliability portion of RDAT. Currently studies are in progress to determine whether redesign of the system is feasible or whether a new ED program should be initiated .

(U) Surveillance Radar Set AN/PPS-15. The DT II/OT II tests of this portable radar were initiated in January 1974. Some deficiencies were discovered as a result of testing,and corrections are in progress. Completion of the DT II/OT II and the conduct of a DEVA IPR are scheduled for FY 1975.

(U) Artillery Meteorological Data Sounding System AN/UMQ-7. The AN/TMQ-19 Atmospheric Sounder was modified to incorporate the AN/UYK-12 automatic data processing computer. The AN/AMQ-23 Meteorological Probe (Balloon Radiosonde) was modified to improve data transmission reliability. The ML-566 fast rise balloon was redesigned to improve stratified rise speed/reliability characteristics. A teletypewriter code translator was developed to enable ACS II and FIELDATA/AUDOT (NATO Metorological) message format transmissions direct to artillery batteries.

(U) Sound Ranging. A successful test of a laboratory version of the Field Artillery Locating System (FAALS) was conducted at Fort Sill, Oklahoma during FY 1974. The potential of the program was such that HQ AMC directed transfer of the program to the PM REMBASS for intensive management.

Chemical-Biological

(C) Two tasks in the CB Defense area in engineering development (6.4) for FY 1974 were: (1) 1W764725D018-23, Modular Collective

Protection Equipment. It was nearing the DT II/OT II phase. During FY 1974 most of the DT II/OT II testing was completed, R&D testing was completed and a Research and Development acceptance review conducted. (2) 1W764725D022-01, Chemical Agent Detector Kit XM256. It was designed to replace the M15 and M18 kits, and had been delayed in advanced development. It entered Engineering Development in 2d Qtr FY 1974.

(C) In the Chemical Offense area, engineering development continued on the 155mm Binary GB Projectile XM687, which was designed to produce casualties via the respiratory route. The type classification was 3d Qtr FY 1975. This, however, was dependent upon approval of open air testing. The AMC position on this subject was being staffed.

(C) In the Combat Support Area, engineering development continued on the use of liquid riot control agent (1% CR in propylene glycol) in the XM33 dispersers. The XM33 item would be able to discharge three gallons of liquid to a distance of approximately 50 feet in less than one minute. The XM36 was a "mace" type device using the same agent as the XM30. Development also continued on the XM47 and 48 riot control grenades and these items were T.C.'d.

STINGER Missile System - 1X364306D646

(U) The objective of this effort is to provide the field Army with a manportable weapon system having significantly greater capability than was available from current REDEYE missile systems. Emphasis was being placed on retaining or further improving all the desirable attributes of basic REDEYE system, such as size, weight, reliability, operational simplicity, accuracy, and deployment feasibility. It would have all aspect capability against low flying targets at speeds up to Mach 1.0. The ED program initiated in June 1972 was continued. The first milestone, establishment of Allocated Baseline was achieved on schedule on 1 March 1973. Testing of components and sub-assemblies was initiated. Flight tests of Eject Test Vehicles and Launch Flight Tests in FY 1974 were initiated. The total FY 1974 funding was $21,130,000 with $11,391,000 contracted out-house and $10,739,000 for other service agencies such as MICOM, Picatinny Arsenal, WSMR, and the Air Defense Board, Fort Bliss, Texas.

SAM Development - SAM-D - 1X263302D212

(U) The objective of the program is to provide a single modern air defense weapon system to replace both NIKE-HERCULES and HAWK missile systems in the field Army and CONUS. The advanced features of SAM-D will provide an increased capability against saturation attacks, elecronic countermeasures, and maneuvering targets. It would also provide a reduction in manpower and maintenance requirements.

In late 1973 the Secretary of Defense directed the Army to reexamine and redirect the SAM-D program. An ASARC held on 16 November 1973 recommended the existing program with efforts being made to accomplish a reduction in the design to unit production cost. The total resources for FY 1974 was $194.2 million, of which $153.1 million had been obligated by 31 December 1973.

CHAPARRAL-VULCAN Air Defense System (CVADS) - 1M322153D697

(U) The objective is to meet an urgent requirement for low altitude Air Defense of the forward area of the field Army. Prototype programs were initiated for a Target Acquisition Aid (TAA) for CHAPARRAL/VULCAN and for a Gun Low Altitude Air Defense System (GLAADS). Thirty-one scheduled CHAPARRAL and 44 VULCAN batteries and nine FAAR platoons have been deployed. CVADS battalions meet the urgent requirement to provide Low Altitude Air Defense to the forward area of the field Army. The total CVADS FY 1974 funding was $3,100,000 with $1,685,000 awarded in contracts and $1,415,000 in-house at MICOM.

PERSHING, SSM - 1X222254D678

(U) The PERSHING 1a system was type classified standard A in 1st Qtr FY 1972. The current development effort would provide system operational improvements. Engineering Design testing of two new items of firing battery equipment was continuing. Development Testing (DT II) was started during 3d Qtr FY 1974. Pershing Artillery Ordnance firings were conducted at White Sands Missile Range during the fiscal year. Twelve Follow On Test (FOT) firings were completed at the Air Force Eastern Test Range (AFETR) during the Spring of FY 1974. The funding for FY 1974 was $5,700,000.

Surface Attack Guided Missile System (DRAGON) - 1X623627D306

(U) The objective of the DRAGON weapon system is to develop a one manportable, disposable anti-tank weapon. A parallel but separate activity is to develop the Night Sight. Development of Night Vision Sight AN/TAS-5 was initiated. Development of a new Launch Simulator was initiated. The DRAGON training equipment (handling round, monitor set, and target source pedestal) except for the launch effects trainer were type classified standard. Type classification of limited procurement for the launch effects trainer (LET) was continued until the modified LET could be retested in a DT III. In addition, DA directed the development of a new launch simulator. The formal OT II for the AN/TAS-3 Night Sight was completed in Europe in May 1974. The system DT/OT II Tropic Phase was initiated in December 1973. Preparations were completed to enable the initiation of system OT III on 1 July 1974. The funding for the system in FY 1974 was $1,563,000 with approximately 75 percent contracted out-house.

Land Combat Support System (LCSS) - 1M323623D677

(U) The objective of the program is to update the LCSS design to provide Field Maintenance capability for the SHILLELAGH, LANCE, TOW, AND DRAGON Missile Systems. The development effort for the DRAGON tape program has been completed. The funding for FY 1974 was $343,000 with approximately 70 percent contracted out-house.

Test and Evaluation

(U) The HQ AMC Directorate for Research, Development and Engineering Test and Evaluation Division monitored eight RDTE projects on a continuing basis. These projects were of noncommodity status. Effort was continued on Army management of the DOD National Range Mission under Project D-240. Support was rendered to all range users in accordance with DOD Directive 3200.11, to include the three military services, NASA, AEC, and other government agencies on a non-reimbursable basis. Range activities included: development, engineering and procurement of major range instrumentation; instrumentation operation and maintenance; logistic support; communications; computer and data reduction services; and calibration of scientific instruments. Significant actions during the year under this project included the following:

(U) Review of two draft revisions of DOD Directive 3200.11, Use, Management and Operation of DOD Major Ranges and Test Facilities. These drafts implement the uniform-funding policy, and, in addition to White Sands Missile Range, include Dugway Proving Ground, Arctic Test Center, Tropic Test Center, Yuma Proving Ground, Jefferson Proving Ground, Electronic Proving Ground and Aberdeen Proving Ground. The major AMC recommendation was that the Army Missile Test and Evaluation Directorate (ARMTE), a TECOM agency at WSMR independent of the National Range, be identified as a separate agency. Informal advice indicated that the recommendation was not adopted by DOD.

(U) Effort was undertaken to coordinate and establish procedures for implementation of the new, uniform-funding policy on 1 July 1974. Methodology was established to identify and estimate direct test support costs. Trial accounting procedures devised by the proving grounds were tested and reviewed by a DOD Comptroller team.

(U) A study was completed to mothball the facilities in support of reentry physics testing in the 600-mile flight corridor between Green River, Utah, and WSMR. Implementation of the plan was begun in August 1973. By December, the special facilities had been phased out.

(U) On 20 March 1974, inauguration ceremonies marked the opening of the most complete assemblage of nuclear testing facilities in the free world at WSMR. The total complex was completed with addition of the final two elements, the Gamma Radiation Range and the Solar Furnace.

(U) Agreements were reached for support of a 4-day, operational, joint test exercise in 1975. Project Gallant Shield was to be conducted over a week-end, from early Friday to late Monday, to minimize loss of instrumented range time to R&D projects. This would be the first extensive, lengthy field exercise approved by ODDR&E for conduct at WSMR. Earlier policy had been that use of a highly instrumented range for field exercises was uneconomic utilization of extremely high-cost facilities. Lost time will be made up by conducting normal range operations on succeeding week-ends, with Project Gallant Shield reimbursing the overtime costs.

(U) A recommendation was made to ODDR&E to establish a Drone-Formation Control System at a cost of over $5 million. The major user of this facility would be the SAM-D project, beginning in FY 1976. Capabilities to fly more than two drones, or in the close-formation spacing required to test SAM-D, or other highly sophisticated air-defense systems, do not exist anywhere.

(U) On 29 November 1973, inadvertant destruction of a SAM-D, controlled test vehicle S/N 1, raised questions regarding WSMR capability to handle certain advanced-technology missiles. General Miley, on 19 March 1974, requested the Chief Scientist, DA, to establish a sub-group of the Army Scientific Advisory Panel (ASAP) to examine current WSMR instrumentation capabilities and future requirements. Initial meetings of the ASAP were held on 30 May 1974 at WSMR and 27 June 1974 in Washington. A report was expected to be issued during the 1st quarter, FY 1975.

Test Schedule and Review Committee (TSARC)

(U) AMC participation in the Test Schedule and Review Committee (TSARC) continued. The Director, RD&E, represented AMC in the December and June General Officer meetings. Due to the reorganization of the Army, the TSARC membership has changed somewhat with CDC and CONARC replaced by TRADOC and FORSCOM. With the 1974 reorganization of the Army Staff the TSARC results are submitted to DCSOPS rather than ACSFOR. The 11 December 1973 TSARC considered 173 Outline Test Plans (OTP) and approved 162 for the FYTP. The 19 June 1974 TSARC considered 213 OTP's and approved 208 for the FYTP.

(U) Additional information was added to the Five Year Test Program (FYTP) document. A troop support forecast for Development Testing (DT) was included as an appendix for information in comparison with

the Operational Testing (OT) troop requirements. This DT forecast was compiled by TECOM. Another appendix was added to summarize the fuel resource requirements for OT.

Joint Test for Probability of Hit by Antiaircraft Guns - HITVAL.

(U) This test is an outgrowth of the Joint Aircraft Attrition Program to JTCG - Munitions Effectiveness studies on aircraft attrition. The Army and Air Force participate in HITVAL. The test objectives are threefold: (1) It should provide the data to establish the validity or limits of validity of mathematical models used to determine the probability of hit of fixed and rotary wing aircraft being fired on by antiaircraft guns when the conditions of engagement are known. (2) The program should be relevant for US aircraft providing support in Europe in the mid-1970's and establish conditions of engagement such as aircraft flight path, location of gun relative to the flight path, gun type, firing mode, firing doctrine, skill of the gun crew, and visibility. (3) It should provide a test methodology and an empirical and improvement of models. Use of advanced state-of-the-art guns instrumentation and break-up ammunition will provide basis for more extensive testing of new gun developments.

(U) The Army Materiel Command was the Army Executive Agent for HITVAL. Actions completed during FY 1973 were: (1) the tilt test was completed and reports submitted to IDA WSEG; (2) instrumentation and 23mm break-up ammunition contracts were let and work in these two areas started; (3) Picatinny Arsenal began development of 57mm break-up ammunition; and (4) test plan was prepared, submitted for comment, and revised by the Test Director.

(U) Actions completed during FY 1974 were: (1) Picatinny Arsenal completed development, production, and delivery of 57mm break-up ammunition; (2) 23mm and 35mm break-up ammunition was received from Dutch firm; (3) EG&G, Inc. completed development, production, installation and check-out of gun instrumentation; (4) 35mm FLAK PANZER was obtained on loan per MOU with the Federal Republic of Germany; (5) 23mm, 35mm, and 57mm gun crews were trained and qualified; (6) TECOM completed safety certification testing of gun systems and all calibers of break-up ammunition; (7) the System Scoring Test and major portion of the Ballistic Verification Test were completed at WSMR; (8) the main (field) test was begun on 7 May 1974 at WSMR and will continue into September 1974; and (9) planning was effected for the addition of a fifth AD gun to the HITVAL test program. This gun was to be tested as a follow-on phase to the original HITVAL program during the October-December 1974 time frame.

(U) Cooperation between Army and Air Force personnel was outstanding, and was a significant factor in allowing the main test to start on schedule. Many technical problems were encountered during preliminary testing and major changes were made in the Test Director's staff. All problems were expeditiously corrected and the main test started on schedule.

Tactical Effectiveness Testing Antitank Missiles - TETAM

(U) TETAM was initiated in December 1970 when the Department of Defense approved Program/Budget Division (PBD) 464 and allocated $6 million to fund testing of the DRAGON, TOW and SHILLELAGH antitank guided missile (ATGM) system. PBD 464 ordered a series of tests to assess the combat effectiveness of the ATGM systems under simulated combat conditions and a TETAM program was developed. As a result of international cooperation, two NATO ATGM systems, the French/German MILAN and the British SWINGFIRE, were incorporated into the CDEC Experiment 11.8 portion of the program.

(U) The TETAM program consists of three components: (1) CDEC Experiment 11.8; (2) a modeling effort; and (3) the TETAM study and analysis.

(U) The three simulation models to be considered in the analysis and validation efforts are: (1) IUA, (2) CARMONETTE, and (3) DYNTACS. The third component of the TETAM program is the study which would tie together the experimentation, data analysis and model validation, and would culminate in a report in the autumn of 1975.

Human Engineering Laboratories Battalion Artillery Test (HELBAT IV)

(U) The HELBAT program consisted of a series of studies and field experiments designed to measure and parcel out human factor errors in the fire control system utilized by the artillery and to develop procedures to improve the effectiveness of artillery firings. HELBATs I, II, and III, conducted at Fort Hood during August 1969, February 1971, and April 1972, using a field artillery battalion as the basic unit of study were joint 1st Armored Division/HEL tests. HELBAT IV, conducted at Fort Sill, October 1973, was a joint Field Artillery School and Center (FASC)/HEL (AMC) field experiment designed to reduce response time of artillery fire and improve the accuracy of engaging moving targets through the use of an automated data processing system. T&E division was the AMC HQ action office responsible for the administering of the AMC portion of HELBAT IV.

(U) A new program (HELBAT V) was developed as a result of the successes of previous HELBAT studies which demonstrated the capability and feasibility of the automated fire control system utilized during

HELBAT IV. This system offers the field artillery the capability to successfully engage moving targets with considerable improvement in response time and accuracy of fire. The program was designed to coordinate developer and user efforts to improve the concepts, doctrine, operation, and cost effectiveness in developing an automated fire control system.

Battlefield Command and Control

(U) By Memorandum dated 27 February 1973, the Assistant Secretary of Defense for Telecommunications assigned Army/AMC the responsibility for conducting tests (unprogrammed-unfunded) in collaboration with other Military Departments, National Security Agency, Defense Communications Agency and TRI-TAC. The objective of these tests was to provide the DOD with data as a basis for establishing criteria and technical parameters for interoperability of tactical and strategic telecommunications systems. Task 1 was to confirm that suitable intelligibility is obtained using Continuous Variable Slope Delta (CVSD) at 32 kbps and 16 kbps through a number of tandem analog/digital conversions for multi-channel and VHF/UHF combat net radio systems including those utilizing Pulse Code Modulation (PCM) and narrowband digital voice processing.

(U) Interoperation of CVSD and various voiceband secure voice communications equipments were evaluated; the most notable, CARLOS, the candidate for use in the AUTOSEVOCOM (Dept of Defense Non-Tactical Secure Voice System - DCS) Phase II. Other voiceband equipment tested were the FY-65 (PARKHILL narrowband) and ELCROVOX (NATO SYSTEM). Assessment of speech intelligibility was also conducted on various European DCS voiceband circuits and a General Electric delta codec operating at 16 and 32 kbps.

(U) Consonant Recognition (CRT) and Diagnostic Rhyme (DRT) tests were used in evaluating equipment/schemes under test, results of which are contained in a final report (minus preference tests to be completed o/a August 1974) dated January 1974. Funds ($150K) for these tests were reprogrammed from project D222 Automatic Communications Central Office.

(U) Task 2 was to confirm the ability to accommodate 16 kbps in a 25 khz channel for VHF/FM radios and establish a standard modulation technique for that purpose. Tests in seven major areas were carried out and completed on 27 June 1974. These included: transmitters, receivers, comparisons of candidate modulation techniques, deployment, frequency analysis, multipath propagation, and field validation. Continuous Variable Slope Delta (CVSD) analog/digital converters HY-11, KY-8 and KY-38 crypto equipment, AN/RPC-77 radios modified to 25 khz channeling, pulse shaping filters, varied modulation equipment/schemes were utilized in carrying out these tests at the Electronic Proving Ground, Fort Huachuca, Arizona (under contract with Lockheed Electronics).

(U) A final report of tests was scheduled for delivery to HQ AMC o/a 31 July 1974. The most significant results of tests determined that 32 and 16 kbps can be accommodated in a 25 khz VHF/FM radio channel and that two-level FM modulation is a recommended modulation technique. The funds ($222,176) for these tests were reprogrammed from project D615.

Missiles Systems

(U) In each missile area listed in Missiles Systems, 6.2-6.7, considerable effort was expended evaluating all possible alternates of systems, subsystems and components. The Army Missile RD&E Laboratory facilities, Huntsville, Alabama, are equipped and staffed to study problems of propulsion, aerodynamics, guidance, structures and electronics. Many simulation and testing hours were carried out in this in-house facility to complement or eliminate field testing during the development process, thereby reducing the time and cost required to field a system. In addition, flight testing was carried out at The National Missile Test Station at WSMR, Eglin AF Base and The Navy's China Lake Facility. Joint tests (AMC and TRADOC) of laser designator survivability were conducted. Testing was continuous throughout the year.

Engineering

PEP/MACI/MMTE

(U) During FY 1974 the Production Engineering Branch of HQ AMC Directorate for Research, Development and Engineering managed all production engineering measures projects, namely, Producibility Engineering & Planning (PEP), Military Adaptation of Commercial Items (MACI) and Manufacturing Methods & Technology Engineering (MMTE). In addition, the branch also was responsible for and managed the O&MA fiscal codes relating to engineering in support of production. Effort was also expended in organizing the smooth transition, effective with FY 1974, of the Advanced Production Engineering program into an R&D phase entitled, Producibility Engineering and Planning (PEP) and a follow-on PEMA phase entitled Initial Production Facilities (IPF).

(U) FY 1974 saw the full operation of the Production Engineering Branch in harmony with the Production Equipment Agency (PEQUA) at Rock Island, Illinois and the R&P Directorate at HQ AMC. PEQUA, a Class II Activity of HQ AMC performed a detailed analysis of all submitted MMTE projects and advised this branch as to the technical worth, conformance to format, economic advantage and probability of successful completion. Two parts of the overall production support

program, namely, layaway and facilities were managed by R&P but were closely interfaced by this branch to insure proper time phasing with the Production Engineering Measures projects.

(U) The Military Adaptation of Commercial Items (MACI) remained a part of the Production Engineering Measures program. The scope was broadened by a revision to AR 37-100-74 to provide for conversion (reverse engineering) of procured off-shore developed items' technical data package prior to quantity production in the US.

(U) Following is a summary of the activities and accomplishments of the branch. During the past fiscal year the budget and apportionment was made for FY 1975 and the FY 1976 budget was formulated:

FY 1975 Budget PEM

Fiscal Code	Title	No. of Projects	$M
1490	Aircraft	18	$ 3.292
2590	Missiles	21	5.823
3190	Tracked Combat Vehicles	12	1.415
3290	Weapons & Other Combat Vehicles	32	4.495
4930	Ammunition	69	38.640
5190	Tactical and Support Vehicles	8	3.152
5290	Communications & Electronics	14	4.991
5390	Other Support Equipment	21	12.774
	TOTAL	195	$74.582

FY 1975 Apportionment PEM

Fiscal Code	Title	$M
1490	Aircraft	$ 3.802
2590	Missiles	3.398
3190	Tracked Combat Vehicles	1.040
3290	Weapons & Other Combat Vehicles	5.824
4930	Ammunition	36.160
5190	Tactical & Support Vehicles	2.162
5290	Communications & Electronics	5.081
5390	Other Support Equipment	13.324
	TOTAL	$70.791

FY 1976 Budget PEM

Fiscal Code	Title	No. of Projects	$M
1490	Aircraft	19	$ 4.338
2590	Missiles	9	3.568
3190	Tracked Combat Vehicles	9	1.270
3290	Weapons & Other Combat Vehicles	35	4.800
4930	Ammunition	65	37.580
5190	Tactical & Support Vehicles	8	1.738
5290	Communications & Electronics	18	9.437
5390	Other Support Equipment	27	19.134
	TOTAL	190	$81.865

FY 1975 Budget PEP

RD&E PEP	TOTAL	36	$36.832

(U) It is to be noted that the total number of projects listed above and dollar values are the figures approved by the HQ AMC RD Review Board. Approximately half again the number of projects were submitted and screened to arrive at these figures. All the major subordinate commands were visited by the Production Engineering Branch personnel and field reviews were held for each budget exercise lasting two weeks.

(U) A summary of the O&MA budget prepared for FY 1975 and financed is as follows:

FY 1975
OMA 728012.12
Engineering in Support of Stock Fund Items

COMMAND	$M
AVSCOM	
ECOM	$1,122,300
TROSCOM (Including Natick)	5,074,000
MICOM	1,393,500
ARMCOM	4,374,100
TACOM	2,882,000
AMMRC	267,000

FY 1975
OMA 728012.16
Engineering in Support of PEMA Procured Items

COMMAND	$M
AVSCOM	$ 187,100
ECOM	9,982,000
TROSCOM	3,984,000
MICOM	
TACOM	6,084,000
ARMCOM	1,359,200
AMMRC	

Technical Data

(U) The effort to improve the quality and management of Technical Data Packages (TDP) was a principal task of the IMPACT (Improved Management of Procurement and Contracting Techniques) Program. A Technical Data Package was defined as a technical description of an item adequate for use in procurement and includes the required design configuration to assure item performance. A TDP consists of all applicable data such as plans, drawings and associated list specifications, standards, models, performance requirements, quality provisions, packaging data, etc.

(U) Below are a number of the areas of activity addressed in the IMPACT TDP Program during FY 1974.

(U) Measurement. A committee established and made up of representatives of the MSC's plus Natick and HD Labs have been working in the following major areas: Part I: How each Command determines a Tech Data Package is ready for use in procurement. This information has been made available to each command, laboratory and arsenal involved. The data will be updated during FY 1974. Part II: The objective of this phase was to establish a "check sheet" procedure for documenting Part I; and also formulating a "check sheet" approach for tracking production and data package change activities which reflect on Tech Data Package adequacy. Part II was completed and tracking was started the 1st Quarter FY 1974. The program was to be continued in FY 1975 and data evaluated.

(U) Training. Participation in two training classes has been satisfactory. Both were to be continued through FY 1975. The FY 1974 statistics are: Seminars - 8 Classes - 160 Participants; Practitioners Course - 7 Classes - 133 Students.

(U) Preproduction Evaluation (PPE). The Procurement Research Office, Fort Lee, Virginia, completed the study of the PPE Concept. It was being evaluated. Preliminary indications were that a series of seminars would be needed to clarify the use of the PPE Concept. Also, a regulatory document would need to be published.

(U) Self-Help. Improvement of Tech Data Packages needed to come from within the developing installation. Individual task directors at each of the commands were continually encouraged to promote programs to improve Tech Data Packages. These programs were presented to the Measurement Committee at periodic meetings. Continued emphasis was being placed in the area.

Product Improvement

(U) The Army Budget continued to minimize new weapons systems development and the result was continued emphasis on improving the fielded systems through the Product Improvement Program (PIP). The AMC program for FY 1976 recommended to DA was $475 million which was an increase of 4 percent over FY 1975. This total was made up of APA, OMA, RDE, and Stock Fund accounts. Approximately $90 million represented new starts.

(U) The Product Improvement Program concerned with the dieselization of the M88 Medium Recovery Vehicle fleet was continued during the reporting period. Five rebuilt M88 vehicles equipped with the AVDS 1790-2AR 750 HP diesel engine, modified XM1410-2 transmission, diesel auxiliary power unit (APU) and diesel personnel heater were subjected to DT II/OT II type operational, engineering, and performance tests at Yuma Proving Ground, APG and Fort Knox. TECOM concluded that the dieselized vehicles met the requirements of the ROC and Purchase Description to a sufficiently high degree that it would be an adequate recovery vehicle. Several deficiencies and shortcomings were identified for correction.

(U) With the introduction of the "RISE" engine into M60 production, plans were formulated for the further modification and validation testing of three DT II low mileage vehicles incorporating the AVDS 1790-2 "RISE" engine modified for M88 use, designated as the AVDS 1790-2DR, and "fixes" for the TECOM identifiable deficiencies/shortcomings. These vehicles are scheduled for testing during August-October 1974 with the DEVA IPR in December 1974 and TC in January 1975.

(U) A significant change in DA policy on PIP was enunciated in the letter from Office of the Deputy Chief of Staff for Logistics, 14 September 1973. This letter, the culmination of an AMC plan, increased AMC approval thresholds to $1 million per year and $3 million

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over five years for out-of-production items and $3.5 million for one year and $17.5 million over five years for an in-production item. This increase in thresholds covered both product improvements and deficiency-correcting projects. It further stated that deficiency-correcting projects that exceeded these thresholds could be approved by AMC up to the DA thresholds without submitting the proposal to DA. It also streamlined the operation by permitting on-going PIP to be submitted in summary only

(U) An AMC ad hoc committee studied and made recommendations concerning a redelegation of this PIP approval authority by AMC to its Major Subordinate Commands and Project Managers. The recommendations of the ad hoc committee report were incorporated into a letter which was in the process of being staffed as the fiscal year ended. A portion of this DA authority delegation was redelegated to MSC/PM for urgent operational requirements.

(U) The policies for submission of the FY 1976 PIP were invoked in the AMC letter to the field, 11 December 1973, and it resulted in a reduced amount of paper work, a more easily developed program, and impacted the POM substantially. The program has doubled in three years.

Reliability

(U) AMCRD in conjunction with AMCQA had staff responsibility for implementation of the IMPACT Task, Accelerated Development of Reliability at the MSC's. AMCRD had four subtasks: Component Control, Design Reviews, Physics of Failure and Hands-On Capability. AMCQA had the remaining four subtasks: Organization, Reliability Growth, Reliability Data Base and Design Feedback, and Life Cycle Cost and Value. As implied in the subtask titles, the objectives and accomplishments of the IMPACT Task are broad and will benefit the entire material acquisition cycle at the MSC's. Engineering Division is the executive agent and point of contact for the AMCRD portion of the task.

(U) The IMPACT Task for Accelerated Development of Reliability was terminated effective 30 June 1974. A final report of significant accomplishments for the period 27 October 1972 to 30 June 1974 was requested to be furnished to this Headquarters by 15 July 1974. In synopsis, the Commands were successful in their application of the task efforts and were expected to continue to carry forward under their personal influence the management improvements affected by this IMPACT Task.

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Chemical-Biological Branch

(C) Under the FY 1970 APE for "Improvement of Inspection Aids for CBR Defensive and Protective Items" work resulted in the evaluation of a prototype device for determining leakage in a protective mask which proved unsatisfactory. A final report was submitted. The task under this APE for an improved penetrometer was cancelled. Under the FY 1970 APE for "Improvement to Quality Control Equipment" Q95 Gas Tester, a contract was awarded to Mine Safety Appliance Corporation for test equipment. A prototype was built and delivered by the contractor and is currently being tested with modifications being made to correct shortcomings. Completion anticipated in 1st Quarter FY 1975.

Management Improvements

Army Materiel Acquisition Review Committee (AMARC)

(U) The RDE Directorate was assigned primary action for implementation of 11 AMARC recommendations. The Directorate prepared the first quarterly implementation progress report and submitted it to the Plans and Analysis Directorate on 21 June 1974. The reporting requirement has been changed to monthly reports beginning in July 1974 and all implementing actions are to be completed before end of the 2d Quarter FY 1975.

New Required Operational Capability (ROC) Review Group

(U) An AMC ROC Review Group was established to subject selected ROC's to disciplined, intensive, high level review prior to submission to HQ TRADOC and HQDA. This review gives particular attention and scrutiny to ROC's originating within AMC and to those portions of ROC's originated by the combat developer and user for which AMC inputs have served as the basis for proposed performance characteristics. Such procedures were designed to preclude forced reduction of performance characteristics by AMC from those characteristics at the outset of the program and specified in approved requirements documents.

(U) A meeting between the Commanders AMC and TRADOC took place on 9 April 1974 to arrive at agreements on procedures for processing Required Operational Capability (ROC) documents. Major items of agreement included: (1) There should be, early in the development of any system, a close working relationship between low level staffs of the TRADOC community; i.e., the schools and AMC laboratories; (2) The ROC should not be approved until a relatively good COEA has been developed and should cover 6.4 development; (3) The statement of specifications or characteristics in ROC's, particularly reliability, availability,

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and maintainability, should not be stated at the beginning of the program in definite terms. Specified values without firm derivation can lead to termination of the project; (4) There should be some means for expressing a requirement, small "r" perhaps, which allows systems oriented research and development (6.3) to proceed; and (5) TRADOC and AMC should get together to establish a coordinated position on AR 1000-1. The same for the AMARC report.

Electronic Warfare

(U) The AMC policy on Electronic Warfare was approved by DCG AMC on 2 December 1973. This policy established the requirement for all AMC elements to maintain an increased awareness of the implications of available threat data in the EW Environment for ECM and ECCM of materiel being developed. As a result, discussion now takes place at all RECAPS, IPR's, and/or ASARC's as appropriate of the results of ECM Vulnerability testing and ECCM recommendations. Also, included in all proposed requirements documentation was a provision for hardening; i.e., ECCM against a specified (known or postulated) hostile EW threat. All AMC elements were required to identify their respective current and planned EW efforts for inclusion on an annual basis in the periodic update of the Army EW Master Plan, and provide a program status report for each AMC Quarterly Command Review of EW as presented by ECOM/EWL.

(U) On 16 January 1974 the Charter for the Electronic Warfare Laboratory, ECOM, as the Lead Lab for Electronic Warfare Technology was approved by the AMC Deputy for Labs. For the purpose of the charter, electronic warfare (EW) technology encompasses all EW-oriented technology as applied to electronic warfare support measures (ESM) and tactical signal intelligence (SIGINT), general support electronic countermeasures (the latter two functions in support of USASA), protective electronic countermeasures (ECM), ECM susceptibility and electronic counter-countermeasures (ECCM), and to quick reaction development of EW materiel and techniques. In essence, this charter establishes the EWL as the focal point for all EW-related efforts as well as the technological base for EW as it pertains to all AMC-developed materiel.

Missiles Systems

(U) To gain more managerial flexibility and greater responsiveness to high authority, management by objectives has been applied in the development of new missile concepts. This type management puts full emphasis on specific projects needing highly specialized efforts and offers greater flexibility and visibility into the objectives and results of development programs. In support of this

endeavor the Army Missile plan has been provided as an overall planning tool for documenting missile requirements. Clearly described are materiel concepts in support of these requirements, a priority system of analysis and the technology requirements for future missile development Single Program Element Funding (SPEF) has been supported to relieve the inflexibility of line item funding by enabling the redirection of funds as priorities change to provide unity of effort and direction.

Research

(U) During FY 1973, AMC acquired the US Army Research Office. A study on the ARO organization mission, progress, achievement, and future role was conducted by AMCDL using personnel from AMCRD. The recommendations of the study were approved and directed to be implemented by the DCG, AMC.

NOTE

Classified portions pertaining to Foreign Science and Technology and Nuclear Programs are excluded from General Declassification Schedules of Executive Order 11652 and consequently not included in this review. The exempted portions may be seen on a need to know basis at the Archives of the HQ DARCOM Historical Office, File: 55 RDE-74 D/RDTE.

CHAPTER IV

REQUIREMENTS AND PROCUREMENT

Mission

(U) The mission of the Director of Requirements and Procurement is to:

- Direct and control the AMC logistics materiel management activities pertaining to requirements determination, budgeting, programming, procurement direction, rebuild direction, and disposal direction for all Procurement Appropriation funded major items.

- Direct and control the planning and execution of the AMC procurement and production mission which includes the development and implementation of plans, policy, programs, and procedures relating to AMC procurement and production management; e.g., procurement, contract pricing, contract financing, industrial preparedness, production and associated areas, including the Small Business and Labor Surplus Area Programs. Provide the AMC Staff with direction and guidance for all aspects of the administration, and technical and professional service required to facilitate and support the procurement production process.

- Serve as the program director for production base support; central procurement activities; Industrial Preparedness, Procurement Appropriation Programs (major items). Supervise the execution of such programs by the major subordinate commands, and defend these programs to higher authority.

- Exercise operating control over the US Army Production Equipment Agency, and the US Army Equipment Authorization Review Agency (EARA), 5001 Eisenhower Avenue, Alexandria, Virginia, and the US Army Procurement Research Office (PRO).

- Perform the functions of the head of a procuring activity for the US Army Research Office, US Military Academy, and separate AMC installations and activities and direct Central Procurement Activities, Industrial Preparedness Operations, and Production Base Support.

- Direct Standard Integrated Support Management System (SISMS) and serve as the office of primary responsibility (OPR) for SISMS.

- Implement the DOD Selected Acquisition Information and Management System (SAIMS) and its subsystems (less Selected Acquisition Reports).

Plans and Programs

Materiel Policy and Guidance, Secondary Items, FY 1976

(U) This is a document providing the necessary information and instructions for the computations of mobilization materiel requirements for secondary items, both appropriations financed and Army Stock Fund. Action was under way to update the FY 1974 guidance which was to be used in computing revised mobilization requirements, stratification of assets and development of the FY 1976 budgetary programs. It was anticipated that this guidance would be furnished to the NICP/SICC's by approximately 15 October 1974. The Program of Instructions (POI) for computing general mobilization requirements for secondary items under the ALPHA system would need to be changed based on the revised guidance.

NICP Management Review - War Reserves

(U) During the period of 28 January 1974 through 7 June 1974, TROSCOM, TACOM, ARMCOM, and AVSCOM were visited and reviews were conducted on the management of war reserves. The reviews sought to determine if existing DA/AMC guidance and procedures were being complied with.

(U) The war reserve programs reviewed included: Theater War Reserve Levels; computation of General Mobilization Requirements; Mobilization Reserve Stockage List (MORSL); Contingency Support Stocks (CONSSTOCS); and Operational Projects.

(U) No significant problem areas were noted; however, there were a number of areas which would require continued evaluation and clarification. These areas were to be reviewed during visits to NICP's in FY 1975.

Operational Projects

(U) Chapter 2, Section IV, AR 710-1, published as C-9, contains policies, responsibilities, and procedures for initiating new (proposed) operational projects, and changes or revisions to existing (published) operational projects. The regulation also provides for the processing, review, and reporting required to establish operational projects. This Chapter was completely revised and published 28 August 1973. The major change involved the inclusion of guidance relating to Prepositioning of Materiel Configured to Unit Sets (POMCUS). DA requested AMC to review all operational projects, during first two quarters of FY 1975, in an effort to reduce the projects to a minimum essential level without degrading the Army's capability to carry out the national strategy.

Mobilization Reserve Stockage List, AMCR 11-30

(U) Mobilization Reserve Stockage List (MORSL) (SB 700-40) and MORSL Support List, dated 13 August 1973 prescribe objectives, policy, and responsibilities for the selection and identification of procurement of equipment and missiles, Army (PEMA), and Army Stock Fund (ASF) end items and repair parts to be maintained in war reserves. AMCR 11-30 was completely revised and published on 25 June 1974.

Mobilization Reserves Stockage List

(U) SB 700-40, Mobilization Reserves Stockage List is a supply bulletin providing a consolidated list of mobilization reserve stockage items authorized for worldwide use used as a basis for computing Operational Plans (OPLANS) and mobilization reserves worldwide. The bulletin was completely revised with the proposed revision bing forwarded on 22 April 1974 to DA for approval and publication. Items in support of Allies have been excluded from SB 700-40. They will be published as a classified document under separate cover.

Major Command Stockage Levels Worldwide, AR 11-11

(U) USAMC is responsible for computing the annual theater war reserve levels for the oversea commands. Theater war reserve levels were not recomputed in CY 1974 and therefore the FY 1974 levels computed in CY 1973 were used for the FY 1975 supply management actions. In addition, action was initiated on 2 April 1974 to review and to further reduce the FY 1974 levels to eliminate stockage of low value, low quantity, and low cube items applicable to Class IX items. Reduction of Class IX items ranges from 25 to 73 percent. The FY 1975 Theater War Reserve Levels for Allies were also computed and furnished to HQDA for review and approval prior to submission to USARPAC.

International Logistics Program

(U) There were significant increases in the dollar value of International Logistics (IL) procurement programs during the last four years. Foreign Military Sales (FMS) and Military Assistance Programs (MAP) increased from $492.6 million in FY 1972 to an estimated $4,275.8 million in FY 1975. This estimate was based on the number of open IL cases pending as of 15 August 1974. The IL programs for FY 1972 were 15.3 percent of the total Army requirements. The IL estimate for FY 1975 was 61.5 percent of the total Army requirements. While the estimate for FY 1975 may not be exactly accurate, it was sufficiently approximate to indicate the huge increase in dollar flow and workload represented by the IL programs. A breakdown of International Logistics Programs by major subordinate command for the period FY 1972-FY 1975 is indicated on the following table.

INTERNATIONAL LOGISTICS PROGRAMS

	FY 72	FY 73	FY 74	FY 75*
ARMCOM	182.2	133.4	428.6	1709.2
AVSCOM	52.4	405.3	45.7	966.1
ECOM	40.4	25.1	42.6	40.0
MICOM	104.6	328.5	277.9	1007.4
TACOM	101.2	70.8	865.3	540.0
TROSCOM	11.8	6.9	5.9	13.1
TOTAL	492.6	970.0	1666.0	4275.8

*DOLLAR VALUE OF IL CASES PENDING

Procurement Appropriation - Three Year Fund Limitation

(U) The FY 1972 and subsequent Procurement Appropriation Acts contained a three year limitation on the obligation of procurement funds. Expired funds could be used only for obligational adjustments due to price increases, engineering changes, etc., that did not increase quantity or contract scope. Interpretation of this law and the intent of Congress resulted in the loss of some needed materiel programs through expiration of procurement funds.

(U) An example of lost programs/funds was the procurement of 1500 AN/GRC-106 radio sets with funds due to expire on 30 June 1973. Because of contractor inability to comply with contract terms, and the belief that termination for default would have the undesirable result of forcing the contractor into bankruptcy, the contract was terminated by mutual agreement. It was intended to utilize $1.1 million of funds remaining on the original contract plus $9.4 million of funds that expired on 30 June 1973 for a new procurement. This was thought to be appropriate since the original obligation had been accomplished prior to the expiration date and there was no change in quantity or scope of the work. However, the COA determined that the method of contract termination effected a complete and absolute termination of the original contract, therefore, use of expired funds for a new obligation were not authorized.[1]

[1]DF, DACA-FP to DALO, 26 Sep 73 (fr Comptroller of Army sgd Arther M. Schied, Actg Asst Comp), Subj: Authorized Utilization of Expired PEMA Appropriations, CMT 2.

Functional Coordinating Group (FCG) Tasks

(U) The initial effort of the Major Items Functional Coordinating Group (FCG) was review the approved FY 1974 Plan of Action for the FCG and convert this general plan into specific tasks. These tasks were as follows:

(U) FCG Task #1 - Identify Existing Major Items Management ADP System. The NICP's, HQ AMC directorates, DRP divisions, MIDA, CDA, LSSA, MMC and EARC provided input data. This data was reviewed and stratified into the functional areas of assets, requirements, catalog and data management. This provides a basic data base for other FCG Tasks. Completion date was 15 December 1973.

(U) FCG Task #3A and 3-R - Identify Major Items of Equipment Which Could Be More Effectively Managed Under Secondary Items Techniques. The NICP's were tasked to review their major items and identify candidate items to be placed under secondary items management techniques. As of 15 March, 332 items had been identified. MICOM agreed to 67 items in June 1974. Target for completion is 1 October 1974.

(U) FCG Task #6-A/6-R/G - Identify the Roles of the Various Activities Involved in Assets, Requirements and Data Management. ALMC was tasked with this project to determine what functions of each major item management system was performed by the various activities. Considerable time was wasted on this task because ALMC could not determine if the ALMC Logistics Research Office (LRO) or the ALMC school should do the work. This was resolved but because of personnel turbulence and other priorities at ALMC (School), delay was expected to continue until 1 January 1975.

(U) FCG Task #8-G - Publish Synthesis of Major Items Management Systems. The work on this task was a joint effort of AMC and ALMC. The task was completed 1 March 1974 and AMCP 11-4, Army Major Items Management System, was published and distributed on 12 June 1974. The Major Items Management System was not standardized at the NICP's. The pamphlet relied on flow charts, augmented by descriptive narrative, to illustrate the interrelations of principal processes, systems and procedures of major item management as it was practiced (ammunition and missiles excepted). A document was needed for a text by ALMC Logistics Executive Development Course and a guide for system improvements and standardization. This document, AMCP 11-4, would satisfy this need.

(U) FCG Task #9-G - Identify Publications and Other Media that Provide Information Pertaining to Major Items. This task was required to understand the impact of system changes upon publications. Input

was solicited from NICP's, MIDA, LSSA, EARC, MMC, CDA, HQ AMC directorates. This was a joint effort by AMC and EARC. The task was partially completed 1 December 1973 and the results were being utilized in the development of other FCG tasks.

(U) FCG Task #11 - Major Item Management Systems Products and Data Elements. This was a joint effort of AMC, MIDA, and ALMSA. The purpose of this task was to: identify input and output products; to analyze both the products and data elements; and to define, modify, consolidate these data elements as the first step towards system improvement and standardization. This task commenced 30 March 1974 with a target date of June 1975.

(U) FCG Task #12 - Manual For Major Item Manager - NICP. The work was being done by ALMC under the direction of AMC. This manual was to be directed to the Major Item Managers at the NICP's. It was to provide the detailed instructions required for effective management. The target date for issuance was December 1975. Study plans were developed for FCG Tasks 2, 4, 5, 7, 8 and 10. These tasks were not implemented because of the lack of resources.

(U) Unnumbered Tasks. There were a number of tasks unnumbered regarding management system problems, disposal policy, major end item criteria, interfaces between AMC/SAMPAM/MIDA, eliminations of multi-LIN, separate authorizations of weapons, and cost to manage Line Items which were either completed or moving toward completion.

(U) FCG Task #14 - Management of Low Density Items. This task was initiated to determine if the number of items with low requirements was great enough to warrant the development of a special management system to find the parameters for designating an item as Low-Density and to find the impact of the special management system would have on the system in effect as of 22 August 1974.

(U) Approximately four and one half man years of effort were devoted to the above FCG Tasks. The project tangible and intangible saving was in excess of $20 million.

Procurement Policy

Procurement Support

(U) During FY 1974, the Procurement Support Branch of the Procurement Policy Division, AMC Directorate for Requirements and Procurement, devoted considerable effort in upgrading the quality of major system RFP's. The effort was specifically directed to assuring

brevity, clarity and uniformity in solicitation documents for major development programs. It was viewed that these efforts issued improve the RFP system by: materially improving communications between Government and industry; simplifying the acquisition process and reducing the paper work involved; reducing the size of RFP's; and causing each individual involved in the procurement process to question, analyze and find more efficient means of doing the job. This was a two phased program.

(U) The first phase involved the formal training of approximately 170 personnel from the major subordinate commands responsible for preparing and reviewing RFP's. The course was developed by AMC in conjunction with ALMC. The second phase of the program involved the development and promulgation of a Request for Proposal Format Guide which prescribed policies, procedures and standards governing the preparation of RFP's by AMC installations and activities. This publication was released 1 June 1974.

(U) During the fiscal year, the major subordinate commands were delegated unlimited authority to approve the award of contracts and to approve the issuance of letter contracts. This authority had previously been retained by higher authority. The above actions were expected to materially aid in the timely award of contracts and reduce overall procurement administrative leadtimes.

(U) The Procurement Support Branch received and staffed 195 Determination and Findings for Secretarial Approval under ten U.S.C. 2304(a) 11 and in addition provided review guidance and comment on 30 Determination and Findings being staffed for Approval under 10 U.S.C. 2034(a) 14. The Branch also received, staffed and obtained HPA approval on 14 R&D AP Plans in accordance with the requirements of ASPR 1-2100 and provided staff review and guidance on an additional 25 Procurement Appropriation supported AP Plans. In addition, the Procurement Support Branch received, staffed, and obtained AMC or DA approval on 19 requests to purchase foreign supplies under ASPR 6-103 and staffed nine requests for providing facilities to contractors pursuant to ASPR 13-301.

(U) In addition to the foregoing, the 39 ASPR cases were processed. These concerned proposed ASPR revisions for review and comment by the Army Materiel Command. Also, the branch provided two representatives as permanent Army members on two standing ASPR subcommittees working on specific cases assigned by the ASPR committee and provided representatives for Procurement Review Boards and special AMC, DA, and DOD Ad Hoc Study Groups. Procurement support people also reviewed and responded to 194 actions resulting from IG, AAA and GAO reported findings and recommendations; and processed 16 requests for and approvals of contracting officer approvals.

Testing Prototypes Competitively

(U) In 1970, AMC published policies which required our development plans to include provisions for testing prototypes competitively. This competition was aimed at eliminating some of the risk inherent in the decision to enter full scale development. AMC planning under these policies received stimulation and support when DOD Directive 5000.1 was published in 1972. Soon thereafter, the Army Received approval to proceed with competitive prototyping for such weapons systems as the Armed Reconnaissance Scout Vehicle, Bushmaster Advanced Attack Helicopter, XM-1 Tank and the Utility Tactical Transport Aircraft System. There were approximately 20 competitive prototype programs through 30 June 1974. Recently, AMC used a cost ceiling in some competitive prototype contracts. It was realized that any target level of performance could be obtained provided the attendant cost growth was allowed. The AMC objective was to maintain a balance of cost and performance. It was believed that financing should be limited to the contractor who balanced cost and performance. The contractor normally would win or lose based on performance at that point.

(U) The competitive prototyping approach proved an excellent method for determining developmental potential and expense for production of systems. Army policy was to continue and AMC would use competitive prototyping to further refine its implementation techniques.

Low Rate Initial Production (LRIP)

(U) During FY 1974 briefings were provided to MSC's concerning the Low Rate Initial Production (LRIP) approach. The approach was taken to insure that design changes on newly developed weapons systems were held to a minimum. LRIP allowed the Army to contract for a minimum number of items before the contractor would go into full production. The system reduced the government's exposure to large retrofit problems and costs but still provided adequate numbers of hand tooled production items for final development and operational test prior to full scale production. AMC planning for its major weapon systems incorporates the LRIP technique into contracts with the developer after successful full scale engineering development tests.

Source Selection Evaluation Board (SSEB)

(U) AMC promulgated policies necessary to meet the objectives of new materiel acquisition guidelines. Under these policies, proposal evaluation was to be conducted by the Source Selection Evaluation Board (SSEB), consisting of experts in cost, technical and management areas and a Source Selection Advisory Board acting for the Source

Selection Authority who would make the final decision. A new set of criteria for the SSEB costing team included design to unit production cost realism, and life cycle cost consideration.

(U) AMC found that it was most important that our source selection procedures fully consider each offeror's technical approach (identification of areas of uncertainty and trade-offs), proposed management approach (past performance regarding quality of product, timeliness of delivery, and cost effectiveness), and approach to cost realism.

(U) AMC believed that the cornerstone of effective source selection was advance planning. To facilitate this planning, it was believed that a project team must be formed by the project manager early in the project cycle (normally at the time of task force implementation of Required Operational Capability (ROC)). The project team was required to develop procedures to ensure brevity, clarity and uniformity in Requests for Proposals and proposal evaluation procedures.

(U) Procedures in practice had proved extremely successful in obtaining contract execution within the required time. For example, contracts for the XM-1 Tank, the UTTAS and AAH all followed this streamlined procedure and met the lead-time objectives. These new source selection procedures were being applied to major weapons systems as well as non-major weapons systems which have been executed through 30 June 1974.

Competitive Procurement

(U) Procurements placed under contracts during FY 1974 by AMC purchasing offices reached a value of $4,637 million, an increase of $154 million over the value of awards during FY 1973 of $4,483 million. Awards on the basis of price competition (including formal advertising) during FY 1974 amounted to $1,304.6 million for a performance rate of 28.1% of total procurement dollars, a decrease of 3.7% from performance of 31.8% in FY 73.

(U) Performance during FY 1974 by the following AMC major subordinate commands was short of performance in FY 1973 causing the overall lowered results as follows:

	Total Awards ($ Mil)	Compet Awards ($ Mil)	Percent
AVSCOM			
FY 74	$664.4	$56.2	8.5
FY 73	421.4	60.9	14.5
FY 74 Change	+243.0	- 4.7	-6.0

	Total Awards ($ Mil)	Compet Awards ($ Mil)	Percent
ECOM			
FY 74	$589.6	$150.1	25.5
FY 73	330.9	113.8	34.4
FY 74 Change	+258.7	+36.3	-8.9
ARMCOM			
FY 74	$1,445.7	$466.4	32.3
*FY 73	1,717.3	556.6	32.4
FY 74 Change	-271.6	-90.2	-.1
TACOM			
FY 74	$672.7	$316.3	47.0
FY 73	619.3	341.3	55.1
FY 74 Change	+53.4	-25.0	-8.1
TROSCOM			
FY 74	$188.3	$85.9	45.6
FY 73	180.1	93.3	51.8
FY 74 Change	+8.2	-7.4	-6.2

*Combined WECOM-MUCOM Total

(U) The reduced competitive procurements could be attributed at least in part to: reductions in programs which were highly susceptible to competition such as tactical vehicles; to general overall increases in new and continuing R&D procurements (noncompetitive); for aircraft, tanks and urgent ammunition procurements placed with firms already in production; or to preserve an existing production base, on a non-competitive basis.

(U) The year end target to award at least 35.5% of procurements on the basis of price competition was not met. Actual AMC total performance for the year was 28.1%. Summary of competitive performance through four quarters of both FY 1974 and FY 1973 follows:

	Total Dollars Awarded ($ Mil)	Total Dollars Compet ($ Mil)	Percent Compet
FY 74 (12 Mos)	$4,637.5	$1,304.6	28.1
FY 73	4,483.4	1,424.5	31.8
FY 74 Change	+ 154.1	- 119.9	- 3.7

Cost-Plus-Fixed-Fee Contracts

(U) Contract awards during FY 1974 on a cost-plus-fixed-fee (CPFF) basis amounted to $407 million for a rate of 9.3% of the total procurement dollars awarded under contracts which were $3,396.5 million. This performance represented a favorable reduction in the ratio of procurement dollars awarded on a CPFF basis to toal procurement dollars.

(U) The decrease in ratio of contract dollars under CPFF pricing arrangements was attributable mainly to continuing emphasis placed upon the use of other forms of cost type contracts and actions taken by the AMC Commands to convert contracts form CPFF to Cost-Plus-Incentive-Fee (CPIF) or Cost-Plus-Award-Fee (CPAF) pricing arrangements. The proportion of CPFF dollars to total procurement dollars has continued downward (improvement) from 16.7% in FY 1971 to 13.3% in FY 1972 to 9.7% in FY 1973 to the present 9.3% in FY 1974. Comparison of CPFF performance for both FY 1974 and FY 1973 follows:

	*Total Dollars Awarded ($ Mil)	Total Dollars CPFF ($ Mil)	Percent CPFF
FY 74 (12 Mos)	$4,396.5	$407.0	9.3
FY 73 (12 Mos)	4,260.8	414.0	9.7

*Measured only on awards of $10,000 and over.

Formal Advertising

(U) AMC procurements placed under contract through formal advertising (including two-step FA) during FY 1974 amounted to $451 million, which was $164 million less than the value awarded on this basis during FY 1973. As shown below in the comparison of performances for the two years, formal advertising performance during FY 1974 produced a result of 9.7% of total dollars placed under contracts and declined from 13.7% in FY 1973.

(U) The reasons for lower performance in FY 1974 when compared to FY 1973 were the same reasons resulting in lowered performance on the basis of price competition discussed in the portion of the "Price Competition."

(U) Comparison of Formal Advertising (FA) performance for both FY 1974 and FY 1973 follows:

	Total Dollars Awarded ($ Mil)	Total Dollars Formal Adv ($ Mil)	Percent F/A
FY 74 (12 Mos)	$4,637.5	$450.7	9.7
FY 73 (12 Mos)	4,483.4	614.9	13.7

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Incentive Contracts

(U) Procurement dollars placed under contracts containing incentive provisions amounted to $1,275 million or 29.0% of total contract awards of $4,395 million for FY 1974, an increase of $91 million over value of similar awards in FY 1973 which amounted to $1,184 million or 27.8% of total FY 1973 awards of $4,261 million. Total awards for both years shown above are computed on the basis of value of all procurement actions of $10,000 or more.

(U) Awards during FY 1974 under Fixed-Price-Incentive contracts amounted to $563 million (12.8%) while those under Cost-Plus-Incentive pricing provisions amounted to $712 million (16.2%) of total awards. By way of comparison, value of awards in FY 1973 under Fixed-Price-Incentive contracts were $452 million (10.6%) and those under Cost-Plus-Incentive pricing provisions were $732 million (17.2%) of total awards.

Multi-Year Procurements (MYP)

(U) Twenty-two new MYP contracts were awarded during FY 1974, obligating $98.2 million of funds for the first year increment under multi-year contractual arrangements. By way of comparison, 16 new MYP contracts were awarded in FY 1973 representing first year obligations of $26.6 million. An additional $229.7 million of procurement funds were obligated during FY 1974 under 48 existing MYP contracts for requirements subsequent to the initial first year's quantities procured. The latter transactions include not only the second and following annual increments, but in some instances, represent additional amounts against option quantities set out in the contract with the first year's firm quantity. During FY 1974, a total of 70 MYP contracts were utilized, representing $327.9 million of procurement funds compared to $220.5 million in FY 1973 and $394 million in FY 1972.

Procurement Volume and Trends

(U) Total procurement dollars awarded under contracts by the AMC purchasing offices during FY 1974 amounted to $4,637 million, an increase of $154 million (3.4%) over the value of awards during FY 1973 which amounted to $4,483 million. FY 1974 represented a reversal of the downward trend in the total value of procurement dollars awarded in the years following the Southeast Asia conflict. In FY 1968, total value of awards was $9,874 million, decreasing to $8,806 million in FY 1969, $6,121.7 million in FY 1970, $4,518 million in FY 1971, increasing slightly to $4,718 million in FY 1972 and down again to $4,483 million in FY 1973. On a dollar basis, AMC procurements during FY 1974 accounted for 57.3% of total Army procurement dollars of $8,099 million, a significant increase from 49.3% for FY 1973.

(U) In terms of number of individual procurement actions awarded, total actions during FY 1974 ($1.00 and over) amounted to 527,733, down from number of actions awarded in FY 1973 of 573,633. There were 20,203 procurement actions at a value of $10,000 and over during FY 1974 compared to 20,784 in FY 1973.

Procurement Performance, FY 1974

(U) The DA and AMC procurement performance for FY 1974 compared to the four immediate previous years is indicated below:[2]

	Price Compet (% of Total Procurement $)*	Formal Advtg (% of Total Procurement $)*
FY 70 Army-wide Performance	37.1	15.8
FY 71 Army-wide Performance	36.1	16.5
FY 72 Army-wide Performance	36.5	15.0
FY 73 Army-wide Performance	34.1	14.7
FY 74 Army-wide Perf (12 mos)	33.5	12.5
FY 70 AMC Performance	38.5	16.9
FY 71 AMC Performance	39.2	19.8
FY 72 AMC Performance	38.3	16.9
FY 73 AMC Performance	31.8	13.7
FY 74 AMC Perf (12 mos)	28.1	9.7

*All procurement actions $1.00 and over (DD 1057 and DD 350)

(U) Charts 11 - 13 compare actual performance for the twelve month period July 1973 through June 1974 by AMC Subordinate Commands and other purchasing activities against FY 1974 year-end goals assigned. The specific areas covered are Price Competition, Formal Advertizing, and Small Business Awards.

Inflation

(U) An inflation-shrunken procurement dollar, coupled with Congressional demands for DOD Budget restraints, led AMC to perform a most extensive study of the effect of inflation on the cost of materiel acquisition. The study was a joint effort of the AMC Directorates for Requirements and Procurement and Supply, and the Office of the Comptroller.

(U) The results of the study were provided to the Director for Materiel Acquisition and the Deputy Chief of Staff for Logistics for

[2] Ltr, AMCRP-SO, 12 Aug 74, Subj: AMC Procurement Performance, July 1973-June 1974 (FY 74).

UNCLASSIFIED

AMC PERFORMANCE AGAINST ASSIGNED GOALS BY COMMAND/ACTIVITY JULY 1973-JUNE 1974 (FY 74)
ALL CATEGORIES OF FUNDS - EXCLUDES INTRAGOVERNMENTAL & FMS

AMC REPORTING OR REQUIRING COMMAND	Price Competition (1) (%)		Formal Advertising (1) (%)		Small Business (2) Awards (%)	
	Actual FY 74 12MOS	FY 74 GOALS	Actual FY 74 12MOS	FY 74 GOALS	Actual FY 74 12 MOS	FY 74 GOALS
Armament Cmd	32.3	44	8.4	15	19.1	13.5
Aviation Sys Cmd	8.5	10	2.6	3	7.2	4.5
Electronics Cmd	25.5	39	6.3	30	21.9	16.0
Missile Cmd	15.1	11	4.1	3	7.7	7.0
Tank-Auto Cmd	47.0	60	28.9	47	19.0	12.0
Test & Eval Cmd	27.2	25	8.5	6	38.0	35.0
Troop Support Cmd	45.6	49	14.3	25	39.1	27.0
H. Diamond Labs (3)	51.3	XXXX (3)	.3	XXXX (3)	15.9	23.0
TOTAL AMC	28.1	35.5	9.7	18	17.5	13.0

Note: (1) Based on Procurement Actions $1.00 and over (DD 350 & DD 1057) reported by the activity and its subordinate purchasing offices, if any.
(2) Based on awards to business firms only.
(3) Performance reported - formal goals not assigned.

Prepared by: AMCRP-SO
Date: 6 Aug 74

Chart 11

UNCLASSIFIED

AMC COMPETITIVE VS NON-COMPETITIVE PROCUREMENT JULY 1973-JUNE 1974 (FY 74)

$1.00 AND OVER (IN THOUSANDS) - EXCLUDES INTRAGOVERNMENTAL & FMS

REPORTING COM'D OR ACTIVITY	Total Value Awards*	PRICE COMPETITION				NON-COMPETITIVE				% Price Compet
		2-Step Formal Adv'tg	Other Formal Adv'tg	Negot Price Compet	Total Price Compet	Design, Tech'l, Other Compet	Follow-on After: Price Compet	Follow-on After: Design, Techn'l, Other	Other Non-Competitive	
ARMAMENT	1,445,669	1,539	119,504	345,357	466,400	10,826	59,832	89,160	819,451	32.3
AV'N SYSTEMS	664,365	1,135	16,034	39,041	56,210	175,766	6,449	38,954	386,986	8.5
ELECTRONICS	589,640	2,620	34,377	113,134	150,131	107,413	27,739	49,525	254,832	25.5
MISSILES	803,991	23,728	9,566	88,134	121,428	23,574	60,935	302,282	295,772	15.1
TANK-AUTO	672,684	24,335	170,156	121,856	316,347	51,330	12	9,709	295,286	47.0
TEST & EVAL	85,212	2,154	5,096	15,922	23,172	11,289	1,008	10,855	38,888	27.2
TROOP SUPT	188,336	10,445	16,574	58,847	85,866	17,005	1,164	18,531	65,770	45.6
H. DIAMOND LABS	65,289	-	242	33,269	33,511	1,671	154	1,261	28,692	51.3
OTHER PROC ACT	122,303	2,426	10,753	38,358	51,537	4,072	1,301	3,991	61,402	42.1
AMC TOTAL	4,637,489	68,382	382,302	853,918	1,304,602	402,946	158,594	524,268	2,247,079	28.1

Note: * Based on procurement actions $1.00 and over, (DD 350 & DD 1057) reported by the activity and its subordinate purchasing offices, if any.

Chart 12

SMALL BUSINESS PROGRAM
ARMY MATERIEL COMMAND

FISCAL YEAR 1974

Period 1 Jul 1973 through 30 June 1974

(Dollars in Thousands)

Total Procurement Awards

COMMAND	TOTAL ALL BUS AWARDS ($)	TOTAL SM BUS AWARDS ($)	PERCENTAGE ACTUAL	FY 74 OBJECTIVE (%)
ARMCOM	$ 1,424,139	$ 272,027	19.1	13.5
AVSCOM	658,730	47,116	7.2	4.5
ECOM	565,208	123,567	21.9	16.0
MICOM	795,985	61,452	7.7	7.0
TACOM	662,787	125,668	19.0	12.0
TECOM	80,829	30,750	38.0	35.0
TROSCOM	177,413	69,437	39.1	27.0
OTHERS	172,445	65,765	38.1	33.3
TOTAL AMC	$ 4,537,536	$ 795,777	17.5	13.0

Chart 13

use in the Army budget request. This study led to a Joint AMC/NMC/AFLC/AFSC Commander's Ad Hoc group study report on Production Lead Time and Price Increases. This Ad Hoc group found that inflation and materiel shortages were creating significant impact on both government and commercial contracts with respect to contract costs, schedule, and performance. There was concern over the impact of economic conditions on the procurement process. Severe shortages were being experienced by the industrial community which were causing price uncertainties. It was believed that the problem was the result of growing worldwide demand for limited materiel supplies, unavailability of essential production capacity, inflation, environmental controls, labor problems, and other economic factors.[3]

(U) The Ad Hoc group agreed that all of the services had addressed these economic problems by: extending existing contracts; emphasizing curtailment of options and multi-year contracts; selecting contract types in cases with economic conditions prevailing at the time of the award; implementation of economic price adjustment policies; advance procurement planning; and consideration of using government furnished property.[4] After a thorough review of the government contracting procedures and authorities in existence, the panel concluded that the services required no change in existing DOD procurement policy. The group found that lead times and inflation were problems universally effecting all services and that changes in the inconsistent use of escalation factors in budget submissions to counteract inflation and changes in funding policy to counteract long lead problem were required. The Ad Hoc group emphasized that OMB and the Congress needed to be made aware of the full magnitude of the problem and what actions were required if the "defense readiness posture, as required by Congress, was to be maintained."[5]

Design to Cost

(U) During FY 1974, a Panel established by the Joint Logistics Commanders developed a Joint Design-To-Cost Guide, a Tri- Service Pamphlet providing information and guidance for application of the Design-To-Unit Production Cost concept. The AMC publication was AMCP 700-6. It was the first guidance formally published by AMC concerning Design-To-Cost. The proper application of Design to Cost provided AMC with effective cost controls for new significant development and acquisition programs.

(U) In addition to the new Guide, AMC issued a new policy statement, dated 13 September 1973. The new policy called for, instead of the $25 million production cost threshold used for application of

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[3]Report of Joint AMC/NMC/AFLC/AFSC Commander's Ad Hoc Group on Production Lead Time and Price Increases, August 1974, pp 8-9, sgd H.L. Page-AMC, COL T.E. Brown-AFLC, E.L. McCubbins-NMC, and P.G. Schultz-AFSC.

[4]Ibid., p. 10.

[5]Ibid., p. 11.

Design-To-Cost, AMC would now employ the concept in all major or non-major development programs except where it could be demonstrated that its use would not be in the best interests of the program.

Impact of Energy Shortage and Inflation on Procurement

(U) During FY 1974, the impact of the energy shortages created economic problems and material shortages which resulted in the inability of some contractors, particularly small business, to fulfill their contractual obligations. DOD policy concentrated on techniques for awarding new contracts and ways of administrating them that, hopefully, should mitigate the impact of shortages and price escalation on Government contractors.

(U) Contractors were given relief under the provisions of Public Law 85-804, on a case by case basis[6] where the inflationary spiral of material prices rose significantly to jeopardize the continued existence of contractors. OASA(I&L) recognized the problem of contracting officers, and advised that the use of multi-year contracts, options, or indefinite delivery type contracts for delivery over an extended time period in the current economic climate of inflation was inappropriate unless an effective economic price adjustment provision is included in the contract.[7] The inflationary spiral also played havoc with budget submissions and in efforts to estimate the cost of end items one or two years ahead. AMC believed that DOD needed to provide more flexible guidance and funding to meet the changing economic trend as prices escalated upward.

Industrial Management

Industrial Planning

(U) Department of Army (DCSLOG) transferred the Priorities and Allocations function to the Commander, AMC on 20 May 1974 which included the following responsibilities: AR 715-5, Department of Defense Priorities and Allocations Manual; DA Pamphlet 715-6, Emergency Priorities and Allocations Manual; DODI 4210.7, Controlled Materials Requirements; DODI 7700.13, Computation and Reporting of Requirements for Depleted Uranium; DODI 4210.8, DOD Bills of Materials; DODI 4210.4, DOD Studies on Availability of Materials; DODI 4210.6, DOD Coded List of Materials; and DODI 4400.6, Priorities and Allocations (Delegation of DO and DX Priorities and Allocations, Rescheduling of Deliveries and Continuance of Related Materials).

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[6] ASD(I&L) Memo, dated 12 Jun 74, Subj: Impact of Energy Shortages on DOD Procurement.

[7] OASA(I&L) ltr, dated 20 Jun 74, Subj: Impact of Energy Shortages and Inflation on Procurement.

(U) Additionally, AMC agreed to accept the responsibility for the following functions: preparation, printing and distribution of the Departmental Industrial Plant Reserve (DIPR) and National Industrial Plant Reserve (NIPR) Report, RCS 1559; preparation of RCS DD-I&L(A)784 Report, "Cost of Maintenance of Industrial Mobilization Base," and direct submission of the 4F Category Annual Recertification to ASA(I&L)

(U) The number of Requests for Special Priorities Assistance (BDSAF-138) for the period of January - July 1974 averaged 60 requests per month as opposed to 18 per month during the same period in 1973. While the increase in priority assistance cases was reflected by an increase in workload, of greater significance was the increased difficulties encountered with procurement actions and timely deliveries of required materiel. These difficulties were largely attributable to energy shortages, pollution abatement corrective actions, petroleum and feedstock shortages, and shortages of steel, copper and aluminum. Manufacturing and procurement lead times increased at an unprecedented rate during the January - July 1974 period as a result of materiel shortages and production demands in the domestic and international markets. These combined problem areas have increased the complexity of efforts required to meet the demands in all program areas. The outlook for the future in procurement and improved production lead times was not encouraging.

(U) In an effort to create an awareness of problems relating to steel shortages and long leadtimes, representatives of Republic Steel Company, on 21 May 1974, discussed with General McKeen and other AMC personnel the position of Republic Steel Company in meeting Government and industrial demands for steel products. Republic Steel Corporation was advised that the shortage of scrap steel, limited steel mill capacity, and the increased demand for steel worldwide, resulted in long leadtimes for procurement of steel products, but Department of Commerce directives were being honored with best possible deliveries.

(U) Good relationship has been maintained with chemical and electronics manufacturers to facilitate the best possible delivery of items in short supply.

Facilities Management

(U) Rotary Forge at Watervliet Arsenal. Mr. Melvin Price (D-Ill), Chairman of the House Armed Services Subcommittee No. 1, held a meeting of the full subcommittee on 14 November 1973. This meeting was called to resolve certain claims made by representatives of industry.[8] Testimony was given by officials and representatives of Cabot Corporation,

[8]Hearings, Subcommittee No. 1 Hearings on the Purchase by the Department of the Army of a Rotary Forge Machine, House of Representatives, Armed Services Committee, Washington, D.C., November 19, 1973, U.S. Government Printing Office, p. 31.

together with that of the Army in defense of placing the rotary forge at the Watervliet Arsenal, Watervliet, New York. Major General Chester M. McKeen, Director of Requirements and Procurement, US Army Materiel Command and Congressman Samuel Stratton, a member of the House Armed Services Committee, defended the Army position. Watervliet Arsenal, which is in Mr. Stratton's Twenty-Ninth New York Congressional District, was scheduled to receive the Rotary Forge in February 1975.

(U) The rotary forge to be installed at the Watervliet Arsenal would be the largest rotary forge machine in the United States, having both solid and hollow forging capability. It is approximately 186 feet long. The rotary forge is completely automated and capable of accepting a work piece up to seven tons in weight and 22 inches in diameter. It would be capable of handling weapons ranging from the cold forging of 60 millimeter mortar tubes to the hot forging of 155 millimeter tubes. In the cold forging mode of operation, speeds of 1.5 feet per minute will be possible. In the hot forging mode of operation, speeds of 2.6 feet per minute will be possible.

(U) Following delivery of the drop forge early in 1975, and a successful test performance of the equipment, a controlled phase-in of production was to be initiated. The completion date of facilities installation and acceptance was projected to be July 1, 1975, while complete production phase-in was expected to be accomplished in the following 12-18 month period.

(U) MG Chester M. McKeen, Jr., Director of Requirements and Procurement, HQ AMC, reviewed for the subcommittee the situation leading to the acquisition of the rotary forge. He compared the existing manufacturing of the gun tube blank and the proposed operation utilizing the rotary forge process. He informed the Congressmen that in the existing operation, thick walled cannon tubes were forged from an ingot to a solid elongated cylinder after which several machining operations were employed to form a hole the entire length of the tube, and to remove excess stock outside. In the proposed operation, an ESR or other steel preform would be purchased for thick walled tubes. Initially the preform would be trepanned, preheated and rotary forged to the required cannon tube geometry. When technology permitted, cast hollow ingots would be used which would allow the elimination of trepanning. The rotary forge would forge the outside, and simultaneously provide a hole the entire length of the tube. An entirely different technology cold forging of thin walled tubes would be developed. This may allow forging to finish dimensions. The rotary forge would provide greater latitude during mobilization and would greatly reduce response time. It represented the greatest change in gun manufacturing technology in the last 25 years. The rotary forge is capable of both hot and cold forging.

(U) General McKeen then reviewed the situation regarding gun tubes that led to the purchase of the rotary forge. He explained that, in accordance with instructions of the Assistant Secretary of Defense at the time he approved the rotary forge project, industry had been queried to determine their willingness to establish the rotary forge capability. A meeting was held with these firms on March 23, 1972.[9] Cabot Corporation was represented at the meeting.

(U) At the meeting, the rotary forge concept was explained and the reasons for moving toward rotary forging were stated. There was discussion of the technical features of the process and the economics of the investment and operating costs. However, the meeting created no interest in private investment in a rotary forge of the size needed for large gun tubes. Indeed, there was considerable doubt expressed as to the usefulness of a rotary machine in making forgings for gun tubes.

(U) A few days after the meeting a representative of a corporation telephoned to state a desire to discuss arrangements whereby that company might have possession of the machine. A meeting was arranged and held at Watervliet Arsenal on May 1, 1972. No written proposal was presented. The discussion centered on four points. The company had available space within its forging facility for a large rotary forge. They had know-how for forging over a mandrel. They would guarantee a minimum financial return to Government under a lease. However, they were reluctant to invest in the machine. A later meeting between Watervliet and that company took place in November of 1972 with a representative of a second company present. The same points were discussed except for the guarantee of a minimum return. Later, a third firm joined the two in discussions.

(U) The proposals were not considered acceptable because the cost of the rotary forge and much of the related equipment was to be borne by Army but the primary use of the equipment was to manufacture commercial products. Thus, a distinct competitive advantage in a commercial market would be conferred to the possessor of the equipment.

(U) In December of 1972, a representative of still another company visited Watervliet to explore the feasibility of a cost sharing arrangement. Again, the cost sharing would have the Army pay for the rotary forge with the company contributing facilities already on hand. The primary products would have been commercial. A reply was made to that company later in December and was substantially the same as the reply to the first group. The company representative followed up the Watervliet visit with discussions at AMC Headquarters and at the Department of Army level. No written proposal has been received.

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[9] Ibid., p. 32.

(U) The initial reaction from Cabot to the March 1972 meeting with industrial firms took place in June of 1972 when Cabot plant managers, during the course of a routine visit to Watervliet, mentioned that Cabot desired to remain a producer of gun tube forgings. There was no discussion of how this might be done. In September 1972, a vice president of the Cabot Corporation visited Watervliet. Rotary forging and the use of hollow preforms in the forging process were discussed but again there was no proposal for private investment in a rotary forge. There were discussions later in the year regarding the material to be used by the forging machine.

(U) A contract to purchase a rotary forge was placed on March 21, 1973 by the Frankfurt Germany Procurement Agency. Then, on May 22, 1973, the manager of the Machinery Division of the Cabot Corporation called Watervliet to request a meeting with the commanding officer so that a written proposal could be presented. AMC interpreted the central thrust of the conversation to be that Cabot would buy the rotary forge currently under manufacture for the Army.

(U) A proposal was presented on June 6, 1973. It did not address buying the forge outright. It offered housing for the rotary forge and a commitment to "acquire an interest in the GFM rotary forge to the extent that it utilizes the equipment to successfully produce gun tubes from hollow castings or develops yet unidentified Department of Defense (DOD) needs or commercial products." The proposal also estimated utilization for gun tube forgings at between seven percent and 14 percent. No estimate was made for commercial use. The proposal also pointed out that Cabot would devote $3 million in existing Cabot-owned facilities to the manufacture of gun tube forgings. By letter of July 5, 1973, the proposal was declined because no basis existed for Government financing the purchase or production equipment for private use in the manufacture of commercial products.

(U) A more recent proposal from Cabot dated October 19, 1975 proposed that a Government-owned rotary forge be placed in a Cabot plant. A rental arrangement was offered to apply when commercial work was performed. There would be no rental charge when gun tube forgings were being made. Regarding this proposal, General McKeen informed the Congressional subcommittee that "to enter negotiations solely with Cabot would be illegal, that competition was feasible and that other firms had shown interest." He reminded the subcommittee that "prudence dictates that the working arrangements of any type be carefully thought through. We have in question a remarkable machine. It must be used for both developmental work and straight-out manufacture. An arrangement which attempted to permit both, and additional extensive commercial work, would be very difficult to consummate and to execute.

(U) "As for equity, the interest shown by Cabot is itself evidence that there is an advantage to possessing the machine. This advantage clearly exists in the production of both Government and commercial products. Since other firms have evidenced interest in the forge, simple equity requires that if it is to be made available to industry, they also must be given an opportunity to acquire the use of it.

(U) "We need the rotary forge for cannon. The Russians and the North Koreans have them. We are unable to make the finding required by statute that leasing this machine will promote the national defense or be in the public interest. We are willing, as we were at the outset of this program, for industry to possess this machine. This now means that we stand ready to sell it on a competitive basis, to an interested and qualified company."[10]

(U) Radford Army Ammunition Plant. An explosion destroyed the TNT Nitration and Purification Building in the continuous TNT manufacturing area at Radford Army Ammunition Plant, Radford, Virginia, on 31 May 1974. Although damage to the plant was extensive, there was no loss of life. There were 15 disabling injuries and 102 non-disabling injuries. The explosion caused shock waves 35 miles from the center of the blast. The estimated total cost for clean-up and repairs is estimated at $10 million dollars. The reconstruction of the destroyed nitration and purification building was scheduled in FY 1976, with a total estimated cost of $15 million dollars.

(U) Mississippi Artillery Ammunition Facility. In July 1974, Senator John C. Stennis announced that the Department of the Army had selected the NASA National Space Technological Laboratories site in Mississippi as the location for construction of a new artillery ammunition facility. An initial expenditure of $2 million was authorized to conduct preliminary engineering studies and to prepare an environmental impact statement for construction of a 155mm Improved Conventional Munition Facility. The decision to pursue the project at the NSTL site culminates three years of extensive economic evaluations which exhausted a number of competitive locations before selection of the Mississippi site was finalized.

(U) Ammunition Production Base Modernization and Expansion Program. In January 1974, the Huntsville Engineer Division of the Office of the Chief of Engineers was selected as the principal managing agency for design and construction of the Ammunition Production Base Modernization and Expansion Program. The Huntsville Division Engineer Office would be directly responsive to the AMC Project Manager in the execution of the construction phase of the multi-year modernization program of the Army's Ammunition Production Base. Addition of the Huntsville Division provides a new dimension of technical expertise to the Project Manager which was expected to enhance program execution.

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[10] Ibid., p. 34.

Production Base Support

(U) A comparison of the Production Base Support (PBS) program contained in the AMC's FY 1974 Apportionment Request, with year-end AMC Program 1974, is indicated below:

	DA Exhibit P-1 1 Jun 73	AMC Adjusted Program	Increase Decrease
1490 Aircraft	4.7	4.8	+0.1
2590 Missiles	4.2	5.7	+1.5
3190 Tracked Combat Vehicles	(6.8)	(6.8)	-
3290 Wpns & Other Combat Veh	(21.0)	(16.7)	(-4.3)
Subtotal Wpns & Tracked Combat Veh	27.8	23.5	-4.3
4910 Ammo Prov Ind Fac	(226.2)	(141.0)	(-85.2)
4920 Ammo Layaway Ind Fac	(17.5)	(13.5)	(-4.0)
4930 Ammo Prod Engr Meas	(36.7)	(36.7)	(-0.1)
Subtotal Ammunition	280.5	191.2	-89.3
5190 Tact & Spt Veh	(1.9)	(1.6)	(-0.3)
5290 Comm/Elec	(5.7)	(5.2)	(-0.5)
5390 Other Support	(10.7)	(11.5)	(+0.8)
Subtotal Other Procurement	18.3	18.3	-
Total FY 74 PBS	335.5	243.5	-92.0

(U) The reasons for the changes in the appropriate categories were as follows:

Aircraft - Increase, program transferred from Hardware to fund a MACI project, Distance Measuring Equipment for aircraft (29748).

Missiles - Increase, program transferred from Hardware and Secondary Item.
1.0 from Hardware (Dragon) for MACI Engr f/Type IV Test Equip NIKE HERCULES (33095).
.2 from Secondary Items for same project (33095).
.3 from Hardware for MAMP: OSHA (LANCE 32174)

Weapons - Decrease, cut by DA because of overall cut in the Weapons program by Congress.

Ammo PIF - Congressional cuts from FY 1974 Defense Appropriation Act.

52028 Badger AAP:	MOD-Construct 4M lb/mo Continuous NC Facility	9.7
52329 Sunflower AAP:	MOD-Const 3M lb/mo Continuous NC Facility	5.9
52622 Radford AAP:	MOD-Const 4M lb/mo auto line f/Prop Unit	61.8
52665 Radford AAP:	MOD-Const 4M lb/mo Continuous NC Line	7.8

Ammo LIF - Congressional cut of $4.0M.

Ammo PEM - Small amounts due to rounding.

Other Procurement - Program decreased in Tactical and Comm & Elect and Transfer to Other Support, TECOM, Project 05060, Jefferson Proving Ground, PS&ER Test Facilities - to replace Instrumentation Cable Network.

(U) The status of the FY 1974 Production Base Support Execution program at year-end was as follows: Program Released to MSC's, 30 Jun 74 - $356.3M; Obligations, 30 Jun 1974 -$306.9M; Percent Obligated - 86 percent.

(U) The status of the FY 1974 Provision of Industrial Facilities (PIF) awards at year-end was as follows: Program Released to MSC's, 30 Jun 74 - $158.8M; PIF Awards, 30 Jun 74 - $82.1M; Percent Awarded - 52 percent.

(U) The status of the FY 1974 Ammunition Modernization and Expansion (MOD/EXP) awards at year-end was as follows: Program Released to MSC, 30 Jun 74 - $106.9M; MOD/EXP Awards, 30 Jun 74 - $35.4M; Percent Awarded - 33 percent.

Cost Performance

Progress in Measurement Accomplishment

(U) The number of management system applications, accepted as meeting C/SCSC as a result of AMC-led reviews increased during FY 1974 from 18 to 38. This tremendous upsurge in activity was further emphasized by the fact that by the end of the fiscal year, 37 other C/SCSC management system applications were in various stages of the implementation process. Another significant historical event was the first acceptance of the management system at a Government-Owned-Contractor-Operated (GOCO) Ammunition Plant, Radford Army Ammunition Plant, operated by Hercules, Inc. By the end of FY 1974, two GOCO and three in-house management systems had been accepted.

Training and Orientation

(U) The AMC Cost Performance Reporting Division continued to support the C/SCSC training courses conducted by the Army Management Engineering Training Agency (AMETA), Air Force Institute of Technology (AFIT), and the Defense Systems Management School (DSMS). This support

consisted of soliciting and screening applicants, reviewing and advising concerning course content, and participating in and making panel presentations during classes. The Division also regularly provided representatives to all known industry/government meetings and seminars on the subject of C/SCSC.

Air Systems

Air Systems Procurement Program

(U) The FY 1974 Air Systems executed APA (PEMA) program totaled approximately $334 million spread over four commands, with Synthetic Flight Trainer 2B24 procured through the Naval Training Devices Center at Orlando, Florida.

(U) Program distribution as follows:

	FY 74 (Army)	Total (Ind Cust & C/O)	Unit $M.1 Obl 6/30/74
AVSCOM	$120.1	$253.6*	$212.4
ECOM	38.0	54.9	42.2
ARMCOM	3.8	10.5	9.9
MICOM	7.4	7.4	7.0
NTDC	8.0	7.4	7.4
TOTAL	$177.3	$333.8	$278.9
*Direct Cite Customer			
USAF & US Navy		$159.0	$123.7
TOTAL		$492.8	$402.6

(U) The FY 1975 Army APA Program Budget Base Submission Totaled $339.5 million.

OV-1 Aircraft Conversion Program

(U) The Conversion Program will modernize the older OV-1B/C Aircraft to a standard OV-1D configuration to accept the Improved Infrared (IR) and Side Looking Airborne Radar (SLAR) packages, thereby increasing the operational capability of the OV-1 Aircraft. It was planned to convert 61 OV-1C's and 24 OV-1B's to the D model.

(U) Conversion of four OV-1C Aircraft were on contract with the prime contractor for FY 1973. A contract was awarded 1 February 1974 for conversion of 12 OV-1C's for FY 1974. Funding restrictions

imposed for FY 1974 resulted in the quantity being reduced from 24 to 12. Contracts were awarded in August 1974 with Motorola and Texas Instruments for the necessary parts required to comprise the IR and SLAR sensor equipment for FY 1974 and FY 1975.

(U) The projected procurement plan was as follows:[11]

FY 73 Prior Year		FY 74 Current Year		FY 75 Budget Year		Future Years		Total Program	
Qty	Dollars	Qty	Dollars	Qty	Dollars	Qty	Dollars	Qty	Dollars
4	12.6	12	16.6	9	17.3	61	78.4	86	124.6

Grounding of CH-47C Helicopters

(U) On 28 February 1974 all CH-47C helicopters with the T55-L-11A engines (108) were grounded. This action resulted because of in-flight failures of the third stage turbine disc. An extensive analysis of the engines revealed fretting fatigue at the bolted wheel to the turbine power shaft connection.

(U) As an interim measure, the problem was resolved by shot peening the turbine wheel. A contract was awarded to AVCO-Lycoming on 20 March 1974 in the amount of $847,649 for shot peening. A total of 224 engines were shot peened. The aircraft were removed from grounded status on 15 March 1974.

(U) A final fix for the third stage disc failure was the installation of a welded rotor into the T55-L-11A engines. A contract was awarded to AVCO-Lycoming on 31 March 1974 for 409 rotor kits in the amount of $837,000.

Airplane, Utility UX

(U) The FY 1973 Army Program for 20 aircraft for $12 million was released by OSD/DA on 13 March 1974 with planned contract finalization in June 1974. On 28 June, the Secretary of the Army deferred award pending resolution of a Cessna protest, which resulted in a carry over into FY 1975. The actual award was accomplished in August 1974.

Battlefield Command and Control Systems

(U) The AMC Directorate for Requirements and Procurement Battlefield Command and Control Systems Division was established in May 1971. Included were elements of the old Tactical and Strategic Communications Division and the STANO and Electronic Warfare Division.

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[11] Acft Modifications, Appropriation P-1200 FY 75; Exhibits P-3,P-3a.

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During FY 1974 the three branches which made up the division were reorganized into two branches. The STANO Branch was consolidated with the Command and Control Branch and was redesignated the Command Control and STANO Branch. There was no change to the Strategic Communications Branch nor were there any changes made in commodity or functional responsibilities.

AN/GRC-106 Radio Set

(U) The Futuronics contract, DAAB05-71-C-3703, for AN/GRC-106 (FY 70-73 programs) was terminated on 10 August 1973 in accordance with ASPR 8-602.4, "Procedure in Lieu of Termination for Default." The total settlement agreed to was $4.1 million of which $3.8 million was paid to date (end FY 1974). The Defense Contract Audit Agency (DCAA) conducted an audit of the contractor's records which was submitted to the Terminating Contracting Officer (TCO) on 15 March 1974. A supplement to the above audit to cover final claims from Futuronics was furnished to the TCO in May 1974. Forecast for completion of final negotiations was scheduled for October 1974.

AN/GRC-103(V) Radio Set

(U) The AN/GRC-103(V) nomenclature covers a family of radio sets which provide facilities for multichannel radio transmission and reception of pulse code modulation (PCM) signals. The frequency range was divided into four bands and each band was covered by its own transmitter and receiver RF head. The radio sets would accommodate six, 12 or 24 telephone channels when used with appropriate PCM multiplex equipment. Operating with its own antenna system, the AN/GRC-103(V) provides good performance over line-of-sight paths in excess of 30 miles, and has sufficient reserve power to give satisfactory operation over obstructed paths. An order wire circuit, which includes facilities that connect all stations in a system on a party line basis, was provided for use by operating and maintenance personnel.

(U) The AN/GRC-103 was the basic radio set employed in Low Capacity Assemblages. It was part of six separate assemblages, had simplified tuning and could be quickly set up for operation. It used solid state circuitry and was to replace the vacuum tube AN/GRC-50. There were no plans to replace the AN/GRC-103.

Forward Area Tactical Teletypewriter (FATT)

(U) The Project Manager, ATACS, has life cycle management responsibility for Army Tactical Teletypewriters. The Forward Area Tactical Teletypewriter (FATT) is capable of reliable medium speed

operation in both the interim standard BAUDOT Code or the Standard ASC II Code, will operate under extreme tactical environmental and climatic conditions, and will meet Federal Standard 222 requirements. FATT completed engineer and operational service tests. Type classification (LP) was approved in the 1st quarter FY 1974 and first production was planned for the 2d quarter FY 1975.

(U) FATT is a family of equipments intended to provide teletypewriter capabilities over existing communications facilities down to forward area combat battalion level and to battery level of nuclear delivery artillery units. It would handle both tactical and administrative traffic. It would eventually replace all current standard electromechanical teletypewriter equipment used by the tactical field Army Multichannel Communication System and Net Radio Communication System. The new Tri-Tac Communication System, new data processing systems, and the Army Communications Command would use it.

(U) FATT would realize greater traffic rates over existing circuits due to its higher operating speed which would result in less time on the air during radio transmission. It would achieve greater accuracy in message transmission when operating in the ASC II mode due to its use of parity check. Its higher reliability and enhanced maintainability, made possible because of the reduction in the number of mechanical parts, was expected to result in higher availability and decreased maintenance time. It would also be capable of continuous operation in severe tactical environments and in secure locations where radio frequency interference and undesired signal data emissions needed to be suppressed.

(U) The design of FATT was the application of electronic techniques to replace electromechanical mechanisms of current standard Army teletypewriter equipment. FATT was a multi-speed equipment designed for continuous operation in fixed plant or mobile telecommunications centers. FATT features packaging in immersion-proof transportation cases, small size and low weight. FATT also makes use of modular construction of sub-assemblies, integrated circuits, and few moving parts which results in easy maintenance and high reliability. The first production contract for FATT equipment was scheduled for award in the first quarter of FY 1975.

AN/PRC-77 Radio Set

(U) On 6 December 1973, a letter contract was awarded sole source to Memcor for 3000 PRC-77 radio kits for the US-Korea AN/PRC-77 co-production program. The value of the award was $900,000. The contract was definitized on 5 April 1974 in the total amount of $2,590,000. Kit delivery commenced in May 1974 with delivery of 1500 kits. An additional 1500 were delivered in June 1974.

(U) This contract provided for an optional quantity of 2235. One thousand items were delivered on 20 August 1974 with 1000 scheduled for delivery on 6 October 1974. The remainder of 235 more to be delivered on 6 November 1974.

Low Level Teletypewriter Conversion Program

(C) This program is to convert existing Global Communications Centers to comply with TEMPEST requirements. This program had formerly been assigned to US Army Communications Command. As a result of a study prepared by ECOM, HQ DA by letter of 6 March 1974, assigned this program to AMC who in turn assigned the program to Commander ECOM. ECOM, by 30 May 1974 letter, requested the program responsibility be transferred to Project Manager, DCS (Army) Strategic Communications Systems. This assignment was approved by AMC letter of 27 June 1974. Reprogramming of PEMA funds was accomplished in May 1974 for initial procurement of kits. The remaining requirements were to be procured with FY 1975 and FY 1976 funds. Installation of the kits was to be accomplished in three categories beginning in December 1974 and completion of category III by 1 January 1979.

AMC 5 Year ADP Program

(U) This program was designed to provide the Army Materiel Command with standard computer equipment and systems developed as a major management improvement effort of the standardization of CONUS Depot Operations (SPEEDEX), Commodity Command Operations (ALPHA), Test and Evaluation Command (TEAMUP), Data Banks, Laboratories and Arsenals. After successful evaluation of an IBM prototype 360/65 system, it was decided in FY 1973 to implement the ALPHA portion of this program and to extend the 360/65 system to all AMC commodity commands. The plan called for a total of 12 computers, consisting of nine remanufactured and three installed computers. The 12 computers included one for MIDA, which was not a part of the ALPHA Program. The CPU's for the three installed computers had already been purchased.

(U) On 5 June 1973, IBM submitted a special proposal offering a 36 percent reduction in standard GSA purchase prices for the 360/65's and related peripherals at a total net price of $28.8 million. The proposal was formalized as Modification AG to the ALPHA contract. It was contemplated that the buy would be completed in the first quarter of FY 1975. On 26 November 1973 however, Comdisco, a dealer in used computer equipment filed a protest with the Comptroller General, requesting that he halt any further "contract awards" to IBM under the ALPHA contract. An administrative report, stating the Army's position that all laws and regulations applicable thereto had been

followed and that it was in the Government's interest to proceed with the acquisition of the IBM ADPE as planned, was forwarded to the Comptroller General on 10 July 1974. A decision on the case was forecast for August 1974.

Logistics Transfer of Security Agency Programs

(U) HQ DA proposed a transfer of logistic responsibility of Program II items, budget sub-activities Other Electronic Systems/ Equipment-Intelligence Support and Electronic Warfare. This transfer was under review by the US Congress. A memorandum from ASA(I&L) to the Army staff regarding the lack of logistic support by USAMC/ECOM precipitated the activation of study groups to outline the problem areas and provide solutions to the problems surfaced. A Logistics Support Plan was to be developed on the total support of ASA items for HQ DA by 2 September 1974.

TACFIRE

(U) The Tactical Fire Direction System (TACFIRE) provides automation of selected field artillery operational functions. It will replace the present manual system in field artillery organization. This system is Project Managed by the PM Army Tactical Data Systems (ARTADS) at ECOM, Fort Monmouth.

(U) The Total Package Procurement (TPP) contract was restructured in March 1973 from the TPP to a cost plus fixed fee and the addition of new items. Both of the above sections have a ceiling price negotiable downward only.

(U) There were options for Low Rate Initial Production (LRIP) and for Full Scale Production (FSP). Both of these options were forward priced with ceilings negotiable downward only. The work scope and statements were definitized in December 1973. A find, fix, test mode was included in the contract modification that ran from April 1973 to 28 February 1974 with the requirement that the Contractor redeliver to the Government a fully compliant system by 28 February 1974. DT/OT II testing started on 14 May 1974 and was to be completed in October 1974. The LRIP option was to be exercised in the fourth quarter FY 1974 and full scale production release in the 3d quarter FY 1977. The ASARC for the LRIP option was scheduled for 10 December 1974. The DSARC had not been scheduled.

Communications Security

(U) The Communication Security (COMSEC) item is a family of equipment to provide secure transmissions for all types of communications (i.e., telephone, teletype, satellite and radio). The

TSEC/KG-27 was originally scheduled for contract award in the 4th quarter FY 1974, but was slipped to 1st quarter FY 1975 due to the Senate Appropriations Committee deferral of a portion of the program to FY 1975. The award in October 1975 was to be a three year multi-year contract.

Project Scope Picture (J-7)

(U) Project Scope Picture, formerly J-7, began as an Air Force program for providing American-type television programs to United States Government installations located in Germany. Originally, the system was to be implemented in four incremental phases and completed by November 1975. Subsequently, in December 1971, a decision was made to combine Phases III and IV into Phase III and to accelerate completion by 30 June 1973. Implementation of Phases I and II and operation and maintenance of the final system (all phases) were to have remained as Air Force responsibility. The engineering and installation of Phase III requirements were tasked to the US Army.

(U) A decision by the Secretary of Defense placed the executive responsibility for television in Europe with the Army under the provisions of DOD Directive 5120.20. The transfer of responsibility occurred officially on 1 July 1973; however, the actual transition was completed before the end of FY 1974.

(U) Project Scope Picture, when completed, would establish an extensive AFTV network consisting of microwave distribution, ultra-high frequency (UHF) television broadcast and local distribution systems, either mast antenna or cable. Over all, it would provide television service to approximately 300,000 US military and civilian personnel located in hospitals, barracks and family housing units.

(U) Proposals were received from five vendors in April 1973 which were evaluated in May and June. Negotiations were conducted with each vendor during early July and August and on 6 September 1973, a contract was awarded through the US Army Procurement Agency, Europe, to a joint venture of Federal Electric Company (part of ITT) and Siemens A.G. of West Germany. Subsequent to award of the contract, one of the unsuccessful bidders submitted a protest to the GAO which was denied in July 1974.

(U) Engineering planning documents and UHF broadcast licenses, being furnished under the provisions of a Communications Service Agreement between the U.S. and the FRG, signed on 30 October 1972, were 75 percent completed. The agreement called for completion by the end of December 1973. There was no reason to forecast a slippage

in the completion date for the system of April 1975. The EF&I contractor was in the process of constructing towers, installing antennas, microwave radios and UHF radios.

(U) In the financial area, $12.5 million of the $23.4 million FY 1972 OPA funds was not to be obligated on 30 June 1974. OSD PBD #311, dated 2 January 1974, reduced the FY 1972 OPA by $12.5 million and increased the FY 1975 OPA by $12.5 million for this project. $7.0 million of the $12.5 million had been released to ACC-EUR to continue the project.

(U) A decision was made in March 1974 to convert the distribution system to color. This decision would require the Phases I and II, which were in operation, to be modified to carry color signals. The originating studio would require new equipment as the old was not capable of being modified. Based on the fact that new equipment was required, the decision was made to locate a new studio in Frankfurt with the American Forces Network-Europe (AFNE) radio facilities. The new color studio was scheduled to become operational before 1 July 1975. In the meantime the system was to be operated from the black and white studio in Ramstein.

Territorial Command Network - Spain

(U) The Terrirorial Command Net (TCN) was projected to be a communications system which would consist of voice and teletype communications between the Army and Navy Ministries in Madrid through a system control to 15 major terminals and 14 tactical centers and one control center. The system would utilize troposcatter, microwave line-of-sight and diffraction modes of propagation.

(U) The TCN was to be utilized for command and command-related traffic. During periods of national emergency, the TCN would be fundamental to the rapid deployment and quick response of the Spanish Army and Navy. In time of peace, the Net would service command communications and routine and administrative and logistic functions. The total program cost was $31.5 million of which $27 million was provided by the Spanish Government.

(U) A pre-bid conference was held at Fort Monmouth on 2 August 1973 to receive questions from, and to provide answers to, members of industry that were prospective offerors or interested in sub-contracting opportunities for the TCN procurement. On 12 October 1973 proposals were received from industry for the TCN. The technical evaluation of the proposals began 15 October 1973 and were completed 17 December 1973. The contract award was made on 15 April 1974. The initial operational capability (IOC) date was set for October 1976.

As a matter of interest, the Spanish Government, as a separate effort, was in the process of acquiring the site real estate, building roads, constructing buildings and bringing in power.

Combat Service Support System (CS_3)

(U) The Combat Service Support System (CS_3) is a non-developmental, ruggedized, tactical, multi-functional computer system for the Army in the field. It is project managed by the Computer Systems Command (CSC), Fort Belvoir, Virginia, HQ US Army.

(U) The GAO conducted an in-depth evaluation of the CS_3 Corps Concept at Fort Hood, Texas, during the first half of the Calendar Year 1973. While the GAO decision had not been published, the indications were that the Corps Concept was not considered responsive to the Command and Control structure nor was it effective. As a result, a decision was made in May 1973 to abandon the "Corps" Concept and revert to a modified Division Concept, similar to that in being prior to 1 July 1972. One major difference between the new Division Concept and the old Division Concept was the elimination of teleprocessing from the new Division Concept.

(U) The House Appropriations Committee rejected the Army request of $5.3 million for CS_3 in FY 1974 program. $8.2 million was released in the FY 1975 program for the initial procurement of the CS_3. The Project Master Plan was prepared by Computer Systems Command and approved by DA. The new concept would now total 20 systems, consisting of four Corps; thirteen Divisions, two Depots and one support Brigade.

Tactical Operations System (TOS)

(U) The Tactical Operations System (TOS) is an on-line, near real time, secure, information processing system designed to aid tactical commanders in the conduct of combat operations. TOS was to consist of a combination of computer hardware, software, communications terminal equipment, personnel and procedures. TOS was in the concept formulation/advanced development phase. The concept would be tested through a Division level segment (TOS Operable Segment - TOS_2) and extended testing by HQ MASSTER at Fort Hood, Texas. This system is project managed by PM, Army Tactical Data Systems (ARTADS), Fort Monmouth, New Jersey.

(U) In April 1971 the concept leading to the current procurement of the TOS_2 and related equipment for a Teleprocessing Design Center and Software Support Center was approved. A sole source contract valued at $13.9 million was awarded to Litton Systems, Inc.,

on 23 June 1972 for the TOS_2. Because of software problems, the program encountered a nine month slippage in Phase I completion. Efforts were initiated by the user representatives, USTRADOC, through the TOS User Requirements Committee, and various study programs, to define TOS_2 alternatives for testing at MASSTER, and to refine and establish ultimate TOS requirements and applications for considerations of the TOS ASARC/DSARC.

Army Marine Communications and Electronics (C&E) Modernization Program

(U) On 9 November 1966 Department of the Army approved the US Army Marine Electronic Configuration Five Year Plan. USAECOM, USATROSCOM and the Maintenance Directorate of USAMC shared the responsibility for installation of approved Communications Electronics in the various vessel designs.

(U) On 26 May 1972 ACSFOR approved eight items for urgent operational requirement for USARPAC Marine Craft fleet. These items were type classified as Limited Production with expiration date of 30 November 1973. However, this date was extended to November 1974. There would be a delay in procurement of some C&E items for the FY 1975 program because of some additional testing requested by TROSCOM and MERDC.

Weapons and Munitions Systems

Mortar Training Devices

(U) The U.S. Army had never had a satisfactory mortar training device system. All such devices adopted over the past thirty years had been designed to train only one part of the mortar section and provided no integrated training.

(U) In 1968 it was determined that the potential of a German made mortar training system should be investigated. Tests proved that the German system had the required characteristics, in that the gun crews, fire direction computers and forward observers could train as a team and receive realistic training without firing the more expensive service ammunition.

(U) This system consists of a reusable sabot which approximates the size and weight of the service cartridge, a sub-caliber cartridge which loads into the sabot and fires when the sabot is loaded into the mortar, and firing tables which provide the fire direction computers with accurate range information. The sub-caliber cartridge had one-tenth the range of the 81mm Mortar round, provided ground burst on impact and hadan expulsion charge which ejected the sabot from the mortar.

(U) On 27 June 1974, a contract was awarded which was to provide this system to the Army during 1975. It was estimated this system would provide realistic training for approximately $6.00 per shot as compared to $30.00 per shot for the service round.

Ammunition End Item Procurement Program Released to ARMCOM

(U) During Fiscal Year 1974 the ammunition end item procurement program released to ARMCOM for execution totalled $1,387,200,000. This consisted of $838,300,000 for Army and $548,900,000 for other customers. Against this authorization, ARMCOM obligated $1,327,600,000 (96%) as of 30 June 1974. The following is a breakout of the authorized program:

Category of Items	($M) Dollar Value Army	Customer
Small Arms Ammunition	136.4	122.2
Artillery Ammunition	313.4	92.7
Tank Ammunition	101.1	61.6
Mortar Ammunition	45.6	77.7
Fuzes	86.5	20.7
Mines/Grenades/Flares/Signals	42.6	11.6
Rockets	24.7	45.1
Bombs	0	33.5
Misc Ammo	88.0	83.8
	838.3	548.9

(U) Congressional limitation for FY 1974 MASF support for Vietnam and Laos was $1.126 million of this amount; the Army limitation was $700.0 million. On 15 March 1974, AMC was advised that the Army obligation for MASF exceeded limitations by $159,000,000. As a result AMC was requested to reduce the planned and prior obligations by $159,000,000. The ammunition program was reduced as follows:

FY 1973 - $101.4 million		FY 1974 - $58.6 million	
Ctg 60mm HE	20.0	Ctg 5.5mm AT Ex Blank	7.4
Ctg 81mm HE	19.2	Ctg 60mm HE	3.9
Ctg 4.2" HE w/o Fuze	11.1	Rocket 66mm HEAT	2.8
Ctg 105mm, HE M1 w/o F	25.8	Ctg 105mm HE w/o Fuze	38.1
Proj, 155mm HE	12.7	Proj, 155mm HE	4.3
Chg Prop, 155mm WB	3.0	FDT	2.1
Fuze PD F/Arty & 4.2" Mtr	9.6		$58.6M
	$101.4M		

Conventional Ammunition Proliforation Study

(U) The Weapons Munitions Systems Division of the AMC Directorate for Requirements and Procurement started the conventional ammunition

proliferation study on 14 February 1973. The study was completed at the Department of the Army level on 9 June 1974, and the results were briefed to the Vice Chief of Staff on the 22 March 1974 meeting.[12] Members of the US Army working group, representing ACSFOR, DCSOPS, DCSLOG, OCRD, TRADOC, USAMC, WECOM, MUCOM, AMSAA, and the Aviation School developed, reviewed, analyzed, and decided on the retention, reclassification or deletion of ammunition items. There were 1148 ammunition items evaluated, of which 406 items were deleted and were to be phased out of the inventory. There were 17 items deferred for additional study and analysis. A significant cost savings was expected to result from this study. The finalized cost impact study was being completed.

(U) The DA Vice Chief of Staff approved the ammunition items list to be retained, and requested that further follow-up actions[13] be taken to phase out the reclassified, or obsolete ammunition. The US Army Armament Command was requested to prepare a planned course of action[14] for implementation of the proliferation study, including milestone charts.

Artillery Trainer

(U) During 1962, the Army procured an artillery training system from a firm in West Germany. This system was composed of a barrel assembly, sight unit, mount and three types of cartridges. It performed well and was an inexpensive and beneficial aid in teaching fire adjustment procedures to forward observers. The cost of the training round is approximately $1.00 as opposed to $35.00 for the 105mm HE cartridge, which was previously used for fire adjustment training.

(U) In 1972, it was determined that by adding ancillary equipment to the system it could be utilized to provide training for the gun crews and fire direction personnel as well as the forward observers. The entire training exercise could be conducted in an area about the size of a football field without the possibility of dud ammunition contamination. This feature would enable the Army and reserve units to receive meaningful training without having to travel to an approved artillery firing range.

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[12] AMCRP-WM Memorandum for Record, dated 12 Apr 74, Subj: DA Conventional Ammunition Proliferation Study.

[13] DA Vice Chief of Staff ltr dated 22 Mar 74, Subj: Ammunition Proliferation.

[14] AMCRP-WM ltr dated 15 Apr 74, Subj: Ammunition Proliferation.

(U) Watervliet Arsenal has an order to deliver 43 each M31 Trainers (complete with tripod) and an additional 823 barrel groups, which were to be assembled into kits at two depots. Kits, consisting of complete trainers, barrel groups, adaptors, ancillary equipment and spare parts were to be shipped to Training Device Centers starting in December 1974 and ending by April 1975.

Surface Systems

Military Standard Power Generators

(U) An AMC decision was made to solicit industry for supply of Military Standard Engines in lieu of Army Arsenals in support of generator requirements.[15] TROSCOM was advised to proceed with sole source procurement under the provisions of AMCPI 3-102.80. A decision was made on the 10kw Turbine Program to go the Synchronous Turbine route rather than the Cycloconverter approach. The Special In-Process Review is scheduled for the 2d quarter FY 1974. The current approved program for FY 1974 covering generator requirements, was furnished by DA in the amount of $11.4 million. The planned program for FY 1975 was $14.8 million.

[15] MFR,AMCGM, 8 Aug 73, Subj: Review and Command Assessment of Project Mobile Electric Power, Approved: MG J. R. Guthrie, DCGMA.

PERSHING II (PII)

(C) On 9 August 1973, the Assistant Secretary of the Army (FM) proposed to have AMC procure experimental, developmental or research work calling for design, development, fabrication and tests in support of the PERSHING II Program.[16] The estimated cost amounted to $45.7M.

(C) The approval for award and secretarial review and notation of the PII Advanced Development Program was noted by the Assistant Secretary of the Army (Research and Development) 12 March 1974.[17] Since FY 1975 was the initial budget year for PII, a contract was awarded 29 January 1974 to maintain continuity of radar area correlation (RAC) team effort through 30 April 1974. A second contract was awarded 30 April 1974 which revised the scope of work and split out RAC work from the PII effort. This second contract extended RAC effort through the end of June 1974 and provided for a PII option that was planned for award in January 1975.

(C) On 7 March 1974, the Deputy Secretary of Defense authorized the US Army to proceed with the PII advanced development program briefed to DSARC I and to initiate effort with the Atomic Energy Commission.[18]

PERSHING Ia

(C) A Class Determination and Findings (D&F) to procure ARS/SLA by contract under authority of 10 USC 2304(a)(14) was approved by the Assistant Secretary of the Army on 9 May 1974.[19] Procurement was authorized for FY 1974, FY 1975, and FY 1976 in total amount of $54,170,000 for US Army and the Federal Republic of Germany. A MICOM request for waiver from pre-award contract submission was approved by ASA(I&L) on 18 June 1974. ASA(I&L) indicated that an after the fact submission of the contract would be required for a post-award review.[20]

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[16] DA Determination and Findings dated 9 Aug 73, sgd H. A. Hull, Assistant Secretary of the Army (FM).

[17] 1st Ind AMCRP-MS dtd 24 Jan 74, Subj: Request for Approval of Award and Secretarial Review and Notation, PERSHING II Advance Development Program.

[18] SEC DEF MEMORANDUM FOR THE SEC OF THE ARMY dtd 7 Mar 74, Subj: PERSHING II Program.

[19] DA Determination and Findings for the PERSHING Weapon System FY 74, FY 75, and FY 76 approved 9 May 74 by Eugene E. Berg, Assistant Secretary of the Army (Installation and Logistics).

[20] SAAS-IL-MO MEMORANDUM FOR RECORD, 20 Jun 74, Subj: Waiver of Pre-Award Review and Notation - PERSHING ARS/SLA Long Leadtime Items FY 74 and FY 75

UNCLASSIFIED

[redacted]

(C) A Cost-Plus-Incentive Fee (CPIF) contract for FY 1974 ARS/SLA long leadtime items was awarded to Martin-Marietta Corporation, Orlando, Florida on 28 June 1974. Option A to the contract was awarded 15 July 1974 for FY 1975 ARS/SLA long leadtime items. The full production contract was scheduled for award December 1974.

(C) The design-to-costs of the ARS/SLA were developed by Martin-Marietta Corporation in FY 1972, at which time the items were in research and development. These costs were revised in the FY 1974, FY 1975, and FY 1976 programs because of a change in the procurement plan from one to three years, higher escalation costs in manufacturing and engineering laborrates, higher overhead, and higher than planned costs for high reliability electronic and optical components. In April 1974, the Martin-Marietta Corporation submitted a contract proposal for production of ARS/SLA. The proposal increased the FY 1974 program cost by $3.7M. A reprogramming request for the additional $3.7M was submitted for Congressional Committee approval.[21]

HAWK

(U) A request for a waiver of HAWK Pre-award Review and Notation by the Assistant Secretary of the Army (I&L) was forwarded in mid-August 1973. The FY 1974 Improved HAWK Ground Support Contract had to be placed by 31 August 1973 to prevent a costly break in production. Avien Inc. was given a negative pre-award on a competitive procurement for S&A devices. Inadequate technical and production facilities, lack of sufficient labor resources and equipment were the major reasons for negative findings.

(U) The Under Secretary of the Army approved a recommendation to delay a decision on the FY 1974 missile contract of 30 days from 31 October 1974. The following were needed to provide the basis for a decision: determine acceptability of performance levels against formation and moving targets; determine minimum delivery requirements to support deployment; determine minimum economic level of missile production and impact on deployment of production cutback; determine retrofit costs; and determine actions required on FMS cases.

(U) A final price contract was awarded in the amount of $127.6 million approved for training the Imperiel Iranian Air Force in operation and maintenance of the Improved HAWK system.

SHORADS

(U) The SHORADS Engineering Development (ED) Request for Proposal (RFP) was released to industry on 29 July 1974 with award scheduled

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[21] DD Form 1415 - Appropriation Serial No. FY 74-2 P/A.

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[redacted]

for 2 January 1975. Competition for the ED contract was specifically expanded to include US offerors. Previously, it was anticipated that only the three foreign systems: Crotale, Rapier, and Roland, under license to three US Firms, would be considered.

(U) As a result of opening competition, 21 firms requested and received copies of the RFP. Funding for FY 1975 RDT&E was still not firm at the end of FY 1974. The House/Senate Joint ASC approved $21.2M, but the Defense Appropriation Bill had not been approved by the Congress. If there was to be a cut, it was anticipated that it would be in the cooperative test area.

AN/TSQ-73 FY 74

(U) On 30 May 1974, a Development Acceptance IPR was held at USAMICOM to determine whether the AN/TSQ-73 had met its developmental objectives and should be type classified LP and production initiated. All IPR voting members voted to type classify the system and to exercise the first production contract option as planned under FY 1974 MIPA program for four Low Rate Initial Production (LRIP) systems (1 IPT model and 3 trainers). However, OTEA, in its independent assessment of technical performance in an operational environment identified two software problems which they considered significant enough to defer a production decision. At a briefing to DDR&E, a decision was made to delay the LRIP procurement until the software deficiencies were corrected. OSD withdrew $4M FY 1974 MIPA funds to a deferred status and additional DT/OT II testing was initiated with a planned completion date of 20 September 1974 and a new target date for award of the first contract option in mid-October 1974.

NIKE HERCULES

(U) On 31 August 1973 the Secretary of Defense directed the inactivation of all 48 Nike Hercules units deployed in CONUS by ARADCOM. This inactivation originally scheduled to be completed by the end of FY 1975 was to be accomplished by December 1974. All equipment deployed with CONUS Nike Hercules units was being retrograded to Army Depots for potential sale to other customers or disposal.

(U) The update of the Type IV Test Equipment continued during FY 1974 at reduced levels because of decreases in deployment. The FY 1974 PEMA program for this effort was $2.7M for hardware, $.8M for spares, and $2.9M for Military Adaptation of Commercial Items.

Forward Area Alerting Radar (FAAR)

(U) The FAAR second hardware buy was awarded to Sperry Rand of Great Neck, New York, on 13 May 1974 for $18.2 million Firm Fixed Price. Applied Devices, Inc. protested the award but withdrew objection after reconsideration. An Engineering Services contract to support the hardware buy was awarded to Sanders Associates for $7.0 million, Cost Plus-Award-Fee on 26 June 1974. Sperry Rand protested the award but approval was obtained from ASA (I&L) to let the contract prior to protest resolution. The protest was answered, but disposition of the case was still pending at GAO.

(U) ARCTIC tests were scheduled for winter of 1974-1975. Tropic tests were completed. ECP's to correct shortcomings found during Tropic tests were submitted, approved, and fix kits to correct shortcomings in the field were built with most of them installed. Spare parts continued to be short in Europe, but long lead time repair parts orders were placed and correction of the spares problem was expected in the near future.

Missile Procurement (Army)

(U) The Army and Customer approved program for missiles awarded during FY 1974 was $724.9 million. This included $654.1 million for missile systems and modifications, $7.0 million for production base support, $62.7 million for repair parts, and $1.1 million for first destination transportation. Carryover to FY 1975 totalled $118.0 million, making a total program available to MICOM in FY 1974 of $842.9 million.

Lance

(U) During FY 1974, 360 missiles were procured for the United States and 374 for United Kingdom and Germany. During FY 1974, the FY 1975 buy was scrubbed of all non-nuclear requirements resulting in 194 missiles being planned for procurement in FY 1975 in lieu of the original quantity of 360.

Dragon

(U) During FY 1974, the following significant events occurred: IPR was conducted on training hardware. All items were type classified STD with exception of Launch Effects Trainer which would continue under limited procurement until DT III was complete. First production delivery of the round was accomplished from the second source.

Shillelagh

(U) Carryover funds in the amount of $100,000 were utilized in support of the Shillelagh Weapon Program for FY 1974. MICOM introduced a Product Improvement Proposal for the Shillelagh Conduct of Fire Trainer. The PIP involved changes mainly to the Launcher Visual Effects Simulator, Instructors Control Unit, and the Target. Total PEMA Funds to complete the effort amounted to $4.3 million. The PIP was forwarded to DA for approval and funding in fiscal years FY 1975, FY 1976, and FY 1977. DA proposed moving this PIP Program forward to start in FY 1977.

(U) A MICOM study confirmed that it was feasible to convert the Tactical, heat missiles warheads to inert warheads for the practice missiles, to meet training requirements. Cost estimates for a specified quantity were provided DA for two approaches: the converted heat missile warheads and procurement of inert warheads. The converted warhead approach was determined to be the most economical.

Small Business Administration

(U) The final program statistics for FY 1974 revealed that AMC had exceeded the assigned goal of 13.0 with a 17.5 percent level of performance. This accomplishment exceeded the performance in the program for the past four years. The 17.5 percent represented $795 million in contracts awarded small business firms. All major commands met their assigned goals for FY 1974.

(U) In support of the President's Minority Business Enterprise Program, better known as 8(a), AMC continued to be among the federal leaders with award of 75 contracts, valued at $36.1 million. This exceeded the program high of 62 contracts awarded in FY 1973.

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CHAPTER V

PROJECT MANAGEMENT: WEAPONS SYSTEMS*

Introduction

Project Manager Development Program (PMDP)

(U) At least since 1973, materiel acquisition, and especially project management, has been undergoing an intense review within the Army. Congressional interest began much earlier. In 1973, the Secretary of the Army established the Army Materiel Acquisition Review Committee (AMARC), the mission of which was to conduct a comprehensive review of the Army's entire materiel acquisition process. Though some were already in process, many recommendations and changes resulted from the findings of the AMARC study.

(U) Among the recommendations of the AMARC study, which was completed in April 1974, and released to the public on 15 August 1974, was one calling for improving materiel acquisition personnel posture through a personnel development program which would grant proper recognition to the project manager because of his value as a resource manager.[1] Actually, the AMC materiel acquisition had already been improved through the publication of DA Pamphlet 600-3, Officer Professional Development and Utilization, that reflected in the Project Manager's performance appraisal his accountability for cost management and including cost analysts as active participants of Source Selection Evaluation Boards, and through revision of materiel acquisition policies and procedures providing for contractor evaluations of producibility in the early development stages.[2]

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1 DA letter, 19 Aug 74 to Commanders: AMC, FORSCOM and TRADOC, 19 Aug 74, subj: Release of Army Materiel Acquisition Review Committee Report to the Public (News Release No. 377-74, 15 Aug 74, same subj - attached) (In AMCHO consolidated subj file under AMARC).

2 Ltr, SecArmy Howard H. Callaway to Hon. F. Edward Hebert, Ch. Committee on Armed Services, House of Representatives, 29 May 74, with inclosure, AMARC Report (incl a 28 May 74 paper entitled Army Action on AMARC Report). (In AMCHO Consolidated subj file under AMARC.)

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* The bulk of the material in this chapter pertaining to the Weapons Systems discussed was furnished by the Offices of Project Management concerned.

(U) The acquisition and training of quality project managers had long been a concern of the Army. However, in February 1974, prior to the release of the AMARC findings, DCSPER directed the Commander MILPERCEN to establish a Project Manager Development Office (PMDO) with the MILPERCEN Office Research Directorate as part of a Project Manager Development Program (PMDP). Initial development of the PMDP began in March 1974. Continued development was directed in the approved AMARC implementing plan in May 1974. In September 1974 MILPERCEN began selection of officers for participation in the PMDP.

(U) The PMDP was established for the professional development of officers pursuing a career in managing the acquisition of major defense systems. The PMDP was viewed as a mechanism for identifying and developing qualified commissioned officers to support future requirements for project managers or other senior officers for materiel acquisition. At the end of FY 1975, the PMDP had identified approximately 2,200 positions for development. Over 1,750 of the identified positions were approved for the program and of these, about 1,500 were approved PMDP positions within AMC. Letters of invitation to join the PMDP were dispatched as of March 1975. By the end of May 1975, 532 officers had been nominated or applied for the program, and 324 had been chosen for membership. As of the end of FY 1975, some 97 officers had accepted with only eight declinations.[3]

Defense Systems Acquisition Review Council (DSARC)

(U) The PMDP program and other programs launched in recent years sought to provide personnel and management excellence in the area of materiel acquisition. Aside from effective program leadership, the disciplines imposed over all major Defense acquisition programs in excess of $50 million in RDT&E and $200 million in procurement or of other special interest have been impressive. The Defense Systems Acquisition Review Council (DSARC) provides an effective continuous process which attempts to assure efficient and effective system acquisition through a program of formal reviews during the various phases of systems acquisition.

(U) DSARC I, the first major milestone focuses on the decision whether to proceed into advanced development. The questions of military need, the program potential for filling the need, technical risks involved, and the status of alternatives are decided at this phase. Even approval at DSARC I does not assure progression to DSARC II. Interim reviews and conditions are frequently imposed.

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[3] Ltr, AMCPT-PT to AMC Subordinate Commands and Installations, 3 Jul 1975, subj: Project Manager Development Program (PMDP). (In Historical Source Files of AMC Historical Office, Consolidated Subj File "Project Management - General 1974-75."

(U) DSARC II involves the decision for moving into full engineering development. At this phase, while need is still a critical issue, other issues such as the quality of cost and performance data that has been developed, the adequacy of the test and evaluation programs, and the maturity of the technology, are examined and addressed.

(U) By the third phase, DSARC III, the issue of proceeding into production is addressed. At this stage, questions focus on force structure requirements, production readiness, producibility, logistics support, and training and manpower needs. Also test and evaluation results are carefully analyzed. In addition to the formal DSARC reviews, there may also be less formal program reviews plus other continuous support activities bridging intervals between reviews. Altogether, the DSARC program provides an extremely consistent, pervasive management procedure.[4] Within the Army, the Army Systems Acquisition Review Council (ASARC) provides program review looking toward the DSARC reviews.

Selected Acquisition Report (SAR)

(U) Once committed to the development of a full-scale major weapons system within a defined cost for a definite quantity, the Selected Acquisition Report (SAR) is used for measuring performance under the commitment. The SAR is prepared quarterly to provide information to DOD, the Congress, the Office of Management and Budget, and the General Accounting Office concerning program cost, schedule and technical data. These reports present a standardized method for tracing progress with actual achievements being assessed against program objectives.

Cost Analysis Improvement Group (CAIG)

(U) The establishment of cost goals with an expectation that costs will remain within assigned goals has required the DOD to employ a Cost Analysis Improvement Group (CAIG) to assure the accurate assessment of projected costs. The CAIG review of program cost provides improved visibility of estimates and points up differences between program managers and independent estimates prepared by CAIG when such additional estimates are required. The CAIG provides cost assessments for each program coming under ASARC review.[5] Project managers responsible for directing the numerous weapons, equipment, and management systems programs for the Army have use of this elaborate system of management tools combining the DSARC, DTC, SAR, and CAIG plus the formalized training programs to aid them.

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4 RDT&E Mgmt Initiatives in an Age of Uncertainty, Commanders Digest, Vol. 18, No. 15, Oct 9, 75.

5 Op. cit., Commanders Digest.

Review and Command Assessment of Projects (RECAP)/Department of the Army Program Report (DAPR)

(U) The management of materiel and systems acquisition within AMC was further refined through the implementation of the RECAP and DAPR reporting systems. The Project Managers were given responsibility for preparing and presenting quarterly or semi-annual, depending upon the project, RECAP briefings and quarterly DAPR pre-briefings to the AMC Deputy Commanding General. In these briefings, the Project Manager was encouraged to address significant events and existing or potential problems, the resolution of which required assistance from headquarters AMC, or higher headquarters. The briefings include charts and graphs depicting program schedules, performance specifications status, system reliability growth, system performance assessment, test status, program acquisition cost, RDTE cost, procurement cost schedule, contractor cost/schedule variance trends, design to unit production cost, delivery schedules, foreign sales status, summary of project highlights, assistance required, and overall program metrics.[6]

Army Project Managed Systems

(U) As of 30 June 1974, the Army Materiel Command had 41 systems under special product or project management. Project managed systems were those chartered by the Secretary of the Army. Product managed systems were charted by the AMC commander. (See Chart 14 for breakdown)

Required Operational Capability
New Materiel Acquisition Guidelines

(U) A memorandum dated 20 June 1972 from the Secretary of the Army and the Chief of Staff, US Army to the major Army commanders and heads of Army staff agencies set forth basic policies for successful systems acquisition. These policies were: (1) Shortened Requirements Generation Time. This policy instituted a document identified as the Required Operational Capability (ROC) in lieu of the Materiel Need (MN) document. It also provided for a Special Task Force which prepares the Concept Formulation Package for Defense Systems Acquisition Review Council (DSARC) I; (2) High Level Decision Making.

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6 DARCOM Reg No. 1-34, 25 Feb 1976, subj: Program Reviews, Review and Command Assessment of Projects (RECAP) Department of the Army Program Report (DAPR) which superseded AMCR 1-34, 17 July 1972.

LISTING OF AMC PROJECT/PRODUCT MANAGERS

REPORTING TO COMMODITY COMMANDS (TOTAL 27)

ARMCOM

PM, Cannon Artillery Weapons Systems, US Army Armament Command, Rock Island, IL 61201
PM, Safeguard Munitions, Picatinny Arsenal, Dover, NJ 07801
PM, Selected Ammunition, Picatinny Arsenal, Dover, NJ 07801
PM, Vehicle Rapid Fire Weapons Systems, US Army Armament Command, Rock Island, IL 61201

AVSCOM

* PM, Aircraft Survivability Equipment, US Army Aviation Systems Command, St Louis, MO 63166
* PM, COBRA, US Army Aviation Systems Command, St Louis, MO 63166
* PM, Iranian Aircraft Program, US Army Aviation Systems Command, St Louis, MO 63166

ECOM

PM, Army Tactical Communications Systems, US Army Electronics Command, Ft Monmouth, NJ 07703
** PM, Army Tactical Data Systems, US Army Electronics Command, Ft Monmouth, NJ 07703
* PM, Mortar/Artillery Locating Radars, US Army Electronics Command, Ft Monmouth, NJ 07703
PM, Multi-Service Communications Systems, US Army Electronics Command, Ft Monmouth, NJ 07703
PM, Navigation Control Systems, US Army Electronics Command, Bldg 2539, Ft Monmouth, NJ 07703
PM, Remotely Monitored Battlefield Sensor System, US Army Electronics Command, Ft Monmouth, NJ 07703

MICOM

** PM, Dragon, US Army Missile Command, Redstone Arsenal, AL 35809
** PM, Hawk, US Army Missile Command, Redstone Arsenal, AL 35809
PM, HELLFIRE Missile System, US Army Missile Command, Redstone Arsenal, AL 35809
PM, Pershing, US Army Missile Command, Redstone Arsenal, AL 35809
PM, 2.75" Rocket System, US Army Missile Command, Redstone Arsenal, AL 35809
PM, SHORADS, US Army Missile Command, Redstone Arsenal, AL 35809
** PM, Stinger, US Army Missile Command, Redstone Arsenal, AL 35809
** PM, TOW, US Army Missile Command, Redstone Arsenal, AL 35809
* PM, Precision Laser Designators (Established 11 April 1974)

Chart 14

Chart 14 (Cont'd)

TACOM

** PM, Armored Recon Scout Vehicle, US Army Tank-Automotive Command, Warren, MI 48090
* PM, 1-1/4T. Commercial Truck Systems, US Army Tank-Automotive Command, Warren, MI 48090
* PM, FAMECE, Ft Belvoir, VA 22060
* PM, Heavy Equipment Transporter, US Army Tank-Automotive Command, Warren, MI 48090
** PM, M60 Tank, 28150 Dequindre, Warren, MI 48090

REPORTING TO HQ USAMC (Total 14)

** PM, Advanced Attack Helicopter, US Army Aviation Systems Command, St Louis, MO 63166
PM, DCS (Army) Strategic Communications Systems, Ft Monmouth, NJ 07703
** PM, Heavy Lift Helicopter, US Army Aviation Systems Command, St Louis, MO 63166
** PM, Lance, US Army Missile Command, Redstone Arsenal, AL 35809
** PM, Mechanized Infantry Combat Vehicle, US Army Tank-Automotive Command, Warren, MI 48090
PM, Mobile Electric Power, 7500 Backlick Rd, Springfield, VA 22150
PM, Munitions Production Base Modernization & Expansion, Picatinny Arsenal, Dover NJ 07801
** PM, SAM-D, US Army Missile Command, Redstone Arsenal, AL 35809
PM, Satellite Communications, Ft Monmouth, NJ 07703
PM, SANG, 5001 Eisenhower Ave., Alexandria, VA 22333, ATTN: AMCPM-NG
PM, Surface Container-Supported Distribution System Development, US Army Materiel Command, 5001 Eisenhower Ave., Alexandria, VA 22333
PM, Training Devices, US Army Training Device Agency, Naval Training Equipment Center, Orlando, FL 32813
** PM, Utility Tactical Transport Aircraft System, US Army Aviation Systems Command, St Louis, MO 63166
** PM, XM-1 Tank System, 28150 Dequindre, Warren, MI 48092

* Product Manager
** Submit SAR Reports

Chart 14

This policy provided for personal participation by top managers of the Army in face-to-face decision making and establishes an Army Systems Acquisition Review Council (ASARC) which parallels the DSARC. (3) Shortened Development Time. The development time was shortened to approximately six years from ASARC I to Initial Operational Capability (IOC). This required the availability of developed components and early initiation of tests. The testing is divided into two categories: Development Testing (DT) which includes engineering testing and that part of service testing which assesses operability and maintainability of the system, the initial production testing; Operational Testing (OT) will be conducted with prototype by user troops or individuals; (4) Funding Priorities. This required that the top priority project be fully funded by the Army and that lower priority project be considered for trade-offs. This will prevent meager and marginal funding and lengthened development time; (5) Cost Versus Quantity. This required that the Army explain cost in terms of required effectiveness for all or part of the forces in terms of realistic contingency missions; and (6) Program Cost Control. This policy required realistic cost estimates and cost control be constantly maintained. It requires that "Design to Production Unit Cost" goals be established no later than entry into full-scale development.

(U) These new guidelines provided for elimination of 14 documents previously required in the materiel acquisition process and establishment of two documents to replace them. The relationship of past documents to the new documents is indicated on Table I.

RELATIONSHIP OF PAST DOCUMENTS TO NEW DOCUMENTS

PAST	NEW
Operational Capability Objective (OCO)	Operational Capability Objective (OCO)
Initial Draft Proposed Materiel Need (IDPMN)	
Draft Proposed Materiel Need (DPMN)	
Proposed Materiel Need w/Technical Plan (PMN,TP)	Required Operational Capability (ROC)
Materiel Need w/Technical Plan (MN,TP)	
Materiel Need (Product Improvement) (MN(PI))	
Materiel Need (Abbreviated)(MN(A))	
Advanced Development Plan (ADP)	
System Development Plan (SDP)	

RELATIONSHIP OF PAST DOCUMENTS TO NEW DOCUMENTS
(Cont'd)

PAST	NEW
Draft Proposed Materiel Need (Engineering Development) (DPMN(ED))	Development Plan
Proposed Materiel Need (Engineering Development (MN(ED))	
Materiel Need (Product Improvement) (MN(PI))	
Project Manager Master Plan (PMMP)	
Concept Formulation Package (CFP) Trade-Off Determination (TOD) Trade-Off Analysis (TOA) Best Technical Approach (BTA) Cost & Operational Effectiveness Analysis (COEA)	Concept Formulation Package (CFP) Trade-Off Determination (TOD) Trade-Off Analysis (TOA) Best Technical Approach (BTA) Cost & Operational Effectiveness Analysis (COEA)
Materiel Need (Production)(MN(P))	Eliminated

(U) Twenty-seven of the systems were under the control of major subordinate commands and 14 reported directly to the Commander of AMC. Four systems were under the USA Armaments Command; three systems were under the USA Aviation Systems Command; six systems were under the USA Electronics Command; nine systems were under the USA Missile Command; PM, and five systems were under the USA Tank-Automotive Command. Except for Lance and PM, SAM-D (both covered in the history prepared at MICOM) the systems reporting to the Commander, AMC, are the systems covered in this report (chapters V and VI). The Annual Reports of Major Activities (ARMA) of the major subordinate commands will include portions devoted to the project managed systems of the respective major subordinate command. During FY 1974, three new Project Manager Offices were established: SHORADS, Multi-Service Communications System and Training Devices, and one Project Manager Office: Precision Laser Designator. The Project Manager's Office for DESERET was terminated.

(U) Chapter V includes portions devoted to four of the weapons systems included in the "Big Five." The "Big Five" are the systems around which the Army, the fighting Army, proposes to be organized. Included are: The Advanced Attack Helicopter (AAH), the Mechanized Infantry Combat Vehicle (MICV), the Utility Tactical Transport Aircraft System (UTTAS), the XM-1 Tank System, and the SAM-D surface-to-air missile. The SAM-D history is covered in the Annual Report of Major Activities of the US Army Missile Command. Chapter V also includes the PM, Heavy Lift Helicopter. Chapter VI includes portions

devoted to PM-DCS (Army) Strategic Communications Systems, PM-Mobile Electric Power, PM-Satellite Communications, and PM-Surface Container Supported Distribution System Development. Three recently established Project Managers: PM-Munitions Production Base Modernization and Expansion, PM-Saudi-Arabian National Guard, and PM-Training Devices will receive historical coverage for the first time in the history of FY 1975. Brief descriptions of those weapons, equipment, and management systems whose project managers report directly to the Commander, AMC (redesignated DARCOM in January 1976) follow:

Advanced Attack Helicopter. An advanced attack helicopter capable of defeating tanks, providing quickly responsive direct aerial fires as an integral element of the ground forces and capable of performing its mission at night and under adverse weather conditions. This weapon system will contribute highly mobile and effective firepower to the anti-armor capability of the Army in the field.

DCS (Army) Strategic Communications Systems. The DCS (Army) Strategic Communications Systems Project encompasses all strategic Army communication systems requirements whether associated with Defense Communications Systems (DCS) or generated by Department of the Army. Responsibilities include RDTE Resource Control, Configuration Management, Integrated Logistics Support Planning, Procurement and Production, Product Assurance, and follow-on Logistics Support to the point of project transition. It also includes installation/implementation planning, on-site testing and acceptance, and first-year operation and maintenance when contractually performed. The project is a continuous program where new tasks are assigned and completed tasks are transferred with each successive year. It usually encompasses approximately 160 active tasks of which some 45 are major system/equipments; 2-3,000 procurement directives are processed annually; 100 or more contracts are active with a value of $200 to $300 million; and 4,000 to 6,000 PEMA items are managed.

Heavy Lift Helicopter. A joint Army/Navy project to investigate technology that an HLH is practical within the stated payload capability. Payload is to be 22.5 tons, sea level, 95°F day. This development effort is for new equipment that is essential to the defense posture.

LANCE (GM-52C Field Artillery Missile System). LANCE is a reliable highly mobile surface-to-surface guided missile system designed to provide nuclear and non-nuclear artillery general support to the Army Corps and divisions. The completed tactical missile system consists of the LANCE missile, two types of launchers (self-propelled and towed), a loader-transporter vehicle and ancillary equipment. The missile incorporates an advanced guidance system and a single stage

prepackaged, liquid propellant rocket. All system components are air transportable and the modified M113A1 vehicle provides excellent ground mobility. The LANCE missile system is scheduled to replace the SERGEANT missile and HONEST JOHN rocket system.

Mechanized Infantry Combat Vehicle. The Mechanized Infantry Combat Vehicle (MICV) is a lightly armored tracked combat vehicle having high cross country mobility and mounted firepower to provide protection for the mechanized infantry squad in mounted and dismounted combat.

Mobile Electric Power. The Project Manager for Mobile Electric Power, located at Fort Belvoir, Virginia and reporting to Headquarters Army Materiel Command, is responsible for development and implementation of a program which will eliminate the diversity of sizes, types, makes, and models and improve the quality of power generator equipment used by the DOD. The foundation of the program is the development of a DOD standard family of engine generators of high quality, rugged design which can be repetitively procured on a fully competitive basis and which will meet the needs of the Military Services and agencies of DOD. The resultant simplification in training, maintenance, and repair parts support will appreciably improve operational effectiveness and provide substantial savings in logistical support costs.

Munitions Production Base Modernization and Expansion. The Project Manager, Munitions Production Base, located at Picatinny Arsenal and reporting to Headquarters Army Materiel Command, is responsible for modernization, expansion and Production Engineering Measures (PEM) of Army Munition Plants and Arsenals and for government equipment in private industry in the MPBME program. He assures a required state of readiness for munitions production facilities that are safe, efficient, essentially polution free and represent the latest state-of-the-art, utilizing the most effective and economical techniques and equipments.

SAM-D (Surface-to-Air-Missile-Development). SAM-D will be a highly mobile surface-to-air guided missile system with the ability to conduct simultaneous multiple engagements against high performance air supported targets (AST) and provide a high single shot engagement kill

probability. SAM-D will provide air defense of the US Field Army against AST's with a high level of effectiveness, complemented by forward area air defense weapon systems, and may be used to complement the SAFEGUARD system in defense of CONUS. Each launcher will carry four single stage, solid-propellant missiles in launching-shipping containers. A multi-function, phased-array radar will perform all the functions for which several radars have been required in other missile systems. SAM-D will replace the Nike Hercules and Hawk Systems.

Satellite Communications (SATCOM). The US Army Satellite Communications Agency is the Army Project Management Office for satellite communications. The project involves research, development, test, evaluation, procurement, and life cycle logistic support for ground terminals. Terminals are designed for operation and maintenance by military personnel of all three services for both Strategic and Tactical Communications applications. Terminals range in size from antennas with 60-foot diameter reflectors to man pack units to miniature terminals for special applications. Major programs include: the Defense Satellite Communications System (DSCS); Tactical Satellite Communications (TACSAT); the Defense Navigation Satellite System (DNSS); and exploratory development in those technological areas where the state-of-the-art must be advanced to improve the ground environment. Several classified projects for special users have also been assigned.

SANG (Saudi-Arabian National Guard Modernization Program.) This program manages the organization, training, and equipping of two mechanized infantry battalion-size units of the Saudi Arabian National Guard to include the necessary command and control, fire support and logistics support systems.

Surface Container-Support Distribution Systems Development Project. The Department of the Army has been designated as the Executive Service for the Surface Container-Supported Distribution Systems Development Project. The project, located at Headquarters Army Materiel Command, will develop standard equipment, policies and procedures that can be used by the Military Services and DSA to exploit the full potential of surface container-supported distribution systems. This includes the planning, directing, and controlling of resources authorized for the execution of

approved projects. The major project responsibilities are: (1) satisfying and reporting status of specific development and support requirements stated by the participating Services/Agencies; (2) the development of necessary Joint Operating Procedures (JOPs) which will specify the procedures for satisfying peculiar requirements of the participating Services/Agencies; (3) Providing optimum commonality and interchangeability of systems equipment and procedures throughout the DOD; and (4) insuring compatibility of the DOD Surface Container-Supported Distribution Systems with those elements of the commercial industry with which they must interface.

TRADE (Training Devices). The Project Manager for TRADE exercises direct control over the US Army Training Device Agency (ATDA), Orlando, Florida, and reports direct to the Commanding General, US Army Materiel Command. He is responsible for planning, directing, and controlling the life cycle management of non-system and non-type classified system training devices and providing support to the managers of type classified system training devices as required.

Utility Tactical Transport Aircraft System (UTTAS). A new twin engine helicopter that will replace the UH-1 in the air assault, air cavalry and medical evacuation missions. This aircraft will be the Army's first true squad assault helicopter. UTTAS will be designed to transport troops and equipment into combat, resupply troops while in contact and perform the associated functions of aeromedical evacuation, repositioning of reserves, command and control and other support. Increased cost-effectiveness will be achieved through substantially improved maintainability, reliability, survivability and performance.

XM-1 Tank System. An advanced main battle tank which is characterized by (1) exceptional battlefield mobility and agility, (2) rapid engagement of successive targets with high assurance of first-round hits, (3) weapons effectiveness approaching total target neutralization at ranges commensurate with target acquisition capabilities, (4) substantial improvement in fire control and target acquisition means, (5) effective target engagement while moving, (6) enhanced protection and decreased vulnerability, and (7) capability to operate effectively during periods of darkness and

limited visibility. This tank will help offset the numerical superiority of Warsaw Pact forces.

Advanced Attack Helicopter (AAH)

Overview

(U) On 21 June 1973, the Deputy Secretary of Defense, the Honorable William P. Clements, Jr., concurred with the Army's selection of the AAH contractor; however, he expressed concern as to whether the Army's proposed AAH could be realistically produced within the design to cost range of $1.4 to $1.6 million. Mr. Clements directed that within 30 days the Army and OSD CAIG (Cost Analysis Improvement Group) were to conduct an "Intensive Review" of the winning contractor's projected unit cost and clarify their design-to-cost so as to be consistent with other cost reporting procedures. Concurrent with the cost validation effort, the Army and its contractors were to conduct design trade-offs to identify cost reduction possibilities both to insure that the AAH system was brought within the design-to-cost goal and to provide the basis for prudent margins as the program proceeded. Mr. Clements further indicated that at the end of the 30-day period, he would review the results of the CAIG/Army Cost Analysis and the Army's design trade-offs. Depending upon the results, if satisfactory, he would authorize proceeding with the AAH program.

(U) At the beginning of fiscal year 1974 the personnel authorization for the AAH Project Office was 91 (79 civilian and 12 military). Implementation of the March 1974 AMC manpower survey reduced the AAH-PM Office personnel spaces from 91 to 85 (76 civilian and 9 military). BG Samuel G. Cockerham has continued as Project Manager since his designation by the Secretary of the Army by charter signed on 20 April 1973.[7]

(U) During 26 June - 19 July 1973, the Army and CAIG conducted a series of meetings and visited the contractor's facilities as part of the production unit cost validation effort. In addition to contractor data the Army made available to the CAIG all proposed and

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[7] Project Manager Charter is Appendix I to FY 73 Historical Report.

evaluated cost data relating to the Hughes and Bell Aircraft Companies as developed by the Source Selection Board. Concurrently, an Army team met with each contractor to obtain information to be used for assessment of contractor recommended trade-offs. Both cost validation and trade-off data provided the basis for compliance with the 21 June 1973 guidance from the Deputy Secretary of Defense.

(U) On 13 July 1973 the Acring Secretary of the Army and the Chief of Staff of the Army were briefed on the results of the Contractor Design trade-off efforts. The conclusions contained in this briefing were that both contractors were capable of producing an AAH at or below $1.6 million and that the Army design-to-cost estimates remained realistic and achievable. The Army subsequently reaffirmed their position during the briefing to the DSARC principals, that the $1.6 million design-to-cost estimate was a good basis against which to manage the AAH Program. The Army also identified trade-offs which were available for immediate and future use. On 19 July, the Deputy Secretary of Defense reviewed the results of the cost validation and trade-off efforts and authorized the Army to proceed with the AAH Program with the understanding that: (1) The Army promptly execute initial trade-offs; (2) The $1.6 million, in constant FY 1972 dollars design-to-cost, recurring flyaway goal be retained and that the DCP Program Unit Cost of $3.078 million in constant FY 1972 dollars, remain the basis for program financial planning and (3) The Army continue to consider trade-offs in the future where required to hold costs within this design-to-cost goal, and include strong incentives in future contracts to achieve that objective. A modification to each contract to implement the go-ahead as specified was consumated on 20 July 1973.

Operations

(U) A modification to the General Electric engine contract was signed on 23 July 1973 which provided T-700 Engines, and necessary supplies and support, for the AAH Contractors' Prototype Aircraft during Phase 1 of the Engineering Development Program. Post award briefings were presented by AAH Office chiefs at Bell Helicopter Company and Hughes Helicopters during the month of August. The purpose of these briefings was to outline to Plant Activity and Contractor Personnel the organization for, and approach to, Project Management during Phase 1 Engineering Development.

(U) On 23 August 1973 the Deputy Assistant Secretary of the Army for Financial Management, was briefed on the AAH Management System. Then on 30 August 1973, an AAH Overview Briefing was presented to the Chief and Deputy Chief of Research and Development. The purpose of this briefing was to provide basic cost, schedule and technical information to support appearances before Congressional Committees.

(U) The second funding increment was made to each of the competing contractors by a unilateral contract modification on 28 September 1973. The period of contract performance for this increment was 1 October 1973 through 30 June 1974. Approval was granted by AMC to use in-house funds to supplement available funds for this increment. This action was necessary because of a Congressional delay in the release of $3.5 million of reprogrammed Cheyenne funds.

(U) AAH Project Progress Reviews were held at the Bell Helicopter Company and on 2 and 3 October 1973, and at Hughes Helicopters on 24 and 25 October 1973. During the first day of each session, the contractors presented an overview of the program. Attendance included numerous Army Activities supporting the AAH development. Separate reliability and maintainability and system safety reviews were held with each AAH contractor concurrent with the Project Progress Reviews. The R&M Reviews were conducted to provide visibility into the contractors' program, monitor status and resolve problems. The System Safety Reviews were conducted to identify safety hazards, define areas requiring further investigation, assure that corrective action was taken, and insure that system safety was being effectively integrated into total system design. Then, 5 October 1973, an overview briefing was given to the Honorable Norman R. Augustine, newly confirmed Assisant Secretary of the Army for R&D, on the background and current status of the AAH Program.

(U) The first AAH selected acquisition report (SAR) and the first AAH GAO Staff Study were forwarded to AMC on 9 October 1973. Following staffing by AMC, the AAH SAR was submitted to DA on 23 October 1973. The Staff Study was to identify problem areas, assign actions to responsible parties and provide management visibility.

(U) Preliminary Design Reviews were held with Bell Helicopter Company the week of 29 October and with Hughes Helicopters the week 10-12 November 1973. The primary purpose of these reviews was to assess the design approach selected by the contractors to meet the technical and cost goals. A draft AAH Baseline Cost Estimate was jointly prepared by PM-AAH and AVSCOM cost personnel and submitted to AMC on 16 November 1973.

(U) The five year New Equipment Training Plan was developed for the AAH in coordination with DA, AMC, Commodity Commands and TRADOC. This plan was distributed in November 1973. It provided training milestones keyed to major decision points for the AAH in accordance with the existing program schedule.

(U) A sensitivity analysis was prepared on the impact of increasing full rate production from eight per month to an optimum quantity based on contractors' capabilities, and assessing the resultant impact on design-to-unit cost. The preliminary results of the

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study were staffed with AVSCOM which indicated that twelve aircraft per month was the optimum peak production rate under the assumption used, i.e., maintaining a constant work force with no additional tooling (PEP/IPF), rate applying to airframe only. With these assumptions there was no significant impact on design-to-cost, but the new rate was expected to result in production completion six months early.

(U) AVSCOM developed a list of common items on AAH, UTTAS, and HLH. This list was coordinated with the AAH PM and was forwarded to AMC by AVSCOM on 4 January 1974. Twenty common GFE items and six potential items were identified in the list. With the exception of the APU, the list did not show existing contractor furnished equipment or common ground support equipment since the aircraft was still in the early design stages. Hughes Aircraft Company, the supplier of the TOW Missile Equipment (TME) was contacted to determine commonality between the Bell and Hughes Design and the AH-1Q. Hughes Aircraft delivered a memorandum of agreement with Bell and Hughes Helicopters on the common support items and related dollar impact.

(U) A team which included representation from the HELLFIRE PM Office and Supporting Commodity Commands and Laboratories assembled to compare the latest HELLFIRE development schedule with the AAH and determined the most appropriate time to integrate this missile with the AAH. This was referred to as the "B" Model AAH, and was included in the Army Aviation RDT&E Plan published in June 1974. The initial cost estimate for the integration or non-recurring cost effort for the laser only HELLFIRE was $23 million. Cost estimates for integration of air defense suppression missile and Optical Contract Seeker capability were estimated to be an additional $12 million. The completed study was forwarded to AMC in February 1974.

(U) T-700 Engine Mockups were delivered to Hughes Helicopters and Bell Helicopter Company on 27 November and 4 December 1973, respectively. These were the wooden mockups originally used for the UTTAS Program, then redirected after refurbishment to Bell and Hughes for use in their Air Vehicle mockups. Utilization of these engine mockups, in lieu of a new procurement, resulted in a cost saving of approximately $190,000.

(U) A Tri-Service Readiness Review for a Cost Schedule Control Criteria (CS^2) validation was conducted at Hughes Helicopter Company on 10-14 December 1973. The review revealed many deficiencies in their CS^2 Cost Accounts and at Government direction, Hughes submitted a "Get Well" schedule on 28 December 1973 proposing validation in June 1974. The proposed schedule did not meet the Government's need for early access to valid cost and schedule data. AAH PM, in conjunction with AMC and AVSCOM, advised Hughes that a mid-May validation

should be achievable. Hughes responded on 8 February that their June 1974 schedule provided the optimum approach in achieving the preparedness necessary for validation. The contractor reported bi-weekly progress against his "Get Well" schedule until the system was validated.

(U) The GAO completed two reviews of the AAH. The first review concerned the development of weapons systems under Competitive Cost Reimbursement type contracts. In addition to the AAH, four other DOD Systems were reviewed consisting of the Navy Surface Effects Ship, the Air Force AX and two other Army systems; namely the UTTAS and the XM-1 Tank. Major areas covered by the GAO with the AAH PM were: criteria for Competitive Prototyping; reasons for Competitive Prototyping versus single contractor development; selection of the contractors; cost variance between Hughes and Bell contracts; and status of contracts. A draft statement of facts with no recommendation was presented to the AAH PM and AVSCOM for comment on 5 December 1973. Combined AAH PM and AVSCOM comments were returned to GAO 14 December 1973.

(U) The second review, the AAH Staff Study, prepared by AAH Project Manager's Office and reviewed by AMC, DA and OSD, was provided to the GAO in Washington on 25 January 1974. On 30 January, the St. Louis GAO Field Office submitted to the AAH PMO their draft study report. It was a factual review of the program. No recommendations were included within the GAO Report. Coordinated comments were provided to the GAO on 8 February 1974. These comments pertained to classifying some passages as "Competition Sensitive," and expanding the narrative discussion of stated facts.

(U) A Program Progress Review on the T-700 Engine was conducted in St. Louis on 7 December 1973 between GE and Army Project Managers for UTTAS and AAH. The T-700 Engine demonstrated 1600 SHP on 26 November 1973. A Program Progress Review was held on 5-6 February 1974 at Lynn, Massachusetts. Both of these meetings indicated that the Engine Development Program was proceeding satisfactorily and that the required engine delivery dates, power available and flight rating approvals would meet AAH schedule requirements.

(U) The contract data requirements list (DD Forms 1423) was one of the prime areas to minimize specified data for Government monitorship during Phase 1 Engineering Development. In light of the competitive nature of the program, the PM-AAH completed, after contract award, a re-evaluation or a scrubbing of the contractually required data items. This resulted in the elimination of interim reports on contractor test programs and a reduction in number of copies of reports required. One of the other areas of this scrub was to assure that only the minimum number of plans and reports to substantiate the airworthiness of the AAH were required by the Government. As a result of this review, there was an overall reduction by deletion of 122 documents from the prime contracts. This reduction pertained to test

plans, test reports and analytical reports. Examples of these were the Wind Tunnel Test and Antenna Model Study Reports, which were moved to the accession list. A data item which lists internal management generated documents required by the contractor was formulated from which the Government might request copies; thereby deleting the requirement for Government approval, but maintaining their availability if required by the Government.

(U) The contractors were using the design flexibility allowed by the J.13 clause of their respective contracts by the submission of changes to their system specifications. The PM-AAH established criteria and coordinated a position with AVSCOM and AMC legal people as to when comments pertaining to design flexibility changes would be submitted to the contractors. Specifically, there were three occasions when it would be appropriate to comment: when errors, omissions or system safety implications were noted; when design-to-cost and operational cost data were not substantiated; and when the Government had factual knowledge or data that should be considered by the contractor. Both prime contractors implemented changes primarily pertaining to reducing the design-to-cost and weight of their vehicles.

(U) During 15-20 November 1973, the PM Staff assisted ARMCOM in providing data for the Bushmaster ASARC/DSARC. The impact of integrating the Bushmaster 30mm weapon into the AAH in lieu of the XM-188 or the XM-230 chain gun was addressed. It was concluded that if a Bushmaster weapon were integrated into the AAH, our current program schedule would slip approximately eight months and costs would increase $35 million to $50 million. Conversely, the chain gun was studied for possible application to the Bushmaster Program.

(U) Additional AAH Project Progress Reviews were held at Bell Helicopter Company on 17-18 January 1974 and at Hughes Helicopter on 14 February 1974. Both contractor presentations indicated the AAH Program was progressing satisfactorily although both were experiencing unfavorable cost and schedule variance due primarily to a heavy volume of design trade-offs to reduce design-to-cost and the initial thirty day delay caused by the Army CAIG Cost Validation. Extended lead times on forgings and castings and other materials were experienced with "work-around" schedules and alternate manufacturing methods used to resolve this problem area.

(U) Because of problems of material shortages and increased lead times in procurement of materials, a study was initiated on schedule protection requirements for the Phase 2 Program. The study identified long lead time items such as the Copilot/Gunner Stabilized Sight and the Night Vision System. The results of this analysis were included in the alternative schedules which were developed as part

of our development/production schedule re-evaluation.

(U) A review of the specifications cited in the AAH contracts was conducted in accordance with direction to Program Managers stated in a 28 November 1973 memorandum to the Deputy Secretary of Defense from the Honorable Howard H. (Bo) Calloway. Included in the "Spec Scrub" was a revalidation of the Materiel Need (MN) by both the "developers" and the "users." The contract specifications were reviewed for elimination of technical requirements that were excess to operational effectiveness needs. The review was conducted jointly with TRADOC, AMC Commodity Commands and the two aircraft airframe contractors. Proposed changes to the MN were staffed with the Armor Center at Fort Knox and were favorably indorsed by that Command to TRADOC on 31 May 1974, by TRADOC to AMC on 13 June 1974, and by AMC to DA Staff on 9 September 1974. No action was taken by DA prior to the end of the fiscal year.

(U) A C/SCSC (Cost/Schedule Control System Criteria) Baseline Review was conducted at Bell Helicopter Company from 18-21 March 1974. The Review Team recommended acceptance of Bell's Management Control System on the AAH for RDTE and the Iranian 214A Program for production pending resolution of three discrepancies. These were: (1) Government approval of a tentative agreement of the sustaining engineering and tooling (set) pool applicable to the 214A Program, (2) Improvement in the quality of the variance analysis section of the AAH Cost Performance Reports, and (3) Submission of valid revised Cost Estimates to complete the AAH Phase 1 Program. The Set Pool agreement was completed and accepted by the Government on 3 May 1974. AAH Variance Analysis Reporting improved, and the Revised Cost Estimate to complete the AAH Phase 1 Contract was submitted with the April Cost Performance Report. This estimate was updated in subsequent monthly Cost Performance Reports throughout Phase 1. Formal presentation of the C/SCSC acceptance to Bell occurred in May 1974.

(U) A second C/SCSC Readiness Review was conducted at Hughes from 22-25 April 1974. As a result of this review the Tri-Service team recommended postponement of the formal demonstration review from 4 June to 15 July 1974. Although the team concluded that considerable progress had been achieved since the first Readiness Review held in December 1973, deficiencies still existed and a 15 July target date for system demonstration appeared more realistic. The major problems encountered at Hughes were a lack of system discipline, generalized variance analyses, and the delay in definitization of AAH subcontracts.

(U) Mockup Reviews were conducted at Hughes during 19 through 21 March 1974, and at Bell during 30 April through 2 May 1974. These reviews provided a full scale representation of the physical arrangement of each contractor's design to permit demonstrating the compatibility

of the servicing, maintenance, and other user requirements of the helicopter and its equipment. Particular emphasis was given to crew stations, weapon provisions, equipment arrangement, and propulsion system installation. Army attendance at the reviews was limited to 42 -28 from the Development Community and 14 from the User Community. The Developer Group consisted of engineering personnel from PM Office, major supporting AMC Commands, Government Laboratories and the Aviation Safety Agency. The User Group consisted primarily of Warrant Officers and NCO's who had had extensive maintenance and operational experience with Attack Helicopters, i.e., the "Dirty Rag Mechanic" approach.

(U) Also Phased Critical Design Reviews were initiated at Bell Helicopter on 26 March 1974 which were completed on 22 May 1974. The Bell Critical Design Review was held 13 through 17 May 1974. Hughes was debriefed and Bell was debriefed on 7 June 1974. These reviews allowed the Government to assess each contractor's technical progress and schedule status. These reviews were conducted by a small informal working group in a manner that minimized interference with contractor design and fabrication activities.

(U) The AAH PM was tasked by AMC on 22 February 1974 to develop a schedule reflecting key decision dates for AAH/HELLFIRE integration. It was necessary to establish the most likely HELLFIRE development program and compare it with the AAH Program schedule in order that the integration decision and other milestones could be projected. This schedule was developed in conjunction with the HELLFIRE Project Manager, supporting Commodity Commands, and Laboratories, and provided to AMC on 27 February 1974. Following AMC Staffing, it was forwarded to OCRD on 5 March 1974. The earliest recommended decision point for timely integration of the AAH and the HELLFIRE Missile was the AAH DSARC II. This was set for the fourth quarter of FY 1976. This date was predicated upon successful completion of the HELLFIRE Advanced Development prior to this DSARC.

(U) A review was completed of the Bell, Hughes Aircraft, and Lockheed unsolicited digital TOW proposals. AAH PM recommended to AMC, and AMC approved, that no contractual action be taken on these proposals because the schedule for this effort was not compatible with the AAH schedule. However, MICOM was tasked to quantify potential cost and weight savings, growth potential, define the AAH schedule impact and recommended what effort, if any, regarding digital or solid state TOW should be pursued in support of the AAH Program. MICOM completed this study and briefed the results to AAH PM and his staff on 31 May 1974. This study identified several approaches which included digital TOW development, airborne laser locator designator (ALLD) options and HELLFIRE interface.

Heavy Lift Helicopter

Organization and Mission

(U) The Project Charter, approved by Secretary of the Army, Robert F. Froehlke, dated 20 April 1973 [8] designated BG Jerry B. Lauer Project Manager for the HLH. General Lauer served as the Project Manager throughout the fiscal year.

(U) At the beginning of FY 1974, the personnel authorization was 61, (54 civilians and 7 military). The authorized average grade was 10.4074. The onboard strength was as follows: 1 July 1973, 8 military and 53 civilians; 1 January 1974, 7 military and 52 civilians; 30 June 1974, the Project Manager was delegated the full line authority for centralized management of his specific project, and is responsible for: (1) planning, directing, and controlling the allocation and utilization of all resources authorized for execution of the approved project; (2) the definition, development, product assurance, initial procurement, production, distribution, and integrated logistic support to accomplish project objectives; (3) achieving the technical performance objectives of the project, as stated in the requirements documents, on schedule and at the lowest practicable cost. Cost parameters shall be established which consider the cost of acquisition and ownership; discrete cost elements (e.g., unit production cost, operating and support cost) shall be translated into "design to" requirements. Traceability of estimates and costing factors, including those for economic escalation, shall be maintained; (4) Practical trade-offs between system capability, cost and schedule within the bands of performance of the materiel requirements documentation and within the thresholds of the Development Concept Paper and associated Cover Sheets. Trade-off decision will give full consideration to the effect on system support effectiveness and logistics support resource elements; (5) assuring that planning is accomplished and that, except as otherwise directed, the execution of the project conforms to the plan, including implementation by the organizations responsible for the complementary functions of integrated logistic support, product assurance and operational testing, and activation or deployment of the system and its related equipment; and (6) appropriate utilization of the AMC corporate and commodity laboratories in the solution of project technical problems and ensuring that project industrial contractors are fully aware of the technical resources and expertise available in these laboratories.

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[8] Project Manager Charter, Sec/Army, Robert F. Froelke, 20 Apr 73, DODD 5000.1, AR 1000-1, AR 70-17, AMC Reg 11-16, and Devel Concept Paper No. 63, Heavy Lift Helicopter, 27 Jul 70, approved by the Dpty Sec of Def on 17 Sep 70, and associated Cover Sheets No. 1, approved 7 May 71, and No. 2, approved 6 Nov 72.

(U) The Project Manager was also made responsible for the following RDTE projects and tasks:

ELEMENT CODE	DA PROJECT	TITLE
6.32.03.A	1X263203D156	Heavy Lift Rotary Wing Aircraft
6.32.03.A	1X263203DB75	Heavy Lift Helicopter Engine

(U) The Secretary's approval carried an additional note to General Lauer: "This is a big job, Jerry. Its successful completion is vital to the Army. I know you will give it your all--and that will insure success. R.F.F.".

Funding

(U) The fiscal year 1974 Research Development Test and Evaluation (RDT&E) program as of 30 June 1974 was $59,845,000.00. This consisted of $39,260,000.00 of airframe program project No. 1X263203 D156 and $20,585,000.00 of engine program project No. 1X263203 DB75. The fiscal year 1974 program total obligation authority of $60,545 million as of 30 June 1974 included FY 1974 obligation authority of $59,845 million (see breakdown above) and unobligated balance carryover of $0.700 million from FY 1973.

Technical

(U) During FY 1974, the first flight of a helicopter with "pure" fly-by-wire (FBW) was successfully accomplished. This event occurred during the initial phase of the Boeing Vertol model 347 Direct Electrical Linkage System (DELS) evaluation on 5 September 1973. Upon successful contractor demonstration of the DELS the HLH Project Manager BG Jerry B. Lauer became the first military aviator to fly a helicopter with pure FBW. The second phase of this flight program began in April 1974 and was intended to demonstrate integration of stability and control augmentation with the DELS as well as selectable modes such as automatic load stabilization, precision hover/maneuver and automatic approach to hover. The basic aircraft stability and control augmentation was demonstrated by the contractor and evaluated by the Army with excellent results, included evaluation of automatic hoverhold, altitude hold, heading hold and airspeed hold features. The test program for load stabilization, precision hover, visual augmentation and automatic approach to hover was still in process, but the completion date slipped from 31 May 1974 to 21 September 1974. This slippage was caused by aircraft down time due to an engine problem which grounded the CH-47 fleet, as well as technical difficulties experienced in the

test program. Generally, the program was successful, however, based upon forthcoming test results, a determination needed still to be made as to the feasibility of certain selectable modes.

(U) On 2 December 1973 a major failure of the aft transmission was experienced while conducting full-load operations on the closed loop stand. A similar failure occurred in the combiner transmission on 23 June 1974. Subsequent failure investigations and design iterations essentially resulted in a six-month slippage, thus precluding completion of the ATC phase on 30 June 1974 as originally scheduled. This failure as well as several problems of lesser magnitude in the rotor system motivated a reassessment of the ATC rotor drive status. Results of this evaluation and possible alternatives were the subject of a series of briefings through the CG AMC to the Assistant Secretary of the Army during the January-July 1974 time frame. The revised schedule as approved by Secretary Augustine on 7 August 1974 restructured the ATC phase for a target completion in April 1975. Simultaneously, the first flight of the prototype was adjusted from August 1975 to March 1976 so as to make maximum use of the ATC results and induce further program risk reduction.

(U) During the Congressional budget hearings, the HLH program request for FY 1975 included funds for a second prototype and a two-year task directed toward evaluating potential Reliability and Maintainability (R&M) characteristics of the critical components. The objective was to provide a reduced risk for the flight test phase, increase the practical program alternatives for Engineering Development, and provide for early identification of design shortcomings. However, it was expected that the approved Congressional budget would delete the $21.5 million that was requested for these activities.

(U) The Allison 501-M62B engine which was developed for use on the dynamic system test rig (DSTR) completed over 400 hours of testing in August 1973. The engines exceeded all performance requirements and three engines were delivered to Boeing in September 1973. This completed the development and delivery requirements of the contract which was accomplished ahead of schedule and under the target cost.

(U) The XT701-AD-700 engine which was being developed via government contract to Allison was first run in January 1974 ahead of contractual schedule. By the end of June 1974 over 300 hours of highly instrumented development testing had been accomplished. While routine first article problems were experienced, the project remained highly successful in terms of being under cost and ahead of schedule, as well as exceeding performance requirements. Significant submilestones which were accomplished included (1) world's first flight of a "fully fly-by-wire" control system helicopter - September 1973; (2) completion of HLH crew station mockup - October 1973; (3) completion of HLH whirl tower test - March 1974; and (4) completion of HLH cargo handling system integrated test - April 1974.

XT701-AD-700 Engine Design-to-Unit Production Cost

(U) On 29 January 1973, an engine development contract was awarded to Detroit Diesel Allison Division of the General Motors Corporation which contained a special award fee clause specifically for the "Design-to-Cost" program. A target design-to-unit production cost, in FY 1973 dollars, was established as $208,000.

(U) The first award fee period ended 30 June 1974. During this period the contractor established and maintained an aggressive design-to-cost team composed of both design engineering and production engineering disciplines. From a unit production pre-design-to-cost configuration of $243,000, the contractor's design-to-cost efforts resulted in a government validated savings of $28,000 per engine, which was 73 percent of the reduction necessary to reach the contract target. Highest potential candidates under additional study and refinement were expected to result in an additional $9,000 per engine. The contractor identified and was in the process of evaluating additional areas which, if partially realized, would reach the target cost goal.

Design-to-Unit Hardware Cost

(U) A contract modification was issued to the Boeing Vertol Advanced Technology Component contract on 29 January 1973, which provided for the design, fabrication and test of one prototype Heavy Lift Helicopter. Unique to this procurement was the inclusion of a provision in the contract for an award fee for Design-to-Unit Production Cost effort. This provision stated a major objective of the contract was the successful development and demonstration of the Heavy Lift Helicopter system that would meet the mission requirements and be produced and maintained at the lowest possible cost. The contractor was attempting to meet the contract "Design-to-Unit Hardware Cost" target objective of $5.1 million, and fully expected to meet this target.

HLH Cost Reduction Trade-Off Review

(U) A cost reduction trade-off review team was established on 19 April 1974 to identify components, characteristics, and features of the production version HLH for potential cost reductions. Review team members consisted of LTC Richard Baxter, Utility Tactical Transport Aircraft System (UTTAS) Project Manager's Office, Team Chief, and members of Air Mobility Research and Development Laboratory (AMRDL), TRADOC, AVSCOM, and the HLH Project Manager's Office. The study was completed on 31 May 1974. The potential cost reductions as identified by the team were in two categories. The first category was those items which might be considered in excess of the minimum requirements as described by the Materiel Need and Trade-Off Analysis. There were 11 items identified in this category, i.e., titanium rotor shaft,

blade isis, programable force feel, etc. The second category was those items which were required by the Materiel Need and Trade-Off Analysis but might not be cost effective and not essential to mission accomplishment. There were 36 items identified in this category, i.e., on-board refueling, in-flight refueling, rotor blade deice, etc. Following testing and analysis of results, a joint review was to be made with the user to fully evaluate each of these items and appropriate actions were to be taken to assure that the production HLH would have the lowest cost possible and still meet essential mission requirements.

Cost Estimates

(U) The HLH Baseline Cost Estimate (BCE), forwarded to Commander, AMC in May 1974, was the first comprehensive Project Manager Cost Estimate for the program. Parametric estimates of Research and Development, investment and operating costs for several Research and Development options and production quantities were included in the BCE. Costs were displayed in constant FY 1974 dollars and escalated dollars. The cost estimate was developed parametrically using data provided by AVSCOM, contractors and internal Project Manager Office personnel. The cost estimates address development options (number of prototypes, test hours, schedules, etc.) under consideration by the Army for continuation of the HLH program. Investment cost estimates pertain to the Prime Item Description Document (PIDD) aircraft and are consistent with requirements as defined in the Materiel Need (MN) and other concept formulation documents.

(U) Concurrent with the preparation of the BCE, AVSCOM prepared an Independent Parametric Cost Estimate (IPCE) using the same ground rules as the BCE. The IPCE was higher than the BCE. The major factor influencing the difference between the BCE and IPCE was the impact of low production rates on the air-frame manufactured improvement curve. A study was to be initiated prior to production to evaluate the impact of production rates on cost. Both estimates were to be used by DA to establish the official cost estimates for the HLH program.

(U) During FY 1974, the Advanced Technology Component (ATC) Prototype progress was scrutinized and reevaluated as a prelude to planning for the September 1974 Army Systems Acquisition Review Council (ASARC). Revisions to the ATC/Prototype schedule generated increases in corresponding cost estimates. Innumerable plans for continued development and procurement of the HLH were evaluated and costed to cover the spectrum of possible courses of action. Costs were provided as input for the Cost and Operational Effectiveness Analysis (COEA) in the fall of 1973 and, after the concept formulation studies confirmed the need for the HLH, five primary plans, and several options were evaluated and costed for presentation to

the ASARC in September 1974. In each of these estimates, funding profiles were developed. As the year progressed it was obvious that the double digit inflation observed throughout the economy would heavily impact the HLH. Each successive cost estimate was higher due to incorporation of more realistic escalation factors.

HLH Concept Formulation Activities

(U) There are four concept formulation studies in the Concept Formulation Package (CEP). The Trade-Off Determinations (TOD) and Trade-Off Analysis (TOA) were completed in the previous fiscal year. The Best Technical Approach (BTA) was started in April 1973 based on an advance draft copy of the TOA. A preliminary draft BTA was formulated, subject to the final revision of the TOA so that it would reflect the most current stated requirements. The BTA was completed in January 1974, and formed a major input document to the COEA which is the final CFP study.

(U) On 22 March 1973, LTG E. H. Almquist, ACSFOR informed the Commander, USAMC and the Commander, US Army Combat Developments Command (CDC) that responsibility for the COEA was assigned to the HLH Project Manager. CDC was directed to delete the COEA from its FY 1973 and FY 1974 study programs, and the HLH Project Manager was directed to request (through ACSFOR) that the study be accomplished by the US Army Concepts Analysis Agency (CAA). Since that time, the Army reorganization caused the functions of ACSFOR to be absorbed by the newly formed Office of Deputy Chief of Staff for Operations (DCSOPS), and the new Training and Doctrine Command (TRADOC) to assume the functions of the dissolved CDC. When the COEA was completed in June 1974, it was submitted to the HLH Project Manager through DCSOPS. However, before DCSOPS forwarded the study to the HLH Project Manager as final, it needed to be staffed through Headquarters DA and coordinated with TRADOC.

(U) With the completion of the TOD, TOA, and BTA an executive summary of these portions of the CFP was written and internally coordinated so that when the COEA was completed, its summary could be readily incorporated. The CFP executive summary then would become part of the HLH Development Plan (DP). The HLH DP was due for completion (draft) by 3d Quarter FY 1975.

Procurement and Production

(U) No major HLH contracts were awarded during the past fiscal year. The two major HLH contractors, Boeing Vertol and Detroit Diesel Allison Division, have performed satisfactorily; neither have experienced cost overruns and are generally on schedule. Contract milestones completed during this period were:

ATC/Prototype Aircraft (Boeing Vertol).

Start Drive System Test Stand Demonstration	Jul 1973
Start Fly-By-Wire Demonstration	Jul 1973
Delivery of Three DSTR Engines	Sep 1973
Complete Crew Compartment Mockup	Oct 1973
Start Cargo Handling System Integrated Rig Demonstration Test	Nov 1973
Start Rotor/Drive Whirl Test	Dec 1973
Start (DSTR) Integrated Rig Demonstration Test	Jan 1974
Completed Cargo Handling System Integrated Rig Demonstration Test	Apr 1974
Forward Transmission Test Stand (slave) Gear Box Delivery	Jun 1974

XT701-AD-700 Engine Program (Detroit Diesel Allison Division).

Critical Design Review - Engine and Power Management Control (PMC)	Jul 1973
Mockup Engine Delivered	Jan 1974
First Development Engine to Test	Feb 1974
First Development PMC to Test	Mar 1974

Product Assurance

(U) A continual review and updating of reliability parameters such as HLH mission reliability, subsystems reliability, Mean-Time-Between-Failure (MTBF) rates and flight safety for the ATC components, the prototype and associated engines of the HLH system, were major activities during FY 1974. Maintenance Evaluation Analysis (MEA) reports, prepared by the contractor were analyzed to determine optimum maintenance requirements. In addition, maintainability parameters such as maintenance manhours per flight hour, maintenance factors at various levels of repair and estimates of availability were completed. The results of these activities were reflected in the preparation of the CFP. R&M requirements were also developed and included in the preliminary DP. Since the tracking of reliability growth became a major area of interest to AMC, the PM office actively engaged in the development and application of reliability growth methodologies that might be applied to the HLH system.

(U) The contractor's R&M efforts as related to the existing prototype program were reviewed and comments provided for improvement. Relating ATC R&M reports and test results to the prototype and ultimately an HLH system were accomplished during this period. Boeing Vertol completed an R&M study "Optimization of Reliability Test Hours of HLH During Engineering Development (ED)" which was reviewed and analyzed. This study brought out the optimum reliability levels and

test programs for various alternatives of fleet size and utilization, and was found useful in the planning of future program alternatives.

(U) The prime contractors encountered some difficulties in areas related to quality control. This Office addressed these problems which were primarily oriented toward better quality control of the subcontractor instrumentation problems of test set-ups, and better material/processing controls.

Logistical Support

(U) During FY 1973, the Logistics Support Management Division adopted and modified the Logistics Cost Analysis Model (LOCAM) for use by the HLH system. During the 2d Quarter FY 1974, these efforts culminated in satisfactory results regarding life cycle costs and operational availability evaluations. Base-line logistics structures were developed in comparative references. The engine was used. Other major components will be the subject of further modeling reports. The equations contained in this model were equivalent to those used in the Manual of Provisioning Techniques, TM 38-715-1. The structuring of this model allowed easy and economical investigation of the effects caused by input data uncertainties and sensitivity analyses. An additional model was developed with the cooperation of AVSCOM personnel from the Systems Analysis Office. This model was referred to as Aircraft Reliability and Maintainability Simulation (ARMS). Initial analyses performed through the utilization of these studies indicate that the project will materially assist in determining the optimum support concept for the HLH.

(U) During the period, both Contractor Recommended Support Plans (CRSP) were completed and approved. These documents defined each contractor's program of management, scheduling, control and liaison to ensure effective and efficient logistics support for the HLH prototype program.

(U) The PM-Logistic Support Division engaged in in-depth studies and reviews relative to the scope of work and efforts with regard to a second prototype. This basically incorporated additional data items above those of the original requirements. They were: Government furnished equipment requirements schedules, the Army maintenance system, and Government furnished equipment shortage status. The Government furnished equipment (GFE), Government furnished material (GFM), Government furnished property (GFP), ground support equipment (GSE), and avionics, as required in support of the HLH program during the period, were generally considered very satisfactory. The MEA continued with satisfactory progress. The Division also provided a representative to the AMC/TRADOC Joint Working Group for the HLH BTA document. Logistic support requirements, specified in the MN but

not addressed by the table of distribution or table of allowances, were incorporated. Probably the most pertinent input was the perpetuation of the C-5A transportability requirement. USA TRADOC recommended this requirement be deleted because of the extensive disassembly/reassembly time and associated high costs. The PM-HLH believed that though TRADOC might not desire to deploy the HLH by C-5A, the capability needed to remain to facilitate the retrograde of crash or battle-damaged aircraft.

Mechanized Infantry Combat Vehicle

Overview

(U) The MICV program started in 1964 with the approval of the Mechanized Infantry Doctrine which postulated a new lightly armored vehicle to provide protected cross-country mobility and a mounted firepower capability to support the Mechanized Infantry Squad in mounted and dismounted combat.

(U) In 1964-1965, five pilot vehicles designated as the MICV-65 (XM-701) were designed and built by Pacific Car and Foundry Company. This design did not go into production, but the pilots were used extensively as baseline vehicles during concept formulation for the proposed MICV (XM-723).

(U) In August, 1965, the Vice Chief of Staff directed that a comprehensive analysis be made of Mechanized Infantry Combat Vehicles feasible for adoption within the time period 1966-1972. Since that time, five studies have been conducted.

(U) The first study was a parametric design cost effectiveness evaluation by Cornell Aeronautical Laboratory, Inc. of 53 concepts from industry and the Government. CDC conducted the second study which integrated vehicle design characteristics with tactical doctrine and operational concepts. This resulted in a determination of the optimum characteristics of the vehicle. The third study, which was another conducted by Cornell Aeronautical Laboratory, Inc., evaluated in-depth six vehicle parameters which heavily influenced the size, weight, and cost of the vehicle.

(U) Using these three studies, plus several minor ones, a Department of the Army Ad Hoc committee was established to study and recommend changes in the QMR which would result in a smaller, lighter weight and less costly vehicle. As a result of the Ad Hoc Committee study, a revised QMR was prepared and approved in October 1968. A System Development Plan (SDP), in-process review (IPR) and System Status Evaluation (SSE) were held in June and July 1969. Department of Army approved the recommendations of the SSE for planning purposes but

directed that a comparative analysis of the cost effectiveness of competing MICV candidates be made. Several weapons were to be included in the study to provide a basis of a back-up primary weapon for the MICV.

(U) This study selected an in-house concept design as being most cost effective. This selection was confirmed at the SSE held on 1 July 1970 and approval was granted to a recommended program plan which omitted contract definition and scheduled entry into engineering development for January 1971. Subsequently, the QMR for MICV was revised into the Materiel Need (MN) format with necessary changes in requirements to permit development of this concept.

(U) Requests for Proposal (RFP) for Engineering Development (ED) and Producibility, Engineering and Planning (PEP) of the MICV were issued in April 1972. In November, 1972, the Ordnance Engineering Division of FMC Corporation was awarded a Cost-Plus-Incentive Fee (CPIF) Contract for ED and PEP. This contract called for the development and fabrication of two test rigs for component testing, twelve ED prototype vehicles and the production of four second generation prototypes to determine the adequacy of the Technical Data Package and the corrections resulting from Development Test II/ Operational Test II (DT II/OT II). Following Engineering Development, a Low Rate Initial Production Contract (LRIP) was to be awarded which would provide for Development Test III/Operational Test III (DT III/OT III), Troop Training, and the equipping of one mechanized infantry battalion. After completion of testing and type classification standard, a multi-year production contract was to be awarded.

Nomenclature

(U) The Mechanized Infantry Combat Vehicle (MICV) reflected a new concept of armored infantry operations compared with the M113 Armored Personnel Carrier (APC) vehicles. The XM723 MICV would permit the infantry squad to fight from within the vehicle, while the M113 was strictly a personnel carrier. The MICV was designed to carry 12 persons and their combat equipment. Six periscopes and weapon firing ports were to be located in the troop compartment, two in each side and two in the rear. This arrangement would enable the squad members to deliver controlled small arms fire from inside the vehicle and permit visual orientation by personnel during vehicle movement.

(U) In addition to the firing ports, the XM723 weapon station would mount an M139 PI dual-feed 20mm primary weapon and a coaxial 7.62mm M60 C (mod) machine gun. The fully-powered, stabilized control, with manual back-ups, was designed to provide excellent target acquisition. The gunner, commander, and driver would also be provided with day and passive night vision.

(U) The MICV power plant was to provide a horsepower to weight ratio in excess of 20 HP/ton. The engine proposed was the Cummins VTA 903, it being a diesel fueled, four cycle engine, rated at 450 gross horsepower. The selected General Electric XM-2 transmission was fully automatic and featured hydrostatic steering.

(U) The suspension system would provide high wheel travel (14") and this increased wheel travel, along with a low ground pressure of 710 PSI, would provide the MICV with greater cross-country mobility than the M113. Conventional aluminium armor and a space laminate of high hardness steel with an aluminium backing (on the lower sides and rear of the hull) would provide protection meeting the requirements of the Materiel Need (MN) for Engineering Development.

Organization and Mission

(U) The Project Manager's Office, Mechanized Infantry Combat Vehicle (PM-MICV) was officially established 4 January 1968. Colonel James F. McCluskey, OrdC, was the MICV Project Manager during FY 1974.[9]

(U) The PM-MICV was to be responsible to the Commanding General, AMC, with full authority for the development, acquisition and fielding of the Mechanized Infantry Combat Vehicle. The Project Manager was made responsible for planning, directing and controlling the allocation and utilization of all resources authorized for execution of the approved project. This extended to definition, development and initial procurement, through production, engineering, product assurance, distribution and integrated logistic support to accomplish project objectives. He was also responsible to assure that planning was accomplished by organizations responsible for complementary functions of logistics and maintenance support personnel training development and operational testing and deployment of assigned systems. In addition, he was to provide general administrative support for all organizational elements and provide liaison services at the contractor's facility for all organizational elements. The Project Manager was to be supported by offices and organizations within AMC and participating organizations responsible for directing other customer procurement.

(U) The PM-MICV Technical Management Division was made responsible for directing and supervising overall technical activities relating to the engineering development and production of the automotive, weapons, fire control, protection and ancillary equipment for the MICV.

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9 Charter. PM-MICV, Secretary of the Army, 4 Jun 68.

308-582 O - 80 - 17

The division was to conduct continuous evaluation of technical developments and engineering programs associated with complete systems to assure that military characteristics and technical requirements were achieved and develop and disseminate technical policies.

(U) The PM-MICV Product Assurance Division was made responsible for establishing and supervising the execution of policies and procedures on product assurance and related matters with special emphasis on reliability, durability, availability, maintainability, human factors and safety engineering, testing, quality assurance and configuration management.

(U) The PM-MICV Logistics Management Division was made responsible for establishing and supervising the execution of policies and procedures to assure the integration of logistic support activities and for coordinating with Government and contractor representatives in support of research, development, testing, procurement, production, and vehicle distribution efforts.

(U) The PM-MICV Program Management Division was given the responsibility to schedule, direct, coordinate and control the total programming, budgeting, fiscal review and analysis cost estimating and analysis plus exercising full line authority of the Project Manager for the development, submission, justification, receipt, allocation and execution of all financial resources.

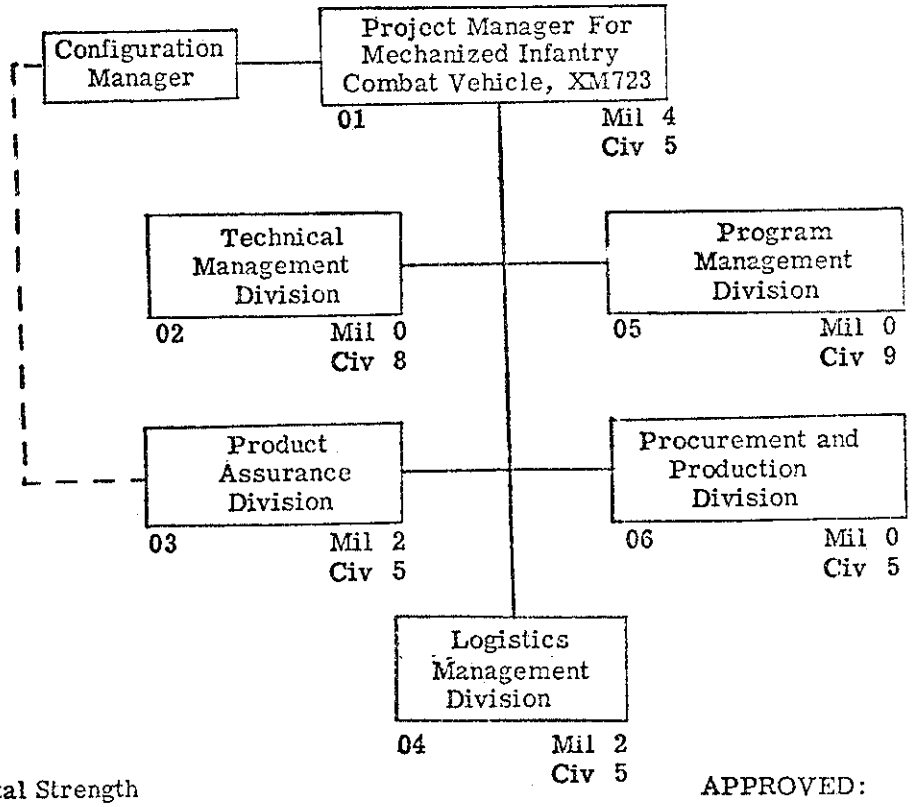
Procurement and Production Division

(U) The PM-MICV Procurement and Production Division was given the responsibility to develop and administer a complete detailed procurement program in accordance with the Project Manager's policies and programs. This division was also to provide management direction and coordination for execution and administration, production and pricing matters, industrial preparedness planning, and implementation of overall Project Manager policy as relates to all procurement actions in support of the MICV system.

(U) The PM-MICV also employed a configuration manager to serve as the configuration control advisor for the MICV system who was to act with responsibility for all configuration control matters and to establish a configuration control program. The Configuration Management mission and functions were being accomplished by the Product Assurance Division. Chart 15 identifies MICV's five operating divisions and the special assistant for Configuration Mangement. It has been the Project Manager's philosophy to operate with a minimum staff by utilizing, to the maximum extent possible, resources of TACOM and other AMC Commands and elements.

MECHANIZED INFANTRY COMBAT VEHICLE

(MICV XM723)



Total Strength
Mil 8
Civ 37
45

APPROVED:

JAMES F. McCLUSKEY
COL, OrdC
Project Manager, MICV
15 April 1974

Chart 15

Management

(U) Colonel James F. McCluskey was designated the Department of the Army Project Manager for the Mechanized Infantry Combat Vehicle (MICV) effective 19 July 1973.[10] The Project Manager reports to the Commanding General, US Army Materiel Command (AMC). The project charter[11] was revised and approved by Secretary of the Army, Howard H. Callaway, on 5 February 1974. The revised charter included the specific responsibility for establishing and maintaining a system for contractor performance measurement in the areas of cost, schedule and technical performance. Cost/schedule Control System Criteria (C/SCSC) was incorporated into the ED/PEP contract with FMC Corporation. It also included responsibility for monitoring and analyzing the variance between the amount of work planned and that accomplished, and between the planned expenditures and the actual costs. As a result of the analyses of contractor performance, FMC management and the Project Manager identified potential or incipient problem areas and developed and implemented actions to overcome problems with minimum adverse effect upon the program.

(U) Project support agreements were negotiated with the US Army Tank-Automotive Command, Warren, Michigan; US Army Armament Command, Rock Island, Illinois; US Army Electronics Command, Ft. Monmouth, New Jersey; US Army Training and Doctrine Command, Ft. Monroe, Virginia; US Army Test and Evaluation Command, Aberdeen Proving Ground, Maryland; US Army Training Device Agency, Orlando, Florida; US Army Human Engineering Laboratory, Aberdeen Proving Ground, Maryland; Vehicle Rapid Fire Weapon Systems, Rock Island, Illinois; US Army Ballistic Research Laboratories, Aberdeen MD; US Army Logistics Evaluation Agency, New Cumberland, PA; US Army Materiel Systems Analysis Agency, Aberdeen, Maryland; Defense Contract Administration Services, Alexandria, Virginia; and US Army Operational Test and Evaluation Agency, Ft. Belvoir, Virginia.

Resources

(U) Army resources were provided, after administrative processing through Headquarters, AMC, and Headquarters, US Army Tank-Automotive Command (TACOM), directly to the Project Manager to accomplish his mission as reflected in the Five Year Defense Plan (FYDP). During FY 1974, the MICV Project Manager received a total of $11.8 million RDT&E program authority for the XM723. These resources were used predominately for contractual activity ($10.1 million). PMO operating costs were $.9 million. TACOM and other Government agencies' support amounted to $.8 million.

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[10] AMC GO #254, 19 September 1973.

[11] Project Manager Charter, Mechanized Infantry Combat Vehicle, Secretary of the Army, 5 February 1974.

Engineering Development/Producibility, Engineering and Planning (ED/PEP) Contract

(U) The RFP was released on 11 April 1972. Proposals were received on 11 September 1972 from Chrysler Corporation, FMC Corporation, and Pacific Car and Foundry Company. Each offeror was requested in the RFP to submit with his proposal a full size wooden mock-up provided vital tangible clarification of many interfacing and conceptual areas such as arrangement of major components, space allocation, seating arrangement, entry and exit capability, ease of maintenance, stowage, and human factors engineering. The mock-ups were particularly valuable for assessment by the user representatives in the source selection organization.

(U) Source selection was conducted in accordance with DOD, Army and AMC source selection procedures. The Source Selection Evaluation Board (SSEB) completed their evaluation and reported to the Source Selection Advisory Council (SSAC), 4 November 1972. A management audit, independent of the SSEB activities, was conducted at each offeror's plant and results were presented to the SSAC by the management audit team, 4 November 1972. The SSAC conducted their analysis of the SSEB report and management audit and recommended FMC Corporation as the source. The recommendation was presented to the Source Selection Authority (SSA), 10 November. The SSA made the source selection decision on 20 November and briefed the CG, AMC, who assisted in obtaining DA and DOD approval.

(U) After completion of negotiation and source selection, a contract in the amount of $29,260,000 was awarded 22 November 1972 to FMC Corporation, San Jose, California. The cost of the ED portion was $22,000,000 and the PEP portion $7,260,000. The contract was cost-plus-incentive-fee (CPIF) with incentives on performance and cost for ED and on cost only for PEP. The major aspects of the contract were: Performance of design and development; Fabrication of two test rigs, one prototype and 12 ED vehicles equipped with the GFP M139 weapon; Provide support during conduct of DT II by the Government; Preparation of a technical data package; Fabrication and delivery of four pilot vehicles; and Support Government test and evaluation of the PEP vehicles.

(U) In December 1973, FMC advised the MICV PM that a four month slip in the contract delivery schedule was necessary to provide adequate time between the start of the test rigs and prototype vehicles durability tests and the delivery of ED vehicles for DT II/OT II. Late delivery of components due to the current saturated state of the national economy and the energy shortage of 1973-1974 was largely responsible for the schedule slip. Holding the present delivery schedule would have resulted in unnecessary expenditure of additional funds and would

have precluded FMC from incorporating and adequately testing redesigned components as required to achieve reliability and durability required by contract specification. The contract delivery schedule was extended by four months in June 1974.

(U) Test reports, submitted by FMC in the early months of 1974 for the test rigs and prototype vehicle, indicated serious technical problems on the transmission and other major components. Several meetings were held with FMC to discuss these problems and their possible resolutions. In May 1974, the MICV PM and FMC discussed the possibility of realigning the ED program to achieve contract requirements on an optimum cost effective basis. In accord with this discussion, FMC submitted a realistic get-well proposal to include increased contractor vehicle testing prior to DR 11/OT II by an additional 23,000 miles for a total of 53,000 miles. Two additional ED vehicles would be provided the contractor for this increased testing and the number of DT II/OT II vehicles would be reduced from 11 to 9. The realignment would then delay the start of DT II/OT II by five months, from March 1975 to August 1975. To further concentrate on hardware, the contractor proposed suspension of all unrelated software activities and other indirect efforts not required for the correction of technical problems. ED realignment also included a proposed change in the contract incentive structure from cost and performance to incentive on cost only. FMC implemented the contract realignment and submitted their proposal in June 1974. The new ED/PEP contract delivery schedule, when implemented by modification, would be 53 months duration with completion set for April 1977. The contract was to reflect the following phases and dates for implementation:

Phases	Starting Date	Completion Date
Engineering Development/Producibility Engineering & Planning (ED/PEP)	Nov 1972	Apr 1977
DT II/OT II Test	Aug 1975	Aug 1976
Low Rate Initial Production (LRIP)	May 1978	Feb 1980
Full Scale Production	Mar 1980	Nov 1981

(U) The plan to integrate the Bushmaster Weapon system with MICV during full scale production was deferred indefinitely. The VRFWS ASARC/DSARC decision to contract for ED/PEP in September 1974, was postponed and the MICV PM was directed to plan for the M139 product improved weapon system with dual feeder for the MICV in ED, PEP, LRIP and production.

Logistic Support

(U) During FY 1974 the Logistics Management Division made a concentrated effort to promote logistical support and to involve the contractor energetically and effectively in the use of MEADS and ILS. As a direct result of this effort and interest expressed, an Integrated Logistical Conference was held at the contractor site which was chaired by the Chief, Logistics Management Division of PM-MICV. This conference was held to stiumlate comments and suggestions as to the improvement of the logistical support of the MICV and was to inform agencies involved in our progress. Representatives from TACOM, DSLOG, LEA, AMC ARMCOM, ECOM, FMC Corporation, TECOM, Logistics Center and the MICV PM office attended this conference. Future improved relations of the Logistics Management Division, PM-MICV, were assured with recommendations of those attending recognized and utilized when feasible. Favorable reaction from those present indicated our Integrated Logistical Support was far in advance of other projects the attendees had witnessed previously.

(U) Supply actions appropriate to our position have progressed without incident and the procurement of GFE items so far has been successful. A method of monitoring tool and fastener proliferation during development of the MICV has been implemented as a result of the use of the MEADS by the contractor.

(U) Early involvement of the user was initiated with the cooperation of TRADOC (Fort Benning Infantry Board). A squad of infantry was available for familiarization and actual participation in a movement, access, egress, and utilization of the MICV as a troop carrier and comments were solicited. This included storage of combat equipment, participation of the infantry squad in combat uniform to include individual weapon. The comments made were straight forward and realistic and made by personnel actually designated as potential users.

(U) The MICV development contract implements a logistics data system in the FMC Corporation's management organization. In fiscal year 1974, the system became operational and its LSA outputs were forming a data basis for "early influences upon design," "performance," and "cost."

Technical

(U) Vehicle Hardware. The vehicles, one prototype and two test rigs, were fabricated by the vehicle contractor, FMC Corporation, San Jose, California. A total of 13,000 miles of vehicle endurance were run to date (end of FY 1974) including engineering performance runs. Major problems developed in several areas during the vehicle operation. Power pack problems occurred in the areas of the alternator drive and transmission. The most noteworthy power pack problem remaining to be

solved was brake lining failure in the 2nd range clutch of the transmission. A redesign of the 2nd range clutch assembly with improved brake lining material and lower unit loading scheduled for test during FY 1975 was expected to solve the problem.

(U) Hardware. Serious durability problems were also discovered in the suspension components. These included the track, roadwheel, roadarm, shock absorber, support roller and idler assembly. Redesigned components were under test. A notable change was the use of the track from the LVTP-7 vehicle, in production for the Marine Corps.

(U) Transmission R&D Contract. All testing on two R&D transmissions was completed. Only the final engineering report remained to complete the contract. (DAAE07-72-C-0200). Two transmission development test rigs accumulated 7,500 miles at General Electric Co., Pittsfield, Massachusetts. Testing was scheduled to continue through 14,000 vehicle miles plus 800 hours of dynamometer endurance.

Cost/Schedule Control System Criteria (C/SCSC).

(U) A "mini" demonstration review was conducted in May 1973 at FMC and the report submitted by the review team indicated FMC was applying the same management system to MICV as it was to the system previously accepted for the Armored Reconnaissance Scout Vehicle (ARSV). On 16 October 1973, the Director of Requirements and Procurement, AMC, forwarded a letter to FMC indicating acceptance of its C/SCSC. FMC has prepared its monthly Cost Performance Report (CPR) based upon the C/SCSC system.

Project Documents

(U) The following major project documents were used in the execution of the MICV mission.

(U) System Development Plan (SDP). The SDP was revised to reflect current data and plans included in the Development Concept Paper (DCP). The SDP was reviewed and approved by AMC on 6 November 1972. It was forwarded to DA for information and retention.

(U) Coordinated Test Program (CTP). The CTP was approved in March of 1971 by AMC. After revision to bring the program schedules up to date and to reflect a coordinated AMC/CDC agreement on operational characteristics curves which were included as part of the reliability program plan, the CTP was forwarded to AMC on 15 August 1972. The CTP reflected OC curves for DT II and provided for a 50 percent probability of acceptance if the true (0.86) reliability was demonstrated during test. AMC then forwarded the CTP to DA. In accordance with new AMC requirements and establishment of the Operational Test and Evaluation Agency (OTEA), the CTP was to be revised

to include Outline Test Plans (OTPs) and Operational Tests OT II and OT III. Test plans prepared by the various testing activities for conduct of DT II were evaluated and upon completion of coordination were to be included with the CTP for implementation.

(U) Materiel Need (MN). The latest issue MN was dated 29 September 1972. Revisions were in process in the area of vehicle weight, coaxial machine gun and the firing ports. These revisions were forwarded to TRADOC for review, concurrence and revision of the MN.

(U) Integrated Logistic Support Plan (ILSP). The objective of this plan was to assure timely and effective management, planning, acquisition and control of logistic support throughout the entire life cycle of the vehicle system. Within the framework of the plan, the Maintenance Support Plan was revised to reflect Materiel Need and System Specification changes prior to the contract award for Engineering Development.

(U) Development Concept Paper (DCP). The Secretary of the Army, Robert F. Froehlke, recommended approval of the MICV DCP with development by a single contractor.[12] The original DCP was approved by Deputy Secretary of Defense, Kenneth Rush on 10 April 1972.[13] However, prior to its approval, Secretary Rush expressed concern over the attainment of reliability goals and suggested that an expanded reliability program would be an effective method of reducing MICV Operations and Maintenance (OMA) costs. As a result, a revised program that increased reliability testing by $2.1 million, coupled with a six month expansion of development prior to the Development Test and Operational Test (DT II/OT II) was prepared by DA. This program was approved by Secretary Rush with the caveat that the Army would attempt to reduce the overall development time consistent with adequate Test and Evaluation, and submit a revised DCP for his approval prior to ED contract award. In response to Secretary Ruch's guidance, the DCP was amended to include the expanded reliability program and overall reduction in the development cycle. The amended DCP was approved by Secretary Rush on 25 September 1972.

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[12] Memorandum, OSD to Dep Sec of Def, 28 Mar 72, Subj: Rationale Supporting Army Recommendations for Mechanized Infantry Combat Vehicle MICV Program.

[13] Development Concept Paper (DCP No. 30) Mechanized Infantry Combat Vehicle, dated 23 Dec 71, Sec of Def, approved 10 Apr 72.

(U) Basis of Issue (BOI). The Basis of Issue of production vehicles during the late 1970's was to be on a selective basis. It was not intended that the MICV replace all of the M113 fleet presently in service. Replacement was to be made on the basis indicated in the Tentative Basis of Issue (TBOI) as approved in 1969 by the Vice Chief of Staff.

(U) Advanced Procurement Plan (APP). This plan, APP No. 12 was published in November 1973 and described procurement activities and summarized future MICV procurement planning.

(U) Baseline Cost Estimate. The baseline Cost Estimate/Life Cycle Cost Estimate (LCCE) was a result of joint efforts by TACOM, ARMCOM, ECOM, TECOM and MICV Project Manager Office Study Team participants. The cost estimates were derived to the maximum extent from data available from the AMC Major Subordinate Commands. The MICV LCCE was approved by the Department of the Army in February 1971. A revised baseline cost estimate was included in the DCP approved by Secretary Rush on 25 September 1972. This revision included an increase in Development Cost and escalation of baseline figures to FY 1972 constant dollars. The baseline cost estimate was again revised in March 1973 to reflect both cost input from FMC Corporation and in-house planning. This revision was approved by AMC and was the basis for the MICV program estimate.

(U) DA Master Milestone Schedule. The DA Master Milestone Schedule was revised in May 1973 and forwarded to AMC as required by AR 71-4. [14] AMC approved the Master Milestones and forwarded them to DA. The DA Master Milestone Schedule was compatible with the amended DCP, and was approved in August 1973.

(U) System Specification. The latest issue System Specification was dated 20 November 1972. Nineteen Specification Change Notices (SCNs) were issued during FY 1974. These were issued to reflect MN changes, clarify engineering requirements, reduce cost and incorporate the latest program changes.

(U) Training Device Requirement (TDR). The Continental Army Command prepared a Draft Proposed Training Device Requirement (DPTDR), in July 1970 describing the Army's need for a maintenance and gunnery weapon station trainer for MICV that would permit reliable, economical

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14 Army Reg No. 71-4, HQ, DA, 3 Jun 69, Force Development, Dept of the Army Systems Staff Officer (DASSO) System.

and effective year round training for both maintenance and user personnel. The DPTDR was coordinated with all services, major US Army Commands and armies of friendly foreign governments. Comments were received and incorporated in the final DPTDR. CONARC forwarded the DPTDR to Department of the Army for approval to enter Engineering Development (ED), July 1972. The DPTDR was staffed and approved by DA in November 1972 subject to incorporation of DA comments. DA comments were reviewed by CONARC and MICV PMO and incorporated into the TDR. The approved TDR was released for worldwide distribution by CONARC in December 1972. A trainer specification had been developed in coordination with CONARC and Army Training Device Agency. The finalized trainer specification was assigned Document No. AT-TS-1004-001 by TACOM and disseminated to all interested services and major commands 6 February 1974. The Trainer Development Plan describing the trainer development program was incorporated as Appendix F to the MICV System Development Plan, 31 July 1974. In view of the latest decision to go into production with the M139 weapon and based on the present status of the Bushmaster program, it was decided that MICV weapon station trainers would be developed employing the M139 gun as primary weapon. The weapon station training devices development was scheduled to begin with the award of a contract in July 1975 with concurrent testing during vehicle DT III/ OT III tests and production beginning in January 1978. Engineering Development of the weapon station training devices were to be based primarily on the MICV weapon station requirements and were to be part of the MICV System Development Program.

(U) Chart 16 indicates the evolution and status of MICV documents. Chart 17 indicates the MICV schedule.

Utility Tactical Transport Aircraft System (UTTAS)

Organization and Mission

(U) BG Leo D. Turner was assigned Department of the Army Project Manager for the Utility Tactical Transport Aircraft System (UTTAS) on 21 November 1971.[15] General Turner served continuously in that capacity through 30 June 1974, the end of FY 1974.

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15 UTTAS PM-Charter, Secretary of the Army, 21 November 1971.

MICV SYSTEM -- PROJECT DOCUMENTS LIST

DOCUMENT	PREPARED BY	APPROVED BY	DATE OF BASIC DOCUMENT	DATE OF LATEST REVISION	STATUS
SYSTEM DEVELOPMENT PLAN (SDP)	PM	AMC	FEB 69	NOV 72	APPROVED
COORDINATED TEST PROGRAM (CTP)	PM	AMC	MAY 70	NOV 72	APPROVED
MATERIEL NEED (ED)	TRADOC AMC	DA	OCT 70	SEP 72	REVISION IN PROCESS
INTEGRATED LOGISTIC SUPPORT PLAN (ILSP)	PM	AMC	DEC 68	OCT 73	CURRENT
DEVELOPMENT CONCEPT PAPER (DCP)	PM	OSD	OCT 70	SEP 72	COVER SHEET REVISION APPROVED
BASIS OF ISSUE (BOI)	DA	DA	APR 69	APR 72	CURRENT
ADVANCE PROCUREMENT PLAN (APP)	PM	DA	MAY 68	NOV 73	UPDATE
ED/PEP CONTRACT	PM	AMC	NOV 72	MAY 74	CONTINUING CONTR. MODS
BASELINE COST ESTIMATE	PM	DA	DEC 70	OCT 73	APPROVED
SYSTEM SPECIFICATION	PM	AMC	DEC 68	NOV 72	REVISION IN PROCESS
DA MASTER MILESTONE SCHEDULE	PM	DA	APR 71	AUG 73	APPROVED
TRAINING DEVICE REQUIREMENTS	TRADOC PM	DA	NOV 72	MAR 73	APPROVED

Chart 16

MICV SCHEDULE

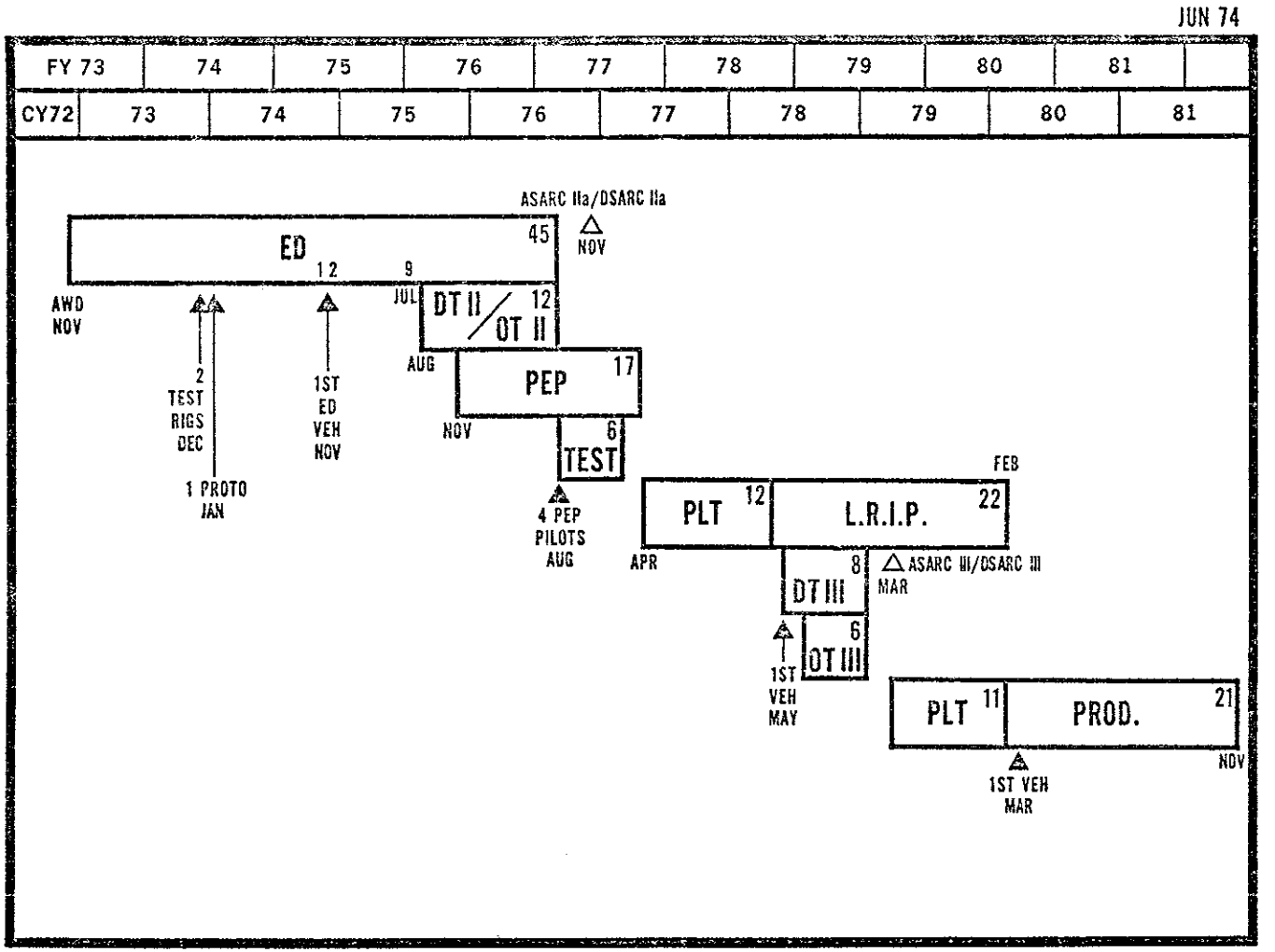

Chart 17

(U) A new Project Charter approved by the Honorable Howard H. Calloway, Secretary of the Army on 21 June 1974 continued with BG Leo D. Turner as Project Manager and superseded the previous charter approved by the Honorable Robert F. Froehlke.

(U) At the beginning of Fiscal Year 1974, the personnel authorization was 77 (71 civilians and 6 military). There was no change in the authorization until May 1974 when AMC decreased one military space, an enlisted aide to BG Turner. The authorization remained through end of Fiscal Year 1974 at 76 (71 civilians and 5 military). The on-board strength at the beginning of Fiscal Year 1974 was 63 (57 civilians and 6 military). At the end of Fiscal Year 1974, the strength was 73 (68 civilians and 5 military).

(U) The Project Manager was made responsible for Project Management of the Utility Tactical Transport Aircraft System (UTTAS) in accordance with Development Concept Paper No. 13, 24 May 1971, approved by the Deputy Secretary of Defense on 22 June 1971, as approved, DOD Directive 5000.1, AR 1000-1, AR 70-17, AMCR 11-16, and other pertinent regulations. He was delegated full line authority for centralized management of his specific project, with responsibility for: (1) Planning, directing, and controlling the allocation and utilization of all resources authorized for execution of the approved project; (2) The definition, development, product assurance, initial procurement, production, distribution, and integrated logistic support to accomplish project objectives; (3) Achieving the technical performance objectives of the project, as stated in the DCP and associated cover sheets, on schedule and at the lowest practicable cost. Cost parameters shall be established which consider the cost of acquisition and ownership. The design to unit cost goals shall be maintained in accordance with the DCP and associated cover sheets. Traceability of estimates and costing factors, including those for economic escalation, shall be maintained; (4) Practical trade-offs between system capability, cost and schedule within the bands of performance of the materiel requirements documentation and within the thresholds of the Development Concept Paper, and associated Cover Sheets. Trade-off decision will give full consideration to the effect on system support effectiveness and logistics support resource elements; (5) Assuring that planning was accomplished and that, except as otherwise directed, the execution of the project conforms to the plan, including implementation by the organizations responsible for the complementary functions of integrated logistic support; product assurance and operational testing, and activation or deployment of the system and its related equipment; and (6) Appropriate utilization of the AMC corporate and commodity laboratories in the solution of project technical problems and insuring that project industrial contractors are fully aware of the technical resources and expertise available in these laboratories.

(U) The Project Manager was assigned responsibility for the following Department of the Army (DA) RDT&E projects:

Element Code	DA Project	Title
6.42.06.A	1X264206D378	Utility Tactical Transport Aircraft System (UTTAS)
6.42.06.A	1X264206D189	UTTAS Engine

(U) The Project Manager was further responsible for the procurement of engines and support for the Advanced Attack Helicopter (AAH) test programs, as applicable.

Funding

(U) The FY 1974 RDT&E Program as of 30 June 1974 was $102,625,000. This consisted of $87,510,922 of Airframe Program, Project Number 1X264206D378, and $15,114,078 of Engine Program, Project Number 1X264-206D189. The FY 1974 program total obligation authority of $102.646 million as of 30 June 1974 included FY 1974 obligation authority of $102.625 million (see break-down above) and unobligated balance carry-over of $21 thousand from FY 1973.

Source Selection

(U) The initial draft of the Source Selection Evaluation Plan for selection of the Airframe Production Contractor was completed and reviewed by the Project Manager and his staff during June 1974.

T700 Engine Program

(U) The T700 engine and support requirements for the AAH Airframe Contractors was incorporated into the General Electric Engine Contract on 23 July 1973. A Design to Cost objective for the T700-GE-700 engine was negotiated and incorporated into the General Electric Contract 29 November 1973. An independent technical assessment was conducted in January 1974. The team was chaired by a representative of AMRDL and included Navy representation. The first XT700 engine successfully completed the final acceptance test by 23 March 1974 and deliveries were made as follows:

1974	March	April	May	June
	1	4	3	4

(U) The T700 engine maturity phase of the UTTAS Program was initiated with the submittal of the Project Manager Approved Advance Procurement Plan and Determination and Findings to Department of Army on 31 May 1974. The T700 Engine Contractor began tracking reliability growth during the development tests leading to the preliminary flight rating test. Release for PFRT was given in June 1974. Reliability evaluation assessed a 75 percent chance of successfully completing the PFRT.

(U) The identification, range and quantity of Government Furnished Materiel (GFM) for the Utility Tactical Transport Aircraft System (UTTAS) contractors was completed during the year. The most significant item of GFM was the newly developed 1500 Shaft Horsepower T700-GE-700 Turboshaft Engine. Initial shipments of these engines from the General Electric Company Plant to the UTTAS prototype aircraft developers occurred in April 1974.

Implementation of Logistics Support Analysis System

(U) The automation of the Logistic Support Analysis (LSA) described by TM 38-703-3 dated May 1972 (draft) was actively pursued during the year. Automation assistance was initially provided by the Naval Weapons Engineering Support Activity (NAVWESA). Subsequent to the initial effort, a meeting was convened at the U. S. Army Maintenance Management Center (USAMMC) on 7 November 1973 to define the support required of the USAMMC by various Army Project Managers. The initial NACWESA effort was terminated and the USAMMC began to provide support for LSA. The automation of the LSA was completed with one Utility Tactical Transport Aircraft System (UTTAS) contractor in May 1974, and actions were continuing to install this capability with two other UTTAS contractors. Concomitant action was initiated to program the U. S. Army Aviation Systems Command (USAAVSCOM) computer to accept the automated LSA. This activity was completed in April 1974 and the LSA program was automated within USAAVSCOM and LSA products were capable of being provided by electronic data processing.

Program Milestones

(U) The following major milestones occurred during the period 1 July 1973 through 30 June 1974:

Milestones	Schedule	Actual
Mock-up Review	Sep 1973	Sep 1973
Critical Design Review	Dec 1973	Dec 1973
Start XT-700 Engine Delivery	Mar 1974	Mar 1974
Start Official Engine - PFRT	Jun 1974	Jun 1974

XM1 Tank System

Overview

(U) During FY 1974, the XM1 Tank System program was characterized by a scheduled transition from engineering design paperwork to fabricated hardware. In all areas assemblies appeared, components were developed, structures took shape and finally, initial tests were conducted. These items represented the first tangible results of the Main Battle Tank Task Force ideas. The Validation Phase was well on its way to successful completion.

(U) As established in the acquisition strategy for the XM1 Tank System, the Validation Phase was being conducted according to the concepts of "competitive prototyping". Two contractors were involved in this competition--General Motors Corporation and Chrysler Corporation. The efforts of these contractors, as generally discussed in the paragraph above, were directed toward the successful completion of the Validation Phase, and ultimately selection as the contractor to continue into the Full Scale Engineering Development Phase and finally production of the XM1 Tank.

(U) The objectives of the XM1 Tank Program were to develop and field a main battle tank for use during the 1980 time frame and beyond. The most significant improvements in the fighting characteristics of the XM1 were to be in armor protection, mobility and firepower. Additionally, the XM1 was to possess improved operating and maintenance capabilities through the improvement of reliability, availability, maintainability and durability (RAM-D).

(U) The Office of the Project Manager, XM1 Tank System, was established as a separate Class II activity of Headquarters, US Army Materiel Command (USAMC) on 12 July 1972, under the provisions of paragraph 4a.1, AR 70-17, Systems/Project Management, 19 January 1972 by the Commanding General, USAMC. On 18 July 1972, the Secretary of the Army, Robert F. Froehlke, approved the initial tank system charter, then known as the XM815 Tank System. (The designation was changed to "XM1" on 2 November 1972.) Under this charter, Major General Robert J. Baer, A Brigadier General at the time, was designated Department of the Army Project Manager for the System. This charter was "renewed" on 4 January 1974. The Project Manager reports directly to the Commanding General, US Army Materiel Command.

(U) The Project Manager was made responsible for the development, procurement, production, testing, distribution and logistical support of the XM1 Tank System and related ancillary equipment. In accordance with the charter, the Office of the XM1 Project Manager was planned for phase-out in FY 1984, provided that: the production validation system evaluation and initial troop tests were completed; initial overseas deployment had been accomplished, and there were no unusual engineering or support problems which would preclude continued support of XM1

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Tank System under another manager after termination.

(U) To accomplish the assigned mission, the project manager's office was authorized 16 military and 64 DA civilians, for a total of 80 persons, under the Department of the Army approved TDA M1W3TJAA00 effective as of 1 September 1972. With the exception of the Washington Field Office (one officer and one secretary) at Headquarters, USAMC, the personnel and offices of the XM1 project were all situated in the Universal Professional Building, 28150 Dequindre Street, Warren, Michigan 48092.

Significant Events

(U) MG Robert J. Baer, XM1 Project Manager, accompanied Dr. Malcolm R. Currie, Director of Defense Research and Engineering, to the Federal Republic of Germany during the period 24-28 October 1973. The purpose of the visit was to participate in the initial Tripartite discussions and conferences on armored vehicles in general.

(U) General Creighton Abrams, Chief of Staff of the Army, visited the General Motors and Chrysler facilities on 9 January 1974. At each contractor facility he was presented an update briefing and a view of the respective XM1 mock-ups.

(U) During the period 23 March to 17 April 1974, Major General Baer conducted a visit to the United Kingdom, the Federal Republic of Germany, and Israel. The overall purpose of the visit was to exchange information on tank technology and armor related programs. General Baer was accompanied on this trip by Major General Donn Starry, Commanding General of the Armor Center and Fort Knox, Kentucky. The details of each portion of the trip were: (1) United Kingson (24-30 March 1974) - This visit included the British Armor Center and a review of the most current British armor vehicles and concepts; (2) Federal Republic of Germany (30 March - 14 April 1974) - This portion of the trip included the German Armor School (Munsterlager), the Krauss-Maffei production facilities for the Leopard Tank, and a review of R&D equipment. Additionally, several U. S. Units were visited and an exit briefing was conducted for the Commanding General, V Corps; and (3) Israel (14-17 April 1974) - This last portion of the trip included discussions on Israeli armor tactics and developments.

(U) The Honorable Deputy Secretary of Defense William P. Clements visited the two prime contractors on 15 May 1974. Each contractor presented an update briefing. The Under Secretary then viewed the progress of the respective mock-ups. Visiting with Mr. Clements were Dr. Malcolm R. Currie, Director, Research and Engineering and the Honorable Norman J. Augustine, Assistant Secretary of the Army (R&D).

(U) The Project Office conducted two armored vehicle familiarization tours at Fort Knox. The first tour was from 15 to 19 October 1973 and the second tour was conducted from 24 February to 1 March 1974.

The objective was to provide design engineers and other contractor personnel first-hand experience with tank operations, gunnery and maintenance activities.

Management Procedures

(U) Although many of the management procedures and techniques listed below were not necessarily unique or original to the management procedures of the XM1 Project Office, they were an important part of the overall managerial methods which were employed.

(U) Milestone Management System. The XM1 Milestone Management System, as reflected in XM1 Regulation No. 5-1 dated 2 November 1973, was developed to insure timely project office action. The system identifies requirements, records actions of the responsible individuals, records the detailed plans for accomplishment, and provides for a monthly review. It culminates in a monthly briefing to the Project Manager. This briefing serves as a vehicle to expedite staff coordination and provides valuable staff guidance. The system was expanded in FY 1974 to include internally originated actions involving more than one XM1 division, and/or any action of project manager interest.

(U) Project Management Information System (PROMIS) Report. The XM1 project office submitted its first PROMIS Report in September 1973 according to Volume 3 of AMC Regulation 11-16, and continued to file the reports through February 1974. The reporting frequency was changed to a quarterly basis by HQ, AMC in March 1974. Then in May, before the first quarterly report was due, AMC cancelled all PROMIS Report requirements.

(U) Decision Risk Analysis (DRA). The XM1 project office formally established its procedures for implementation of Headquarters AMC guidance for DRA August 1973.[16] XM1 Regulations 5-10 established the DRA Committee, chaired by the Deputy Project Manager, and required the assignment of a DRA Action Officer within the Project Manager's Office. Additionally, several personnel of the Project Office attended the DRA Course conducted at Fort Lee, Virginia.

(U) Designation of the XM735 Project Office. On 15 August 1973 the XM1 Project Manager was assigned management responsibility for the XM735 105mm APFSDS round. So that intensive management could be provided to the XM735 round of ammunition and all related activities, a

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16 XM1 Regulations 5-10, 21 August 1973, Subject: Decision Rick Analysis.

sub-project office was established on a provisional basis with a lieutennant colonel as the project officer.

(U) Special Access Program for Special Armor. The Special Access Program for Special Armor was established by the Department of the Army on 19 December 1972. This program initially required formal access determinations, special briefings, reporting procedures, and the recording of formal access lists. The Special Access Program for Special Armor was integrated into the XM1 security classification guide to assign reasonable and practical classifications to the exposed materiel as it was being fabricated. This guide was published by the project office on 16 March 1973. The guide has been an important consideration in the Request for Proposal for each prospective contractor. It was used to estimate the security expense for restricted areas, to safeguard the classified data and to provide the lead time necessary to hire qualified personnel with the mandatory security clearances. Throughout the past fiscal year, the security classification guide has been refined. The Project Manager's Office returned opinions and interpretations to contractor questions, but the basic security policy for the Validation Phase remained intact.

(U) Control of Competitive Sensitive Information. The competitive nature of the Validation Phase required the utmost protection and control of contractor competition sensitive (proprietary) information. To this end, a special designation was established: "Competition Sensitive". An XM1 Regulation which addresses control of competition sensitive information was published on 5 June 1974.

Contractor Progress

(U) Hardware. Early in FY 1974, both contractors initiated hardline design activities on all subsystems and components. Contracts were issued to major subcontractors for the design and procurement of items such as engines, transmissions, fire control components and subsystems. Fabrication of the automotive test rigs was initiated. Component development test results were assessed, with design modifications being implemented as required. Full-scale mock-ups were constructed on a continuing basis during the year. These were used to assess general arrangement and to identify potential problems in the areas of design engineering, human factors, and maintainability.

(U) Preliminary Design Reviews. Both contractors conducted design reviews to determine whether the technical requirements had been properly interpreted in the design, correctly allocated to the lower level hardware elements of the tank system, and accepted properly by the engineers responsible for meeting the sub-requirements. Preparation of the System Specification and Environment Specification was initiated on 1 July 1973. Vehicle cost and weight reduction trade-off studies were

conducted and error and weight budgets were established on a system basis and allocated to the subsystem/component levels. The control of vehicle weight, the evaluation of design unit production costs, and the protection program dominated major efforts outside the planned design activities.

(U) Reliability, Availability, and Maintainability (RAM). The XM1 Project Manager's Office closely monitored the establishment and functioning of the two contractors' RAM and product assurance programs during FY 1974. A major effort was directed toward definitizing combat mission failure/scoring criteria. This effort resulted in a detailed scoring criteria book for each of the two XM1 competing designs. At the end of FY 1974, the basic scoring philosophy was before the AMC/TRADOC RAM communities for approval or revision. The overall goal was to develop a standardized failure scoring system that could be applied to the XM1 in particular and to combat vehicles in general. Work was also directed toward establishing a technique for validating contractor RAM performance during the vehicle system validation phase. The lack of significant system test experience during DT/OT I was expected to make the RAM assessment a difficult problem during validation.

(U) System Integration. The solution of the XM1 system integration problem was one of the major activities during FY 1974. This was expected since the SM1, aside from its major attributes, viz.: firepower, protection and mobility, also involved the integration of a set of components and subsystems. Each had its own share of weight and volume and each its own individual performance characteristics to meet. Most difficult were the interrelations between design, physical characteristics, component performance and overall vehicle performance. The contractors strived to achieve a balance between the conflicting requirements, such as maximum armor protection versus weight and fire control versus "design-to-cost". An additional constraint on the development was the rigid requirements on reliability and durability. With the XM1, components and/or subsystems could not be selected on the basis of best performance, least expense or most reliability. Each had to be considered and integrated into a system that best satisfied the overall requirements. The tight schedule and the competitive atmosphere allowed little margin for error. Nevertheless, each contractor was solving technical uncertainties through system analysis with a minimum of test and evaluation.

Technical and Testing

(U) AVCR-1360 Diesel Engine. The contract (DAAE07-72-C-0315) specifications to develop the AVCR-1360 engine were completed on 31 August 1973. The objectives were to increase the power of the engine from 1250 to 1500 ghp (meeting the expected power-to-weight vehicle requirements), to increase the engine low-speed torque

(improving vehicle acceleration), and to increase engine reliability. Design and development of the engine subcomponents was also accomplished by June 1973. Two contractor in-house engines, modified for laboratory development tests, were used during the contract period. The design effort included interfacing with the X-1100 transmissions.

(U) AGT-1500 Turbine. The AGT-1500 gas turbine engine development, initiated in October 1965, was continued at Lycoming under a Chrysler subcontract. Operation of the turbine test rig (XM803 Pilot #8) was also continued to November 1973 under TACOM Contract (DAAE07-71-C-0145).

(U) Transmission X-1100. The Contract (DAAE07-72-C-0314) for the design and development of the X-1100 transmission was completed on 30 January 1974. This transmission was designed for both diesel and gas turbine engines at power levels up to 1500 ghp with only a change in the input modular section. Three prototype transmissions (diesel version) were fabricated by the contractor in October 1973. In addition, input modules for the turbine engine were designed during the contract. Under a separate TACOM Contract, two other transmissions were fabricated for the turbine engine in March and April 1974.

(U) Hydropneumatic Suspension System. Contracts (DAAE07-72-C-0313 and 0316), calling for the design, fabrication, and laboratory testing of suspension systems, were completed in January 1974. Assets remaining at the end of the contracts were provided to both contractors.

(U) Weapon System. Selection of a main weapon system still remained contingent upon the future threat assessment and by the outcome of the Tripartite Tank Armament Evaluation Program, which started in 1974. Final selection was scheduled for before the ASARC II. The BUSHMASTER program was evaluated during 1974 by the user for the purpose of confirming the system requirement. The evaluation included a COEA Study. The XM1 requirement for using the M85, .50 cal machine gun, as an interim weapon for the validation phase, was unchanged. No final decision on a coaxial gun was expected until all candidates had been reexamined for the best trade off between ammunition availability and gun effectiveness. This decision was also to be made prior to ASARC II.

(U) Unbalanced Gun and Turret. A report was written in FY 1974 on the unbalanced gun and turret test conducted in FY 1973 using the XM803 Pilot #7 as a test bed. The report stated that the test results on the azimuth drive indicated performance requirements could be met for turret unbalance conditions up to 22,050 ft-lbs. relative to the XM803 system configuration. For the elevation drive, the results indicated

the requirements could be met for main weapon unbalance conditions varying from a nominal XM803 condition (21 ft-lbs) up to 869 ft-lbs.

(U) Shock Testing of Selected Fire Control Components. A shock test of selected fire control components was conducted in FY 1973 for the purpose of generating and developing ballistic impact shock data and design guidelines. The test report of November 1973 on the electronic, electro-mechanical, and electrical equipment indicated that the hardware was adequately designed. It met the applicable, existing ballistic shock environmental design requirements of 1000g and 400g peak amplitudes with durations of 0.5 and 1.5 milliseconds, respectively. Tests at incremental shock levels, in excess of these requirements, also indicated that design margins were evident. The tests further identified those areas of the designs which were the "softest" and could limit any extended shock capabilities. Shock test results on the optical fire control equipment indicated it is feasible to design equipment to fulfill ballistic shock requirements associated with combat vehicle applications (400g, 1.5 msec and 1000g, 0.5 msec).

(U) Protection vs Weight. Initial contractor designs developed in FY 1974 indicated that a maximum vehicle weight of 58 tons was feasible and attainable. No major difficulty was foreseen for the XM1 remaining within the Materiel Need band. The emphasis was on reduction of ammunition and fuel vulnerability through compartmentalization within the required minimum weight and maximum protection. these factors produced an element of risk which could not be removed until additional examination results were available, namely: ballistic evaluations of hull and turret structures, vulnerability assessments, system durability tests and other trade off analyses. However, an optimistic note has been sounded in this developmental area.

(U) Electronic Warfare. A decision was made to assess XM1 vulnerability to the electronic warefare threat. Countermeasures to the threat were to be evaluated and ranked according to XM1 mission functions, program schedule and cost impacts. Plans were for threat simulation and analysis to predict the impact of hostile electronic warfare and to recommend solutions.

(U) Communication Equipment. Existing communication equipment was planned for use in the XM1. This would provide electromagnetic compatibility with the M60A1, M60A2, XM723 and armored reconnaissance scout vehicles, along with all data utilized in the XM1 Tank System. During the validation phase, the contractors were designing to meet the electromagnetic compatibility requirement. However, the government would not require test documentation on a component level, nor would system level tests be conducted as a means of selection between contractors. The contractors would need only to conduct the required

tests to assure intrasystem compatibility. The Government testing was to take place during the Full-Scale Engineering Development Program (FSED).

(U) Camouflage Plan. The main battle tank camouflage plan was outlined in February 1974. Camouflage for the XM1 was defined as the application of passive measures and characteristics of materiel that contribute to the reduction of perceptibility (detection, acquisition, and identification) to surveillance. The term camouflage applied not only to the end item, but also to properties of items to include electromagnetic, acoustic, chemical and seismic. Specifically excluded from camouflage were electronic countermeasures, electronic counter-countermeasures, and other active measures. During the validation phase the contractors' design was to address camouflage requirements as part of the overall system engineering effort. The aims were to reduce vulnerability, to evaluate the combat effectiveness and to conduct a production cost analysis for the FSED pilot vehicles. Future plans included contractor mathematical models to assist in assessing signature reduction studies in radar, infrared and smoke. A radar cross-sectional analysis of vehicle concepts was under government contract. The camouflage paint pattern was being designed by USATACOM under USAMERDC auspices. The XM1 system was designated camouflage sensitive and therefore needed to be designed to incorporate a camouflage capability in consonance with: (1) AMCR 70-48, dated 23 January 1973, (2) the requirements of the Materiel Need Document (MN) and (3) the Current Summary of the Threat to Passive Countersurveillance (Camouflage) of Army Materiel (U), MERDC-FIO-CST-1-74, 11 March 1974, SECRET - NFD. (Supersedes Summary dated 21 September 1973.)

(U) Armor/Protection Program. Both contractors were making gratifying progress on their armor protection programs. The Ballistic Research Laboratories (BRL) furnished both contractors armor design concepts incorporating the best combination of ballistic protection, structural integrity and simplicity of fabrication. Each contractor fabricated and delivered to the Government, three armor structures (31 January 1974) which simulate their respective hull front, hull side and turret quarter. A ballistic evaluation was conducted at Aberdeen Proving Ground (APG) in conjunction with BRL. It addressed such areas as single- and multiple- hit performance, methods of fastening and repairability. Results of the tests were encouraging. Each contractor developed an independent program for the design, test and evaluation of ammunition compartments, as part of the overall vulnerability program. Various baseline data tests were initiated but results were inconclusive. As a result, both contractors requested assistance from government agencies. A program was initiated at BRL in April 1974 to obtain additional data in support of the contractors' compartmentalization program. Based on the initial results of these tests, both contractors were expected to revise their respective designs as required and conduct the necessary test and evaluation.

(U) Technical Performance Measurement (TPM). The XM1 implementation divided TPM into two related and integrated parts. It consisted of continual tracking of selected system performance characteristics and the monitoring of key component performance parameters which influence or contribute to the system characteristics being tracked. In FY1974 the system characteristics were carefully selected to provide a good overview of system performance that would also be a suitable source of data for the Selected Acquisition Report (SAR) and other reports. The component parameters (approximately 100) were selected based upon the significance of their contribution to system performance and upon the degree of visibility of component performance desired by the XM1 PM Office Engineers. Each contractor reported their TPM status to the Government every two months. At the conclusion of FY 1974 each contractor estimated that all of their TPM system characteristics would fall within or exceed the Materiel Need requirements.

(U) Ammunition Development Program (Cartridge, 105mm, APFSDS-T, XM735): Management. The formal development program for the XM735 105mm, armor-piercing, fin-stabilized, discarding sabot, tracer (APFSDS-T) cartridge, (DA Project Number 1X663608DG21) was initiated in January 1973 with the objective of developing a kinetic energy round for the standard M68 tank cannon that would provide improved terminal effectiveness over the M392 series and XM728 fin-stabilized armor-piercing discarding sabot (APDS) rounds. At the close of the fiscal year 1973, this program was under the management of the US Army Armament Command (ARMCOM). The total RDTE program was $7.3 million. The XM735 cartridge was scheduled for type classification in May 1976. On 15 August 1973, management responsibility for the XM735 program was transferred to the Project Manager, XM1 Tank System. This was done to provide more intensive management of the program and to facilitate interface control between the XM1 and its proposed main armament. The actual development of the XM735 (and management of related M68 cannon system work) was covered by a joint responsibility agreement between the Project Manager and ARMCOM. Up to the time of transfer of responsibility, the program had been managed for ARMCOM by Rock Island Arsenal. After 15 August 1973, management through Rock Island Arsenal was temporarily continued to insure an orderly transfer. However, on 1 January 1974, Rock Island Arsenal's management responsibility was phased out and Picatinny Arsenal assumed direct management of all aspects of the program (including related work by Watervliet and Rock Island Arsenals) under the general direction of the Project Manager. A Systems Engineering Manager in Picatinny Arsenal's Ammunition Development and Engineering Directorate accomplishes this task. The Project Manager created an XM 735 Project Office within the XM1 Project Manager's Office to assist him in intensively managing the program.

(U) Ammunition Development Program (Cartridge 105mm APFSDS-T, XM735): Precision Program. During Fiscal Year 1974, firing of both slugs and flight rounds was continued in order to evaluate various seal designs, obturators, bourrelet bands and fin designs leading to improved flight precision and overall performance. A summary of precision firings through 30 June 1974 follows:

	FY 1974	TOTAL PROGRAM
Flight Rounds	484	582
Slug Rounds	108	203
Totals	592	785

(These figures do not include the armor penetration improvement program - see the next paragraph.) Using the data gained from these firings, a baseline XM735 design was established in March 1974. Precision firings since that date were primarily to confirm the design. These confirmatory firings established that the XM735 baseline design surpasses its established precision requirements (classified) under all required conditions (i.e., from -25°F to 125°F and from a worn gun). At the close of the fiscal year, developmental work on the flight design was principally directed at optimizing base seal material to provide improved sealing at extreme hot temperature (145°F) without compromising precision.

(U) Ammunition Development Program (Cartridge 105mm, APFSDS-T, XM735: Armor Penetration Program. Originally, the XM735 design envisioned use of a modified XM579 (last generation). This subprojectile's performance was within the established bands of required armor penetration (classified) but was close to the lower band. Early in FY 1974, a program was initiated to determine what measures could be taken to improve penetration within XM735 design and schedule constraints. The program was intensified with the establishment in November 1973 of the Tripartite Tank Armament Evaluation Program. Specific areas evaluated and tested were core length and mass, penetrator construction and shape, fin material, composition (alloy) and working of the core material and exotic core materials. One hundred and fifty-five (155) rounds had been fired in this program through 30 June 1974. Test results indicated that performance improvements were readily achievable without violating XM735 constraints. A decision on penetrator configuration and core material was scheduled for early in Fiscal Year 1975.

(U) Ammunition Development Program (cartridge 105mm, APFSDS-T, XM-735: M68 Cannon Activities. Throughout the fiscal year, Watervliet Arsenal provided cannon and engineering support for the XM735 program. Since the XM735 was being developed for use with the existing M68 cannon, little design effort was involved.

(U) Tripartite Tank Armament Evaluation Program. In November 1973, a tripartite (United States - United Kingdom - Federal Republic of Germany) program was established to seek a common solution for the main armament systems of the three countries' future main battle tanks. The tripartite program was managed separately from the XM1 project; however, XM1 provided the Deputy Chairman of the Tripartite Working Group which was charged with carrying out the program, plus two key members of the subordinate Tripartite Production, Cost and Vehicle Interface Panel. In addition, the XM1 contractors were to conduct vehicle design impact and trade-off analyses for each of the candidate armament systems as applied to XM1. This effort was funded by the Tripartite Program but managed by the XM1 program. Contracts for this work were executed on 28 June 1974.

(U) Testing Activities. A detailed review and revision of the Coordinated Test Program (CTP) was completed during the fiscal year. Critical issues to be resolved through testing were identified and outline test plans for Development and Operational Tests, I, II, and III were staffed and approved. After review of the draft CTP, a meeting of all required coordinating commands/agencies was held on XM1 in May 1974. As a result of this meeting, the CTP was finalized and limited distribution was made. Distribution was to be completed early in FY 1975. Leopard II chassis testing was initiated in June 1973. A series of engineering performance tests were conducted since then and the vehicle was continuing to acquire durability test miles. An interim test report, covering the period June 1973 through December 1973, was published and distributed. A final test report was to be published following completion of testing anticipated for August 1974.

Financial

(U) Funds. The XM1 Project was authorized $53,950,000 in FY 1974 funds of which $6.0 million was authorized as carryover into FY 1975. The program was not authorized PEMA funds during FY 1974. The Development Concept Paper (DCP), as approved 18 January 1973, provided for a total program (in escalated dollars) of $471.5 million RDT&E element and $2533.9 million PEMA base production. The DCP was approved for the Validation Phase only, limiting the approved funds to $177.8 million RDT&E funds only with future decision points at DSARC II, IIA, and III, concerning further funding of the program. For FY 1973, XM1 Project was authorized $21.5 million RDT&E, including $0.5 million for program support such as salaries, travel and operation of the Project Manager's Office. The program did not receive PEMA funds during FY 1973.

(U) Certification of Contractors for C/SCSC. Both XM1 prime contractors and their subcontractors were validated under C/SCSC

criteria and their management systems were accepted as meeting the requirements of DODI 7000.1. General Motors and Chrysler initiated the effort in July 1973 on organizing management control systems in response to C/SCSC requirements, as specified in the XM1 contract. This was coordinated with the Government through readiness reviews and implementation reviews, and culminated in a detailed demonstration of the systems to the Government in the last quarter of FY 1974. In the interim, three subcontractors (Chrysler Tank Plant, Cadillac Gage Co. and Teledyne Continental Motors) were validated. In addition, the three other major subcontractors (AVCO Lycoming, Detroit Diesel Allison and Delco Electronics), who had previously accepted C/SCSC systems from other DOD programs, were reviewed to insure that they were implementing their systems on their XM1 programs. The successful completion of C/SCSC validations upon the XM1 prime contractors and their subs gave the Government the visibility needed to conduct a successful development program and provided a system through which the Government could track progress in terms of cost and schedule performance down to the greatest detail. The system itself does not prevent overruns or slippages, but it did give the visibility and early warning of trends allowing the management action necessary to counteract these trends.

(U) Evaluation of Contractor's Cost Performance Data. The XM1 program received a monthly Cost Performance Report (CPR) from each of the contractors. Through the C/SCSC systems implemented by each of the contractors, the report summarized the program status. The successful validation of the C/SCSC systems, as described in the paragraph above, gave the required confidence in the validity of the CPR reports. These were being analyzed by the project office to project trends, review corrective actions and compile estimates of completion. This was done on a monthly basis and provided an excellent track of program progress.

(U) Evaluation of Contractor's Design-To-Cost Reports. The XM1 program imposed a contractual requirement that both competitors design a tank having a unit hardware price tag of less than $450,000 in FY 1972 dollars. As a part of this requirement, the contractors were required to conduct an extensive design-to-cost program to assure that each design engineer reduced hardware cost to the lowest figure possible. As a part of this process, the contractors were required to submit a detailed Design-To-Cost Report (DTC) on the 12th, 20th, and 28th month of development, showing the cost buildup of the tank. This was to be based on vendor quotes, parametric projections and industrial engineering cost techniques. The first report was received in June 1974. Due to the importance of the hardware cost to the XM1 program, a detailed review team was organized which would review all of the input in the DTC report and validate the contractor's procedures and his estimate.

(U) Program Cost Estimates. The Planning Estimate for this program was established in the DCP at $391.1 million for RDTE and $1937.2 million for Procurement for a total Program Acquisition Cost (PAC) of $2328.3 million. These were identified in FY 1972 constant dollars. Corresponding escalated dollars were $471.5 RDTE, $2533.9 PROC, and $3005.4 PAC. During the past year, changes in directed escalation indices[17] resulted in corresponding escalated dollars for the Current Estimate of $479.6 RDTE, $2920.7 PROC, and $3400.3 PAC. This Current Estimate also reflected a very insignificant reduction in the RDTE portion by $0.7 million and no change in the PROC portion. It was significant to note that the DCP threshold on RDTE was plus 20 percent and on PROC was zero percent. The XM1 Project Manager's current estimate at the end of FY 1974 was $0.7 million lower for RDTE, and for PROC it is the same as the DCP Planning Estimate.

Procurement and Production

(U) Validation Contracts. The two primary validation contracts awarded in June 1973 were being performed satisfactorily. The other active contracts in FY 1973 were completed and were in the closing-out process.

(U) Contracting Function Assumed. On 1 May 1974, the procurement contracting function was assumed by the XM1 Procurement and Production Division. This included solicitation, negotiation, and execution of procurement actions, as well as subsequent administrative activities. Pursuant to this function several modifications to the respective validation contracts were executed. In addition, individual contracts were negotiated and awarded to the primary contractors, Chrysler and General Motors, to review the design and evaluate the impact of alternate main weapons applicable to the XM1 system.

Summary

(U) As indicated by the above discussions, FY 1974 was characterized by the transition from paper to hardware. It was a very effective transition, one which resulted with no increase in estimated costs, no lags behind proposed schedules, and finally with very good indications that the technical performance parameters would be met, and in some cases exceeded.

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[17] OSD Inflation Guidance, 15 Dec 73.

CHAPTER VI

PROJECT MANAGEMENT: EQUIPMENT SYSTEMS*

Mobile Electric Power

Organization and Mission

(U) Project Manager-Mobile Electric Power (PM-MEP) was activated 1 July 1967 by direction of the Secretary of Defense. The Secretary of the Army was designated Executive Agent for DOD for FSC 6115, Engine Generators, and was directed to appoint a project manager and to negotiate and issue a jointly approved charter. The mission of the Project Manager, as outlined in the charter, was to affect management and standardization of mobile electric power generating sources within DOD to meet military needs. Consistent with this mission, two priority tasks were assigned: (1) to develop fully coordinated standardization documents and procurement data packages which could be used to procure the first DOD Standard Family of generator sets acceptable to the Services. DOD Directive 4120.11, "Mobile Electric Power", describes the Family by classification, power rating and mode; (2) to determine the operational requirements for and definition of a DOD Standard Family of gas turbine engine driven generator sets and/or other power sources. This was referred to as the second generation of the DOD Family.

(U) Colonel Ralph H. Sievers, Jr. was designated Project Manager-Mobile Electric Power, effective 12 August 1974, replacing Colonel Carroll D. Strider, who retired 31 July 1974. During the interim, Mr. James E. Griffin was designated Acting Project Manager.

Program

(U) Personnel Staffing of PM-MEP. TDA M1WOWHAA, effective 1 July 1974, authorized one military and 28 civilians for PM-MEP, which authorizes two additional civilian spaces from previous TDA. Effective 2d Qtr FY 1975, PM-MEP was to be authorized four military and 28 civilians.

(U) Program Requirements. The DOD Mobile Electric Power Generating Source Program requirements for FY 1974 were as follows:

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* The bulk of the material in this chapter was furnished by the Project Manager Offices under discussion.

Program Requirements FY 1974

Army	$10.1 million
Navy/USMC	2.7
Air Force	6.8
TOTAL	$19.6 million

Product Assurance/Test Analysis

(U) Reliability & Maintainability (R&M) Testing. Reliability demonstrations were started on the 15kw, 30kw, and 100kw, 400 hz DOD diesel engine driven (DED) generator sets. These sets were following in the paths of the 60kw, 100kw, 60hz and 200kw sets, which had completed R&M demonstrations. This program (15-200kw) was the first to utilize the R&M disciplines for mobile electric power equipment procurement. The 200kw joined the 60kw and 100kw size sets as Production Phase Family Members based on successful R&M demonstrations.

(U) Reliability Records. Reliability of the family of 0.5-10kw gasoline engine driven (GED) generator sets was being assessed periodically under the guidance of the Project Manager. The status reports were based on Initial Production Testing performed by the Test and Evaluation Command in connection with production contracts.

(U) Specifications. Action was initiated to introduce R&M requirements into the specifications for the GED sets. The R&M requirements of the 15-200kw DED set Configuration Identification were reviewed and appropriate revisions initiated for inclusion in the reprocurement specification.

(U) Test Procedures. Based on lessons learned in the 15-200kw DED program, a standardization project was established to revise MIL-STD-705, Methods of Test for Engine Driven Generators, to include a new reliability test method.

(U) Lot Summary Data. The utilization of the PM-developed Lot Summary Data Item began with initiation of production deliveries of the 60kw and 100kw size sets. This would not only permit direct analysis of an individual contractor's inspection program but, due to high commonality of components among the DOD Family, would provide the basis for a comparative analysis among contractors. The data comprised a lot-by-lot summary of results of individual and sample set inspections, average defects per unit, "High Five" defectives, start-up failures and "burn-in" data.

Standardization

(U) Class 6115 Projects. MIL-STD-633D was in the final stages of completion. MIL-STD-1650, identifying Joint Service approved generator sets for aircraft ground support, was approved on 21 June 1974 and forwarded for publication. Items reflected in this Military Standard 1650 were identified as the first generation aircraft ground support family members. There were 13 active standardization projects at the beginning of the year; seven more were opened, and 10 completed. Therefore, 10 projects remained active at the close of the year.

RDT&E Program

(U) 10kw GTED. Through a competitive process, a full scale 10kw, 60hz GTED development contract was awarded to SOLAR, a division of International Harvester Company, on 28 June 1974. The 10kw GTED generator set was to be used by those units whose operational mission and/or mobility requirements dictated the need of the lightweight and small volume afforded by this set. The power plants were to be used by those units on a worldwide basis as a principal power source where 10kw was required and would be used in the same manner as the GED and DED 10kw generator sets. Additional objective of the development contract was to achieve Design to Unit Production Cost (DTUPC) of $7,600 on the basis of 1000 sets.

(U) 30kw GTED. Through a competitive process a full scale 30kw GTED development contract was awarded to Air Research on 6 February 1974. This 30kw GTED unit was being developed as a general purpose power generator, with superior characteristics in terms of size, weight, durability, reliability, maintainability, multifuel operation and cost effectiveness over existing equivalent quality power output generators in the DOD inventory. Additional objective of the development contract was to achieve DTUPC of $16,700 on the basis of 500 units. A revision of Test Procedures for Engine Driven Generator Sets, MIL-STD-705, was initiated. The document was not compatible with some DOD Standard Family generator set characteristics. The Project continued its participation in the coordination of Required Operational Capabilities (ROC) documents for the Family of Silent Lightweight Electric Energy Powerplants (SLEEP) and the family of direct Military design electric powerplants (power for communications used in armored mobile command post and ground support for Army aircraft). Because of the energy crisis, a long range plan was being prepared to determine viable alternatives if or when the hydrocarbon fuel supply was not adequate for essential power generation. The DOD survey of 400hz power requirements for the possible reduction of the number of 400 hz generator sets was initiated. Response was scheduled for FY 1975.

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Item Reduction

(U) As an action related to the publication of DOD specifications for engine generator sets replacing single Service makes/models, a program was initiated to identify and purge obsolete specifications/purchases descriptions from the system. Conclusion of the program was expected in FY 1975.

(U) Army Review. This consisted of 673 FSN items, with only one nonstandard generator set remaining for which future procurement may be necessary until the 10kw turbine set (dc version) is available. Military specifications/purchase descriptions for all others were in process of cancellation.

(U) Air Force Review. This consisted of 208 FSN items, with only four nonstandard generator sets remaining as procurable until such time as a suitable DOD generator set is available. Military specifications/purchase descriptions of all others were cancelled except for two which are in final stage of cancellation.

(U) Navy Review. This consisted of 96 FSN items, with no nonstandard remaining for possible procurement. Military specifications/purchase descriptions for nonstandards were cancelled.

(U) Marine Corps Review. This consisted of 71 FSN items, with no nonstandards remaining for possible procurement. Military specifications/purchase descriptions for all nonstandard generator sets have been cancelled.

Miscellaneous Programs

(U) The extended oil change PEMA Project initiated in FY 1973 was well underway. Phase II test part of the program was started with four sets running at General Environmental Corporation (GEC) Hartwood Facility (two 60kw sets and two 100kw sets). Preliminary findings were encouraging wherein the 60kw sets have run six times the authorized interval (100 hours) without oil change and without any serious degradation of the lubricant or any contamination. In reviewing the program, consideration of extending oil changes to GED sets was being studied. Meanwhile, Phase II tests were continuing and would establish the practical limit for extending oil change intervals on the 15-200kw DED sets by using the spectrometric and chemical analysis methods for analyzing used oils accumulated during the testing. A technical data package was prepared for replacement of the special purpose 10kw, 400hz slide-rail Pershing GED set with a modified 10kw, 400 hz GED standard set (MEP 023A). TECOM and MERDC testing of the 15-200kw DED generator sets was reviewed toward reduction of fuel consumption. As a result of this review, testing was reduced with a projected savings of 300,000 gallons (28%) of DF-2 diesel fuel.

Procurement and Production

(U) Procurement of DOD Standard Family Sets. (1) Contract DAAK-02-74-C0143 was awarded 6 February 1974 to Air Research Corporation for procurement of the 30kw gas turbine engine driven generator sets. (2) Contract DAAK-02-74-C0386 was awarded 28 June 1974 to Solar for procurement of 10kw gas turbine engine driven generator sets. (3) Letter Contract F04606-74C-1133 was awarded 28 June 1974 to ONAN for procurement of 5 and 10kw diesel engine driven generator sets. (4) Contract DSA400-74-C8473 was awarded 2 May 1974 to Holingsworth for additional quantities of 3kw, 28V gasoline engine driven generator sets.

(U) Contract Surveillance. Close surveillance of progress was maintained on the contracts for the DOD Standard Family sets involving 25 generator set line items. Continued intensive management of the Standard Family set contracts resulted in further refinements of production progress reporting, more effective surveillance by Defense Contract Administration Service production specialists, and improvement of contractor production plans and milestone reports used in Government surveillance of contract progress.

(U) Contract Awards. Total dollar value of procurements placed for mobile electric power requirements during FY 1974 was approximately $26.1 million.

(U) Industrial Preparedness Production Planning (IPPP). Total quantitative planning requirements for each required generator set were obtained from each of the Services. These planning requirements were, in turn, assigned by FSN to the cognizant Service Procuring Activity and Defense General Supply Center for appropriate IPPP coverage.

Logistics Management

(U) Provisioning. Initial provisioning actions on the 15, 30, and 60kw DOD Standard Family generator contracts were taken as follows: (1) 15-30kw contract - the provisioning conference was completed in November 1973. Cataloging actions, submission of Supply Support Requests and procurement of initial quantities of repair parts were being accomplished to assure availability of parts in the DOD supply system to support the fielding of production sets during FY 1975. (2) 60kw contract - repair parts were procured and stocked in preparation for fielding of production sets during 1st or 2nd Quarter, FY 1975.

(U) Monitorship of the Maintenance Program for DOD Family Generators: (1) 15-30kw DOD contract - the contractor validation/ Government verification of the 15-30kw DOD technical manuals was conducted in August 1973. Comprehensive commentary, resulting from the review of the second draft of DOD technical manuals, was consolidated at an all Service meeting in April 1974; (2) 60kw contract - the initial changes to the printed technical manuals were distributed in May 1974; (3) the 100-200kw DOD technical manuals for both sets were printed. Two copies were being packed with each production end item.

(U) Large Generator Program. An Army Overhaul Program of large (500kw and larger) generators was initiated; production of overhauled sets enabled Office, Chief of Engineers to satisfy emergency requirements for power by placing sets on extended "loan". Navy and Army have programmed funds for procurement of 500 and 750kw DED and 750kw GTED sets for FY 1975 through 1978. This procurement should enable PM-MEP to be responsive to supply requirements in the 500-750kw range. Continued progress was made in FY 1974 in minimizing the expenditure of new procurement dollars. Close surveillance was maintained on all requests for deviation, both formal and informal. Redistribution of existing Service assets was arranged to satisfy over 60 informal requests for deviation. The requiring Services' funds were then used to "buy back" quantities of DOD standard generators. Thirteen formal requests for deviation were processed; eight were either disapproved or excess substitutes offered. The remaining five requests were approved after detailed investigation. The basis for approval in each of these cases was the fact that no Standard Family item had the technical characteristics to support the stated requirement. Through these actions, Government purchases were avoided and proliferation of new makes and models was curtailed.

(U) Joint Operating Procedures (JOP). JOP on Asset Reporting was published in April 1973. The Services were submitting asset data in their standard format; however, the data needed to be manually stratified before it was a meaningful management tool. The Depot Maintenance JOP was not printed due to objections of Deputy Chief of Staff, Logistics (DCSLOG). The Joint Logistics Commanders endorsed the concept of a single Service performing overhaul of common end items, but DCSLOG objected to the printing of the joint regulation definitizing the consolidated overhaul of generators. Recommendation was being made to the Army Logistics Commander to include generator sets in the FY 1976 Budget for a single Service to depot overhaul sets for all Services. This was in consonance with Joint AMC/NMC/ AFLC/AFSC Commanders Conference item "Depot Maintenance Interservicing."

Configuration Management

(U) Configuration Management/Product Assurance. Staff Officers of PM-MEP, through the delegated authority of the Project Manager, were chairing four configuration control boards for design control of 34 models of generator sets. During FY 1974, 93 change proposals, deviations and waivers were evaluated.

ECP's Processed:

Approved	Disapproved	Cost Increase
43	14	$137,129

VECP & Cost Reduction Proposals:

Approved	Disapproved	Cost Savings
1	4	To be determined

Waiver & Deviations:

Approved	Disapproved	Cost Savings
23	8	$ 2,250

(U) Drawing packages were approved by the Project after completing 100 percent Physical Configuration Audits for the following DOD generator sets:

60 kw diesel engine driven 50/60 hz & 400 hz
100 kw diesel engine driven 50/60 hz

(U) Production release was granted for the following sets:

15 kw diesel engine driven 50/60 hz and 400 hz
30 kw diesel engine driven 50/60 hz and 400 hz
100 kw diesel engine driven 400 hz
200 kw diesel engine driven 50/60 hz

US Army Communications Systems Agency/DCS Army

(U) FY 1974 was a year of transition from the urgency of the Vietnam War to the return to normal operations. Emphasis switched from meeting requirements in the shortest possible time to reviewing policies and procedures to determine whether effective controls were in force, whether resources were properly used, and whether cost savings could be effected through better management. A review of the management process was evident throughout the entire fiscal year.

(U) The following accomplishments will highlight progress in the various areas of project management.

Comptroller/Funding Programs

(U) The Other Procurement Army (OPA) Program remained the major resource of the USACSA Project Manager. In FY 1974, the total Army and Customer Program was $78 million. The self-imposed obligation goal was set at 75 percent; but actual performance reached 70 percent. This goal, however, was satisfactory because the award of the Spanish Territorial Command Network contract fell short of the estimate by $20 million. Actual performance was acceptable to DA and ASA (I&L). The OPA Program for the next five fiscal years indicated there would be updates in existing programs such as AUTODIN, AUTOSEVOCOM, and WWTCIP; expansion of projects in the command and control area; new projects such as Integrated Data Network and Secure Voice, Phase II; and acquisition and installation of communications systems for foreign military governments like Spain and Indonesia.

(U) The Cost Reduction Program available for FY 1974 was $1,300,000. This goal was exceeded by $5,000. These actions were in the major item and value engineering areas. This fiscal year's performance was the sixth consecutive year in which the established goal was exceeded.

(U) Near the end of FY 1974, a CDC remote terminal was installed at USACSA, which allowed entry into the USACC CDC computer at Fort Huachuca. Its capabilities were used to prepare many of the management information system outputs. The possibility of preparing PERT charts for strategic communications projects and to monitor the Program Monitor System, data processed and stored in the CDC computer at Fort Huachuca, was being assessed. Other possible uses for the terminal which could help the agency improve its management capability was also being researched.

(U) During FY 1974, the PM's Cost Analysis Office became more involved in the area of economic analysis. Two major analyses were initiated. First, the CAMEA Program (Centralized Automated Message Entry and Addressal System) was partially concerned with the development of an Optical Character Reader for electronic scanning of DD-173 message forms. A major economic analysis was developed to determine whether a single-font or multi-font OCR would be more cost effective. Using a specific set of ground rules and definition of both single and multi-font, a sample analysis of typewriters was conducted at Fort Monmouth which showed a multi-font machine would be economically attractive. However, almost immediately upon completion of the study, consultation with industry showed that the definition of multi-font would have to be changed to meet the prescribed milestones. A

recheck of the data showed that, under the revised definition of multi-font, a single-font machine would be more cost effective. This result was certified by further data collection efforts at Aberdeen Proving Ground, Maryland; Fort McPherson, Georgia, and Picatinny Arsenal, New Jersey. The study results were approved by the Commander, US Army Communications Systems Agency in FY 1974, and a recommendation was made to DCA to procure a single-font Optical Character Reader.

(U) The second major economic analysis concerned the logistics support policy employed for 181 UNIVAC punched card machines procured for Air Defense and DSTE sites in March of 1973. At the time the study was initiated, the on-line equipment was supported from the AMSF and depot by cannibalizing float equipments and shipping parts (and personnel) wherever necessary. The economic analysis evaluated the alternatives of continuing with the above stated maintenance policy, purchasing full-scale provisioning documentation and repair parts, or obtaining contract maintenance under a GSA schedule maintenance contract. It was found that contractor maintenance would be most economical. In fact, training alone of government personnel would be more expensive than the entire contractor maintenance effort. Completion of the study effort was expected in early FY 1975.

(U) Other areas of cost analysis activity included: (1) analysis of monthly contractor cost performance reports. This was a data item especially designed to call early government attention to serious schedule slippages or cost overruns. Reports of this nature were called for at USACSA on all cost contracts in excess of $1 million. USACSA was receiving Cost Performance Reports on its FKV and AUTODIN Enhancement Programs; (2) participation in the development of cost assessments for ROC's (Required Operational Capabilities). Among the cost assessments completed during the past fiscal year were those for micro-miniaturized test equipment, access area switching integration, bandwidth compression, station timing synchronization subsystem, high speed digital facsimile, advanced speech compression, transitional digital multiplex, transportable heavy tropospheric scatter radio set, and Secure Voice Command and Control System.

(U) Significant achievements in the Internal Review area were made during FY 1974. A review of the functional activities conducted within the DPM's was made to determine whether duplication of functions existed. A manpower study of the Systems Introduction Division, Logistics was conducted to determine manpower needs. Other major reviews included DPM/ADPM Concept Study, determination of the effectiveness of the Procurement Requirements Review Committee, and an evaluation of the economic analysis procedures in USACSA. In addition to the above, a review was conducted of the Missing Support, Host Tenant, and the Personnel Servicing Agreements. The PM's

Internal Review Office continued to represent USACSA as the coordinating, liaison, and reporting office for the Inspector General and the US Army Audit Agency.

Logistics

(U) USACSA Type Classification/Reclassification Program. This program initiated in September 1969, continued to achieve the DA-directed goal that equipments be type classified in accordance with the provisions of AR 71-6, "Type Classification/Reclassification of Army Materiel". During FY 1974, the initial formal Type Classification/Reclassification In-Process Reviews (IPR) were scheduled, and IPR agenda packages were prepared. Written concurrences from the IPR members achieved 32 type classification actions, and 14 reclassification actions. In addition, expedited procedures for type classification of equipments fielded prior to January 1972 achieved the type classification for almost 100 items. Type classification actions for 522 equipments and reclassification of 30 equipments were recorded and broadcast by the USAMC Materiel Status Office. The schedule for type classification indicated over 150 systems/equipments which would require preparation of agenda packages and scheduling of formal In-Process Reviews.

(U) Class IV Projects. These projects are those items of communications-electronics systems or equipments which are fabricated, procured, constructed, assembled, tested, and shipped by USAMC depots. The Logistics Directorate was monitoring 222 projects with approximately 14,619 line items. The ratio of worldwide project support was 50 percent each, Pacific and Europe (Canal Zone), respectively. During FY 1974 shipments of 89 projects comprising a total of 9,723 items were shipped. Assembly depots continued to provide bi-weekly reports of project status which were analyzed by the directorate to insure timely delivery of requirements to meet scheduled site delivery dates. This was being expanded to include CONUS sites, as well as overseas sites.

(U) Modification Work Order Management. US Army Communications Systems Agency, as a project manager, was responsible for overall management guidance and control of equipment modifications for major items of equipment that are peculiar to strategic communications systems. In addition, the agency provided interface and coordination with configuration management, the user, and other MILDEP's; i.e., USACC, USAF, and USN, where applicable or required. Upon review by USACSA Configuration Control Board and approval by the respective Deputy Project Manager, Logistics Directorate tasked the Electronics Command (AMC) to prepare all supporting documentation. Supporting documentation included the printed modification work order, changes to maintenance manuals and repair parts and special tools lists.

The final agency action provided management overview and approval of the draft and final modification work order manuscript. Under the FY 1974 modification work order program, three have been completed, five are in various stages of processing, and five were being definitized for contract award.

(U) US Army Communications Systems Agency/US Army Communications Command Product Improvement Program. The continuing Product Improvement Program was originally initiated at the request of the US Army Materiel Command. The program encompassed all defense communications equipment for which Army was the executive agent, irrespective of the using MILDEP. Three product improvements, under the DSTE Project Upgrade effort, were approved by AMC and the Department of the Army in FY 1974. Funds for the improvements will be released by AMC at the outset of FY 1975. The approved proposals will correct inherent deficiencies found in the High Speed Paper Tape Punch, RO-314/G; Low Speed Paper Tape Punch, RO-315/G; and Reader Punch Tape, RP-154 (p)/G.

(U) Government Owned UNIVAC Punch Card Machines. This agency reacted to a requirement from US Army Communications Command to procure a punch card machine (PCM) capability for use within the AUTODIN Digital Subscriber Terminal Equipment (DSTE) environment. The requirement included minimal logistic support coverage. In view of the decision to procure hardware without the normal logistic support, this agency then developed the methodology for supporting the PCM's without reliance upon the commodity command. This included the promulgation of a maintenance/supply plan which presents a viable method for PCM users to obtain support. The techniques employed were user reports of PCM outages directly to a trouble desk and the maintenance of a nucleus of trained technicians at an Army depot (Tobyhanna) so as to provide to the user an emergency type reaction to his needs for logistic support. Additionally, our support posture incorporates use of adequate commercial literature, contractor prepared parts lists and operational float end items.

(U) Test, Measurement and Diagnostic Equipment Management Improvement Program (TMDE-MIP). Significant achievements have resulted from USACSA's participation in the USACC TMDE MIP. This agency has coordinated and cooperated with USACC and USAECOM in implementing AR 750-43 and USACC directives pertaining to the TMDE MIP. The agency's Logistics Directorate indoctrinated key USACSA personnel in the disciplines which must be applied in the acquisition of test equipment associated with USACSA projects. Questions surrounding USAECOM's acceptance of newly required TMDE taskings by USACSA were resolved. Specific management techniques employed in order to implement the TMDE MIP included:

(1) A TMDE action officer was designated as agency point-of-contact on matters pertinent to the USACC TMDE MIP; (2) Numerous meetings, conferences, and briefings were conducted to enhance the understanding of TMDE MIP objectives, and to discuss their impact upon specific projects and existing resources and capabilities; (3) The USACSA command group, deputy project managers, and functional directorates and offices were thoroughly briefed on current regulatory requirements affecting TMDE acquisition; (4) USACSA received and reviewed drafts of various USACC directives and plans dealing with TMDE. Comments on these draft documents were prepared and submitted; and (5) USACSA Procurement and Production Directorate initiated a D&F action to make the PIL items "commercial standards."

(U) Living with the new TMDE disciplines which have been imposed will continue to present a number of unique problems. Several valuable lessons were learned: (1) Much continued effort and careful managerial attention would need to be devoted to TMDE matters during the coming fiscal year. The concepts, objectives, policies, and basic procedures for controlling and effecting the acquisition of TMDE have been established in essence, and are largely accepted. Much remained to be done to refine and routinize these TMDE matters. Resources and capabilities to apply the newly imposed disciplines need yet to be developed to accomplish the additional workload effectively and efficiently. Posture for the support of present PIL items must be improved by identifying and filling voids in software such as technical manuals and calibration procedures, and in hardware such as repair parts and special tools; (2) Prevention or reduction of TMDE proliferation by limiting acquisition to items in the PIL or DA TMDE Register contravenes directly the free-competition concept stipulated in government procurement law and regulations. Evaluation of legality by competent authority was underway and expected to resolve or answer the questions or issues causing controversy. Projects impacted by TMDE constraints were as follows:

PROJECT	LINE ITEMS OF TMDE	PIL ITEMS	ESTIMATED LEAD TIME	IOC DATE
DCS Microwave Radio	60	43	12 mo	Aug 1974
CDNARS	35	12	12 mo	Aug 1974
TG-TP Modems (DCL)	9	0	9 mo	Sep 1974
TANGO	25	25	12 mo	Aug 1974
EWCS-70	20	16	12 mo	May 1974
WWTCIP FY 1974	13 Eur	13	12 mo	Sep 1974
	49 Pac	49	12 mo	CY- 1975
	13 CONUS	13	12 mo	CY- 1975
MEECN Phase II (AN/FRC-117)	9	6	Unknown	Dec 1974

Procurement and Production

(U) One of USACSA's continuing goals was to improve the quality of its procurement requirements packages. During FY 1974, the drive was maintained.

(U) Publication of a handbook entitled "Cookbook" was completed in the second quarter of FY 1974. The "Cookbook," a handy and easy to read document, represents consolidation of procurement reference material and approved internal policies and procedures of USACSA. Its purpose is to furnish guidance to action officers assigned the responsibilities of preparing procurement requirements packages. The "Cookbook" was given wide distribution throughout USACSA. It is planned to amend the publication periodically, to incorporate revisions made in DOD procurement regulations and in USACSA policies and procedures.

(U) Strategic communications involve maximum use of contractor-developed, off-the-shelf equipment. Our major procurements are predominately competitive; however, support and resupply are largely bought by sole source procurements. All sole source justifications are rigorously reviewed before signature by the Project Manager. During FY 1974, 96 sole source justifications, totaling approximately $15 million, were reviewed.

(U) When the procurement requirements package has been completely assembled and coordinated at USACSA, it is subjected to final review by the Procurement Requirements Review Committee (PRRC). This committee is composed of expert personnel in management, logistics, value engineering, configuration management, product assurance, data management, procurement and production. The committee completed 15 formal reviews during FY 1974, aggregating about $52 million. Also, procurement analysts conducted an additional 32 reviews, totaling approximately $6 million, which did not require formal committee action.

(U) The US Army Communications Command has the authority to administer the overseas portion of its contracts. In executing this authority, newly assigned USACC Administrative Contracting Officers (ACO's) and supporting procurement personnel are required to receive extensive briefings and orientations at Fort Huachuca and Fort Monmouth prior to departing for overseas assignments. During FY 1974, USACSA contributed approximately 200 man-hours to this effort.

(U) In addition to the contractual efforts, significant progress was also made in the area of post-award contract management activities. Post-award conferences were attended and contractor production activities were monitored. These included the following: the DCS Microwave Radio; Telegraph Terminals AN/FCC-19, and 25; Project TANGO; and AUTODIN Phase II Upgrade.

Research and Development

(U) During FY 1974, the following accomplishments were made in the research and development area:

(U) Megabit Digital Troposcatter Subsystem (MDTS). The MDTS modulates digital signals at rates up to 12.6 megabits per second for transmission over existing DCS troposcatter transmission links. A request for proposal was released in March 1973. Contract award for the development, fabrication, test and evaluation of eight engineering development models was made to GTE Sylvania on 9 November 1973 for $1.9 million. The contract was modified on 30 June 1974 to incorporate a digital orderwire, segregation of rate-sensitive circuitry on separate plug-in cards, and inclusion of transmitter timing in the MDTS modem. These changes were requested by the Defense Communications Agency.

(U) Test Equipment Analysis. A contract was awarded in October 1972 to analyze the USACC test equipment requirements for 1975 and later. The analysis provided the basis for consolidating, standardizing and updating the test measurement and diagnostic equipment at USACC sites. The interim report, delivered in June 1973, indicated an excess in actual test equipment on hand at the sites studied versus authorized quantities and the quantities required to perform the test and maintenance function. USACC ACSLOG was advised of these preliminary findings and was utilizing the analysis data in the preferred item list program for USACC test equipment. The final report of the test equipment analysis was received in October 1973 and provided further support to the standardization program.

(U) Centralized Automatic Message Entry and Addressal (CAMEA). This task called for the development of a low cost optical reader equipment (OCRE) and a centralized automatic format conversion system (Switched Network Automatic Routing System-SNARS). The OCRE translates the hard copy information on the DD-173 into electrical signals (ASCII) and transmits them via existing AUTODIN access circuitry to the SNARS. The SNARS translates the DD-173 formatted information into JANAP-128 for tri-service traffic (R traffic) and into SOI-100 for intelligence traffic (Y traffic). This included conversion of the DD-173 plain lauguage address into routing indicators. By DA direction, the SNARS effort was being held in abeyance pending further guidance. The OCRE effort was split into an immediate procurement of OCR's capable to read OCR-A and -B fonts and R&D effort to develop multifont readers. Both the immediate procurement and the R&D OCR's could be expanded to perform format conversion into JANAP-128, including limited automatic plain language address to routing indicator translation.

(U) Transportable Automated Electromagnetic Compatibility Measurement System. The EMC system is an automated computer-controlled spectrum analyzer that is capable of sensing, measuring, recording and analyzing electromagnetic emissions over a range of 20 hz to 40 Ghz. The system is contained in two four-wheel-drive vans and can be transported by C-130 aircraft or lifted by helicopter, as necessary. Delivery of four systems for worldwide deployment and operation by USACEEIA was expected July/August 1975.

(U) PCM Multiplexer - TD-968 ( )/U. The TD-968 converts 3, 6, 12, or 24 voice-frequency channels into a time division multiplexed pulse code modulated signal for transmission over digital communications links. One advanced development model was accepted by the Government in December 1971. Eight engineering development models (EDM) were delivered to the Government in June 1973. Of these, two were shipped to USAECOM COMM/ADP Laboratory for engineering testing; two to USASATCOMA for testing in the Satellite System Engineering Network; and four to Rome Air Development Center (RADC) for terrestrial link testing. Two additional EDM's, which incorporate 56 and 64 KBS data channels were tested in July 1973 by USAECOM and in October 1973 by RADC.

(U) Required Operational Capabilities (ROC's). With the advent of the new materiel acquisition guidelines, as promulgated in the Department of Army Letter of Instruction, 23 August 1972, this agency, representing the materiel developer, was preparing Sections VI and VII (Technical and Cost Assessment) of ROC's initiated by USACC. Support for the preparation of the technical assessments of Section VI is usually obtained from technically cognizant USAECOM Laboratories. The cost assessments of Section VII are prepared with the USACSA Cost Analysis Office and validated by the USAECOM Cost Estimating Control Data Center. Sections VI and VII have been prepared during FY 1974 on the following draft ROC's: High Speed Facsimile; Transportable Heavy Troposcatter Terminal; Automatic Antenna Beam Steering System for Troposcatter Radio Communications; Bandwidth Compression; Micro Miniaturized Test Equipment; Local Digital Distribution System; Access Area Switching Integration; Station Timing/Synchronization Subsystem; and Transitional Digital Multiplex.

Configuration Management

(U) The following accomplishments highlighted the activities of the Configuration Management Office during FY 1974. A configuration Management Plan (CMP) was prepared and approved for the Consolidation of Telecommunications Centers (CTCC) in the Pentagon; the CMP for TCN-Spain was revised and updated. A Configuration Control Board(CCB) has been established for: Consolidation of Telecommunications Centers in the Pentagon (CTCC); Spanish Army Telecommunications

Network (TCN-Spain); Defense Communications Systems Contingency Station (DCSCS); Defense Communications Systems Microwave Radio; Standard Automated Multimedia Exchange (AMME) Level Automated Telecommunications Center (ATCC); Automatic Secure Voice Communications (AUTOSEVOCOM); Automatic Digital Network (AUTODIN); USA-USSR Defense Communications Link (USA-USSR DCL); and US Army Communications Systems Agency Chartered CCB.

(U) In addition to other things, the Configuration Management Office accomplished the following: (1) Conducted configuration management physical configuration audits (PCA's) and configuration item verification reviews (CIVR's) in conjunction with the DCS Microwave Radio and the results thereof were received with great interest by the MILDEP's. These PCA's and CIVR's revealed many deficiencies between the equipment and baseline documentation. The deficiencies were subsequently corrected satisfactorily; and (2) Received thirteen engineering change proposals (ECP's) during FY 1974 of which four ECP's were definitized at a cost of $439,390; one ($70K) was rejected; two definitized at no change in cost; one ECP involved a reduction in cost (amount to be determined by 2d quarter FY 1975), and five are to be definitized by the 2d quarter of FY 1975 at an estimated cost of $1,391,086. Two ECP's involving the USA-USSR DCL Molniya Earth Station, estimated amount of $45,291, were expected to be definitized by the end of the 1st quarter of FY 1975.

Value Engineering

(U) The PM Configuration Management Office also administers the agency's Value Engineering (VE) Program. Historically, VE has been part of the Army's cost reduction program because successful application of the technique saves money. VE does not compromise required quality or function and is concerned mainly with life-cycle costs. The CSA VE program consists of two parts - an internal program for agency personnel and a contractual program for contractors.

(U) Internal Value Engineering Program. Action officers and support personnel were continually encouraged to apply the concepts of value engineering on both hardware and software items. During FY 1974 individual and group effort resulted in the submission and subsequent approval of value engineering proposals (VEP's) for cost savings of $5.6 million of which $3.4 million was hardcore savings. Five individuals were recommended to receive monetary awards in recognition for their participation in the VE program.

(U) Contractual Value Engineering Program. Twenty-three of the contracts that were awarded in FY 1974 had individual cost estimates of $100,000 or more. The value engineering incentive clause

was contained in seventeen of the twenty-three contracts as required by ASPR 1-1701. The remainder offered no potential for VE cost reductions and VE provisions were excluded. Only one value engineering change proposal (VECP) was received during FY 1974. This VECP resulted in a net cost savings of $14,587 for the government. Action was implemented to encourage contractors to participate fully in our VE effort in the submission of value engineering change proposals to meet our FY 1975 goals.

Acquisition of Strategic Communications Systems-Europe

(U) During FY 1974, Deputy Project Managers (DPM's) continued to acquire and install new communications systems worldwide and to expand and modify existing systems. The following accomplishments occurred in FY 1974.

(U) Project Scope Picture Phase III. Project Scope Picture is a three-phase program which would provide American Forces Television (AFTV) coverage to most US military locations in the Federal Republic of Germany. The US Air Force was originally tasked with total implementation responsibility for this project. On 9 December 1971, by joint agreement, the Army was assigned the responsibility of implementing Phase III. Phase III was to interface with and extend the Phase I and II portions to approximately 150 additional troop billets, hospitals and housing areas. The system includes expansion of the microwave transmission system and utilization of low power UHF TV broadcast transmitters and associated master antenna distribution subsystem equipment. Cable TV distribution subsystems would be used in locations where UHF transmitters were not considered technically feasible or desirable to the FRG. Funding for Phase III was released in February 1973. USACSA submitted a procurement requirements package to the US Army Procurement Agency - Europe on 9 February 1973 calling for an engineer, furnish and install (EF&I) contract to be awarded under one competitive, negotiated cost-plus-incentive contract. The contract, awarded on 6 September 1973 to a joint venture of Federal Electric GmbH/Siemens AG for $6,514,960 called for effort over a period of twenty months with completion about April 1975. Microwave radios, antennas, and UHF transmitting equipment are being acquired through the use of existing requirements contracts and provided as government-furnished equipment to the EF&I contractor. As a result of a request by CINCUSAREUR and a program review by DA, management of the program was transferred on 1 March 1974 to USACC-EUR. On 11 April 1974, USACSA distributed a project management transition final status report to those activities concerned, summarizing project status, including actions immediately subsequent to the date during the period of transition. USACSA will continue to provide logistical support to the program.

(U) Digital Transmission Evaluation Project (DTEP). The DTEP was established to evaluate selected commercially developed digital communication equipments and government owned encryption equipment and serves to develop empirical data to effectively guide procurement and standardization of future digital equipments for use in the Defense Communications System (DCS). The testing and evaluation of the digital equipment was being conducted by the USA Electronic Proving Grounds, Fort Huachuca, Arizona, under the project management of USACSA and engineering direction of USACEEIA. The objectives of DTEP were: to develop an engineering data base (information) on digital equipment, needed by DCA and other MILDEP's; to guide modernization of the DCS into an all-digital system; to determine interface parameters between major digital equipments in a system; and to determine transfer parameters and propagation path influence on these parameters in a digital system. DTEP was also to utilize data base information for development of: (1) digital transmission performance standards; (2) digital system technical procurement specifications and test methodology; and (3) digital system engineering design criteria.

(U) Phase I of this project, scheduled for completion by 15 July 1975, was to evaluate digital equipments in back-to-back and link (over-the-air) configurations. Equipments for evaluation under DTEP were obtained from two sole source procurements processed with the Raytheon (RDS-80) and the Collins Radio Companies, and reallocated from DTAP (Digital Transmission Application Projects), the predecessor to DTEP. Contracts were awarded to Raytheon and Collins Radio on 15 January 1974 and 15 February 1974, respectively. The RDS-80 system was installed and tested by the contractor during late March 1974. Government acceptance of the RDS-80 was on 14 April 1974 and back-to-back testing of the system commenced 16 April 1974. The Collins MW-518 (QPSK) radios were installed, tested by the contractor and turned over for operational T&E to the DTEP test facility during 10-21 June 1974.

(U) USA-USSR Satellite Direct Communications Link (DCL). As a result of negotiations at the diplomatic level with the USSR, an agreement was signed on 30 September 1971 in which it was agreed to upgrade the existing Direct Communications Link between Washington and Moscow (MOLINK) from the present radio and cable system to a more modern satellite communications system. The DCL will provide direct teletype communications from subscriber terminals in the vicinity of Washington, D. C. to subscriber terminals in the vicinity of Moscow. This is to be accomplished through two independent satellite systems and their respective terrestrial interconnect facilities. The two satellite systems to be utilized are the Russian Molniya II and the USA commercial COMSAT INTELSAT IV. A definitive division of implementation responsibility exists with each country responsible for the communications from both satellites to the subscribers in their respective countries.

(U) The major accomplishments on the USA-USSR DCL were: (1) USASATCOMA, tasked with engineering, procuring and installing a Molniya II Earth Station at Fort Detrick, Maryland, awarded a contract with Radiation, Inc., on 19 October 1972. The Earth Station building, communications-electronics and dual 60 feet diameter parabolic antennas were accepted by the Government on 23 April 1974; (2) On 26 October 1972, a contract was awarded to Siemens A. G., Munich, Germany, for 64 each one-time paper tape signal mixers and 64 each electric remote control switches. Deliveries were completed in December 1973. The USSR was furnished 32 of each unit on a cost reimbursable basis through the Department of State. This equipment would be used for privacy during official message traffic; (3) USACEEIA was tasked with the engineering and installation of the CONUS terrestrial interconnect facilities, technical control facilities and subscriber terminals. The major items Bill of Material (BOM) was furnished USACSA on 16 March 1973 for procurement; (4) Most of the major items of the BOM, such as speech plus data modems, encoders, teletypewriters, test equipment, regenerative repeaters, cable; etc., were procured by USACSA. The remainder of this BOM was tasked to Lexington Bluegrass Army Depot (LBAD) for procurement as part of Quick Reaction Project 73-20; (5) The Quick Reaction Project (QRP) 73-20 was approved by USAMC on 19 April 1973. LBAD was tasked to: prepare an installation BOM, to procure the installation items, and to fabricate and assemble the equipments into relay racks for each of the seven DCL sites.

(U) The LBAD constructed relay racks were delivered to each site during the week of 2 June 1974. Installation was completed on 18 June, and site checkout was completed on 28 June 1974. Site-to-site testing within CONUS was from 1 to 31 July 1974. The USA IOC date will be 1 August 1974. The USA milestone date of 1 October 1974 for FOC is no longer firm. The USSR notified the US State Department in June 1974 that they would be available for operational capability testing in late fall 1974. Since a firm date has not been specified and although the US has IOC status, testing could begin anytime from September to as late as December 1974. The completion date of testing and the FOC date will be dependent upon the mutual agreement of the US and USSR.

(U) Frankfurt-Koenigstuhl-Vaihingen Transmission Upgrade Project (Phase 1). The FKV, Phase I, covers six sites and five links, as follows: Vaihingen-Stuttgart - Upgrade; Stuttgart-Stocksberg - New; Stocksberg-Koenigstuhl - New; Koenigstuhl-Schwetzingen - New; and Schwetzingen-Heidelberg - New. The links were to employ Pulse Code Modulation/Time Division Multiplex (PCM/TDM) bulk encryption techniques, the first such operational use of PCM-TDM in the DCS, and was intended to serve as a basis for future planning of PCM/TDM expansion within the DCS. In addition, FKV would implement seven wideband secure voice circuits from Vaihingen to Heldelberg, Landstuhl, Ramstein,

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and London. The links are to employ the new DCS Microwave Radio, modified for digital operation, forecast for delivery by the end of 1974.

(U) A contract for the engineering and installation of the system was awarded to the Raytheon Europe Electronics Company on 26 February 1974. Initial Operating Capability (IOC) was forecast for 13 March 1975 (Stuttgart-Stocksberg-Koenigstuhl), 12 April 1975 (Koenigstuhl-Schwetzingen-Heidelberg) and 12 May 1975 (Vaihingen-Stuttgart). An FKV system training facility was planned for the USACES, Fort Monmouth, New Jersey, in order to provide trained personnel to operate and maintain the system when it becomes operational

(U) Tunnel Diode Amplifier Assemblies (TDA's) (AM-4410A/GRC). Radio Frequency AM-4410A/GRC is a tunnel diode amplifier drawer assembly used to replace parametric amplifier drawer assemblies in radio set AN/FRC-113 in the European Wideband Communications System. The objective was to provide amplifier assemblies that were more reliable and easier to maintain. Twelve tunnel diode amplifier assemblies were procured and delivered for installation at selected sites and in marginal links within Europe in April and May 1974. TDA's were being installed by O&M command personnel.

Consolidated Telecommunications Center (CTCC) Pentagon, Washington, DC

(U) The CTCC would establish a single automated message processing system with the capability of providing record message communications support for the MILSERVICE tenants in the Pentagon and for other designated activities located in the Washington Metropolitan area. The central computer complex for this system would be located in the US Army Pentagon Telecommunications Center. The system would interface with a wide variety of digital subscriber terminal equipment with speeds ranging from 75 BPS to 9600 BPS. The system would be capable of interconnecting subscriber terminals of different speeds of transmission due to its store-and-forward method of operation. Incoming traffic from the AUTODIN is automatically distributed to subscribers. The system provides for message accountability and history/journal files.

(U) Traffic originated by a system subscriber would require only the plain language address of its destination. The system would automatically add routing indicators for transmission over AUTODIN. Where the system did not recognize an address or there was an error in the header format, an operator would be signalled. He could

cause the message to be displayed on a cathode ray tube type of equipment. The unit is called a Visual Display Unit and has a keyboard and control circuitry by which the operator can correct errors as required. The CTCC would provide faster and more reliable service to its users. It would also provide for more efficient utilization of AUTODIN access circuits. Planning called for interim CTCC completion in FY 1976.

Automated Message Processing System AMPS.

(U) AMPS provides automated telecommunications center services for the Secretary of Defense, Joint Chiefs of Staff (JCS), Defense Intelligence Agency (DIA), and other high level subscribers, including the State Department and White House. Although operational since 1970, AMPS was being upgraded to incorporate state-of-the-art improvements. In August 1972, procurement packages were forwarded to USAECOM for increased high speed circuit capacity, an automated data retrieval system, improved visual displays, and updated programming software. DOD placed a hold on these procurements pending completion of a study to determine feasibility of consolidated communications facilities in the Washington DC area.

Military Assistance Program (MAP)

(U) Indonesian Communications Systems (INDOCOM). Indonesian Communications System is a five-year (FY-1971/FY-1975) MAP/AID program to provide communications for the Indonesian Armed Forces. The numerous subsystems that comprise the total system would utilize microwave UHF, VHF, and HF equipments. The system was being installed under the modular concept; i.e., it consisted of networks, each of which was in itself an operating communications network available for use until the total system was completed. A total of eleven (11) Army, Navy, Air Force, and police communications networks (Nets) were involved in this project. The planning for each Net was accomplished by the US Defense Logistics Group (USDLG) in Indonesia. Installation of the equipment was being accomplished by Indonesian personnel. Since the inception of the project (in 1971), the Hankam, Kowilan, and Mabad-Kodam and Kodau nets were installed and working; equipment was shipped for the Koops command and Mabak-Komdak nets; additional equipment was being staged for the DAERAL-SIONAL net. Approval was received for the procurement of parts for the Kodam-Korem-Kodem and the Bandung-Surabaya nets. Approval for procurement was awaited for the Kolog and Koops aero nets. A program planning conference was to be held in July 1974 to discuss program status and the joint memorandum of understanding between the two countries, with technical assistance being provided by USACC personnel.

(U) Foresight Sierra Communications System Expansion Project (FSCS) (Philippines). The Foresight Sierra Expansion is a MAP funded project to add two tropospheric links to the existing system (which included one tropo link and two microwave links). The original FSCS was completed in 1971 by a contract with Philco-Ford (P-F). This expansion is being accomplished by in-house engineering and by joint USA-AFP (Armed Forces Philippines) military personnel using surplus Southeast Asia (SEA) assets and funding. The expansion system included two 60-channel microwave links; one 60-channel tropo link; one passive repeater; two tropo links, training facility (Fort Bonifacio); two position toll telephone switchboards and a 200-line telephone dial exchange. The total Foresight Sierra project involved work by the contractor (Philco), US and AFP personnel. In association with the FSCS, two dial central offices and one two-position toll test-board were being procured from Stromberg-Carlson and would be further installed in the system by AFP personnel. The project was being monitored by a six-man field office located near Manila, and was scheduled for completion in November 1974.

(U) Military Integrated Communications System (MICS-Taiwan). The MICS-Taiwan (Military Integration Communications System) is a MAP-funded project to upgrade the existing Republic of China (ROC) backbone microwave system. The original MICS system was completed by Collins Radio Company in 1965. This upgrading consists of the following: addition of 90 voice and 4 TTY channels to 38 existing microwave links; addition of a video radar channel to existing links; relocation of one complete radio terminal to a new location; reconfigure and add equipment to 24 radio terminals; and addition of one new radar station and reconfigure one other radar station. In December 1973, a sole source contract was awarded to Collins Radio Company. Estimated project completion date was April 1975.

(U) Territorial Command Network (TCN) Spain. The territorial Command Network (TCN) - Spain is a joint-funded MAP program to provide the Spanish Army and Navy with a communications system to interconnect the Spanish High General Staff in Madrid with 15 Army and Navy Captain General Headquarters and bases located throughout Spain. On April 15, 1974, a fixed price incentive contract was awarded to Federal Electric Company (FEC), a division of International Telephone and Telegraph Company (ITT), to engineer, furnish, and install this system. The system was composed of the following: forty-two radio links and one cable link between 42 military locations; three telephone tandem switching offices (200 line); 19 telephone PABX's (100 to 400 line); 15 cordless switchboards (25 line); two teletype message switching centers; 32 new technical control facilities; and 52 new diesel generators. Post-award conferences were held in the US and in Spain to discuss contractual matters. The first draft deliverables (software) from the contractor (FEC), were received and were being reviewed

by US personnel and the Spanish Army Working Group (SAWG), in conjunction with the Spanish Field Office. The overall TCN contractual efforts were being monitored by the Spanish Field Office whose staffing consisted of 24 military and civilian personnel.

Acquisition of Strategic Communications Systems - Pacific

(U) Dial Central Office Upgrade - Okinawa Upgrade (MITS). The Dial Central Office Upgrade - Okinawa Upgrade (MITS) project was to provide upgraded service to 14 DCO's and associated telephone trunking in Okinawa. The Military Integrated Telephone System (MITS) encompasses six Army sites, six Marine sites, and two Air Force sites. The implementation and installation plan was distributed in January 1973. Cutover was completed in March 1974, at which time, the O&M commander assumed responsibility.

(U) Taiwan Laterals Project (TLP). The Taiwan Laterals Project is an upgrade of lateral sites on Taiwan which interface with the IJCS-PAC backbone system. When the upgrade was almost completed, the US Government agreed to return to the host government half of the frequencies previously authorized for the project. This required replacing frequency diversity equipment with non-diversity hot-standby equipment. Engineering was completed. Installation began in July 1973 with cutover of the last link in March 1974. O&M commander assumed responsibility incrementally between November 1973 and March 1974.

(U) Project TANGO. Project TANGO is a command and control facility to provide an alternate headquarters for the United States Forces Korea (USFK). Authority to implement the C-E requirements was received in June 1972; the following major C-E subsystems have been approved: Microwave and Cable, Dial Central Office (DCO), Internal Wiring System, Telephone Terminal Equipment, Communications Center, Technical Control, Secure Voice, Audio/Visual/Announcing System (AV-PA), Emergency Action Console (EAC), and Maintenance Facility.

(U) As of 30 April 1974, the beneficial occupancy dates (BOD) for all Project TANGO buildings were achieved. Some miscellaneous work; i.e.; lights, ducts, air conditioning (A/C), power telephone key system housing remain, with completion forecast for 15 July 1974. Procurement was initiated for all systems (BOM's for equipment and IML) primarily through the AMC depots, with the exception of: EAC, AV-PA, External Cable (GFP), and DCO (GFP) by Eighth US Army.

(U) Korea Wideband Network (KWN). The Korea Wideband Network (KWN) consists of three major tasks: (1) Minimal upgrade of the Republic of Korea Air Force (ROKAF) system and its interconnect/interface to the US-operated Defense Communications Systems (DCS)

backbone; (2) Minimal upgrade of the Republic of Korea Army (ROKA) system and its interconnect/interface to the US-operated Defense Communications Systems (DCS) backbone; (3) Upgrade of the US-operated DCS backbone system which extends from Camp Red Cloud in the north to Changsan in the south. The backbone system has 12 sites to be upgraded. ROKAF and ROKA upgrades were completed. Installation of backbone was in process. It consisted of: installation of RF (FRC-109 on all links). This was completed in April 1973; installation of FCC-18 mux as replacement for obsolete Nippon Electric equipment was completed in October 1973; and installation of new technical control facilities (TCF) at seven sites. Estimated completion date is July 1974. Final cutover is scheduled for February 1975.

Rebuild of Civil Defense National Radio System (CDNARS)

(U) The CDNARS consists of three major tasks: (1) engineer, procure, install, test and place into operation new HF radio equipment and associated equipment at each of seven Defense Civil Preparedness Agency (DCPA) regional headquarters to replace obsolete equipment, (2) engineer, procure, install, test and place into operation two retractable HF monopole antennas at each of seven DCPA regional headquarters sites, and (3) engineer procure, quick erect HF antennas for state emergency operation centers.

(U) This project is part of an overall Civil Defense Preparedness Agency effort to upgrade regional and state civil defense facilities supporting emergency operations. CDNARS provides reliable and adequate communications and warning support to eight regional headquarters locations, Office of Civil Defense, 50 state civil defense relocation sites and other selected locations. The reliability and required performance of DCNARS was that it would be available on a continued basis to serve the regional federal governments and the state and territorial locations in the event of a nuclear attack on the United States. The low power HF facilities at the CDNARS sites were to be replaced by using Army approved new family radio equipment. Tobyhanna Army Depot was given the total upgrade task at all CDNARS sites. All sites were to be operational by January 1976. The retractable HF monopole antennas were under contract and installation would be complete by March 1976. The forecast award date for the HF quick erect antennas was December 1974 and delivery was to be completed by December 1975.

Washington Area Warning System (WAWAS) - Sirens

(U) Expansion of the Washington Area Warning System would provide 200 additional sirens needed to overcome increased ambient noise levels and to expand the Civil Defense System into recently populated

subdivisions of the Washington, D. C. metropolitan area. The Washington Area Warning System (WAWAS) for sirens was a Type II project with USACC-CONUS designated as Executive Agent. Contract DAAB07-74-C-0343 was awarded 15 May 1974 to Alerting Communicators of America, Wequan, Wisconsin; amount, $537,950. Delivery and installation of the sirens is as follows: 50 units, FY 1974-FY-1975; 100 units, FY-1976; and 50 units, FY-1977.

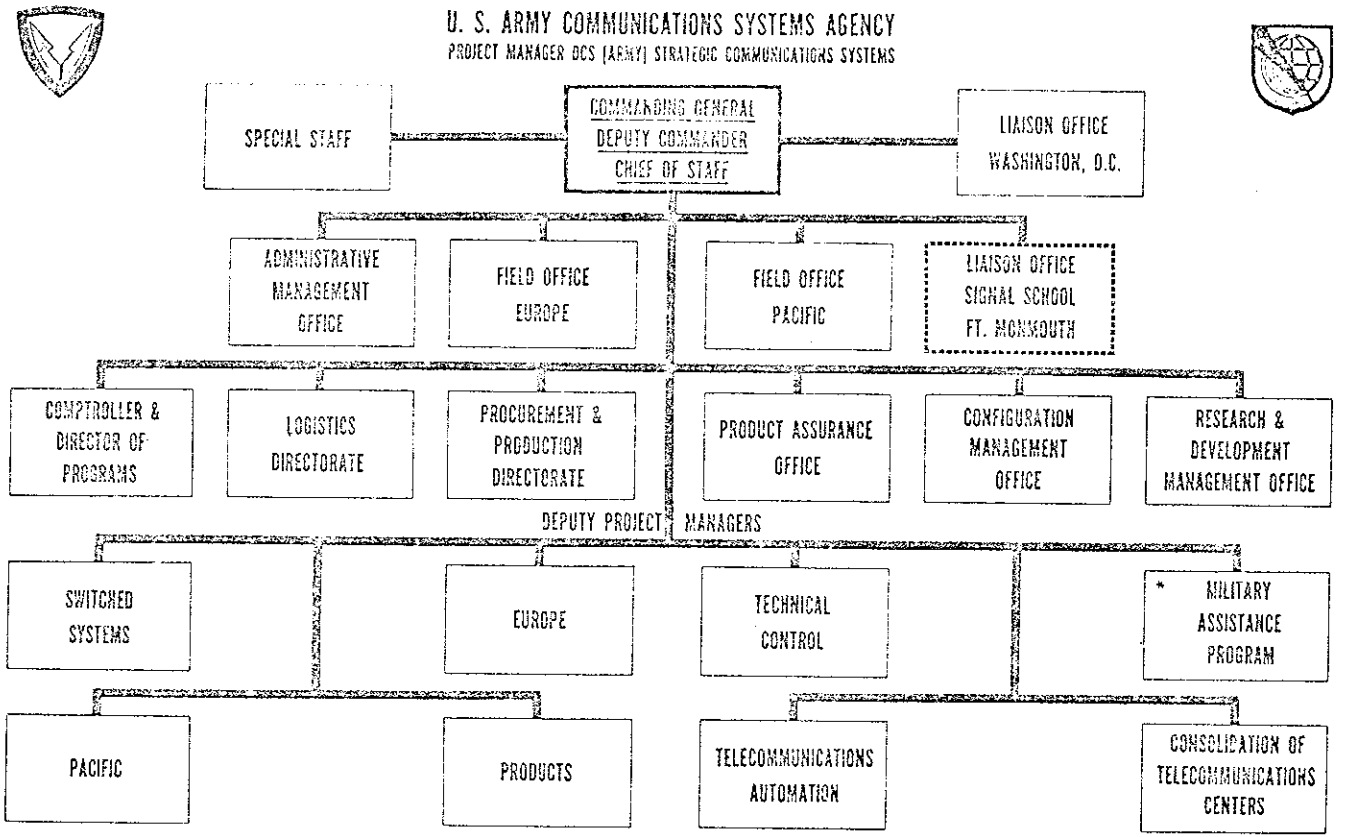
(U) Chart 18indicates the organization and structure of the U. S. Army Communications Systems Agency/Project Manager DCS (Army) Strategic Communications Systems.

United States Army
Satellite Communications Agency Overview

(U) The United States Army Satellite Communications Agency (SATCOM), based at Fort Monmouth, NJ is the focal point for military satellite communications. As Army project manager organization for satellite communications, the Agency is responsible for the earth environment of all Department of Defense (DOD) satellite communications systems. The SATCOM Project Manager also acts as the Army's agency for all international military satellite communications programs, represents the Army in special DOD satellite projects, provides the ground environments for the Global Positioning System (GPS) and exercises complete life-cycle management and support for the Tri-Service satellite communications earth terminals.

(U) The Agency is an integrated facility performing satellite communications system engineering, research and development testing and evaluation, and support functions for the Army under Headquarters, US Army Materiel Command (AMC). From its Fort Monmouth Headquarters, the Agency also directs the operations of the 235th Signal Detachment (TACSATCOM), a Forces Command element, while in garrison at Lakehurst (NJ) Naval Air Station. This unit and the training area are employed in testing and demonstrating tactical satellite communications equipment.

Note: Coverage regarding progress on additional communications efforts under the management of PM-DCS(Army) SCC such as products, switched systems, technical controls, and telecommunications automation is included in the Annual Report of Major Activities of the US Army Communications Systems Agency/Project Manager DCS (Army) SCS preserved in the Archives of the DARCOM Headquarters Historical Office under File No. 65-PM-DCS(Army)SCS-74.



* DUAL ROLE - SERVES AS DEPUTY CHIEF OF STAFF, CSA ELEMENTS, FORT HUACHUCA

---------- ATTACHED FOR ADMINISTRATIVE PURPOSES ONLY

DATE: 1 JULY 1974 PREPARED BY: COMPTROLLER, DIRECTOR OF PROGRAMS

GERD S. GROMBACHER
BRIGADIER GENERAL, USA
COMMANDING

Chart 18

(U) During 1974, SATCOM directed its major efforts toward the installation of a new strategic terminal and an earth station for the Washington-Moscow direct communication satellite link, both at Fort Detrick, MD; and the procurement of new terminals for Phase II of the Defense Satellite Communications System (DSCS).

Strategic Systems

(U) A firm-fixed price incentive contract funded over three years was awarded to Western Development Laboratories, Philco-Ford Corporation, for the follow-on procurement of heavy transportable AN/FSC-78 and Fleet Broadcast Terminals, AN/FSC-79. Thirteen AN/FSC-78 terminals are to be used in the DSCS and six AN/FSC-79s in the FLTSAT program. Deliveries under the contract extend from September 1975 through June 1977 at the rate of two terminals a month.

(U) In 1974 the Agency completed modifications of 14 AN/MSC-46 terminals in the DSCS. Thirteen AN/TSC-54 terminals also were modified and deployed to their field locations. These terminals were modified to improve availability by addition of redundant systems.

(U) SATCOM was involved in other means of improving terminal performance. One such means was improving the system threshold by the aid of coding techniques. Acceptance testing proceeded at Linkabit Company, San Diego, CA on the development model of the KY-801 hard or soft decision, maximum likelihood decoder to be used in the DSCS to provide improved digital operation. Ten engineering development models are being procured from Linkabit.

(U) The Harris Corporation (Electronic Systems Division), Milbourne, FL completed production and delivery of ten phase shift key modems MD-921 and interconnect Facility Modem (ICF) MD-920, capable of data rates of up to 10 MB/s. They interface with decoder KY-801. The Harris firm was awarded a contract for the development of two quaternary phase shift key modems capable of transmitting the same information as the MD-921, but using one-half the radio frequency bandwidth. They are to be employed in Stage 1c of the DSCS.

(U) The Raytheon Company, Sudbury, MA continued acceptance testing of two engineering development models of a time division multiple access subsystem (TDMA). This equipment was the culmination of five years of research and development effort, studies, experimental testing and conceptual design. One of the innovative concepts in this equipment group was that of processor control of the format and operation, and fault location and isolation to achieve a high degree of equipment availability.

(U) Two agency civilian employees designed and developed a programmable carrier noise test set for incorporation in the DSCS. In operation the test set establishes a known value of signal-to-noise ratio for the purpose of evaluating the performance of the demodulator portion of modem equipment. Although designed and developed specifically for satellite communications and digital modems, it is adaptable to any communications system and modulation technique. The set will be employed in the AN/TSC-54, AN/MSC-46 and AN/MSC-78 earth terminals operated by the Force throughout the world. The set permits quick and accurate measurements to be made, insuring the most economical use of the satellite and increasing the total availability of the system.

(U) Agency representatives traveled to Moscow in November 1973 for technical discussions on the DCL, which replaces the "hot line" communication route between Washington and the Soviet capital. The Agency directed the construction of a twin terminal earth station at Fort Detrick, MD as this country's part in the linkup which was to utilize the Soviet Molinya-3 satellite system. The earth station, completed in April 1974, was built under a contract awarded in 1972.

(U) The DCL earth station consists of two identical and independent communication systems providing simultaneous transmission and reception of C-band, FM signals through 60-foot diameter tracking and communications antennas. Both communications systems interface through baseband processing equipment with government telephone cables that complete the "hot line" connection. Transmission frequency and power are controlled automatically, using as a reference a pilot carrier transmitted through the satellite from an earth station in the Soviet Union. Both DCL antennas have the full hemispherical angular coverage and precision tracking capability needed to direct their narrow beams toward satellites that have eccentric, 12-hour orbits. During the daily eight-hour period in which each satellite is mutually visible between Washington and Moscow, its pilot signal is autotracked by the two DCL antennas.

(U) In addition to the two communications subsystems--including the transmitting, receiving and antenna subsystems--there are ancillary subsystems that serve the earth station as a whole. They are made up of a dual programmer subsystem; a control, monitor, and alarm subsystem; a prime power subsystem; and the earth station building.

(U) Delivery was completed on 15 contingency AN/TCC-79 communication subsystems, eight AN/TCC-78 communication subsystems and seven communication subsystem modification kits. Integration and operation with the satellite earth terminals were largely completed for stage 1b of the DSCS. These systems provide the interface with the earth terminal at 70 MHz and the military users, either directly or by an interconnect facility to a technical control center.

(U) In order to insure continuous traffic in a jamming environment in the DSCS, engineering effort proceeded at Magnavox Research Laboratories for the fabrication of four engineering development models of the AN/USC-28. These subsystems are for use with all the satellite earth terminals in Phase II of the DSCS.

(U) As part of the Agency's life-cycle support responsibilities as Satellite Communications Project Manager, on-site technical assistance was provided to deployed Tri-Service earth terminals on 57 different occasions between 1 July 1973 and 30 June 1974, for the resolution of operational or maintenance problems which were determined to be beyond the capability of site personnel.

Tactical Systems

(U) Progress was made in the development of a family of tactical satellite communications terminals under contract to Radio Corporation of America. The program comprised Trailer Terminal AN/MSC-59; S-250 Shelter Terminals AN/TSC-85 VI and V2 mounted on 1¼-ton vehicles; and S-280 Shelter Terminal AN/TSC-86 mounted on a 2½-ton vehicle. These terminals are characterized by their ease of setup and high degree of transportability, maintainability, reliability and low-cost production. They were configured to provide point-to-point and multi-point capabilities where conventional ground communications equipment cannot operate.

(U) The AN/MSC-59, the smallest in the family, is mounted in a modified jeep trailer. This low-power terminal has a 100-watt power amplifier; a low-gain parametric amplifier providing a maximum system noise temperature of 300 degrees K; and up and down converters tunable in 1 MHz increments across the 7.25 to 8.4 GHz satellite frequency band. All facilities required for 6- or 12-channel PCM voice channel transmission and reception are included. An 8-foot diameter automatic tracking antenna is mounted as an integral part of the equipment enclosure.

(U) Enclosed in an S-250 shelter mounted on a 1¼-ton vehicle, the AN/TSC-85(VI) terminal provides 500 watts of transmitter power; low noise parametric amplifiers and is redundant throughout. It was intended for medium or high capacity voice, data and teletype traffic on a point-to-point basis. All modules and assemblies are directly interchangeable when used in the AN/MSC-59 with the exception of the power amplifier.

(U) Three additional down converters are included in the AN/TSC-85(V2), a multi-point version of the AN/TSC-85(VI). This permits simultaneous communications with up to four terminals. In all other respects it is identical to the (VI) equipment. Included in this and all the other terminals is extensive built-in test equipment (BITE) to isolate failure to the module level quickly and easily.

(U) The AN/TSC-86 is the largest and most sophisticated of the terminals. It has a 1000-watt power amplifier, is fully redundant and can be tuned across the transmitting and receiving bands in one KHz increments. A beacon receiver is provided for antenna tracking signals, in contrast to the smaller terminals that derive their tracking signals from the communications channel itself.

(U) These terminal configurations having successfully passed through the design and fabrication phase of the program, were undergoing qualification tests. The operation of each terminal was successfully demonstrated through the Phase II satellite. In December 1973, a contract for the TACSAT Control Terminal was awarded to RCA. The control terminal was designed to increase the utility of tactical satellite communications by organizing user acess to the satellite and managing the radio frequency assets, including that portion of the DSCS satellite power assigned by the Joint Chiefs of Staff for tactical Army use. Delivery of the terminal was projected for the April-May 1975 time frame.

(U) The Martin Marietta Corporation was awarded a contract for the development of TACSAT Signal Processors (TSSP). The TSSP would provide a digital signal processing interface between the TACSAT SHF Terminals and the users while conserving frequency bandwidth consistent with the number of traffic channels in use.

(U) Progress also was made in the development of a special transportable terminal under contract with international Telephone and Telegraph Corporation. The terminals were intended for special purpose, contingency operation with the DSCS. The packaging design makes possible easier installation and operation in difficult-access locations. The terminal operates in the 7.250 to 8.4 satellite frequency band and has an automatic tracking antenna six feet in diameter, on which is mounted a low-gain parametric amplifier. The power amplifier is 500 watts. The major packages are up and down converter, power amplifier, power amplifier power supply, beacon receiver, modem and multiplex equipment. The designing and fabrication of the terminals was completed and qualification testing was begun.

(U) A contract was awarded Cincinnati Electronics for the design and development of a UHF manpack terminal, incorporating development of a modem to be installed in a future UHF vehicular and shelter terminal. The terminal was to be capable of communicating in a paging mode to a man in motion. When the paging signal is received, the manpack terminal 6 db antenna is deployed and communications back to the base station initiated in either the voice or burst modes

(U) Specifications and procurement information were completed for the development of a UHF vehicular-shelter satellite terminal, using to the maximum extent modules developed as part of the Air Force AFSAT program. Voice, burst and data communications capabilities were to be part of the design. The terminal was to operate in the time division multiplexed modes that are part of the AFSAT system.

235th Signal Detachment (TACSATCOM)

(U) The 235th Signal Detachment (TACSATCOM) a FORSCOM element based at Lakehurst Naval Air Station, continued its support of Army and other of the nation's armed forces activities. In July 1973, TACSATCOM communications teams participated in the second phase of tests of communications systems for the support of the Commander-in-Chief, Europe Special Ammunition Storage System. Reports indicated that the TACSAT equipment out-performed all other systems tested by a wide margin in both reliability and speed of delivery.

(U) In September 1973, the 235th deployed its teams to Europe and Fort Bragg, NC, in support of Eighth Airborne Corps elements engaged in Exercise Deep Furrow '73. The TACSAT network was employed for command and control and for administrative traffic in the exercise area and from the exercise area to CONUS. As Deep Furrow support operations ended, the TACSAT teams deployed in support of the 1st Infantry Division in Exercise Reforger V. The TACSAT terminals furnished communications from various points in Germany and from Fort Riley, Kansas. The TACSAT network was extensively used for command and control, particularly during movements. Midway through this mission, the 235th was placed on alert for a contingency mission under control of CINCEUR. The tactical terminals were regrouped at the DSCS terminal site at Landstuhl for the duration of the alert. The terminals were eventually returned to First Division control in time to return to CONUS with the division.

(U) In the spring of 1974, the 235th received two modified AN/TSC-80 superhigh frequency terminals with 12-channel capability. Accelerated training on this equipment was conducted and it went into operational use. Four UHF and two SHF terminals were deployed in exercises Aloud Uniform and Solid Shield with the Eighth Airborne Corps. During these exercises the terminals performed extremely well and at times were the sole communications available to exercise elements after other systems failed. The UHF terminals were primarily employed as the Army stations in the Joint Task Force command net for the exercises.

Navigation System

(U) A satellite navigation project was instituted as a tri-service program and at the direction of the Department of Defense consists of a combination of Air Force 621B and the Navy Timation. A Development Concept Paper for the NAVSTAR Global Positioning System was approved by the Secretary of Defense on 11 May 1974. The program was under the executive direction of the Air Force which had established a joint program office at the Air Force Space and Missile Systems Organization in Los Angeles. SATCOM Agency furnished nine civilians and a deputy program manager for Army user equipment, all assigned to the Engineering, Programs, Test and Logistics Division of the Joint Program Office.

(U) The first phase of the program was intended to validate the system concept of using four space vehicles and a variety of user equipment. A series of system definition programs were completed in parallel by Philco-Ford Corporation and General Dynamics in February 1974, and a single contractor for the space segment was selected, Rockwell International.

(U) SATCOM Agency completed a NAVSAT simulation test utilizing earth-based satellite simulator systems with a single channel receiving computer coupled with an inertial reference system. The tests confirmed the performance of such a system as predicted by laboratory simulation.

(U) The Agency conducted a series of support activities on directional receiving antennas, vulnerability, clock error analysis, manpack set design, application of the GPS to survey requirements, effective rotor blade modulation, and the application to fire control systems. These actions were to continue in support of the actual user demonstration. Selection of a development contractor for the user segments of the equipment was initiated and continues. Two prospective contractors were being evaluated--Philco-Ford and General Dynamics as an extension of their work in system definition.

Surface Container - Supported Distribution Systems

Overview

(U) During the 1970's actual and planned U. S. industry investments in surface containers, container facilities, material handling equipment (MHE), and rail, highway and ocean transport container carrying equipment accelerated the trend from break-bulk to container shipping. The US Army has long recognized that the containerization offered unique opportunities to improve its entire distribution systems.

The Surface Container-Supported Distribution Systems project is playing a significant role in the development of a container-supported distribution system. The mission of the Project Manager Surface Container-Supported Distribution Systems is to develop standard equipment, policies and procedures that can be used by military services and DSA to exploit the full potential of surface container-supported distribution systems.[1]

(U) Colonel J. J. Morris, US Army, was designated as the Department of Defense Project Manager, effective 28 May 1974, vice Colonel Raymond A. Cramer, Jr.[2] During FY 1974, the Project Manager Surface Container-Supported Distribution Systems reduced his Army authorization as recommended by the FY 1974 Manpower Management Survey from a total of 25 to 16 positions.[3] This reduction was effected by the disestablishment of the Systems Test Division (seven positions) and one position each within the Program Management and Technical Management Divisions.

Containerized Ammunition Distribution Systems (CADS) Shipments

(U) The function of managing and controlling European containerized distribution shipments was transferred 13 May 1974 to the Directorate for Supply, HQ AMC.[4] Prior to this transfer, a level of 160 MILVAN loads of ammunition per shipment every 45 days was achieved.[5]

(U) Significant progress was made in regard to obtaining Coast Guard relief from vertically restraining ammunition in containers for ocean movement. This project took the lead in this issue early in 1973 after the Navy and the Army had been unsuccessful in obtaining relief from this costly requirement. The key to breaking the deadlock was in obtaining piecemeal relief for carefully defined categories of ammunition such as boxed ammunition, propelling charges and separate loading projectiles. By separate consideration, it was agreed that boxed ammunition and propelling charges could be safely

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1 AMCPM-CS DF, 14 Aug 74, Subj: Ann Review of Proj Mangr Charter.

2 AMC Special Orders, Number 58, dtd 2 May 74.

3 AMXMM-TS letter 6 Dec 73, Subj: Manpower Mgmt Survey - PM, Surface Container-Supported Distribution Systems Development.

4 AMCPM-CS Msg, 10 May 74, Subj: Disestablishment of Systems Test Division, Ofc Proj Mgr, Surface Containers Distribution Systems.

5 Review and Command Assessment of Project (RECAPS), dtd 24 Mar 74, Published by AMCPM-CS.

transported in containers without vertical restraint. This meant that approximately 70 percent of the Army's ammunition could now be moved at a reduced cost of about $1.10 per ton because of savings in labor and lumber if the system of shipment was adopted.[6]

Extension of Project Manager for Surface Container Supported Distribution Systems Beyond 30 June 1974.

(U) The Office of the Project Manager Surface Container-Supported Distribution Systems developed a plan to support project extension beyond 30 June 1974 which was the scheduled termination date. The plan reflected a staffing scheme which would permit the PM to function beyond 30 June 1974 in discharging the identified responsibilities of off-shore discharge systems and the adaptation of commercial containers for carriage of ammunition as well as the overall program coordination until project termination on 30 June 1975. The extension plan was approved by the Deputy Assistant Secretary of Defense (Supply, Maintenance and Services) on 15 January 1974.[7]

Procurement

(U) In April 1974, the US Government awarded a contract in the amount of $4.1 million to Cochran-Western Corporation to manufacture twenty-four 50,000 pound Side Loading Container Handlers. These units were to be used at Army depots and plants. Delivery of the first unit was scheduled for December 1976, and with the production of four units per month it was anticipated that the final unit would be delivered in May 1977.[8]

(U) Another contract was awarded to Midland-Ross Corporation, Roxboro, NC, to manufacture fifteen 20 foot and nine 40 foot Container Top Handling Spreader Bars. These units were to be used on existing cranes as backup Container Handling equipment at plants and depots. The 20 foot Spreader Bars have a unit cost of $2,875.00 and the 40 foot Spreader Bars cost $4,473.00 each.[9]

Prototype Equipment Acquisition

(U) Mobility Equipment and Research and Development Center (MERDC) accepted delivery of fourteen 8' x 8' x 6 2/3' TRICON Containers after the prototype had passed its initial structural test.[10]

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6 Ibid.

7 ASD (Sup Maint & Svc) Memo, 15 Jan 74, Subj: Extension of DOD PM for Surface Container Supported Distribution Systems.

8 Contract No. DAAK01-74-C-3245.

9 Contract No. DAAK01-74-C-5461.

10 TRICONS were produced under Contract No. DAAK02-72-C-0568, awarded to Barnes and Reinecke, Inc.

Additional inhouse operational/service testing was estimated to be completed by December 1974.

(U) MERDC also accepted delivery of the prototype model of The Electronic Label Logistic System (TELLS) and the Container/Chassis Identification Recording System (CCIRS). These were currently undergoing validation tests which were estimated to be completed by January 1975.

(U) The validation testing of the MILVAN 8' x 8' x 20' refrigerated container was completed by the Test and Evaluation Command (TECOM) and service testing at the Engineer and Armor Board, Fort Knox, Kentucky, was scheduled for completion in October 1974. A multi-year procurement program was projected for this container. The May 1974 Five Year Defense Program (FYDP) planned quantities are: FY 1975 - 130; FY 1976 - 300; FY 1977 - 500; FY 1978 - 0; FY 1979 - 130; and FY 1980 - 80.

Projection

(U) The DOD PM-CS and his staff were reevaluating the functions of this project.[11] There was indication that the project should be extended beyond the proposed termination date, June 1975. The goal of the project continued to be to optimize responsive support at the lowest cost in manpower, equipment, and facilities. If the project was to be extended, its size would be predicated upon the scope of the prerogatives the Services and DSA surrendered to unified control. The duration of the project would be to that point when the full potential of the DOD Container Distribution System had been exploited.

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11 AMCPM-CS DF, dtd 10 July 74, Subj: Realignment of Functions.

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Chapter VII

SUPPLY*

Overview

(U) During Fiscal Year 1974 the AMC Directorate for Supply, in contrast to the many changes effected in the previous fiscal year, had only one organizational change. The Munitions Branch of the Storage and Transportation Division was disestablished during December 1973, and the mission and functions were amalgamated into the Storage Branch.

(U) During the year, the energy (fuel) crisis was a very serious situation which adversely affected many operational areas. To compensate for the energy crisis, several steps were taken. Specifically, the use of airlift cargo delivery was drastically reduced by a change in DA policy which restricted the eligibility criteria for air freight items. Increased emphasis was placed on cargo consolidation resulting in fewer total movements. And the overseas commands greatly reduced the number of high priority requisitions being submitted. These major actions materially reduced total fuel requirements without degradation of customer support. Also, a procedure was initiated for challenging/validating the need for premium transportation, which resulted in the diversion of cargo to less costly modes of transportation.

(U) This first year of across-the-board Army Industrial Fund (AIF) application to depot operations was very challenging. Operating the depots under AIF procedures was basically a problem of translating depot standards and rates into an equitable distribution of funds. This conversion to AIF was not a simple task; however, good progress was reflected toward the end of the fiscal year.

(U) Price increases were very dramatic which caused numerous short falls in the stock fund programming. Also, rapidly lengthening production lead times had a significant adverse impact on materiel availability. It was possible, however, in many cases to obtain program increases to offset to a degree the price increase and lengthened production lead times.

(U) Emergency situations were coped with as they occurred; e.g., in support of Project 9DD this Directorate provided extensive support to the AMC Operations Center which was operated around the clock for a

*The bulk of this chapter was furnished by the AMC Directorate for Supply.

period of six weeks to provide logistical support to Israel during the Middle East conflict. Another emergency action, Project 9EE, provided logistical support to Cambodia during the period 1 October through 15 December 1973. Approximately 2,000 tons of cargo were involved.

(U) Since instituting the NICP/Depot ranking system of supply operations in February 1973, which continued through FY 1974, there was a marked performance improvement trend by most NICP's and depots due primarily to the ranking system.

(U) In the area of computer systems management of military funds and materiel, the two main systems, ALPHA (acronym for AMC Logistics Program Hardcore Automated), and SPEEDEX (acronym for System-Wide Project for Electronic Equipment at Depots, extended) were further proliferated during the year. ALPHA was implemented at AVSCOM and MICOM with the remaining NICP's scheduled for completion by November 1975, and SPEEDEX was functioning satisfactorily.

(U) A problem of hydraulic fluid flammability surfaced during the Israeli/Arab Conflict in October 1973. After action reports indicated that the hydraulic fluid used in combat vehicle hydraulic systems could have contributed to the combat losses suffered during the October 1973 Conflict. A task group was established to determine if there were any fire resistant hydraulic fluidsavailable which could be used in armored combat systems. A synthetic hydrocarbon fluid developed by the Air Force was selected for evaluation which, after addition of a rust protection additive package, was found to be 70 percent more fire resistant than the fluid (MIL-H-6083) in use during the October 1973 Israeli/Arab combat. As a result of the acceptable performance of the fire resistant hydraulic fluid in all tests, General Miley directed immediate retro-fit of all armored combat vehicles with FA-PD-5136, Hydraulic Fluid, Rust Inhibited, Fire-Resistant, Synthetic Hydrocarbon Base.

(U) Several changes to the inventory program were studied and tested. For example, an IRO test with ECOM, a study of the DSA system, and a records match and depot scheduling test conducted by TEAD, TROSCOM, TACOM, and ARMCOM, were conducted. The results are discussed as follows:

(U) The IRO Project #209, "Test of Physical Inventory Decision Model," was discontinued in December 1973 because (1) implementation costs of $1,500,000 outweighed the savings of $300,000 five-to-one; (2) existing procedures were adequate for categories of items requiring complete inventories annually; and (3) anticipated savings from less frequent inventories of inventory category code 5 items could already be realized by decision. In October 1973, approval was granted

for TEAD and TROSCOM to conduct a test of a system to match depot and NICP records and to have TEAD schedule inventories using an order of merit listing (OML). The test was later expanded to include TACCM and ARMCOM.

(U) The basic concept called for an expansion of the location audit procedure to include reconciliation of quantities by condition code. Resulting mismatches were given first priority for inventory. Succeeding priorities were assigned according to position of appearance on the order of merit listing which ranked FSN's by degree of item activity. Tooele test results indicated visible improvement in inventory accuracy, consequently AMC-wide implementation was scheduled for FY 1975. Pending the revision of AR 700-15, depots and commands were provided guidance for prescribing commercial packaging for AMC-sponsored procurements and shipments. Guidelines were developed which outlined the minimum requirements for determining the acceptability of commercial packaging. The guidelines were to be cited in procurement documents when applicable. Analysis of packaging requirements indicated that commercial packaging would be adequate for approximately 60 percent of AMC shipments and would also result in significant savings over current military packaging methods.

(U) In furtherance of the Care of Supplies in Storage (COSIS) Program, the AMC Supplement to AR 37-100-75 was changed to more clearly identify the COSIS AMC accounts. A COSIS PRON was established to provide positive control in assuring that COSIS funds were used for COSIS workload. The AMC accounts within the PRON were raised to priority two in the Dir/Supply Five Year Program. Reporting requirements were expanded in the Depot Operations Cost and Performance Report (RCS AMCSU-238) to provide visibility of total lines, tons, manhours, and dollar value of materiel generated, processed, and backlogged. FY 1974 workload accomplishments resulted in a reduction of the COSIS PP&P backlog to the lowest level in four years. A major effort was underway to insure that adequate provisions would be made to convert to the National Stock Number (NSN) in September 1974. Implementation of the NSN would require a conversion of basically all files used by the NICP's, depots and intermediate supply sources in the requisition, receipt and adjustment processing procedures. Many reporting requirements would also be affected by the conversion to the NSN.

(U) Original guidance to the Direct Exchange Task Group (DXTG) was provided for third loop (wholesale level). The General Officer Steering Group on 21 November 1973 judged the wholesale level not feasible and gave alternative guidance to develop a Selected Item Exchange (SIE) program. The SIE program was designed to insure that selected Class IX depot reparables, in national short supply, were intensively managed and equitably distributed to and within major Army

commands. Draft SIE procedures were prepared and staffed with Department of the Army and major Army commands. Upon final approval the procedures were to be incorporated in appropriate Army regulations.

(U) In the Weapons Management Improvement Program, Phase I, which called for capturing serial numbers in property book accounts and serial numbers of small arms moving between retail accounts, overseas depots, and depots and property accounts, was completed 1 January 1973. Phase II called for the establishment of a central registry at ARMCOM to be operational by 31 December 1973. Procedures for training and a central data bank were accomplished in November 1973 and the system was ready for operation 21 December 1973. On 29 December 1973, the House Appropriations Committee denied funds to develop the system and directed that action on the small arms program be suspended pending further instructions from DA. DOD Memorandum dated 18 April 1974 directed the Army to establish a DOD-wide standard system to control small arms by serial number using the Air Force system as a base line. A joint requirements group was established under Army leadership to draft the specifications for the system to control small arms by serial number. On 15 June 1974 the proposed specifications were submitted to ASD(I&L).

(U) During the Army Logistic Policy Council (ALPC) meeting of 26-27 March 1974, the ALPC approved a change to its charter, giving the council a greater role in the management of the Army Logistics System Master Plan (LOGMAP). DA DCSLOG subsequently requested each member of the ALPC to submit ideas for improvement of LOGMAP, and further requested that, in preparing for the next annual revision (July 1974) of LOGMAP, AMC review of LOGMAP include a comprehensive look at specific and sub-objectives. Response to DA DCSLOG advised that AMC supports the ALPC function of providing advice and assistance in continuing development and improvement of LOGMAP, and that comments and ideas for improvement were based upon an in-depth examination of LOGMAP concepts, policies, format and specific and sub-objectives. In summary, AMC did not recommend any drastic changes to the LOGMAP concept.

(U) The Wheels Study, completed in June 1973, was a comprehensive analysis of the Army's need for the program management and utilization of wheeled vehicles and related equipment. The Wheels Study Group (WSG) and the Tactical Vehicle Review Board (TVRB) made an extensive study of wheeled vehicle authorizations for US Army Units, resulting in an approximate 34 percent reduction in the quantity of wheeled vehicles authorized Army-wide. Subsequently, DA imposed a moratorium on the depot issue of wheeled vehicles to preclude shipment of vehicles to an installation which would possibly become excess after receipt of the new authorization documents. Procedures were then developed during 13-14 August 1973, to accelerate the redistribution/disposal of wheeled

vehicle excesses and involve intra-installation cross-leveling of vehicles and consolidation of data packages reflecting excesses and shortages. The procedures were offered to the overseas commands but they were rejected. Overseas commands were to accomplish their own cross-leveling and excess their own vehicles, in accordance with current directives, on a gradual and continuing basis. On 1 April 1974 FORSCOM/TRADOC submitted their data packages reflecting excesses, shortages and modernization requirements to TACOM, after having completed their intra-installation cross-leveling of vehicles. The National Guard Bureau (NGB) failed to submit their data packages to TACOM on 1 April 1974 which would delay TACOM's inter-installation redistribution actions. The TACOM time-phased plan for the redistribution/disposal of vehicles generated by the Wheels Study, scheduled for completion by 1 August 1974, was to be revised after receipt of complete data by TACOM from the NGB.

(U) Extensive preparations were accomplished for the AMC assumption of the ammunition support functions in the Pacific. In compliance with DA direction, AMC was to assume ammunition logistics support functions in the Pacific area. The Central Ammunition Management Office (CAMO) would be established in Hawaii effective with elimination of HQ USARPAC, 31 December 1974 as a sub-element of the US Army Armament Command (ARMCOM). CAMO was to assume the functions that had been performed by the USARPAC DCSLOG Munitions Division. These functions cover centralized management and control of ammunition inventories geographically located in the WESTPAC area.

(U) In November 1973, DA/DCSLOG disseminated a change to AR 11-14, Logistics Readiness which formalized the on-going Readiness Improvement Programs and established uniform reporting procedures for major commands and individual reporting units. The reporting system was titled Materiel Assistance Designated (MAD) Report. These unit generated reports facilitated the intensive management of the Readiness Improvement Programs and had proven very effective at improving and maintaining the quantity and condition of equipment required by units to meet their combat mission. As of 20 June 1974, 844 units of the Army's 910 reporting units world-wide had achieved a readiness Equipment on Hand (EOH) position equal to DA's assigned Authorized Level of Organization (ALO). This represented an attainment of a 93 percent fill and exceeded the DA established goal by three percent.

(U) During FY 1974, development continued on the Continuing Balance System (CBS) for capturing asset data through supply transactions

on a world-wide basis; however, the predicted target date for implementation of the CBS during FY 1974 was not achieved. Major problems and delays in resolving these problems were the cause for the setback in implementing an operational CBS. As a consequence, no firm starting date for implementation of the CBS could be predicted at the last Study Advisory Group (SAG) meeting, held on 12 June 1974.

(U) The Secondary Items Readiness Improvement Program was focused upon materiel items which were not meeting Materiel Readiness objectives and were degrading unit readiness in more than one major command. Collectively, these items form the Readiness Hot List which was first published in September 1973 and being updated as requirements dictated. Although substantial progress was made in reducing the percentage of equipment reported as non-operational for reasons of supply, only one of the original list met the DA objectives for one quarter. However, the hot list served a useful purpose and was to be continued.

(U) Intensive Management of the M551 ARAAV and Vulcan Systems commenced producing results on the M551 during the 3d Qtr, FY 1974, and was expected to be capable of sustaining the system above the DA readiness standard world-wide in the wholesale support function. Progress on the Vulcan system was hampered by a recognized need for extensive product improvement which was under development, for future Vulcan Modification.

(U) The NICP Management Review Team visits were scheduled annually to each commodity command. The team was composed of members from DA DCSLOG, HQ AMC, ALMSA, and one member from each commodity command other than the one being visited. Five of the six trips scheduled for 1974 were completed as follows:

COMMAND	VISIT	NO. OF OBSERVATIONS
MICOM	3-7 December 1973	62
TROSCOM	28 January - 1 February 1974	42
ARMCOM	4-8 March 1974	50
TACOM	15-19 April 1974	80
AVSCOM	3-7 June 1974	91

(U) The Director of Supply, HQ AMC, was briefed periodically on the status of the observations from each trip until action on all the observations was complete.

(U) On 30 June 1974, a policy of cost effectiveness was added to the Operational Readiness Oriented Supply System (OROSS). The implementing document for this policy change was final draft revision

of Chapter 4, AR 710-1 dated 28 June 1974. This Chapter would be officially published by the Adjutant General when the Requirements Determination and Execution System was completed, expected in October 1974. The following policy changes were provided: (1) addition of a cost differential stockage model that based the stockage decision on all appropriate inventory management variables instead of just demand frequency data; (2) addition of a stockage parameter that based the size of the wholesale stockage list on desired operational readiness goals of selected weapon systems - the higher the readiness goal, the more items stocked; (3) implementation of DODI 4140.39 which increased safety levels on the majority of the low dollar items while reducing safety level protection on the few remaining high dollar items to improve overall parts availability and reduce investment costs.

(U) The procedure for measuring production leadtime (PLT) was modified to permit the use of contract delivery schedules at time of award of contract. This permitted recomputation of PLT a full production leadtime in advance of the older method, thus providing a more sound requirements objective and a more accurate budget base.

(U) At the request of DOD, the Department of Army, in November 1973, initiated a Cost Comparison Study of horizontal versus vertical stock fund. AMC was tasked by DA to perform the comparison study at the wholesale level. During the course of the study, it became evident that the Direct Support System (DSS) would have a major impact upon the vertical stock fund and supply management system. It was determined that certain costs being attributed to vertical stock fund would either not be realigned if vertical stock fund were implemented in a total DSS environment or that the increased cost would already have been experienced with implementation of DSS. Therefore, two vertical stock fund cost estimates were developed. One cost estimate without DSS and one with DSS. A conclusion drawn from the study was that with total implementation of DSS, there would be no value in implementing vertical stock fund. This conclusion is based on the assumption that the Installation Supply Division will perform as a DSU for all non-DSS customers.

(U) The Requirements Determination and Execution System was a consolidation of the stratification and supply control study into one system for managing secondary items for which a task group was formed to develop and implement the new system. This task group consisted of representatives from Headquarters, AMC, ALMSA, ALMC, IRO, ARMCOM, AVSCOM, ECOM, MICOM, TACOM, and TROSCOM. The new system would provide the means to determine requirements, plan, program, budget, and execute from one system. It would "close the loop" and provide an efficient and effective method for managing secondary items. The system was on target for implementation 18 October 1974. The three ALPHA Commands

(AVSCOM, MICOM, TROSCOM) were scheduled for implementation of the new system on 18 October 1974. The non-ALPHA commands (ARMCOM, ECOM, TACOM) would have the new system implemented concurrently with implementation of ALPHA at those commands.

Plans and Programs

PE 393401 Communications Security (COMSEC)

(U) The COMSEC Commodity Manager at Fort Huachuca, Arizona, provides for the operation of the COMSEC National Inventory Control Point, the COMSEC National Maintenance Point and the Army COMSEC Central Point of Record. COMSEC Depot Operations at Lexington-Blue Grass Army Depot, Kentucky provides for the receipt, storage and issue of COMSEC Materiel Maintenance and modification of COMSEC equipment/components. This also includes funds for Design Control Repair Parts and reimbursement of the AIF.

(U) The following is a summary of the FY 1974 financing of this element:

(Dollars in Thousands)

FY	Requirement	Financed
74	$7,474	$7,474

PE 721111 Supply Depot Operations (CONUS)

(U) This program provides for internal operations of Army Depots and Arsenals; includes receipt, storage, issue, and shipment of assigned stocks and all operations incident thereto. It includes stock control activities when performed in depots and administrative portions of traffic managements performed within depots.

(U) Following is a summary of the FY 1974 financing of this element:

(Dollars in Millions)

FY	Requirement	Financed
74	$203.8	$203.8

(U) The revision of AMCR 740-16 (Depot Operations--Program Workload Forecasting System) was published 23 January 1974. This regulation prescribes policies and procedures for the reporting and dissemination of depot workload forecast data. Forecasts of workload are required by CONUS Army depots and storage activities, including manufacturing arsenals and loading plants, and by Defense Supply Agency (DSA) depots where Army-owned stocks are stored. Forecasts of workload are

the basis upon which CONUS Army depots and storage activities generate and justify manpower, funds and storage space requirements for functions consisting of, but not limited to, receiving, shipping, unit and set assembly/disassembly and care of materiel in storage.

(U) The revision of AMC Suppl 1, AR 37-100-75 (The Army Management Structure) was printed and distributed in FY 1974, thus providing AMC with more data on COSIS by increasing the number of accounts, establishing priorities and affording better budget justification. AMC Suppl 1 to AR 740-1, applicable to all United States Army Materiel Command (AMC) major subordinate commands, and installations reporting directly to Headquarters AMC, which perform and/or account for manpower/dollar resources identified as Supply Depot Operations in AR 37-100-XX, was published 8 February 1974.

(U) During the year, visits were made to the NICP's and Depots to determine how forecasts were made, how workload forecasts were used, how actual data was reported against the forecasts and how depots compute the depot generated portion of the forecasts. Guidance and procedures to improve methods for workload forecasting system for Supply Depot Operations based upon results obtained from NICP and Depot visits was to be incorporated in revision of AMCR 740-16 in early FY 1975. Some of the more significant improvements under consideration were: distribution of advance copies of forecasts to depots for review and possible challenge; generation of exponentially smoothed forecasts in advance of forecast submitted for NICP use as a possible management guide; provision for a continuous update system based upon change and input; reduction Source/Destination element; and elimination of some update cycles.

(U) FY 1974 was "That First Year Under AIF." AMC was on a learning curve. Early in the year, the Directorate for Supply had a lot of problems trying to translate depot standards and rates into an equitable distribution of dollars. However, as time went on and the Supply Management personnel understood the criticalness of the accuracy of these factors, good progress was made in solving problems. There were problems early in the year with the ADP system. The three major problem areas were in workload forecasting, timeliness and accuracy of data flow and the availability of PE 721111 funds. FY 1975 was expected to be better with more data being generated automatically at depots as SPEEDEX was expanded and workload forecasting procedures were implemented.

PE 721112 Supply Management Operations (ICP)

(U) This program operates CONUS National Inventory Control Points and Army Class Manager Agencies, including inventory control, cataloging,

stock control and direct support functions. The following is a summary of the FY 1974 financing of this element:

FY	(Dollars in Millions) Requirement	Financed
74	$124.0	$124.0

(U) The program workloads were accomplished within resources available. All on-hand personnel were retained and paid although reprogramming was required at the Command level. The merger of the following Commands was completed and in operation during the year: WECOM and MUCOM established as ARMCOM, ECOM Philadelphia, Pennsylvania and Fort Monmouth consolidated at Fort Monmouth; ACMA's at Philadelphia and New Cumberland Army Depot were transferred in place to TROSCOM.

PE 728010 Second Destination Transportation

(U) This program provides land, sea, and air second destination movement of troop support cargo, mail, and DA Civilians (DAC) and their dependents. In summary, this element received the following financing for FY 1974

FY	(Dollars in Millions) Requirement	Financed
74	$39.4	$39.4

(U) The FY 1974 Budget for PE 728010 to move supplies and equipment was estimated at $37.3 million and 776,125 short tons. Due to the movement of additional Commercial Line Haul Freight such as Nike Hercules which was not anticipated in the original forecast, additional funds in the amount of $2.0 million were required in FY 1974. These funds were provided by DA. The revision of AMCR 11-35 which prescribed responsibilities and procedures for preparing and submitting the Cost and Performance Plan and Report (RCS AMCSU-207) for Second Destination Transportation and other Logistic Service was converted from a manual to mechanized reporting system.

DOD MILSTEP Conference

(U) In December 1973, DOD convened a two-day conference of all service MILSTEP representatives to discuss system problems and proposed changes.

(U) The proposed changes to the DOD MILSTEP system discussed resulted in adoption of the following: (1) Format 2, Supply Availability and Workload Analysis Report, would be changed to exclude those extended delivery date requisitions which are not due for processing in the report month. These requisitions were being counted as not

filled despite the fact that they might not be due for issue for many months; (2) Format 1A, Pipeline Performance Analysis Report, would be revised to allow more time for depot processing when materiel was being consolidated into a container shipment; and (3) Format 2 reports were to be expanded to show the volume of, and reasons for, manual processing of demands.

(U) In addition to the DOD changes, several changes and improvements in AMC MILSTEP Internal Management Reports were made. Among these were: (1) Format 1B, Pipeline Performance Report, was modified to measure individual depot transportation performance; and (2) Format 2 reports were expanded to provide additional data required to analyze NICP performance. Such data included dollar value of demands and back orders, partially filled demands, weapon system performance breakouts, and the identification of problem stock numbers.

(U) To implement the above changes, input requirements for the system were completely revised and reprogramming of NICP and MILSTEP data bank computers was accomplished. The completely revised MILSTEP system was to go into effect beginning with the report month of July 1974. A revised Chapter 13, AR 725-50, which prescribes MILSTEP procedures was provided to DA for incorporation in a complete rewrite of AR 725-50. Analysis requirements for MILSTEP reports were revised to change analysis reporting from monthly to quarterly. Monthly flasher reporting is required only on significant problem areas.

(U) To assist in completing the revised AMC MILSTEP system, a MILSTEP seminar was held in April 1974. Representatives of all depots and NICP's attended and took part in discussions of how MILSTEP reports could be improved. Many recommendations were made and most were integrated into system revision. The seminar also served another purpose in that it allowed for an exchange of ideas on how supply operations could be improved.

Logistics Performance Measurement Evaluation System (LPMES)

(U) The Management Evaluation Branch acts as monitor for the AMC Director of Supply assigned areas under the LPMES program. The objectives of this system were to identify for top DA/DOD logistics managers important areas of logistics activity. LPMES assigned areas for performance indicator goals, reporting, and evaluation are: (1) Materiel Obligations Outstanding (MOO) (i.e., back-ordered demands recorded for future issue). This area is monitored to reduce the number of MOO's either through positive supply action or through cancellation of requirements no longer needed; (2) Minimize Wholesale Item Range. A system to support military operations with a minimum number of essential items; (3) On Time Pipeline Performance (Highlights the number of

lines of supply issued and shipped that meet UMMIPS standards for each cycle segment of the pipeline and the total logistics cycle. Separate reports are prepared for domestic and overseas shipments); (4) Item Identification Improvement (A descriptive method of item identity which enables materiel managers to more efficiently perform logistic support functions (LSF)). Included are such LSF's as item entry, control, provisioning, standardization, interservicing, interchangeability, substitutability, competitive procurement, and requirements forecasting; (5) Utilization of Long Supply, Excess, and Surplus Property. This area is monitored to insure maximum utilization of available long supply, excess, and surplus assets (DOD, foreign, and other Federal agencies) in satisfying valid Defense requirements; and (6) Stock Availability (Measures the responsiveness of the supply system to demands for stocked items which are available when requested). The rate of availability is maintained on the basis of funding and stockage levels. Quarterly LPMES progress reports for each of these areas were rendered during FY 1974.

(U) The system utilizes trend charts (maintained by the AMC monitor/Comptroller), brief analyses, and limited statistical data in a manner designed to show current status, trends, and developing problems in a timely and effective manner. The AMC Supply Directorate Plans and Programs Office acts as coordinating liaison office between the AMC Comptroller and Divisions/Offices of the Supply Directorate.

NICP/Depot Ranking of Supply Operations

(U) In February 1973, the Supply Directorate instituted a system for ranking NICP's and depots on how well they perform supply operations. The system was based on selected performance indicators which were considered equitable and representative of depot and NICP supply operations. Each indicator was weighed based on a judgment as to its relative importance. The rankings for NICP's use 27 indicators and the depot rankings use 17. Each depot or NICP was compared with its counterparts in performing against each indicator. The best performer of six NICP's gets six times the weight of the indicator as a score and depots were scored similarly. The scores for all indicators were added to come up with a total score for each activity. Comparable activities were ranked two ways: by best to worst relative performance, and by most improvement from quarter to quarter.

(U) This ranking system permitted a composite review of NICP and depot operations which heretofore were reviewed independently in each functional area. It also generated a spirit of competition since the bottom ranked position was to be avoided. At least partially as a result of this system, it was noted that there was a marked performance improvement trend by most NICP's and depots since the system was initiated.

(U) Each quarter, NICP and depot commanders were provided a report on their relative ranking compared to their sister activities. This supply performance management tool supplemented other reports/analyses in highlighting problem areas and corrective actions taken by the Director of Supply mission elements.

Materiel Management Conferences

(U) These conferences provide an opportunity for NICP managers, depot supply managers, and HQ AMC supply staff personnel to discuss problems, projects, and programs of mutual interest. The Directorate for Supply held annual Materiel Management Conferences. The conference concept, established in FY 1972, was continued in FY 1974 with one such conference held in January 1974 at the Red River Army Depot.

Major Problems

(U) All AMC Inspector General findings of deficiency for areas staff supervised by this directorate at the major subordinate commands and Army depots for FY 1974 were consolidated to determine those that were repeated at another AMC activity or one that was a duplicate deficiency at the same AMC activity in FY 1973. Corrective action was taken by the directorate staff element for all duplicated and repeated deficiencies in order to correct the deficiency. These deficiencies were made an item for review as part of the NICP review team visits in order to provide coverage to all the NICP's.

Decentralization

(U) Decentralization of authority was implemented for seven areas by the directorate to commanders of the major subordinate commands during FY 1974. This effort was in keeping with the AMC Goal #4, Decentralize Operations in AMC.

Five Year Program Objectives, 1974-1978

(U) Each fiscal year, the Director of Supply develops, publishes, and distributes a Five Year Program document on long-range plans and concepts on the supply mission support and the Army Materiel Command goals. Included in these objectives/goals were eight major (i.e., mission essential, those subject to higher authority visibility, or involved substantial resources) and 12 minor (i.e., important to the Director, warranted managerial evaluation, or required judgment of critical milestone objectives. These objectives/goals were based on past performances and anticipated future performance capabilities of the NICP's and depots. LPMES and the LOGMAP objectives were integrated into the Supply Five Year Program.

(U) For FY 1975, the AMC program format was changed to minimize the number of objectives and to identify specific tasks which were required to meet AMC's objectives and goals. Supply objectives were reduced from 20 to three and 35 separate tasks were established to support those three objectives. Each task was measurable and had a specific performance target. This revised program was to go into effect in FY 1975.

Headquarters, Management Information System (HQMIS)

Supply Terminal

(U) Since February 1974, this office has been operating a prototype system of HQMIS to evaluate its useability in the Directorate for Supply. The prototype system consisted of a remote terminal equipment configuration connected with the CDC 3300 computer located at the LSSA Data Bank. During this period, the remote terminal had access to MILSTEP on-time performance data and RCS-220, Depot Receiving Performance. Programs Office and Storage Division personnel used the terminal to extract performance data directly from the LSSA computer in forms specified by analysis personnel.

(U) After an evaluation of the prototype HQMIS system, a general conclusion was drawn that the system would be beneficial to the Directorate, particularly when all major supply reports were included in the HQMIS file. The Storage Division had already advised LSSA that hard copy reporting on the RCS-220 report could be eliminated when all of that data was included in the HQMIS file. It was also found that at least one portion of the MILSTEP Format 1A report could be eliminated as a result of HQMIS. A substantial amount of manual on-time performance statistics effort had already been eliminated.

(U) One very significant finding in the evaluation was that in each case of conflict between manual and machine statistics, the machine was correct. This confirmed the contention that manual computations were not only time consuming but much more prone to error. Part of the evaluation involved identified reports which could be added to the system. All supply divisions were requested to nominate such reports and as a result, ten new reports were identified. It was expected that as the system was used, more reports would be included in the system.

UMMIPS Standards and Policies Revision

(U) UMMIPS (Uniform Materiel Movement and Issue Priority System) standards and policies were revised to emphasize NORS requisition

processing and de-emphasize the processing of other high priority requisitions. Also, a separate combined NICP/depot time standard was established to allow the trade-off of NICP and depot processing time.

(U) In March 1973, the Directorate for Supply recommended to DA that UMMIPS time standards for IPG-1 and IPG-2 depot processing be extended one day in each case. Our reason was that depot HIPRI standards were unrealistic in a peacetime environment. In addition, it was also recommended that DOD modify UMMIPS instructions to allow for the trade-off of time between NICP's and depots. This trade-off would in affect allow one more day for depot processing on 80 percent of the MRO's. DCSLOG approved the recommendation and passed it to DOD.

(U) After receiving other service and JCS comments on our proposal, DOD offered a compromise proposal which reduced the emphasis on processing high priority requisitions by limiting the seven day work week, 24 hour day criteria to IPG-1 and NORS requisitions only. It also recognized the practice of trading off NICP and depot time. It did not extend depot processing time. AMC accepted the DOD proposal as a good first step but advised that another proposal would be submitted to increase time standards so that energy savings and monetary benefits could be realized. UMMIPS was subsequently changed along the lines of the proposal.

(U) In January 1974, the Directorate for Supply submitted another UMMIPS change proposal again recommending one additional day for depot processing and a reduction in IPG-1/NORS processing emphasis to a six day work week, 24 hour work day. Cited was a potential $2 million dollar annual savings as well as a substantial reduction in energy expenditures. DCSLOG did not approve our proposal on the basis of the recent DOD turn-down of our similar proposal but advised that a DOD group would re-study UMMIPS standards sometime in FY 1975 at which time the AMC recommendations would be considered.

Logistics Data Management

Defense Integrated Data System (DIDS)

(U) The development of the Army program for DIDS implementation continued on schedule through FY 1974. One of the important events during the early part of the period was the publication of an OASD(I&L) Memorandum, dated 11 September 1973, which directed that DIDS and the National Stock Number (NSN) Conversion Program would be implemented simultaneously 30 September 1974.

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(U) As a result of the continuing emphasis on the DIDS/NSN programs, a decision was made in September 1973 to convene a monthly AMC In-Process Review (IPR) to ensure compliance with OSD direction. The group, co-chaired by Directorate for Supply and Directorate for Management Information Systems, consists of representatives of the MSC's, ALMSA, USACDA, and miscellaneous AMC agencies/activities involved in DIDS and NSN. These monthly IPR's were extremely constuctive and helpful for all participants. Army sub-focal point meetings were held in September and December 1973 and April 1974. Liaison visits were performed by the Army DIDS Project Office to Army participating activities and DLSC and HQ DSA. Coordination of the DIDS Procedures Manual was completed and the DOD DIDS Procedures Manual 4900.29M was published in August 1973 with 17 changes by the end of FY 1974.

(U) In accordance with the original DIDS schedule, the DOD Interface Test was to commence 1 May 1974. Accordingly, the Army internal planning in DIDS workload scheduling pointed towards accomplishment of all required tasks and milestones leading to this date. In the interest of meeting the objectives, a decision was made September 1973 to impose a freeze on internal systems design as of Design Interface Guidance (DIG) handbook change 73-10. Subsequently, DIG change 73-11/12 and Design Change Notices (DCN) 01 thru 07 were issued, but were not utilized in the basic systems design planned for 1 May 1974. As a consequence of this decision, Army was able to complete its basic systems design, establish all required ADP programming and Satisfactorily accomplish internal testing. On 1 April 1974 Army certified readiness to participate in the DOD Interface Test. Conduct of the DIDS Mid-Management and Operational Application Training Courses was completed by USAMC ALMC in June 1974.

(U) Progress by the services/agencies involved in DIDS was satisfactory with the exception of the Defense Logistics Support Center (DLSC) whose systems testing had not progressed to the point that DOD interface testing could commence on schedule. Additionally, DLSC files conversion and files compatibility programming/testing had not progressed as rapidly as demanded by the implementation schedule. Because of these conditions, a recommendation was made by the DSA System Administrator to OASD (I&L), in a letter dated 31 May 1974, to delay DIDS implementation to 31 March 1975. The letter further recommended retention of the 30 September 1974 implementation date, for the NSN. Subsequently, in a memorandum, dated 6 June 1974, OASD (I&L) concurred in the DSA recommendation and established three key dates as follows: 1 July 1974 start DIDS Interface Test; 30 September 1974, implement NSN and 31 March 1975 implement DIDS Phase I.

(U) Army accepted the OASD (I&L) direction and immediate steps were taken to break out the NSN procedural requirements from DIDS wherein an interrelated program had been established and to incorporate DIG change 73-12 and DCN's 01 thru 07 into the basic systems design. Additional adjustments were made to update the training courses and schedules.

Defense Integrated Materiel Management of Consumable Items Program

(U) At the direction of DOD, 24 FSC classes were subject to item management coding in support of the subject program. A total of 82,443 items were processed within Army. Of these, 18,289 items were transferred to the Defense Supply Agency (DSA), 37,507 items were retained by Army and 26,647 items were withdrawn from the supply system. One of the requirements of subject program is that with the transfer of items to DSA, a commensurate number of civilian spaces must be transferred from the Army NICP's and depots to DSA. In the first increment, 23 spaces were transferred from Army to DSA on the basis of 7,559 items processed for integrated management. In the final increment, 35 spaces would be transferred from Army to DSA on the basis of 9,036 items reflecting a total of 16,595 items coded by the Army for transfer to DSA through 30 June 1973. A memorandum of understanding was signed by DSA and AMC regarding the spaces and dollars involved.

Microfiche

(U) As a result of the DOD Report on the miniaturization of Federal Catalog System Publications (Mini-Cats), dated July 1974, the following Army publications/files have been produced on 48X microfiche (in lieu of hard copy or microfilm): Army Tailored Master Cross Reference List (C-RL-1-A); Army Master Data File Retrieval Microform System (ARMS); Supplementary Interchangeable and Substitute Item List (SB 700-25); and The Management Data List (C-ML-A).

(U) The Army Master Data File on Microfiche (ARMS) was furnished to authorized friendly foreign countries without reimbursement. The Army Master Data File was available through the US Army Catalog Data Agency at New Cumberland Army Depot. The other cited publications were available through the US Army AG Publications Center, St. Louis, Missouri.

Federal Item Identification Guides (FIIG) Improvement Program

(U) The FIIG program provides a mechanized system of item identification of those items in the Defense Logistics Services Center (DLSC) file utilizing the descriptive pattern. Negotiations between HQ DSA and the Superintendent of Documents, Washington, D.C. resulted in an agreement which would permit the DLSC to make distribution of published

FIIG's to DOD activities. DLSC began distribution to Army activities 1 April 1974. Distribution of FIIG's was tailored to the requirements of each user, in lieu of fixed distribution.

Aviation Support for the American Embassy (AMEMB) and the International Commission for Control and Supervision (ICCS) in the Republic of Vietnam (RVN)

(U) DA, on 30 May 1974, directed AMC to negotiate a Memorandum of Understanding (MOU) with an implementing support agreement for repairable components to support 16 AVSCOM-owned UH-1H aircraft leased to a US Contractor (Air American, Inc. (AAI)) in the RVN. USARPAC (USARBCO) terminated in-country supply support to AAI on 10 June 1974 and Direct Supply Support (DSS) from CONUS was proposed to begin 1 July 1974. DSS direction was necessitated by the proposed realignment/phase-down of the USARPAC area. It was envisioned that DSS to AAI from multiple CONUS sources, AVSCOM, ECOM, DSA, and GSA could be initiated. However, this action posed an unprecedented situation in that there was no suitable central CONUS retail activity (sponsor) to accomplish requisition control, funding and billing.

(U) AMC proposed the following three options to DA with the recommendation that DA approve the first option: (1) AAI buy commercially, (2) permit USARJ to provide support, or (3) establish a "pipe line" to AVSCOM. The DA decision to task AVSCOM to support AAI directly was aborted after AVSCOM indicated resources for a minimum of five personnel spaces would be required.

(U) At a subsequent meeting, it was decided to have AAI requisition directly from each NICP including GSA and DSA, providing DSA was successful in obtaining an exception, from DOD, to a governing DOD Directive which precludes DSA from dealing directly with contractors. In the event this approach failed, DA was to request that USARJ, in lieu of USARBCO, support AAI using existing procedures. In the interim, to preclude halting flow of support to AAI, DA requested that USARPAC continue, through 30 September 1974, the previously established arrangement through USARBCO until CONUS support could be established.

Joint Army/Navy Plans for the Development of Wholesale Supply and Depot Level Maintenance Support of Army Ships and Watercraft

(U) Guidance from the SECDEF of 25 February 1974 to the Secretaries of each Military Department, specifically indicated that the Army and Navy should develop, in time to be implemented no later than CY 1975 (FY 77-81) POM, a plan for the Navy to assume wholesale supply and depot-level maintenance support of Army ships and watercraft under a continuing interservice support agreement. That plan was to provide

for accomplishing such maintenance in either Naval facilities or private shipyards with Navy contract specification and administration as was most efficient. Accordingly, a joint Army/Navy ad hoc committee proposed a plan of action, with milestones, for all critical aspects of depot level maintenance and wholesale supply support upon which an agreement would be based. The joint plan was given to the Chief of Naval Operations by the Chief of Naval Material, 27 June 1974.

Demilitarization Codes

(U) By Memorandum, dated 8 December 1972, the Assistant Secretary of Defense (Installations and Logistics) revised the demilitarization policy to include all items which meet the definition of "lethal" in the Demilitarization Manual, including parts and accessories not commercially available and which contribute directly to the lethal nature of the item.

(U) The Defense Supply Agency (DSA), in collaboration with the Military Services and other Defense Agencies, was tasked to develop a series of standard codes to identify each item requiring demilitarization and the type of demilitarization required. Twelve codes were established during a meeting held on 9 and 10 January 1973.

(U) All items in the DOD supply system were to be reviewed and the appropriate codes assigned prior to 30 June 1973. Due to problems in assignment of codes to items managed by more than one service, some items are still being reviewed for assignment of the appropriate codes. The initial broadcast of these codes in the Army Master Data File (AMDF) was in the AMDF broadcast effective 1 February 1974.

Property Disposal

(U) The 13 AMC special property disposal demilitarization accounts began the year with an inventory value of ammunition and small arms weapons awaiting demilitarization of $120.3 million. Generations during the year totalled $148.2 million. Dispositions amounted to $130.7 million leaving an ending inventory of $137.8 million. Dispositions included $17.5 million of ammunition reutilized or returned to stock; $99.7 million of weapons and parts and ammunition demilitarized and expended to scrap; and $13.5 million of ammunition demilitarized and destroyed with no scrap residue remaining.

(U) In addition, 3,243.9 tons of copper based ammunition-scrap valued at $4.0 million were provided mills by ARMCOM as raw material for the ammunition procurement program and 10,827.3 tons of scrap, resulting from demil operation, were transferred to Defense Property Disposal Offices for sale to the general public.[1]

[1] All statistics were derived from Status of Materiel at Disposal Activities (RCS AMCIS-132), AMCR 755-4, 13 June 1969.

Agreement for Rotation of Prepositioned War Reserve Stocks

(U) Agreement has been made with the Defense Supply Agency (DSA) to have the DSA assist in the rotation of all DSA managed items that are Army-owned Prepositioned War Reserve Stocks (PWRS) and stored in Army depots. Machine listings that identify items to be rotated would be provided semi-annually to DSA. When DSA reached a "buy" position or generated a requirement, the stocks at the Army depots would be rotated and replaced with stocks that had a greater remaining shelf life. The agreement was to preclude and/or minimize stock losses due to approaching shelf life expiration.

Inventory Management

(U) A four day seminar, hosted by the US Army Troop Support Command, St. Louis, was held the week of 17 September 1974. Its major theme was "Operational Readiness." More specifically, rising inflation and cutback in defense expenditures notwithstanding, managers of the Army's inventory were challenged to develop methods aimed at increasing the total AMC inventory stock availability position from 67 percent to 85 percent. To this end, working groups, consisting of NICP, depot, and overseas command representatives, were formed to consider critical problems; recommend solutions; and draw up procedures for implementation. Subjects discussed included File Maintenance, Inventory Control Effectiveness (ICE), Review team recommendations, Inventory Research Office (IRO), study of materiel release denials (MRD), inventory reporting, location record audit, and denial management codes. These efforts, in conjunction with on-going projects and studies, resulted in positive actions.

(U) At the close of fiscal year 1973, the MRD rate was 1.75 percent vs an AMC goal of 1.5 percent. In fiscal year 1974, intense monitoring of the SPEEDEX system, with particular emphasis on the physical inventory program and its interface with other ADP systems, resulted in a reduction of the MRD rate to 1.5 percent. New inventory procedures scheduled for command-wide implementation in FY 1975 were expected to have an even further impact on reduction of MRD rates in the future.

(U) For some time now, the Inventory Office of the Directorate for Supply had been studying and considering several changes to the inventory program. Included in these considerations were an IRO test with ECOM, a study of the DSA system, and a records match and depot scheduling test conducted by TEAD, TROSCOM, TACOM and ARMCOM. The objective of the study effort was to revise the existing AMC inventory

program so that it would be more effective, take more complete advantage of the capabilities offered by the ALPHA and SPEEDEX systems and be more economical in terms of manpower effort, reduced reporting, and reduced computer time.

(U) In October 1973, approval was granted for TEAD and TROSCOM to conduct a test of a system to match depot and NICP records and to have TEAD schedule inventories using an order of merit listing (OML). The test was later expanded to include TACOM and ARMCOM. The basic concept called for an expansion of the present location audit procedure to include reconciliation of quantities by condition code. Resulting mismatches were to be given first priority for inventory. Succeeding priorities were assigned according to position of appearance on the order of merit listing which ranked FSN's by degree of item activity. This was the logical application of the very simple but nonetheless very important principle that those items with the greatest number of transactions generate the greatest number of errors. Tooele test results indicated visible improvement in inventory accuracy, thus substantiating the validity of these procedures. Consequently, they were scheduled for AMC-wide implementation in FY 1975. Plans were also under way for the development of compatible ADP programs which were expected to dramatically reduce the time required to accomplish the inventory process and even further increase the degree of records accuracy.

Storage and Transportation

Civilian Transportation Management Career Program

(U) The responsibility for functional supervision of the AMC Civilian Career Program for Transportation Management is assigned to the Chief, Transportation Branch, Storage and Transportation Division, Directorate for Supply. During FY 1974, several significant actions were successfully accomplished in support of this program which concerns approximately 200 AMC career civilians. In the first quarter of FY 1974, an AMC representative participated in the DA-wide Job Analysis Task Force, whose task it was to analyze representative transportation job descriptions and identify the basic skills, knowledge, abilities, and personal characteristics required to accomplish assigned functions. These efforts lead to the new criteria to be utilized in identifying potential candidates for transportation assignments throughout DA. Other actions included finalization of arrangements with HQ Military Traffic Management and Terminal Service to provide courtesy referral assistance from their talent banks for some "hard to fill" vacancies experienced by AMC at specific geographical locations.

Energy Crisis

(U) During the past year our country was faced with a serious energy crisis. Because of the shortage of fuel, the Army took several steps to minimize the impact of the energy crisis. Specifically, the use of airlift for cargo delivery was drastically reduced by a change in DA policy which restricted air eligibility criteria. Increased emphasis was also placed on cargo consolidation to assist commercial carriers in obtaining better load factors which resulted in fewer total movements. Finally, oversea commands greatly reduced the number of high priority requisitions being submitted. These actions materially reduced the total fuel requirements without appreciable degradation of support to the customer.

Control of Premium Transportation (RCS CSGLD-1604) AMCR 55-8 dated 24 April 1974

(U) The Control of Premium Transportation Program (RCS CSGLD-1604) was a vehicle whereby AMC exercised control over the utilization of premium transportation (surface and air) by shippers of Army sponsored cargo. AMCR 55-8 tasked the Logistics Control Offices and AMC shipping activities to validate the consignee's transportation requirement for those movements which weigh over 500 pounds and have a transportation priority of 1 or 2. The LCO validated overseas shipments and the separate shipping activities validated CONUS movements. With the concurrence of the customers, many of these shipments were diverted to less costly modes. The following statistical data reflected the continued emphasis that AMC placed on this program; and the success that was achieved.

OVERSEAS SHIPMENTS

Shipments Diverted	Tons Diverted	Resulting Cost Avoidance
12,169	36,790	$32,849,794

CONUS SHIPMENTS

Shipments Diverted	Tons Diverted	Resulting Cost Avoidance
13,391	14,147	$ 4,331,505

Total Cost Avoidance
$37,181,299

(U) This program received additional emphasis during the 2d Quarter, FY 1974 in the light of the energy crisis. To minimize the amount of materiel moving by airlift, Department of the Army eliminated TP2 shipments as air eligible. This action reduced by approximately 40

percent the amount of AMC cargo that was eligible for premium transportation. Consequently, the total cost avoidance for FY 1974 was not of the same magnitude as during earlier periods, but they did represent similar percentages of diversions against offerings.

Modernization

(U) During FY 1974, contracts were awarded for Care and Preservation at Anniston Army Depot for a cost of $1,165,802 and at New Cumberland Army Depot for realignment of the in-process control unit in the Consolidation and Containerization Point (CCP) at a cost of $48,016. In addition, contracts for $499,400 for capital equipment for depot storage operations were awarded.

Storage Space

(U) During FY 1974 the net to gross ratio for covered storage space (minus igloos and magazines) rose to a high of 66 percent at USAMC depots. Covered storage space occupancy rose to 85 percent during the period and all measurable storage space data met or exceeded DA objectives.

Receiving Performance

(U) On time receiving performance was measured by the Supply Performance Report (AMCSU-220) prescribed by AMCR 740-20 and covers two elements: reporting receipts to ICP's within MILSTRAP time allowances - depots having six days on a receipt from procurement; nine days for other receipts; and placing receipts in permanent storage location within prescribed line frames - seven days for receipts from procurement; ten days for other receipts.

Project Nickel Grass (9DD)

(U) When the Middle East conflict began in October 1973, Storage and Transportation was an integral part of a coordinated AMC effort tasked with locating stocks and pre-planning of shipments should direct aid to Israel become necessary. Upon receipt of direction from DA (DCSLOG), AMC was prepared to move large volumes of materiel to aerial and water outports. An operations center was established and operated around the clock for a period of six weeks. AMC personnel were called upon to direct movement, monitor the flow and control of thousands of tons of cargo as well as provide higher authorities with a multitude of reports and information.

Project 9EE

(U) During the period 1 October thru 15 December 1973, the transportation branch operated a movement control system of expediting, tracing and reporting shipment and lift status for approximately 2000 S/tons of general cargo and vehicles destined to Cambodia. The materiel for Project 9EE moved via MAC Channel Airlift from the aerial ports of Charleston, Tinker and Travis AFB's at a cost of approximately $3.5 million. The intensified coordination and movement control exercised by transportation people materially enhanced AMC's ability to meet the required delivery date in country.

Commercial Container Shortfall

(U) During the 2d Quarter of FY 1974 and extending to May 1974, the entire Department of Defense was effected by an acute shortage of commercial containers for movement of materiel overseas. Ocean container carriers were overburdened with a dramatic increase in export of materiel from private industry. AMC became particularly effected in the operation of its consolidation and containerization points (CCP) when cargo became backlogged.

(U) Through daily coordination between AMC, DA, MTMTS, and MSC the commercial containers available were augmented by the respotting of MILVANS within CONUS. The use of MILVANS plus the chartering of additional ships to move the cargo were instrumental in relieving the backlog and reducing the impact of long delays in shipments to overseas customers.

Special Assignment Airlift Missions (SAAM)

(U) FY 1974 was the first year AMC had sole responsibility, as the Army designate, for analysis, approval or disapproval and arrangement for all Special Assignment Airlift Mission (SAAM) for movement for Army sponsored cargo, a function prior to May of 1973, performed by DA (DCSLOG). SAAM's were requested from the Military Airlift Command (MAC) when airlift was deemed necessary due to the urgency, sensitivity or physical characteristics of the cargo. Since the Army pays for the entire use of the aircraft both to and from the destination, AMC coordinated with other elements within the Army or with other services to efficiently use the aircraft on both legs of the trip. Ninety-five percent of all Army SAAM's during the year returned to points of origin with retrograde cargo.

(U) A total of 298 missions were arranged for by AMC during the year at a total cost of $11,928,042. MAC utilized 51 C-5A's, 366 C-141's and 1 C-124 to support the above missions. Not included in

these figures were 40 missions or 18,600 flying hours arranged for in support of Israel during Project Nickel Grass (9DD).

DSS-Drop Point

(U) As a result of energy shortages and the corresponding limitations placed upon airlift, AMC found it necessary to modify its distribution plan for USAREUR DSS units. While maintaining the objectives of DSS, AMC placed increased emphasis upon cargo consolidation during FY 1974.

(U) The distribution plan developed provided for the best possible support to the customers considering the constraints impacting on the physical distribution system. The plan called for direct delivery to single/multiple consignees to the maximum possible extent. The capability was established to support low volume customers through ten Distribution Drop Points (DDP) on an as needed basis.

(U) Units typically receiving shipments through a DDP could expect an increase of one to two days in unit processing time; however, a corresponding reduction in total time would be experienced at the CCP and in-country in transit. Since the majority of units were to continue to be serviced by direct deliveries, the total yearly average OST was not expected to increase. Fewer containers would also be required to effect delivery which would help lessen the impact of the container/lift shortage.

Worldwide Short Range Forecasting of Overocean Transportation Requirements.

(U) Effective June 1973, the Transportation Branch, Storage and Transportation Division, AMC, was assigned sole responsibility for preparation of monthly Army worldwide transportation requirements to the Military Airlift Command (MAC) and Military Sealift Command (MSC), a function previously performed by DA (DCSLOG). Preparation of these forecasts entailed consolidation, analysis and modification, as necessary, of inputs received from seventeen commands/organizations covering future movements of cargo, ammunition, personal property, courier materiel and mail. The final product submitted by AMC was for the operational planning and use of the single managers for transportation (MAC and MSC).

(U) Events of FY 1974 such as the energy crisis, which limited movement by air to only Transportation Priority 1 materiel, the commercial container shortage and high priority projects precluded forecasting based on trends. Despite these events, the Army monthly forecasts were within the 15 percent MAC objective when compared with actual worldwide air movement and within 9 percent of actual movement for surface lift. To further improve current forecasts, a feedback system

was being studied and developed by the Logistic Control Office to provide NICP forecasters monthly lift data by MAC channel and MSC traffic area.

Expanded Use of Commercial Packaging

(U) Pending revision of AR 700-15, depots and commands were provided guidance for prescribing commercial packaging for AMC-sponsored procurements and shipments. Guidelines were developed which outlined the minimum requirements for determining the acceptability of commercial packaging. The guidelines were to be cited in procurement documents when applicable. Analysis of packaging requirements indicated that commercial packaging would be adequate for approximately 60 percent of AMC shipments and would result in significant savings over military packaging methods in use.

Retrograde

(U) Since the early 1970's, AMC Supply Directorate has had considerable interest in studying the nature, volume and condition of retrograde material entering the CONUS depots from USAREUR and USARPAC. The total receipts declined from 175,000 tons in FY 1972 to 117,000 tons in FY 1973. The decline continued into FY 1974, when after three quarters, only 53,000 tons had been received.

(U) The following table summarizes trends in depot processing of retrograde.

	Lines Processed (000)	Tons Processed (000)	$ Value of Material Processed (billions)
FY 72	645	208	$1.5
FY 73	254	128	.8
FY 74 - 9 months	159	55	.2

(U) Retrograde backlogs at the depots were reduced considerably, as processing capability exceeds new receipts. At the end of FY 1972, backlogs stood at just under 10,000 tons. By the close of FY 1973, the retrograde backlog was only 2300 tons. By the end of the third quarter FY 1974, backlogs had been reduced still further and stood at just over 1000 tons. Because of the decline in retrograde activity, RCS 1499, Processing and Reporting of Returned Material, was discontinued effective the end of FY 1974.

Supply Performance-Productivity.

(U) In July 1972, the Director of Supply, AMC, published the first Workload/Resources Relationship Overview of AMC Depots. The overview included an analysis of PE 721111, Supply Depot Operations. The purpose of this publication was to determine the strength of the relationship between workload and resources, as a possible basis for improved workload forecasting. The original study was followed by a second study, which was published in April 1973.

(U) These studies provided a basis for examining productivity in gross terms. The following are system-wide averages based on total manhours and total receiving and shipping workload. The term "system" includes all of the depots in the FY 1974 lineup. In this regard, Atlanta and Charleston which were active in years prior to FY 1974 are excluded for purposes of this data. The FY 1974 productivity gains were considerable:

	1969	1970	1971	1972	1973	1974 3 Qtrs
Manhours per Ton	8.33	9.54	9.51	9.24	9.33	7.82
Manhours per Line	4.53	4.29	4.21	3.76	4.23	3.15
Lines per Ton	1.84	2.23	2.26	2.46	2.21	2.51

Defense Integrated Management Engineering System (DIMES)

(U) The regulatory authority for the DIMES program is DODD 5015.10, dated January 1972. The objectives of the DIMES program are: to improve labor productivity through the application of management engineering and techniques; and to provide a common base of work measurement and productivity data which would be used in the development of budget estimates and manpower requirements in work planning and control, in the development of productivity performance indices relating outputs to inputs, and for other management purposes.

(U) The DIMES program had never truly achieved its potential. There were many reasons for this. In its present state, DIMES application within the depot system, provided supply management with a tool for evaluation and a basis for analysis of organizational efficiency, very little more.

(U) While there was apparently sufficient confidence in the DIMES output to use it for purposes of internal control, there was apparently not yet sufficient confidence to apply DIMES standards data for the broader and more significant purpose of pricing and

workload negotiation with MIDA. In effect, a depot maintained two sets of books, one used internally to evaluate subordinate performance and efficiency, the other for external purposes of negotiation with the workloading agency. There was seemingly no correlation between the two.

(U) As the AMC Directorate for Supply viewed the system, part of this dilemma was caused by inadequacies in the DIMES informational package that was made available to depot supply managers. The Supply Directorate made firm recommendations relative to improvement/changes that could and should be incorporated in the SPEEDEX product.

(U) In January 1974, the Army Management Engineering Training Agency (AMETA) published a study "Evaluation of Uses of Work Measurement Data Throughout the AMC Depot System." The study was undertaken at the request of the AMC Comptroller.

(U) The study tended to be critical of depot commander's application of the product of the work measurement system and provided many reasons for the manager's apprehension to rely on the system. Throughout the paper a theme that frequently appeared was that unit cost type efficiency measures were employed to monitor overall operations. The position taken by the study was that these measures "are not adequate measurements of efficiency because the baselines for unit cost measures are based upon past history which may contain an unknown amount of inefficiency." The AMC Directorate for Supply did not completely agree with this premise and, with the passage of time, found it less and less acceptable. In the directorate's view, the depot system did not operate in a vacuum; there are many constraints upon it. Manpower survey teams provided depot commanders with optimum staffs necessary to perform missions, and financial constraints also impacted on the resources available to the commander. The net effect of such constraints was to assure that there are no significant imbalances between depot resources and its workload according to AMC Supply Managers.

COSIS Program

(U) The Army Audit Agency conducted a comprehensive review of the COSIS Program during FY 1974 and offered numerous recommendations for improving overall program management. In response to the AAA recommendations, program changes were developed for implementation in FY 1975 aimed at providing a better handle on programming, budgeting, and reporting aspects.

(U) The AMC Supplement to AR 37-100-75 was changed to more clearly identify COSIS AMC accounts. A COSIS PRON was established to provide positive control in assuring that COSIS funds are used for COSIS workload. The AMC accounts within the PRON were raised to priority 2 in the D/Supply Five Year Program. Reporting requirements were expanded in the Depot Operations Cost and Performance Report (RCS AMCSU-238) to provide visibility of total lines, tons, manhours, and dollar value of materiel generated, processed and backlogged.

(U) FY 1974 workload accomplishments resulted in a reduction of the COSIS PP&P backlog to the lowest level in four years.

Stock Management and Policy

AR 725-50 - MILSTRIP

(U) Approximately 30 proposed MILSTRIP changes have been received for review, staffing, evaluation, and response during the past year. Most of these changes were of major consequence when and if adopted. Notable among these changes were the following: (1) use of AUTODIN to transmit the back order reconciliation in lieu of mail; (2) review of the mass cancellation procedures; (3) use of referral orders to transmit requisition demands to CONUS posts, camps and stations and overseas theater depots reporting assets; (4) a standard DOD system for use in reporting and processing of excesses. This would include use of a standard format for the materiel release receipt document, DD Form 1348-1, covering shipments to the PDO; and (5) the complete revision of AR 725-50 was in process. The manuscript was reviewed by TAG and it was tentatively scheduled for publication and distribution during the 1st Quarter, FY 1975.

AR 725-50 - MILSTRAP

(U) Two major changes to MILSTRAP occurred during 1974 that would require revision of Chapter 5, AR 725-50. These changes involve: (1) a series of internal reject codes for use between the military services' storage activities and the inventory control points; and (2) asset visibility to accommodate provisions of DODI 4140.37. When fully implemented, these changes would have a major affect on the current asset reporting system.

Excess Reporting

(U) Actions were continuing to report ARVN excess and to accomplish bulk retrograde of US Army materiel from Okinawa. Major excesses were identified by ARVN and were being reported to the CONUS

inventory manager under the FTE procedures. This action commenced during the latter part of calendar year 1973.

(U) USARBCO has reported a major quantity of unidentified, unclassified excesses. Much of this materiel was in unopened CONEX's which were retrograded by the USARV. Items were being reported under the normal FTE procedures, as required by AR 755-1.

National Stock Number

(U) A major effort was underway in the Military Standard Systems Branch of the AMC Directorate for Supply to insure that adequate provisions would be made to convert to the National Stock Number (NSN) in September 1974. Implementation of the NSN would require a conversion of basically all files used by the NICP's, depots and intermediate supply sources in the requisition, receipt and adjustment processing procedures. Many reporting requirements would also be affected by the conversion to the NSN.

(U) The following AMC Commodity Commands converted their cataloging functions to CCSS (ALPHA Phase A): TROSCOM (December 1973), TACOM (April 1974), and ECOM (June 1974).

Wholesale Level Exchange Development

(U) Original guidance to the DXTG was provided for third loop (wholesale level). The General Officer Steering Group on 21 November 1973 judged the wholesale level not feasible and gave alternative guidance to develop a Selected Item Exchange (SIE) program. The SIE program was designed to insure that selected Class IX depot reparables, in national short supply would be intensively managed and equitably distributed to and within major Army commands. Draft SIE procedures were prepared and staffed with Department of the Army and major Army commands. Upon final approval the procedures were to be incorporated in appropriate Army regulations.

CCSS/ALPHA Administrative Control Procedure

(U) The Director of Supply designated the Stock Management and Policy Division as the control point over all CCSS/ALPHA actions on 29 March 1974. It therefore became necessary to develop an implementing procedure to insure that the objective of setting up a single control was indeed recognized and followed by the individual divisions and offices within the Directorate. An internal CCSS/ALPHA Administrative Control Procedure was developed by the Logistics Doctrine Branch in June 1974.[2]

[2]Memo, AMCSU-MD, 4 Jun 74, Subj: CCSS/ALPHA Administrative Control Procedures.

Classes of Supply

(U) As a result of previous action taken by the AMC Directorate for Supply to incorporate a Supply Categories of Materiel Code (SCMC) in AR 708-1, item managers were required to code items in the Army Master Data File (AMDF) by classes and subclasses of supply as published in AR 11-8, Logistic Policies. This information was broadcast to the field by means of the Army Master Data File Microform System (ARMS) in July 1973. Since the coding of items by SCMC in the AMDF was new to item managers and users of the ARMS data, as well, shortfalls were experienced and documented by units in the field, consequently, SB 38-1, Classes of Supply, was developed and published by AMCSU-MD to furnish information and guidance to managers and users, alike.

(U) Recognizing that the soundness of SCMC coding depended on the interpretation of item managers, the Classes of Supply were redefined in the Army Dictionary of Terms (AR 310-25) and realigned in AR 11-8 and SB 38-1. In addition, a color marking concept based on the ten classes of supply structure was developed and coordinated with the military services, DSA, REDCOM and FORSCOM. The majority of responses were favorable, therefore action was taken to incorporate the new markings in MIL STD 129 and procedures included in SPEEDEX to provide depots with a means of identifying items to be color marked.

Development of the SIMS Program

(U) While the SIMS Program had been successful in producing actual cost avoidances, it was recognized that additional benefits could be achieved through: improved timeliness of data by daily asset status; vertical management through transaction accounting and reporting; expanded item coverage; timely reporting through DAAS/AUTODIN; improved requirements determination through improved supply control studies and positive control of referral action; and through improved support to the customer by increased visibility, reduced demand fluctuations, lower stockage objectives, reduced pipeline, improved procurement actions, improved maintenance scheduling and a reduced NORS rate.

DSS

(U) Several significant accomplishments in the DSS occurred in FY 1974. They were: complete expansion of DSS to USARPAC (85 customers); extension of DSS in CONUS to Fort Riley and Fort Sill; and a tentative schedule for the extension of DSS in CONUS was developed.

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Policy Changes

(U) Back Order Reconciliation. Effective July 1974, the back order reconciliation was to be forwarded to recipients via AUTODIN. This was a DOD directed action and a major change from the policy that required that back order reconciliation requests be mailed. It was also a major change in policy in that these were to be transmitted via AUTODIN rather than DAAS.

(U) Asset Reporting. Major changes in the asset reporting policies and procedures were under review, with the objective of implementation during the 1974-1975 time frame. These changes in policy would involve major changes in the criteria for reporting, the method and frequency of reporting, and also the procedures with respect to utilization of assets reported under the asset reporting requirements of DODI 4140.37.

(U) Internal Rejects. The DOD MILSTRAP was modified to incorporate internal reject codes for use internally between the NICP and the storage activity. This was a major change in policy, as DOD was prescribing internal system rejects. This could present major obstacles to the ALPHA and SAILS systems.

(U) Condition Code P. Condition Code P (CC P) was introduced in 1972 to cover major items classified as unserviceable and uneconomical to repair, but having serviceable components or assemblies to be reclaimed. CC P items are categorized as those reportable to commodity commands for disposition instructions in accordance with AR 755-1, and those which are nonreportable, i.e., disposition instruction is provided by the accountable major command, without referral to the applicable NICP. Implementation of CC P in 1973 necessitated publication of policy guidance for AMC commodity commands as regards reportable code P, major end item. This policy guidance was provided in AMCR 755-10, Reportable Major End Item Assets, published 31 August 1973. This regulation stated the criteria to be used by AMC commodity commands in designating major items as reportable when classified in condition code P. AMCR 755-10 also directed AMC commodity commands to submit current lists of their reportable major end items, in a standardized format, to Headquarters, AMC, by 1 August and 1 February of each year. Negative replies were required and could be phoned. Headquarters, AMC, would, in turn, review these lists and consolidate them into an AMC Reportable Major Items List, and would forward this list to all major commands and AMC installations/activities.

(U) Maintenance Management Center (MMC). The Maintenance Management Center (MMC) was established at Lexington-Blue Grass Army in 1973. The AMC Directorate for Supply had responsibility for assignment of tasks concerning areas of supply and transportation. The supply activities at MMC were reoriented toward the AMC wholesale system in order to eliminate potential duplication of effort with the Army Logistics Center (LOGC), which was retail/user oriented, and to improve supply staff support for AMC. This reorientation of effort meant that retail level supply tasks being accomplished by MMC would be transferred to the LOGC. A program of coordination between the two centers was to provide interface overlap and improve communications between the wholesale and retail supply systems.

(U) Basic Issue Items. The DA revised Basic Issue Items (BII) policy was implemented and became effective 1 July 1973. Under the new policy, BII was to consist of crew/operator accessories and tools required to operate the major end item and enable it to perform the mission and functions for which it was designed. Support items such as repair parts, common tools, and expendable supplies were excluded from BII. The policy was implemented for US Forces on an item-by-item basis and became effective upon the date of the publication of the TM changes containing the revised policy. The revised BII policy was placed into effect for Grant Aid, Foreign Military Sales and MASF (LAOS), effective 1 July 1973. Those changes in funding requirements resulting from the revised BII policy were forwarded through normal funding channels. AMCR 700-47 was revised to comply with the DA revised BII policy and published on 9 January 1974. A joint working group with representation from LOGC, Fort Lee, Virginia, AMC and DA was established in May 1974 to review the overall BII policy. Initial recommendations from this group included the development of a separate AR for BII. The joint group policy was being expanded to include all commodity areas. The joint group plans to forward their recommended changes to the BII program on or about 1 August 1974.

Weapons Management Improvement Program

(U) In October 1972, the Army designed and developed a central control for small arms by serial number. Phase I called for capturing serial numbers in property book accounts and serial numbers of small arms moving between retail accounts, overseas depots and depots and property accounts. Phase I was completed 1 January 1973. Phase II called for the establishment of a central registry at ARMCOM to be operational by 31 December 1973. Procedures for training and a central data bank were accomplished in November 1973 and the system was ready for operation 21 December 1973.

(U) On 29 December 1973, the House Appropriations Committee denied funds to develop the system and directed that action on the small arms program be suspended pending further instructions from DA. DOD Memorandum dated 18 April 1974 directed the Army to establish a DOD-wide standard system to control small arms by serial number using the Air Force system as a base line. A joint requirements group was established under Army leadership and proposed specifications were drafted and submitted to ASD (I&L) on 15 June 1974. The proposed specifications provide that: (1) there would be one DOD central registry located at ARMCOM, Rock Island, Illinois; (2) the services/DSA would operate separate service registers and record all transactions occurring within their respective areas; (3) only transactions resulting in a gain or loss to a service registry would be reported to the DOD central registry; (4) the DOD central registry would register and track, by NSN, the serial number of all small arms as defined in DODI 4140.35; (5) depot stocks would be registered over a three year period and all weapon shipments between services/DSA would be registered stock; and (6) the central registry and the service/DSA registers would be reconciled annually.

Reduction of Off-Line Processing of Requisitions

(U) During the period of April-May 1973, the Directorate for Supply was given the responsibility of reducing off-line processing of requisitions.[2] The Supply Director was concerned about the number of rejects and off-line requisitions being processed by the NICP's. As a result, the Director of Supply established an on-going intensified effort to reduce off-line processing in order to improve the response time performance in supplying the materiel needs of the user. The large percentage of requisitions that were manually processed by NICP's was a major contributor to delays in materiel processing.

(U) On 27 June 1973 and 28-29 August 1973, conferences were held at Headquarters, AMC for the purpose of developing standard procedures to reduce the percentage of off-line processing by the NICP's. The conferences generally agreed that immediate and constant review of controlled and/or regulated items would yield the greatest return regarding reducing the number of such items to the absolute minimum. A milestone schedule for coordination and implementation was formulated. In addition, a set of performance goals for the NICP's was established and submitted to Plans and Programs Office for inclusion in the Director of Supply 5-Year Program. Monitoring of the NICP performance against these goals was performed using the MILSTEP report. Effective 1 January 1974, this report included the percentage of requisitions processed off-line by category. The categories included were the percent of: (1) demands manually processed; (2) exception data demands; (3) part number demands; (4) customer

[2]Director Guidance, AMC Directorate for Supply, 11 Apr 73, Subj: Rejects and Off-Line Processing of Requisitions.

errors; (5) demands manually processed over MRO; (6) management control; and (7) others manually processed.

LOGMAP

(U) During the Army Logistic Policy Council (ALPC) meeting of 26-27 March 1973, the ALPC approved a change to its charter, giving the council a greater role in the management of the Army Logistics System Master Plan (LOGMAP). Under the revised purpose statement, as approved, the council would provide advice/assistance to the DCSLOG in the evaluation and development of concepts, objectives and policy as documented in LOGMAP and assist the DCSLOG in the development, management and coordination of LOGMAP.

(U) In pursuit of this increased role, DA DCSLOG requested each member of the ALPC to submit ideas for improvement of LOGMAP. DA further requested that, in preparing for the next annual revision in July 1974, of LOGMAP, the AMC review of LOGMAP would include a comprehensive look at specific and subobjectives. AMC advised DCSLOG that it supported the ALPC function of providing advice and assistance in continuing development and improvement of LOGMAP based upon an in-depth examination of LOGMAP concepts, policies, format and specific and subobjectives. However, in summary, AMC did not recommend any drastic changes to the LOGMAP concept. As of the end of the fiscal year, the 1974 edition of LOGMAP had not been published.

Army Logistics Systems Interface Review (ROADMAP) Study

(U) During the second quarter FY 1974 the Director of Supply was concerned regarding the interface of the various Army logistic systems and subsystems which combine to make up the Army supply system. A lack of a cohesive network to relate one system to another had resulted in duplication and non-compatibility in many of the subsystems which made up the overall supply system. During the 3d Quarter, FY 1974, the Logistics Study Office (LSO), ALMC, Fort Lee, Virginia, was tasked to conduct a review of the many logistic systems and subsystems making up the Army logistics systems and to establish a "ROADMAP" for tracking system interface requirements. A Study Plan was submitted during the fourth quarter and approved with minor changes. The magnitude of the task, however, precipitated a manpower resource problem which exceeded the capability of the LSO to resolve locally. A Study Advisory Group was established to oversee the study effort and to render assistance and guidance.

SIMS-X

(U) Functional guidance for the Selected Item Management System-Expanded (SIMS-X) was provided during FY 1974 by a Vertical Management

Task Group consisting of representatives from DA DCSLOG, USAMC, the Logistics Evaluation Agency (LEA) and Computer Systems Command (CSC). This guidance was to be the basis for the formulation of both the general and detailed functional system requirements.

(U) During the latter half of FY 1974, a draft General Functional System Requirement was developed for SIMS-X by LEA. USAMC provided a major portion of the input for this effort and was to continue to provide support for the development of a SIMS-X Detailed Functional System Requirement. Firm dates for the actual implementation of SIMS-X were not established; however, a tentative 3d Quarter FY 1975 date was projected. Adjustments in this date were expected to be made because of problems being experienced with various programming efforts and requested standardized input documents. SIMS-X would replace some portions of SIMS and was expected to improve and expand others to overcome deficiencies currently existing in SIMS. SIMS-X was directed by DOD. The system required the adoption of vertical management through transaction accounting and reporting.

Major Item Management

(U) To support the US Army logistic readiness goals worldwide, an extensive and aggressive program was implemented throughout AMC supply activities to assure timely logistic support of both major items and repair parts. Within the Directorate for Supply, the Major Items Management Division was assigned the responsibility for the overall logistics readiness posture of US Army units worldwide. Under this "readiness umbrella" concept, the Major Items Management Division Chief was designated the AMC President-in-Charge of Logistics Readiness. A senior individual in the Materiel Management Division of each commodity command was designated as Vice-President-in-Charge of Logistics Readiness to serve as the command focal point for logistics readiness matters outlined in AR 11-14 and AR 220-1.

(U) The major thrust of the Major Items Readiness Branch was to manage the day-to-day program which included: (1) supervision of wholesale logistic support provided to major commands; (2) analysis of the Materiel Assistance Designated (MAD) report depicting RICC-1 shortages, Equipment on Hand (EOH), and unit repair parts shortages affecting Equipment Serviceability (ES); (3) advising the Secondary Items Management Division of secondary items/repair parts which were degrading overall unit readiness; (4) monitoring the DACS report and Army reorganization schedules to coordinate logistics support; (5) interfacing with customers, NICP's, and other interested agencies on those major and secondary items/repair parts directly affecting the logistics posture of US Army units worldwide; and (6) assisting in the

development of DA policy, procedures, and directives concerning unit and materiel readiness, data collection, reporting systems, etc., and participate in DA Materiel Logistics Assistance Visits, Major Command Logistics Review Team Visits and other operation support visits.

Predisposition Instructions for Forecasted USARPAC Excess

(U) Predisposition instructions and destinations for approximately 1300 USARPAC excess end items generated under Keystone operations facilitated early disposition of assets. Assets from USA Eight, Thailand, USARV, and USARPAC Maintenance Activities made up the items for pre-disposition. The subsequent success of this project enabled termination by DA in June 1973.

Worldwide Accelerated Disposition of Major Items of Equipment

(U) A uniform procedure was developed by DA/AMC to provide a system of predisposition instructions for excess major items for all commands. The system, an exception to the normal excess reporting prescribed by AR 755-1, expedited the disposition of known major items excess. The project was terminated in June 1973.

Phase-Out of Excess Army Aircraft

(U) During the August 1972 Aircraft Closed Loop Conference, a program was established to phase out approximately 700 additional second line Army aircraft through June 1973. AVSCOM, in accordance with DOD Manual 416021-M, offered surplus aircraft to other military services, foreign countries, and General Services Administration. Further, as a result of the decrease in flying hours program and reduction in training requirements, approximately 300 additional aircraft were placed in long term storage at the Military Aircraft Storage and Disposition Center (MASDC), Tucson, Arizona. The progress was terminated by the end of FY 1974.

Requisitioning of PEMA-Funded Principal Items by Reserve Units

(U) Requisitioning policies established by DA during 1968 provided that no back orders would be established for PEMA items for Reserve components. On 16 February 1971, DA changed the above policy with the objective of placing Reserve component units on an open requisitioning system identical to Active Army Units. By March 1972, all reserve units were under equal requisitioning criteria as active Army, except for certain intensively managed categories of combat vehicles/equipment, allocated by DARC to selected Units.

Closed Loop Support (CLS) Program

(U) During FY 1974, 191 individual items were included in Closed Loop Support Programs for the FY 1975 CLS Program. Only the Electronics Command submitted 45 nominations other than aviation type items. The CLS Program was being considered by DA and AMC for possible termination.

Commercial Construction Equipment (CCE)

(U) DA authorized the issue of several Commercial Construction Equipment (CCE) items to construction type Units to take advantage of the construction industry's research and development efforts and incorporate the latest technology. End items selected for this program were limited to those being used by civilian industry at the same configuration for at least one year. The program was expected to eliminate the need for military testing and field evaluation. The following items have approved distribution plans: (1) Distributor, Bituminous, 1500 gal, truck mounted; (2) Crane, Truck mounted, 25 ton; and (3) Truck, Dump, 20 ton.

(U) Additional candidate items under consideration for the CCE Program were: (1) Compactor, High Speed; (2) Roller, Pneumatic; (3) Roller, Vibrator; (4) Roller, 10-14 ton, steel wheel; (5) Loader, 4½-5 cubic yard; (6) Tractor, T-11 size; (7) Distributor, Water, 6000 gal; (8) Tractor, Utility; and (9) Truck, concrete, 8 cubic yard.

Commercial Vehicle Asset Visibility

(U) The management and reporting of commercial wheeled vehicles through the Army Maintenance Management System (TAMMS) as outlined in TM 38-750 had been less than satisfactory insofar as Asset Visibility was concerned. The primary reason for the lack of visibility, it appeared, was the improper utilization, preparation and submission of the DA Form 2408-9 for reporting acceptance, gains, losses and transfers to the US Army Maintenance Management Center (USAMMC). The reinstatement of the Semi-Annual Validation, rescinded by DA in February 1973, and the proposed publication of an AMC drafted DA Circular designed to highlight and clarify the use of the DA Form 2408-9, were expected to improve Commercial Vehicle Asset reporting immeasurably, thereby improving the asset visibility.

Wheels Study

(U) The Wheels Study, completed in June 1973, was a comprehensive analysis of the Army's need for the program management and utilization of wheeled vehicles and related equipment. The basic objectives were:

insuring that wheeled vehicle requirements at the lowest levels are realistically attainable, expansion of the use of commercial vehicles, improvement to the vehicle management processes and organizational structure, and improvement of acquisition procedures and wheeled vehicle utilization through development of cost associated decision making information for use in fleet management.

(U) The Wheels Study Group (WSG) and the Tactical Vehicle Review Board (TVRB) made an extensive study of wheeled vehicle authorizations for US Army Units. The net result of their recommendations was an approximate 34 percent reduction in the quantity of wheeled vehicles authorized Army-wide. In applying the approved recommendations to each applicable TOE resulted in DA imposing a moratorium on the depot issue of wheeled vehicles to preclude shipment of vehicles to an installation which would possibly become excess after receipt of the new authorization documents.

(U) The above recommendations resulted in procedures, developed between 13-14 August 1973, to accelerate the redistribution/disposal of wheeled vehicle excesses and involve intra-installation cross-leveling of vehicles and consolidation of data packages reflecting excesses and shortages. The procedures were offered to the overseas commands but were rejected. Overseas commands planned to accomplish their own cross-leveling and excess their vehicles, in accordance with current directives, on a gradual and continuing basis.

(U) The current status was: FORSCOM/TRADOC. On 1 April 1974 (original suspense date was 1 January 1974), FORSCOM/TRADOC submitted their data packages reflecting excesses, shortages, and modernization requirements to TACOM, after they completed their intra-installation cross-leveling of vehicles. National Guard Bureau (NGB). NGB failed to submit their data packages to TACOM on 1 April 1974 due to change from "G" to "H" series TOE's, annual summer training, and receipt of incorrect data from State National Guard Units. NGB dispatched a message to all State Adjutant Generals stressing urgency in submitting promptly the required data to preclude exclusion from the Wheels Program and deprivation of standard assets from Army-wide redistribution which are vitally needed for fleet modernization and readiness improvement. TACOM. It was necessary for TACOM to have all data packages from FORSCOM, TRADOC, and NGB for review and study of requirements and excesses to determine inter-installation redistribution actions. After receipt of complete data packages TACOM planned to coordinate with FORSCOM, TRADOC, and NGB to determine which vehicles would be used to fill specific requisitions, upgrade of requipment by FORSCOM/TRADOC maintenance shops, and process redistribution documents, as appropriate. After receipt by TACOM of all data packages, milestones were to be established for completion of redistribution and disposal actions. USAREUR. The USAREUR Tactical Wheeled Vehicle Redistribution Plan, Phases I, II and III were scheduled to be completed 15 March 1975.

(U) The TACOM time-phased plan for the redistribution/disposal of vehicles generated by the Wheels Study, scheduled for completion by 1 August 1974, was to be revised after receipt of complete date by TACOM from the NGB.

SPANNER (Special Analysis of Net Radios)

(U) The Net Radios (SPANNER) Study Group was established on 8 January 1973,[3] with the mission of conducting a comprehensive analysis of the Army's requirement for, and program and management of, net radios and related equipment. Major changes to equipment requirements and authorization documents (TOE, MTOE, TDA) resulted from the review of these documents by SPANNER. Criteria for minimum essential levels of equipment were used as a guiding factor in the course of the review of proliferation of Tactical Net Radios (TNR). The study, in analyzing requirements for TNR, determined that high capacity radios were authorized where lower capacity radios, at lower cost, would suffice.

(U) The SPANNER study concluded that generally Authorized Acquisition Objectives (AAO) could be reduced by some ten percent except for AN/PRC-77 and AN/VSC-3. Once revised Operational Readiness Float (ORF) and Repair Cycle Float (RCF) factors were determined (estimated 4-6% decrease) and applied, it was estimated that the overall AAO reduction would approximate 14-16 percent. Except in the case of AN/PRC-77, AN/VSC-3, and barring any unforeseen contingency requirements, no future TNR radio procurements would be required until introduction of new tactical radios in the 1980 timeframe. The cost avoidance in procurement of new equipment in the 1980 timeframe, as a result of SPANNER revised AAO's, approximated $39.88 million.

(U) The following SPANNER study recommendations were awaiting DA approval: (1) DA DCSLOG, in conjunction with AMC, develop a program to control implementation of SPANNER TOE changes to include deletions world-wide and substitutions within CONUS; (2) DA DCSOPS direct that all units required to reorganize and all newly formed units will configure TNR in accordance with changes incorporated in revised TOE documents; and (3) DA DCSOPS inform overseas commanders that they may direct and implement SPANNER substitution changes for their commands in coordination with AMC implementation plans.

(U) On 20 May 1974, DA forwarded a listing of TOE changes for TNR radios to USATRADOC for action to include the changes in the next consolidated TOE changes table.

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[3]Chief of Staff (Army) Memorandum 73-15-2, 8 January 1973.

Committee for Ammunition Logistic Support (CALS)

(U) As a result of the 27 January 1973 Vietnam cease-fire agreement, Department of the Army Allocation Committee, Ammunition (DAACA) meetings were discontinued. The DAACA was established in 1966 and served a significant management role in the allocation, distribution, and redistribution of ammunition items in actual or potential short supply. Although the cessation of hostilities in Southeast Asia relieved the strain on ammunition consumption to a degree, DA recognized a continuing need for monitoring ammunition distribution. Accordingly, on 8 February 1973, DA requested AMC to establish a system to insure timely ammunition support and to consider semi-annual work group meetings with major commands. The purpose of the meetings would be two-fold: (1) to insure proper controls are maintained over ammunition items in actual or potential short supply; and (2) to provide a means for discussing mutual problem areas and facilitate a free exchange of information.

(U) Ultimately, with the approval of DA, AMC established the Conventional Ammunition Requirements Distribution Allocation Committee (CARDAC). The initial CARDAC meeting was held at Headquarters, US Army Munitions Command (forerunner of ARMCOM), 25-26 June 1973. Under AMC Chairmanship, representatives from DA, USAREUR, USARPAC, CINCPAC, TRADOC and FORSCOM allocated critical ammunition items and discussed common problems. At the following session, in November 1973, the Committee agreed to reschedule meetings from semi-annual to quarterly. This decision stemmed from the unforecasted impact of increased activity in Vietnam and Cambodia on ammunition supply. Additionally, at the November CARDAC meeting, ARMCOM was tasked to prepare a draft Army Regulation chartering the Committee which would hereafter be known as the Committee for Ammunition Logistic Support. The draft AR 15- "Department of the Army Committee for Ammunition Logistic Support (CALS)" was forwarded in July 1974 to DA for approval and publication.

Central Ammunition Management Office (CAMO)

(U) With the elimination of HQ USARPAC, 31 December 1974, DA directed AMC to assume ammunition logistics support functions in the Pacific Area. In implementation of this directive, the Central Ammunition Management Office (CAMO) was established as sub-element of the US Army Armament Command (ARMCOM) and located in Hawaii. CAMO was to assume the functions that had been performed by the USARPAC DCSLOG Munitions Division. These functions covered centralized management and control of ammunition inventories geographically located in the WESTPAC area and included requisitioning, distribution, surveillance, quality assurance, storage, care and preservation,

maintenance, disposal, and mobilization planning. Through CAMO, AMC would take action on safety waivers and recommend to DOD action to be taken on safety aspects of ammunition facility construction projects.

(U) CAMO was to serve as the central depository for requisition history, supply status and in-transit visibility data and provide input to the Worldwide Ammunition Reporting System. The major commands in the Pacific (US Army, Japan, Eighth US Army, US Army Support Command, Thailand, and FORSCOM units in Hawaii, Guam and Johnston Island) were to execute those programs which were normally command responsibilities, while CAMO would be prepared to offer technical advice and assistance. The CAMO was to be comprised of the 31 personnel spaces (8 military, 23 civilian) identified with the USARPAC DCSLOG Munitions Division. Administrative support was to be provided by FORSCOM. The CINCPAC Support Group would provide liaison between CAMO and CINCPAC Headquarters. It was planned that CAMO be established on 1 January 1975.

Readiness Improvement Programs

(U) In November 1973, DA/DCSLOG instituted a change to AR 11-14, Logistics Readiness which formalized on-going Readiness Improvement Programs and established uniform reporting procedures for major commands and individual reporting units. The reporting system, titled Materiel Assistance Designated (MAD) Report consists of three parts: Part I - Equipment on Hand (EOH) shortages (Major RICC-1 items); Part II - Equipment Status (ES) Red Condition (NORS repair parts/ components); Part III - Equipment Status (ES) Red Short (major item shortages not included in MAD Part I). Commanders of units having an EOH less than their Authorized Level of Organization (ALO) needed to submit Part I as of the 20th of the even numbered months. Units having an ES less than ALO needed to submit Parts II and III as of the 20th of each odd numbered month. This cycle of unit generated reports was expected to facilitate the intensive management of Readiness Improvement Programs. Such programs, established through the cooperation of major commanders, DA and AMC, proved very effective for improving and maintaining the quantity and condition of equipment required by units to meet their combat mission.

(U) As of 20 June 1974, 844 units of the Army's 910 reporting units worldwide had achieved a readiness Equipment on Hand (EOH) position equal to DA's assigned Authorized Level of Organization (ALO). This represented an attainment of a 93 percent fill. Included were major combat units as well as company and battalion-sized separate units. The overall attainment rate for EOH was considered an excellent posture. It exceeded the DA goal by three percent. However, actions pending or in progress at DA, and changes in equipment or mission

requirements were expected to have an adverse impact on several major combat units. Continued intensive efforts would be needed during the coming year to meet DA's readiness criteria.

(U) The Equipment Serviceability (ES) of 80 percent as of 30 June 1974 was not as impressive as the EOH rate but it too exceeded the DA goal of 70 percent. The ES measurement reflected Not Operationally Ready System (NORS) and Not Operationally Ready Maintenance (NORM) conditions of all reporting units. Progress was being made in this category, as well as in EOH, and actions were to continue to be pursued to reach and sustain the high state of Logistics Readiness demanded by DA.

US Army, Europe (USAREUR) Readiness Improvement Program

(U) For several years AMC had participated with USAREUR in a DA plan to improve and maintain the assigned readiness posture of Active Army units and War Reserve Stock Accounts such as REFORGER, POMCUS, 2+10, Theater War Reserves, etc. in the European Theater. To manage this task effectively, visibility of all major item shortages was maintained. Also, expeditious fill action to satisfy any shortages was taken whenever possible. All major combat units in USAREUR had completed their MTOE conversions and were maintaining an EOH equal to their ALO. Although many company and battalion sized individual Army units had just completed or were undergoing conversion to "H" Series MTOE's, USAREUR consistently met or exceeded the DA goal for EOH and ES attainment. As of the end of FY 1974, 328 units had met their EOH criteria and 263 units had attained their ES objective out of a total of 360 reporting units. This represented an achievement rate of 91 percent and 73 percent, respectively. War Reserve Stocks were below ALO for EOH. This was primarily due to MTOE conversions of the supported units creating authorization changes and to several large Joint Chiefs of Staff directed shipments of major items to the Middle East. A special intensive management program was initiated to effect resupply of the items diverted; however, most of the items concerned were in short supply throughout the Army. Availability was restricted to the output of previously initiated production and repair programs and competition for the assets was keen. The ES rating for the War Reserve Stocks, based on Logistics Evaluation Agency (LEA) on-site inspections, continued to meet the DA established goals.

US Army, Southern Command (USARSO) Readiness Improvement Program

(U) The Southern Command's Readiness Improvement Program encompassed ten active Army units, one of which was designated a major combat unit (193d Infantry Brigade). All units had achieved an EOH

equal to or greater than ALO. The low density of reportable items assigned to the reporting units for ES computations caused large fluctuations in the Equipment Serviceability (ES) ratings; however, the mission effectiveness of units involved was not adversely affected.

US Army, Pacific (USARPAC) Less Korea, Readiness Improvement Program

(U) There were 24 Army units in the Pacific, less Korea, included in the USARPAC Readiness Improvement Program. During the month of June 1974, 19 units were at or above their ALO in EOH. The five units below the prescribed ALO in EOH were expected to reach their readiness posture by December 1974. The 25th Infantry Division was reported as exceeding its prescribed ALO in EOH during June 1974.

US Army Pacific (USARPAC), Eighth US Army (EUSA) - Korea Readiness Improvement Program

(U) There were 82 Army units in Korea included in the EUSA Readiness Improvement Program. During the month of June 1974, 75 units were at or above their ALO in EOH. The seven units below the prescribed ALO in EOH were expected to reach their readiness posture by 29 June 1975. The 2d Infantry Division was reported at its ALO in EOH during June 1974.

US Army, Alaska (USARAL) Readiness Improvement Program

(U) There were 14 active Army units in Alaska included in the USARAL Readiness Improvement Program. As of 30 June 1974, 12 units were at or above their ALO in EOH. The two units below their prescribed ALO in EOH were expected to reach their readiness posutre by December 1974.

CONUS Readiness Improvement Program

(U) Strategic Army Forces (STRAF). A record level EOH posture was achieved by non-divisional STRAF support units as a result of intensive management by AMC. The establishment of a revised readiness reporting concept effective in the third quarter FY 1974 resulted in command readiness consciousness at all levels. Shortages were surfaced and reported. Records at the reporting level were/are being validated. All major CONUS based combat units achieved/maintained their assigned ALO by 30 June 1974.

(U) Army Security Agency (ASA). During FY 1974, inherent readiness problems involving ASA units worldwide were brought to the attention of the DA staff (DALO-PLR). ASA units began to utilize the MAD Report. However, problems involving items to be reported by ASA continued to exist. It was anticipated that substantial progress would be made during FY 1975.

Reserve Components

(U) The Reserve Component Unit Readiness Improvement Program covering 22 major units was phased down during the first quarter of the fiscal year because it was determined that equipment file levels compatible with the units' logistics priority had been attained. Priorities for deployment of Reserve Component Forces were realigned to comply with the Department of Army Master Priority List (DAMPL) and emphasis shifted to integration of the Reserve forces into the standardized AR 220-1 Readiness Reporting structure. Several studies were conducted during the year on the availability of major items of equipment to satisfy various Reserve Force configurations being looked at by DA. The Army National Guard (ARNG) instituted a program to redistribute existing ARNG major combat assets to conform to the revised deployment alignment. The project, Readiness From Redistribution of Army Materiel (REDFRAM), basically involved the movement of approximately 800 tanks and lesser amounts of heavy weapons and communications equipment. AMC involvement was limited to coordination and monitoring the equipment shuffle.

(U) A revised Reserve Component Readiness Improvement Program was being developed by DA but the program had not been fully defined or finalized by 30 June 1974 and no specific tasks had been identified to AMC. The basic concept, developed in coordination with AMC and the Reserve Components, was aimed at improving the readiness of the several hundred early deploying company and battalion sized combat support and combat service support units. Completion of the new program plan was expected in early FY 1975.

Project 9DD, 9EE, and 9FF (Special Programs for Friendly Foreign Governments)

(U) During the first half of FY 1974 emergency aid programs were initiated to support friendly foreign governments in several parts of the world. Because of the quantity of major items involved, a special study was conducted to determine the capability of AMC to support and maintain the materiel readiness posture of the Active Army and the Reserve components in light of these unprogrammed equipment drains. The review, carried out in cooperation with the commodity commands and International Logistics personnel indicated that there

had been no immediate or measureable impact on current US Army requirements for major items of equipment. In fact, during the period that these unprogrammed requirements were being satisfied, the readiness posutre of the Active Army actually increased to the point that all major combat units attained their goal of Equipment on Hand (EOH) equal to or greater than their Authorized Level of Organization (ALO). The study concluded that the prime impact of these equipment diversions was limited to delaying modernization and standardization programs planned for the Active Army and the Reserve Forces, the disruption of major overhaul schedules, and the reduction of depot stored contingency stocks.

Continuing Balance System

(U) During FY 1974, development continued on the Continuing Balance System (CBS) for capturing asset data through supply transactions on a worldwide basis. The development of the system was placed under contract with the General Research Corporation (GRC). When operational, the CBS was to replace the current manual system for computation of the Worldwide Asset Position (WWAP). The predicted target date for implementation of the CBS during FY 1974 was not achieved. Major problems and delays in resolving these problems were the cause for the setback in implementing an operational CBS. As a consequence, no firm starting date for implementation of the CBS could be predicted by the Study Advisory Group (SAG) meeting held on 12 June 1974. MIDA was scheduled to receive all CBS ADP programs by 31 August 1974.

Computation of "Hidden Assets"

(U) A system for computing "hidden" assets was implemented, effective January 1974 for use in development of data concerning the Army's worldwide inventory of major end items. "Hidden" assets are major end items which could also be used as components of other higher order systems, sets or assemblages; e.g., machine guns on vehicles. Under procedures in practice, these components were not separately identified or authorized in The Army Authorization Document System (TAADS), and consequently not reported under the Army Equipment Status Reporting System (AESRS). The new system would compute hidden asset densities by multiplying the ratio (number of applications of the component to the assemblage) against the reported assemblage density as displayed in the official WWAP. The system would generate a quarterly report which would display hidden assets by commodity manager, LIN, FSN (NSN), major commands, and assemblage application. The hidden asset system was expected to improve major item management by providing more complete and accurate worldwide inventory visibility.

The increased visibility was expected to provide the tools required to more accurately determine major and secondary item requirements, improve budget formulation, standardize area distribution and insure that major items were not procured or repaired in excess of worldwide requirements caused by an understatement of the Army inventory.

Issues of Selected PEMA Items to Reserve Components (RCS CSGLD-1199)

(U) The Secretary of Defense is required by law to report annually to the Congress regarding those actions taken to upgrade the readiness posture of the Reserve Components. Accordingly, subject report was established in 1964 by the DA to serve as backup during Congressional hearings. The report is used as a management tool at DA/DOD levels to determine progress in equipping Reserve Component units and as a basis for comparison of actual issues versus programmed allocation and distribution plans. The total dollar value of deliveries to the Reserve Components during FY 1974 was $256,039,925. This represented a decrease of $193,364,348 from that of FY 1973 ($449,404,273) reflecting the increasing effectiveness of the program to fully equip the Reserve Components with the latest type equipment. Scope of item coverage was restricted to those items identified as PEMA, Reportable Item Control Codes (RICC) "1," "2," or "3" and Supply Class Code VII (Major End Item).

Secondary Items Management

ALPHA Implementation

(U) ALPHA (AMC Logistics Program Hardcore Automated) is the standard mechanized system being implemented by the Army at all of its commodity commands. It is a system including 25 major files involving the basic logistics functions of Procurement and Production, Supply Management, Stock Control, Cataloging, Provisioning and Financial Management. The implementation of ALPHA, because of the complexity of the system, was to be accomplished in Phases A, B, C, and D.

(U) Phase A contains the Provisioning and Cataloging systems and files as well as three Supply Management files. These are the Materiel Management Decision File, the Program Data File and the ZAB table containing data required in the computation of economic order quantities and variable safety levels. These Supply Management files are available for use but do not have specific application until Phase C. In addition, Phase A contains the ALPHA standard reject control system, the AUTODIN interface, a standard output control system, and continued operation of the standard Budget Stratification System.

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(U) Phase B includes Maintenance Systems which involve the inclusion of the maintenance program data in the Federal Stock Number Master Data Record (FSNMDR), processing the Overhaul Consumption Data, and the Parts Explosion process in the preparation of Depot Maintenance Parts Requirements List (DMPRL).

(U) Phase C comprises the largest phase of the implementation. This phase contains the major segments of the Supply Management, Financial Inventory Accounting, Procurement and Production, Stock Control, the Financial Management processes, Physical Inventory, Asset Stratification, International Logistics, Mobilization Computation, and the procurement breakout data in FSNMDR.

(U) Phase D includes those processes that were recognized as candidates for other follow-on applications. The objective of Phase D phasing is to reduce the size of the problem potential in initial operation of Phase C of ALPHA.

(U) Supply Management is concerned with all aspects of ALPHA - particularly the automation of the requirements determination and execution system into standard format. Also, the automation of other areas - procurement/stock control/etc. - have a definite effect on the supply area.

(U) By the end of FY 1974, two commands - MICOM and AVSCOM - had completely implemented ALPHA and Phases A and B had been implemented at TROSCOM. At the same time, using AVSCOM as an actual working model, ALMSA/AMC had been working to improve and refine the ALPHA system. One of the major concerns was one of resource allocation; i.e., finding enough computer/manhour time at ALMSA to accomplish all the desired system changes/refinements. This was an on-going project that had required close coordination between ALMSA and AMC.

(U) The present implementation schedule for ALPHA is:

	PHASE A	PHASE B	PHASE C/D
TROSCOM	Complete	Complete	August 1974
TACOM	Complete	Complete	February 1975
ECOM	July 1974	November 1974	July 1975
ARMCOM	August 1974	November 1974	November 1975

Materiel Assistance Designated (MAD) Report

(U) The Materiel Assistance Designated (MAD) Report was established by DA to identify the specific requisitions which were preventing units from achieving a readiness condition (REDCON) equal to their

Authorized Level of Organization (ALO). This involved both major items of equipment on hand (EOH) and repair parts needed to achieve prescribed levels of Equipment Serviceability (ES). After a trial period, procedures were evaluated and recommendations made by AMC to DA. Formal procedures were published by DA for first reporting on a bi-monthly basis commencing in the 3d Quarter, FY 1974. User reports and supply source expedited status were monitored by AMC. The procedures were proving to be a valuable channel of technical data to improve command readiness.

Backordered Repair Parts Summary (BORPS)

(U) Development of this system to provide visibility of wholesale support of individual items of equipment was continuing. During the year, the Logistics Intelligence File (LIF) gained visibility of CONUS NORS requisitions and was providing transceived data to the NICP's weekly and monthly as required. Plans were made to gain visibility of all CONUS requisitions which would complete worldwide visibility early in FY 1975. Programs were developed by the commodity commands to exploit the use of this data to improve support. Further, the Logistics Control Office was developing analyses of LIF data which would be provided to Headquarters, AMC and commodity commands commencing in the 1st Quarter, FY 1975.

NICP Management Review Team

(U) The objectives of the NICP Management Review Team visits were to observe the NICP interpretation and timeliness of implementation of existing and proposed DA/AMC policy/guidance; to determine the adequacy and completeness of current DA/AMC guidance and to determine if any change or clarification of the guidance was required; and to cross fertilize ideas, system improvements and new management techniques between NICP's, DA and AMC.

(U) Visits were scheduled annually to each commodity command. The team is composed of members from DA DCSLOG, HQ AMC, ALMSA and one member from each commodity command other than the one being visited. Five of the six trips scheduled for this year have been completed.

COMMAND	VISIT	NO. OF OBSERVATIONS
MICOM	3-7 December 1973	62
TROSCOM	28 January-1 February 1974	42
ARMCOM	4-8 March 1974	50
TACOM	15-19 April 1974	80
AVSCOM	3-7 June 1974	91

The Director of Supply, Headquarters, AMC, was briefed periodically on the status of the observations from each trip until action on all the observations is complete.

Wholesale Stock Fund

(U) The major event of the year was the support requirements engendered from the Mid-East conflict during October-November 1973. The NICP's, under direction of the Directorate, provided timely response and were able to document Army Stock Fund and PEMA Secondary Items requirements. Through these actions, recoupment of funds was made possible in a timely manner. Materiel readiness requirements and deficits were brought to the fore during the 2d Quarter, FY 1974. The Directorate made known its requirements to build proper requirements objectives and mobilization reserve requirements. This resulted in recognition and funding of the operational readiness requirements; it also resulted in recognition of mobilization reserve requirements funded during the year.

(U) Two problems were very evident during the period. The first, price increases, was in effect a carryover from FY 1973; however, FY 1974 saw a more dramatic rate of increase. The second problem was in the area of rapidly lengthening production leadtimes. These longer leadtimes had a significant impact on materiel availability and, without extreme effort on the part of personnel in the supply management and procurement areas, could degrade the NICP's supply performance.

(U) Through Division efforts, it was possible to obtain program increases to offset to a degree the price increase and lengthened production leadtimes. These efforts led both the DA and OSD/OMB reviewers to change their views on requirements to cover the above.

Horizontal/Vertical Stock Fund Cost Comparison Study

(U) At the request of DOD, the Department of Army, in November 1973, initiated a Cost Comparison Study of horizontal versus vertical stock fund. AMC was tasked by DA to perform the comparison study at the wholesale level. It was determined by AMC that the greatest impact of the study would be in the supply management area.

(U) Each AMC commodity command developed cost data associated with horizontal stock fund management from Army Management Structure (AMS) cost data of FY 1974 (first half). That data was then adjusted to include the increases that would be attributed to implementing the vertical stock fund concept. During the course of the study, it became evident that the Direct Support System (DSS) would have a major impact upon the vertical stock fund and supply management system. It was determined that certain costs being attributed to vertical stock fund would either not be realigned if vertical stock fund were

implemented in a total DSS environment or that the increased cost would already have been experienced with implementation of DSS. Therefore, two vertical stock fund cost estimates were developed. One cost estimate without DSS and one with DSS.

(U) A conclusion drawn from the study was that with total implementation of DSS, there would be no value in implementing vertical stock fund. This conclusion was based on the assumption that the Installation supply division would perform as a DSU for all non-DSS customers.

Requirements Determination and Execution System

(U) The Requirements Determination and Execution System is a consolidation of the stratification and supply control study into one system for managing secondary items. A task group was formed to develop and implement this new system. The task group consisted of representatives from Headquarters, AMC, ALMSA, ALMC, IRO, ARMCOM, AVSCOM, ECOM, MICOM, TACOM and TROSCOM.

(U) There were two systems for managing secondary items, the stratification and the supply control study. The stratification was a system which compared assets to requirements at a point in time and then simulated successive supply reviews through the budget year to determine the dollar value of forecasted procurements for input into the budget. The supply control study was the document used by the Army to determine at a point in time requirements for a secondary item, to compare assets to those requirements, and to initiate a procurement, repair, cutback, excess or other action to maintain a balanced supply position.

(U) The following were the basic differences between the stratification and supply control study:

	STRAT	STUDY
Current and future supply position	Yes	No
Budget input	Yes	No
Program Execution	No	Yes

(U) The result of these differences was that AMC was determining requirements and executing from one system, the supply control study and planning, programming and budgeting from another system, the stratification. One of the most serious impacts was an imbalance between the funds programmed in the budget and the funds needed for program execution. There was a duplication of various reports between the stratification and supply control study. Because of this duplication, a sub-task group met at Fort Lee, Virginia, in May 1974 to

define the item manager's responsibility and to identify output products to meet that responsibility. Basically, the item manager had three primary responsibilities: determine requirements, plan to meet those requirements, and take action to execute the plan. The output products to meet these responsibilities were also identified.

(U) The following are the advantages and disadvantages of the current system:

(U) Advantage: both systems operational.

(U) Disadvantages: two systems must be maintained, increased computer run time, program and execute on different systems, large volume of paper output, item manager must know two systems, and probability of error.

(U) The conclusions that were drawn were that: two systems were not required and that all of the output products were not required.

(U) The new Requirements Determination and Execution System would provide the means to determine requirements, plan, program, budget, and execute from one system. It would "close the loop" and provide an efficient and effective method for managing secondary items. In developing and implementing the Requirements Determination and Execution System there were numerous areas that needed to be considered, such as design, programming, training, documentation, etc. ALMSA was tasked to design and program the new system and ALMC was tasked to train supply personnel in the new system. Milestones were identified with the forecasted and actual starting and completion dates. The system was on target for implementation 18 October 1974.

(U) The three ALPHA Commands (AVSCOM, MICOM, TROSCOM) were scheduled for implementation of the new system on 18 October 1974. The non-ALPHA commands (ARMCOM, ECOM, TACOM) were to have the new system implemented concurrently with implementation of ALPHA at those commands. Training of the new system was to be done by ALMC through Multimedia Individualized Instruction, the method being used to train personnel on the ALPHA system. The training was to start in August and would be completed by October, prior to implementation of the new system. All supply and other concerned personnel at the major subordinate commands were to be trained.

CHAPTER VIII

MAINTENANCE

Plans and Programs

(U) In October 1973, Major General Eugene J. D'Ambrosio was relieved as the Director of Maintenance, AMC to become the Director of Supply and Maintenance for the DA, Deputy Chief of Staff for Logistics. Colonel William E. Eicher became Director of Maintenance, AMC, on 31 October 1973. He had been Commander, Red River Army Depot, immediately prior to this assignment. Colonel Eicher was promoted to Brigadier General in June 1974.

(U) The Programs and Analysis Branch, Plans and Programs Office, Directorate for Maintenance, provided staff supervision over the execution of the CONUS Depot Materiel Maintenance and Support Activities Program (P7M) which amounted to approximately $636,000,000 in terms of total costs incurred. This Branch also prepared and defended the FY 1975 Command Operating Budget (COB) for Program 7M which amounted to $587,000,000.

(U) During the year, plans progressed to the point that depot modernization requirements for five out years (FY 1975 - 1979) were formulated. Such information was expected to prove useful in determining funding guidance and so forth. Also during FY 1974, AMC Circular 750-3 regarding depot maintenance and plant equipment was developed and released to the field on 1 September 1974. The circular contained all the required guidance necessary for field installations to operate an economical and efficient Depot Maintenance Plant Equipment Program.

(U) In the ALPHA area, an interim system called AMMDEX was installed at all commodity commands. The system provided for a method of transmission of Depot Maintenance Program Data between commodity commands and USAMIDA. In the SPEEDEX area, hard-core and follow-on applications were installed at all SPEEDEX depots. This included the production planning control applications for depot maintenance operations.

(U) Also, General Functional System Requirements (GFSR) and related Economic Analysis (EA) for the Army Wholesale system planned for inclusion in the Standard Army Maintenance System (SAMS) was completed and forwarded to DA. The planned SAMS, comprising three elements: Headquarters, DA, Wholesale Level (Headquarters AMC), and Retail level (TRADOC) progressed to where AMC had completed and forwarded to DA the "Wholesale Level" General Functional System Requirements (GFSR) and related Economic Analysis (EA).

(U) Evaluation of Depot Maintenance Effectiveness and Efficiency. In June 1973 AMC prepared a staff study on depot maintenance evaluation techniques. This first "strawman" concerning the evaluation of Depot Maintenance Effectiveness and Efficiency, subsequently evolved into the procedures for testing. In October 1973 the "strawman" was circulated to depots for comment and recommendation and a briefing on the proposed system was given to all depot directors of maintenance at a conference at ANAD. During December 1973, the first draft procedures, based upon field comments, were circulated to all depots for comment. In January 1974 a second draft revision to the procedures was circulated for comment. Test data was requested from the depots for the first two quarters of FY 1974. A subsequent data call was sent out asking for 3d Quarter data. In May 1974 a briefing covering the draft procedures and results of the first three quarters of test data evaluations was presented at the Depot Commanders' Conference at RRAD.

Maintenance Engineering

(U) During FY 1974, the following standards and specifications used in the preparation and procurement of equipment publications were published: MIL-M-0038784A, 1 May 1974, Manuals, Technical-General Requirements; MIL-M-63029A, 15 April 1974, Manuals, Technical-Requirements for Operators and Crew Members Manuals and Check List for Aircraft; and MIL-M-63041A Amendment 1, 1 April 1974, Manuals, Technical-Content Requirements for Depot Maintenance Work Requirements DMWR's.

(U) During FY 1974, in the Publications Improvement Program, the final technical report for the development of new specifications for -10 series Operators Manuals was received on 15 February 1974. This contract effort of Hughes Aircraft Company, Contract No. DAAG 34-73-C-0079 resulted in new specifications for the preparation of operators manuals. The spec stressed simplified treatment and increased use of graphics. Several manuals were being prepared using these specifications and would, upon completion, be distributed and field evaluated.

(U) In June 1974, two contracts were commenced in support of the "Low Cost Ownership" Project. One, with RCA, stressed the maintenance technicians approach to developing the best method of presenting maintenance information considering commodity group, environment, level of maintenance, task and equipment complexity and other parameters affecting performance of the maintenance function. A parallel contract was entered into with Kinton Inc. to approach the same study from the human factor standpoint. Here again the effort was to develop the information presentation method best suited to the task and environment.

(U) Also, new specifications for organizational (-20 maintenance manuals were the subject of study for a Hughes Aircraft Contract, DAAG-22-74-C-0329, which commenced in June 1974. This contract would also look into, among other things, new troubleshooting presentation techniques.

(U) Finally, two simplified users' guides were produced in conjunction with the Combat Arms Training Board (CATB). These manuals (covering the M109 and the M113) were designed to present in a simple graphic manner only the necessary and sufficient information that the operator requires for day-to-day operations.

Depot Maintenance

(U) During FY 1974, the Army Maintenance Interservice Support Management Office (MISMO) was established as a separate office of the Depot Maintenance Division, Directorate for Maintenance, in June 1974, for the purpose of increasing and enhancing depot maintenance interservicing between the four services. In addition to the Division reorganization to add the MISMO, significant activities involving the Depot Maintenance Division included the following: (1) The transfer of the Medical Maintenance Mission from Atlanta Army Depot to Tobyhanna Army Depot as a Class II Activity of the Surgeon General during FY 1974 was accomplished successfully. Intensive involvement was necessary to assure continuous and adequate medical maintenance during this transition period. (2) The Atlanta Army Depot was phased out with workload and resources being diverted to other Army installations; and (3) Depot level maintenance in USARPAC was phased out.

(U) Demands made upon the Depot Maintenance Division in carrying out assigned mission responsibilities remained extremely heavy throughout Fiscal Year 1974 in all areas. A maximum concerted effort was required to accomplish high priority, Department of Defense requirements in support of Southeast Asia, Mid East and Army CONUS Reserve Forces. Emphasis upon timely recognition of significant problems with regard to depot maintenance workloading, budget and funding management, manpower utilization, capital equipment management, depot maintenance interservicing and other related responsibilities, was maintained throughout FY 1974.

Vehicles, Troop Support and Armament

(U) The US Army Tank-Automotive Command (TACOM) National Maintenance Point reorganized from a Functional to a System Oriented Organization during May 1974. This reorganization was directed to improve maintenance responsiveness, reduce grade structure, provide upward mobility, improve career progression and to make the NMP compatible with the NICP. Also, by the direction of AMC the US Army Troop Support Command transferred the maintenance function of the construction equipment to TACOM on 30 June 1974. Effective 1 July 1974, TACOM assumed responsibility for the management of contruction from TROSCOM.

Level of Repair Analysis (MS+)

(U) In 1970 DCSLOG initiated an analysis of maintenance support of Army materiel, entitled MS+. Maintenance allocation Charts for tactical vehicles were modified and, in October 1973 a battalion at Fort Carson was reorganized for maintenance support under the MS+ concept. The evaluation was continuing, and being monitored by DCSLOG representatives. At the same time, the NMP at TACOM was tasked to develop a computer model to analyze the level of repair for the 2½ ton truck, the objective being to optimize maintenance for comparison to the results of the Fort Carson tests but, more importantly, to develop a program which could be used as a model for all future allocations of maintenance tasks. Both programs were ongoing.

Camouflage Painting of Army Materiel

(U) Promulgation of a DA policy that all major items of Army materiel will be painted in lusterless camouflage pattern has resulted in initiation of a program to develop patterns, procure paint and publish instructions. Active Army materiel will be completed by 30 June 1976, and Reserve Forces materiel by 30 June 1978. New and overhauled materiel will be in solid forest green, the additional three colors to be applied by the user upon receipt. Exterior markings will be reduced to unit identification and a 3" star, all in lusterless black.

Conservation of Energy

(U) Petroleum based products used in support of Army vehicles was to be conserved by implementation of a policy to extend change intervals. Anti-freeze would be used for four years instead of two, and oil change intervals were extended by a factor of two. Proper safeguards to prevent damage to equipment were stressed.

Publications for IHC Commercial Tractors in USAREUR

(U) The 5-ton commercial line haul tractors in the 37th Transportation Group in USAREUR were being partially replaced with 4 x 2 5-ton and 6 x 4 8-ton IHC commercial tractors. It was directed by ASA (I&L) that these trucks were to be supported by the Army Maintenance and Supply systems rather than by the contractor as had been the previous tractors. The supply system required FSN's for all stocked parts, which dictated that standard commercial shop manuals had to be tailored to delete all materiel not pertinent to support of the tractors. TACOM was tasked to develop DA Technical Manuals to support this fleet.

Vehicle Average Useful Life

(U) Based on extensive analysis of maintenance data and life cycle costs, action was taken to increase the useful life of M44A2 series 2½-ton trucks from 12 to 15 years. Action was on-going to change the life of the M39A2 series 5-ton truck from 15 years to 20 years.

M151A2 ¼-ton Truck

(U) In April 1974 a problem regarding internally rusted fuel tanks and contaminated fuel systems began to surface. This had become quite extensive by the end of the period. TACOM appointed a panel to find a solution to restore vehicles to service. A combination of improper manufacturing techniques, improper storage techniques and lack of spare parts and maintenance procedures in the field was judged to be the cause of this major problem.

USAREUR Depot Maintenance Study

(U) In August 1973, DA initiated a study in coordination with AMC and USAREUR to determine the feasibility of eliminating depot maintenance in USAREUR beginning in FY 1975. Increased labor costs in USAREUR inspired the study. After several months of data collection and analysis, it was concluded that depot maintenance should be reduced, but not completely eliminated in USAREUR during FY 1975. DA approved the study in May 1974 and requested AMC and USAREUR to conduct a joint review of the FY 1975 depot maintenance program to determine which items should be returned to CONUS for overhaul. DA also transferred $10.3 million from the USAREUR depot maintenance program (P7M) to its OMA program (P2) increased for GS level work in lieu of overhaul. In connection with this study, USAREUR closed its Schwaebisch Gmuend Maintenance Plant in June 1974 and announced that it would terminate depot maintenance at its Boeblingen plant by December 1974 because of a reduced workload.

Worldwide Tire Retread Accomplishment

(U) Retread reports received during FY 1974 reflected that of the 463,000 tires used, approximately 336,000 were retreads. This represents a 73 percent utilization of retread tires in lieu of new tires resulting in a savings of $7,328,644.

Europe Tire and Tank Track Survey

(U) AR 740-36 places the responsibility on AMC to monitor the tire program on a worldwide basis. In April 1974 Europe disapproved a tire survey. In June AMCMA-VC received Europe's approval

to perform a tire and track survey. A three-week survey was recommended by AMC to permit a review of the maintenance, overhaul, utilization and disposal procedures of tires and track in Army units and an overview of Property Disposal Activities was reduced by Europe to one week.

M551 Sheridan Track T138

(U) During September 1973 RRAD was directed by AMC to develop an in-house capability for the overhaul of the T138 track shoe in support of ANAD M551 vehicle program as new shoes were not available. RRAD developed tooling in-house, produced shoes which passed TACOM's test requirements and shipped 7,500 shoes to ANAD during March-June 1974. Due to an improved supply posture, TACOM decided to use only new track on M551 destined for Europe. The overhauled track produced by RRAD must be used to satisfy CONUS requirements until the track proved to meet new track mileage requirements. TACOM originally waived the vehicle test requirement. Later, TACOM scheduled a mileage test at Yuma during August-October 1974. Should the overhauled track meet new track mileage requirements it was to be authorized for worldwide usage. Balance on present overhaul order of 13,560 was scheduled for completion in September 1974.

Application of Modification Work Orders (MWO)

(U) The general policy of relying on the field to apply MWOs on vehicles had become ineffective. TACOM instituted a pilot program at Fort Bragg to supply 38 different MWO's to 57 M551 vehicles. It was estimated it would require 10,000 manhours at a cost of $80,000, using six technical personnel and one supervisor from ANAD. The TOE/TDA of Fort Bragg assisted the ANAD personnel. The program was completed in 41 workdays (2480 hours) at a cost of $50,000. The same ANAD team arrived at Fort Bliss on 17 July 1974 to apply MWOs to 84 M551. It was estimated it would require 8700 manhours and a cost of $74,000. The Fort Bliss vehicles were scheduled to be completed by 12 October 1974.

Rebuild of Track and Roadwheels

(U) On 21 September 1973 AMC requested TACOM to perform a complete review and update of the worldwide policy on the rebuild of track and roadwheels. TACOM responded on 11 December 1973 that the DMWRs for track and roadwheels were revised and if the items were overhauled to these new standards a Code B or better product would be produced. Roadwheels are coded recoverable, therefore may be overhauled. Track is coded nonrecoverable. During a meeting at TACOM 15-19 April 1974, AMC Directorate for Maintenance brought to TACOM's attention the zero balance of T97E2 and T142 track, with 103,000 shoes on backorder and a monthly demand of 25,500 shoes. It was again urged that TACOM give serious

consideration to performing cost effectiveness study on each track and to develop an overhaul program on those tracks that proved to be cost effective. On 26 April 1974, TACOM was requested to make plans for resolving the shortage of the T97E2 track with specific consideration given to overhaul at RRAD in support of ANAD. TACOM responded that the rebuild of the T97E2 and T142 was not cost effective. On 22 July 1974 the Director of Maintenance, AMC requested the Deputy Commander TACOM to reevaluate the TACOM position on the overhaul of T97E2 and T142 track.

Vehicle Corrosion Reduction Program

(U) As the result of the Marine Corps Reports of corrosion on their M151 vehicles the Commander, AMC requested a briefing on actions taken by TACOM to control corrosion. As the result of the briefing the AMC Commander was specific in requesting wholesale actions at Barstow, AMC depots, contingency stocks and holding areas overseas POMCUS. A briefing to the C/S USMC on 25 February 1974 brought to light a need for a coordinated program (Army and Marine) for the corrosion control of tactical wheeled vehicles. The Corrosion Reduction Program was assigned to the Maintenance Directorate. Essential guidance was provided to TACOM which requested TACOM to develop a plan with milestones to correct the conditions on corroded vehicles and to prevent deterioration on vehicles coming out of production. A review of TACOM's plans on 17 and 24 April 1974 at TACOM indicated a tremendous effort had gone into the program in a very short time. The planned program was very comprehensive and covered the entire spectrum of vehicle conditions and geographical environmental aspects. During May 1974, TACOM developed a milestone plan of proposed actions to resolve the corrosion problem. In June 1974 TACOM, working with an AMC/USMC Advisory group, drafted a joint agreement of a time-phased plan which was approved by AMC in July 1974 and by the Marine Corps in August 1974.

JLC Panel on Depot Maintenance Interservicing

(U) JLC Panel on Depot Maintenance Interservicing completed its report that included methodology and established an organization that would increase depot maintenance interservicing, attain economics, and maintain the operational effectiveness of the individual services. The report was approved by the Joint Logistics Commanders.[1]

Commercial Construction Equipment (CCE) Program

(U) The Logistical Support Plans for CCE Pilot Items were approved by ASA (I&L) on 29 October 1973. The CCE system Plan was approved by TRADOC and forwarded by AMC to DA on 1 March 1974. The plan had not

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[1] Report of Joint AMC/NMC/AFLC/AFSC Panel on Depot Maintenance Interservicing, 9 July 1974.

been approved by DA as of the end of FY 1974. The Bituminous Distributor and the 25-ton Hydraulic Crane were being distributed to Army users. The 20-ton Dump Truck was conditionally accepted by DSA (DCSC). To date no deliveries had been made because of a shortage of steel for the dump truck bodies.

Track and Roadwheel Overhaul at RRAD

(U) AMC placed emphasis on the overhaul of track and roadwheel as a means of cost avoidance. The items overhauled in accordance with DMWR 9-2630-200/1 and DMWR 9-2630-200/1 were expected to produce a track equivalent to new, at a cost of one-third to one-half of the new track. RRAD production for FY 1974 was as follows:

Vehicle Application	Roadwheels	Track
M41		1,516
M48-M88	3,946	6,464
M60	7,063	
M107-M110	1,856	5,040
M108-M109	2,707	
M113	7,923	95,113
M114	680	
M551	16,032	7,612
Hawk Trailer	95	1,464

Demilitarization Codes

(U) TACOM had miscoded many major items which caused problems in property disposal. DA, on 17 May 1974, requested AMC to have TACOM review the DEMIL Codes for tactical and commercial wheel vehicles. DA was advised that the recoding of TACOM items would be completed in September 1974.[2]

Aircraft, Missiles, and Electronics

(U) The Implementation of Weapons System concept for Aviation (including Missiles) which involves increased emphasis on OMA funding, Maintenance Engineering and Logistics Support. In recognition of the weapon system management responsibilities inherent particularly in the missile and aircraft commodity areas of maintenance management, the mission and functions of the Aircraft, Missiles, and Electronics Division, were revised to reflect "system" as well as "commodity" responsibilities in FY 1974.

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[2] DA Letter, 17 May 1974, subject: Demilitarization Codes.

Deployment of the Lance Field Artillery Missile System

(U) Systems and programs supported in FY 1974 included the following. Four LANCE Missile Battalions were successfully deployed in 1974. Adequate logistic support was available at time of deployment. Due to changes in support unit assignments which developed during the later stage of deployment planning, sufficient repair parts were not immediately available to meet the "fill" criteria specified for deployment. While the LANCE battalions used the "minimal but adequate" support available, repair part procurement and deliveries were expedited and shipped in time to avoid any difficulties at the user (battalion) level.

Improved HAWK Conversion at Pueblo Army Depot

(U) A multimillion dollar conversion program on the Improved HAWK missile system was implemented by Pueblo Army Depot in FY 1974. After delivering its first battery set in June 1973, Pueblo successfully built its conversion rate to two battery sets per month effective in January 1974.

CONUS NIKE HERCULES Inactivitions

(U) DA approved the deactivation of CONUS NIKE HERCULES sites to be accomplished by the end of 1974. This action was expected to save approximately $147 million annually. Based on the guidance from the Directorate for Maintenance, AMC MICOM prepared a plan for turn-in of equipment from deactivated units. The plan included information relative to method used to inspect, pack and ship materiel to depots involved, type storage and other data required to complete the deactivation program. The plan staffed within AMC on 30 January 1974 was approved and forwarded to DA requesting permission for its release and implementation. On 27 February 1974, DA approved the plan. The equipment evaluation plan was implemented by MICOM in coordination with related plans prepared by ARADCOM, FORSCOM, and ARMCOM. The plan was complete and coordinated and no problems were encountered.

Three Levels of Maintenance for Aircraft Systems

(U) The "three level maintenance concept" was approved late in 1973 for adoption on the new Iranian Bell 214 aircraft quickly followed by the AAH and UTTAS. DA then instructed AMC to incorporate the "Three Level Concept" on existing aircraft. TRADOC was directed to commence revising TOE for Army aviation units to the 3 level concept. A worldwide coordination conference convened on 4 March 1974 and all Maintenance Allocation Charts (MAC) were reviewed and completed in accordance with AMCR 319-3 on 14 March 1974. In a meeting with AVSCOM on 16 April 1974, it was agreed that all changes resulting from these new MAC's could be completed by mid CY 1975. The major areas affected were provisioning changes, RPSTLS, maintenance manuals, and publication of the new MAC

in the TM 55-xxx-20 manuals. AVSCOM was given the coordinating task with all affected parties.

Revised Aircraft Inspection Criteria (Project Inspect)

(U) DA directed AMC/AVSCOM to reduce field maintenance manhours and increase operational readiness by revising Aircraft Inspection Procedures/Requirements. DA expected this to be some form of "Progressive Maintenance System" (segments of inspection spread over several days rather than all at once, grounding aircraft for long periods of time for the inspection) such as used by Airlines and certain USN Training Commands, as well as USAAVNS at Fort Rucker, Alabama. In addition, analysis of current inspection requirements against actual repairs/removal of parts were expected to enable reduction in inspection manhours by deferring repeated inspections and making only one inspection nearer to an anticipated problem. Such analyses had not been made on Army aircraft since 1951, except at USAAVNS.

(U) RCA, under contract with AAMRDL (Fort Eustis) developed an EAM/ADP "Model" for analysis of Army Helicopter Inspection Requirements, i.e., preventive maintenance scheduled inspection requirements were analyzed to select one inspection concept which could be applied effectively to all types of Army helicopters. The computer model could be used for comparison of alternate practicable inspection schemes (cycle times and variations in scheduling of specific components for inspection within the cycle).

(U) Phase II was in process by RCA for testing and field evaluating the checklist and computer model in a controlled environment. Data were to be collected and analyzed to determine the capability of the modeling technique to produce inspection scheduling which would lower maintenance cost and increase operational readiness without sacrificing reliability. This test was scheduled to be completed at Fort Campbell, Kentucky on UH-1H aircraft of the 101st Airmobile Division. Six helicopter companies were to be used. Three test companies would operate the Army's current inspection system for comparison purposes. The test period was scheduled to last approximately one year.

Aircraft Condition Profile/On Condition Maintenance

(U) DA, in January 1972, requested AMC to make an evaluation to justify or revise the five-cycle overhaul requirement for peacetime operations of Army aircraft. The study was completed by USAAVSCOM and these recommendations were approved by AMC, DA: (1) Aircraft will be selected for return to depot based on individual aircraft condition and the economics of field support (downtime for maintenance) as shown in Fleet Management Data; and (2) Selection would be based on an Aircraft Condition Profile (ACP) derived by actual inspection, and on analyses of field reported maintenance and flight data. Full implementation on all aircraft was planned beginning FY 1975.

Maintenance Support for 2B24 (UH-1) Synthetic Flight Training System (SFTS)

(U) Synthetic Flight Training System (SFTS) model 2B24 for UH-1 helicopter was developed and type classified Standard. The first item, prototype, was in use at Aviation School (AAVNS) Fort Rucker, since about May 1972 and was completely supported by contract with Singer Corporation through Naval Training Device Center and contract with delivery beginning May 1974. Eight more were planned for FY 1975 procurement. ACSFOR provided a schedule of 24 for CONUS and OCONUS (Europe, Alaska, Korea, and Hawaii). BOI required 33. AAVNS would contract for support FY 1975. AVSCOM was to assume total support in FY 1976.

Maintenance Management of Communications and Other Electronic Equipment

(U) A two day conference among DA, AMC, TRADOC, FORSCOM, USARPAC, USAREUR, ACC, and AMC Major Subordinate commands was convened 18-19 October 1973 at ECOM, on maintenance management of communications and other electronic equipment. Logistics support planning and requirements for C-E equipment, current problems, anticipated future problems and proposals for their resolution were discussed. A number of required actions were generated as a result. Of major importance were deliberations pertaining to the substantially increasing density of COMSEC equipment with no commensurate increase in COMSEC maintenance capability. It was agreed that a joint AMC/TRADOC/ACC/DA effort would be initiated by TRADOC to resolve this problem.

AN/MSG-4 Missile Monitor Fire Distribution System

(U) The AN/MSG-4 is an electronic fire distribution system that provides rapid and accurate exchanges of information between USAREUR or USARPAC Air Defense Command elements to their NIKE HERCULES fire units. Due to complexity, obsolescence and lack of trained in-theater technicians, the system was continually plagued with maintenance problems. Establishment of a quick-fix program and closed loop support failed to substantially increase readiness. To relieve the maintenance problems, AMC established a depot support shop in Germany and Korea for on-site maintenance assistance. Both theaters acknowledge the benefits the shops have provided and indicate their readiness posture has been substantially improved.

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CHAPTER IX

INTERNATIONAL LOGISTICS

Overview

(U) Brigadier General J. E. Fix, III, became Director of International Logistics effective 1 July 1973.[1] General Fix succeeded Brigadier General W. C. Magathan, Jr., who retired effective 30 June 1973.

(U) During 1974, the Director was confronted with: the challenge to support the arms demands of foreign governments in competition with our own requirements; modification of our technology sales policy; and furnishing quality materiel in a climate of increasing business. These challenges and increased workload were met through the institution and implementation of new and revised policies and procedures plus the initiation of a study to evaluate the directorate organization and staffing with a view toward possible realignment. The study development was underway with completion anticipated in the 1st Quarter, FY 1975.

(C) The three main programs were: Military Assistance (Service Funded (SF)), Military Assistance (Grant Aid (GA)), and Foreign Military Sales (FMS). Of key importance was the growth of FMS. MASF, under which Vietnam was funded, was scheduled to expire at the beginning of FY 1976. After that, Vietnam was to revert to GA support.

(C) GA appeared to be in a status whereby it would remain relatively stable for the next years. It would vary, however, with respect to the number of countries supported down from a high of 68 in 1963 to 40 at close of FY 1974. In fact, no country got near what was programmed in 1974. Cambodia just about consumed the total. This caused a shift from GA to FMS. FMS (includes Co-Production and SSA) increased from $330 million in 1970 to $2.488 million in 1974. Materiel shipments in support of Israel during October-November 1973 Israel-Arab conflict (JCS Project 9DD) had a tremendous impact on IL operations.

(U) Several management improvements necessitated organizational/functional changes during FY 1974. In the Sales Support area, the increased significance and size of sales to Iran necessitated the establishment of a central focal point to provide intensive management. To provide this management a team approach (three spaces) devoted to Iran was developed. Supervision of the team was placed under the newly

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1 AMC SO 88, 15 June 1973.

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created Sales Support Branch, Military Sales Division, which also encompassed the Co-Production and Analysis functions. This grouping was expected to provide necessary management of the functions without supervisory layering.[2]

(U) Effective 1 December 1973, the Directorate for International Logistics was assigned the financial accounting operation mission relative to the US Army's International Logistics Programs (ILP's).[3] The mission, formerly the responsibility of the US Army Finance and Accounting Center (formerly US Army Finance Support Agency (USAFSA)), was further assigned, by USAMC, to the USA International Logistics Center (USAILC), New Cumberland Army Depot, New Cumberland, Pennsylvania.[4] A new office, the Program Control Office (PCO) was established within the USAILC for the purpose of conducting the accounting programs associated with the Army's FMS, GA, extended credit and Agency for International Development financial transactions.

(U) Between 1 December 1973 and 25 January 1974, the PCO operated out of the Forrestal Building in Washington, DC, thus providing for a phasing in period prior to the physical transfer which occurred on 25 January 1974. During the 1 December 1973 - 25 January 1974 period, the PCO was staffed, on a TDY basis, by new employees recruited largely from the New Cumberland, Pennsylvania labor market and by temporarily assigned persons from other offices within the USAILC. This inexperienced work force, after being deployed 1 December 1973, processed such a tremendous volume of accumulated transactions that the physical transfer to New Cumberland, Pennsylvania was accomplished two weeks earlier than originally planned. Thus on 25 January 1974, the work force (and 78,000 pounds of files, furniture, and office equipment) relocated to the USAILC.

(U) Emphasis has been placed, since 25 January on training (on-the-job), personnel, rapid dispatch of bills to customers, disbursements, collections, processing of discrepancy reports and final case closeouts, systems interface, and responses to both US and foreign country financial inquiries. Of significant note was the extensive effort that was required to interface PCO computer systems requirements with the NCAD SPEEDEX system on a time-sharing and data exchange basis.

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[2] CMT 2, AMXMM-SM, 3 May 1974, subj: Dir. of International Logistics TDA Change.

[3] Letter, DACA-CSS-FF, 26 Sep 73, Subj: Transfer of International Logistics Fiscal Operations.

[4] DA General Order No. 25, 23 July 1974.

(U) As with any undertaking of the size and complexity of geographically relocating the US Army Finance and Accounting Center, Military Assistance Division, to the USAILC, there were some problems. One seemingly small item on which very favorable response was received was the requested use of the proper case tri-ALPHA designator on all communications with the PCO. Since the ledger structure within PCO was based on country and tri-ALPHA designations, the proper case tri-ALPHA identification becomes very important in responding to financial inquiries. The cooperation received from various US and foreign activities on this and other matters during and subsequent to the relocation of functions was commendable.

Military Assistance Program (MAP) (SF/GA)

MAP Utilization of Major Items in Long Supply (MIMEX)

(U) FY 1974 Major Excesses (MIMEX) Utilized by IL Customers. The Foreign Assistance Act governing the furnishing of Excess Defense Articles (EDA) was amended on 17 December 1973 to require MAP funds equivalent to the value of EDA supplied, exclusive of repair and rehabilitation, be returned to the Treasury. The amendment was applicable to all EDA supplies from CONUS and EDA generated overseas which exceeded $150 million. The amendment was implemented to all military services,[5] and made retroactive to 1 July 1973. AMCIL implemented it to all AMC subordinate commands. SECDEF implementation of the amendment requires the "actual value cost" of the EDA be transferred to the Treasury. The "actual value" was to be determined in accordance with DODI 2140.1 The "actual value cost" of the EDA would be charged against GA customer program ceilings. Collections for EDA allocated for purchase under FMS would also be forwarded to the Treasury. As of 30 June 1974, EDA with an "actual value cost" of $5.1 million was programmed under GA. A total of $1.8 million was reported delivered. The implementation of this amendment required extensive program changes at USAILC, including changes to in-country program records and actual value dollar line programs as well as definitized program lines.

(U) Special MIMEX Offers for Selected Wheeled Vehicles. MIMEX policy provided that only items in Condition Code R-3 or better be offered. During a visit in June 1973, by AMC/TACOM representatives to USAMMAE, it was disclosed that some wheeled vehicles that were economically reparable were being classified Condition Code R-4 and subsequently sent to PDO, only because of the repair dollar cost. The high cost of repair was caused by rising labor/repair cost in Europe. USAMMAE recommended that an "average MAP rebuild cost" be established to reduce the washout rate of wheeled vehicles. AMC

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[5] SECDEF Messages 171622Z and 172029Z January 1974; DA message 221516Z January 1974; and AMC message 251948Z January 1974.

submitted a recommendation to DA that the MIMEX policy be changed to permit certain Condition Code R-4 vehicles to be offered. DA informed AMC that the policy would not be changed at this time; however, authority was granted to establish a test MIMEX Offer and evaluation of the benefits. A Special MIMEX Offer was forwarded to the Unified Commands for 50 truck, cargo, 3/4 ton, M37B1, Condition Code R-4. The estimated rebuild cost per vehicle was $385. The rebuild cost was based on labor cost of $19 per hour. All 50 vehicles were accepted and allocated to a FMS customer.

(U) Excess 1/4 Ton Vehicles. On 12 June 1974, DA directed AMC to implement an exchange program on high mileage M151/M151A1 vehicles with new M151A2's as part of the redistribution of wheeled tactical vehicles. The vehicles being replaced that met criteria (Condition Code R-3 or better) were to be offered under MIMEX to IL customers.[6] TACOM estimated as many as 9,000 vehicles were to be replaced. During FY 1974, a total of 5,167 vehicles were offered under the MIMEX. The offers represented actual and projected turn-ins. As of 30 June 1974, requirements and allocations were received for 3,990 vehicles. There were no requirements for 920 vehicles and 257 had not been allocated by the Defense Department.

(U) Status of the FY 1974 MIMEX Program. During FY 1974 a total of $351.6 million in Acquisition Value of Army excesses were offered to foreign customers. Of this amount $143.6 million were allocated to MAP customers. The allocation total included $39.2 million allocated for purchase under FMS. There were no requirements for $208.0 million.

Turkey

(U) Turkish Tropospheric Scatter Communication System (TROPO). The Turkish Air Force is to procure TROPO through US Army sources. The procurement is to be made by utilizing FMS and GA funds. In April 1974, SEC DEF/DSAA transferred $1.4 million in GA funds from the US Air Force to the Army for procurement of items under GA. This procurement is expected to result in a FMS cash purchase of approximately $6.2 million, which will be in addition to the GA funding received by the Army.

(U) Delivery of Armored Personnel Carriers (APC), Mortar Carriers and Tanks to Turkey. During FY 1974, 268 M113A1 APC's, 40 Mortar Carriers and 166 M48A2C As-Is Tanks were delivered under GA.

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6 DA/DALO-SMS Message 121446Z June 1974.

Jordan

(U) Shipment of TOW Missiles to Jordan. On 10 December 1973, DA directed AMC make available for airlift to Jordan, 36 TOW Missile Launchers, 648 TOW Missiles and related/required equipment. One half of the equipment (18 Launchers and 324 Missiles plus equipment) was shipped immediately and arrived in Jordan on 25 December 1973. A USAMICOM Quality Assurance Team arrived in Jordan 2 January 1974. The balance of the missiles,launchers and other equipment was held at Anniston Army Depot and was airlifted to Jordan in March 1974. Subsequent to the arrival of the materiel and the initial QAT, additional technical assistance and parts were provided.

(U) Delivery of M60A1 Tanks to Jordan. During FY 1974, the US Army delivered 12 M60A1 Tanks to Jordan under GA and 20 additional tanks were made available awaiting the availability of shipping.

Cambodia

(U) Section 506 Funding. During FY 1974, the Cambodia GA was hampered by funding constraints, which necessitated a change in normal GA procedures. The Congress authorized special authority as Section 506 of the legislation.[7] The 506 Authority, provided that during the fiscal year the President might, if he determined it to be in the best interest of the US, order defense articles from the stocks of the DOD and defense services, subject to reimbursement from subsequent appropriations available for Military Assistance. The value of such orders was not to exceed $250 million. The Army portion of Section 506 Authority amounted to $218.7 million. This authority was used primarily to fill ammunition requirements. The use of Section 506 Authority expired with the implementation of the FY 1975 Cambodia program.

(U) Cancellation of Undelivered FY 1974 and Prior RCN's MAP Cambodia. In an effort to relieve a strained funding situation, DA directed that the Military Equipment Delivery Team Cambodia (MEDTC) review their remaining funded but undelivered defined lines for all FY 1974 and prior years.[8] The review was to determine what equipment could be deleted from the program, without hampering the combat capability of the Cambodian forces. AMC, with the assistance of all the NICP's, compiled a listing of all undelivered defined lines of

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[7] CINCPAC 050620Z Dec 1973 (C)

[8] DALO 221600Z February 1974 (C). AMCIL 011951Z March 1974 (C)

equipment. Consideration was given to possible termination charges for these items on procurement or scheduled rebuild. This listing was forwarded to MEDTC, for review and action. Upon completion of the review, USAILC entered cancellation actions into the system and recouped approximately $4.3 million. No program losses were incurred as a result of procurement or rebuild cancellations.

(U) Ammunition Cost and Delivery Reporting. Considerable difficulty was experienced in attempting to keep the Cambodia ammunition program within the established program ceiling limitations.[9] This was caused by the escalation of procurement costs for ammunition and the ARPAC method of reporting ammunition deliveries to MEDTC. During an IG Inspection, it was determined that a possibility existed that the Cambodia program could have been overcharged an estimated $8 million due to the delivery reporting system. Based on this assumption, representatives from ARMCOM and USARPAC were dispatched to USARSUPTHAI, to determine the actual ammo items and quantities delivered to MEDTC during October through December 1973. Reports of deliveries were made citing DODAC numbers rather than FSN's for materiel actually supplied. This method of reporting caused ARMCOM to charge the program an average cost rather than the actual cost. Since the majority of ammunition for Cambodia was supplied from USARPAC stocks and actual items shipped were unknown to ARMCOM, it was necessary to reconstruct previous deliveries into a proper format indicating the actual item supplied. An ARPAC/ARMCOM Team was sent to the ARPAC depots to search the record and determine items actually delivered. This action was continuing at the close of FY 1974.

(U) Laos MASF/MAP Reversion. Congressional action converted the Laos MASF to MAP in January 1974, with an effective date of 1 July 1974. In December 1973, PL 93-189 Foreign Assistance Act was signed. Section 12(B)(6) states that MASF to Laos would revert to MAP effective 1 July 1974. In January 1974, DA laid down the rules for the reversion. AMC, also in January 1974, expanded the guidance received from DA and provided criteria for recording obligations against MASF lines prior to 30 June 1974.[10] The AMC reconciliation conducted during February 1974 surfaced some of the problems which would be encountered. The main problems were expected to be: a shortage of trained supply technicians in the Royal Laos Army; implementation of new developed TO&E; revision of the logistic support concept; and the tremendous amount of work and coordination to be completed in a relatively short timeframe.

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[9] DALO 281431Z March 1974 (C)

[10] DACA-BUO-O 121528Z January 1974

An ammunition reconciliation meeting was conducted 25-29 March 1974. The value of ammunition items transferred to the US Government which required replacement impacted on the maintenance of program control and recording by ARMCOM and USAILC. There were $27 million available for support of the Laos MASF in January 1974. By 30 June 1974, actions had been taken to obligate all defined lines and to schedule items for rebuild. No problems anticipated.

(U) Cancellation FY 1973 and Prior Year Vietnam Requisitions. On 12 January 1974, DA advised that the President's budget reduced the total Army MASF (OMA Project 10) request by $98.4 million.[11] As a result of the Project 10 funds reduction, $6.1 million was tentatively set as the allowable to cover the FY 1973 and Prior Year unfilled requisitions. Cancellation was directed for all stocked items reflecting a program year of FY 1973 and prior or a Julian Date of 3182 or earlier. Non-stocked items would continue to be shipped. AMC implemented the DA instructions on 28 January 1974 including the AMC installations. The AMC installations reported that approximately $2.4 million could not be cancelled and would apply against the $6.1 million.

(U) Transfer of Laos and Vietnam to MAP or DAV. There were major changes in the operation of the Military Assistance Programs in FY 1974, especially in Laos and Vietnam. Vietnam transferred to Service Funded in 1966. In January, AMC was advised that Laos would revert to MAP beginning with FY 1975.[12] Implementing instructions were issued to AMC agencies in January 1974.[13] The transition of the Laos program proceeded smoothly. There had been a possibility that the Vietnam program might also revert to MAP in FY 1975, but this did not happen. This possibility persisted until late June at which time the Congress set up special legislation for Defense Assistance to Vietnam (DAV). The Vietnam program was thus transferred from Service Funded to Defense funding at the end of the fiscal year. The procedures to be followed were virtually the same as for MAP. OSD advised that in view of the anticipated transfer of the Vietnam program to MAP in FY 1976, the DAV procedures would be as close to MAP as feasible. There were in fact very few differences. These were that P10 authority at USAILC was to be cited in lieu of stock fund with

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[11] DALO 161905Z January 1974 (C)

[12] DALO-ILG 161905Z January 1974 (U)

[13] AMCIL 281326Z January 1974 (U)

reimbursement from DAV funds upon receipt of evidence of delivery. The total reimbursement for rebuilt items furnished was to be to PEMA rather than split. Also, all DAV administrative funds or PC&H, transportation, etc., were to be placed at USAILC to reimburse applicable Army accounts as required. The Laos transition back to MAP because of advance planning moved with virtually no difficulties. The transition for the Vietnam program to DAV created some problems due to the lack of time for planning. Fortunately the procedures to be followed were virtually MAP which was expected to make the transfer in FY 1976 almost painless.

(U) NIMBLE VOYAGE. Project NIMBLE VOYAGE was established upon Defense Department direction.[14] The objective of the project was to increase the combat capability of the Khmer forces by providing additional weapons and vehicles prior to the dry season at which time combat was expected to increase. In order that this commitment could be assured, authority to withdraw or divert from active or reserve sources was granted. Diversions from FMS or GA could be made with review and approval by the Secretary of Defense. All requisitions for 9EE materiels were established as Priority 02 with premium transportation (SAAM/MAC airlift) authorized to insure that materiels would arrive in-country within the DOD established timeframe. Through the intensive efforts of all concerned, all equipment was delivered on time thus enabling the Khmer forces to effectively resist the opposing forces.

Secondary Items Support

(U) The Secondary Items Support office had two basic functions for which it was responsible during FY 1974. These were the management of Supply Support Arrangements (SSA). These arrangements comprised agreements between the US Army and friendly foreign governments or international organizations setting forth the terms and conditions under which peacetime logistics support were to be provided through the Army's logistical system on a reimbursable basis. Under these agreements, friendly foreign governments received the same follow-on logistical support for major end items of US origin as did US troops for the same items. The office was also responsible for staff management and coordination for intensive management of all International Logistics Program Secondary items and repair parts. This included management, not only for SSA, but for Foreign Military Sales and Grant Aid as well. The accomplishment of this function assured foreign governments that they would receive support for major end items in their inventory even though these items might have become obsolete to the US Army. This was accomplished by offering IL customer countries

[14] SECDEF 302117Z October 1973 (S)

an opportunity to participate in a one-time, Life-of-Type (LOT) buy of peculiar repair parts applicable to major end items prior to deletion from the US inventory. Accordingly advance notification to purchase appropriate peculiar repair parts was to be afforded IL countries two years prior to the support termination date. During FY 1974 NICP support phase-out plans were approved for various end items; i.e., AN/PRC-8-9-10 radio sets, ¼ ton M38 and M170 series vehicles, 10 ton M125 cargo truck and M20 75mm recoilless rifle. With regard to missiles, LOT buys were initiated for peculiar repair parts applicable to the BASIC HAWK and the NIKE HERCULES missile systems.

(U) One significant change in policy during FY 1974 which occurred, was the decision to abolish the Foreign Military Sales Order No. 3 (FMSO No. 3), and to collect storage and modification charges, formerly collected under FMSO No. 3, under the FMSO No. 2, the Consumption FMSO. This consolidation resulted in saving considerable administrative workload, not only for the US Army but for participating countries.

(U) During FY 1974, the following countries indicated an interest in SSA support; however, at the end of FY 1974 there was no formal acceptance: Korea, Thailand, Tunisia, Brazil, and Venezuela.

(U) The participating countries and program values at the end of FY 1974 were as follows:

Country	Program Value (Millions/Dollars)
Australia	$ 7.1
Austria	2.7
Belgium	1.0
Canada	15.4
China	21.6
Denmark	3.1
Germany	34.3
Iran	24.8
Israel	7.3
Japan	7.1
NHPLO	8.1
Netherlands	1.3
New Zealand	1.1
Norway	3.6
Saudi Arabia	16.5
Spain	4.5
United Kingdom	1.6
	$161.1

(U) The totel program for FY 1974 showed an increase of $18.0 million over FY 1973.

Middle East Crisis

(C) To maintain a balance of forces and thus achieve stability, the US provided Israel with military materiel during their conflict with the Arab nations, which began on 6 October 1973. To enhance DA efforts in expediting the supply of materiel to Israel, the AMC Operations Center with a selected cadre of personnel was opened on 9 October 1973. The AMC Headquarters Operations Center along with Operation Centers in the major CONUS commodity commands was subsequently staffed and became fully operational on 12 October 1973 on a 24-hour basis. Approximately 15 October 1973, JCS assigned PROJECT NICKEL GRASS - 9DD to facilitate the flow of correspondence and identify the supply of materiel to Israel.[15]

(C) During the October-November period, 294 lines of major items valued at $233 million were shipped to Israel. To replace combat losses, movement of the most critical items was made by US special mission aircraft and by Israeli aircraft. While most of this materiel was shipped from CONUS depot stocks, substantial shipments came from US prepositioned stocks in Europe.

(C) While the Operations Centers (AMC HQ/commodity commands) closed on 13 November 1973, Project 9DD for Israel continued on a high priority basis, constantly changing, with a continuously expanding program. In summary, at the end of FY 1974, the total 9DD Program was $1.5 billion and represented some 202 FMS cases involving 305 lines of major items of equipment. As of 30 June 1974, the value of equipment shipped amounted to $408.2 million.

(U) Because of the magnitude of the 9DD Program, the short timeframe for shipment of equipment, the Commander of AMC directed that QATs (Quality Assurance Teams) be utilized on these shipments. The QATs are required to inspect selected major items at the source prior to shipment, monitor/observe the shipment to destination (POE, POA destinations), and correct any deficiencies possible on the spot and report other deficiencies requiring urgent action direct to AMC. The delivery of the best possible product was the goal.

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15 Incoming and outgoing messages pertaining to Project NICKEL GRASS - 9DD and General Miley's Fact Book concerning the distribution of materiel to Israel including impact statements are preserved among the holdings of the AMC Historical Office archives.

(U) The QAT concept was expanded by direction of ODCSLOG to aid USAREUR in the supply of equipment from prepositioned stocks. Twenty-four AMC QA specialists were placed on TDY in Europe commencing in May 1974 to inspect large quantities of items being prepared for shipment during June through August. Prior to the TDY of the AMC QA specialists, detailed inspection standards were developed and tested on certain items at a CONUS depot, and these standards were subsequently reviewed/accepted by USAREUR and approved by DA.

M113A1 Dieselization Program - Federal Republic of Germany (FRG)

(U) During May 1973, a US/FRG and FMC conference was held to develop plans for converting FRG's gasoline model M113 APC to diesel model M113A1. In July 1973, FRG accepted a Letter of Offer for the development and testing of two prototype kits. In October 1973, FRG accepted the following cases for procurement of hardware required to convert 2,900 M113s: (1) DA Germany VGU - Conversion/Modernization Kits to be procured by FMC ($17.6 million); and (2) DA Germany VHH - Engines/Transmissions, Heaters and Spare Transfer Cases for 2,900 conversion kits and 300 spares ($18.9 million).

(U) For financial reasons, beneficial to both FRG and the US, the FRG accepted bulk shipment of the component parts required for conversion and modernization kits. The delivery of the 3,200 engines and transmissions was to be accomplished during the 1974-77 timeframe.

M48 Tank Modernization Program - Turkey

(U) In December 1973, the JUSMMAT advised AMC that the Government of Turkey had decided to convert M48 Series Tanks to M48A3s with 105mm Gun. JUSMMAT requested and was provided a team to visit Turkey to survey facilities to determine if a program could be conducted in Turkey. Advice on what shop equipment would be required was also needed.

(U) Letters of Offer were requested for technical data packages, conversion kits, special tools, technical drawings, training requirements, and for blueprints and specifications of X-ray machine and building utilized for quality inspection. A total of 885 M48A1 Tanks were to be modernized. The Letters of Offer were approved by AMC and were being staffed through DA for release at the close of FY 1974. The total value of these offers was in excess of $117.6 million.

Foreign Military Sales, Iran

(C) During FY 1974, the Government of Iran accepted Letters of Offer valued at $471.7 million, which brought their total FMS program value since inception to $1.9 billion. Significant programs included the Improved HAWK Missile System (29 FMS cases for equipment and services) and procurement/military qualification of the Bell 214A Helicopter, and 40 man years of field service technical representation.

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Modernization of the Saudi Arabian National Guard

(U) On 13 December 1973, a team from the US Project Manager's office presented to the Commander of the Saudi Arabian National Guard (SANG) the US Government's proposal for the modernization. That proposal for the modernization represented a 48-month program costing some $152 million and encompassing the modernization of two battalions of mechanized infantry, including organic artillery support. Because of the SANG Commander's expressed displeasure at the proposal's limited scope (he wanted a four-battalion modernization, to include supporting artillery), the US Ambassador to Saudi Arabia, with assistance from the US Project Manager, furnished the SANG Commander with a proposal to do more than two battalions. The estimated cost was set at $335 million and covered a 66-month execution period. That cost, plus the $50 million for construction of a SANG Headquarters Complex, brought the total program to an estimated $385 million. The modernization was subsequently approved.

(U) During February 1974, a Pre-Qualification Committee composed of PM SANG representatives and legal representation from the Corps of Engineers convened in Riyadh to select six firms qualified to receive the Request for Proposal (RFP) for the modernization. After approval of the selection methodology by the SANG General Counsel, and approval of procedures, to include the results, by AMC, the RFP was prepared and staffed at AMC and the Harry Diamond Laboratory before distribution 17 April 1974. Proposals were scheduled for receipt on 31 July 1974. On 14 April 1974, the SANG accepted the $272 million FMS case covering the AMC portion of the program.

Territorial Command Network (TCN) for Spain

(U) In June 1971, the Government of Spain requested a Letter of Offer for a communications network between nine general headquarters, fourteen tactical centers, one control center, and the Ministry of Army and Navy in Spain. In May 1972, Spain signed a Memorandum of Understanding and Letter of Offer which authorized the US Army to obtain US contractor proposals to install the TCN. Price and availability were furnished by Amendment No. 1 to the Letter of Offer and accepted by Spain at a case value of $26 million. The contract was awarded to International Telephone and Telegraph (ITT).

(U) Spain acquired a loan from the Import-Export Bank with a payment schedule based on US Government progress payments to the manufacturer. The contract contained a provision whereby partial payment to the contractor was to be in non-convertible pesetas not to exceed $10 million. The contract was to be administered through ECOM; the supply of US material through Ft. Monmouth; and the expenditures of non-convertible pesetas in Spain through the STRATCOM Field Office.

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FY 1974 FMS Case Close-Out Program

(U) The FY 1974 FMS Case Close-Out Program was established 12 September 1973 [16] with objectives, adjusted during the year for exemptions, as follows: close 480 FY 1971 and prior year cases; and close 826 FY 1972 cases. Accomplishments for FY 1974 were: 251 cases were closed against the FY 1971 and prior year objective and 457 cases were closed against the FY 1972 objective.

(U) The combined accomplishment of 708 cases closed represented 54 percent of the FY 1974 objective. Also completed during FY 1974 was an additional 171 cases not included in the FMS Case Close-Out Program. Total value of the 879 cases closed was $290 million.

Scope of the FMS Program

(C) The Army World-Wide FMS Program from date of inception to the close of FY 1974 totalled $9.8 billion. The active FY 1974 program totalled $3.8 billion, of which $2.5 billion represented new sales made during FY 1974. Countries making major purchases during FY 1974 were:

Country	$ Millions
Canada	37.4
China	38.7
Germany	92.5
Greece	49.0
Iran	471.7
Israel	1,425.7
Jordan	37.0
Norway	25.7
Peru	17.4
Saudi Arabia	104.1
Spain	30.3
United Kingdom	25.9

(U) Major equipments included in these sales were helicopters, missiles, personnel carriers, trucks, ammunition and communications equipment. World-wide deliveries against the Army FMS Program totalled $762 million for FY 1974.

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16 Letter, AMCIL-MR dated 12 September 1973, subject: FY 1974 Foreign Military Sales (FMS) Case Close-Out Program

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Co-Production of AN/PRC-77 Family of Radios - Republic of Korea (ROK)

(U) The Memorandum of Understanding[17] relating to co-production of the AN/PRC-77 Family of Tactical Radios was consummated on 14 August 1973. The ROK plans to co-produce and assemble these tactical radios starting with the assembly of complete kits furnished from a US manufacturer (Memcor Div. of E-Systems, Inc.) and progressing through assembly of kits only partially (60 percent) produced by US manufacture. The contract between Memcor and the ROK Government for kits was signed on 14 August 1973. Memcor was providing production know-how, technical assistance and test equipment to the ROK contractor, Oriental Precision Co. First production of radios started in April 1974 with delivery of kits from Memcor.

Co-Production of ARGOS-10 Radar System - Italy

(U) Negotiations were finally completed and a Memorandum of Understanding[18] consummated between the Governments of Italy and the US on 13 May 1974 for co-production of the ARGOS-10 Radar System. This co-production project would involve integration of the US High Power Acquisition Radar System (HIPAR) technology and hardware into development and production of an Italian Radar System, ARGOS-10. A technical assistance agreement supporting this project was entered into by the US contractor, General Electric Co., and the Italian contractor, Selenia SpA on 1 April 1974. This was approved by the US State Department on 21 May 1974.

HELIP (HAWK European Limited Improvement Program) - NATO

(C) The production phase (Phase C) of the HELIP was officially launched on 15 January 1974 by the signing of a contract between the NATO HAWK Production and Logistics Organization and the Raytheon Co. (US prime system contractor). Under the production phase, Raytheon will function as the system prime contractor both in CONUS and in Europe. Production of the Improved HAWK missiles will be accomplished in the US by Raytheon Co. and in Europe by contractors from the member countries (Federal Republic of Germany, France, Greece, Italy, Netherlands, and Denmark) participating in HELIP. Production of modification kits and conversion of the Basic HAWK ground equipment to the Improved configuration will be accomplished in Europe.

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[17] Memo of Understanding between the Government of the ROK and the Government of the USA Relating to the Co-Production of AN/PRC-77 Family of Tactical Radios (C)

[18] Memo of Understanding Between the Government of Italy Represented by the Ministry of Defense and the Government of the USA Represented by the Dept of Defense for the Development & Production of the ARGOS-10 System (U).

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M109 SP Howitzer Co-Production with Italy

(U) On 17 August 1973, the US Department of Defense issued a letter amendment to the 1968 Arrangement for Co-Production in response to a request from the Italian Government.[19] This amendment authorized co-production of an additional quantity of M109 SP Howitzers. Italy was purchasing, through FMS, the US configuration M109A1B vehicle, less the M127 Mount, M185 Howitzer, M2 Machine Gun/Mount, loading tray, flotation device, fire control and communication equipment, and basic issue items for the foregoing. Italy was to convert these vehicles to the M109G configuration and install the Italian developed 155/39 gun and mount.

M109A1 Howitzer Co-Production with The Netherlands

(U) Under the 1966 General Arrangement for Cooperative Production of the M109 Vehicle, the Netherlands co-produced 134 M109's. As a follow-on effort, in keeping with the standardization provision of the General Arrangement, the Netherlands was to modify those vehicles to the M109A1 configuration. They would co-produce the modification kit, except for the M185 tube and the M118A1 elbow telescope conversion kit being purchased through FMS Cases UXX and UWS. Supplement 2 to the General Arrangement was provided the Netherlands and was awaiting signature of both governments to formalize the modification effort at the end of FY 1974.

Potential Co-Production of M60A1 Tanks with Australia

(C) Since early 1973, Australia had been considering the M60A1 Tank as a successor to their British Centurian Tank. Since Australian policy required an offset arrangement for a substantial portion of the value of oversea purchase of defense items, purchase would be dependent upon an arrangement which would permit in-country production of a percentage of the tank dollar value. Budgetary and Planning estimates relating to co-production of the M60A1, which were based upon the combined 1973 AMC/Chrysler Corp. study team to Australia findings, were furnished to Australia in early 1974. Additional planning information was being provided at fiscal year ending for their consideration of various offset arrangements.

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[19] OASD/ISA letter 1-10010/73 dated 17 August 1973 to Ministry of Defense, Italy, inclosure to 2nd Ind, AMCIL-MC, Subject: M109 SP Howitzer - Italy dated 10 September 1973 (U) (previously furnished).

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Scope of the Co-Production Program

(C) As of 30 June 1974, the active Army Co-Production Program consisted of the following projects:

US Government Managed

M113 APC Family	Italy
M109 SP Howitzer	Italy
ARGOS-10 Radar System	Italy
HAWK	Japan
NIKE HERCULES	Japan
Air Defense Control & Coordination Systems for HAWK and NIKE HERCULES	Japan
LAW	NATO (Norway)
HAWK European Limited Improvement Program (HELIP)	NATO
M109A1 SP Howitzer	Netherlands
General Purpose Vehicles	Republic of China
M14 Rifle, M60 Machine Gun and 7.62mm Ammunition	Republic of China
UH-1H Helicopter	Republic of China

US Industry Managed, Under Umbrella of Government/Government Agreement

AN/PRC 77 Family of Radios	Republic of Korea
M16 Rifle	Republic of Korea
M47 Tank Modernization Program	Iran

US Government Supported, Under Umbrella of Government/Government Agreement

Conversion and Expansion of Ammunition Facilities	Republic of Korea

(C) Since inception, the US Government-managed program had a value of $2,489.3 million, of which an estimated $1,192.5 million will have been spent in the US over the period covered by the Government/Government agreements.

CHAPTER X

HIGHLIGHTS AND TRENDS

Year End Concerns

Management and Control

(U) One of several problems, and a seemingly chronic one, worrying General Miley when FY 1974 came to a close, in addition to the implementation of AMARC discussed in Chapter 1, was the continuing problem regarding staff command supervision and control. General Miley's overall general view of his headquarters staff was that it was too large and too poorly equipped to handle the numerous, varied, and complex queries and tasks brought to it from the AMC subordinate commands and other activities and installations.

(U) Earlier, when General Miley had been the Assistant Deputy Chief of Staff Logistics (Program and Budget), he had often come to grips with problems involving Headquarters, AMC and its field elements. The solutions to many of these problems were often made more difficult than necessary because the AMC Headquarters staff failed to give him the detailed backup he needed. In such cases, General Miley was forced to call in task forces from the field elements to supply the backup. After he returned to AMC in June 1969, he had a previous assignment in AMC as a deputy director in the procurement area, as the deputy commander and then as the commander in November, and throughout his command of AMC, he confessed that he never had a warm, comfortable feeling about his staff and their capability to perform the staff and policy job that was required to support the field and satisfy DA.[1]

(U) The AMC commander felt that many of his staff had a deep feeling tending toward insecurity because they had no independent source of data from which to draw to aid the solution of problems. General Miley observed that whenever a problem arose, whenever a hot requirement came in having to do with operations in the field, unless the particular staff member involved individually and intellectually was equipped to do the job, there was very little analysis performed or guidance offered regarding a solution. Problems were often handed to the commander or deputy dommander in almost the same state that it arrived in the mailbox in Washington.

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1 Side 1, Tape 2, 11 December 1975, Interview Between Gen. H. A. Miley,Jr. and LTCs Harbuck and Stephansen, P. 20 of Transcript in Archives of the Institute of Military History, Center of Military History, Carlisle Barracks, PA., Army War College

(U) General Miley worried about this failure to analyze and offer guidance the whole time of his tenure which spanned more than five years. He resorted to many devices without much success. His view was that "the AMC Headquarters staff, large staff and a highly paid staff, lot of high grades on the staff, but lacking either the capability to do the critical job or just lack of interest in doing the critical job." [2] According to the AMC commander, his staff just did not examine, did not evaluate, and did not solve many of the problems presented by the field commander and he was not sanguine about the situation. He had hoped that the CONCISE realignments and the decentralization policies discussed in Chapter 1, would provide some help. However, as FY 1974 drew to a close, the imposition of the AMARC reorganization fogged the situation.

Delinquent Deliveries

(U) Other problems were confronting the AMC commander. For example, longer lead-times for the delivery of procured items was the trend. With increasing frequency, AMC had to extend abnormally the delivery dates for both major items and replenishment parts. A survey of the major subordinate commands indicated that all of them were experiencing shortages in almost all categories of materiel. Reasons suggested for extended delivery schedules included the currency devaluation which had made U. S. products more attractive abroad, and price controls in the U. S. which made foreign markets more attractive. Also, clean-air and occupational safety standards were forcing foundries, forges, and other "dirty" industries to either cleam up or shut down with many choosing the latter course. In addition, there was the energy shortage causing delays of deliveries. General Miley estimated that it would take at least six months or more to work out the problem of long lead times for delivery. In the meantime, AMC's future capability to support and supply the field was in jeopardy. Remedies offered were stark conservation and pressure on producers.[3]

(U) Still another problem perplexing General Miley was that in recent years, the Army had not been able to find, on the shelf, engines and power train components with characteristics suitable for modern

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2 Ibid.

3 Letter, AMCRP-SP, Gen. H. A. Miley, Jr. to Gen. Creighton W. Abrams, 20 Mar 1974; Letter, AMCRP-SO, LTG W. W. Vaughan to LTG Wallace H. Robinson, Jr., 19 Jun 1979.

combat vehicles. Whereas the Army could utilize without significant penalty commercial engines and transmissions for many applications, such as most tactical vehicles, it was not possible to use commercial propulsion systems in combat vehicles without undue compromise of the vehicle and its mission.

(U) This was true for the following reasons: commercial engines were not available in the 1000-2000 horsepower category for heavy tracked vehicles; commercial engines in the 300-500 horsepower range required for medium weight vehicles (SCOUT and MICV) were excessively large and heavy and adversely affected the size and weight of the vehicle; commercial engines uprated substantially to provide desired power densities for combat vehicles could not meet reliability and durability requirements; and commercial transmissions were not available for tracked vehicles.

(U) Consequently, it was necessary for the Army to develop those specialized engines for combat use which were not commercially available and those engine developments needed to be preceded by an adequate technology base derived from appropriate exploratory development and advanced development programs. Also, where there had been in the past an abundant availability of preferred hydrocarbon fuels was not assured. Therefore, a need arose to identify fuel types that would be available to the Army on a world-wide basis. This information was needed to guide the power plant and component research and development effort, and to determine if the Army, in coordination with other DOD agencies and the civilian industry needed to participate in future fuels development.

(U) To resolve these problems, the AMC developed two integrated twenty-year technology plans--one for combat vehicle propulsion systems and one for fuels. The integration was necessary in order that the development of vehicle power trains and components would be optimized for combat vehicles in the future fuel environment. General Miley proposed two plans as policies for which AMC was to adhere in the accomplishment of the AMC mission for vehicular power, and he solicited the support of the Army research and development staffs in this effort.[4]

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4 Letter, AMCRD-GP, General H. A. Miley, Jr. to Chief, Research and Development, DA, Washington, DC, 20 Dec 1973, Subject: Twenty-year RDT&E Plan for Ground Combat Vehicle Propulsion Systems and Fuels.

High Priority Requisitions

(U) Excessive numbers of high priority requisitions was a continuous problem impacting adversely on AMC operations. In 1970, over 50 percent of the requisitions submitted to the Army Materiel Command were high priority requests. This abuse of the priority system caused the Army to establish a goal to reduce the percentage of high priority requisitions to USAMC supply sources to 25 percent of total requisitions submitted. Three years of emphasis brought little progress toward this goal. As of October 1973, 35 percent of the requisitions submitted were high priority.

(U) This excessive use of high priority requisitions caused the misdirection of critical resources, wasted valuable dollars and subjected the Army to severe criticism. The costs of overtime processing and air-shipment of invalid high priority requisitions became intolerable especially during FY 1974, a period of austere funding.

(U) Reports of the Army Audit Agency, the Inspector General and the results of air-shipment challenge procedures continued to validate the fact that too many requisitions were erroneously assigned a high priority. Further, an AAA study of more than 13,000 requisitions revealed 39 percent had overstated priorities. In addition, the challenge of air-destined shipments during the fourteen-month period ending August 1973, resulted in 74 percent being diverted to surface shipment with a total cost avoidance of $84.7 million.

(U) To correct the situation, General Eugene J. D'Ambrosio, the AMC Director for Maintenance directed corrective steps to improve use of the priority system. Commanders were to use these corrective steps to develop their improvement programs. Programs were to include a positive system of challenges to identify priority system abuses and corrective actions to be taken when abuses were identified.

(U) The corrective steps to improve the priority system were to include the following tasks: (1) identify ten activities which have submitted a high portion of Issue Priority Designator (IPD) 01 through 08 requisitions during the month. These data would become the subject of command review and would be investigated to assure compliance with the UMMIPS criteria; (2) daily review (by sampling) of requisitions by the Commanding Officer or his designated representative to assure correct application of the authorized Force/Activity Designator (FAD) and proper assignment of the Urgency of Need Designator (UND);(3) periodic comparison ofIPD's assigned by any activity/installation with the IPDs which would normally be associated with that activity/installation; (4) mandatory validation of the IPD assigned to any over-age requirement which has been backordered for future delivery by any supply source;

(5) semi-annual review (as well as continued monitorship) of the propriety of the FAD assigned to each activity which submits materiel requisitions; (6) intensive and more frequent audits of local compliance with UMMIPS rules and directed improvement/compliance techniques; (7) rigid enforcement of the priority system rules and disciplinary action and official reprimands for intentional overstatement of the priority of a materiel requirement; and (8) establish regular local training seminars (perhaps one-half day quarterly) at which priority rules are reviewed and new or changed situations are restated and discussed by all personnel who assign UNDs. Also identify the effect of careless use/flagrant misuse on the entire logistics cycle.[5]

(U) Through implementation of the above system, General Miley looked to easing the high priority requisition problem.

Notable Accomplishments *

Research and Development

(U) Even as it was a "time of troubles" for AMC, not unique for crisis management had been the nature of AMC business since its creation in 1962, 1974 was also another year of solid accomplishment. In the research and development area, the most notable achievement was when the two UTTAS competitors accomplished first flights on schedule. An added accomplishment in the aircraft area was completion of the development of the TOW Cobra. In another area, the HELLFIRE program had set the technological pace for the DOD in the application of laser weapons and the feasibility of a Cannon Launched Projectile (CLGP) was proven. Also, during FY 1974, AMC was awarded the Army Exceptional Performance Award for meeting Value Engineering (VE) goals. On the financial side of research and development, by 30 June 1974, AMC had obligated 96.4 percent of its FY 1974 RDTE funds and 100 percent of its prior year RDTE funds.

Procurement and Production

(U) During fiscal year 1974, AMC executed 535,000 contractual actions with a value of $6.4 billion. Of these, only 115 were protested to the Comptroller General of which only two were sustained. In terms of dollar value, 93.5 percent of the goods and services contracted for were delivered on time. AMC continued to deploy the Improved HAWK

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5 Letter, DALO-SMS-A, From MG Eugene J. D'Ambrosio, AMC Director of Supply and Maintenance to Army MACOM Commanders and oversea CINCS, 9 November 1973, subject: High Priority Requisitions.

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* The bulk of data in this section was taken from Letter, AMCCG, Gen. H. A. Miley, Jr. to Gen. Fred C. Weyand (CS), 30 January 1975 (New Year's Letter).

system to Europe. This system offered a significant increase in capability and maintainability over Basic HAWK. Also, the Command continued to deploy the SHERIDAN and TOW systems, and began deployment of the DRAGON system, to USAREUR. Taken in sum, the addition of the SHERIDAN M60A2,(scheduled for deployment in 1975), TOW and DRAGON to the European-positioned force markedly increased the anti-tank power where the threat was the greatest. In addition, during the year, AMC completed deployment of the LANCE system to Europe and successfully converted USAREUR's 155mm self-propelled fleet to the extended range version significantly adding to the Army's artillery capability. The GOER family of vehicles, which exhibited cross-country capability equal to or superior to any tracked vehicle in the world began deploying to Europe in Deember 1974.

Readiness of the Force

(U) In August 1974, for the first time all major combat units achieved their assigned ALOs with respect to equipment on hand. Of the remaining units in the Army, some 88 percent achieved their assigned ALOs. This was remarkable in light of the significant diversions of equipment to meet foreign military commitments. Repair parts availability continued to steadily improve to 75 percent as compared with 63 percent in December 1973.

Organization and Management

(U) AMC continued to prune and trim its structure with a view to making funds and spaces available for the combat elements of the Army.

(U) The AMC five-year progress was as follows:

	31 December 1969	31 December 1974
Military	14,375	9,880
Civilians	162,838	117,730

(U) The AMC Headquarters strength had also been steadily reduced as shown:

	31 December 1969	31 December 1974
Military	397	246
Civilians	2713	1838

(U) The AMC internally developed CONCISE package comprised most of the Army's contribution to overall reduction of structure as indicated by these data:

	Total Army	AMC
Dollar Savings	$115 million	$112.5 million
Manpower Savings	7344	7240

As part of this CONCISE action AMC implemented a new distribution system which reduced our repair parts distribution depots from eleven to three. This was expected to save money and time and provide better support to the field. Also, AMC continued to expand the Direct Supply Support System and by year's end it was fully in operation for Europe and the Pacific and was expanding into the larger CONUS posts.

(U) One of the major improvements resulting in cost savings was made by a new method of selecting aircraft worldwide for overhaul by actual on-the-ground inspection and technical analysis by trained teams instead of returning them for overhaul on a cyclical basis. An example of the effect was the reduction of UH-1 overhaul from a planned 588 in FY 1975 to 438. This method of selecting equipment for overhaul is being studied for its possible application to other types of equipment.

(U) During FY 1974, AMC reduced its energy consumption by 19.1 percent against the DA goal of 15 percent. The AMC goal for FY 1975 was a further 10 percent reduction of last year's significant action which equates to a 27 percent reduction from the FY 1973 base.

(U) AMC maintained an aggressive program to reduce the number of administrative vehicles in the Command. During FY 1974, a reduction of 673 vehicles was made. This program reduced dollar requirements for replacement vehicles; reduced operating and maintenance costs; conserved energy by reducing the amount of gasoline used; and realigned vehicle authorizations with current workloads and forced austere standards of operation. Further reductions were planned for FY 1975.

(U) AMC inaugurated a program to improve business relationships with industry through industrial association sponsored meetings with business executives. From these conferences AMC developed a set of 21 initiatives with specific actions addressing each. Some of the more significant actions are: designating a Minor Program point of contact to allow contractors on small programs to air problems at the highest HQ level; a complete revamping of the Technical Information Liaison Offices to allow easier access to advanced R&D information; a stricter control of the Best and Final offer technique to eliminate the possibility of awarding contracts by auction; and a complete analysis of the Product Improvement Proposal procedures.

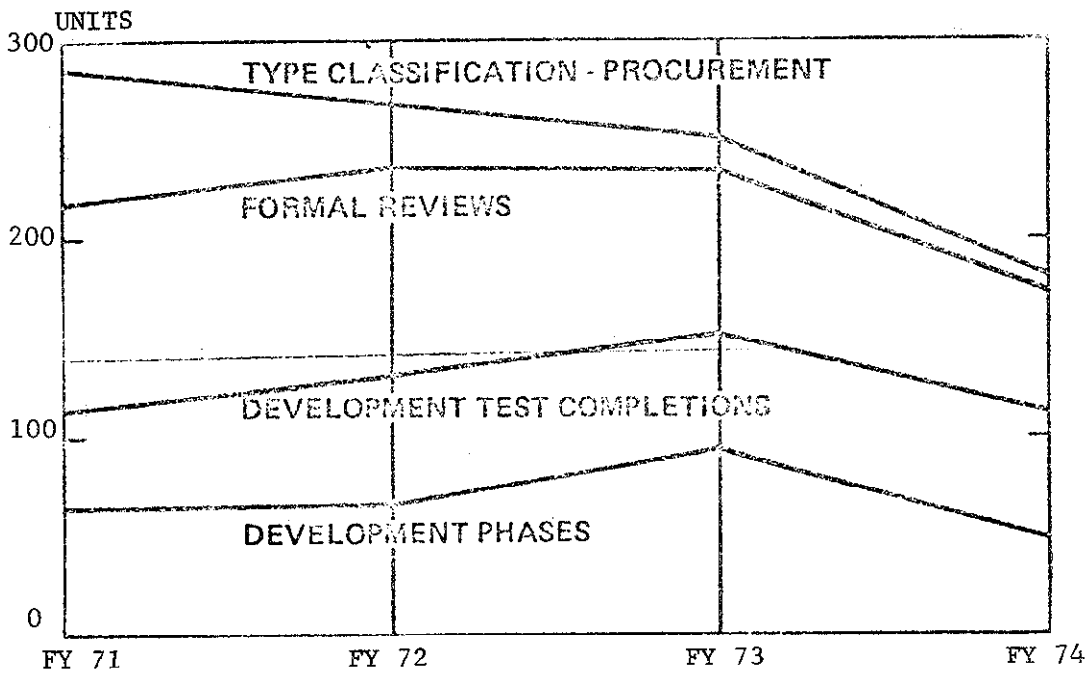
International Logistics

(U) During FY 1974, AMC executed its largest International Logistics Program to date. New customer orders amounted to $3.6 billion of which $2.49 billion was for Foreign Military Sales. AMC anticipated that in FY 1975 the new business would escalate to $5 billion of which $4.0 billion would be Foreign Military Sales. The International Logistics Program was 29 percent of the AMC procurement appropriation funding in FY 1973, 46 percent in 1974, and was expected to reach 53 percent in 1975. It was impacting greatly on other AMC US programs.

Activity Trends *

(U) It was the practice of AMC to measure the actual performance of its mission responsibilities against assigned goals or performance targets compared with previous compatible reporting periods. The mission areas measured in FY 1974 included: Research, Development, Test and Evaluation (RDT&E); Requirements and Procurement; Supply and Maintenance; International Logistics;Personnel, Training and Force Development and Equal Employment Opportunity. The following charts and narratives indicate the FY 1974 performance of effectiveness and efficiency in the above areas. Effectiveness rankings were based upon current accomplishment (FY 1974) against current (FY 1974) goals. Efficiency rankings were based upon current accomplishment (FY 1974) related to base period (1972) accomplishment.

AMC RDT&E TECHNICAL OBJECTIVES
STRATIFIED BY TECHNICAL OBJECTIVE AREA
FY 1971 THROUGH FY 1974

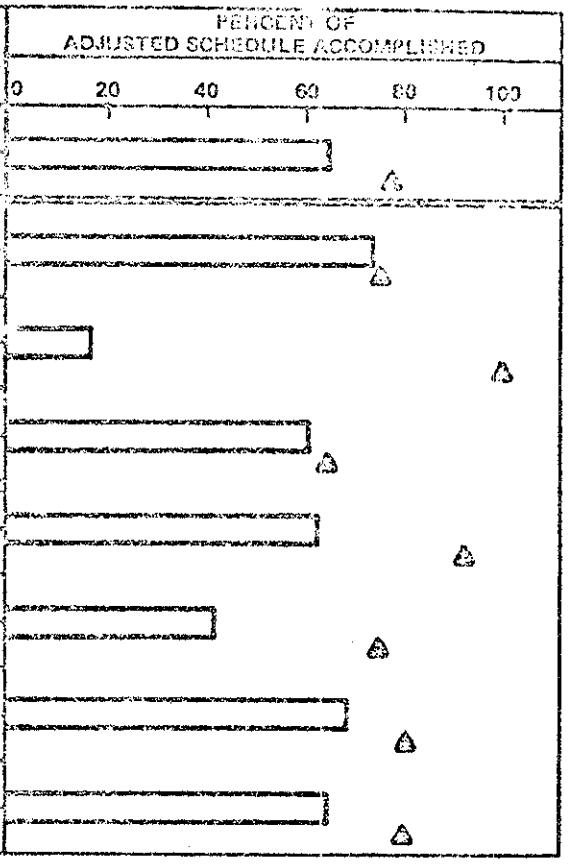


* Charts and narratives in this section were taken from "Data on Activity Trends in AMC,"AMC Comptroller, Review and Analysis Division, Jun 74.

(U) There had been a general decline in the accomplishment of RDT&E technical objectives with only 186 tasks being completed in FY 1974. This was the lowest level of accomplishment since FY 1971. Three of the four areas reflected a decrease with Development Phases accomplishment dropping almost 50 percent (from 95 to 48) and Formal Reviews dropping more than 27 percent (from 80 to 58). These reductions were based principally upon changes in Army materiel acquisition guidelines which eliminated the previous requirement for Formal Reviews for major systems and reduced the previously required number of Development Phases reviews for all projects. Information concerning accomplishment of targets is provided on the following three charts.

AMC RDT&E TECHNICAL OBJECTIVES
ADJUSTED SCHEDULES AND COMPLETION
FISCAL YEAR 1974

COMMANDS		DEVELOP PHASE	DEVELOP ACCEPT TEST	IN-PROCESS REVIEW	TYPE CLASSIF	TOTAL
TOTAL AMC	SCH	84	93	93	19	289
	ACT	48	66	58	14	186
ARMCOM	SCH	12	19	23	4	58
	ACT	8	11	21	3	43
AVSCOM	SCH	2	2	2		6
	ACT	1	0	0		1
ECOM	SCH	23	25	21	12	81
	ACT	9	13	12	10	49
MICOM	SCH	3	5	8		16
	ACT	2	5	3		10
TACOM	SCH	7	2	3		12
	ACT	2	2	1		5
TROSCOM	SCH	39	33	20	2	95
	ACT	23	23	18	1	65
OTHERS	SCH	7	7	6		20
	ACT	3	7	3		13



△ = PERCENT OF FY 1973 ADJUSTED SCHEDULE ACCOMPLISHED (ADJUSTMENTS RESULT FROM DELETIONS FROM INITIAL SCHEDULE OF ITEMS CANCELLED OR TERMINATED).

(U) Thirty-nine technical objectives scheduled for FY 1974 completion were cancelled during the year. This reduced the gross schedule from 327 to the 288 identified above. Of those remaining, 186 or 64.6 percent were completed on time. The balance of 102 were rescheduled for FY 1975. Twenty of the slippages were avoidable (18 for administrative reasons and two for overoptimistic scheduling) and 82 were unavoidable (46 administrative reasons, 32 due to technical difficulties and 4 to delays caused by DA, TRADOC and other agencies). Unavoidable slippages were caused by such factors as late delivery of material, decision delays and changes in specifications as a result of reviews and tests. The 64.6 percent completion rate compared with a 77.5 percent completion rate in FY 1973.

AMC RDT&E TECHNICAL OBJECTIVES
ADJUSTED SCHEDULES/COMPLETIONS/PROJECT ACCOMPLISHED
FY 1972 THROUGH FY 1974

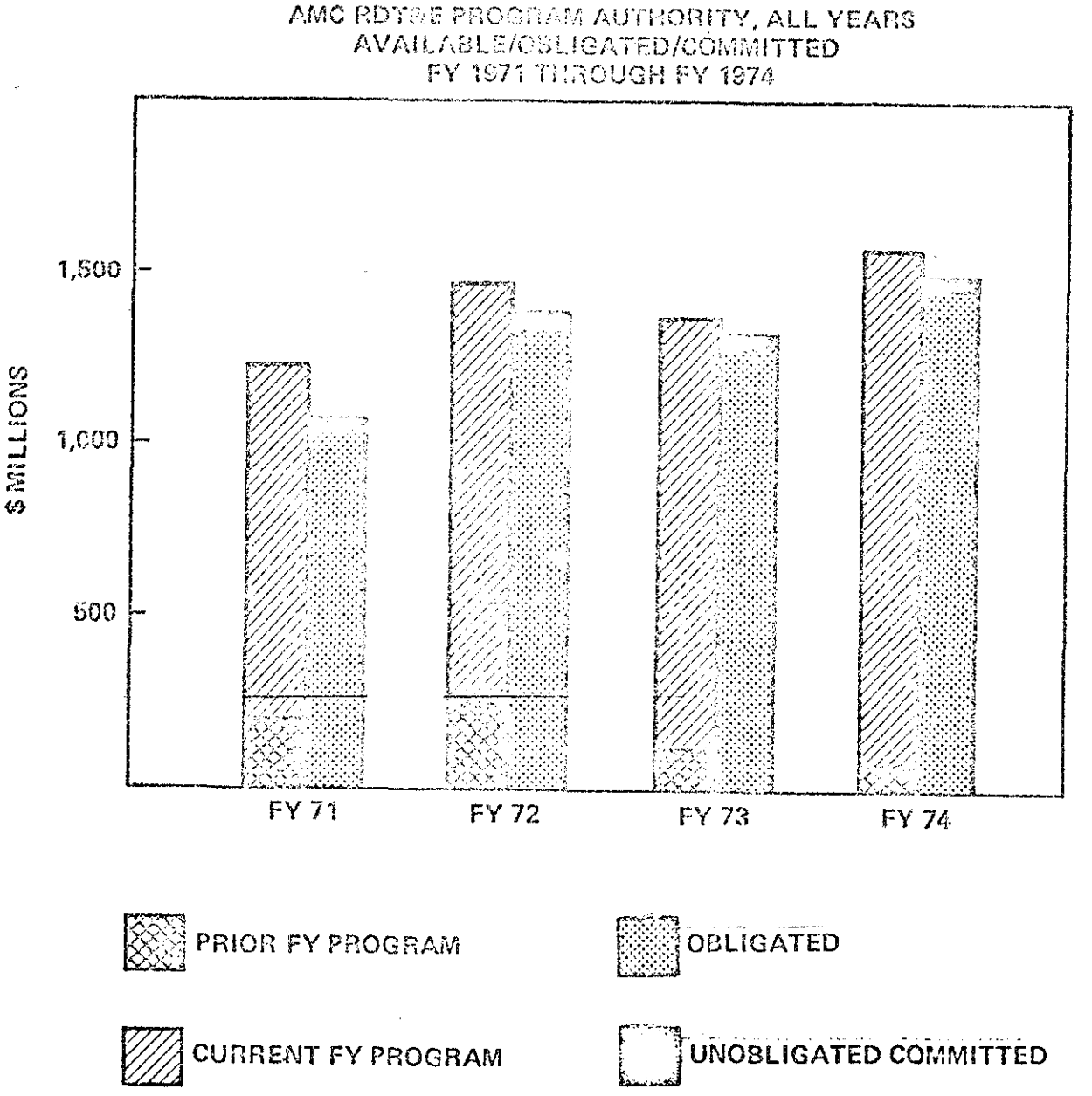
	FY 1972			FY 1973			4Q FY 1974		
	SCH	ACT	%	SCH	ACT	%	SCH	ACT	%
TOTAL	356	269	76	325	252	76	288	186	65
TYPE CLASS-PROG	43	33	77	20	19	95	18	14	78
FORMAL REVIEWS	126	103	82	97	80	82	93	58	62
DEVELOPMENT TESTS	99	65	66	87	58	67	93	66	71
DEVELOPMENT PHASES	88	68	77	121	95	79	84	48	57

(U) Although a lesser number of objectives were scheduled for FY 1974, the rate of accomplishment dropped in all areas except Development Tests which improved in total tests and rate of accomplishment.

AMC RDT&E TECHNICAL OBJECTIVES
COMPLETIONS BY COMMAND
FY 1971 THROUGH FY 1974

	TOTAL	ARMCOM	AVSCOM	ECOM	MICOM	TACOM	TROSCOM	OTHER
TOTAL 1971	286	77	24	61	22	26	59	17
TOTAL 1972	269	51	10	80	16	9	63	40
TOTAL 1973	252	45	13	45	21	9	94	24
TOTAL 1974	186	43	1	49	10	5	65	13

(U) There continued to be a decline in the technical objectives area. All major subordinate commands were down from FY 1973 except for ECOM which experienced a slight increase. AVSCOM completed only one of six milestones scheduled, the remaining five milestones were not completed due to unavoidable slippages.



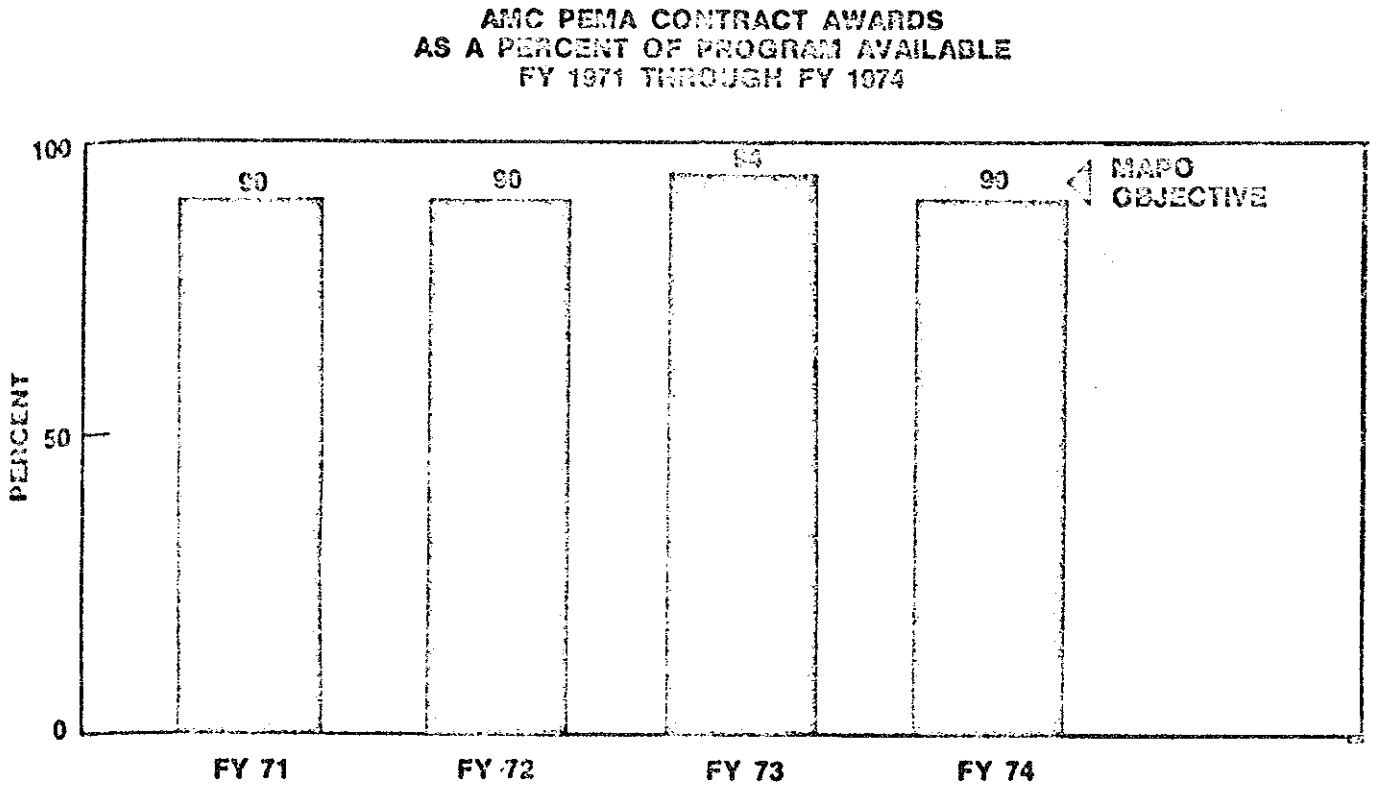
(U) In FY 1974 AMC obligated $1,487 million (the highest amount in the 4 year period covered) of its $1,568 million RDT&E program authority, an accomplishment rate of 94.8 percent. The obligation rate for each year reflected consistent improvement over the 84.8 percent established in FY 1971. Prior FY program of $68 million, representing 4.3 percent of the total authority available in FY 1974, was the lowest prior year carry-over for the period covered. This was 66 percent less than that reflected for FY 1971.

AMC RDT&E PROGRAM/OBLIGATIONS/PERCENT OBLIGATED
ALL YEAR PROGRAMS
FISCAL YEAR 1974

COMMAND	$ MILLIONS		PERCENT OBLIGATED
	PROGRAM	OBLIGATED	0 25 50 75 100
AMC TOTAL	1,567.9	1,456.1	
AMC-HQ	94.0	88.8	
ARMCOM	153.5	147.0	
AVSCOM	301.3	288.9	
ECOM	276.5	257.3	
MICOM	354.3	326.8	
TACOM	110.1	105.2	
TECOM	180.7	175.0	
TROSCOM	71.7	69.1	
UNDISTRIBUTED	25.8		

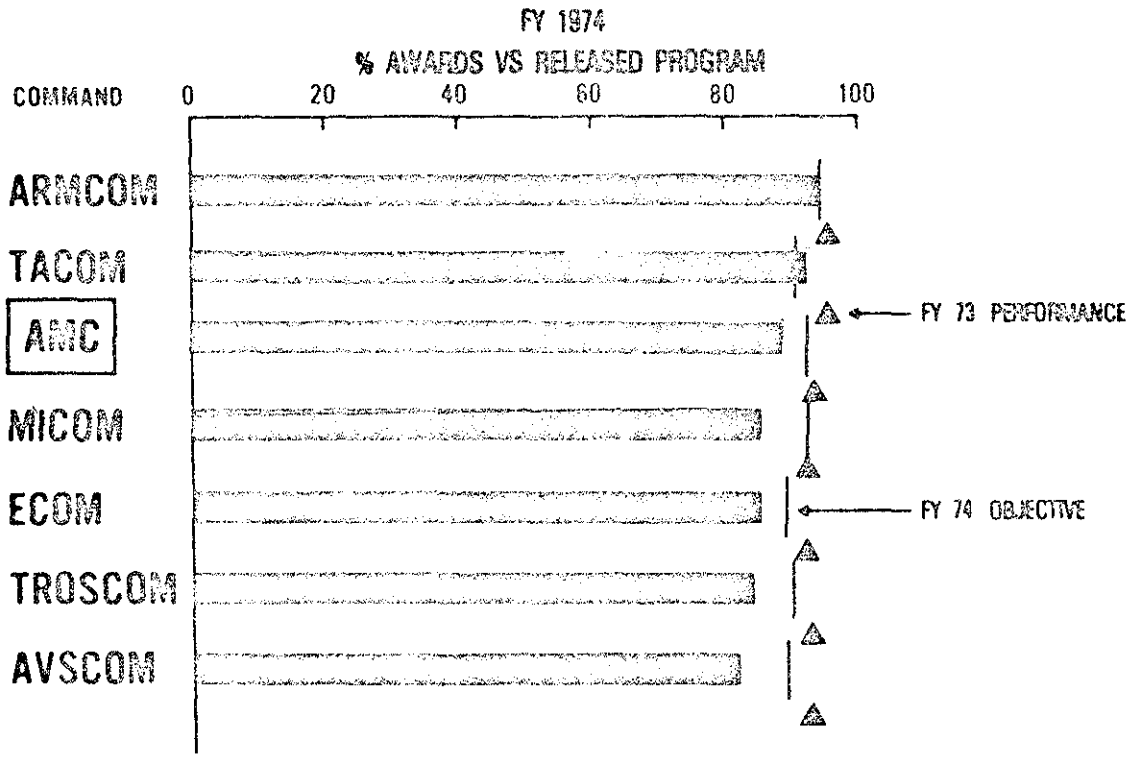
△ PERCENT OF FISCAL YEAR 1973 PROGRAM OBLIGATED

(U) Data in the chart above relates to program authorizations for FY 1974 ($1,500 million) and prior fiscal years ($68 million). All major subordinate commands bettered the program obligation goal of 92 percent for FY 1974 program authority with TECOM scoring a high of 96.8 percent. The obligations goal of 100 percent for the FY 1973 program was met by TROSCOM only, while other major subordinate commands obligated between 82.4 percent and 98.9 percent.

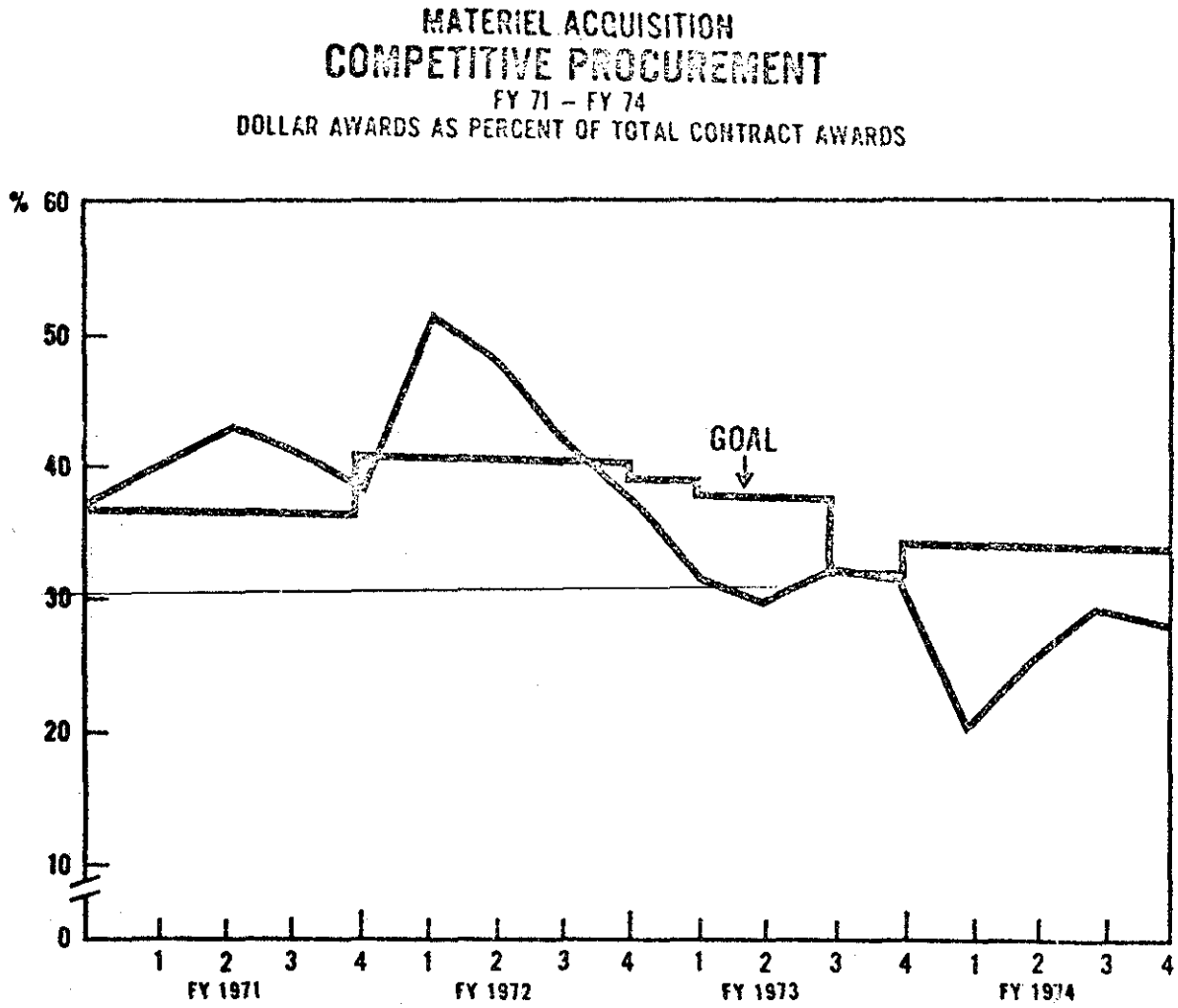


(U) The AMC contract award rate of 90 percent of available program fell 3 percent short of the FY 1974 MAPO goal of 90 percent. Part of the reason for the shortfall was the fourth quarter release by DA of $844 million, or one sixth of the FY 1974 program. The major recipients of the late released program (TACOM-473; ARMCOM-203; MICOM-102) being forwarned of imminent release of supplemental authority, began administrative actions short of obligation during the third quarter with final obligation shortly after receipt of authority in the fourth quarter. This factor alone kept the FY 1974 rate at the same 90 percent as those of FY 1971 and FY 1972.

MATERIEL ACQUISITION
PEMA CONTRACT AWARDS



(U) The two major recipients of fourth quarter supplemental program release (TACOM/ARMCOM--see previous narrative) had the best FY 1974 contract rate performance. TACOM exceeded and ARMCOM matched respective FY 1974 objectives, although neither matched FY 1973 achievements. By 30 June MICOM had contracted 98 percent of program released 31 March 1974. ECOM, TROSCOM and AVSCOM each missed their goals because of six protests by dissident bidders (ECOM, 1/$8 million; TROSCOM 4/$13 million; AVSCOM, 1/$12 million).



(U) There had been a persistent three year slide in AMC competitive procurement, particularly in the formal advertising category which fell from 17 percent in FY 1972 to 14 percent in FY 1973 to 10 percent in FY 1974 (competitive negotiation rates were 21 percent, 18 percent and 18 percent in the same timeframe). Command details are delineated on the following page.

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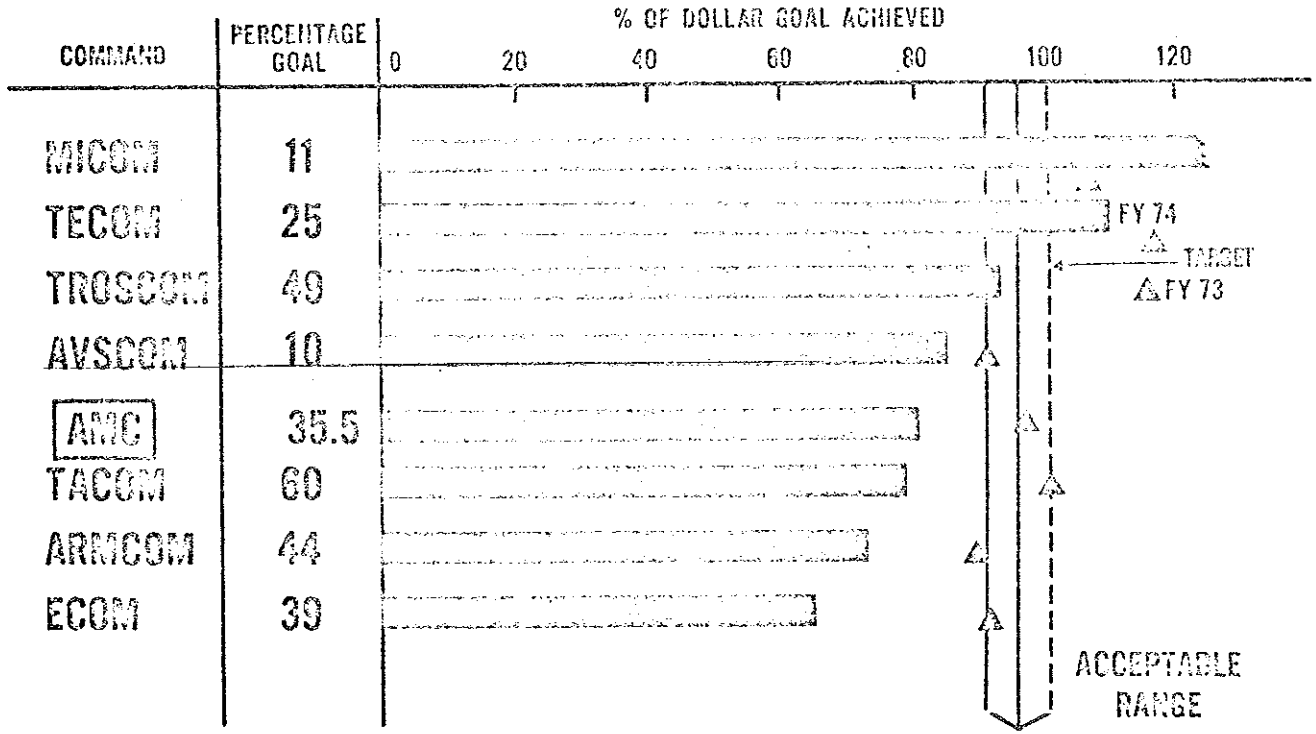
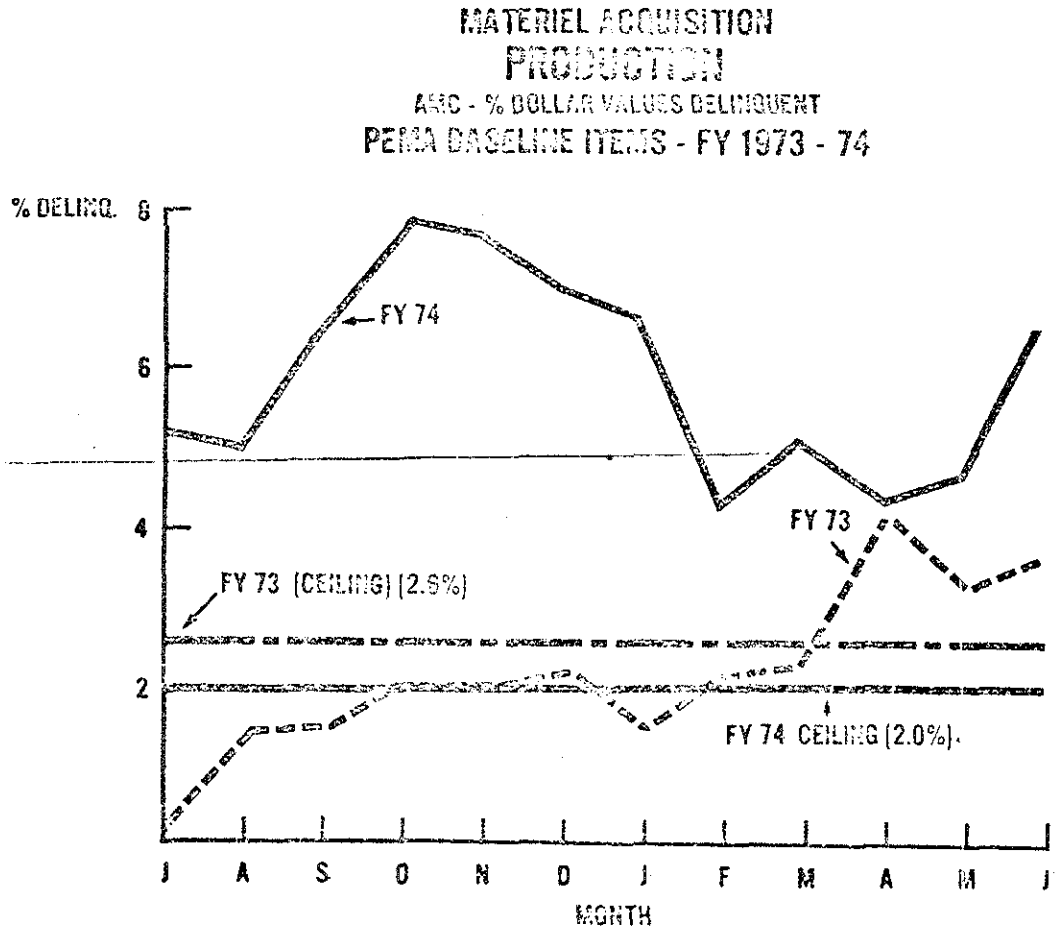
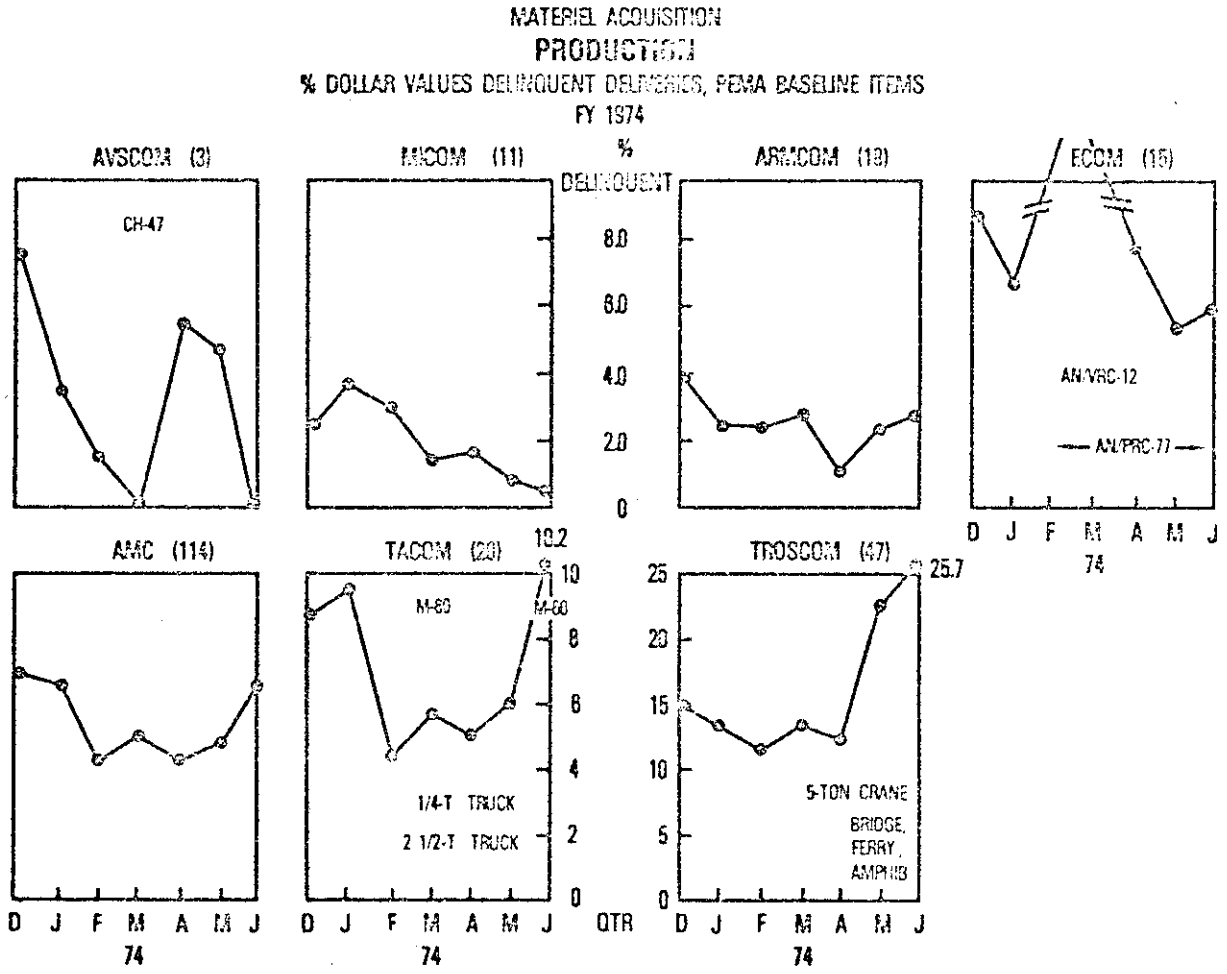
MATERIEL ACQUISITION
COMPETITIVE PROCUREMENT
AS % OF TOTAL $ AWARDS
(LPMES) FY 1974



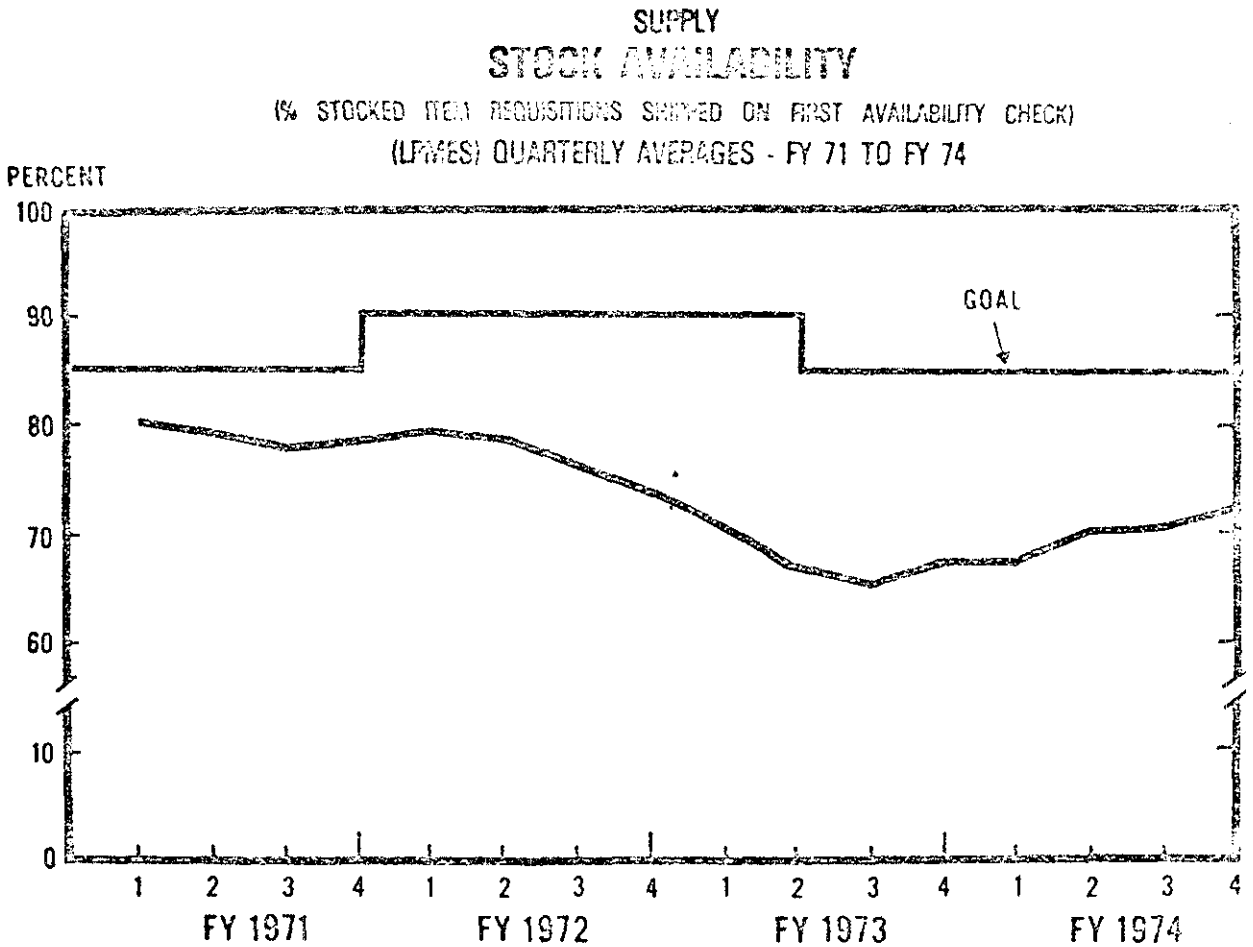
(U) Except for MICOM, with a very low goal, all commands fell significantly short of FY 1973 performance. MICOM and TECOM exceeded their FY 1974 goals and TROSCOM was within the acceptable range. AVSCOM fell short partly because of its low total obligation rate for the year. TACOM fell short partly because of reductions in FY 1974 procurement of highly competitive wheeled vehicles and partly because of increases in FY 1974 procurement of generally non-competitive tanks. The ARMCOM lag was in large measure due to procurement of urgent ammo requirements as add-ons to contracts with companies in production. TACOM and ARMCOM each received and made contracts with large amounts of program authority during the last quarter FY 1974.



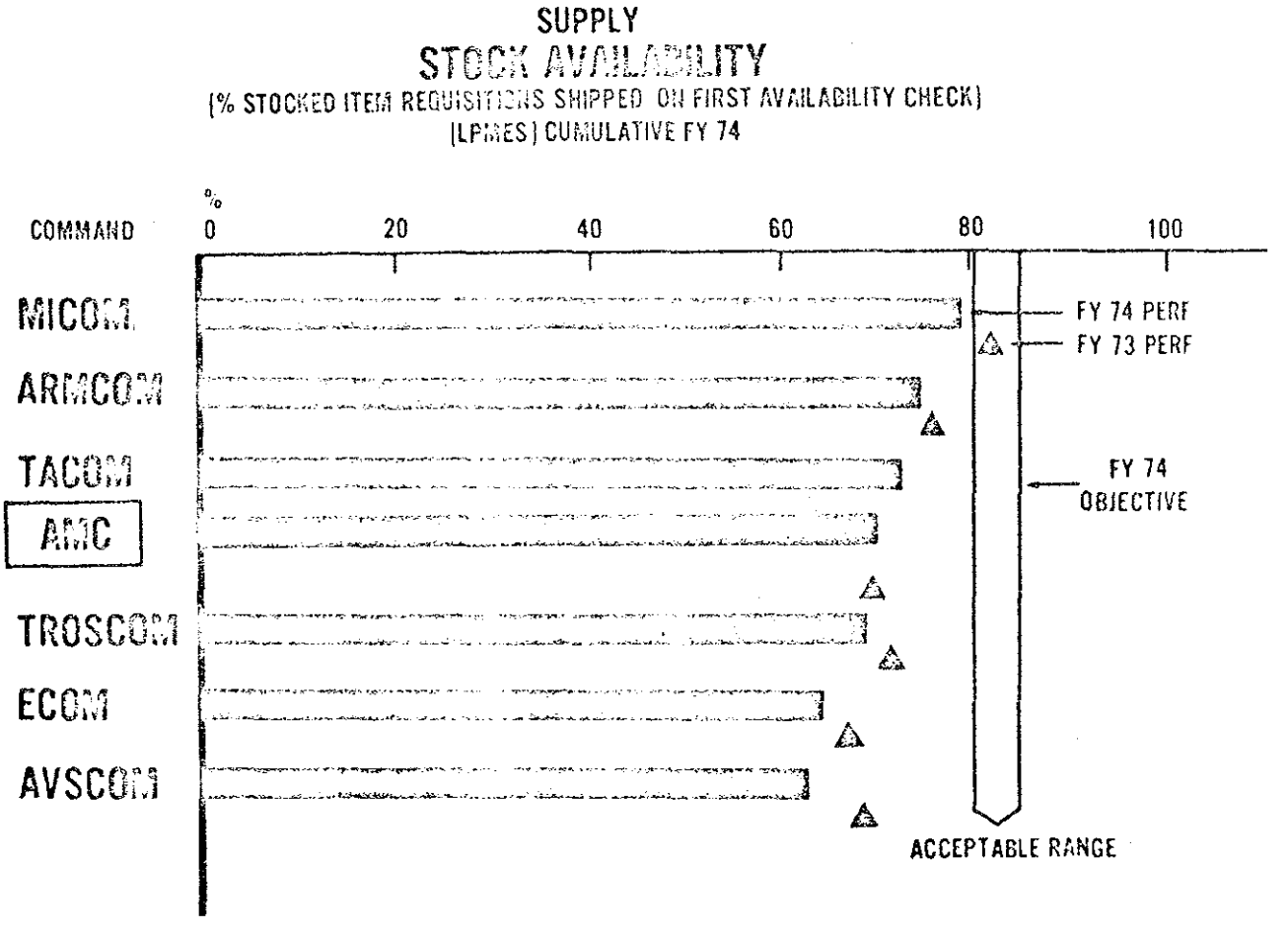
(U) The monthly delinquency rate during FY 1974 was consistently above FY 1973 rates and also consistently in excess of the 2.0 percent FY 1974 ceiling. Command details are provided on the following page for the last seven months of FY 1974.



(U) In the charts above the numbers appearing in the heading for each command tell how many items each command had in the PEMA Baseline Item list, while the system named in some of the blocks represent those causing the major amount of delinquency for those commands for the periods shown. For example, TACOM, with 20 items on the list, had delivery problems with the quarter-ton truck and the 2½-T-Truck for the entire second half, and with the M-60 tank (due to defective vendor castings) in March and in June. The ECOM delinquency rate results in large measure from non-delivery of AN/PRC 77 radio by the bankrupt Electro Space Corp. The TROSCOM exceedinly high rate was caused by late changes for the five ton crane and material vendor shortages for the Amphib Bridge Ferry.

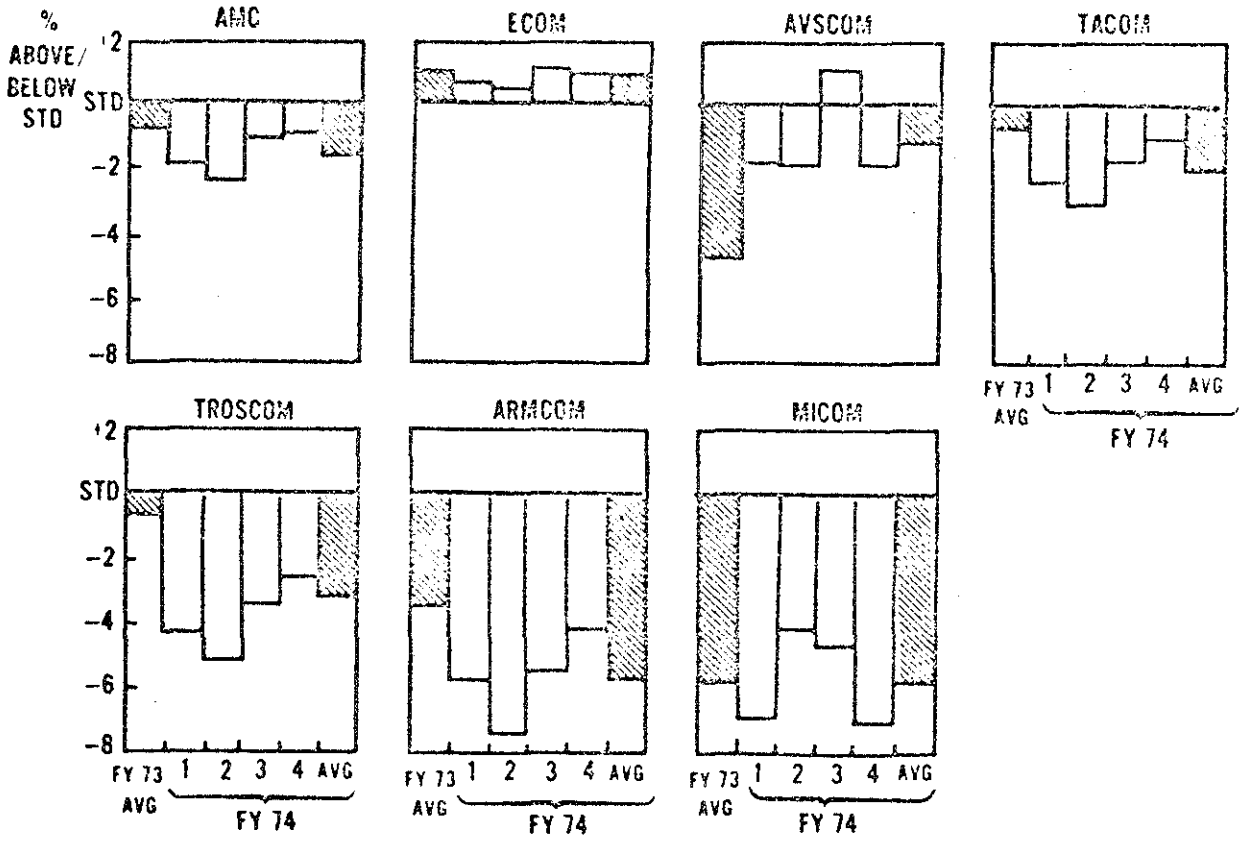


(U) AMC stock availability of stocked items in FY 1974 was slightly above that of FY 1973 although it remained substantially below the 85 percent LPMES goal. An encouraging sign was noted with the consistent quarter to quarter rise in availability following the four year low in the third quarter of FY 1973. Command details are delineated on the following page.



(U) No command achieved the LPMES goal of 85 percent or was in the acceptable range, although MICOM was close and would probably have been in the acceptable range if ALPHA had not been introduced in FY 1974. The upward surge at TACOM overcame the cumulative reported shortfalls at all other commands.

SUPPLY
COMPOSITE OPERATIONAL READINESS (SUPPLY) TRENDS
(COMPARED TO DA STANDARD)
FY 1973 - 1974



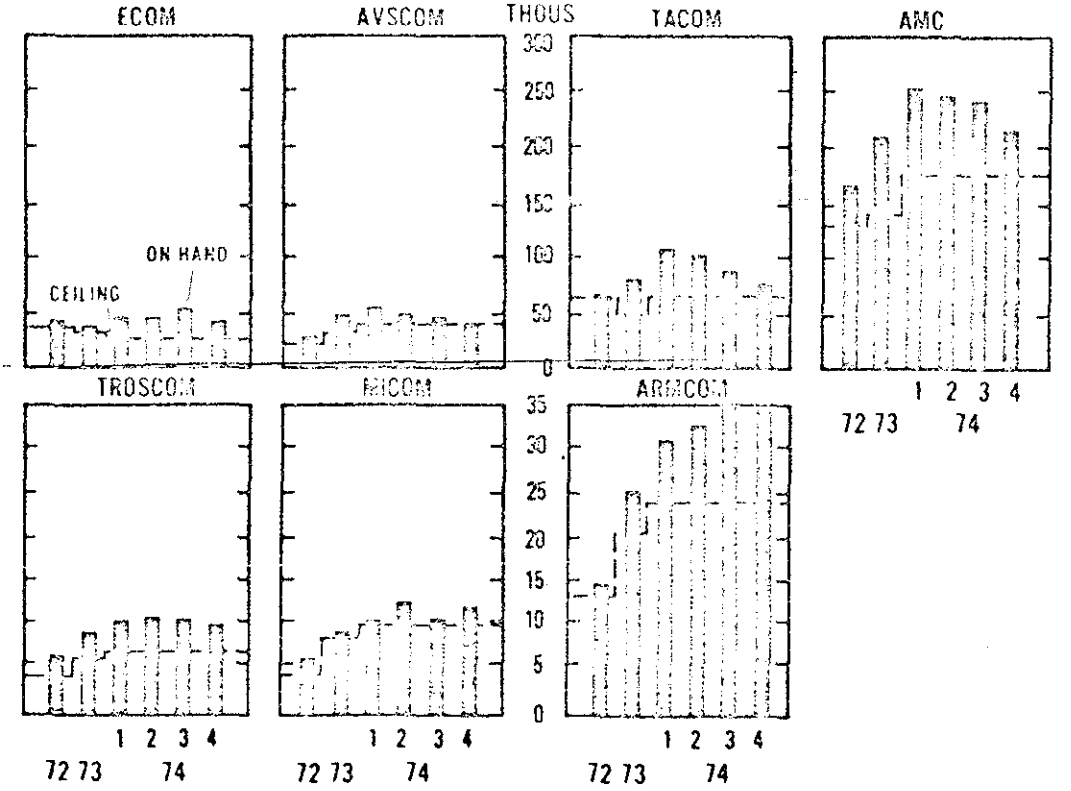
(U) The charts above relate AMC Composite Operational Readiness posture to DA standards for FY 1973 (first column-striped) and FY 1974 (last column-striped) as well as FY 1974 quarter by quarter progress (open columns). On an overall basis AMC lost ground in FY 1974 but there was improvement the third and fourth quarters, with the latter equaling FY 1973 performance. ECOM alone was consistently above the DA standard and all commands but MICOM with ALPHA transition problems improved during the last half.

SUPPLY

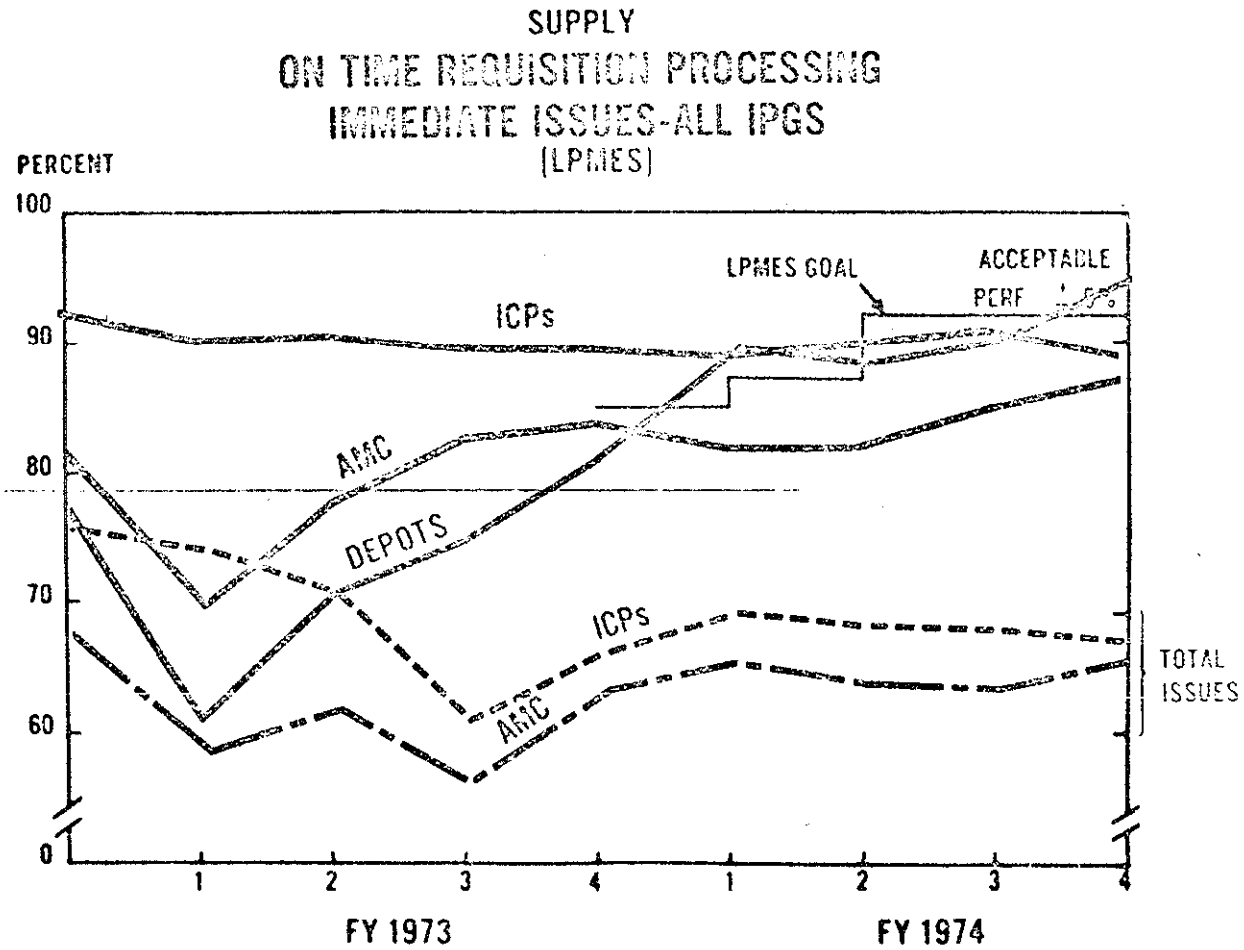
MATERIEL OBLIGATIONS OUTSTANDING (BACKORDERS)

STOCKED ITEMS (LPMES)

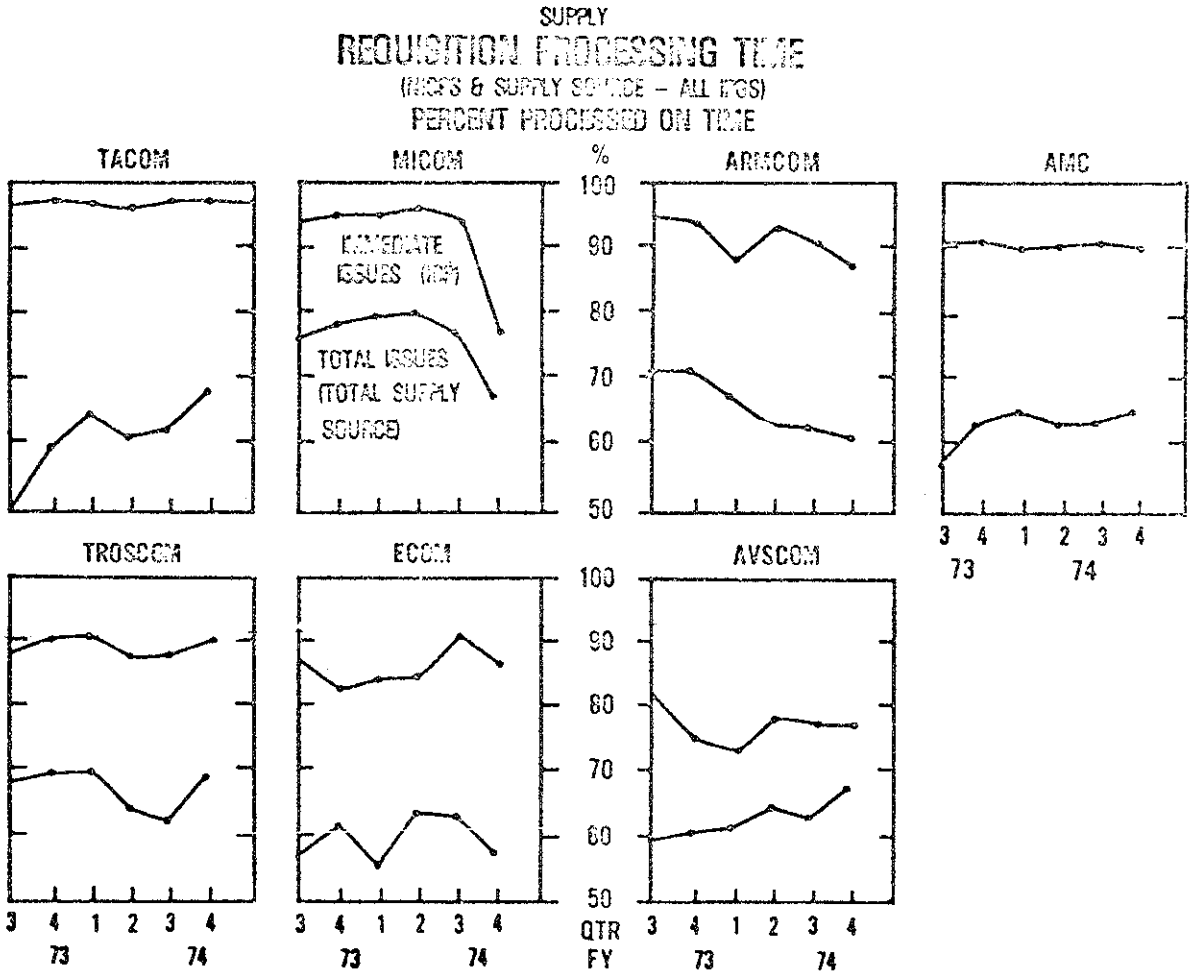
NUMBER ON HAND - END OF PERIOD (ACCEPTABLE PERFORMANCE - 10% OF CEILING)



(U) These charts identify Materiel Obligations Outstanding (backorders) for stocked Items for 30 June 1972 and 1973 and for FY 1974 quarter ends. LPMES ceilings are also identified. On an overall basis AMC backorders have risen each year and they have consistently exceeded LPMES ceilings. The FY 1974 trend was down after an abrupt rise in the first quarter. AVSCOM alone met the LPMES ceiling at the end of FY 1974.



(U) This chart provides Immediate Issue as well as Total Issue data. AMC Immediate Issue performance (shown by the three solid lines at the top of the page) rose steadily during FY 1974 and at years end was within LPMES acceptable performance criteria. There was very little change in Total Issue posture during FY 1974 but a modest upturn in the fourth quarter raised Total Issue performance at years end to the highest level in two years. Command Details for Immediate Issue and Total Issue are delineated on the following page.

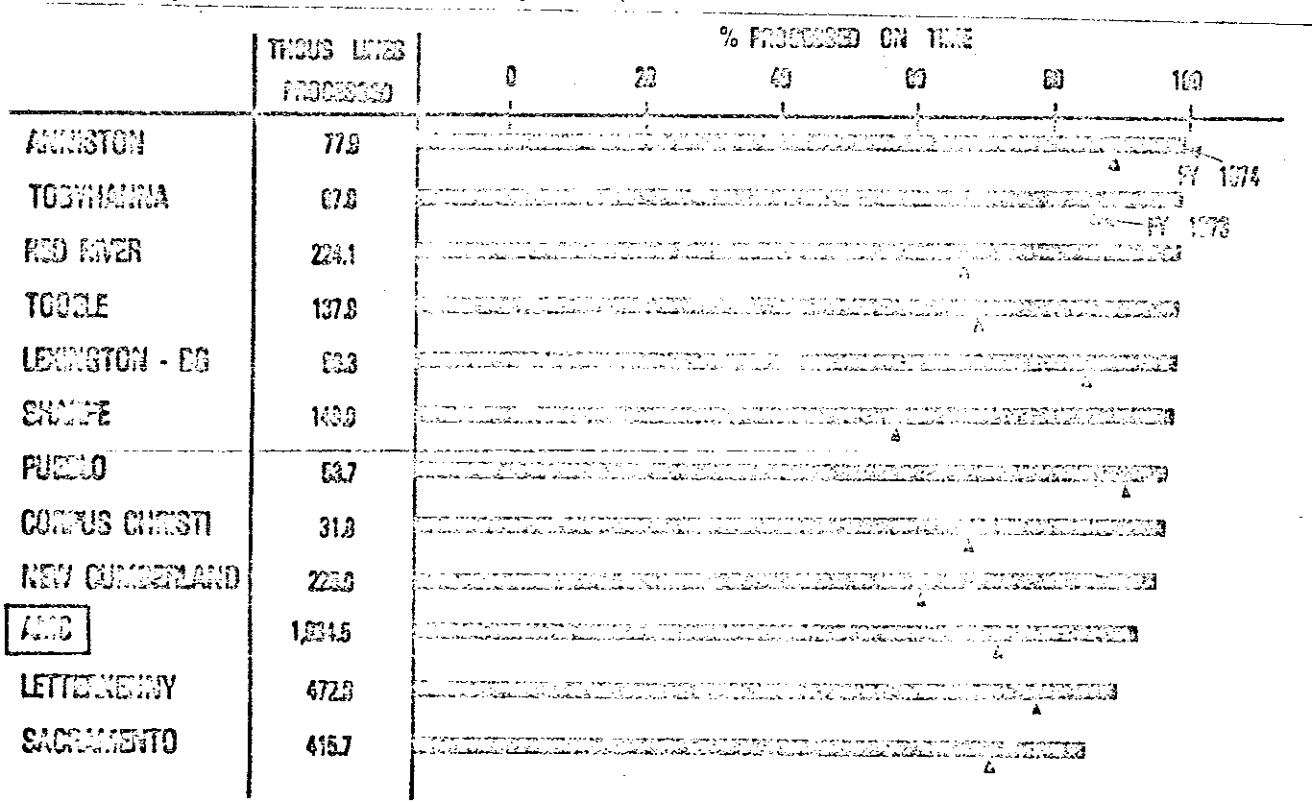


(U) The top trend lines show ICP performance in Immediate Issues paralleling the top set of lines on the composite chart on the preceding page. The bottom trend lines show data for Total Issues. MICOM and ARMCOM had disruptive problems with Immediate Issues. The MICOM problem was due primarily to implementation of ALPHA/CCSS in April and the inability to run the prescribed number of requisition processing cycles due to system conversion. Ninety cycles were scheduled but only 28 were completed during the fourth quarter. ARMCOM regression, related to the WECOM/ MUCOM merger, was caused by computer problems associated with merging Class 5 (Ammo) applications with Classes 2, 7 and 9. This file merger adversely affected requisitioning processing cycles, with 90 being scheduled and only 13 completed.

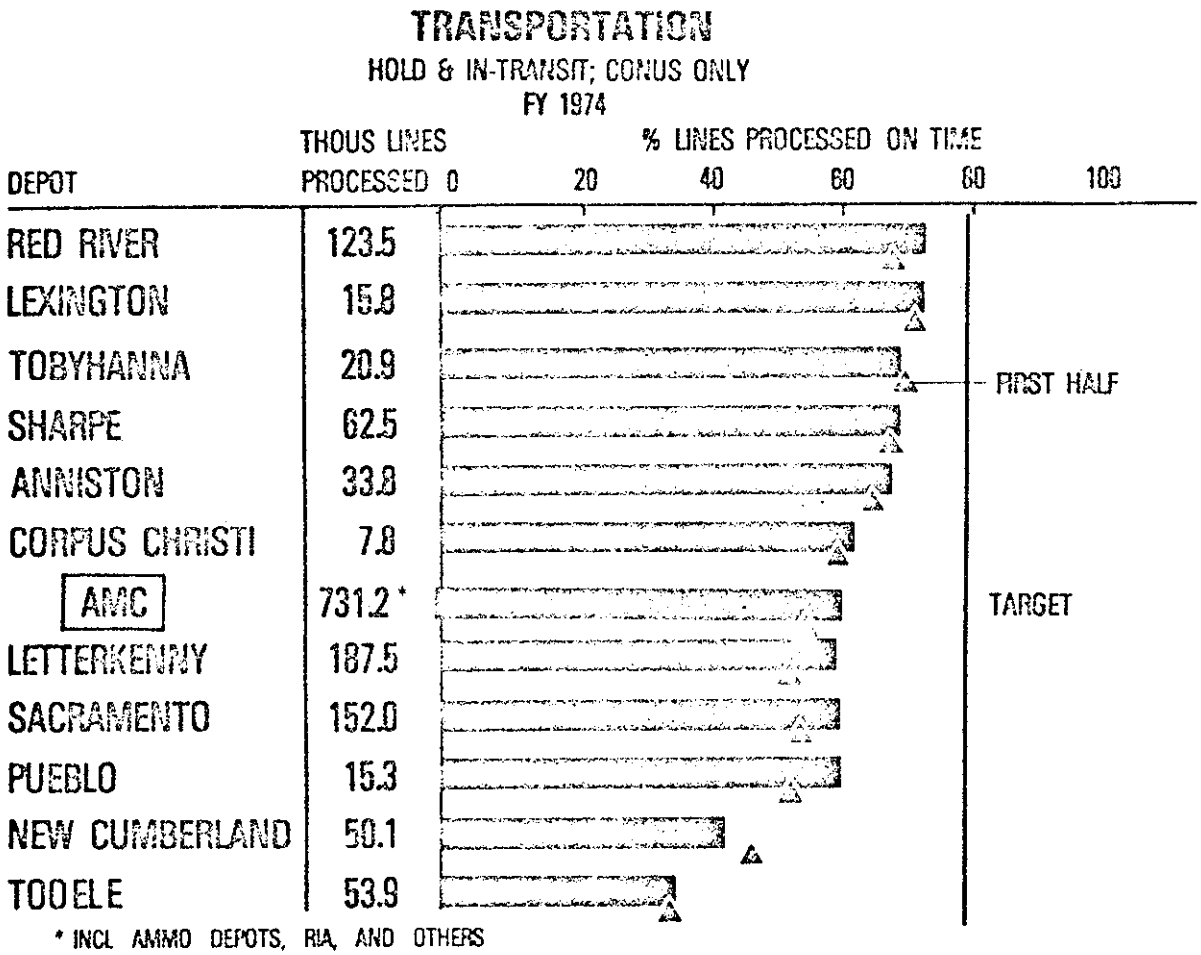
SUPPLY

DEPOT MRO PROCESSING

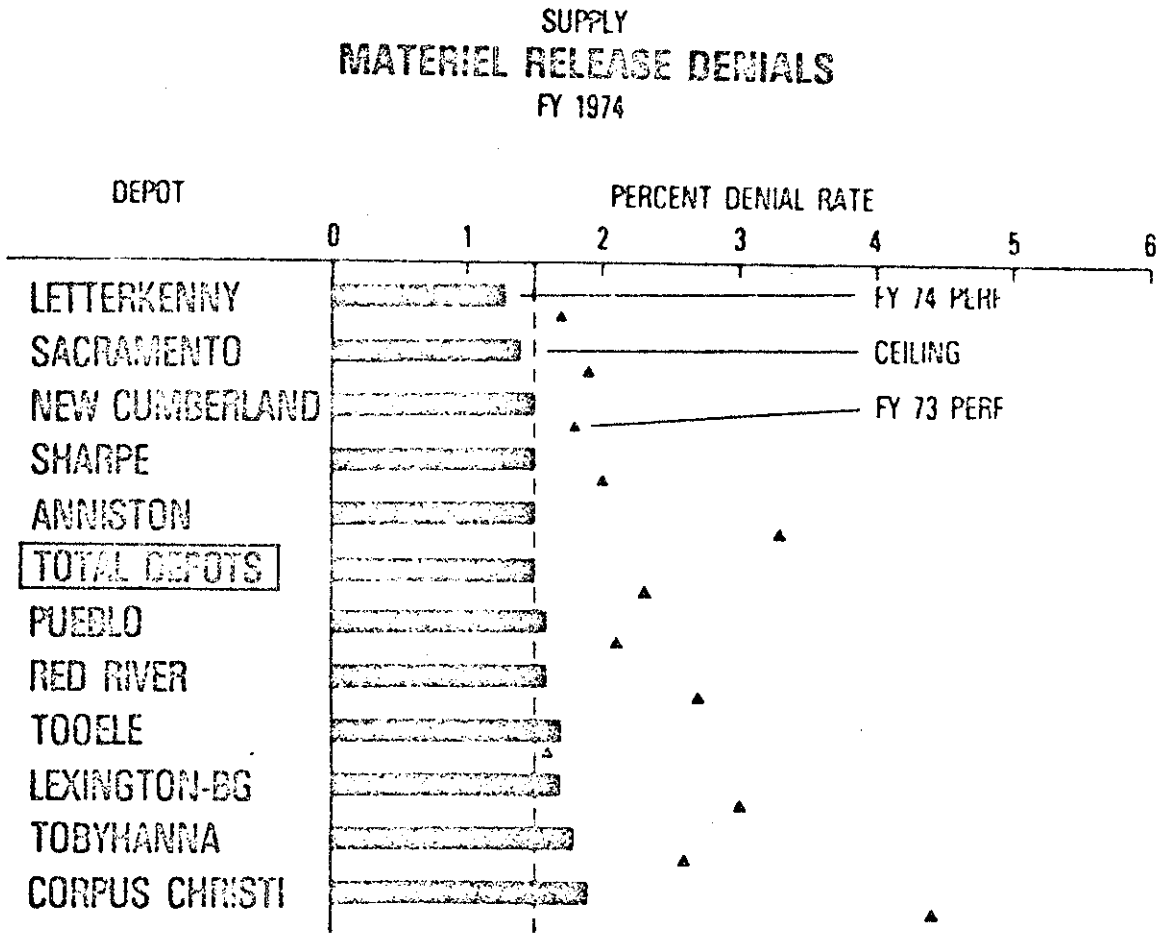
TOTAL ISSUES - ALL CFSS - FY 1974



(U) Without exception the depots improved MRO on time processing in FY 1974 over FY 1973. Only Sacramento, with 86 percent on time achievement, failed to achieve 90 percent performance. Sharpe, New Cumberland and Red River had the most dramatic increases.



(U) Transportation Hold and In-Transit time measures the time between receipt of materiel by the transportation officer and its receipt by the customer. Based on reports no depot met the 80 percent on time target, but the possibility of delays in processing documents at the customer receiving end is being investigated as a contributing factor. The fuel shortage and trucking strike each took their toll in FY 1974, with New Cumberland particularly hard hit as a less than carload shipper encountering delays in obtaining consolidated loads by the carriers.

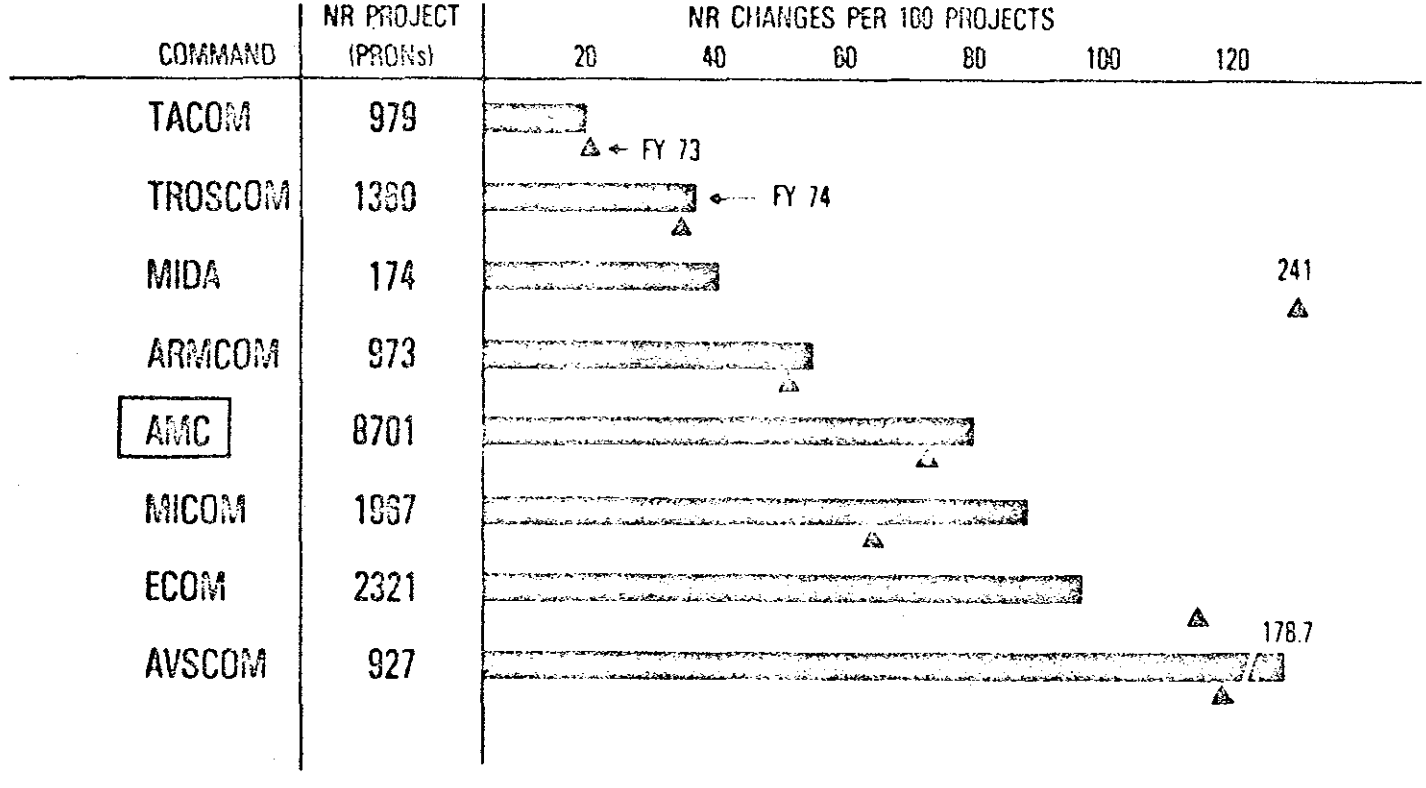


(U) On an overall basis AMC met the FY 1974 Materiel Release Denial ceiling of 1.5 percent. This was a great improvement over FY 1973 experience. Further, every depot but Tooele showed significant improvement in FY 1974.

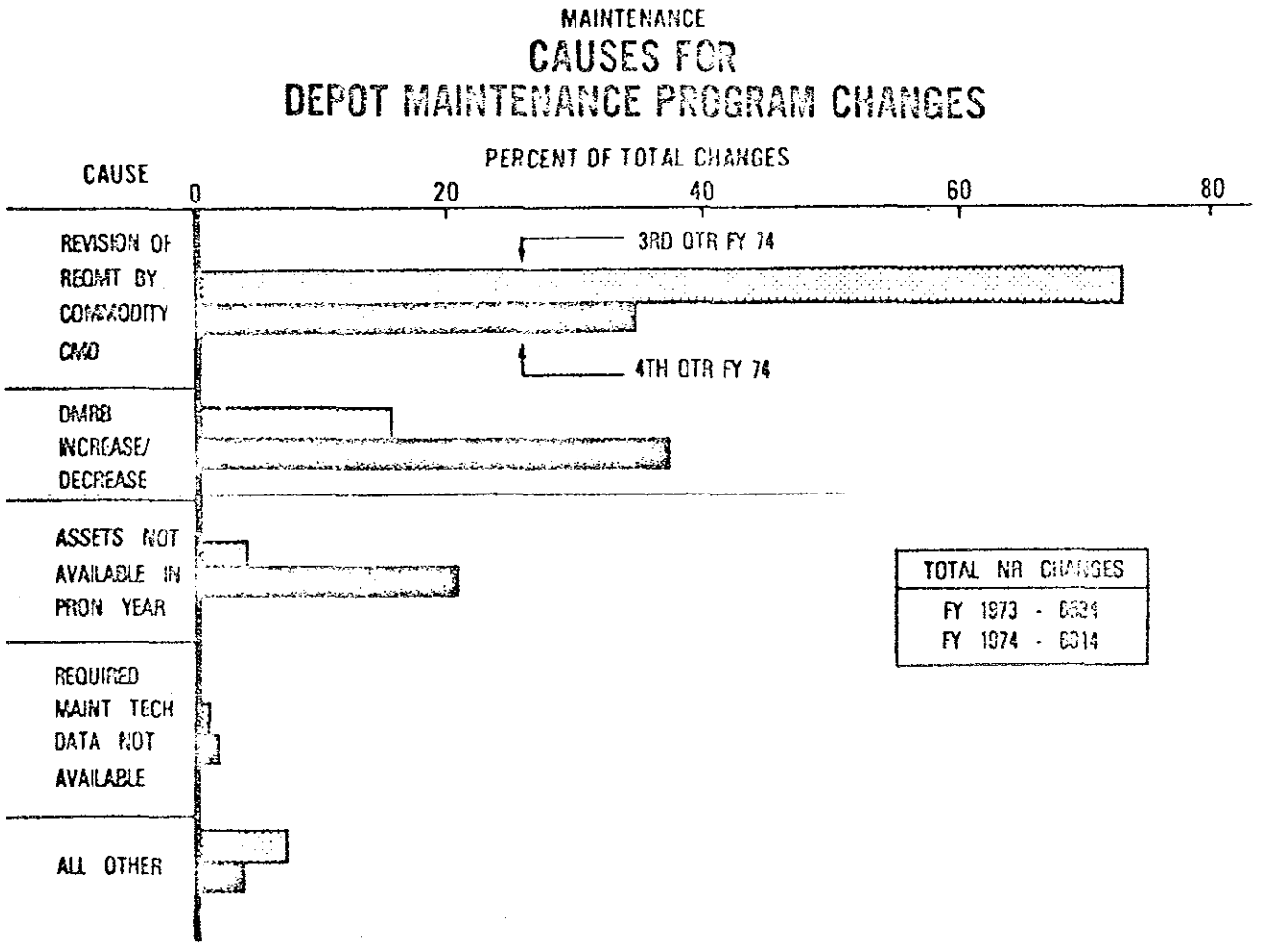
MAINTENANCE

DEPOT MAINTENANCE PROGRAM CHANGES

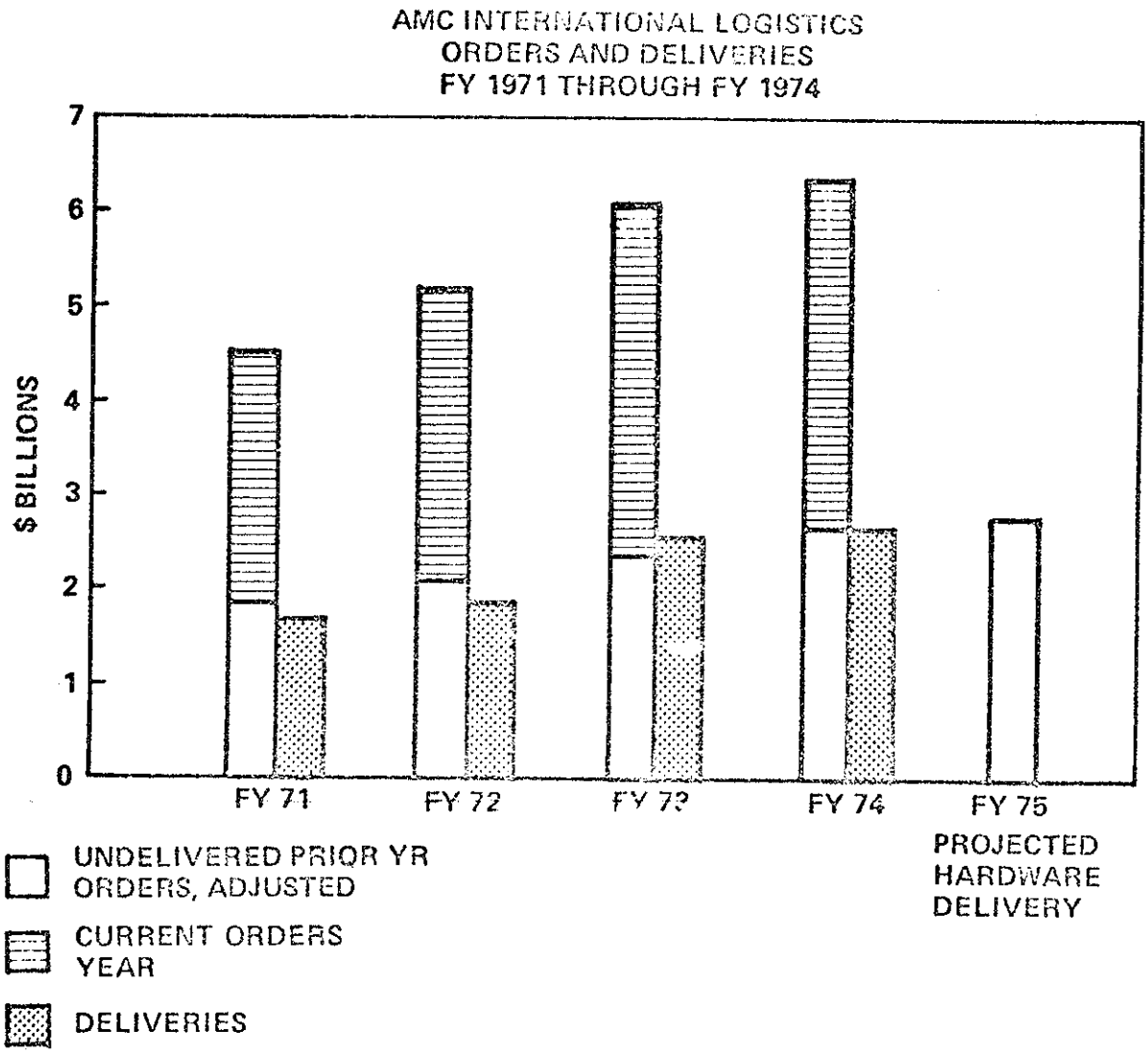
FY 1974 vs FY 1973



(U) On an overall basis Maintenance Program changes to depots by MIDA and commands increased in total number and rate per hundred projects in FY 1974. Based on this, AMC fell far short of its FY1974 goal of not to exceed 85 percent of the FY 1973 rate. MIDA, ECOM and TACOM rates dropped and all other increased with the biggest jump at AVSCOM which increased 60 changes per hundred orders. Many of the AVSCOM changes were relatively minor red-tape PRON adjustments which did not change maintenance workload at the depots.



(U) FY 1974 changes of 6,914 were 380, or 5.8 percent more than in FY 1973. A change in reporting of causes for changes in FY 1974 makes a valid comparison with FY 1973 impossible. The third and fourth quarter comparisons reveal that commodity command changes (many of which were red-tape, non-hardware oriented) were halved and Depot Maintenance Review Board (DMRB) changes more than doubled. The latter was caused by receipt in June of $44 million of new funding.


AMC INTERNATIONAL LOGISTICS
ORDERS AND DELIVERIES
FY 1971 THROUGH FY 1974
$ BILLIONS
0
1
2
3
4
5
6
7
FY 71
FY 72
FY 73
FY 74
FY 75
PROJECTED HARDWARE DELIVERY
UNDELIVERED PRIOR YR ORDERS, ADJUSTED
CURRENT ORDERS YEAR
DELIVERIES

(U) FY 1974 deliveries of $2.7 billion were the highest for the four years reported. These deliveries matched the adjusted value of prior year orders at years end causing a carry over of $3.7 billion into FY 1975. It was estimated that only $2.8 billion of hardware would actually be delivered against these orders in FY 1975 since they included 0.3 billion of hardware which had been delivered but not billed at 30 June 1974 and, based on experience, approximately $0.6 billion would be cancelled during FY 1975. Distribution of carry over order value was identified as follows:

Country	Value in Million $	Principal Items w/Value in $ Millions
Iran	1,449	Helicopters $409; Missiles $380
Israel	1,042	Vehicular Equipment $696; Weapons/ Ammo $245
Vietnam	427	Repair Parts $327; Ammo $79
Cambodia	140	Ammo $124
Korea	79	2½T Trucks $50; Missiles $8
Turkey	43	Communications Equipment $12; Repair Parts $11
Others	520	Miscellaneous
	3,700	

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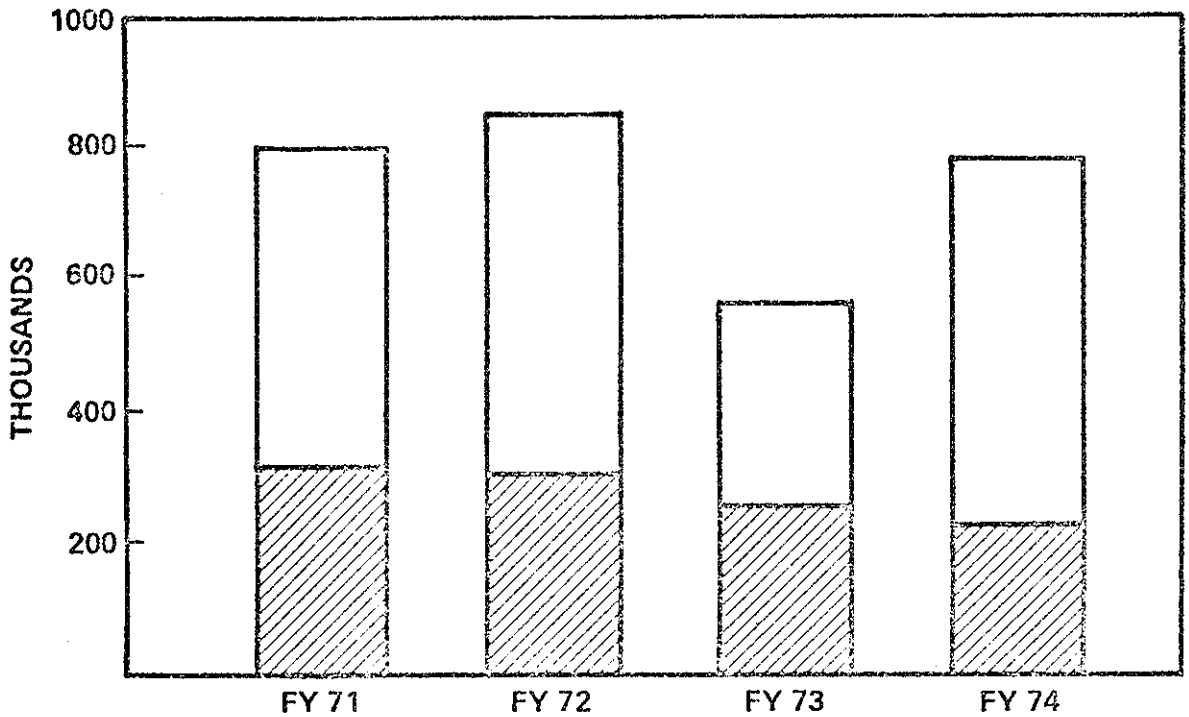
AMC INTERNATIONAL LOGISTICS
REQUISITIONING/DEMAND ACTIVITY
AMC NICPs COMPARED WITH OTHER AGENCIES
FY 1971 THROUGH FY 1974

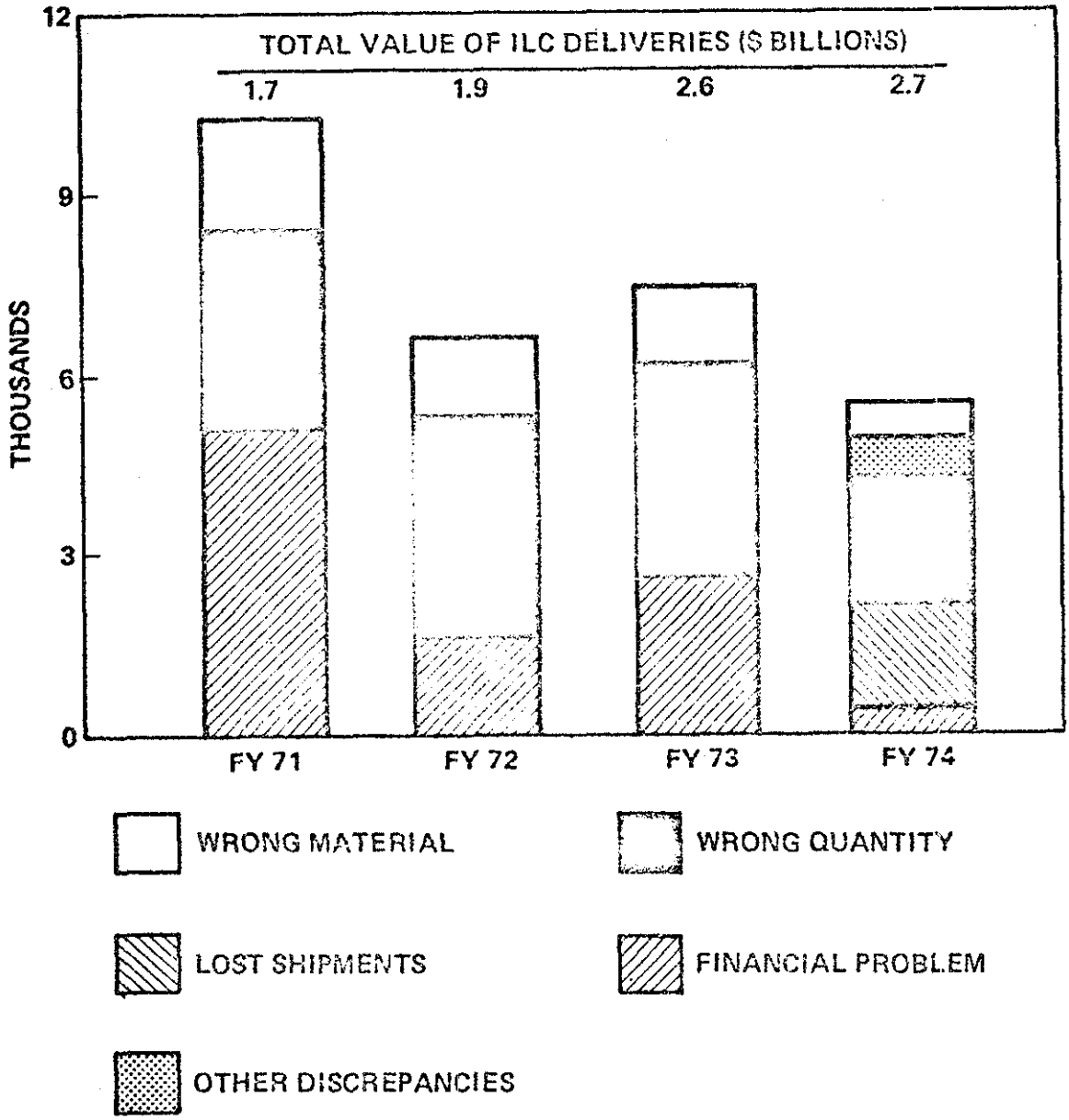


TO OTHER AGENCIES (GSA, DSA, AF, USN, etc.)

TO AMC NICPs

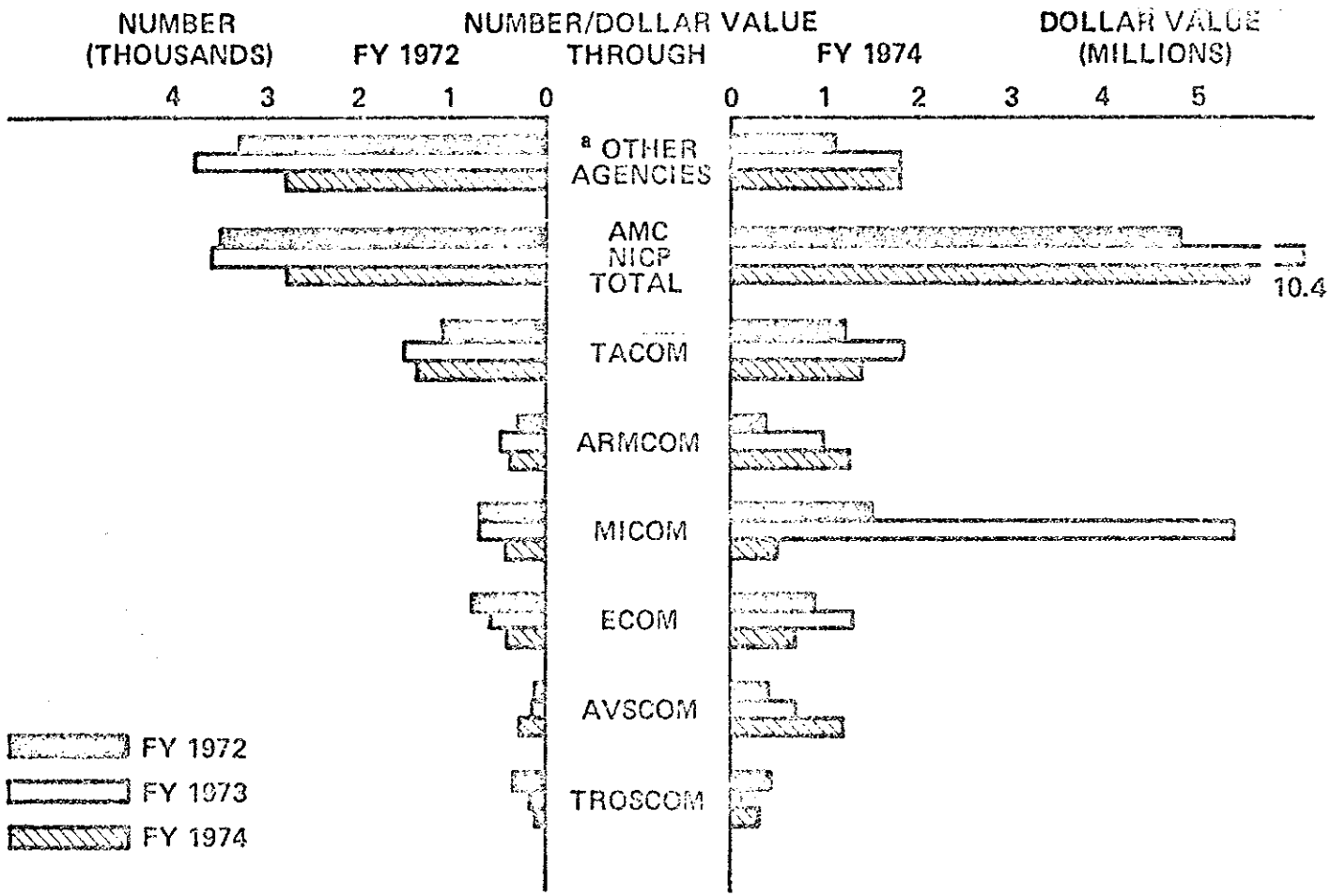
SOURCE OF DATA: TOTAL - ILC RECORDS
NICPs - MILSTEP

AMC INTERNATIONAL LOGISTICS
DISCREPANCY REPORTS BY TYPE
FY 1971 THROUGH FY 1974



(U) The category previously identified as financial problems was distributed in FY 1974 between financial problems and lost shipments and the category previously identified as wrong material and others was distributed this year between wrong material and other discrepancies. Progress in customer satisfaction was noted by a comparison of the lowest number of discrepancy reports (5,577) for the four years reported with the highest value of sales ($2.7 billion) for the same period. The number and value of discrepancy reports by NICPs are delineated on the following page.

AMC INTERNATIONAL LOGISTICS
DISCREPANCY REPORTS



[a] OTHER AGENCIES INCLUDE GSA, DSA, USAF, USN, ETC.

UNCLASSIFIED

(U) The dollar value of customer discrepancy reports during FY 1974 was distributed as follows:

Customer	(Dollar Thousands) NICP Total a/	Other Agencies	Total
Australia	820	16	836
Iran	527	295	822
China	607	117	724
Korea	414	291	705
Germany	444	168	612
Saudi Arabia	375	138	513
Israel	361	59	420
NATO	335	79	414
Canada	177	86	263
Jordan	207	43	250
Subtotal	4,267	1,292	5,559
Others	1,196	489	1,685
GRAND TOTAL	5,463	1,781	7,244

Note: a/ Individual NICP values identified on Page VI-6

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AMC INTERNATIONAL LOGISTICS
CUSTOMER DISCREPANCY REPORTS DISTRIBUTED BY NICP
(Dollar Thousands)

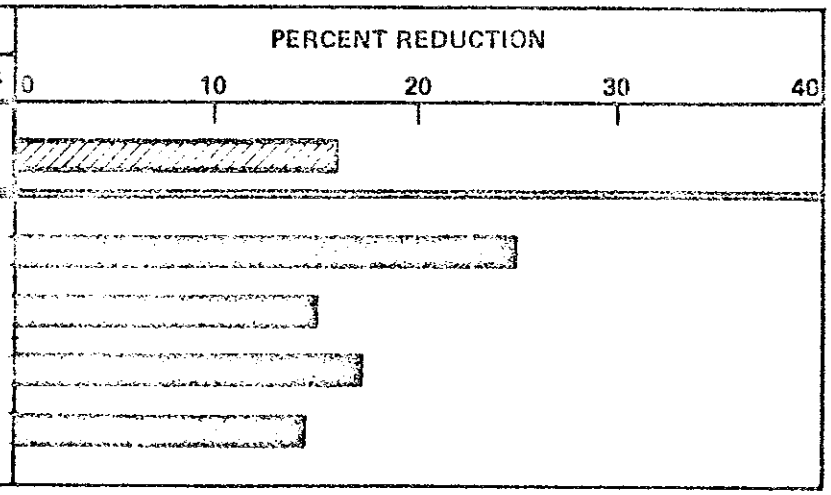
	TOTAL	ARMCOM	AVSCOM	ECOM	MICOM	TACOM	TROSCOM
Australia	820	2	800	13		4	1
Iran	527	32	64	15		214	202
China	607	237	25	160	51	133	1
Korea	414	340	1	19		33	21
Germany	444	156	5	9	123	148	3
Saudi Arabia	375	14	1	1		359	
Israel	361	174	90	7	2	88	
NATO	335	6	1	81	211	36	
Canada	177	12	52	13		64	36
Jordan	207	78		64	1	63	1
Total	4,267	1,051	1,039	382	388	1,142	265
Others	1,196 a/	282	187	294	122	296	15
Total	5,463	1,333	1,226	676	510	1,438	280

a/ Other customers which reported item discrepancies include:

Austria	Ethopia	Nepal	Spain
Belgium	France	Netherlands	Sweden
Bolivia	Greece	New Zealand	Switzerland
Brazil	Guatemala	Nicaragua	Thailand
Burma	Honduras	Norway	Tunisia
Cambodia	Indonesia	Pakistan	Turkey
Chile	Italy	Panama	UK
Colombia	Japan	Phillippines	Uruguay
Denmark	Liberia	Portugal	Venezuela
El Salvador	Morocco	Singapore	Vietnam
	Yugoslavia	Luxembourg	

AMC STRENGTH REDUCTION
30 JUNE 1969 – 30 JUNE 1974
BY ORGANIZATION

FUNCTIONAL ORGANIZATION	THOUSAND PERSONS ON ROLLS	
	1 JUL 1970	30 JUN 1974
AMC TOTAL	156.4	131.2
AMC-HQ	2.8	2.1
COMMANDS	92.2	78.1
DEPOTS	48.6	40.0
MISCELLANEOUS	12.8	11.0

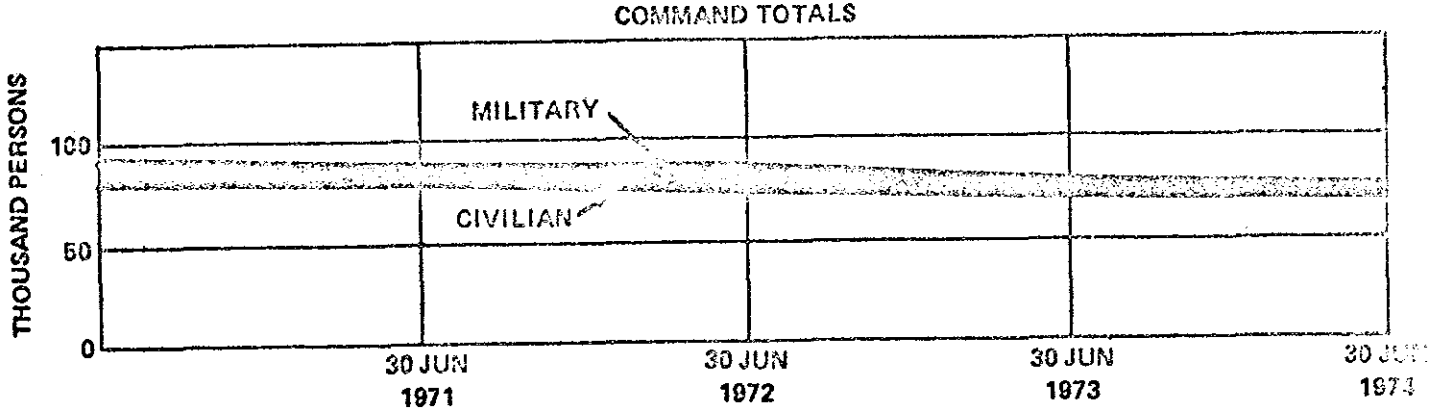


(U) At 30 June 1974 AMC personnel (civilian plus military) was 25.2 thousand below the 30 June 1970 level but it increased slightly during the fourth quarter FY 1974, reversing a downward trend of long duration. This increase, which resulted from temporary hires of civilians to accomplish urgent workload, was spread generally across the board. At fiscal year end functional organization authorized and actual strength were as follows:

	AMC TOTAL	AMC HQ	COMMANDS	DEPOT	OTHERS
Authorized	133.2 a/	2.2	79.6 b/	39.4	12.0 c/
Actual	131.2	2.1	78.1	40.0	11.0
Difference	- 2.0	-0.1	-1.5	-0.6	-1.0

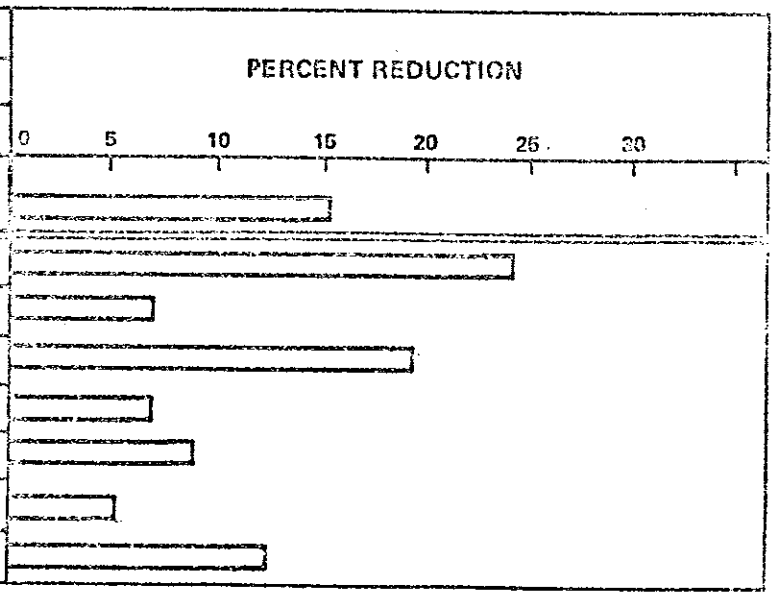
Notes relate to reflex inclusions as follows: a/- 7.1; b/- 5.5; c/- 1.6

AMC COMMAND CIVILIAN AND MILITARY END STRENGTHS
FY 1971 THROUGH FY 1974

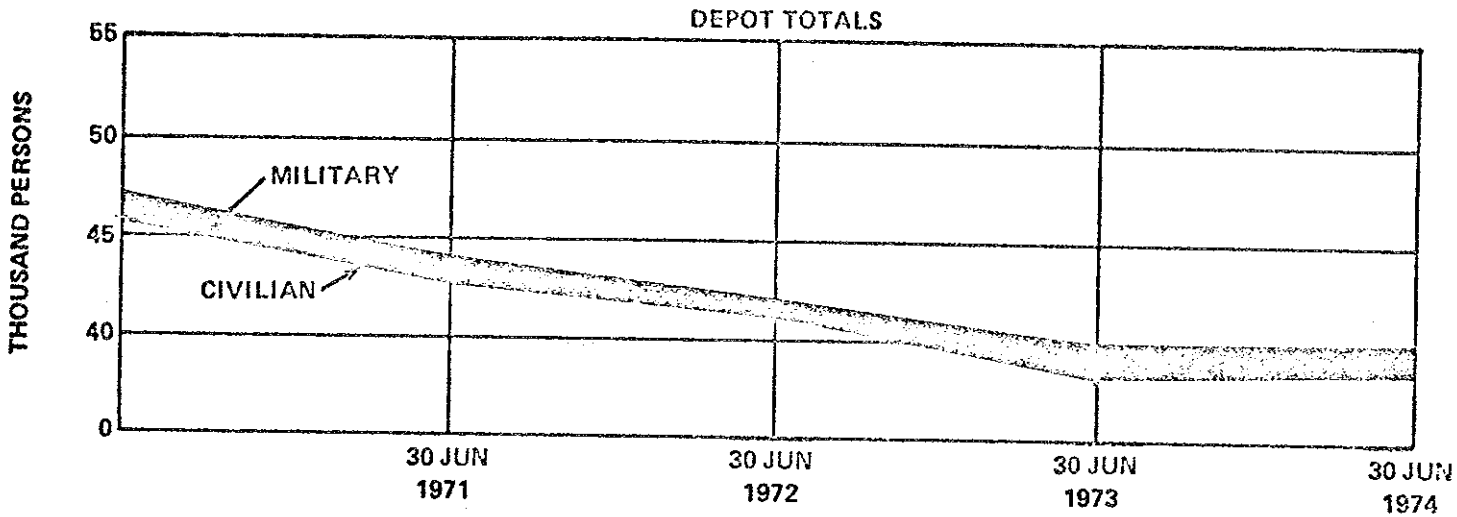


INDIVIDUAL COMMAND COMPARISON
30 JUNE 1970 -- 30 JUNE 1974

COMMAND	(THOUSAND PERSONS ON ROLLS)					
	30 JUN 1970			30 JUN 1974		
	CIV	MIL	TOTAL	CIV	MIL	TOTAL
AMC TOTAL	81.6	10.6	92.2	70.1	8.0	78.1
ARMCOM	31.8	1.4	33.2	24.1	1.0	25.1
AVSCOM	9.4	1.2	10.6	9.3	0.5	9.8
ECOM	10.6	1.6	12.4	8.7	1.3	10.0
MICOM	8.3	1.0	9.3	7.8	0.8	8.6
TACOM	5.5	0.1	5.6	4.9	0.2	5.1
TECOM	9.9	4.9	14.8	10.0	4.0	14.0
TROSCOM	5.9	0.4	6.3	5.3	0.2	5.5



AMC DEPOT CIVILIAN AND MILITARY END STRENGTHS
FY 1971 THROUGH FY 1974



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INDIVIDUAL DEPOT COMPARISONS
30 JUNE 1970 – 30 JUNE 1974

DEPOT	(THOUSAND PERSONS ON ROLLS) 30 JUN 1970			30 JUN 1974			PERCENT REDUCTION
	CIV	MIL	TOTAL	CIV	MIL	TOTAL	0 10 20 30 40 50
AMC TOTAL	47.1	1.5	48.6	33.7	1.3	40.0	
ANNISTON	3.9	–	3.9	4.4	.1	4.5	15.4% INCREASE
LETTERKENNY	4.5	–	4.5	4.7	–	4.7	4.4% INCREASE
LEXINGTON-BLUG	4.0	–	4.0	3.7	.1	3.8	
NEW CUMBERLAND	2.4	.1	2.5	3.0	.1	3.1	24.0% INCREASE
PUEBLO	3.7	.1	3.8	2.8	–	2.8	
RED RIVER	5.8	.1	5.9	5.3	.1	5.4	
SACRAMENTO	3.2	.1	3.3	3.0	.1	3.1	
SAVANNA	1.1	.1	1.2	.6	.2	.8	
SENECA	.9	.3	1.2	.7	.3	1.0	
SHARPE	3.2	.1	3.3	1.9	.1	2.0	
SIERRA	1.2	.1	1.3	.6	.2	.8	
TOBYHANNA	3.4	.1	3.5	3.1	–	3.1	
TOOELE	5.4	–	5.4	4.7	–	4.7	
OTHER [a]	4.4	.4	4.8	.2	–	.2	

[a] OTHER: 1970 – ATLANTA; CHARLESTON; GRANITE CITY
1974 – ATLANTA; CHARLESTON

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AMC EQUAL EMPLOYMENT OPPORTUNITY PROGRAM
COMPOSITION OF AMC TOTAL WORK FORCE
30 JUNE 1973 COMPARED WITH 30 JUNE 1974
SOURCE: USCSC 1136 REPORT

AMC COMPONENT	THOUS PERSONS 73	74	PERCENT FEMALE 73	74	PERCENT MINORITY 73	74	PERCENT CHANGES FEMALE	MINORITY
AMC TOTAL	122.5	120.5	24.9	25.3	14.8	14.5	+1.6	-2.0
COMMANDS								
ARMCOM	25.7	24.0	23.9	24.1	8.8	8.8	+0.8	N/C
AVSCOM	8.9	9.3	26.5	27.3	28.8	29.3	+3.0	+ 1.7
ECOM	9.9	8.6	32.1	29.2	13.1	9.8	-9.0	-25.2
MICOM	7.3	7.7	27.9	29.7	4.6	5.5	+6.5	+19.6
TACOM	4.8	4.9	37.6	39.1	27.3	26.5	+4.0	- 2.9
TECOM	9.4	10.0	24.0	24.9	22.6	21.5	+3.8	- 4.9
TROSCOM	5.4 a/	5.3	34.1	35.7	11.6	12.2	+4.7	+ 5.2
AMC-HQ	2.5	2.4	35.8	38.2	14.1	14.6	+6.7	+ 3.5
COMD TOTALS/ AVGS	73.9	72.2	27.8	28.2	14.7	14.6	+1.4	- 0.7
DEPOT TOTALS/ AVG	40.0	42.2	19.8	20.8	14.0	14.4	+5.1	+ 2.9
OTHERS	8.8	6.1	24.4	23.0	18.6	13.6	-5.7	-26.9

Depot details on facing page
a/ TROSCOM June 1973 data adjusted to include Natick Labs

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AMC EQUAL EMPLOYMENT OPPORTUNITY PROGRAM
COMPOSITION OF AMC DEPOT WORK FORCE
30 JUNE 1973 COMPARED WITH 30 JUNE 1974
SOURCE: USCSC 1136 Report

DEPOT	THOUS PERSONS 73	THOUS PERSONS 74	PERCENT FEMALE 73	PERCENT FEMALE 74	PERCENT MINORITY 73	PERCENT MINORITY 74	PERCENT CHANGES FEMALE	PERCENT CHANGES MINORITY
AMC TOTAL	40.0	42.2	19.8	20.8	14.0	14.4	+ 5.1	+ 2.9
ANAD	4.0	4.5	14.3	14.0	10.0	10.8	+ 2.1	+ 8.0
LEAD	5.2	5.6	14.8	15.9	2.9	3.2	+ 7.4	+10.3
LBAD	4.0	4.2	23.2	25.0	10.9	11.0	+ 7.8	+ 0.1
NCAD	3.6	3.9	23.2	24.0	9.3	10.3	+ 3.4	+10.8
PUAD	2.7	2.9	16.5	15.7	49.4	50.2	- 4.8	+ 1.6
RRAD	5.2	5.7	23.3	24.3	18.7	21.2	+ 4.3	+13.4
SAAD	2.8	3.1	25.9	25.5	23.4	24.2	- 1.5	+ 3.4
SEAD	0.7	0.8	23.5	25.1	5.2	5.1	+ 6.8	- 1.9
SHAD	2.3	2.0	23.7	25.8	23.3	21.8	+ 8.9	- 6.4
SIAD	0.8	0.7	21.6	22.7	15.5	13.8	+ 5.1	-11.0
SVAD	0.7	0.8	21.2	27.5	1.6	2.2	+29.7	+37.5
TOAD	3.4	3.5	12.3	12.8	3.1	2.8	+ 4.1	- 9.7
TEAD	4.6	4.7	21.0	23.5	10.5	9.8	+11.9	- 6.7
ARADMAC a/	4.3	4.6	12.8	13.3	44.4	44.9	+ 3.9	+ 1.1

a/ ARADMAC data provided for info only and not included in AMC total since it officially became Corpus Christi Army Depot 1 July 1974.

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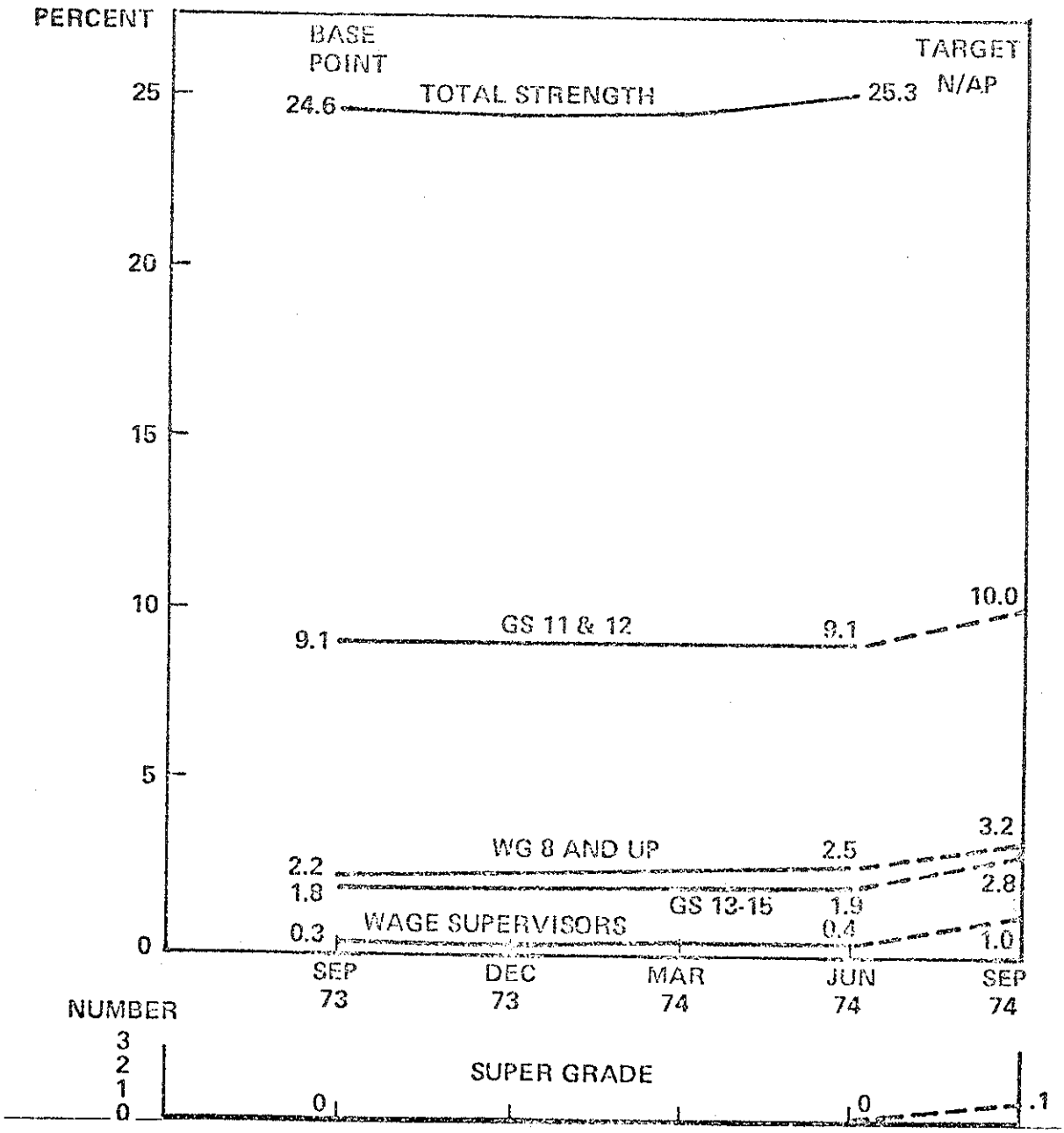
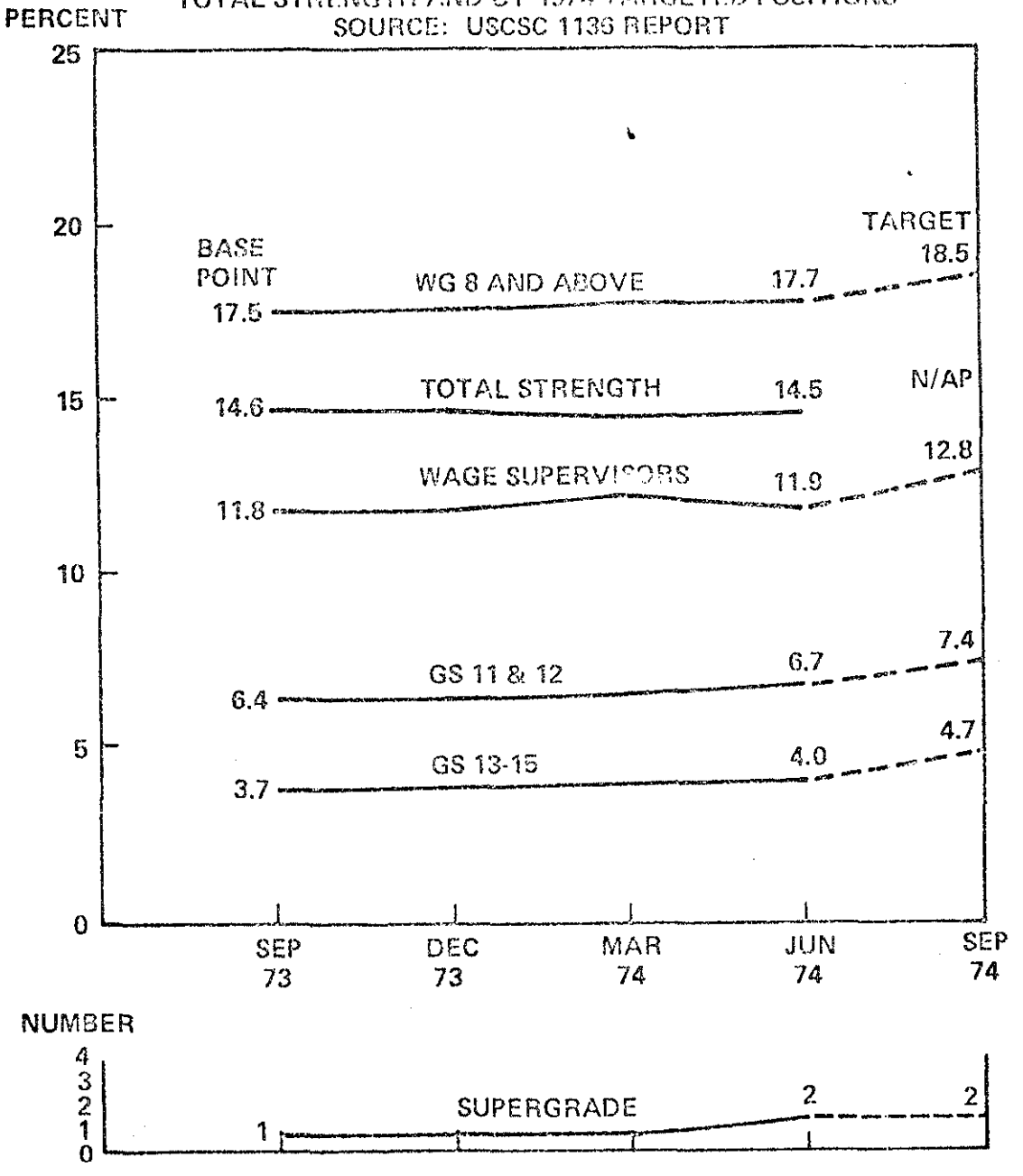
AMC EQUAL EMPLOYMENT OPPORTUNITY PROGRAM
FEMALE EMPLOYMENT COMPARED TO TOTAL EMPLOYMENT
TOTAL STRENGTH AND CY 197 TARGETED POSITIONS
SOURCE: USCSC 1136 REPORT



AMC EQUAL EMPLOYMENT OPPORTUNITY PROGRAM
MINORITY EMPLOYMENT COMPARED TO TOTAL EMPLOYMENT
TOTAL STRENGTH AND CY 1974 TARGETED POSITIONS
SOURCE: USCSC 1136 REPORT



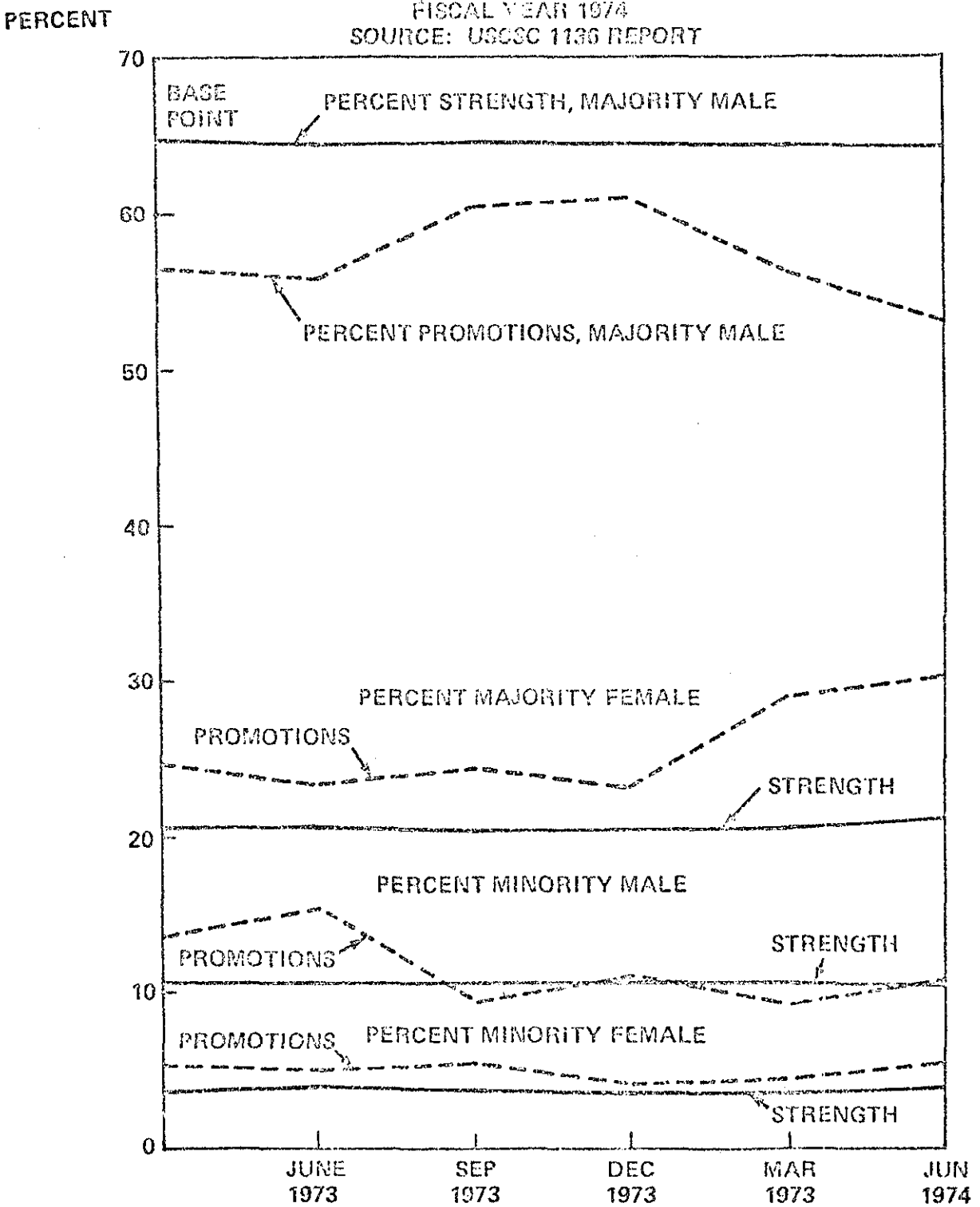
(U) AMC Civilian employment dropped forty nine hundred during the first three quarters of FY 1974 but command-wide hiring of temporary employees during the fourth quarter offset all but two thousand of this loss. On an overall basis there was a modest increase (1.6 percent) in the relative strength of females and a slightly larger decrease (2.0 percent) for minorities. AMC EEO statistics suffered a staggering one-two punch with the closing of the Philadelphia Office of ECOM. Large numbers of the predominately black female staff chose not to follow their jobs to Ft. Monmouth, NJ. Likewise, the addition of Dugway Proving Ground, with its minimal minority population, saddled TECOM with a negative minority picture for FY 1974. The TACOM minority posture stayed even through three quarters but dipped down the fourth quarter as employment of minorities increased slightly but did not keep pace as temporary help was employed.

(U) On an overall basis the depots improved the posture of females (+5.9) and minorities (+2.9 percent) during FY 1974. The status of females improved at all depots although at three (ANAD, PUAD and SAAD) numerical increases did not keep pace with the total civilian staff increases. The status of minorities improved at ten of the thirteen depots, although at two (SEAD and TEAD) numerical increases did not keep pace with total civilian staff increases. At each of the other three (SHAD, SIAD and TOAD) total civilian staff decreased and the minority staff decreased at a disproportionately high rate.

(U) The AMC EEO Affirmative Action Plan for CY 1974 set five targets for increased status of females. They included four which were concerned with increased ratios of females as a percent of specific subgroups (WG 8 and above, wage supervisors, GS-11 and 12 and GS-13 through 15) and the other was the desire to employ (hire or promote) one female to supergrade status. Because of late report experience the CY 1974 targets actually cover the unique fiscal year 1 October 1973 - 30 September 1974. Based on the three quarter experience depicted above there was little likelihood that any target would be achieved.

(U) The AMC EEO Affirmative Action Plan for CY 1974 set five targets for increased status of minorities. They included four which were concerned with increased ratios of minorities as a percent of specific subgroups (WG 8 and above, wage supervisors, GS-11 and 12 and GS-13-15) and the other was the desire to employ (hire or promote) one minority to supergrade status. Because of late report experience the CY 1974 targets actually cover the unique fiscal year 1 October 1973 - 30 September 1974. Based on the three quarter experience depicted above there was little likelihood that any ratio target would be achieved but the other target was met with the promotion of a minority group male to supergrade status.

AMC EQUAL EMPLOYMENT OPPORTUNITY PROGRAM
TOTAL CIVILIAN STRENGTH COMPARED WITH PROMOTIONS
FISCAL YEAR 1974
SOURCE: USCSC 1136 REPORT



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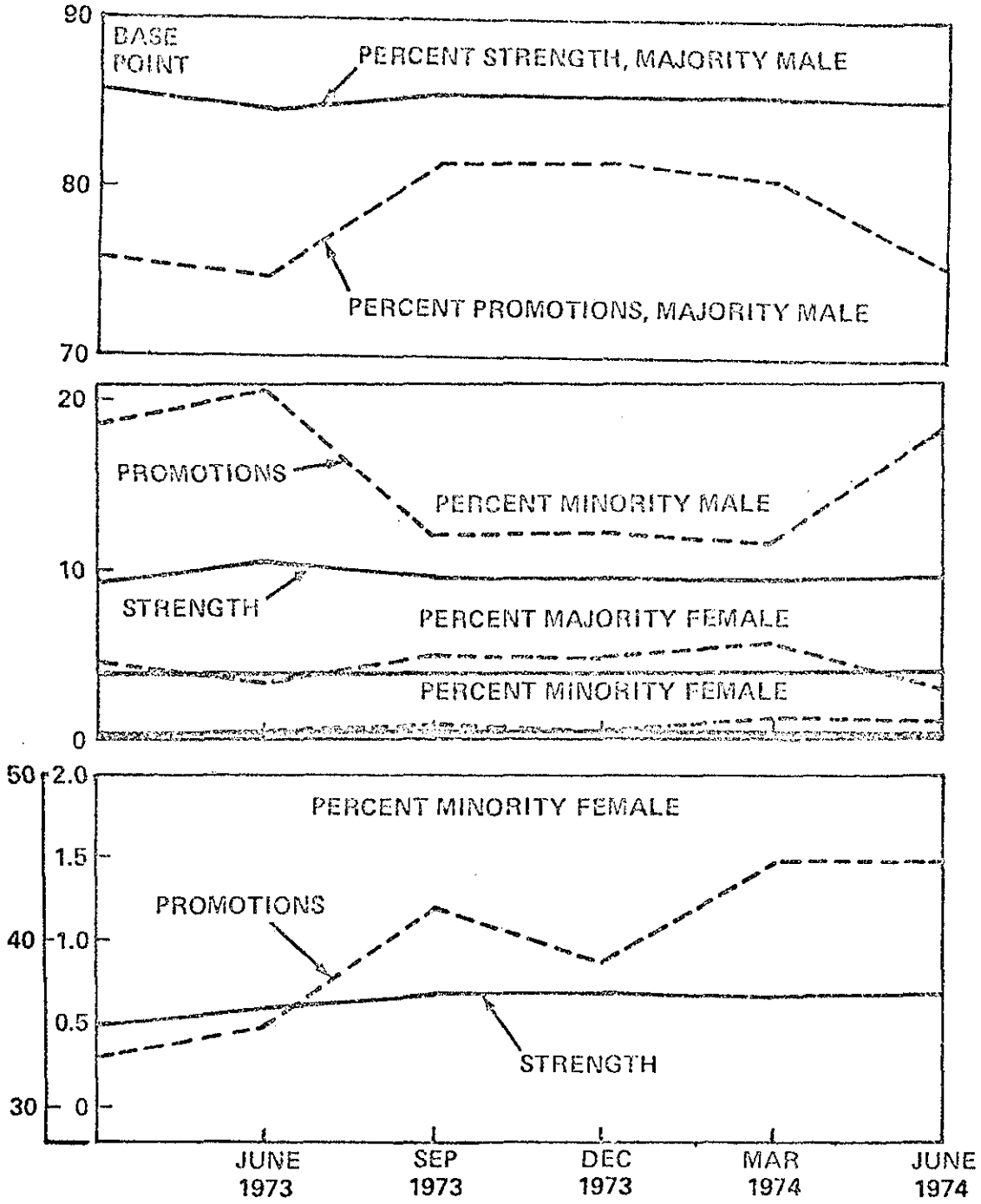
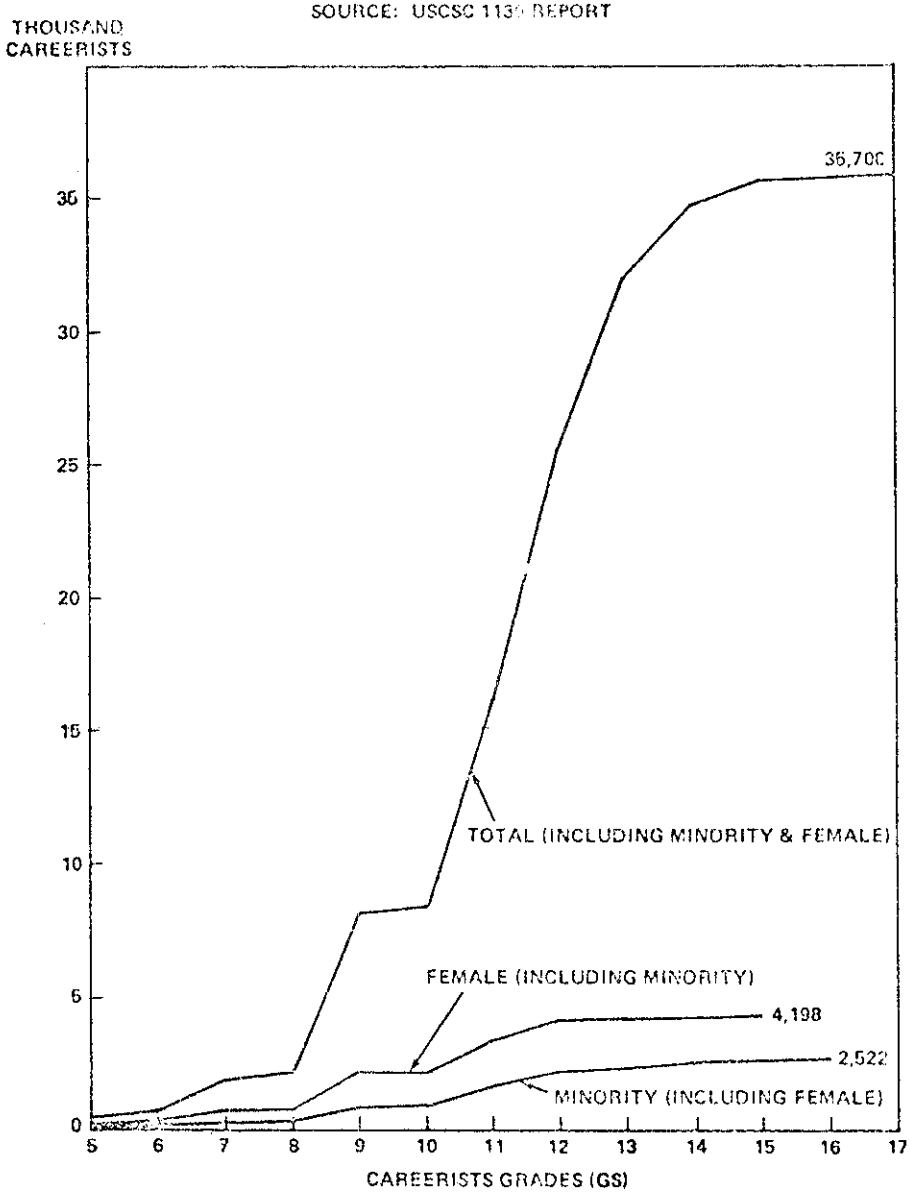
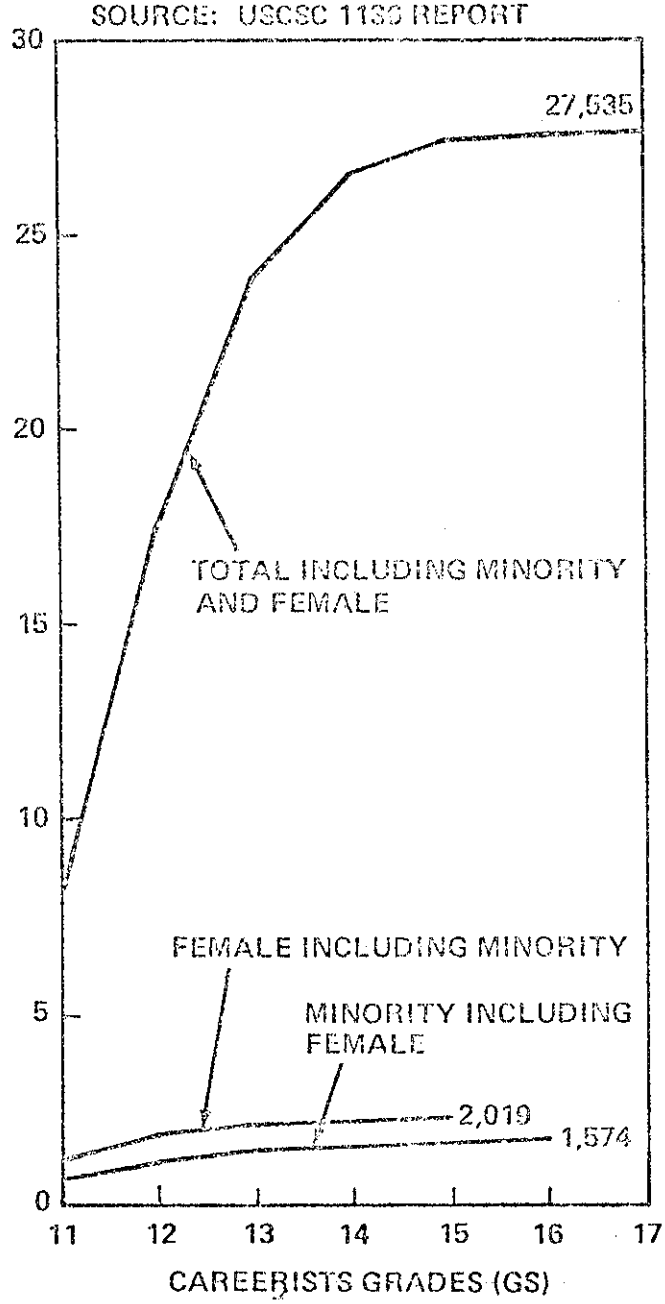
AMC EQUAL EMPLOYMENT OPPORTUNITY PROGRAM
EEO TARGETED CIVILIAN STRENGTH COMPARED WITH PROMOTIONS
FISCAL YEAR 1974
SOURCE: USCSC 1136 REPORT



AMC EQUAL EMPLOYMENT OPPORTUNITY PROGRAM
CAREER PROGRAM PARTICIPATION, CUMULATIVE BY GRADE
30 JUNE 1974
SOURCE: USCSC 1130 REPORT



AMC EQUAL EMPLOYMENT OPPORTUNITY PROGRAM
CAREER PROGRAM PARTICIPATION, CUMULATIVE BY GRADE
GRADES GS-11 AND ABOVE (CY 74 TARGETED POSITIONS)
30 JUNE 1974
SOURCE: USCSC 1130 REPORT



(U) During FY 1974 the relative strength of females increased 0.4 percent (+0.5 majority, -0.1 minority) and the relative strength of minorities decreased 0.3 percent (-0.2 male, -0.1 female). During the same period promotion of females and of minorities occurred in greater magnitude than their strength.

(U) In the area of targeted positions, during FY 1974 the relative strength of females stayed the same (-0.1 majority, +0.1 minority) and the relative strength of minorities decreased 0.6 percent (-0.7 male, +0.1 female). During the same period promotions of females and minorities occurred in greater magnitude than their strength.

(U) By 30 June 1974 female careerists (including minority females) of 4,198 were 11.7 percent of the AMC grand total of 35,728 and the minority careerists (including female minorities) numbered 2,522, or 7.1 percent of the AMC total. There was a clearly visible imbalance of distribution. Retrogression during FY 1974 is shown by the following comparison of 30 June 1973 and 30 June 1974 statistics:

	No. of Careerists			Percent of Total	
	TOTAL	FEMALE	MINORITY	FEMALE	MINORITY
30 June 1973	38,028	4,864	2,728	12.79	7.17
30 June 1974	35,728	4,198	2,522	11.74	7.05
Change	-2,300	-666	-206	-1.05	-0.12
% Change	- 6.05	-13.69	- 7.55	-8.21	-1.67

(U) By 30 June female careerists in targeted positions (GS-11 and above) of 2,019 were 7.3 percent of the AMC grand total of targeted careerists of 27,535 and the minority careerists numbered 1,574 or 5.7 percent of the AMC total. In this area the female careerists lost ground during the year and minorities improved slightly as shown by the following chart:

	No. of Careerists in Targeted Positions			Percent of Total	
	TOTAL	FEMALE	MINORITY	FEMALE	MINORITY
30 June 1973	28,376	2,138	1,552	7.53	5.47
30 June 1974	27,535	2,019	1,574	7.33	5.72
Change	- 841	- 119	+ 78	-.20	+.25
% Change	-2.96	-5.56	+5.03	-2.66	+4.57

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AMC OVERALL PERFORMANCE INDICATOR REVIEW
COMMODITY COMMAND PERFORMANCE SUMMARY
SELECTED INDICATORS
FISCAL YEAR 1974

INDICATOR	WT	ARMCOM	AVSCOM	ECOM	MICOM	TACOM	TROSCOM
COMPL OF R&D TECH MILESTONES	9	667	150	545	563	375	616
OBLIG OF FY74 RDTE DOLLARS	9	866	862	848	830	861	868
COMPETITIVE PROCUREMENT	9	660	761	588	1236	706	837
PEMA AWARDS	9	897	838	855	833	923	842
PEMA BASELINE ITEM DELIVERIES	9	863	848	853	879	840	765
SUBTOTAL, MATERIEL ACQUISITION	(45)	(3953)	(3459)	(3689)	(4341)	(3705)	(3928)
STOCK AVAILABILITY	10	749	637	614	790	733	673
ON TIME REQN PROCESS ICP, IMMEDIATE	10	901	771	863	916	967	893
ON TIME REQN PROCESS SUPPLY SOURCE IMMEDIATE	5	421	374	417	441	445	430
OPERATIONAL READINESS (SUPPLY)	10	943	989	1010	942	981	966
MAINT PROG CHANGES PER 100 PROJ	5	227	394	19	60	400	315
REDN OF MAINT PUBLICATION COSTS		DATA NOT CURRENTLY SUITABLE FOR RATING PURPOSES					
SUBTOTAL, LOG SUPPORT	(40)	(3241)	(2377)	(2923)	(3149)	(3526)	(3277)
CIVILIAN PERSONNEL MGT 1/	9	823	888 2/	767	972	782	1029
EQUAL EMPLOYMENT OPPORTUNITY	1	20	25 3/	171	100	57	100
SUBTOTAL, PERSONNEL MGT.	(10)	(843)	(863)	(938)	(872)	(839)	(929)
TOTAL	95	8037	6699	7550	8362	8070	8134

1/ 4TH QTR DATE: 2/ EXCL ARADMAC; 3/ INCL ARADMAC

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AMC OVERALL PERFORMANCE INDICATOR REVIEW
DEPOT PERFORMANCE SUMMARY (MAJOR DEPOTS)
SELECTED INDICATORS
FISCAL YEAR 1974

INDICATOR	WT	AN	CC	LK	LB	NC
MRO PROCESS TIME						
IPG 1	15	1463	1389	1376	1458	1379
IPG 2	12	1187	1162	1105	1168	1112
IPG 3	10	998	997	891	987	980
RECEIPTS REPTD TO ICPs OT	8	783	730	754	783	761
MAT'L RELEASE DENIALS	10	973	708	1106	837	1031
TRANSPORTATION	5	340	310	296	365	210
SUB TOTAL, SUPPLY	(60)	(5744)	(5296)	(5528)	(5598)	(5473)
MAINT ITEMS COMPL VS SCHED	25	1535	950	1890	2065	2050
FINAL INSP REJECT RATE 1/	5	762	560	715	950	600
SUB TOTAL, MAINT	(30)	(2297)	(1510)	(2605)	(3015)	(2650)
CIV PERS MGT 1/	9	940	883	959	997	811
EQUAL EMPLOYMENT OPPORTUNITY	1	66	200	-100	-100	18
SUB TOTAL, PERSONNEL MGT	(10)	(1006)	(1083)	(859)	(897)	(829)
TOTAL	100	9047	7889	8992	9510	8952

1/ 4th Qtr Data

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AMC OVERALL PERFORMANCE INDICATOR REVIEW
DEPOT PERFORMANCE SUMMARY (MAJOR DEPOTS)
(CONTINUED)

PU	RR	SA	SH	TO	TE	INDICATOR
						MRO PROCESSING TIME
1454	1478	1194	1413	1463	1464	IPG 1
1133	1189	1007	1151	1183	1181	IPG 2
985	989	887	994	996	990	IPG 3
786	767	674	750	766	754	RECEIPTS RPT'D TO JCPs OT
954	935	1086	992	795	898	MAT'L RELEASE DENIALS
295	366	295	345	345	170	TRANSPORTATION
(5607)	(5724)	(5143)	(5645)	(5548)	(5457)	SUB TOTAL, SUPPLY
925	900	1380	1350	1868	1803	MAINT ITEMS COMPL VS SCHED
260	500	-200	640	600	603	FINAL INSP REJECT RATE
(1185)	(1400)	(1180)	(1990)	(2468)	(2406)	SUB TOTAL, MAINT
1100	1154	976	1024	935	995	CIV PERS MGT
103	35	63	-100	-100	180	EQUAL EMPLOYMENT OPPORTUNITY
(1203)	(1189)	(1039)	(924)	(835)	(1175)	SUB TOTAL PERSONNEL MGT
7995	8313	7362	8559	8851	9038	DEPOT TOTAL

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COMPARATIVE PERFORMANCE RANKINGS

EFFECTIVENESS BASED ON CURRENT TARGETS			EFFICIENCY RELATED TO BASE PERIOS (FY 1972)		
FY 1973 RANKING		30 JUNE 1974 RANKINGS			FY 1973 a/ RANKING
		MAJOR SUB COMMANDS			
3	1	MICOM	MICOM	1	4
4	2	TROSCOM	TACOM	2	1
5	3	ARMCOM	ARMCOM	3	3
2	4	TACOM	TROSCOM	4	5
1	5	ECOM	ECOM	5	2
6	6	AVSCOM	AVSCOM	6	6
		GENERAL DEPOTS			
4	1	LBAD	SHAD	1	10
1	2	ANAD	TOAD	2	4
9	3	TEAD	LBAD	3	8
3	4	LEAD	PUAD	4	6
7	5	NCAD	ANAD	5	1
5	6	TOAD	SAAD	6	2
11	7	SHAD	RRAD	7	7
8	8	RRAD	LEAD	8	3
2	9	PUAD	CCAD	9	11
10	10	CCAD	TEAD	10	5
6	11	SAAD	NCAD	11	9

NOTE a/ FY 1973 Ranking related to FY 1969 base period.

(U) In General Miley's view, FY 1974 had been a year of solid accomplishment. It was the year devoted to an in-depth evaluation of the acquisition process by the AMARC Study Group. Regarding the recommendations of this study group pertaining to changes in the AMC structure and processes, the AMC Commander cautioned the Army Chief of Staff, General Fred G. Weyand that: "As these changes are made, care should be exercised as to the rate of change lest the AMC capability to perform its primary missions be damaged." [6]

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[6] Letter, AMCCG, GEN H. A. Miley, Jr. to Army Chief of Staff, Fred G. Weyand, GEN USA, 30 January 1975 ("New Years' Letter")

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MISSION
U.S. ARMY MATERIEL COMMAND

Manage the wholesale materiel activities of the Army.

Provide supply and maintenance support to the Army - and to other customers.

Assist in the formulation of the Army material program and implement the program.

MAJOR SUBORDINATE COMMAND MISSION RESPONSIBILITIES

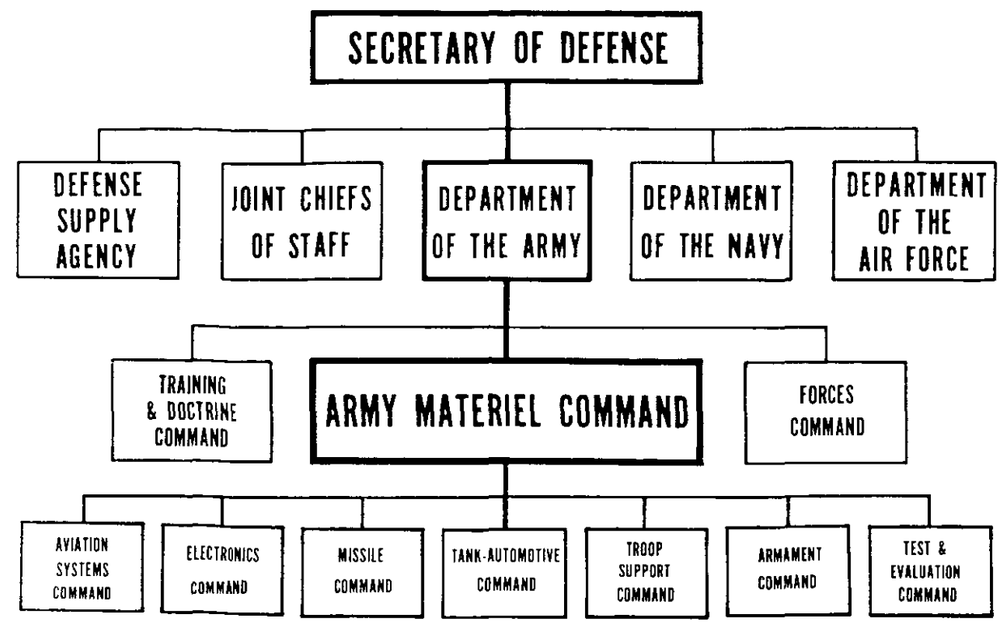
The primary mission responsibilities of the Major Subordinate Commands for the commodity items reflected on the inside of this guide are indicated below.

MISSIONS RESPONSIBILITY / MAJOR SUBORDINATE COMDS	AVIATION SYSTEMS	ELECTRONICS	MISSILE	TANK-AUTOMOTIVE	TROOP SUPPORT	ARMAMENT	TEST AND EVALUATION		
RESEARCH	X	X	X	X	X	X			
DESIGN	X	X	X	X	X	X			
DEVELOPMENTAL TESTING	X	X	X	X	X	X			
CATALOGING & STANDARDIZATION	X	X	X	X	X	X			
MAINTENANCE ENGINEERING	X	X	X	X	X	X			
PROCUREMENT	X	X	X	X	X	X			
PRODUCT & PRODUCTION ENGINEERING	X	X	X	X	X	X			
INDUSTRIAL MOBILIZATION	X	X	X	X	X	X			
NEW EQUIPMENT TRAINING	X	X	X	X	X	X			
WHOLESALE INVENTORY MANAGEMENT	X	X	X	X	X	X			
TECHNICAL ASSISTANCE	X	X	X	X	X	X			
SUPPLY & FINANCIAL MANAGEMENT	X	X	X	X	X	X	X		
ENGINEERING & SERVICE TESTS							X		
MATERIEL EVALUATIONS							X		
POST-PRODUCTION TEST SUPPORT							X		
TROOP TESTS (PARTICIPATION)							X		
RETAIL INVENTORY MANAGEMENT									

UNCLASSIFIED

A GUIDE to the*

ARMY MATERIEL COMMAND ORGANIZATION & MISSIONS



Headquarters
United States Army Materiel Command
5001 Eisenhower Ave
Alexandria, VA 22304
Cable Address - CDRAMC

OCTOBER 1973

* Charts shown are not official organization charts

UNCLASSIFIED

US ARMY MATERIEL COMMAND

US Army Materiel Command (AMC), commanded by General Henry A. Miley, Jr., consists of a nationwide network of 78 military installations and more than 100 activities.

AMC was established 8 May 1962. The Command became operational 1 August 1962 and observes its anniversary on that date. It is responsible for the materiel functions formerly performed by six of the Army's seven technical services (Ordnance, Signal, Quartermaster, Engineer, Transportation, and Chemical), including research and development, test and evaluation, procurement and production, storage and distribution, inventory management, maintenance, and disposal.

The US Army Materiel Command has management responsibility for an inventory of approximately $12 billion on hand in depots in Continental United States; $6 billion on order from procurement; and $16 billion in ammunition and other major items in the hands of troops or overseas depots; and an annual expenditure of approximately $7 billion. It directly employs 11,000 military and 119,000 civilian personnel.

With headquarters in the Washington, DC, area, AMC operates through seven major subcommands and directs the activities of depots, laboratories, arsenals, maintenance shops, proving grounds, test ranges, and procurement offices throughout the United States.

AMC headquarters furnishes over-all policy direction of its far-flung operations. The major subordinate commands serve as the "mid-management level." The individual installations and activities accomplish the actual execution of the Army's materiel program. AMC also makes maximum use of "vertical management" techniques, using project and product managers to expedite development, production and delivery of 37 selected major or critical weapons (equipment) systems.

The seven AMC major subordinate commands, including six commodity-type commands responsible for research, development, production, and procurement in their assigned commodity areas; and one test and evaluation command; are listed below.

US Army Armament Command (ARMCOM), with headquarters at Rock Island, IL, is responsible for integrated commodity management of nuclear and non-nuclear weapons and munitions. ARMCOM'S materiel assignment includes artillery, infantry, gun-type air defense, surface vehicle mounted and aircraft mounted weapons, rocket and missile warhead sections, demolition munitions, offensive and defensive chemical materiel as well as training equipment, tools and test equipment. The Command supervises 26 Government-owned, contractor-operated (GOCO) ammunition plants. In addition ARMCOM manages five development and fabrication weapons and munitions centers at Edgewood, Frankford, Picatinny, Rock Island, and Watervliet Arsenals and two production, storage, maintenance and demilitarization centers at Pine Bluff and Rocky Mountain Arsenals. ARMCOM consists of approximately 25,500 military and civilian personnel.

US Army Aviation Systems Command (AVSCOM), with headquarters at St. Louis, MO is responsible for Army aviation design, research, development, maintenance engineering, stock and supply control, and technical assistance to users of all Army aviation and aerial delivery equipment. It consists of approximately 9,500 military and civilian personnel. The command directs the US Army Air Mobility Research and Development Laboratory with headquarters at NASA-Ames Research Center, Moffett Field, CA; the Army Aeronautical Depot Maintenance Center (ARADMAC) at Corpus Christi, TX; the Army Aviation Systems Test Activity (ASTA) at Edwards Air Force Base, CA; and Army Aviation Plant Activities at Stuart, FL; Ft. Worth, TX; Culver City and Van Nuys, CA; and Morton, PA. It is also responsible for aeronautical maintenance/supply missions at Atlanta, New Cumberland, Red River, and Sharpe Army Depots.

US Army Electronics Command (ECOM), with headquarters at Fort Monmouth, NJ, is responsible for managing the entire life cycle of research, development, procurement, and fielding of communications, avionics, radar, radiac, automatic data processing, meteorology, night vision, combat surveillance, target acquisition, air traffic management, navigation, and electronic warfare equipment and systems, as well as test equipment and electrical power sources. It is the Army's prime center for R&D in electronic parts and materials. The ECOM mission includes the integrated logistic support of equipment and systems at all levels of maintenance for their overall life cycle. ECOM has military and civilian personnel strength of approximately 11,000. Members of the ECOM team, military and civilian, are located at some 25 locations throughout the world.

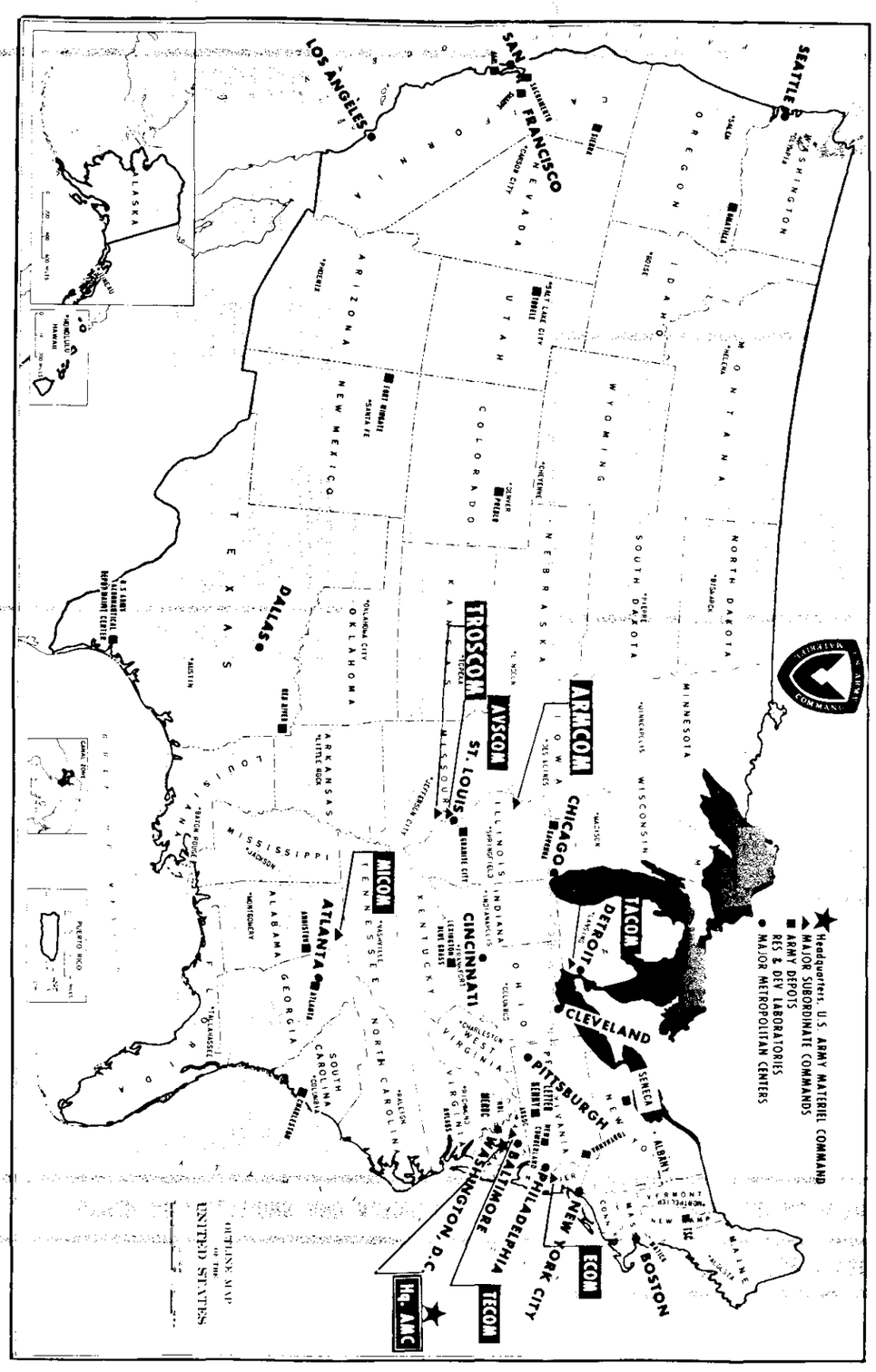
US Army Missile Command (MICOM), with headquarters at Redstone Arsenal, AL, has management responsibility for research and development, procurement, supply and maintenance of assigned rocket, missile, and related programs. It consists of approximately 8,100 military and civilian personnel. Small liaison offices are maintained at missile facilities and industrial locations throughout the United States and overseas, but a majority of the command mission is accomplished at Redstone Arsenal.

US Army Tank-Automotive Command (TACOM), with headquarters at Warren, MI, is responsible for integrated management of vehicles and repair parts in use around the world by the Army, Navy, Air Force, Marine Corps, and allied nations; procurement of material ranging from nuts-and-bolts to tanks; applied research, development and engineering of tank-automotive vehicles and components for the Army, and other Defense Department agencies; and development of technical doctrine, policies and procedures for operations, service and maintenance of tank-automotive materiel. TACOM employs approximately 5,200 military and civilian personnel.

US Army Test and Evaluation Command (TECOM), with headquarters at Aberdeen Proving Ground, MD, is the primary developmental testing agency for the US Army. TECOM plans, conducts, and reports results on mandatory tests performed during the life cycle of Army materiel. Additional developmental testing is performed as a service to the commodity commands, upon their request. The testing organization consists of six service test boards; two environmental testing activities; five proving grounds, one of which serves as a third environmental testing activity; and a national missile range. These are located in the Continental United States and in the Panama Canal Zone and in Alaska. Its personnel strength is approximately 13,200 military and civilian, in the scientific, engineering, technical, and support categories.

AMC CONUS Depot System. The AMC CONUS depot system is comprised primarily of 19 depots. These installations are under command of the Commanding General, AMC, with operating control exercised by the Deputy Commanding General for Logistics Support (DCGLS). The mission of the AMC depot system, accomplished through the skills of about 38,500 military and civilian personnel, is to provide for the receipt, storage, issue, maintenance, and disposal of assigned commodities as the primary storage and distribution points for the Army wholesale supply system; to provide installation support to attached and tenant organizations, and to operate such other facilities as may be assigned.

US Army Troop Support Command (TROSCOM), with headquarters at St. Louis, MO has life cycle management responsibility for assigned categories of equipment. Types of major items involved include: barriers and bridging; water purification equipment; construction equipment; rail, marine, and amphibious equipment; power generators; materials and fuel handling equipment; industrial engines and turbines; and environmental control equipment. The Command's two class manager activities at New Cumberland, PA, and Philadelphia perform wholesale management for the Army for primary items of clothing, subsistence food preparation equipment; furniture and household equipment; hand tools and industrial supplies and insignia and medals. Approximately 5,200 military and civilian personnel are employed. They work mainly at the headquarters, the Army Mobility Equipment Research and Development Center, Fort Belvoir, VA; and the Natick Laboratories, Natick, MA. Other field activities include: General Materiel and Parts Center, New Cumberland; the Army Support Center, Philadelphia; the Marine Field Office, Norfolk, VA; Mobility Support Offices in Europe and the Pacific and mobile rail shops in the United States.



U.S. ARMY MATERIEL COMMAND

OCTOBER 1973

COMMANDING GENERAL	GEN H. A. MILEY, JR	10E08	49625/49629	AMCCG
DEPUTY COMMANDING GENERAL	*LTG W. W. VAUGHAN*	*10E20*	49641/49640	AMCDCG
DEPUTY FOR LABORATORIES	DR. R. B. DILLAWAY	10N12	49557/49558	AMCDL
DEPUTY CG FOR MATERIEL ACQUISITION	MG J. R. GUTHRIE	10N24	49705/49709	AMCDMA
DEPUTY CG FOR LOGISTICS SUPPORT	MG V. H. ELLIS	10N36	49702/49699	AMCDLS
CHIEF OF STAFF	MG J. W. PEZDIRTZ	10E14	49638/49634	AMCCS
DEP CHIEF OF STAFF & SECY OF THE GEN STAFF	COL O. J. HARRISON	10S60	49644/49648	AMCDCS
COMMAND SERGEANT MAJOR	CSM R. C. ECKENROD	10S48	49695/49694	AMCCSM

COMPTROLLER
BG L. R. SEARS, JR
PROGRAMS, BUDGETS, FUND ALLOCATIONS, FINANCIAL CONTROLS, ACCOUNTING SYSTEMS, MANAGEMENT AND ECONOMIC ANALYSIS, WORK MEASUREMENT, REVIEW AND ANALYSIS, COST ANALYSIS, COST REDUCTION, AND INTERNAL REVIEW AND AUDIT COMPLIANCE.
274-9131

DIRECTORATE FOR PERSONNEL, TRAINING AND FORCE DEVELOPMENT
BG R. L. KIRWAN
MILITARY AND CIVILIAN PERSONNEL MANAGEMENT, MANPOWER, TRAINING, AND ORGANIZATION AND MISSION PLANS.
274-8195

DIRECTORATE FOR PLANS AND ANALYSIS
COL J. W. BRENNAN
COMMAND PLANNING, SYSTEMS ANALYSIS, MISSION AND ORGANIZATION, STUDIES CONTROL, AND ENVIRONMENTAL CONTROL.
274-9472

DIRECTORATE FOR MANAGEMENT INFORMATION SYSTEMS
MR. J. C. GILBERT
CONCEPTS, OBJECTIVES, POLICIES, PLANS, PROJECTS AND PROGRAMS RELATING TO AUTOMATIC DATA PROCESSING AND MANAGEMENT INFORMATION SYSTEMS.
274-8627

HEADQUARTERS

DIRECTORATE FOR INSTALLATIONS AND SERVICES
COL J. H. BOWMAN
MASTER PLANNING, REAL ESTATE, CONSTRUCTION, REPAIRS AND UTILITIES, FAMILY HOUSING, COMMUNICATIONS ELECTRONICS, EQUIPMENT MANAGEMENT, SUPPORT SERVICES.
274-9041

DIRECTORATE FOR QUALITY ASSURANCE
MR. S. J. LORBER
TOTAL QUALITY SYSTEM FOR AMC, INTEGRATING METROLOGY, CALIBRATION, RELIABILITY, PRODUCT TESTING, QUALITY CONTROL, PRODUCT INSPECTION AND VALUE ENGINEERING.
274-8929

DIRECTORATE FOR RESEARCH, DEVELOPMENT AND ENGINEERING
MG S. C. MEYER
RESEARCH, DEVELOPMENT, TEST AND EVALUATION, TECHNICAL INTELLIGENCE, AND PRODUCT AND PRODUCTION ENGINEERING.
274-9490

DIRECTORATE FOR REQUIREMENTS AND PROCUREMENT
MG C. M. McKEEN, JR
LOGISTICS MANAGEMENT, INCLUDING REQUIREMENTS DETERMINATION, BUDGETING, PROGRAMING, REBUILD AND DISPOSAL DIRECTION AND DISTRIBUTION MANAGEMENT. PROCUREMENT AND PRODUCTION, SMALL BUSINESS, AND INDUSTRIAL READINESS PLANNING.
274-8159

DIRECTORATE FOR SUPPLY
BG E. H. JOHANSEN
SUPPLY MANAGEMENT INCLUDING STOCK CONTROL, STORAGE, PACKAGING, DISTRIBUTION, TRANSPORTATION, AND CATALOGING; STOCK FUND; MATERIEL READINESS AND DESIGNATED READINESS IMPROVEMENT PROGRAMS; DSA/GSA ITEMS IN SUPPORT OF ARMY
274-8539

DIRECTORATE FOR INTERNATIONAL LOGISTICS
BG J. E. FIX III
POLICIES, PROGRAM GOALS AND OBJECTIVES FOR ALL INTERNATIONAL LOGISTICS PROGRAMS.
274-8380

DIRECTORATE FOR MAINTENANCE
BG E. J. D'AMBROSIO
AMC MATERIEL MAINTENANCE ACTIVITIES.
274-9718

OFFICE OF LOGISTIC ASSISTANCE
COL H. R. WHITE
274-8286

OFFICE OF PROJECT MANAGEMENT
COL J. P. HAUMERSEN
274-9570

EQUAL EMPLOYMENT OPPORTUNITY OFFICER
MR. S. S. SCHWARTZ
274-9690

MODERN ARMY SELECTED SYSTEMS OFFICE (MASSO)
COL J. H. W. INSKEEP
274-8372

OFFICE OF DEPOT MANAGEMENT
COL R. A. READE
274-9615

SPECIAL ASSISTANTS

TECHNICAL RELATIONS ADVISOR	MR. H. HANDLER	274-9630
NUCLEAR AFFAIRS	MR. A. R. ERVIN (Act)	274-9555
EOD OFFICE	MAJ V. A. LOPRESTI	274-9551
CONGRESSIONAL AFFAIRS	*MR. P. CYR*	*274-8763*
JOINT ACTIVITIES COORDINATOR	COL J. W. LAUTERBACH	274-9714
CHEMICAL AND BIOLOGICAL AFFAIRS	COL J. AARON	274-9609

AVIATION OFFICE
COL G. J. BOYLE III
274-8000

INFORMATION OFFICER
COL R. J. BERENS
274-8010

HEADQUARTERS ADMINISTRATIVE MANAGEMENT OFFICE
COL J. LYCAS
274-8134

SAFETY OFFICE
MR. W. G. QUEEN
274-8848

HISTORICAL OFFICE
DR. D. BIROSELL
274-9021

SECURITY OFFICE
COL W. N. ISRAEL
274-8686

OFFICE OF THE GENERAL COUNSEL
MR. K. M. BARNES
274-8046

OFFICE OF THE SURGEON
COL R. D. WALLACE, JR. M.D.
274-9024

OFFICE OF THE CHAPLAIN
COL W. V. O'CONNOR
274-8020

OFFICE OF THE INSPECTOR GENERAL
COL J. H. BURKE
274-8070

MAJOR SUBORDINATE COMMANDS

COMMAND HEADQUARTERS

US ARMY AVIATION SYSTEMS COMMAND
ST. LOUIS, MO
MG F. KORNET, JR
INTEGRATED COMMODITY MANAGEMENT OF AERONAUTICAL AND AIR DELIVERY EQUIPMENT AND OF TEST EQUIPMENT THAT IS A PART OF, OR USED WITH, ASSIGNED MATERIEL. BASIC AND APPLIED RESEARCH CONCERNING ASSIGNED MATERIEL DEVELOPMENT.
ZIP CODE 63166
AREA CODE 314
TEL. 268-2201
AUTOVON 698-XXXX

US ARMY MISSILE COMMAND
REDSTONE ARSENAL, AL
MG E. I. DONLEY
INTEGRATED COMMODITY MANAGEMENT OF FREE ROCKETS, GUIDED MISSILES, BALLISTIC MISSILES, TARGET MISSILES, AIR DEFENSE MISSILE FIRE COORDINATION EQUIPMENT, RELATED SPECIAL PURPOSE AND MULTI-SYSTEM TEST EQUIPMENT AND TEST EQUIPMENT WHICH IS A PART OF, OR USED *WITH, ASSIGNED MATERIEL, MISSILE LAUNCHING AND* GROUND SUPPORT EQUIPMENT, MISSILE FIRE CONTROL EQUIPMENT, AND OTHER ASSOCIATED EQUIPMENT. BASIC AND APPLIED RESEARCH CONCERNING ASSIGNED MATERIEL DEVELOPMENT
ZIP CODE 35809
AREA CODE 205
TEL. 876-0011
AUTOVON 746-XXXX

US ARMY ELECTRONICS COMMAND
FORT MONMOUTH, NJ
MG H. F. FOSTER, JR.
INTEGRATED COMMODITY MANAGEMENT OF COMMUNICATIONS EQUIPMENT, COMMUNICATIONS-ELECTRONICS INTELLIGENCE EQUIPMENT, ELECTRONIC WARFARE, AVIATION ELECTRONICS, COMBAT SURVEILLANCE, TARGET ACQUISITION AND NIGHT VISION EQUIPMENT, PHOTOGRAPHIC AND MICROFILMING, IDENTIFICATION-FRIEND OR FOE SYSTEMS; AUTOMATIC DATA PROCESSING, RADAR *(EXCLUDING THAT USED IN FIRE CONTROL AND FIRE COORDINATION OF AIR DEFENSE SYSTEMS ASSIGNED TO ANOTHER COMMAND FOR MANAGEMENT)*. METEROLOGICAL, AND ELECTRONIC RADIOLOGICAL DETECTION MATERIEL, ASSIGNED BATTERIES AND ELECTRIC POWER GENERATION EQUIPMENT; DETERMINE VULNERABILITY OF ARMY MISSILES AND COMMUNICATIONS ELECTRONIC EQUIPMENT AND SYSTEMS TO ELECTRONIC COUNTER-MEASURES (ECM) AND DETERMINE REQUIREMENTS FOR ECM SUBSYSTEMS AND TECHNIQUES TO INCREASE ARMY MISSILE SYSTEM EFFECTIVENESS; AND TEST EQUIPMENT WHICH IS A PART OF, OR USED WITH, ASSIGNED MATERIEL AND ELECTRONIC PARTS AND MATERIALS COMMON TO ELECTRONIC MATERIEL THROUGHOUT THE ARMY. BASIC AND APPLIED RESEARCH CONCERNING ASSIGNED MATERIEL DEVELOPMENT.
ZIP CODE 07703
AREA CODE 201
TEL. 532-9000
AUTOVON 99X-XXXX

US ARMY TANK AUTOMOTIVE COMMAND
WARREN, MI
MG J. E. PIEKLIK
INTEGRATED COMMODITY MANAGEMENT OF COMBAT (LESS SELF-PROPELLED ARTILLERY) TACTICAL WHEELED AND GENERAL PURPOSE VEHICLES AND TEST EQUIPMENT WHICH IS A PART OF, OR USED WITH, ASSIGNED MATERIEL. BASIC AND APPLIED RESEARCH CONCERNING ASSIGNED MATERIEL DEVELOPMENT.
ZIP CODE 48090
AREA CODE 313
TEL. 573-1000
AUTOVON 273-XXXX

US ARMY TROOP SUPPORT COMMAND
ST. LOUIS, MO
MG H. R. HIGGINS
INTEGRATED COMMODITY MANAGEMENT OF SURFACE TRANSPORTATION EQUIPMENT *(OTHER THAN TACTICAL WHEELED AND GENERAL PURPOSE VEHICLES)*; MAPPING AND GEODOSY EQUIPMENT FOR THE FIELD ARMIES; ASSIGNED ELECTRIC POWER GENERATION EQUIPMENT; CONSTRUCTION AND *SERVICES EQUIPMENT; BARRIER EQUIPMENT (INCLUDING MINE WARFARE AND DEMOLITIONS EQUIPMENT)*; BRIDGING AND STREAM-CROSSING EQUIPMENT; PETROLEUM HANDLING AND DISPENSING EQUIPMENT; GENERAL SUPPORT EQUIPMENT AND SUPPLIES *(FIRE FIGHTING, INDUSTRIAL ENGINES, HEATING AND AIR CONDITIONING, WATER PURIFICATION, MATERIALS HANDLING, ETC.)*; TEST EQUIPMENT THAT IS A PART OF, OR USED WITH, ASSIGNED MATERIEL. BASIC AND APPLIED RESEARCH CONCERNING ASSIGNED MATERIEL DEVELOPMENT.
ZIP CODE 63120
AREA CODE 314
TEL. AM 3-1110
AUTOVON 693-1110

US ARMY TEST & EVALUATION COMMAND
ABERDEEN PG, MD
MG C. P. BROWN
ENGINEERING *(EXCEPT AIRCRAFT PERFORMANCE, STABILITY AND CONTROL,)* AND SERVICE TESTS AND EVALUATIONS, SUPPORT ENGINEER DESIGN, PRODUCTION, AND POST PRODUCTION TESTS, AND PARTICIPATION IN TROOP TEST PLANNING; MANAGE AND OPERATE A NATIONAL MISSILE RANGE AT WSMR, *NEW MEXICO.*
ZIP CODE 21005
AREA CODE 301
TEL. 278-3672
AUTOVON 870-XXXX

US ARMY ARMAMENT COMMAND
ROCK ISLAND, IL.
MG J. C. RAAEN, JR.
INTEGRATED COMMODITY MANAGEMENT OF ARMAMENT SYSTEMS, INCLUDING ARTILLERY WEAPONS, CREW SERVED WEAPONS, AND AIRCRAFT WEAPON SYSTEMS; FIRE CONTROL EQUIPMENT *(EXCLUDING THAT INTEGRAL TO MISSILE SYSTEMS AND AIR DEFENSE FIRE COORDINATION SYSTEMS)*; NUCLEAR AND NONNUCLEAR AMMUNITION; ROCKET AND MISSILE WARHEAD SECTIONS; DEMOLITION MUNITIONS, MINES, BOMBS, GRENADES, PYROTECHNICS, BOOSTERS, JATO'S, AND GAS GENERATORS; RADIOLOGICAL MATERIEL; *PROPELLANT ACTUATED DEVICES; COMMON-TYPE TOOLS AND COMMON-TYPE TOOL AND* SHOP SETS *(EXCLUDING DSA AND GSA ITEMS)*; AND TEST EQUIPMENT THAT IS A PART OF, OR USED WITH, ASSIGNED MATERIEL. BASIC AND APPLIED RESEARCH CONCERNING ASSIGNED MATERIEL DEVELOPMENT.
ZIP CODE 61201
AREA CODE 309
TEL. 794-6001
AUTOVON 793-6001

INSTALLATIONS AND ACTIVITIES

INSTALLATIONS ACTIVITIES (Aviation Systems Command)
USA AERONAUTICAL DEPOT MAINT. CEN. CORPUS CHRISTI, TX
USA AVN SYS TEST ACTV., EDWARDS AFB, CA
USA AIR MOBILITY RSCH & DEV LAB, MOFFETT FIELD, CA
TRANSPORTATION BATTALION, *CORPUS CHRISTI, TX*

INDUSTRIAL PLANTS
SAGINAW ARMY AIRCRAFT PLANT, FT. WORTH, TX
USA BELL PLANT ACTV., HURST, TX
USA BOEING VERTOL PLANT ACTV., PHILADELPHIA, PA
USA GRUMMAN PLANT ACTV., STUART, FL
USA HUGHES PLANT ACTV., CULVER CITY, CA
USA LOCKHEED PLANT ACTV., VAN NUYS, CA

NATIONAL MAINTENANCE POINT
U.S. ARMY AVIATION SYSTEMS COMMAND, ST. LOUIS, MO
NATIONAL INVENTORY CONTROL POINT
U.S. ARMY AVIATION SYSTEMS COMMAND, ST. LOUIS, MO

INSTALLATIONS ACTIVITIES (Missile Command)
USA METROLOGY & CALIBRATION CEN., REDSTONE ARS., AL
USA MISSILE INTELLIGENCE AGCY., REDSTONE ARS., AL
USA MISSILE RSCH, DEV, & ENGR LAB, REDSTONE ARS., AL

INDUSTRIAL PLANTS
LAWNDALE ARMY MSL. PLANT, LAWNDALE, CA
MICHIGAN ARMY MSL. PLANT, WARREN, MI
TARHEEL ARMY MSL. PLANT, BURLINGTON, NC

NATIONAL MAINTENANCE POINT
US ARMY MISSILE COMMAND, REDSTONE ARSENAL, AL
NATIONAL INVENTORY CONTROL POINT
US ARMY MISSILE COMMAND, REDSTONE ARSENAL, AL

INSTALLATIONS ACTIVITIES (Electronics Command)
USA RESEARCH & DEVELOPMENT, TECH SPT ACTV, FT. MONMOUTH, NJ
ELECTRONICS TECHNOLOGY & DEVICES LAB, FT. MONMOUTH, NJ
USA COMBAT SURVEILLANCE & TARGET ACQUISITION LAB FT. MONMOUTH, NJ
USA COMMUNICATIONS & ADP LAB *FT. MONMOUTH, NJ*
USA ATMOSPHERIC SCIENCES LAB WHITE SANDS MISSILE RANGE, NM
USA ELECTRONIC WARFARE LAB FT. MONMOUTH, NJ
USA AVIONICS LAB FT. MONMOUTH, NJ
USA NIGHT VISION LAB, FT. BELVOIR, VA
USA TV-AUDIO SPT AGCY, SACRAMENTO ARMY DEPOT SACRAMENTO, CA
USA COMSEC LOG AGCY, FT. HUACHUCA, AR

NATIONAL MAINTENANCE POINT
US ARMY ELECTRONICS COMMAND, FT. MONMOUTH, NJ
NATIONAL INVENTORY CONTROL POINT
US ARMY ELECTRONICS COMMAND, FT. MONMOUTH, NJ

INSTALLATIONS ACTIVITIES (Tank Automotive Command)
USA MODIFICATION CENTER, LIMA, OH
USA MOBILITY SYSTEMS LAB., WARREN, MI

INDUSTRIAL PLANTS
MUSKEGON ARMY ENGINE PLANT, MUSKEGON, MI

NATIONAL MAINTENANCE POINT
U.S. ARMY TANK-AUTOMOTIVE COMMAND, WARREN, MI
NATIONAL INVENTORY CONTROL POINT
U.S. ARMY TANK-AUTOMOTIVE COMMAND, WARREN, MI

INSTALLATIONS ACTIVITIES (Troop Support Command)
NATICK LABS, NATICK, MA
USA GEN MATERIEL & PARTS CEN, NEW CUMBERLAND, PA
USA MOBILITY EQUIP RSCH & DEV CEN., FT. BELVOIR, VA
USA SUP CEN, PHILA., PA

NATIONAL MAINTENANCE POINT
US ARMY TROOP SUPPORT COMMAND, ST. LOUIS, MO
NATIONAL INVENTORY CONTROL POINT
US ARMY TROOP SUPPORT COMMAND, ST. LOUIS, MO

INSTALLATIONS ACTIVITIES (Test & Evaluation Command)
DUGWAY PROVING GROUND, UT
USA ABERDEEN PG., ABERDEEN, MD
USA JEFFERSON PG, MADISON, IN
USA ABN COMM & ELECT BD, FT. BRAGG, NC
USA AIR DEF BD, FT. BLISS, TX
USA ARCTIC TEST CENTER, FT. GREELY, AK
USA ARMOR AND ENGINEER BD, FT. KNOX, KY
USA AVN TEST BD, FT. RUCKER, AL
USA ELECT PG, FT. HUACHUCA, AZ
USA FIELD ARTILLERY BD, FT. SILL, OK
USA INF BD, FT. BENNING, GA
USA TROPIC TEST CENTER, FT. CLAYTON, CZ
USA WHITE SANDS MSL RANGE, NM
USA YUMA PG, YUMA, AZ

INSTALLATIONS ACTIVITIES (Armament Command)
EDGEWOOD ARSENAL, ABERDEEN PG, MD
FRANKFORD ARSENAL, PHILA., PA
PICATINNY ARSENAL, DOVER, NJ
PINE BLUFF ARSENAL, PINE BLUFF, AR
ROCK ISLAND ARSENAL, ROCK ISLAND, IL
ROCKY MOUNTAIN ARSENAL, DENVER, CO
WATERVLIET ARSENAL, WATERVLIET, NY

ARMY AMMUNITION PLANTS

ALABAMA, CHILDERSBURG, AL	LONGHORN, MARSHALL, TX
BADGER, BARABOO, WI	LOUISIANA, SHREVEPORT, LA
BURLINGTON, BURLINGTON, NJ	MILAN, MILAN, TN
CORNHUSKER, GRAND ISLAND, NB	NEWPORT, NEWPORT, IN
GATEWAY, ST. LOUIS, MO	PHOSPHATE DEV WORKS, MUSCLE SHOALS, AL
HAYS, PITTSBURGH, PA	RADFORD, RADFORD, VA
HOLSTON, KINGSPORT, TN	RAVENNA, RAVENNA, OH
INDIANA, CHARLESTOWN, IN	RIVERBANK, RIVERBANK, CA
IOWA, BURLINGTON, IA	ST. LOUIS, ST. LOUIS, MO
JOLIET, JOLIET, IL	SCRANTON, SCRANTON, PA
KANSAS, PARSONS, KS	SUNFLOWER, LAWRENCE, KS
LAKE CITY, INDEPENDENCE, MO	TWIN CITIES, MINNEAPOLIS, MN
LONE STAR, TEXARKANA, TX	VOLUNTEER, CHATTANOOGA, TN

INDUSTRIAL PLANTS
CLEVELAND ARMY TANK-AUTMV PLANT, CLEVELAND, OH

NATIONAL MAINTENANCE POINT
US ARMY ARMAMENT COMMAND, ROCK ISLAND, IL
NATIONAL INVENTORY CONTROL POINT
US ARMY ARMAMENT COMMAND, ROCK ISLAND, IL

OTHER INSTALLATIONS AND ACTIVITIES

PROJECT/PRODUCT MANAGERS
LOCATED AT HEADQUARTERS, AMC

SAUDIA ARABIA NATL GUARD (SANG)	COL T. A. MORT	274-9126
SUR CONTAINER-SUP DISTR SYS DEV	COL R. A. CRAMER, JR.	274-8800

LOCATED OUTSIDE HEADQUARTERS, AMC

ADVANCED ATTACK HELICOPTER	BG S. COCKERHAM	St. Louis, MO	698-2928
AIRCRAFT SURVIVABILITY EQUIPMENT	COL S. SHIREY	St. Louis, MO	698-3961
ARMORED RECON SCOUT VEHICLE	COL E. L. BIRK	Warren, MI	273-2208
ARMY TACTICAL COMMUNICATIONS SYSTEMS	COL J. P. DOBBINS	Ft. Monmouth, NJ	995-2109
ARMY TACTICAL DATA SYSTEMS	BG A. B. CRAWFORD, JR.	Ft. Monmouth, NJ	992-4612
CANNON ARTILLERY WEAPONS SYS	*COL S. T. POST, JR.*	*Rock Island, IL*	*793-6626*
COBRA	LTC O. E. GONZALES	St. Louis, MO	698-2331
1 1/4 TON COMMERCIAL TRUCK SYS	LTC J. O. LAX	Warren, MI	273-2780
DCS (ARMY) STRATEGIC COMMUNICATIONS SYSTEM	BG D. W. OGDEN, JR.	Ft. Monmouth, NJ	995-1582
DRAGON	COL J. M. SHEA	Redstone Ars., AL	746-7194
FAMECE AND UET	COL G. R. RELYEA	Ft. Belvoir, VA	192-41116
HAWK	COL E. W. DEADWYLER	Redstone Ars., AL	746-6609
HEAVY EQUIP TRANSPORTER	LTC J. H. BRILL	Warren, MI	273-1219
HEAVY LIFT HELICOPTER (HLH)	BG J. B. LAUER	St. Louis, MO	698-6464
HELIBORNE LASER FIRE AND FORGET (HELLFIRE) MISSILE SYS	COL J. B. HANBY, JR.	Redstone Ars., AL	746-3261
IRANIAN AIRCRAFT PROGRAM (IAP)	LTC W. C. RUDD	St. Louis, MO	698-3741
LANCE	BG G. E. TURNMEYER	Rdstone Ars. AL	746-6144
M-60 TANK SERIES	COL S. R. SHERIDAN	Warren, MI	273-2720
MECHANIZED INFANTRY COMBAT VEHICLE	COL J. F. McCLUSKEY	Warren, MI	273-1630
MOBILE ELECTRIC POWER	COL C. D. STRIDER	Ft. Belvoir, VA	192-43031
MORTAR/ARTILLERY LOCATING RADARS	LTC W. J. HARRISON	Ft. Monmouth, NJ	996-1324
MUNITIONS PRODUCTION BASE MODERNIZATION & EXPANSION	BG R. J. MALLEY	Dover, NJ	880-3207
NAVIGATION CONTROL (NAVCON)	LTC C. W. McDOWELL	Ft. Monmouth, NJ	992-4240
PERSHING	COL S. C. SKEMP, JR.	Redstone Ars., AL	746-1165
2.75" ROCKET SYSTEM	COL F. P. RAGANO	Redstone Ars., AL	746-1201
REMOTELY MONITORED BATTLEFIELD SENSOR SYSTEMS (REMBASS)	LTC R. J. COTTEY	Ft. Monmouth, NJ	992-4541
SAFEGUARD MUNITIONS	COL A. A. NORD	Dover, NJ	880-5285
SAM-D	BG C. F. MEANS	Redstone Ars., AL	746-3008
SATCOM	COL L. D. WAMSTED	Ft. Monmouth, NJ	992-1228
SELECTED AMMUNITION	COL K. E. LOCKWOOD	Dover, NJ	880-3230
STINGER	COL D. H. SOUSER	Redstone Ars., AL	746-6191
TOW	COL R. W. HUNTZINGER	Redstone Ars., AL	746-5185
UTILITY TACTICAL TRANSPORT AIRCRAFT SYSTEM (UTTAS)	BG L. D. TURNER	St. Louis, MO	698-3831
VEHICLE RAPID FIRE WEAPONS SYSTEM	COL R. W. NOCE	Rock Island, IL	793-6852
XM-1 TANK SYSTEM	BG R. J. BAER	Warren, MI	273-2184

SEPARATE INSTALLATIONS AND ACTIVITIES UNDER HEADQUARTERS, AMC

USA MATERIALS & MECHANICS RSCH CEN, WATERTOWN, MASS.	684-CXXX
HARRY DIAMOND LABS, WASHINGTON, DC	292-XXXX
HQ AMC SERVICE SUPPORT AGENCY, ALEXANDRIA, VA	284-8134
JOINT MIL PACKAGING TNG CEN, ABERDEEN PG, MD.	870-XXXX
USA ADVANCED MATERIEL CONCEPTS AGENCY, ALEXANDRIA, VA.	221-0186
USA BALLISTIC RSCH LABS, ABERDEEN PG, MD	870-3961
USA CATALOG DATA AGCY, NEW CUMBERLAND, PA	977-6603
USA EQUIP AUTHORIZATIONS REV CEN, ALEXANDRIA, VA	284-9292
USA FIELD OFC, HQ AFSC, WASHINGTON, D.C.	858-3227
USA FGN SCIENCE & TECH CEN, CHARLOTTESVILLE, VA	274-7XXX
USA HUMAN ENGINEERING LAB, ABERDEEN PG, MD	870-3883
USA INTERNATIONAL LOGISTICS CEN, NEW CUMBERLAND, PA.	977-6800
USA LAND WARFARE LAB., ABERDEEN, MD	870-XXXX
USA LOGISTIC ASSISTANCE OFFICE, CONUS, FT. MONROE, VA	680-2230
USA LOGISTIC ASSISTANCE OFFICE, EUROPE	8888 (HEIDELBERG)
USA LOGISTIC ASSISTANCE OFFICE, KOREA	3174 (YONGSAN)
USA LOGISTIC ASSISTANCE OFFICE, PACIFIC	862715 (HAWAII)
USA LOGISTIC ASSISTANCE OFFICE, JAPAN	51144 (OKINAWA)
USA LOGISTIC CONTROL OFC, ATLANTIC, NEW CUMBERLAND, PA	977-7109
USA LOGISTIC CONTROL OFC, PACIFIC, FORT MASON, CA	586-6995
USA LOGISTICS MGT CENTER, FT. LEE, VA	687-XXXX
USA MAINT MGT CEN, LEXINGTON, KY	745-XXXX
USA MAJOR ITEM DATA AGCY, CHAMBERSBURG, PA	242-XXXX
USA MGT ENGR TNG AGCY, ROCK ISLAND, ILL.	793-6043
USA MATERIEL SYSTEMS ANALYSIS AGCY, ABERDEEN, MD.	870-2432
USA TNG DEV AGCY, USN TNG EQUIP CEN, ORLANDO, FL	791-5292
USA PDN EQUIP AGCY, ROCK ISLAND, ILL.	793-5010
USAMC AMMO CEN, SAVANNA, ILL.	585-XXXX
USAMC AUTO LOG MGT SYS AGENCY, ST. LOUIS, MO.	698-6044
USAMC FLD OFC, KIRTLAND AFB, NM	829-4822
USAMC FLD SAFETY AGCY, CHARLESTOWN, IND.	726-1480
USAMC FLD SPT ACTIVITY, FORT HOOD/MASSTER, FORT HOOD, TX.	737-2131
USAMC IG, EASTERN INSPECTION ACTIVITY, ALEXANDRIA, VA	284-8070
USAMC IG, WESTERN INSPECTION ACTIVITY, ST. LOUIS, MO.	693-3440
USAMC INFANTRY R&D LIAISON OFFICE, FT. BENNING, GA	835-2052
USAMC INSTL & SVC AGCY, ROCK ISLAND, ILL.	793-5018
USAMC LOGISTICS SYS SPT AGCY, CHAMBERSBURG, PA.	242-6389
USAMC PERSONNEL SPT AGCY, ALEXANDRIA, VA	284-8495
USAMC QUALITY ASSURANCE FIELD OFC, LEXINGTON, KY.	745-7591
USAMC SECURITY SPT AGCY, FOREST PARK, GA	797-7301
USAMC SURETY FIELD OFFICE, DOVER, N.J.	880-5196
USAMC TAIWAN MATERIEL AGCY, TAIPEI, TAIWAN	723-2351

ARMY DEPOTS

ANNISTON, ANNISTON, AL	694-XXXX
ATLANTA, FOREST PARK, GA	797-XXXX
CHARLESTON, N. CHARLESTON, SC	748-9XXX
LETTERKENNY, CHAMBERSBURG, PA.	242-XXXX
LEXINGTON-BLUE GRASS, LEXINGTON, KY.	745-XXXX
NEW CUMBERLAND, NEW CUMBERLAND, PA.	977-XXXX
PUEBLO, PUEBLO, CO	877-XXXX
RED RIVER, TEXARKANA, TX	956-XXXX
SACRAMENTO, SACRAMENTO, CA	839-XXXX
SAVANNA, SAVANNA, IL	585-XXXX
SENECA, ROMULUS, NY	489-5XXX
SHARPE, LATHROP, CA	462-XXXX
SIERRA, HERLONG, CA	830-2XXX
TOBYHANNA, TOBYHANNA, PA.	247-9XXX
TOOELE, TOOELE, UT	790-2XXX
UMATILLA, HERMISTON, OR	891-3201

PROCUREMENT OFFICES

USA ARMAMENT COMMAND, ROCK ISLAND, IL
EDGEWOOD ARS., EDGEWOOD, MD
FRANKFORD ARS., PHILA., PA
PICATINNY ARS., DOVER, NJ
ROCK ISLAND ARS., ROCK ISLAND, IL
WATERVLIET ARS., WATERVLIET, NY
USA AVIATIONS SYSTEMS COMMAND, ST. LOUIS, MO
USA ELEC COMD DIRECT OF PROC & PROD
PHILA PROC DIV; FT. MEADE PROC DIV;
FT. MONMOUTH PROC DIV; WASH PROC DIV
USA MISSILE COMMAND, REDSTONE, ARS., AL
USA TANK-AUTOMOTIVE COMMAND, WARREN, MI
USA TROOP SUPPORT COMMAND, ST. LOUIS, MO

HEADQUARTERS U S ARMY MATERIEL COMMAND

5001 EISENHOWER AVE, ALEXANDRIA, VA 22304

STAFF DIRECTORY

ARSENAL FOR THE BRAVE

U.S. ARMY MATERIEL COMMAND

COMMANDING GENERAL	GEN H. A. MILEY, JR.	10E08	49625/49629	AMCCG
DEPUTY COMMANDING GENERAL	LTG W. W. VAUGHAN	10E20	49641/49640	AMCDCG
DEPUTY FOR LABORATORIES	DR. R. B. DILLAWAY	10N12	49557/49558	AMCDL
DEPUTY CG FOR MATERIEL ACQUISITION	MG J. R. GUTHRIE	10N24	49705/49709	AMCDMA
DEPUTY CG FOR LOGISTICS SUPPORT	MG V. H. ELLIS	10N36	49702/49699	AMCDLS
CHIEF OF STAFF	MG J. W. PEZDIRTZ	10E14	49638/49634	AMCCS
DEPUTY CHIEF OF STAFF	COL O. J. HARRISON	10S60	49644/49648	AMCDCS

COMMANDER'S PERSONAL STAFF — AMCCG

AIDE-DE-CAMP	CPT R. H. IVANY	10E08	49629/49625	AMCCG
SECRETARY	MRS. L. HARMON	10E08	49626/49629	AMCCG

DEPUTY COMMANDER'S PERSONAL STAFF — AMCDCG

AIDE-DE-CAMP	CPT H. M. DERMODY	10E14	49639/49640	AMCDCG
SECRETARY	MRS. H. JAMES	10E14	49649/49639	AMCDCG

AUTOVON 284 + XXXX
COMMERCIAL 202-274-XXXX
CABLE ADDRESS CDRAMC ALEX VA
STAFF DUTY OFFICER
AUTOVON 284-9223
COMMERCIAL 202-274-9223
OPERATIONS CENTER 274-8660

OFFICE OF DEPUTY FOR LABORATORIES — AMCDL

ASSISTANT DEPUTY FOR LABORATORIES			
MR. N. L. KLEIN	10N12	49558/49559	AMCDL
CHIEF SCIENTIST			
DR. C. M. CRENSHAW	10N12	49560/49559	AMCDL
EXECUTIVE OFFICER			
LTC F. D. CANTWELL	10N12	49561/49562	AMCDL

OFFICE OF DEPUTY COMMANDING GENERAL FOR MATERIEL ACQUISITION — AMCDMA

ASSISTANT DEPUTY FOR MATERIEL ACQUISITION			
(VACANCY)	10N24	49705/49710	AMCDMA
EXECUTIVE OFFICER			
COL D. A. GRUENTHER	10N24	49709/49710	AMCDMA

OFFICE OF DEPUTY COMMANDING GENERAL FOR LOGISTICS SUPPORT — AMCDLS

ASSISTANT DEPUTY FOR LOGISTICS SUPPORT			
MR. E. GREINER	10N36	49700/49699	AMCDLS
EXECUTIVE OFFICER			
COL W. L. ROGERS	10N36	49699/49700	AMCDLS

COMMAND SERGEANT MAJOR — AMCCSM

COMMAND SERGEANT MAJOR	CSM R. C. ECKENROD	10S48	49695/49694	AMCCSM

SECRETARY OF THE GENERAL STAFF — AMCGS

SECY OF THE GENERAL STAFF	COL O. J. HARRISON	10S60	49644/49648	AMCGS
DEP SECY OF THE GENERAL STAFF	LTC J. B. GRINSTEAD	10S60	49648/49644	AMCGS
ASST SECY OF THE GENERAL STAFF	MAJ R. WEBSTER	10S50	49659/49660	AMCGS
ASST SECY OF THE GENERAL STAFF	MAJ O. B. WESTRY	10S54	49649/49648	AMCGS
ASST SECY OF THE GENERAL STAFF	MAJ J. F. ENRIGHT	10S50	49661/49660	AMCGS
ASST SECY OF THE GENERAL STAFF	MAJ F. J. CALVERASE	10S54	49654/49650	AMCGS
ASST SECY OF THE GENERAL STAFF	MAJ J. F. SALMON	10S50	49660/49659	AMCGS
ASST SECY OF THE GENERAL STAFF	MAJ C. W. TIPTON	10S54	49649/49648	AMCGS
CHIEF, VISITORS BUREAU	MRS. H. L. SALPINI	10C55	49669/49666	AMCGS-V
ADMINISTRATIVE OFFICER	MISS B. A. FOSTER	10S55	49662/49665	AMCGS-A

OFFICE OF THE COMPTROLLER — AMCCP

COMPTROLLER			
BG L. R. SEARS, JR.	3N58	49131/49125	AMCCP
DEPUTY COMPTROLLER			
MR. W. O. HARRIS	3N58	49128/49129	AMCCP
EXECUTIVE OFFICER			
COL B. A. LOWERY	3N58	49129/49130	AMCCP
ADMINISTRATIVE OFFICE			
MRS. L. S. BROWN	3N57	49124/49120	AMCCP-A
BUDGET DIVISION			
COL E. J. DELAUNE, JR.	3N54	49235/49324	AMCCP-B
COST ANALYSIS DIVISION			
MR. W. J. TROPF, JR.	3S34	49080/49100	AMCCP-E
FINANCE & ACCOUNTING DIVISION			
COL G. E. EMRICK	3W06	49169/49171	AMCCP-F
INTERNAL REVIEW & AUDIT COMPLIANCE OFFICE			
MR. J. K. CHURCH	3S50	49110/49111	AMCCP-I
MANAGEMENT DIVISION			
COL C. L. WHITE, JR.	3E10	49029/49028	AMCCP-M
REVIEW & ANALYSIS DIVISION			
MR. I. BERG	3S10	49050/49055	AMCCP-R

DIRECTORATE FOR PERSONNEL, TRAINING, & FORCE DEVELOPMENT — AMCPT

DIRECTOR			
BG R. L. KIRWAN	2E14	48195/48196	AMCPT
DEPUTY DIRECTOR			
MR. W. S. CHARIN	2E14	48195/48196	AMCPT
EXECUTIVE OFFICER			
COL P. D. HAUN	2E14	48195/48196	AMCPT
PLANS & ADMINISTRATIVE OFFICE			
MR. C. W. ROHRER	2E18	48421/48422	AMCPT-A
CIVILIAN PERSONNEL DIVISION			
MR. V. L. EDWARDS, JR.	2W20	49167/49168	AMCPT-C
FORCE DEVELOPMENT DIVISION			
(VACANCY)	2E08	48215/48216	AMCPT-S
HUMAN RELATIONS DIVISION			
COL E. F. CARROLL	2N06	49344/49348	AMCPT-H
MILITARY PERSONNEL DIVISION			
COL J. M. EVANS	2S56	49325/49329	AMCPT-M
TRAINING DIVISION			
COL D. L. HARRIS	2N32	48981/48435	AMCPT-T
STAFF SUPPORT ACTIVITIES			
HQ CIVILIAN PERSONNEL OFFICE			
MR. R. VELTHUIS	2S32	49427/49428	AMXMM-CO
HQ MANPOWER OFFICE			
MR. P. R. ZEKAN	2N46	48974/48979	AMXMM-SM
HQ MILITARY PERSONNEL OFFICE			
LTC G. N. PARRISH	2S49	49333/49334	AMXMM-MR

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MR. D. J. SHEARIN	10S06	49472/49475	AMCPA
SPECIAL ASSISTANT TO DIRECTOR			
MR. J. ROJ	10W22	49476/49475	AMCPA
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LTC T. M. MANSFIELD	10S06	49475/49476	AMCPA
ENVIRONMENTAL CONTROL OFFICE			
MR. B. HILDEBRAND	10S10	49470/49471	AMCPA-E
MILITARY PLANS DIVISION			
COL R. S. CRAIG	7N22	48551/48554	AMCPA-M
MISSION AND ORGANIZATION DIVISION			
MR. W. W. DUKE	10S35	49485/49480	AMCPA-O
PLANS AND PROGRAMS DIVISION			
(VACANCY)	10W16	49441/49442	AMCPA-P
STUDY PROGRAMS DIVISION			
MR. A. D'AMBROSIO	10W12	49464/49463	AMCPA-X
SYSTEMS ANALYSIS DIVISION			
LTC V. L. SPEICHER	10S14	49451/49455	AMCPA-S

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DIRECTOR			
MR. J. C. GILBERT	4E16	48627/48628	AMCMS
DEPUTY DIRECTOR			
MR. J. A. ARNTSON	4E16	48627/48628	AMCMS
EXECUTIVE OFFICER			
LTC J. R. MULLIGAN	4E16	48627/48628	AMCMS
ADMINISTRATIVE OFFICE			
MRS. S. W. CLARK	4E13	48942/48945	AMCMS-A
RESOURCES DIVISION			
MR. J. CIANFLONE	4S52	49154/49156	AMCMS-T
SCIENTIFIC & MANAGEMENT INFORMATION DIVISION			
DR. R. P. UHLIG	4E08	48946/48954	AMCMS-I
SYSTEMS OPERATIONS DIVISION			
MR. H. S. MITCHELL	4N52	48958	AMCMS-E

DIRECTORATE FOR INSTALLATIONS & SERVICES — AMCIS

DIRECTOR			
COL J. H. BOWMAN	5W12	49041/49042	AMCIS
DEPUTY DIRECTOR			
MR. L. M. TAYLOR	5W12	49041/49042	AMCIS
COMMUNICATIONS-ELECTRONICS DIVISION			
COL M. M. MOORE, JR.	5S10	49394/49400	AMCIS-C
INSTALLATION LOGISTICAL SUPPORT DIVISION			
MR. W. C. HEINTZELMAN	5S06	49389/49386	AMCIS-S
PLANS, PROGRAMS & ADMINISTRATIVE OFFICE			
MR. G. A. SOSSICH	5W20	49026/49027	AMCIS-P
REAL PROPERTY MANAGEMENT DIVISION			
COL W. P. SCHILLING	5N06	49390/49391	AMCIS-M

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DIRECTOR			
MR. S. J. LORBER	4W22	48929/48930	AMCQA
DEPUTY DIRECTOR			
MR. H. B. CROSKERY	4W22	48925/48929	AMCQA
PRODUCT OPERATIONS DIVISION			
MR. R. H. TINER	4W20	48894/48899	AMCQA-P
QUALITY & VALUE ENGINEERING DIVISION			
MR. J. STOLARICK	7N41	48028/48029	AMCQA-V
RELIABILITY & SYSTEM ASSESSMENT DIVISION			
MR. A. H. NORDSTROM, JR.	4S06	48912/48915	AMCQA-E

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MG S. C. MEYER	8E08	49490/49493	AMCRD
DEPUTY DIRECTOR FOR OPERATIONS			
(VACANCY)	8E08	49493/49490	AMCRD
DEPUTY DIRECTOR FOR PLANS			
DR. J. V. R. KAUFMAN	8E08	49497/49494	AMCRD
EXECUTIVE OFFICER			
COL M. F. ORMOND	8E08	49494/49497	AMCRD-X
ASSISTANT EXECUTIVE OFFICER			
CPT M. L. SIMONICH	8E08	49494/49497	AMCRD-X
ADMINISTRATIVE OFFICE			
MISS LUCY A. JONES	8E10	49489/49486	AMCRD-A
AIR SYSTEMS DIVISION			
COL W. C. BOEHM	7N08	49514	AMCRD-F
AMC CHIEF MATHEMATICIAN			
DR. B. KURKJIAN	8S58	48948/48852	AMCRD-R
BATTLEFIELD COMMAND & CONTROL DIVISION			
COL D. M. COPP	8S08	49844/49273	AMCRD-O
ENGINEERING DIVISION			
COL C. W. BARKER	8N08	49785/49788	AMCRD-E
FOREIGN SCIENCE & TECHNOLOGY DIVISION			
COL W. I. FOX	7S50	49022/49137	AMCRD-I
INDIVIDUAL SOLDIER DIVISION			
COL K. G. BUERGER	8N23	49815/49816	AMCRD-J
MISSILES SYSTEMS DIVISION			
COL J. J. HOCH	8N14	49825/49828	AMCRD-M
PLANS & PROGRAMS DIVISION			
MR. W. W. FLYNN	8N54	49854/49850	AMCRD-P
RESEARCH DIVISION			
DR. H. M. EL-BISI	8S57	48977/48978	AMCRD-T
SURFACE SYSTEMS DIVISION			
(VACANCY)	8N22	49812/49811	AMCRD-G
TEST & EVALUATION DIVISION			
COL J. F. BLEECKER	8S44	49445/49443	AMCRD-U
WEAPONS/MUNITIONS SYSTEMS DIVISION			
COL W. H. HUBBARD	8S28	49782/49783	AMCRD-W

DIRECTORATE FOR REQUIREMENTS & PROCUREMENT — AMCRP

DIRECTOR			
MG C. M. McKEEN, JR.	9E06	48159/48160	AMCRP
DEPUTY DIRECTOR			
COL H. F. HARDIN	9E06	48160/48167	AMCRP
DEPUTY DIRECTOR			
COL J. W. CAMPBELL	9E06	48160/48167	AMCRP
EXECUTIVE OFFICER			
MAJ R. S. AUSTIN	9E06	48168/48167	AMCRP
ADMINISTRATIVE OFFICE			
MR. A. A. WATSON	9N43	48170/48171	AMCRP-A
AIR SYSTEMS DIVISION			
COL W. C. TYRRELL	9W22	48353/48354	AMCRP-F
BATTLEFIELD COMMAND CONTROL SYSTEMS DIVISION			
COL P. J. COLE	9S28	48310/48319	AMCRP-C
COST PERFORMANCE REPORTING DIVISION			
LTC L. S. MARRELLA	4N17	49240/49241	AMCRP-K
INDUSTRIAL MANAGEMENT DIVISION			
LTC F. G. JOHNSON	9S48	48339/48340	AMCRP-I
MISSILE SYSTEMS DIVISION			
COL R. J. SPECKER	9N08	48293/48294	AMCRP-M
PLANS & PROGRAMS DIVISION			
COL P. K. SHEETS	9E22	48189/48190	AMCRP-P
PROCUREMENT MANAGEMENT REVIEW DIVISION			
MR. W. L. CLEMONS (Act)	9S46	48179/48178	AMCRP-R
PROCUREMENT POLICY DIVISION			
MR. J. D. BLANCHARD	9N56	48262/48267	AMCRP-S
SMALL BUSINESS LABOR RELATIONS OFFICE			
SMALL BUSINESS ADVISOR			
MR. J. A. RAMIREZ	9N13	48185/48186	AMCRP-Z
CONTRACT LABOR RELATIONS OFFICER			
MR. A. COREY	9N13	48186/48185	AMCRP-Z
SURFACE SYSTEMS DIVISION			
COL W. D. KELLEY	9N31	48257/48258	AMCRP-G
WEAPONS & MUNITIONS SYSTEMS DIVISION			
COL A. R. RAUSCH	9S22	48227/48228	AMCRP-W

DIRECTORATE FOR SUPPLY — AMCSU

DIRECTOR			
BG E. H. JOHANSEN	6E06	48539/48097	AMCSU
DEPUTY DIRECTOR			
MR. J. F. MACLIN	6E06	40897/48098	AMCSU
EXECUTIVE OFFICER			
COL J. J. CORLISS	6E06	48098/48097	AMCSU
ADMINISTRATIVE OFFICE			
MISS JOAN TACKETT	6N58	48543/48544	AMCSU-A
INVENTORY & LOCATION SURVEY OFFICE			
MR. D. H. MAGATHAN	6C43	48611/48615	AMCSU-I
LOGISTICS DATA MANAGEMENT DIVISION			
MR. A. I. SAGER	6S57	48701/48708	AMCSU-L
MAJOR ITEMS MANAGEMENT DIVISION			
COL J. P. DRING	6N24	48619/48623	AMCSU-S
PLANS & PROGRAMS OFFICE			
MR. R. W. DEW	6N44	48559/48560	AMCSU-P
SECONDARY ITEMS MANAGEMENT DIVISION			
COL W. R. STRONG	6W06	48733/48732	AMCSU-K
STOCK MANAGEMENT & POLICY DIVISION			
MR. M. I. HINSON	6S06	48761/48762	AMCSU-M
STORAGE & TRANSPORTATION DIVISION			
COL M. R. WAGNER	6S16	48655/48654	AMCSU-B

DIRECTORATE FOR MAINTENANCE — AMCMA

DIRECTOR			
BG E. J. D'AMBROSIO	5N48	49718	AMCMA
DEPUTY DIRECTOR			
MR. H. J. BUKOWSKI	5N48	49719	AMCMA
EXECUTIVE OFFICER			
COL J. J. LEEPER	5N48	49720	AMCMA
PROJECT OFFICER FOR TMDE			
LTC J. R. FORBES	5N39	49770	AMCMA-T
ADMINISTRATIVE OFFICE			
MR. L. F. KORTUM	5E07	49738	AMCMA-A
DEPOT MAINTENANCE DIVISION			
LTC M. E. SCHNEIDER	5N16	49895	AMCMA-D
ELECTRONICS, AIRCRAFT & MISSILES DIVISION			
MR. B. F. WILKES (Act)	5N26	49886	AMCMA-E
MAINTENANCE ENGINEERING DIVISION			
MR. B. LEVINE (Act)	5N40	49772	AMCMA-S
PLANS & PROGRAMS OFFICE			
MR. W. W. WENDT	5E11	49729	AMCMA-P
VEHICLES, MOBILITY EQUIPMENT, WEAPONS & MUNITIONS DIVISION			
COL H. B. BRAZIL	5N42	49759	AMCMA-V

DIRECTORATE FOR INTERNATIONAL LOGISTICS — AMCIL

DIRECTOR			
BG J. E. FIX III	5E22	48380/48383	AMCIL
DEPUTY DIRECTOR			
MR. W. LEVITT	5E22	48383/48384	AMCIL
EXECUTIVE OFFICER			
COL J. L. KENNEDY, JR.	5E22	48384/48380	AMCIL
ADMINISTRATIVE OFFICE			
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COL L. E. WRIGHT	5S22	48451/48454	AMCIL-G
MILITARY SALES DIVISION			
COL B. P. BRYSON	5S54	48398/48399	AMCIL-M
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SECONDARY ITEMS SUPPORT OFFICE			
COL F. F. FOUNTAIN, JR.	5S42	48439/48440	AMCIL-L

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OPERATIONS DIVISION			
MR. H. FUTCH	10N30	49616/49611	AMCDD-O
PLANNING DIVISION			
LTC B. A. LOGERQUIST	10N41	49622/49621	AMCDD-P

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LTC E. M. DUNN, JR.	6S58	48286/48839	AMCLA-NG
SA FOR U S ARMY RESERVE			
LTC L. C. WAYNE	6S58	48101/48843	AMCLA-AR

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EOD OFFICE			
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MASSTER COORDINATOR			
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MR. W. H. ANDERSON	4N29	48874/48670	AMCSS-I
PROVOST MARSHAL DIVISION			
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(VACANCY)	1S14	48072/48079	AMCIG-X
INVESTIGATIONS & COMPLAINTS DIVISION			
COL C. N. THOMAS	1S08	48064/48069	AMCIG-V

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CDR J. M. HALE, DEPUTY PM	6S32	48800	AMCPM-CS
MOBILE ELECTRIC POWER			
COL C. D. STRIDER	Ft. Belvoir	192-43031	AMCPM-MEP

MISCELLANEOUS NUMBERS

STAFF DUTY OFFICER	G2C60	49223	
AMBULANCE			
(During Duty Hours, Call the Clinic)	1S51	48296/48297	
(After Duty Hours, Call the Guard)	Lobby	9-557-1144	
AMC OPERATIONS CENTER	G2C60	48660	
AMC LOG SYS SPT AGCY, WASH TERMINAL	G3C46	49122	AMXLS-LC
AMC PERS SPT AGCY	1N13	48495	AMXMM-P
BUILDING ADMINISTRATOR	1S34	48099	OBM-AMC
CIVILIAN EMPLOYEE HEALTH SERVICE (Clinic)	1S51	48296/48297	
CLASSIFIED MAIL CENTER	G2W07	49585	AMCAM-AMC
COMMAND CONFERENCE ROOM	10N48	48988	AMXCD-PA
CONFERENCE ROOM SCHEDULING	1S17	48485	AMXCD-PA
DRIVERS SERVICE	G2W12	48091/48092	AMXCD-D
GRAPHICS FACILITY	1C22	48491	AMXCD-PG
GUARD OFFICE	Lobby	9-557-1144	
HQ AMC SVC SPT AGCY	1E14	48134	AMXCD
HQ USASTRATCOM–AMC	G3C41	49052	SCCNC-DC
LOCATOR SERVICE (MIL PERS)	2C45	49339	AMXMM-MR
LOCATOR SERVICE (CIV PERS)	2C33	49491	AMXMM-CO
PHOTOGRAPHIC FACILITY	1C44	48489	AMXCD-PP
RECEPTIONIST	Lobby	49191	AMXCD-G
SPECIAL SECURITY OFFICE (SSO)	G2C63	48986/48987	DAMI-SG-AMC
TELECOMMUNICATIONS CENTER	G3C24	49009	SCCNC-CSA-T
TOP SECRET REPOSITORY	G2W09	49590	AMCAM-AMT
UNCLASSIFIED MAIL CENTER	G2C16	49594	AMCAM-AMU
USA ADVANCED MATERIEL CONCEPTS AGCY	7S04	49533	AMXAM
USA EQUIP AUTHORIZATIONS REV CEN	4S22	49300	AMXEA-C
WASHINGTON PROCUREMENT OFFICE, ECOM	4W06	48878	AMSEL-PP-CW

LIAISON

TO HEADQUARTERS, AMC

*UNITED KINGDOM			
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*CANADA			
LTC J. G. HENDERSON	10S44	49679/49680	AMCGS-C
*GERMANY			
COL H. G. RITGEN	10S38	49684/49689	AMCGS-G
MARINE CORPS			
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LOGISTICS CENTER			
LTC D. W. HUFF	10W16	49444	AMCGS-L

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DESERET FIELD OFFICE			
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DCS (ARMY) STRATEGIC COMMUNICATIONS SYSTEM			
MR. J. WILLIS, CHIEF	9S29	48374	AMCPM-COM
REMBASS FIELD OFFICE			
LTC S. OWENS	Ft. Belvoir	192-43335	AMCPM-RBS
2.75" ROCKET FIELD OFFICE			
MAJ W. C. HARDWICK, CHIEF	7N49	48936	AMCPM-RK
SAM-D FIELD OFFICE			
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SATCOMA FIELD OFFICE			
MAJ R. D. CLEMENT, CHIEF	9S29	48372	AMCPM-SC

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HQ, AF SYSTEMS COMMAND*		
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INFANTRY CENTER, FT. BENNING, GA.*		
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US NAVAL WEAPONS CENTER*		
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KIRTLAND AFB*		
COL J. A. BERRIER	964-6615	AMCFO
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5001 EISENHOWER AVE ALEXANDRIA, VA 22333

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DEPUTY CG FOR LOGISTICS SUPPORT	MG J.W. PEZDIRTZ	10N36	49700/49699	AMCDLS
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DEPUTY CHIEF OF STAFF	COL O.J. HARRISON	10S60	49644/49648	AMCDCS

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COMMERCIAL 202-274-XXXX
CABLE ADDRESS CDRAMC ALEX VA
STAFF DUTY OFFICER
AUTOVON 284-9223
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OPERATIONS CENTER 274-8660

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(VACANCY)	10N12	49560/49559	AMCDL
EXECUTIVE OFFICER			
(VACANCY)	10N12	49561/49562	AMCDL

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MR. J. STOLARICK	10N41	49340	AMCDMA

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COMMAND SERGEANT MAJOR	CSM R. C. ECKENROD	10S48	49695/49694	AMCCSM

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SECRETARY	MRS. L. HARMON	10E08	49626/49629	AMCCG

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DEP SECY OF THE GENERAL STAFF	LTC B. A. LOGERQUIST	10S60	49648/49644	AMCGS
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ASST SECY OF THE GENERAL STAFF	MAJ R. WEBSTER	10S54	49649/49648	AMCGS
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ASST SECY OF THE GENERAL STAFF	MAJ J. F. SALMON	10S50	49660/49659	AMCGS
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AMC CHIEF MATHEMATICIAN			
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COL D. M. COPP	8S08	49844/49273	AMCRD-O
ENGINEERING DIVISION			
COL C. W. BARKER	8N08	49785/49788	AMCRD-E
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MISSILES SYSTEMS DIVISION			
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CW4 D. W. SWAFFORD	7N32	48006/48009	AMCAV
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(VACANCY)	7N32	48006/48009	AMCAV
PLANS OFFICER			
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MR. J. ANNEAR	7N32	48009/48000	AMCAV
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MAJ C. S. BULGER	3S20	49025/49024	AMCMM-E

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AMCIG ACTIVITIES			
AMCIG EASTERN INSPECTION ACTIVITY			
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AMCIG WESTERN INSPECTION ACTIVITY			
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SANG MODERNIZATION PROGRAM			
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CDR J. M. HALE, DEPUTY DOD PM	6S32	48800/48799	AMCPM-CS

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AMBULANCE			
(During Duty Hours, Call the Clinic)	1S51	48296/48297	
(After Duty Hours, Call the Guard)	Lobby	9-557-1144	
AMC OPERATIONS CENTER	G2C60	48660	
LSSA MANAGEMENT INFORMATION CENTER	G3C46	49122	AMXLS-LH
AMC PERS SPT AGCY	1N13	48495	AMXMM-P
BUILDING ADMINISTRATOR	1S34	48099	OBM-AMC
CIVILIAN EMPLOYEE HEALTH SERVICE (Clinic)	1S51	48296/48297	
CLASSIFIED MAIL CENTER	G2W07	49585	AMCAM-AMC
COMMAND CONFERENCE ROOM	10N48	48988	AMXCD-PA
CONFERENCE ROOM SCHEDULING	1S17	48485	AMXCD-PA
DRIVERS SERVICE	G2W12	48091/48092	AMXCD-D
GRAPHICS FACILITY	1C22	48491	AMXCD-PG
GUARD OFFICE	Lobby	9-557-1144	
HQ AMC SVC SPT AGCY	1E14	48134	AMXCD
HQ USACC [illegible]	G2C44	48173	ACCNC-DC
LOCATOR SERVICE (MIL PERS)	2C45	49339	AMXMM-MR
LOCATOR SERVICE (CIV PERS)	2C33	49491	AMXMM-CO
PHOTOGRAPHIC FACILITY	1C44	48489	AMXCD-PP
RECEPTIONIST	Lobby	49191	AMXCD-G
SPECIAL SECURITY OFFICE (SSO)	G2C63	48986/48987	DAMI-SG-AMC
TELECOMMUNICATIONS CENTER	G3C24	49009	SCCNC-CSA-T
TOP SECRET REPOSITORY	G2W09	49590	AMCAM-AMT
UNCLASSIFIED MAIL CENTER	G2C16	49594	AMCAM-AMU
USA EQUIP AUTHORIZATIONS REV CEN	4S26	49295/49292	AMXEA-C
WASHINGTON PROCUREMENT OFFICE, ECOM	4W06	48878	AMSEL-PP-CW

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*GERMANY			
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INTELLIGENCE AGENCY			
LTC C. F. FRY	4N29	49795/49797	ICLN-A
MARINE CORPS			
MAJ T. W. ROBERTS	10S44	49676/49675	AMCGS-F
LOGISTICS CENTER			
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LTC P. B. CALDWELL	7N38	48939/48941	AMCPM-AAH
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LTC S. OWENS	Ft. Belvoir	192-43335	AMCPM-RBS
SAM-D FIELD OFFICE			
LTC E. S. PARCHINSKI, CHIEF	7N15	48037/48038	AMCPM-MDW
SANG MODERNIZATION PROGRAM FIELD OFFICE			
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XM-1 TANK SYSTEM FIELD OFFICE			
LTC D. D. GILPATRICK	4S55	49833/49837	AMCPM-GCM

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WRIGHT-PATTERSON AFB*		
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AUGUST 74 1974

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GLOSSARY

AAA	Army Audit Agency
AAH	Advanced Attack Helicopter
AAO	Authorized Acquisition Objective
AAVN	Army Aviation
ACMA	Army Class Manager Agency
ACSFOR	Acting Chief of Staff for Force Development
ADP	Automatic Data Processing
AEC	Atomic Energy Commission
AFETR	Air Force Eastern Test Range
AIF	Army Industrial Fund
ALMC	Army Logistics Management Center
ALPHA	AMC Logistics Program Hardcore, Automated
AMARC	Army Materiel Acquisition Review Committee
AMC	US Army Materiel Command
AMCDL	Deputy for Laboratories
AMCQA	AMC Quality Assurance
AMCRD	AMC Research & Development
AMMRC	Army Materials and Mechanics Research Center
AMRDL	Air Mobility Research and Development Laboratory
AMSAA	Army Materiel Systems Analysis Activity
ANAD	Anniston Army Depot
APA	Army Procurement Appropriation
APC	Armored Personnel Carrier
APG	Aberdeen Proving Ground
ARAAV	Armored Reconnaissance Airborne Assault Vehicle
ARMCOM	US Army Armament Command
ARO	Army Research Office
ARPA	Advanced Research Project Agency
ARRADCOM	US Army Armament Research and Development Command
ARVN	Army Republic of Vietnam
ASA	Army Security Agency
	Assistant Secretary of the Army
ASAP	Army Scientific Advisory Panel
ASARC	Army Systems Acquisition Review Council
ASD (I&L)	Assistant Secretary of Defense (Installation & Logistics)
ASPR	Armed Services Procurement Regulations
AUTODIN	Automatic Digital Network
AVSCOM	US Army Aviation Systems Command
BMG	Budget and Manpower Guidance
BRL	Ballistics Research Laboratories

CB	Chemical Biological
CCAD	Corpus Christi Army Depot
CCP	Consolidation and Container Point
CDA	Catalog Data Activity
CDC	US Army Combat Development Command
CDEC	Combat Development Engineering Command
CINCPAC	Commander in Chief, Pacific
CLGP	Cannon Launched Guided Projectile
COA	Comptroller of the Army
	Current Operating Allowance
COB	Command Operating Budget
COEA	Cost and Operational Effectiveness Analysis
COMSEC	Communications Security
CONARC	Continental Army Command
CONUS	Continental United States
COSIS	Care of Supplies in Storage
CS	Counter Surveillance
C/SCSC	Cost/Schedule Control Systems Criteria
DAAS	Defense Automatic Addressing System
DASA	Defense Atomic Support Agency
DCSLOG	Deputy Chief of Staff for Logistics
DCSOPS	Deputy Chief of Staff for Operations
DED	Diesel Engine Driven
DEMIL	Demilitarization
DEVA	Development Aceptance
DIMES	Defense Integrated Management Engineering Systems
DN	Department of the Navy
DODAC	Department of Defense Ammunition Code
DPG	Dugway Proving Ground
DRP	Directorate for Requirements and Procurement
DSA	Defense Supply Agency
DSARC	Defense Systems Acquisition Review Council
DT	Development Testing
DTC	Design-To-Cost
DTS	Data Transmission System
DYNTACS	Dynamic Tactical Simulator
EA	Edgewood Arsenal
EARC	Equipment Authorization Review Center
ECCM	Electronic Counter Counter Measures
ECM	Electronic Counter Measures
ECOM	US Army Electronics Command
ECP	Engineering Change Proposal
ED	Engineering Development

EF&I	Engineer, Furnish and Install
EPA	Environmental Protection Agency
ESR	Electro Slag Remelt
EWL	Electronic Warfare Laboratory
FKV	Frankfurt-Koenigstuhl-Vaihingen
FORSCOM	US Army Forces Command
FRG	Federal Republic of Germany
FSN	Federal Stock Number
GAMO	Ground & Amphibious Military Operations
GAO	General Accounting Office
GFM	Government Furnished Material
GOCO	Government Owned - Contractor Operated
GSA	General Services Administration
GTED	Gas Turbine Engine Development
HDL	Harry Diamond Laboratories
HEL	Human Engineering Laboratory
HPA	Head of a Procuring Activity
IDA-WSEG	Institute of Defense Analysis - Weapons Systems Evaluation Group
IFF	Identification Friend or Foe
IJCS-PAC	Integrated Joint Communication System - Pacific
IMPACT	Improved Management of Procurement and Contracting Techniques
IPR	In Process Review
IRO	Inventory Research Office
JTCG/ME	Joint Technical Coordinating Group/Middle East
JUSMMAT	Joint United States Military Mission for Aid to Turkey
KPA	Korea Procurement Agency
LAW	Light Antitank Weapon
LBAD	Lexington-Blue Grass Army Depot
LCO	Logistics Control Office
LEAD	Letterkenny Army Depot
LIF	Logistics Intelligence File

LIN	Line Item Number
LOGMAP	Logistics System Master Plan
LPMES	Logistic Performance Measurement Evaluation System
LRIP	Low Rate Initial Production
LSSA	Logistics System Support Agency
MACI	Military Adaption of Commercial Items
MAP	Military Assistance Program
MASF	Military Assistance Service Funded
MASSTER	Modern Army Selected System Test, Evaluation and Review
MECOM	US Army Mobility Equipment Command
MERDC	Mobility Equipment Research & Development Command
MICOM	US Army Missile Command
MIDA	Major Item Data Agency
MILSTEP	Military Standard Procedures
MILSTRAP	Military Standard Transaction Reporting and Accounting Procedures
MILVAN	Military Van
MMC	Maintenance Management Center
MOU	Memorandum of Understanding
MRO	Materiel Release Order
MSC	Major Subordinate Command
MTMTS	Military Traffic Management and Terminal Service
MTOE	Modification Table of Organization & Equipment
MUCOM	US Army Munitions Command
NASA	National Aeronautics and Space Administration
NATO	North Atlantic Treaty Organization
NCAD	New Cumberland Army Depot
NICP	National Inventory Control Point
NORS	Not Operationally Ready, Supply
NSA	National Space Administration
NSN	National Stock Number
NVL	Night Vision Lab
NWC	National War College
OASA (I&L)	Office, Assistant Secretary of Army (In tllations and Logistics)
OCA	Office, Comptroller of the Army
OCRDA	Office, Chief of Research, Development and Acquisition
ODDR&E	Office, Director of Defense Research & Engineering
OMA	Operation & Maintenance, Army
OMAR	Operation & Maintenance, Army Reserve
OMB	Office of Management & Budget

OSD	Office of the Secretary of Defense
OSHA	Occupational Safety and Health Act
OST	Order Ship Times
OT	Operational Test
OTEA	Operational Test and Evaluation Agency
PA	Picatinny Arsenal
PBS	Production Base Support
PCM	Punch Card Machine
PDO	Property Disposal Officer
PEM	Production Engineering Measure
PEMA	Procurement of Equipment & Missiles, Army
PEMARS	PEMA Management Accounting System
PEP	Producibility Engineering & Planning
PEP/IPF	Producibility Engineering & Planning/Initial Production Facilities
PFRT	Preliminary Flight Rating Test
PIP	Product Improvement Program
POE	Port of Embarkation
POL	Petroleum, Oils, and Lubricants
POM	Program Objective Memorandums
PRON	Procurement Request Order Number
PS&ER	Production Support and Equipment Replacement
PUAD	Pueblo Army Depot
QMDO	Qualitative Materiel Development Objective
QMR	Qualitative Materiel Requirement
RAM-D	Reliability, Availability, Maintainability, and Durability
RCA	Radio Corporation of America
RCS	Reports Control Symbol
RDTE	Research, Development, Test, and Evaluation
REMBASS	Remotely Monitored Battlefield Sensor Systems
RFP	Request for Proposal
RIF	Reduction in Force
ROC	Required Operational Capability
ROTC	Reserve Officer's Training Corp
RPSTLS	Repair Parts and Special Tools List
RRAD	Red River Army Depot
SAAD	Sacramento Army Depot
SAAM	Special Assignment Airlift Movement
SAR	Selected Acquisition Report
SEAD	Seneca Army Depot

SEAS	Selective Effects Armament Subsystem
SECDEF	Secretary of Defense
SHAD	Sharpe Army Depot
SHF	Superhigh Frequency
SHORAD	Short Range Air Defense
SIAD	Sierra Army Depot
SICC	Service Item Control Center
SIMS	Selected Item Management System
SINCGARS	Single Channel Ground and Airborne Radio Sub-System
SINCTRAC	Single Channel Tactical Radio Communications
SLAR	Side Looking Airborne Radar
SPEF	Single Program Element Funding
SSA	Supply Support Arrangements
STRATCOM	Strategic Communications Command
TACOM	US Army Tank Automotive Command
TACSAT	Tactical Satellite
TDA	Table of Distribution & Allowances
TEAD	Tooele Army Depot
TECOM	US Army Test & Evaluation Command
TOAD	Tobyhanna Army Depot
TOAMAC	The Optimum Army Materiel Command
TO&E	Table of Organization & Equipment
TOW	Tube Launched, Optically Tracked, Wire Guided
TRADOC	US Army Training & Doctrine Command
TROSCOM	US Army Troop Support Command
TSSP	TACSAT Signal Processors
UMMIPS	Uniform Materiel Movement and Issue Priority System
USACDA	US Army Catalog Data Agency
USACSC	US Army Computer Systems Command
USAREUR	US Army Europe
USAILC	US Army International Logistics Command
USAMICOM	US Army Missile Command
USARBCO	US Army Base Command, Okinawa
USARJ	US Army, Japan
USARPAC	US Army, Pacific
USARSUPTHAI	United States Army Support, Thailand
UTTAS	Utility Tactical Transport Aircraft System
WECOM	US Army Weapons Command
WSMR	White Sands Missile Range

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