Department of the Army Historical Summary

Fiscal Year 1979

CENTER OF MILITARY HISTORY
UNITED STATES ARMY
WASHINGTON, D.C.

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Contents

Tables

Figure

DEPARTMENT OF THE ARMY HISTORICAL SUMMARY

Fiscal Year 1979

1. Introduction

The Army's principal task in 1979, as in other peacetime years, was to man, equip, train, and support combat forces capable of deterring or, if need be, defeating any aggressor. Because resources were limited, this task required the full cooperation and dedication of all components—active, reserve, and civilian. During the past year, this total Army effort stressed improvements in human resources, readiness, deployment, materiel procurement and development, and management.

Regarding the Army's human resources, the capability of the all-volunteer Army came under increased attack, especially as it related to the reserve components, where declining Individual Ready Reserve strength remained a particularly vexing problem. The shortage of medical professionals in the active Army was critical. The accession of high school graduates was the lowest experienced since the all-volunteer Army began and the attrition rate of first-term enlistees was high. While incidents of serious crime declined, drug and alcohol abuse continued to drain the Army's strength. The number of reductions in the Army's civilian employees damaged morale and hindered unit readiness. Hoping to alleviate some of these concerns, the Quality of Life Program, established in March 1979, centralized and gave impetus to the Army's efforts to create an environment for the military community wherein the health, general welfare, and morale of soldiers and their families would receive adequate attention.

Readiness and deployment activities during the past year have centered on preparing combat and support forces for the rapid transition to a war status in defense of North Atlantic Treaty Organization (NATO) countries and to meet other contingencies. NIFTY NUGGET 78, the largest mobilization and deployment exercise accomplished by the United States since World War II, took place in October 1978. It uncovered a number of serious deficiencies in both the active Army and the reserve components for which corrective measures have been taken or are planned. Improved training methodologies and techniques aided readiness. These included a successful test of the one-station unit training concept, the full-time manning program for early deployment of Army Reserve and Army National Guard units, and the use of computer-assisted training programs.

During this past year, the Army increased the equipment and weapons systems in its inventory and improved existing weapons. The Army also moved forward on major research and development efforts designed to bring new weapons systems into its inventory that would be equal to the weapons already in use by Warsaw Pact forces. Significant new purchases included the M60A3 tank, the armored personnel carrier equipped with the improved TOW (tube-launched, optically-tracked, wire-guided) missile system, the M901 improved TOW vehicle, the fully modernized AH1S Cobra/TOW helicopter, and the M109A2 self-propelled and M198 towed 155-mm. howitzers. Production of the XM1 tank began. Rationalization—the objective of achieving economic savings and more efficiency through increased standardization and interoperability of weapons used by members of NATO—was a guiding principle in the development of new weapons systems.

In seeking to improve the management of its human and physical resources, the Army moved ahead in a number of areas. A division restructuring study assessed the organization of the Army's heavy combat divisions, and experiments using alternative structures containing smaller but more numerous maneuver elements began. Based upon ideas contained in a study completed in fiscal year 1978, the Army brought about a number of changes to improve the training and education of individual officers. In the management of installations, facilities, and equipment, energy conservation increased, industrial pollution decreased, property accountability improved, and escalating base operating costs were checked. Continued reliance on automation and the proliferation of individual automated data systems has focused attention on the integration, interoperability, survivability, and security of the various systems. In October 1978, the Office of the Assistant Chief of Staff for Automation and Communications was established to manage the integration of technologies in these rapidly expanding fields.

Details concerning these and other Army activities accomplished during fiscal year 1979 are described in the following pages.

2. Operational Forces

In the fall of 1979, the Army's four-year expansion was complete. The expansion created three new divisions without an increase in troops and established the most stringent standards ever for peacetime readiness. No one doubted that the Army was stronger and certainly leaner than at any other time since the Vietnam War. It was the one credible deterrent against expanding communist forces. But, it was also an Army with some serious organizational problems.

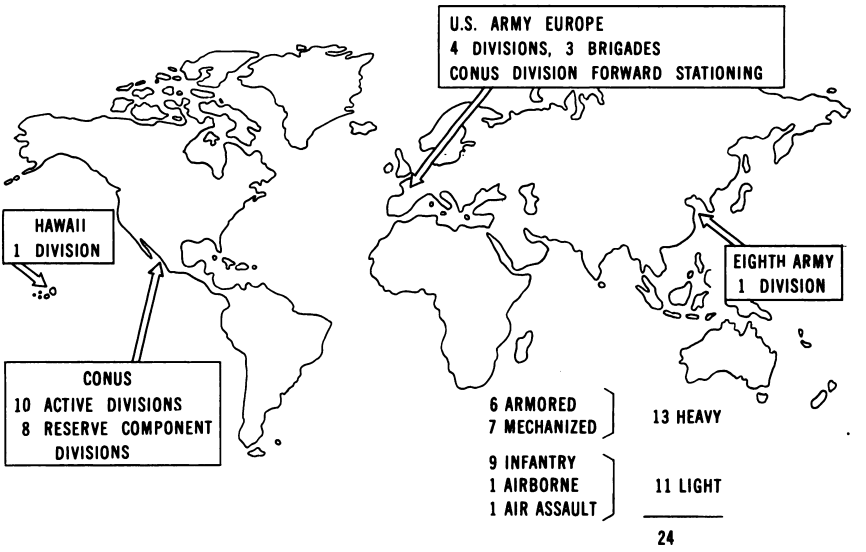
Organization and Mobilization

Of those problems, none presented a larger threat to the military's objectives than the inability of units to meet their deployment schedules. This was caused mainly by resource shortages and complex mobilization procedures. The restructuring of the Army into twenty-four divisions, active and reserve components, had been completed. Nevertheless, except for formations permanently stationed in Europe and Korea (the chief beneficiaries of the specialized programs to enhance force readiness), the Army was still deficient in usable battalions. Only four of the ten active divisions on the American mainland were capable of deploying overseas in an emergency. Furthermore, the logistics story was even bleaker.

For years, logistics had offered reasonable assurance that whatever edge an enemy might have, superior and timely support would put matters right. All that changed as the decade ended. With more active Army manpower being allocated to the improvement of active combat forces, more and more of the combat service support functions were being transferred to the undermanned reserves. By 1978, virtually no base existed that could sustain combat troops beyond the first few weeks of a war. Heightened concern for its power and force mix on the battlefield had brought the Army to the edge of logistical subsistence. Only patchwork solutions were visible.

Despite a long succession of reorganizations and manpower retention programs, the reserve components—both logistical and combat forces—were not adequately prepared. They were required to provide more than half of all the combat battalions necessary for early deployment in the event of a war. These

FIGURE 1—STATIONING OF 24 DIVISIONS



supplemental battalions were affiliated with active forces for training and operations. Four understructured regular divisions, the 7th and 25th Infantry Divisions and the 5th and 24th Mechanized, had recently been rounded out with affiliated brigades. And yet, as NIFTY NUGGET 78 (an exercise in mobilization and deployment) demonstrated, this procedure would not suffice in a European war. Even before the fighting began, many reserve units would be heavily taxed in an effort to supplement the active forces. Barely a month into combat, the Individual Ready Reserve would be quickly exhausted.

In terms of mobilization, the Army ended the year in considerable trouble. Although the fiscal year 1980 request takes aim at the most glaring deficiencies, especially in prepositioned equipment, few expect a significant improvement to occur soon. This is how it has always been in the peacetime reinforcing establishment—there are always ammunition shortages, manpower shortages, and inadequate funds. To express concern, as was being done throughout the Army, is not in itself going to hasten significant improvement. Better for now, as the Chief of Staff put it, to establish realistic priorities and to balance the desirable at home against the necessary abroad. For it is abroad that the

Army's basic mission lay, and where its efficiency to fight will have to be judged. It is also abroad that the Seventh Army lay, with a heritage of neglect which has yet to be fully overcome.

Europe

The "lost decade," as it was known to the fifteen nations of the Atlantic Alliance, had ended four years earlier when NATO military advantages were lost to the Warsaw Pact and permanent inferiority in Europe loomed. Since then, force improvement programs have increased, but at a price. Every NATO member had pursued their force improvements individually, with little allied coordination. By the end of the 1970's, the armies of the alliance were less operationally compatible than they had been five years before. Planners generally agreed that of all the NATO armies, U.S. Army, Europe (USAREUR), would have to take the lead in standardization.

In 1979, U.S. Army, Europe, was about 200,000 soldiers strong, or more than a quarter the strength of the active Army. With the exception of Brigade 75 (which had transferred in late January to northern Germany) and the Berlin Brigade, USAREUR was assigned to the Central Army Group. U.S. Army, Europe, contained four divisions, four separate brigades, and two armored cavalry regiments. The forces were becoming stronger, both armored and mechanized, an expression of shock action and firepower directed at Soviet advances. For example, cavalry units exchanged their Sheridans for M60's, 210 Cobra/TOW's in ten companies were installed on the ground, and armored units increased the size of their tank crews. Artillery forces had been strengthened by the arrival of three battalions of medium and heavy artillery (with increases in the number of tubes for every battery) and adoption of a novel uploading system to quicken the responses of ammunition units alerted for battle. Additional infusions of equipment and technology were to follow, and progress was so sure that in 1978 a proposal was made to turn over to Germany nearly all the base management operations. The proposal, referred to as USAREUR—An Army Deployed, would be negotiated with the NATO allies and would better enable the Army to prepare for war.

In the early years of the alliance, questions of cross-servicing and standardization had rarely arisen. With American military assistance programs supplying the allies with equipment, the standard division reflected American traditions. Unfortunately, the disappearance of the division coincided with the Vietnam

War, and by the time the United States could again focus on its NATO forces, the allied armies could hardly so much as communicate across corps boundaries.

This was the situation, when the allies began exploring "interoperability." Serious disagreements over strategy, questionable dollar savings, and national will and pride had all hindered cooperation. However, everyone did agree on one point: not until 1983, at the earliest, would stocks of ammunition available to the alliance sustain a thirty-day war. With that single acknowledgement, working group discussions on both sides of the Atlantic continued as the fiscal year ended.

The Pacific

In the other global trouble spot where the Army stood on guard, it was a year of discovery and surprise. The withdrawal of the 2d Infantry Division from its sectors in South Korea, announced by President Carter in 1977, had been based on a favorable assessment of the peninsular balance. But in 1978, new intelligence indicated that the earlier estimate had been overly optimistic, that North Korea's forces, the forth largest in the communist world, had much more capability to launch an invasion of the Republic of Korea than anyone in Seoul or Washington had previously thought. In July 1979 the President decided to temporarily freeze combat withdrawals. Certain supporting units would still depart in 1980, but air defense units would leave somewhat later. Equipment would continue to be turned over to the Korean forces. Other than that, the Army would remain on duty in South Korea.

The planned withdrawals had brought about an important change in command and control. The idea of a single headquarters directing Korean and American forces had been under consideration for a number of years, and had been proven, as far as planners were concerned, by the I Corps (ROK/US) Group in the western sector. Late in 1978, therefore, symbolizing our commitment to the Republic of Korea, the Combined Forces Command was inaugurated in Seoul. The commander in chief was an American, and commanded the Eighth U.S. Army. His deputy was a South Korean. The command proved its worth as a planning tool in managing TEAM SPIRIT, their first training exercise. By completion of the exercise late in the fiscal year, 160,000 troops had participated. They tested not only interoperability, but also reinforcement by American combat elements from stations as far away as Hawaii.

One of those elements was Hawaii's 25th Infantry Division,

at the time a subordinate unit of Army Forces Command. For years, the absence of a headquarters specifically responsible for the Army in the Pacific (other than Korea and Japan) had been regarded as a serious weakness. That was the official interpretation given by the Joint Chiefs. Consequently, on 23 March, the Army Western Command was established at Fort Shafter, giving the Army a planning nucleus to hasten its passage to war in the Pacific theater. Now, as the Pacific reinforcing contingent, the 25th Division had its next higher headquarters right at home.

The Third World

Building up the land forces in Europe and maintaining a position in the Pacific had been American goals for nearly three decades. It was something of a political departure, then, to create a rapid deployment force for use in global contingencies outside NATO. This raised questions in Washington about fundamental American interests and the projection of power.

As originally conceived and constituted by Army planners, the force was a mix of units from all the services—the Army's contribution being a command and control headquarters, light and heavy divisions and brigades, and support elements. It was not, officials emphasized, a numerical addition to the strength of the military establishment, but a quick combined reaction force which, if called for in Third World emergencies, would rely upon existing units without mobilization. How the Army and the other services would work around their grievous shortages was not resolved. But increases in spending in fiscal year 1980 offered a good beginning.

When the fiscal year ended, the Army's rapid deployment force was still uncertain. Decisions concerning commanders, basing, and airlift would take months to emerge from a cautious administration.

Support for the Civil Authorities

In another field of combined operations, humanitarian relief and assistance, and teamwork and readiness had long been the accepted standard. Nowhere was this demonstrated under conditions of greater urgency than in the grisly mission of recovery in Jonestown, Guyana. Three commands joined in the task force to evacuate the remains of the American cult members: the U.S. Readiness Command, the Military Airlift Command, and the U.S. Southern Command. The two-month operation cost the Department of Defense over $4 million and was possibly the most spectacular military commitment to emergency assistance.

Before the year was out, fire fighting, snow removal, and hurricane and flood relief would engage the Army's forces, from Hawaii to the Caribbean. The nuclear incident at Three Mile Island called forth several transportation units. Finally, as throughout the 1970's, Army and Air Force helicopters sustained the Military Assistance to Safety and Traffic program (MAST). In the program's nine years of existence, its helicopters have flown 36,000 hours, transporting patients, medical teams, and supplies. By mid-1979, twenty-eight MAST sites were providing communities in the United States with emergency services.

Chemical Warfare

During the past year, the U.S. continued to negotiate with the Soviet Union on the subject of a comprehensive treaty to ban chemical warfare. Since 1977, the intent has been to reach an agreement which, while permitting each the most advanced technologies for protection against a chemical attack, would prohibit production, stockpiling, and retention of toxic weapons. Twelve negotiation sessions have failed to produce an agreement on the issues of declaration of stocks, verification, and entry-in-force. The U.S. continued to adhere to its long-standing "no first use" policy while maintaining a chemical warfare stockpile for deterrence and for retaliation, should deterrence fail.

The establishment of the Nuclear and Chemical Directorate on the Army staff, to oversee all nuclear and chemical matters, signaled an awareness of the impending threat of chemical warfare. Four chemical defense companies were activated for permanent duty with forces in Europe to improve the chemical defense posture.

3. Force Development, Doctrine, and Training

The U.S. Army fulfills its primary mission—deterrence—by continually seeking to attain maximum force readiness, that is, preparedness to go to war. Striving to achieve this goal in fiscal year 1979, the Army underwent significant changes in force structure, revised and adapted concepts and doctrine to conform to those changes, and vigorously pursued a broad and varied program of training and schooling at virtually every level of the active, reserve, and civilian components.

Force Development

Alterations occurred in the force structure of the Army in 1979 because of shifts in national strategy, the accelerated efforts to modernize weapons and equipment, the eroding effects of inflation on defense budgets, and the perennial need to balance available forces to meet or deter potential aggressors as well as contingencies that threaten peace or American interests abroad. There was no significant change, however, in the overall configuration of the Army's structure, which consisted of twenty-four divisions: sixteen in the active Army and eight in the National Guard.

Continuing in the pattern of recent years, the Army employed a variety of sophisticated information and management systems to assist its planning staffs in determining the program requirements for the 24-division force structure. In producing the basic programming document for force structure this year, the Total Army Analysis (TAA) for 1986 instituted some important changes in its methodology. These changes included fully integrating the Army staff, major commands, and interested Army agencies into the data base and allocation review processes; improving model simulation of enemy reinforcement capability and tactics; and improving those techniques designed to provide a more accurate assessment of casualties and the effects of battlefield obscuration and electronic warfare. For the first time, the TAA for 1986 included, in addition to the total force structure requirement, a program force within an established force structure allowance for each year covered. With the objective of institutionalizing the TAA, the Force Management Directorate and the Office of the Deputy Chief of Staff for Operations and Plans (ODCSOPS)

prepared an Army Regulation, which defined the terms of the broader participation in the process by the Army staff, major commands, and other agencies. Publication of the AR is scheduled for the second quarter of fiscal year 1980.

With the TAA basic programming document as a guide, the Army used the Force Packaging Methodology management approach to establish force readiness priorities for equipping, training, modernizing, manning, and sustaining combat, combat support, and combat service support forces. Based on their assigned missions, requirements for Army forces, active and reserve, are broken into four groups or force packages. The first, or top priority package, includes the forces and supplies already in Europe which will reinforce NATO within thirty days after mobilization. It also covers those units assigned to support non-NATO contingency operations. The second and third packages are comprised of the forces required to reinforce NATO sixty and ninety days, respectively, after mobilization. The last force package provides for any remaining Army requirements.

The trend has continued for increased reliance on the Army National Guard and the Army Reserve. In the event of full mobilization, the reserve components are scheduled to provide more than 52 percent of the armor and infantry battalions, more than 58 percent of the field artillery units, 45 percent of the aviation units, and 65 percent of the combat support and combat service support units in the total Army. In reinforcing NATO in a European war, four National Guard brigades would supplement and deploy with four understructured active Army divisions. In addition, a number of reserve force combat service support units would supplement corps support and theater commands.

Consistent with the priorities established under the Force Packaging Methodology, the Army made changes in fiscal year 1979 designed to improve the combat capability of those forces that would be called upon initially to fight in the event of a war in Europe. Specific force structure changes for Europe include activation of four chemical defense, two signal, and four division missile maintenance companies; phased reorganization of additional aviation units; activation of two Stand-off Target Acquisition System (SOTAS) detachments; transfer of two field artillery battalion equivalents (155-mm. howitzers); and increased tank crewmen. The Army also continued the 5 percent over-manning of those divisions selected to deploy first from the continental United States (CONUS) following the outbreak of a European war. To improve the European forces, the Army plans in fiscal year 1980 for activation of two Combat Electronic War-

fare and Intelligence (CEWI) battalions, two chemical defense companies, and three decontamination detachments. They also plan to increase manpower in the divisions and brigades, the Corps Support Commands (COSCOMS), the 21st Support Command, and Brigade 75. In addition, the Army provided for Allied Forces Central Europe (AFCENT) reserve planning and an increase in the Authorized Level of Organization (ALO) for active logistical combat service support units.

Improvements in the CONUS force structure in fiscal year 1979 include mechanization of the 24th Infantry Division, and activation of one chemical defense and three Army security companies, one tank battalion, and one air defense battalion (Hawk). For 1980, the Army plans to request activation of three tank battalions and one mechanized battalion, four CEWI battalions, one forward support battalion, two combat service companies, and ten combat service support companies. In addition, the Army projects conversion of two infantry battalions into mechanized battalions and reorganization of selected aviation maintenance units.

The U.S. Army Forces Command (FORSCOM) continued to execute a major portion of the force development activities in the active Army in fiscal year 1979. During the year, FORSCOM activated 55 units, inactivated 31, deployed 4 to Germany, reorganized about 400 units, and redesignated the 24th Infantry Division as a mechanized unit. The command executed Phase III of the Aviation Requirements for the Combat Structure of the Army Study (ARCSA III), which involved inactivation of twelve aviation units, including the three heavy lift companies employing the CH–54 Flying Crane rendered obsolete by the improved CH–47D helicopter. In implementing the plan for realignment of air defense capabilities in the continental United States, FORSCOM inactivated the 31st Air Defense Artillery Brigade in Florida, and transferred its three missile battalions (two to Fort Bliss, Texas, and one to Fort Bragg, North Carolina). It also inactivated a missile battalion and its support elements in Alaska. In an effort to make more efficient use of its Transportation Corps troops, FORSCOM inactivated a terminal battalion and a boat company at Fort Eustis, Virginia, and used those troops to activate thirteen movement control detachments, fourteen cargo documentation detachments, and four contract supervision detachments at various locations throughout the command. In accordance with a plan approved by the Joint Chiefs of Staff (JCS), the U.S. Army Commander in Chief, Pacific (CINCPAC), Support Group and FORSCOM's U.S. Army Sup-

port Group were consolidated in March 1979 to form a new major Army command, the U.S. Army Western Command (WESTCOM). Subsequently, in September all active component units in Hawaii and vicinity hitherto assigned to FORSCOM transferred to headquarters, WESTCOM. On 1 October 1979, all Army Reserve units in Hawaii and vicinity previously attached to FORSCOM transferred to WESTCOM for command, management, and supervision. At the end of the fiscal year, FORSCOM inactivated the 4th Brigade of the 2d Armored Division in compliance with the provisions of the Army Realignment Plan set forth in the Program Objective Memorandum (POM) for fiscal years 1981–85.

Force development in the reserve components in fiscal year 1979 emphasized changes designed to increase their capability to support and augment units of the active Army in a European war or in other contingency operations. The Army continued, for example, the Reserve Component/Active Army Affiliation Program, with the goal of improving reserve unit readiness. By the end of the fiscal year, ninety-three reserve component battalions and sixty-nine company and detachment size units were in the program.

Similarly, changes in the FORSCOM Reserve Component Troop Action program supplemented force development activities in the active Army units. FORSCOM had planned for fiscal year 1979 activation of twenty-four Army Reserve units, inactivation of thirty-two, and reorganization or conversion of seventeen. However, some activations were deferred because of equipment and support shortages. Some inactivations of field depots and corps support groups were also deferred until the Army determined future requirements. Consequently, FORSCOM completed only a portion of the program during the fiscal year, activating ten Army Reserve units, inactivating sixteen, and reorganizing or converting twelve.

Consistent with the Army's program for force modernization, development of new or technically improved weapons systems and equipment progressed in fiscal year 1979. But, most major items under development did not reach the designated units. This was the case, for example, with the XM1 tank, the improved TOW (tube-launched, optically-tracked, wire-guided) missile system, the XM2 infantry and XM3 cavalry fighting vehicles, the General Support Rocket System (GSRS), the AN/TPQ–36 mortar locating radar, and the U.S. Roland-SAM short-range missile. However, some new weapons systems did reach the units. Following acceptance by the Army at the end of October 1978,

nineteen UH–60A Black Hawk helicopters were delivered to Army aviation units. In the summer of 1979, two battalions were armed with M60A3 tanks before problems in the production of fire control components temporarily delayed further deliveries. In July 1979, ninety-one fire control operator/maintainers and launcher crewmen graduated from the contractor conducted training program for operation of the Patriot/Improved Hawk missile, soon to go into production. They will form the cadre of the 4th Battalion, 62d Air Defense Artillery, which will be armed with the Patriot.

The introduction of new types of weapons and equipment established the need for fundamental changes in the future organization and composition of basic combat units of the Army. In early 1976, the U.S. Army's Training and Doctrine Command (TRADOC) undertook a long-range study to determine the best size, mix, and organization of a heavy division (both armored and mechanized). The purpose of the study was to develop a plan that would accommodate the demands of the many new weapons and equipment systems that would be introduced into the Army's division by the mid-1980's. As the study progressed, it became known as the DIVISION 86 project. Its objectives broadened to include not only new systems but also tactical and organizational concepts, a framework for force structure analysis, and a means to identify required modifications in training. A detailed description of the heavy division studied and tested since initiation of the project appears in the Department of the Army Historical Summary for Fiscal Year 1978. During 1979, TRADOC conducted three workshops which discussed the progress of the DIVISION 86 project and established the need to present the results to the Army Commanders Conference in October 1979 and to the Chief of Staff in July 1980. The workshops discussed the findings and conclusions of a number of studies relating to key problems, concepts, and materiel systems of the heavy division. Specific topics included tactical maneuvers such as delay and disruption of enemy second echelon forces, the air-land battle, and the standoff target acquisition system. The participants also discussed the basic aspects of structural framework: what should be the nature and composition of the corps in which the division would operate and should the brigade organization be flexible (drawing its supporting elements from a division base) or fixed (with most of the elements forming an organic part of the brigade). The proposed DIVISION 86 organization that emerged as an objective plan comprised more than 19,000 soldiers and featured four company tank and mechanized battalions, four

tank platoons, nine-man mechanized infantry squads, antiarmor companies, eight-gun howitzer batteries, a composite eight-inch General Support Rocket System (GSRS) battalion, and an air cavalry attack brigade.

Force modernization also created the need for reorienting and restructuring general support maintenance elements in the corps. In May 1979, the Vice Chief of Staff approved a Restructured General Support (RGS) concept that envisioned establishment of six commodity-oriented support battalions: wheel vehicle, combat vehicle, communication and electronic support, aviation support, missile support, and ground support equipment. The Office of the Deputy Chief of Staff for Logistics (ODCSLOG), appropriate major commands, and other Army activities collaborated in the development of tables of organization and equipment, revision of the applicable parts of the TAA, consideration of the problems of unit conversion, and other actions necessary to carry out the RGS concept.

The Wartime Medical Posture Study, begun in September 1978, comprehensively reviewed the status of medical support with respect to a NATO/WARSAW Pact conflict. The study, accomplished by representatives from the Joint Chiefs of Staff and the services, analyzed resource requirements for each service's medical support and assessed its capabilities. It revealed special problems requiring further study in the area of medical corps staffing of table of organization and equipment units, the number of operating rooms in those units, and patient care.

The Joint Contingency Construction Requirements Study (JCCRS) II represents the second phase of a study originally undertaken in November 1975 by the Joint Chiefs of Staff in conjunction with the services. JCCRS II will develop the Civil Engineering Support Plan Generator (CESPG), which will provide the data to determine worldwide joint construction requirements and the forces needed to fulfill those requirements.

The Army's policy of relying upon reserve component units to augment the active Army in contingency situations requiring mobilization has, in recent years, been threatened by inadequate numbers of trained soldiers in the ARNG and USAR. Since the adoption of the all-volunteer Army as the major source of manpower for the Army, membership in units of the Selected Reserve has declined until, at the end of fiscal year 1979, it stood at 130,000 below the 660,000 peacetime goal authorized by Congress. In the same period, the Individual Ready Reserve, the principal source of trained soldiers to fill vacancies in units upon mobilization and as replacements for initial battlefield casualties,

has declined to less than 200,000. This figure was significantly below the number that would be required until newly trained draftees would become available to sustain the Army's combat forces. The situation was further provoked because most of the shortages were in the critical areas of combat and medical skills.

Beginning in 1977, the Army took steps to solve the problem of mobilization manpower shortages. In August of that year, the Office of the Assistant Secretary of the Army for Manpower and Reserve Affairs established a plan for providing effective management and utilization of the Retired Reserve in the event of mobilization. Under the plan, these reservists would be ordered to active duty when not enough qualified active reservists or inactive national guardsmen were available. Various categories of the Retired Reserve would be called to fill the CONUS post, camp, and station positions, thus freeing active personnel for overseas duty.

Before August 1977, very little information about Regular Army retirees was retained in the Army's computerized files. Consequently, personnel officials had to procure the additional data required from other sources, such as that in the files of the U.S. Army Finance and Accounting Center and from questionnaires sent out to approximately 38,000 retired Regular Army officers and 45,000 retired Regular Army enlisted personnel. To facilitate the successful operation of the retiree mobilization plan, Army personnel officials set up a system for assembling the essential data needed concerning each retiree. Data on grade, age, physical qualifications, and other pertinent information is now available in computerized data banks. Also, files are available on those Regular Army retirees who meet the requirements for placement in Category I (those retired less than five years who satisfy age, grade, and medical criteria). The effort was concentrated on Regular Army retirees pending changes in policy and statute necessary to permit reserve retirees to be ordered to active duty.

Concepts and Doctrine

The development of concepts and doctrine is an integral and indispensable element in the modernization of weapons systems, equipment, and the force structure of the Army. Concepts provide the philosophical framework while doctrine provides the fundamental principles that must precede, accompany, and guide the modernization process. In fiscal year 1979, Army development and activities at all levels were affected by the introduction

of new concepts and doctrine and revisions to those previously established.

At the international level, Army representatives contributed to the formulation of doctrine concerning weapons limitation. In 1979, Army representatives participated in two conferences sponsored by the United Nations concerning weapons limitation—a preparatory conference in Geneva, 19 March–13 April, and a formal conference in the same city, 10–28 September. The conferences considered the prohibition or restriction of certain conventional weapons which may be injurious to the user. The delegates also considered limitations on small caliber, high velocity projectiles; mines and booby traps; incendiaries (including napalm); and a prohibition of munitions with fragments not detectable by X-ray.

The Army continued to work in fiscal year 1979 on a number of broad concepts designed to bring into focus all factors essential to achievement of a level of force readiness that would assure its success in dealing with any future conflict in which it might become involved. In November 1978, the Training and Doctrine Command (TRADOC) distributed Army-wide a new document, the Battlefield Development Plan (BDP). This plan gives focus to TRADOC's efforts in materiel development and training, force structure, and concepts and doctrine development. The BDP is keyed to a view of the battlefield in terms of two related concepts—the central battle and force generation. The central battle is a tangible representation of combat by a division operating in a corps in Europe. Force generation addresses the problem of how to concentrate the combat power of the division in the central battle. Each of these concepts is viewed in terms of five critical tasks on the battlefield. The critical tasks for the central battle are target servicing, air defense, suppression-counterfire, command-control-communications (C3) electronic warfare, and logistical support. The critical tasks for force generation are interdiction, C3 electronic warfare, force mobility, the fusion of surveillance, and reconstitution of forces damaged or destroyed. This dual analytical approach provides a systematic means and a new functional focus for assessing the division's deficiencies and for developing, studying, and testing needed systems.

The role of automated systems in future military operations and the ever-widening proliferation of these systems in the Army has made interoperability—the ability to operate effectively together—a necessity. Consequently, both TRADOC and the U.S. Army Development and Readiness Command (DARCOM) have taken measures to solve the problem. In January 1979, ODCSOPS

organized an Army Interoperability Office to manage and coordinate these efforts. TRADOC and DARCOM have established plans that come under the purview of this office. TRADOC's Army Battlefield Interface Concept 78 (ABIC 78), approved in December 1978, presented concepts for the interoperability requirements of all battlefield automated systems that will go into operation through the year 1985. The 1979 version of this plan (ABIC 79), sent to the Department of the Army for approval in October 1979, updated ABIC 78, incorporated systems to be placed in the field in 1986, and included interoperability requirements for echelons higher than corps, with other services, allies, and NATO. DARCOM's Battlefield Automation Interoperability System Engineering Management Plan (BAISEMP), approved by the Department of the Army in May 1979, provides management techniques which that command will use in developing, testing, placing in the field, and managing ABIC interoperability requirements. In relation to development of interoperability plans, TRADOC, in June 1979, approved a contract for preparation of a Technical Interface Concept (TIC), which will specifically identify and locate all information on the battlefield.

During fiscal year 1979, interoperability became a joint effort between the Army and the Air Force in developing and improving coordination of air-land forces on the battlefield. Prior to issuing a joint document, both services reviewed concepts designed to provide more effective Army/Air Force coordination in tactical situations involving several corps. Through the Air-Land Forces Application Agency at Langley Air Force Base, Virginia, the two services published joint mission analyses (MAA) on reconnaissance-surveillance and destruction of enemy air defenses, and are preparing other analyses on air-air defense and close air support-battlefield interdiction. The joint air attack team (JAAT) training of Air Force units and Army attack helicopter units continued, including joint countering of enemy attack helicopters.

The concept of command and control—the exercise of authority and direction by designated commanders directing forces in the accomplishment of missions—like that of interoperability, has become the focal point of many systems in the Army, some in operation and others still under development. In 1976, the Deputy Chief of Staff for Operations and Plans, to consolidate these systems, created the Army Command and Control Master Plan (AC^2MP). This plan will consolidate requirements and provide solutions for problems. The objective of the plan is to pro-

vide the Army with a means for managing all developments in the command and control area. In fiscal year 1979, the Under Secretary of the Army, Vice Chief of Staff, and the Command and Control Council approved the framework upon which the AC²MP was based and the plan was put into effect. The framework was derived from an investigation into Army forces engaged in a variety of hypothetical situations, including nuclear and conventional conflicts in Europe, Korea, and Iran; civil disorders; disaster relief; noncombat evacuation and similar crisis missions; and in reconstituting military forces and supporting civil defense following a major nuclear attack on the continental United States. The framework included consideration of command and control functions for headquarters in five categories or systems elements: intelligence, surveillance, and target acquisition; data collection and processing; communications; facilities; and command aids. The requirements derived from these categories were matched against projected Army capabilities in 1985 and deficiencies were identified. The AC²MP framework was then formulated so as to provide the Army with a credible, balanced capability consistent with fiscal realities, achievable in three phases (1985, 1989, and 1992). The AC²MP calls for establishment of an all-source analysis center/system (ASAC/ASAS), expansion of a tactical operations system to the corps headquarters, increased emphasis on systems interoperability, improved communications to avoid jamming, devising ways to ensure survivability of the command and control mechanism in a conventional war, development of long-range moving target indicators, increased capacity and accuracy of communications intelligence sensors, and improved communications and continuity of operations for rebuilding military forces following an enemy attack in the continental United States. AC²MP stipulates that the equipment needed to establish and operate the various command and control systems should be funded competitively under the regular planning, programming, and budgeting system.

One of the many command and control systems under development in the Army in 1979 was the Tactical Fire Direction System (TACFIRE) for the field artillery. A divisional artillery unit at Fort Hood, Texas, became operational with the system in April 1979, and other Army units will receive TACFIRE in early 1980. The Army's goal is to have TACFIRE operational in all designated units by 1984.

In the process of force modernization, the Army continued to apply new or improved concepts and doctrine to a variety of weapons systems. The Defense Advanced Research Projects Agency

(DARPA), the Air Force, and the Army continued in an "Assault Breaker" technology investigation program. The objective of this program is to demonstrate the technological feasibility of concepts pertinent to acquisition and engagement of moving armored formations at long range. As the investigation progressed, the Army ascertained that any concepts evolving from the program would have to be incorporated into plans to develop a weapon system designed to replace the current Lance missile system. Consequently, TRADOC prepared a Mission Element Need Statement (MENS) describing the need for a Corps Support Weapon System (CSWS). This CSWS envisioned a corps-level nuclear and nonnuclear interdiction weapon that would be more effective than Lance in range, efficiency, lethality, accuracy, and the type of targets that it could engage. The Army expects to begin a CSWS development program following a concept definition on an evaluation of alternative concepts.

There were a number of developments relating to antiarmor weapons systems during fiscal year 1979. Early in the year, TRADOC's Special Study Group for Close Combat Antiarmor Weapons Systems recommended to the Vice Chief of Staff and the Under Secretary of the Army competitive development of a supersonic laser beamride antiarmor missile. Lack of funds and commitments with our European allies prevented approval of the program, but, in lieu of it, the Army sanctioned a major effort to improve the TOW antiarmor system. The Army also approved continued production of the improved TOW missile, with the goal of increasing the inventory of that weapon to established war reserve requirements. TRADOC and DARCOM undertook a study of the medium-range antiarmor system to correct any defects in its operation. This system was also discussed with our European allies. Safety problems were discovered in the Viper antiarmor rocket system, under development to replace the present Light Antitank Weapon (LAW) as the antiarmor weapon for the individual soldier. Accordingly, distribution of the weapon to field units was postponed for a year to permit redesign of certain components.

Improvement in overall safety and security was the objective of two new study programs relating to Atomic Demolition Munitions (ADM's). The first, to be carried out jointly by the Department of Defense and the Department of Energy, will assess feasible alternatives pertinent to modernizing the Medium Atomic Demolition Munition (MADM). The second, also jointly sponsored, will be concerned with the cost and feasibility of modernizing the Special Atomic Demolition Munition (SADM).

During fiscal year 1979, force modernization brought major changes and new developments to the concepts and doctrine relating to Army logistics. In May 1978, the Department of the Army Select Committee approved twenty-one logistics concepts pertaining to planning, policy, doctrine, and training in the Communications Zone. Headquarters, Department of the Army (HQDA), assigned TRADOC the task of carrying out the doctrinal and monitorial actions required to translate the twenty-one concepts into operational reality. The U.S. Army Logistics Center drew up a plan to implement the concepts and, following approval by TRADOC, they will be submitted to HQDA, for final review and approval.

Army planners have recognized that the increasing lethality of modern warfare, the high mobility of defense forces, and the limits on available resources dictate that in military operations the maximum number of combat vehicles possible must be returned to the battlefield if the Army is to be able to sustain the combat effectiveness of its forces. Information forthcoming from the DIVISION 86 restructuring studies and from other recent investigations of support concepts have further emphasized the significant role of vehicle recovery to successful operations on the modern battlefield. The Army, therefore, inaugurated a Battlefield and Evacuation Study to be completed in two phases: tracked vehicles by the end of fiscal year 1979 and wheeled vehicles in fiscal year 1980. Following reviews of the preliminary results of the study and a briefing of the Under Secretary of the Army, the scope of the study was expanded to include certain aspects of the DIVISION 86 study. With this expansion, completion of the first phase was extended to fiscal year 1980 and the second phase was extended to 1981. In addition, a third phase, to be completed in 1982, will ascertain the appropriate doctrine for recovery and evacuation at the corps level.

The Munitions Systems Support Structure (MS3) study, which TRADOC has been conducting for a number of years, continued in 1979. The broad purpose of MS3 is to make a critical analysis of ammunition support from the port to the brigade area. Directed in the beginning to the 1976–80 period, TRADOC has extended MS3 to cover the 1981–89 period as well. In April 1979, TRADOC submitted a final draft of the original MS3 report to the Department of the Army and briefed the Army staff on its results. Following the briefing, the staff suggested that TRADOC investigate some related issues and present its findings in March 1980. Some of the MS3's conclusions as of the end of fiscal year 1979 were: current doctrine and organization concepts

for ammunition support units are inadequate to meet user requirements for Class V support; the munitions support structure needs to be extended into the brigade rear in order to provide responsive support; and support units proposed by the study would be responsive and cost effective.

Training and Schooling

The quality of individual and unit training constitutes a key element in the attainment of force readiness. In fiscal year 1979, the Army, striving to achieve maximum effectiveness in all aspects of training deemed essential to force readiness, devoted much effort to improve its training program and facilities.

The training program of the U.S. Army Forces Command (FORSCOM), the largest of the Army's commands, was representative of what was done on an Army-wide basis. Consistent with the total Army concept, FORSCOM's program provided for training both the active and the reserve components, recognizing that the capability and training requirements of each differed. FORSCOM emphasized that, for commanders in both components, providing good training was their primary task. The principal goal of this training was to produce units that could mobilize and deploy effectively on the modern battlefield at the least cost. Consequently, FORSCOM's training programs were designed to aggressively seek long-term improvement while maintaining short-term readiness. The objectives for unit training were to increase development and employment of junior leaders, make the most of each soldier's training day, and increase the proficiency of the individual soldier and the unit in performing the tasks set forth in the appropriate training manuals and training programs.

While actual training in FORSCOM was decentralized to the maximum extent feasible, certain fundamental principles guided training management at all levels. The standard philosophy for training management was formalized in the newly developed Battalion Training Management System (BTMS). The BTMS identified critical training management tasks performed at each leadership level in the battalion. In coordination with TRADOC's Army Training Board, FORSCOM began installation of BTMS in February 1979. In a series of workshops designed for both the active and the reserve components, BTMS provided the training skills, knowledge, and techniques to all the leaders within a battalion at one time so they possessed the same baseline skills. The workshops presented the principles of performance-oriented training, decentralized training, and training management, with emphasis on management participation. They also

addressed techniques for scheduling training based on the needs of units and individuals.

Placing the BTMS into operation in FORSCOM required development of long-range (one year) and short-range (three months) training plans as a prelude to preparation of weekly training schedules. Whenever possible, training objectives at the company and battalion level were expressed in terms of proficiency in individual training tasks from the soldier's manual and unit tasks from the Army Training Evaluation Program (ARTEP), which is described in more detail later in this chapter. For units not part of the Strategic Army Force (STRAF), training was based on the unit's mission. Therefore, mission-related unit training was achieved in conjunction with normal day-to-day operations. These units also conducted training programs designed to maintain a high level of individual proficiency and professionalism in personal knowledge subjects, military occupational specialty (MOS) skills, physical fitness, and individual weapon proficiency. Company commanders specified individual training objectives that were related to proficiency in the unit training objectives of the same period or cycle. Subordinates were permitted maximum flexibility in determining how to train and how to achieve the proficiency specified by their training objectives. Under the BTMS, individual training was integrated in all phases of unit activity. Unit commanders conducted periodic internal evaluations as a supplement to those conducted by higher headquarters to determine if they were achieving their training objectives.

Special efforts were made to assure that the BTMS-oriented training was effective with all FORSCOM units. Active component commanders established training priorities to ensure that diversionary activities such as special duty, administrative appointments, general educational classes, honor guard, fatigue details, and routine medical care posed only a slight disruption to the training program. Commanders of combat support and combat service support units sought opportunities to perform field training by supporting other troops at realistic field sites under tactical conditions. Those commanders of support units who did not have this opportunity conducted their own quarterly periods of field training to provide experience in carrying out unit missions. Finally, the commanders of FORSCOM's active component units used every opportunity to maintain small unit integrity when conducting training and support missions. In this way they achieved maximum training effectiveness by assigning support missions to squad, platoon, or company size units on a

rotational basis for specified periods rather than through assigning tasks on an individual basis.

The Army completed the integration of male and female recruits in initial entry training. As of this fiscal year, there was no differentiation in basic training or in training programs for MOS's open to women.

Two serious training abuse incidents occurred in the summer of 1978. The first incident, at Fort Jackson, South Carolina, resulted in the death of two trainees on the first day of training due to heatstroke. General court-martial proceedings found two drill sergeants guilty of involuntary manslaughter, negligent homicide, and dereliction of duty. The second incident, at Fort Dix, New Jersey, involved the systematic abuse of twenty-two trainees by five drill sergeants. Three of the five drill sergeants were convicted of trainee maltreatment. Subsequent publicity led to hearings on the incidents by the Investigations Subcommittee of the House of Representatives Armed Services Committee. The Secretary of the Army, the commander of TRADOC, the Chief of Staff, and other individuals directly involved in the incidents testified at the hearings.

The TRADOC commander was concerned that these incidents indicated existence of widespread and deep-seated leadership problems in the training base. Accordingly, he established a task force to conduct a study of the matter. The study revealed significant differences in the basic training among TRADOC's nine training centers. Consequently, the TRADOC commander formed a committee composed of commanders from the nine training centers to examine the problems and make recommendations to standardize the procedures in initial entry training. The Committee of Nine submitted its report in July 1979 to the TRADOC commander who, on the basis of those recommendations, issued a statement of training practices for the centers. The statement emphasized that positive leadership in basic training was the best way to avoid an atmosphere conducive to abuse and degradation of the individual trainee.

Seeking to increase the efficiency and cost-effectiveness of the initial training of recruits, the Army undertook in 1976 a test of the One Station Unit Training (OSUT) concept. Traditionally, the Army's training for recruits had been conducted at two installations, with basic training at one station and advanced individual training at another. Under OSUT recruits received all initial entry training in one unit and at one installation. In the first test of OSUT, TRADOC demonstrated that the length of time required for initial entry training could be cut without a

loss in the quality of the training results. When the Army attempted to establish OSUT for infantry at Fort Benning, Georgia, Congress directed the Army to conduct a second test in which a specific comparison would be made between OSUT and two station training (TST). TRADOC conducted the OSUT/TST test during January–May 1979. OSUT test companies received all their training at Fort Benning, Georgia. Companies undergoing TST training received the first phase at Fort Knox, Kentucky, and the second phase at Fort Benning. Test results demonstrated that there was no statistical difference in trainee performance between the two methods but that OSUT was more efficient than TST by $7.3 million in annual operating costs. TRADOC determined that OSUT at Fort Benning would be the most effective and efficient means of providing training. The Secretary of the Army delayed his decision on OSUT, because of the proposed closing of Fort Dix with its large Army Training Center. In another realignment action, the Department of the Army announced in June 1979 that basic training and advanced individual training at the U.S. Army Air Defense School, Fort Bliss, Texas, would be converted to OSUT, resulting in an anticipated annual savings of $4.8 million.

In both individual and collective combat training, the Army endeavored to provide the soldier with the realistic experience and special knowledge needed to prepare him for his role on the battlefield. To enhance realism, Army training leaders expanded the use of the Opposition Force (OPFOR) concept. In 1979, training involving an opposition force, complete with weapons and equipment comparable to that which would be used by potential enemy units was underway in every major Army unit. The scope varied from orientation to complete integration into tactical exercises. Plans for the new National Training Center (see below) included integrating OPFOR into its collective training program.

Enhancement of realism in the training of large Army combat units was the primary reason for development of the National Training Center (NTC). The Army knew from experience that exposure to realistic battlefield conditions in training contributed significantly to the ability of the soldier to survive and to the sustainability of units in actual combat. But no existing Army installation had the land required to create a battlefield with sufficient opposing forces to present a realistic threat, or the instrumentation necessary for evaluation of the results of unit training. The NTC, as conceived by FORSCOM with support from TRADOC, would provide the facilities needed to give

heavy combat battalions two weeks of intensive combat training. This training would include air deployment; equipment retrieval from prepositioned stocks; deployment onto the battlefield; training under realistic time-space factors against the OPFOR; evaluation of unit operational training; operation in an electronic warfare environment; integration of artillery, helicopter gunships, and U.S. Air Force close air support and aircraft fire support to complement maneuver operations; and redeployment experience.

In fiscal year 1979, the Army made significant progress toward establishment of the NTC. In May, the NTC concept was refined and approved by the commanders of FORSCOM and TRADOC at a meeting at Fort Leavenworth, Kansas. Following the preparation of environmental impact studies of three feasible sites in California and Arizona, the Army convinced California's Office of Planning and Research that the NTC could operate without significant harm to the California environment. In August, the Army chose Fort Irwin, California, located in the high Mohave Desert, as the site for the NTC. The site, although not entirely comparable to the Central European environment, fulfilled the basic requirements for an NTC. It was large (642,805 acres), isolated, had extensive unused facilities, a varied and rolling terrain (providing a realistic battlefield environment), and was in close proximity to Air Force, Navy, and Marine Corps installations, facilitating combined arms operations. With initial budgeting commencing in fiscal year 1980, plans call for the NTC to achieve full operation in fiscal year 1984.

After studying the possible closure of Army Training Centers at Fort Jackson, South Carolina, and Fort Dix, New Jersey, the Army announced on 29 March 1979 plans to close the Army Training Center at Fort Dix, and to transfer its training missions to centers at Fort Jackson, and Fort Knox, Kentucky; Fort Leonard Wood, Missouri; and Fort Bliss, Texas. Subsequently, the Secretary of the Army decided that Fort Dix would remain open and the Secretary of Defense agreed.

A Land-Use Requirements Study (LURS) prepared for Fort Carson, Colorado, in accordance with guidance contained in Training Circular 25–1, Training Land: Unit Training Land Requirements, was approved in December 1978. The study indicated that there would be a shortfall of between 60,000 and 200,000 acres at the training site, depending on how much land would be environmentally protected. Fort Carson's need for additional training land was the most critical of the Army installations. Following the review of a preliminary Analysis of

Alternatives study, two sites were chosen for further consideration: the Huerfano River parcel and the Pinon Canyon parcel, both in southeastern Colorado. Fort Carson has begun preparation of environmental documentation on the two sites pursuant to requirements set forth in the National Environmental Policy Act of 1969.

Forces Command, Training and Doctrine Command, and Western Command have submitted studies on other installations having a shortage of training land. These were under review at Headquarters, Department of the Army, at the end of the fiscal year.

During fiscal year 1979, FORSCOM continued special environmental training at four locations. At Fort Drum, New York, FORSCOM provided a thirty-day training program designed to prepare units for sustained cold weather combat operations in a European environment. This year, cold weather training of the brigade task force began and beginning next year, three brigade task forces will be trained each ensuing year. At Fort Wainwright, Alaska, FORSCOM conducted a thirty-day arctic training program for its infantry battalions having need (because of their contingency plans) for this type of instruction. At Fort Sherman, Canal Zone, FORSCOM trained its CONUS infantry battalions with contingency missions specifying a need for experience in a jungle environment. The field training exercise, conducted over a three-week period at the Jungle Operations Training Center, was divided into three phases: individual unit, small unit, and battalion. At Fort Irwin, California, FORSCOM provided brigade maneuver training for three brigade task forces in 1979. The small unit exchange program continued with U.S. Army units in Hawaii exchanging with Australia and New Zealand and FORSCOM units exchanging with Canada, England, and Italy.

The development, procurement, and use of training devices and simulators attained importance as constraints on resources forced greater reliance on training methods that were economical, energy and materiel efficient, and which assured sustainment of required skill levels. Management of training device activities became a major concern and actions were taken to refine and publish Army policy, resolve personnel and maintenance issues, and improve the research, development, and acquisition of training devices.

Construction of facilities for the Synthetic Flight Training Program continued, with more than twenty buildings completed at training bases in the United States and Germany and approximately twenty more scheduled for construction. These facilities

will house synthetic flight training for five types of Army helicopters, reducing fuel usage and other operations and maintenance costs by substituting simulated for actual helicopter flights.

In anticipation of a conflict in Europe or other areas where the population lives primarily in towns and cities, the Army began a program to provide training in Military Operations on Urbanized Terrain (MOUT). TRADOC started work in March 1979 on a training plan and in August 1979 published Field Manual 90–10 on procedures for fighting on such terrain. Progress in the program has been slow and training opportunities for NATO- and CONUS-based forces have been limited due to lack of training facilities. USAREUR sends five battalions each year to the German Infantry School MOUT training facility at Hammelburg. Local initiative within the Berlin Brigade and 8th Infantry Division in Germany and the 82d Airborne and 9th Infantry Divisions in the United States have yielded good results, but for only a small segment of the force. Funds to construct a special MOUT training facility at Fort Bragg, North Carolina, were cut from the fiscal year 1980 budget, as were funds for a similar facility to be constructed at Hohenfels, Germany, at the USAREUR/7th Army Training Center.

Each year the Army participates in many of the training exercises directed or coordinated by the Joint Chiefs of Staff, who view them as the culmination of unit and interservice training activities. In 1979, the Army took part in thirty-three such exercises. One of the most important, NIFTY NUGGET/MOBEX 78, occurred in October and November 1978. MOBEX 78 was the first simulated, government-wide war mobilization exercise accomplished in the United States since World War II, and represented the Army's portion of a joint Army, Navy, and Air Force exercise designed to review and practice the mobilization and deployment actions required during the first thirty days of a war. During MOBEX 78, the Army also tested changes it had made to the span of control and decentralization of some mobilization operations because of the results of its first large-scale mobilization exercise in 1976 (MOBEX 76). In the more comprehensive MOBEX 78, the Army learned that serious defects still existed in its mobilization plans and procedures. Major problems the exercise highlighted included deficiencies in current personnel support systems; mobilization station capacity; training base expansion; medical support; materiel and ammunition supply; industrial preparedness; automation and communication support; rapid reinforcement planning; manpower; and command and control capabilities. Based on these results, FORSCOM developed and

began a formal mobilization improvement program, with the goal of correcting, before MOBEX 80, various deficiencies revealed in MOBEX 78.

MOBEX 78 also disclosed a serious inadequacy in Army planning for provision of the training base following a major mobilization exercise. Consequently, Training Directorate, ODCSOPS, formed a permanent mobilization team in January 1979. Planning by this team resulted in an official revision in April by the Army Vice Chief of Staff of the projected capacity of the Army's training base upon mobilization. In June 1979, the Army staff began a thorough analysis of mobilization capacity, reviewing utilities, facilities, transportation, and equipment limitations as well as scheduling capacities for each installaion.

Army forces also took part in the annual REFORGER exercises in Western Europe. During fiscal year 1979, the Army participated in two REFORGER exercises. REFORGER 78 began in August and continued into October and REFORGER 79 (the first winter exercise in this series since 1973) took place between December 1978 and March 1979. From the United States Army standpoint, the major objective in the exercises was to test the readiness of reserve component units in reinforcing active components already engaged in a European conflict. Two U.S. Army Reserve and two National Guard units took part in REFORGER 78. In REFORGER 79, there were two reserve and three guard units. Both exercises succeeded in deploying a combat unit from the United States to Europe with only a 96-hour notice to participate, respectively, in exercise CERTAIN SHIELD in 1978 and CERTAIN SENTINEL in 1979, both a part of the REFORGER exercises. Besides testing the effectiveness of reinforcement of active component units with those from the reserve components, the two REFORGER exercises provided experience in deploying personnel and equipment, drawing and deploying prepositioned materiel, participating in both command post and field training exercises with U.S. Army, Europe, and allied units of the North Atlantic Treaty Organization, and returning to home station.

In 1979, the Army revised the system for educating and training officers, which had been under increasing criticism for not producing officers capable of meeting the demands of the modern battlefield. These changes were based on the recommendations of a comprehensive study—the Review of Education and Training of Officers (RETO)—completed in June 1978 by the Officer Training and Review Group in the Office of the Chief of Staff. These recommendations, which are summarized in the Department of the Army Historical Summary for Fiscal Year

1978, were reviewed and evaluated by the Army staff in late 1978 and presented to General Bernard W. Rogers, the Chief of Staff, in February 1979.

Following approval in May by General Rogers of a majority of the recommended changes, the staff began implementation. Some recommendations are expected to take as long as ten years to phase into the education and training system. Key changes approved by the Chief of Staff provide for improved assessment of cadets and officer candidates in precommissioning programs; more effective screening of candidates who apply for contract status in ROTC detachments; setting up tests for new alternatives to the present four-year ROTC program; development of Military Qualification Standards (MQS) as the basis for early career development; altering the officers basic and advanced courses based on analysis of training; and creation of a nine-week Combined Arms and Service Staff School at Fort Leavenworth, Kansas. The school, which would begin operating in fiscal year 1981, would provide staff training for all officers at some time between their seventh and ninth year of service. The Command and General Staff College (C&GSC) would continue and there would be no change in the number of officers selected to attend it.

The West Point Study Group, established as a result of the honor code violations at the United States Military Academy in 1976, had issued more than 200 recommendations in 1977 covering almost every aspect of the institution's operations. In June 1979, the Superintendent of the Academy reported to the Deputy Chief of Staff for Personnel (DCSPER) that the eleven committees he had appointed to consider those recommendations had reviewed and acted upon more than 90 percent of them. He requested, and DCSPER approved, that no further reports of compliance would be necessary.

Fiscal year 1979 saw further development and refinement of the existing computer-oriented training management systems. The Army's Training Evaluation Program (ARTEP), the so-called systematic front-end analysis designed to derive training missions and critical collective tasks, continued in operation. With assistance from Army schools, the analysis will further examine missions and tasks, with the goal of establishing training hierarchies and relationships for collective training as a guide to formulating training sequences and objectives. Other projects in the planning stage relating to ARTEP and alternate methods of training will establish a system of priorities in unit training missions and provide a system for collective training development. Also under

design for use in the ARTEP computer information systems is an improved feedback system for self-correcting and other purposes.

The Training Management Control System (TMCS), a computerized method for costing battalion training days and accounting for training ammunition expended, continued under development in 1979. The system is designed to assist the unit commander in planning training, evaluating the resource impact of training plans, and recording training accomplished and resources expended. The TMCS consists of computer programs in small, portable, yet powerful, off-the-shelf type minicomputers, which can be operated without special training. TMCS summarizes battalion training resource requirements at the division level, providing information on available battalion funds, petroleum, and training ammunition allocations, and budget development and justification. In September, the Chief of Staff approved TMCS as the Army-wide method for ascertaining the cost of unit training. The Deputy Chief of Staff for Operations and Plans was designated the proponent agency and FORSCOM the responsible agency for the system.

Supplementing and supporting TMCS in determining training ammunition requirements from the battalion to the major command level was the Training Ammunition Management System (TAMS) and the Training Ammunition Management Information System (TAMIS). Development began on TAMS in late 1975 and in May 1979 the Vice Chief of Staff approved the system for operation, replacing the common table of allowances system. The TAMIS was approved as a Class A standard system during the year and will be extended to forty CONUS installations in fiscal year 1980.

The Army Training Requirements and Resources System (ATRRS) achieved major expansion in its area of operation in 1979. Additional agencies brought into the system were the National Guard Operating Activities Center, Aberdeen Proving Ground, Maryland; the U.S. Army Engineer School, Fort Belvoir, Virginia; the U.S. Army Air Defense School, Fort Bliss, Texas; the U.S. Army Signal School, Fort Gordon, Georgia; and the U.S. Army Engineer Training Center, Fort Leonard Wood, Missouri. The inclusion of these agencies represented the first phase in expansion of ATRRS to all Army schools and training centers, to be completed during fiscal year 1980. Of the several changes made in ATRRS during the year, the most important were development and testing of a quota management system as a means to control solicited (in-service) training; an interconnection be-

tween ATRRS and REQUEST, the automated recruit quota system, to permit sharing of data on class schedules and student reservations; and commencing development of an ATRRS subsystem, to be designated the Mobilization Training Management Information System.

The Army Study Program

The purpose of the Army Study Program is to provide a formal means for the Army secretariat, staff, and the major Army commands to examine critical problems that arise in the planning, programming, and budgeting decisions of the Army's defense mission. Under the Management Directorate in the Office of the Director of the Army Staff, the Study System executed the annual Army Study Program, employing both in-house and contract facilities. In fiscal year 1979, the program comprised more than 500 studies and analyses. Of these, approximately 85 percent were conducted by Army organizations, with the remainder finalized under contract by nongovernment organizations or individual consultants.

The comprehensive review of Army study and analysis activities, begun in July 1978 at the direction of the Under Secretary of the Army, was completed in April 1979. The primary objective of this review was to ascertain how, in a period of declining monetary and personnel resources, to increase the efficiency of the study program without reducing its effectiveness. The ad hoc study group chaired by the Deputy Under Secretary for Operations Research made recommendations concerning what problems would be selected for study, the efficient use of resources and procedures in conducting those studies, and the organization of integrated study programs, providing guidance and control. Implementation of the study group's recommendations has begun and many will be completed by March 1980.

4. Intelligence, Automation, and Communications

The commander and his staff, at any level, may be compared to the human brain. The staff resembles the cognitive, analytical part of the brain; the commander, the decision making part. Neither staff nor commander can function effectively without the timely receipt and transmission of information. Intelligence collectors and analysts receive, process, and communicate vital information to the staff. After conferring with his staff, the commander communicates command and control decisions to his fighting forces. Along with the intelligence network, telecommunications is an important part of an Army unit.

Intelligence

Since the early 1960's, the Department of Defense has gradually increased its interest in strategic military intelligence. The Army correspondingly has expanded its efforts in the area of tactical intelligence. Following publication of the Intelligence Organization and Stationing Study in 1975, the Army decentralized its intelligence structure to provide more tactical intelligence support directly to subordinates, especially to commanders in the field.

In 1976 Congress directed the separation of tactical intelligence functions from the National Foreign Intelligence Program (NFIP). This assured accelerated development of intelligence systems better suited to the needs of the tactical commanders. The Department of Defense responded in fiscal year 1979 by removing the tactical aspects of cryptology and electronic warfare from the NFIP. While placing the director of the National Security Agency (NSA) in charge of the new Tactical Cryptological Program, the Department of Defense drafted proposals to integrate the functions of electronic warfare and tactical intelligence into units providing direct support to theater echelons and below. The Army subsequently submitted copies of the proposals to the German Army for their consideration and emulation to create greater interoperability between the ground forces of the two powers.

During implementation of the Intelligence Organization and Stationing Study (IOSS), the Army encountered problems with strategic materiel developed by NSA. The much more rapid NSA

materiel and development cycle was inconsistent with the Army's life cycle model which allowed the lead time necessary for programming adequate personnel and training support. A December 1978 Memorandum of Understanding addressed the problems and established procedures which aligned the materiel acquisition policies and mission requirements of both agencies. The Intelligence and Security Command (INSCOM) is preparing a pamphlet that will describe the responsibilities of the NSA system acquisition and logistic managers and will explain INSCOM and other Army major command relationships and participation in the development, fielding, and life cycle support for NSA-developed items.

National intelligence agencies also collaborated with Army intelligence in meeting the intelligence needs of tactical commanders whose units would deploy in the initial stages of a crisis without benefit of maps, weather data, target area intelligence, and other information. After meeting with representatives from the Air Force and national intelligence agencies, the Army Assistant Chief of Staff for Intelligence (ACSI), in July 1979, distributed procedures for crisis management to all CONUS units for testing in December. Crisis management and reorganization of tactical intelligence support was also a concern for the U.S. Army Special Security Group (USASSG) Headquarters where the staff identified key actions to be taken and functions to be continued during the eve or outbreak of war.

Upon establishment of the U.S. Army Western Command (WESTCOM) in March 1979, the Special Security Office (SSO), Hawaii, an element of USASSG's Special Security Command, FORSCOM, was redesignated the Special Security Command, WESTCOM. This was in keeping with the Army policy of providing SSO support directly to major commands. In a related development, the USASSG decentralized responsibility for contractor support to individual SSO's. The new contractor support program began on 1 January 1979 and involved twenty-five SSO's and four Special Security Commands.

Developments in tactical intelligence readiness training since 1976 also reflected the Army's emphasis on responsive tactical intelligence support. In early 1979 ACSI established Project REDTRAIN to produce better qualified intelligence personnel and more adequate intelligence information for operational planning. INSCOM administers the program and conducts readiness training at national and unit levels for members of the active Army, the Army Reserve, and the National Guard. Pleased with the quality of reservists trained at the three Intelligence Training

Army Area Schools, the U.S. Army Forces Command (FORSCOM) cancelled plans to consolidate the schools in a year-round reserve component training operation at the U.S. Army Intelligence School, Fort Huachuca, Arizona.

Army intelligence reviewed intelligence training programs, expanding the successful while curtailing or eliminating marginal programs. The Opposing Force Program (OPFOR) conducted by FORSCOM, with support from TRADOC and the Department of the Army, proved to be highly successful. Having helped every division to field a company-size or larger unit to play the role of the enemy in training exercises, FORSCOM sought to establish opposing force detachments at the brigade level, and two battalion opposing force detachments were established at the U.S. Army National Training Center, Fort Irwin, California. Overseas, U.S. Army, Europe, fielded a detachment-size opposing force unit and provided opposing force training at the 7th Army Training Center. The Eighth Army in Korea planned a similar, but more modest program. Meanwhile, FORSCOM enhanced the realism of training by providing updated manuals on enemy tactics and by obtaining enemy weapons.

The warrant officer terrain analysis technician program, established in early 1979, will begin in 1980. The program will train warrant officers in terrain analysis and in the evaluation of the impact of weather upon the terrain and weapons systems. Billets were authorized for new warrant officers for terrain detachments at corps and division levels, the Defense Mapping School, and the Engineer School. The Army also planned to reclassify thirty-five active and ten reserve spaces for the new military occupational specialty and to train twelve new warrant officers annually for the next three fiscal years at the Defense Mapping School.

In contrast, the meteorological observer program came under considerable criticism. During the previous two fiscal years, the Army Audit Agency charged that the program was poorly managed and recommended that the Army phase out meteorological observers and transfer their functions to civilians. A special task force from the office of the Vice Chief of Staff concurred with that recommendation but the U.S. Army Development and Readiness Command dissented and proposed that meteorological specialists be replaced by artillery ballistic meteorological observers. The Deputy Chief of Staff for Research, Development, and Acquisition is to consider both proposals and forward a recommendation to the Vice Chief of Staff.

The Army System for Standard Intelligence Support Ter-

minals (ASSIST) was established in 1973 to improve Army intelligence data handling systems by standardizing both computer hardware and software, internetting computers, providing access to national intelligence data bases, and achieving compatibility between Army and Department of Defense computerized command and control systems. During the past year, receipt of various types of computer software—programs, program languages, graphics—at several ASSIST sites permitted additional access to computer systems of the Defense Intelligence Agency. Computer software from the Army Standard Plotter System enhanced the flexibility and capability of the graphic display of intelligence data. ASSIST participants also received new computers, terminals with a graphics capability, and other equipment designed to enhance computer capability.

To provide automated intelligence data to commanders on the move, the Army has acquired the initial series of mobile computer complexes of the Intelligence Information Subsystem. Each complex consists of commercial data processing equipment mounted on five-ton Army trucks capable of moving with support units to field locations to provide rapid automated intelligence support. The complexes are of two types: mobile intelligence centers and mobile remote intelligence terminals. Each center includes data base storage and communications switching capabilities. The terminals provide intelligence analysts at support echelons with facilities that permit ready access, not only to the mobile intelligence center, but through them to data bases and other analysts in Europe and in the U.S. The Army delivered the first of the new mobile computer complexes to U.S. Army, Europe, in June 1979.

Despite technological breakthroughs in intelligence collection and strong criticism from Congress during the turbulent years of civil rights and antiwar activism, Human Resources Intelligence (HUMINT) continued to play a crucial role in the Army intelligence program. Congressional criticism was derived from public concern that Army intelligence agents had exceeded the limit of constitutionality when assisting police and national intelligence agencies to conduct surveillance of U.S. civilians. Members of Congress, the Office of Management and Budget, the Department of Defense, and the Director of Central Intelligence continue to scrutinize HUMINT. However, adherence to restrictions and pursuit of justifiable missions has enabled HUMINT to respond to this criticism, and has obtained approximately the same resources this fiscal year as it did in the previous two. To counteract the erosive effects of inflation, Army intelligence is

preparing a long-range master plan to conserve and more fully employ its limited human resources over the next five years.

During the year, HUMINT satisfied most of the tactical intelligence requirements commanders imposed. However, the lack of adequately trained linguists may limit tactical intelligence support in the future. Emergency funding of certain language programs, such as intermediate and advanced language training for the 66th Military Intelligence Group in USAREUR averted any immediate crisis, and a comprehensive long-range plan for overseas language training to meet future needs is being devised.

The exchange of military officer students and military attachés is practiced among nations enjoying normal diplomatic relations. To a limited extent, such programs permit the participants to scrutinize each other's decision making capability. This fiscal year, the Army trained ninety student officers in foreign area programs in twenty-three countries. Although political events forced the Army to terminate overseas training in El Salvador, Nicaragua, Taiwan, and Iran, the Army established two new schools for China area studies in Singapore and Hong Kong. The Foreign Liaison Directorate of the Office of the Assistant Chief of Staff for Intelligence (OACSI) continued to provide contact between the Army and foreign military attachés. During the year, the directorate accredited 558 foreign national personnel, including attachés from the People's Republic of China and Somalia, to conduct business directly with the Army but withdrew accreditation of the attachés from Taiwan and Iran.

Whether generated by computers, agents, analysts, students, or military attachés, the staggering amount of intelligence information produced requires the protection of an elaborate classification system. In the past, however, users often evaded their responsibility to classify such information or failed to declassify items no longer requiring protection. This resulted in far too much information being denied unnecessarily to people without a security clearance.

In order to protect vital defense information while making other information available to the public, the President issued Executive Order 12065. It replaces Executive Order 11652 and makes obsolete the Advanced Declassification Schedule, the General Declassification Schedule, and all markings related thereto. Executive Order 12065 also made changes regarding the authority, criteria, and duration for classification.

Within the Army, Executive Order 12065 permits the delegation of authority to classify TOP SECRET, SECRET, or CONFIDENTIAL only to those subordinate officials with a frequent

need to exercise such authority. The Secretary of the Army alone delegates authority to classify TOP SECRET, but the Assistant Chief of Staff for Intelligence may delegate authority concerning the classification of SECRET or CONFIDENTIAL. The executive order further stipulates that such delegation will be held to an absolute minimum and will not be given to persons who merely reproduce, extract, or summarize classified information.

The executive order provides specific guidance on the types of information requiring classification in the interest of national security: (1) military plans, weapons, or operations; (2) information provided by foreign governments pursuant to written joint agreements requiring confidentiality; (3) intelligence activities, sources, or methods; (4) foreign relations or activities of the U.S.; (5) scientific, technological, or economic matters relating to national security; and (6) U.S. government programs for safeguarding nuclear materials or facilities.

Perhaps the most significant provision of the executive order is the duration of classification. At the time of classification for SECRET or CONFIDENTIAL, a date is designated, being no more than six years later for automatic declassification. TOP SECRET material may be classified for more than six years, but no more than twenty, and information provided by foreign governments may be protected for up to thirty years.

The Army significantly improved its support of field commanders during the current fiscal year by redistributing tactical intelligence specialists and computer systems to the lowest echelons and by augmenting successful tactical intelligence training programs. At the same time, the Army implemented a policy of maximum disclosure with regard to programs and information no longer requiring protection. Continued emphasis will be placed on improved tactical intelligence support and security measures.

Automation and Communications

In recent years the Army's telecommunications structure experienced a metamorphosis paralleling that of the Army's intelligence organization. While some of the responsibility for strategic telecommunications passed from the Army to the Department of Defense (DOD), the Army retained and strengthened its role in tactical telecommunications. During fiscal year 1979, the Army continued participation in three DOD-sponsored programs: the Joint Tactical Communications Program (TRI-TAC), the Joint Tactical Information Distribution System (JTIDS), and the Joint Interoperability of Tactical Command and Control System

(JINTACCS). These programs are designed to modernize communications equipment for more compatibility with that of our allies and to develop standards for the interoperability of tactical command and control systems.

Under the TRI-TAC program, each service is developing items of telecommunications equipment to be used by all the services in the 1980's. The Department of Defense tasked the Army with the responsibility of developing several key items: automatic switches, digital group multiplexers, net radio interface units, mobile subscriber equipment, modular record traffic terminals, and short-range wide-band radios.

At the heart of the TRI-TAC system, automatic switches make possible the speedy and reliable transmission of tactical command and control messages, data, and voice communications. Private contractors continued to develop and test the AN/TTC–39 circuit switch for interoperability with other TRI-TAC equipment. Meanwhile, the Army tested and evaluated the AN/TYC–39 message switch. Preliminary results indicated satisfactory performance.

To provide large capacity radio systems with several channels of communication on the same frequency, the Army designed and built prototypes of digital group multiplex equipment and two related assemblages, the AN/TRC–173 and the AN/TRC–174. Testing and evaluation of all three items has begun.

Army commanders control tactical forces primarily by means of combat net radios. Under the Single Channel Ground and Airborne Radio Subsystem (SINCGARS), the Army evolved a secure, jam-resistant family of VHF–FM radios suitable for joint use and compatible with the radios of the NATO ground forces. To permit wire subscribers to communicate through a switchboard to radio subscribers, the Army also developed a basic net radio interface analog device. Following satisfactory testing at the Joint Test Facility, Fort Huachuca, Arizona, the Army distributed the new devices to selected units for field testing.

The Vice Chief of Staff designated mobile subscriber equipment as a major program in 1977. In February 1978 the Deputy Chief of Staff for Operations and Plans formed a special task force to outline initial program data requirements and ways of harmonizing the new equipment with that of the United Kingdom and the Federal Republic of Germany. An agreement in principle has been signed between the United States and the Federal Republic of Germany to examine the possible cooperative development and production of mobile subscriber equipment.

The modular record traffic terminal and the short-range

wide-band radio are other key items still in development and testing. During fiscal year 1979, the Army continued to test and evaluate two components of the modular record traffic terminal that had been produced the previous year—the single subscriber terminal and the modular tactical communications center. At the same time, ITT engineers successfully modified the AN/GRC–144 radio for short-range wide-band capability.

In testifying before the House Appropriations Hearings in April 1979, the Assistant Secretary of Defense, Communications, Command, Control, and Intelligence, Dr. Gerald P. Dineen, emphasized the necessity for security to parallel the breakthroughs in communications technology:

> With increasing reliance on rapid high-capacity communications to support command decision-making and precision force control, it is more than ever critical that we protect our systems against unauthorized access and exploitation by hostile intelligence activities and communications deception.

By providing voice security for tactical radio nets down to the battalion level, the new Vinson cryptographic devices met a portion of the need outlined by Dr. Dineen. The Army has distributed initial production models of this new device to U.S. Army, Europe. During exercise CONSTANT ENFORCER last summer, V Corps reported that use of the device was "extremely successful" and that the equipment was "fully accepted and appreciated" by commanders at all levels.

Like TRI-TAC, the Joint Tactical Information Distribution System (JTIDS) represented another interservice tactical communications program. Through JTIDS, the Department of Defense sought establishment of a communications loop system with air, ship, and ground terminals. Charged with responsibility for ground terminals, the Army continued to provide research and develop funds for a manpack-size terminal capable of distributing secure high speed digital and voice communications to the tactical commander during combat.

In 1979, the Department of Defense authorized the development of a cross between JTIDS and the Position Location and Reporting System (PLRS) to provide an Army Data Distribution System (ADDS). The PLRS portion of the system would offer such capabilities as location and navigation information, unique identification, and digital data message exchange. PLRS equipment includes master units for use in vans and portable units that can be employed in manpacks, in land vehicles, or on board aircraft.

Under the auspices of the Tactical Air Control Systems/

Tactical Air Defense Systems (TACS/TADS), a joint program in which the Navy acted as executive agent for the JCS, the Army worked on the AN/TSQ–73, a command and control system for missiles, commonly known as "Missile Minder." The Army corrected deficiencies in radar used in conjunction with the Missile Minders and implemented procedures for combined use of the system with the Air Force. After deploying the Missile Minders to Europe in September 1979, the Army immediately began distributing them to CONUS units. In two field exercises involving the AN/TSQ–73's, the 11th Air Defense Group, Fort Bliss, Texas, successfully exchanged information with a compatible Air Force system.

The third interservice program bore the acronym JINTACCS (Joint Interoperability of Tactical Command and Control System). Interoperability has become a key word in recent years because systems that are incompatible could result in a loss of command and control, especially for the tactical commanders. Within the TRI–TAC, JTIDS, and TACS/TADS programs, the Army emphasized the development of new equipment for common usage between the services. In JINTACCS, the Army, acting as the Joint Chiefs of Staff's executive agent, coordinated the efforts of the services, NSA and DIA, in developing the standards required to achieve the interoperability of tactical command and control systems.

In 1979 the Army published various JINTACCS Technical Interface Design Plans (TIDP's) for air and amphibious operations and continued work on other TIDP's for operations control and fire support. Compatibility and interoperability testing in the area of general intelligence began at Fort Monmouth, New Jersey, where a test center had been established. In related activities, JINTACCS was expanded to include support for centralized, coordinated U.S. involvement in NATO interoperability efforts.

At the strategic level of military telecommunications, the Department of Defense established the National Military Command System with lines of communication running from Washington to unified and specified command posts around the world. At the nation's capital, the Army established the Washington Area Wide-band System to connect several local Defense Communications System user terminals. With facilities leased from Western Union, the Washington Area Wide-band System provides users high data transmission rates capable of combining several voice channels into one. Operational since early 1979, the system will enroll new users as additional terminal facilities become available.

U.S. Army, Europe, contributed to three DOD-sponsored telecommunications programs: the European Telephone System, the Defense Communications System, and the Defense Satellite Communications System. Designed to handle USAREUR's routine message traffic and to alert combat forces for deployment, the European Telephone System depended upon obsolete switching equipment to provide reliable voice communications. In a memorandum signed with the German Ministry of Post and Telecommunications in November 1978, the Army agreed to purchase twenty-two electronic digital telephone switches to modernize the European Telephone System.

The Army also began conversion of the Defense Communication System's mainline transmission network in Europe from an obsolete analog formation to a modern, all-encrypted, high speed digital mode. To be completed in four stages by 1986, the mainline system, known as the Digital European Backbone, will extend from northern Italy through Germany, Belgium, and the United Kingdom. In each country the Army will link up the mainline system with the tributary tactical communications links of USAREUR's subordinate commands.

Superhigh frequency satellites comprise the Defense Satellite Communications System (DSCS). Designed primarily for strategic communications, the satellites also satisfy many tactical requirements of U.S. and allied ground forces. In June 1979 the Department of Defense approved plans for the Defense Satellite Communications System to augment second generation satellites already in orbit with the more powerful and sophisticated third generation models. A third generation DSCS prototype was launched in June and plans call for launching another in early 1980. A series of production line satellites will take permanent orbits later.

The Army took several steps to construct or renovate satellite ground stations and related subsystems. It constructed three additional gateway stations; began procurement of medium satellite terminals (AN/GSC–39) to replace the outmoded AN/TSC–54's and AN/MSC–46's; developed a computerized and automated subsystem for controlling satellites in orbit; deployed twenty-three digital communications subsystems; and contracted for antijamming equipment. The Army also coordinated with the ground forces of NATO for interoperable use of the satellite system. Agreements reached should be validated by the JCS in early 1980 and implemented shortly thereafter.

In the Ground Mobile Forces Program, the Department of Defense employed ultrahigh frequency satellites to provide all

services with fleet broadcast, ship-to-shore, and shore-to-ship tactical communications. In early 1978 the Department of Defense began substituting the Fleet Satellite Communications System (FLTSATCOM) for the outmoded satellites of the Gap Filler program in operation since 1976. Launching of FLTSATCOM satellites will continue through the early 1980's.

Tactical application of communications satellites involved development of ground terminals. In November 1978 the Army began production of specially designed ground terminals capable of linking satellites directly to ground units, yet portable enough to be carried by vehicle or manpack under the highly fluid conditions of combat. The Army scheduled distribution of the new terminals to brigade and higher echelons of the Army, Marine Corps, and Air Force to begin in 1981. In anticipation of receiving the new ground terminals and other advanced telecommunications equipment, USAREUR began work on the Nuclear Forces Communications Support Improvement Plan to integrate the new technology with command and control of U.S. and NATO ground troops. Concurrent with the production of satellite ground terminals, the NAVSTAR Global Positioning System moved from the design phase to full scale engineering development. Under NAVSTAR twenty-four satellites will provide worldwide position and navigation information to a three-dimensional accuracy of less than ten meters.

In recognition of the close interrelationship between the technologies of communications and automation, the Army, in October 1978, created the Office of the Assistant Chief of Staff for Automation and Communications (ACSAC). The new office produced the Study of Management-Automation and Communications, generating new regulations and a new model life cycle for the management of the Army's automated data handling processes.

The Study of Management also recommended consolidation of technology and automation organizations throughout the Army, a recommendation that meshed with the national policy of saving manpower and cutting costs to fight inflation. During the past two fiscal years, the Army consolidated the facilities of the Defense Special Security Communications System with those of the General Services Telecommunications Centers at twenty sites worldwide and plan to consolidate at least twenty-five additional sites for a combined savings of nearly 100 military personnel spaces and up to $2.5 million annually.

The Secretary of Defense directed similar consolidation at

the joint level. Within the Pentagon, the message centers of the JCS and the Navy will join the combined message center of the Army and the Air Force in late 1979 at a total savings of $2.4 million.

The main computer system of the Pentagon became operational in January 1979. When fully completed, the system will permit reception and transmission of messages between the Army and the Air Force Telecommunications Center and the Marine Corps and Navy Personnel Telecommunications Center in the Arlington Annex. The main computer system will further provide message storage and retrieval for the JCS Message Centers of both the Pentagon and Fort Ritchie. However, manpower shortages and delays in equipment delivery have postponed completion of the main computer system from April 1981 until March 1982.

In 1979, the Army continued development of several computer-oriented management information systems. These systems supply the data required for solution of the highly complex problems inherent in force structuring. The Army adopted a new technique for documentation of the Vertical Force Development Management Information System (VFDMIS), designed to enhance its capability to meet both wartime and peacetime management requirements. This technique, called structured analysis, was the third to be tested by the VFDMIS development team. The two previous methods had failed to produce the desired results. Flow charts produced by structured analysis will define force management functions and processes and will provide a graphic representation of their interdependence. By the end of fiscal year 1979, the U.S. Army Communications Command had completed the communications engineering design plan for the communications network, an important step in the preparation of the first test of VFDMIS, scheduled for the second quarter of fiscal year 1981.

At Headquarters, Department of the Army, work continued on the Force Development Integrated Management System (FORDIMS), which, like VFDMIS, is designed to provide data to support force structuring, as well as information pertinent to manpower management. By the close of fiscal year 1979, two of the three subsystems of FORDIMS—Program Budget and Force Structure—were approximately 50 percent completed (the third is the Authorization Subsystem). The goal is to have FORDIMS fully functional by the second quarter of fiscal year 1981.

When VFDMIS and FORDIMS become operational, they

will, in addition to their primary function, provide a source of information for the Structure and Composition System (SACS), which supplies lists of personnel and equipment requirements for current and planned units of the Army. These lists are used in planning acquisition and distribution of equipment and in personnel procurement, training, and distribution. In a one-year study completed in August 1979, General Research Corporation investigated the feasibility of putting into an online configuration all or part of SACS. The recommendations made (including those on accuracy and timeliness) of the data input and output of the system will be used to improve SACS's ultimate performance.

The Army Authorization Documents System (TAADS) continued to expand during the year. This system supplies data on organization, personnel, and equipment to support units in performance of their assigned missions. The Vertical TAADS (VTAADS), providing documentation for major commands and agencies, was extended to the U.S. Military Academy, Western Command, and to the U.S. Army Computer Systems Command, bringing the total to fifteen commands using VTAADS. In addition to the original extension plan for the Installation TAADS (ITAADS) which is completed, one additional site, the Harry Diamond Laboratory, was added. This brought the number of ITAADS users to forty-eight. The Army is considering the extension of VTAADS to Supreme Headquarters Allied Powers Europe (SHAPE) and the extension of ITAADS to four sites within U.S. Army, Europe—the Seventh Army and the U.S. Army Communications Command activities in CONUS, Europe, Japan, and Korea. Korea is the first expansion of ITAADS overseas.

Other aspects of the Army's progress in the area of automation information are covered elsewhere, particularly in Chapters 3, 9, and 10.

During the past year, the familiar themes of innovation, security, interoperability, and consolidation again prevailed in the related fields of communications and automation. Cognizant of the Army's primary role in enhancing the tactical commanders' command and control, Army staff, Army field agencies, and private contractors joined to develop or distribute a variety of devices that enhanced communications and greater compatibility with the systems of other services without sacrificing necessary security. The Army also participated in several DOD-sponsored strategic programs by installing systems or components for use above the theater level. In many cases strategic programs conferred immediate benefits to tactical commanders. To cut the

costs of modernizing both tactical and strategic systems, the Army consolidated its computers and message centers at scores of sites throughout the world and with those of other services at the Pentagon.

5. Manning the Army

In the first five years of the all-volunteer force, the active Army had consistently been at or near authorized strength, although there were serious manpower shortages in the reserve components. Fiscal year 1979 was the first year during the volunteer era in which active Army units experienced a significant manpower shortage.

Because of continuing recruiting problems, the military strength of the active Army decreased by more than 12,500 and was 15,400 short of the end strength authorized by Congress. It dropped from 771,138 on 30 September 1978 to a low of 749,313 in May 1979, then rose to 758,356 by 30 September 1979. As a result, the Army force structure was manned (on the average) at 98.2 percent of authorizations, representing an average undermanning for the year of 13,733. Although some units based in the United States and scheduled for late deployment were at less than 80 percent strength for several months, forward deployed and early deploying units were manned at or above 100 percent throughout the year.

On 30 September 1979 the breakdown of active Army strength was as follows:

	Authorized Strength	Actual Strength
Officers	96,291	96,889
Enlisted Personnel	673,209	657,180
United States Military Academy Cadets	4,300	4,287
Total	773,800	758,356

Due to the decreasing size of the active Army, greater reliance has been placed on the reserve forces. Reserve strength, however, has declined drastically since the expiration of the draft, with the most critical shortages in the combat arms and in medical personnel. As a result, the Army's ability to meet mobilization requirements has been severely hampered. Furthermore, recent mobilization exercises showed that the existing Selective Service System, which has been on standby status since 1975, would be unable to process sufficient numbers of inductees quickly enough to meet military manpower requirements in the event of a national emergency. Therefore, the Department of Defense budget

for fiscal year 1980 includes a request for funds to improve the capabilities of the system and bring it to a higher degree of readiness.

In addition to a revitalized Selective Service System, the Army supported peacetime registration of eighteen-year-old men and women. A variety of draft-related legislation, ranging from a virtual dismantling of the Selective Service System to compulsory public service, military or civilian, for all young people, was introduced in Congress. In September 1979 the House of Representatives rejected a proposal for peacetime registration by a margin of 252 to 163. The debate over the draft and the future of the volunteer Army, however, continued.

Enlisted Personnel

Fiscal year 1979 proved to be the most difficult recruiting year for the active Army since the beginning of the all-volunteer force. Although more men and women enlisted this year than in fiscal year 1978 (142,156 compared to 134,428), total accessions fell about 17,000 or 10.7 percent short of the recruiting objective. Furthermore, only 64.1 percent of the recruits with no prior service had high school diplomas, whereas the goal had been to recruit 70 percent high school graduates. Last year, by comparison, the active Army fell only 1.9 percent short of its recruiting goal; 73.7 percent of enlisted accessions without prior service were high school graduates. This year's disappointing recruiting results were attributed to a variety of factors including the higher recruiting goal and competition from an improved civilian job market.

In fiscal year 1978, for the first time, the Army experienced difficulty in recruiting women, but was able to reach 99.5 percent of its female recruiting goal by lowering the minimum selection test score required for enlistment from 59 to 50, the same as for male recruits. In spite of this change and diversion of recruiting resources from males to females, recruitment of women became even more difficult in fiscal year 1979, particularly in the so-called nontraditional female skills, and the number of female recruits with no prior service fell 8.5 percent short of the objective. In April, women with high school diplomas who scored between 49 and 31 on the selection test were permitted to enlist. While this change produced an initial surge, largely into the supply specialty, once that training program was filled, female enlistments tapered. Starting 1 October 1979, enlistment eligibility criteria for women will be the same as for men. Thus, female non–high school graduates will be eligible for enlistment

if they score 31 or higher on the Armed Forces Women's Selection Test. Female high school graduates scoring between 16 and 30 will also be eligible, but the 10 percent limit on enlistments from this group will apply to women as well as men. Standardized criteria will provide men and women equal opportunity to enlist and should increase the number of women both in the active Army and in the reserve components.

In another effort to expand the recruiting market and stimulate the flow of accessions, the Army once again opened enlistments to seventeen-year-old males who did not graduate from high school. They were not allowed to enlist during fiscal year 1978 because, as a group, their attrition rate proved to be higher than that of high school graduates and older nongraduates. Starting in July 1979, they could enlist provided they scored high enough on a new test called the Military Applicant Profile, which was designed to indicate adaptability and motivation for military service.

In January 1979 the Army made two major changes to improve recruiting for specialties in armor, which had particularly serious shortages. First, the requirement for a drivers license was removed and the eyesight criterion was modified. Second, the enlistment bonus was raised from $2,500 to $3,000, the maximum amount authorized by law. Later in the year, the Army also began paying enlistment bonuses at the maximum level in infantry and some military intelligence skills. This was the first time since the enlistment bonus program was authorized by Congress in 1972 that the Army offered a bonus higher than $2,500. The Army also proposed legislation that would authorize enlistment bonuses of up to $5,000 and provide greater flexibility in the use of the bonus to address recruiting goals other than overcoming shortfalls. During fiscal year 1979, enlistment bonuses ranging from $1,000 to $2,500 were offered in twenty-four military occupational specialties in addition to eight specialties with the maximum $3,000 bonus. Total enlistment bonus payments for the year exceeded $34.6 million.

The Army's recruiting budget for fiscal year 1979 was $237.8 million, including $42.6 million for advertising. The theme of this year's advertising program was the personal challenge of being a good soldier. Aimed primarily at high school seniors and recent graduates, the ads portrayed military service as a natural progression following high school. They stressed the intangible rewards as well as the tangible benefits of Army life and inter-

twined patriotic appeals. Every effort was made to portray the Army accurately and realistically, promising no more than the Army could deliver.

At the request of Congress, the Army, in January, began to test a two-year enlistment option for basic combat skills. To be eligible for the two-year enlistment, the applicant must have no prior military service, be a high school graduate, score 50 or higher on the enlistment examination, enlist in a combat or combat related military occupational specialty, enlist for an assignment location determined by the Army (with the majority of enlistees being sent to Europe), and serve four years in the Ready Reserve after release from two years of active duty. An enhanced Veterans Education Assistance Program (VEAP) is offered as an incentive to soldiers who enter the Army under this option. Under the basic VEAP, the government contributes $2 to the soldier's educational fund for every dollar the individual contributes and a soldier must contribute between $50 and $75 per month for twelve consecutive months. Under the two-year enlistment option, the Army places another $2,000 into the fund, as an added incentive, thus allowing each soldier to accumulate up to $7,400 for educational expenses. In June, the government's incentive contribution to the soldiers' educational fund was increased to $4,000 in certain specified geographic recruiting areas, enabling soldiers to accumulate up to $9,400 during their two years of active duty. The purpose of the increase was to determine the comparative attractiveness of educational benefits at various monetary levels. (Individuals have ten years from the time of separation from active duty to use the fund.)

This option of a shorter enlistment term coupled with enhanced educational benefits was designed to attract college-bound high school graduates, the kind of young people who had enlisted to take advantage of the G.I. Bill before it was discontinued on 31 December 1976. The program has two primary purposes: to enlist more high school graduates and individuals who score over 49 on the entrance test and to fill combat arms slots, especially for Europe. It will also facilitate an evaluation of the effect of shorter tours in Europe on unit readiness, discipline, and morale. Finally, it will increase the flow of trained personnel into the critically undermanned Individual Ready Reserve at an earlier date and for a longer period than can be expected from three- and four-year enlistees. During calendar year 1979, the two-year enlistment option was available to approximately 12,500 appli-

cants. Late in 1979 the decision was made to continue the test, with modifications, until December 1980. After the results are evaluated, the Army will make recommendations to Congress to continue, discontinue, or modify the option.

In addition to measures specifically designed to attract more volunteers, such as changing enlistment criteria, offering higher enlistment bonuses, and testing the two-year enlistment option, the Army took a number of other actions to enhance the recruiting effort. On the basis of recommendations made by the Army Audit Agency, which conducted a thorough examination of recruiting operations from May to December 1978, management techniques were improved in the U.S. Army Recruiting Command (USAREC). The Army also devoted additional resources to the recruiting effort. In January, for example, 250 high-quality noncommissioned officers in grade E–6 were selected for nonvoluntary, three-year assignments as Army recruiters. At the same time, the Army encouraged other soldiers (primarily E–6's, but also E–5's and E–7's) to volunteer for reclassification into recruitment. Soldiers in the rank of E–6 are ideally suited for recruiting duty because of their military experience, professionalism, and maturity.

During fiscal year 1979, the Army conducted a full-scale recruiting malpractice investigation. After a new, sophisticated computer analysis (provided to all the services by the Military Enlistment Processing Command) detected possible coaching of applicants by recruiters on certain portions of the enlistment qualification test, the Army's Recruiting Command began investigating those recruiters who seemed to have many applicants with irregular test scores. Later, the investigation was expanded to cover other recruiting irregularities, and more than sixty USAREC personnel were detailed to the investigation team headed by a brigadier general. By the end of the fiscal year, the team had visited thirty-one installations in the United States as well as units in Germany and Korea, and investigations were underway in thirty-two of the fifty-seven District Recruiting Commands, with the remainder scheduled for visits during the first quarter of fiscal year 1980. About 38 percent of the 6,650 soldiers interviewed provided information relating to recruiter malpractice.

Investigators found that the most prevalent violation was furnishing word lists and other elements of the qualification test to applicants. Other violations that were uncovered included falsification of educational levels; fraudulent use of blank high school diplomas; concealment of police records and disqualifying

medical information; possession of blank social security cards; fabrication of W–2 forms; concealment of dependents; illegal retesting; possible fraud associated with bonus options; failure to exercise leadership or proper supervisory controls, supervisory involvement or condonement; involvement of Job Corps and Armed Forces Entrance Examining Station personnel; and improper transfer of enlistment credits among recruiters and districts.

By 30 September 1979, five officers and 187 noncommissioned officers had been relieved from duty as a result of the investigation, including eighty-two persons who held supervisory positions. Some of these were relieved for failure in leadership rather than recruiting malpractice. Nine of the relieved NCO's had court-martial charges preferred. Nineteen cases were referred to the Criminal Investigation Command and three cases involving tester irregularities were referred to the Military Enlistment Processing Command. Two sergeants facing courts-martial in Charlotte, North Carolina, in turn, filed charges against a brigadier general and two colonels for allegedly condoning, encouraging, and trying to cover up recruiting violations.

There was widespread concern that heavy pressure on recruiters to meet quotas was responsible for illegal enlistment of an undetermined but large number of unqualified recruits for the all-volunteer force. The Army expects to complete the investigation by 30 November 1979. After analyzing the reasons for the widespread recruiting malpractice, the Army intends to take specific actions to prevent, or at least reduce, fraudulent enlistments in the future.

Although fiscal year 1979 was a difficult year for recruitment, it was a successful year for the Army's reenlistment program. As shown in the table below, 80,732 soldiers reenlisted, an increase of 6,909 since the previous year and the largest number of reenlistments since the beginning of the all-volunteer force. Furthermore, the first-term reenlistment rate of over 39 percent was the highest recorded during the volunteer era. The Army was particularly successful in reenlisting first-term personnel, achieving 115.7 percent of the objective, while reaching 98.2 percent of the goal for career soldiers (those with more than three years of service).

Since no new major retention initiatives were implemented this year, the success of the reenlistment program was attributed to the combined effects of several previous policy changes as well as increased command emphasis and involvement throughout

Fiscal Year 1979 Reenlistment Statistics

	Objectives	Achievement	Percent Achieved	Percent of High School Graduates[1]	Percent on Waivers	Percent of Eligibles Reenlisting[2]
First Term	22,920	26,528	115.7	73.4	4.8	39.8
Male	(21,000)	(24,297)	115.7	70.9	n/a	39.5
Female	(1,920)	(2,231)	116.2	99.7	n/a	42.8
Career	55,170	54,204	98.2	97.5	5.6	63.5
Male	(53,180)	(52,192)	98.1	97.5	n/a	64.1
Female	(1,990)	(2,012)	101.1	100.0	n/a	49.0
Total	78,090	80,732	103.4	89.6	5.2	53.0

[1]Includes GED
[2]Adjusted Reenlistment Rates

the Army. About 130 to 140 soldiers have been reenlisting each month under the Bonus Extension and Retaining Program initiated in January 1978. The CONUS-to-CONUS reenlistment option, tested from 1 January 1978 to 1 May 1979, proved to be so effective that it has been approved for implementation in fiscal year 1980. This year, four terminals of RETAIN, the automated reenlistment and assignment reservation system, were installed on a test basis in Europe. Since RETAIN significantly increased reenlistments in the supported units, expansion to twenty-seven sites is planned for next year.

Another effective reenlistment incentive is the Selective Reenlistment Bonus (SRB) program. Approved by Congress in 1974, it authorizes the Army to make payments up to $12,000 for reenlistments of three or more years by soldiers between their twenty-first month and tenth year of active service. During fiscal year 1979, reenlistment bonuses were offered in 126 specialties and payments totaled about $82 million. Lump-sum SRB payments were reinstated on 3 April 1979 because surveys indicated that smaller, lump-sum bonuses provided as much of an incentive to reenlist as larger bonuses paid in installments over the full reenlistment term.

Since it is likely that recruiting will become even more difficult in the future, retention of good soldiers will be particularly important in the years ahead. The Army is in the process of gradually increasing the career content of the enlisted force from about 44 percent at the end of fiscal year 1977 to 49 percent by fiscal year 1984. Greater numbers of skilled, experienced soldiers will improve professionalism as well as reduce recruiting requirements. The following table breaks down the enlisted strength of the active Army by grade as of 30 September 1979.

Enlisted End Strength
30 September 1979

Grade	
E–9	3,729
E–8	12,673
E–7	45,543
E–6	71,976
E–5	114,312
E–4	168,591
E–3	109,109
E–2	50,008
E–1	81,239
Total	657,180

The expansion of the Skill Qualification Testing (SQT) program for enlisted personnel continued during fiscal year 1979, although budgetary constraints have slowed program implementation. The Training and Doctrine Command continued to develop tests for specialties in career fields not yet under the SQT program.

There were no major changes in enlisted promotion criteria during fiscal year 1979, but starting 1 October 1979 soldiers with SQT scores of 60 or higher will be eligible for promotion to grades E–5 and E–6. Currently, these soldiers must score at least 80 in order to qualify for promotion without a waiver. Under the new policy, scores between 60 and 79 will earn 1.5 promotion points for each extra SQT point, while scores between 80 and 100 will earn 3 promotion points for each SQT point. Thus, the higher the soldier's SQT score, the more promotion points he or she can earn. Changes will also be made in the number of promotion points given for specific decorations and awards and for training under the noncommissioned officer education system.

The educational level of enlisted personnel has improved substantially during the volunteer era. As of 30 September 1979, about 86 percent of the enlisted men and women in the active Army had high school diplomas or the equivalent, compared to only 71.3 percent on 30 June 1973, the date on which the draft expired. In spite of this increase in formal education, the reading level of the average soldier has declined and the Army has been forced to rewrite many of its manuals using simpler, less sophisticated language. About 6 percent of new enlistees understand written English at or below the fifth grade level and, therefore, are considered to be functionally illiterate. Such statistics become somewhat less alarming when compared to the reading level of the general public. A recent study sponsored by the Department of Health, Education, and Welfare established that 21 percent

of Americans over the age of seventeen suffer the same lack of reading skills.

In October 1978 the Army began a special education program for basic trainees with reading difficulties. This program improves their communication and arithmetic skills before they enter occupational specialty training and makes them assets rather than liabilities to their units. Later, with additional tailored courses, the Army expects to bring these soldiers to at least the ninth grade level by the end of their first term of service.

This year, congressional attention was again focused on the high rate of first-term attrition in the Army and the other services. The General Accounting Office reported that during fiscal years 1974–77, 420,024 persons were discharged before completing their first term of enlistment and these early separations cost the government $5.2 billion with $2.7 billion—or more than half—in present and future veterans benefits. The Army expects to reduce first-term attrition to about 30 percent for soldiers enlisting in fiscal years 1978, 1979, and 1980, compared to a high of 40 percent for enlistees from fiscal year 1974, the first year of the all-volunteer force. The early discharge programs that separate soldiers unable or unwilling to adjust to the demands of military life will be retained because such administrative separations are in the best interest of both the Army and the individual concerned.

Besides reemphasizing the vital role of good leadership at all levels in reducing attrition and continuing efforts to recruit personnel with high potential for successfully completing their enlistments, the Army this year also developed criteria for transferring certain soldiers to the Individual Ready Reserve (IRR) in lieu of discharge. The primary reason for the new policy was the critical need to increase the size of the IRR. Effective 1 October 1979, soldiers who are separated after successfully completing basic training or at least eight weeks of one station unit training will be transferred to the IRR to complete their six-year obligation. The new policy applies to Regular Army soldiers, Army reservists, and national guardsmen separated for such reasons as parenthood, dependency, hardship, pregnancy, or having the status of sole surviving son, daughter, or other family member. Additionally, soldiers separated under the Trainee Discharge program, the Expeditious Discharge program, or because of unsuitability due to apathy may also be transferred to the IRR. Soldiers in these categories, however, who are identified by their commanders as having no potential for useful service under full mobilization will be discharged.

Officer Personnel

The officer strength of the active Army increased slightly during fiscal year 1979 from 97,301 to 97,381. The following table breaks down the officer end strength by grade.

Officer Grade Structure
30 September 1979

Commissioned Officers	
General Officers	421
Colonel	4,426
Lieutenant Colonel	11,089
Major	16,025
Captain	26,328
First Lieutenant	13,087
Second Lieutenant	12,988
Total	84,364
Warrant Officers	
CW–4	1,363
CW–3	3,880
CW–2	5,230
CW–1	2,544
Total	13,017
Grand Total	97,381

Although the Secretary of Defense directed that officer strength be reduced to 94,000 by the end of fiscal year 1980, the Army was unable to cut officer position requirements down to that level and requested an increase in the end strength for next year to a minimum of 98,340.

As shown in the following table, active Army officer accessions for fiscal year 1979 totaled 9,662, with 4,525 or 46.8 percent coming from the Reserve Officers' Training Corps (ROTC).

Fiscal Year 1979 Officer Procurement by Source

United States Military Academy	902
Reserve Officers' Training Corps	4,525
Officer Candidate School	633
Voluntary Active Duty	189
Direct Appointment	252
Medical, Dental, and Veterinary Corps	1,154
Nurses and Medical Specialists	514
Warrant Officers	1,130
Other[1]	363
Total	9,662

[1]Includes administrative gains such as recall from retired list and interservice transfer.

The opening Army ROTC enrollment for school year 1978–79

was 61,185, an increase of 1,508 since the previous year. About 25 percent of the cadets were women, 21 percent were black, and 6 percent were members of other minorities. The number of ROTC units remained unchanged at 275. The Army's intensive management plan for unproductive units continued to have a positive effect. ROTC units with fewer than seventeen students enrolled in the third-year program decreased from twenty-four during the 1977–78 school year to eleven during 1978–79, with only one potential candidate for disestablishment. Of the 6,500 Army ROTC scholarships awarded this year, 2,294 were for four years, 2,830 for three years, 1,153 for two years, and 223 for one year.

Although ROTC enrollment has grown steadily over the past five years, the rate of growth has been declining. The Army had to revise its plans to increase ROTC production because the manpower and financial resources needed to reach this goal were not provided. Since last year's request for 5,500 additional Army ROTC scholarships was unsuccessful, this year the Army requested 2,000 new scholarships. If approved, they should provide the incentive necessary to raise ROTC production from its present level of about 6,500 officers to a projected level of about 8,600 by fiscal year 1985.

The Army continued its efforts to assign more ROTC graduates to the reserve components. Of the 6,340 officers commissioned through ROTC this year, 4,040 entered active duty, 1,663 went to Army National Guard and Army Reserve units, and 637 were granted educational delays for graduate study. In another action to assist the reserve components, cadets who had completed all ROTC requirements but had not finished the academic requirements for the baccalaureate degree could be commissioned, provided they had been accepted for assignment to the Army National Guard or a unit of the Army Reserve.

In an effort to increase both ROTC enrollment and the strength of the Selected Reserve, the Army implemented a new program in June 1979, which permits eligible enlisted personnel assigned to a troop program unit of the Army National Guard or Army Reserve to enter the advanced course of the ROTC program and eligible ROTC advance course cadets to enlist and serve in USAR and ARNGUS units. Participants in this new Army ROTC/Selected Reserve Simultaneous Membership program will drill with their units as officer trainees, hold the rank of cadet, receive ROTC training, and earn guard or reserve pay at a grade of at least E–5 plus a monthly ROTC stipend of $100 for up to twenty months. After completing the ROTC program,

they will be commissioned in the Army Reserve and assigned to either a USAR or ARNGUS unit pending graduation from college. Upon graduation, these officers will be considered for Regular Army appointment or called to active duty for a three-year period.

The commissioned officer strength of the Army Medical Department (AMEDD) increased from 15,266 to 15,726 during fiscal year 1979 and surpassed the authorized end strength of 15,223. Nevertheless, it still fell far short of the recognized requirements for AMEDD officers, with the largest shortages in the Medical Corps and the Army Nurse Corps, as shown in the following table.

Army Medical Department Commissioned Officer Strength
30 September 1979

	Recognized Requirement	Authorized Strength	Actual Strength	Shortage from Recognized Requirement	Percent of Shortage
Medical Corps	5,935	4,201	4,403	1,532	25.8
Dental Corps	2,326	1,823	1,864	462	19.8
Veterinary Corps	362	365	369	(7)	(1.9)
Medical Service Corps	4,887	4,625	4,731	156	3.2
Army Nurse Corps	6,094	3,759	3,907	2,187	35.9
Army Medical Specialist Corps	490	450	455	35	7.1
Total	20,094	15,223	15,729	4,365	21.7

The following table breaks down AMEDD officer accessions for fiscal year 1979 by corps and source:

	HPSP	ROTC	Direct Appointment	Other	Total
Medical Corps	422	39	332	22	815
Dental Corps	115	23	159	6	303
Veterinary Corps	17	5	10	0	32
Medical Service Corps	25	305	131	35	496
Army Nurse Corps	0	29	458	3	490
Army Medical Specialist Corps	0	4	24	40	68
Warrant Officers	0	0	17	0	17
Total	579	405	1,131	106	2,221

For the second year in a row the Medical Corps succeeded in recruiting more than 300 volunteer physicians, with 124 of these entering graduate medical training and the rest joining as fully qualified doctors. This trend is expected to continue in the future. New incentives to encourage Medical Corps recruitment included the waiver of retirement eligibility criteria for new applicants, extension of active service beyond age sixty in selected cases, and the possibility of retention to age sixty-four for officers in the Army Reserve.

Despite the closing of the Walter Reed Army Institute of Nursing in June 1978, the Army Nurse Corps acquired 490 graduates of baccalaureate nursing programs during fiscal year 1979. Also, the number of nursing students enrolled in ROTC continued to increase. After graduation, they will provide the nucleus of Army nurses for the future who will be highly qualified both from a military and a professional nursing viewpoint.

Volunteer applications for the Veterinary Corps doubled this year, and those for the Dental Corps increased by 52 percent. These increases were attributed to aggressive recruiting as well as greater participation by corps members and AMEDD personnel counselors at professional conventions and in communications with and visits to dental and veterinary schools.

Once again, the Medical Service Corps (MSC) acquired the majority of its new officers through the ROTC program. Plans have been made to expand MSC advertising in order to improve recruitment for hard-to-fill specialties such as nuclear science, clinical psychology, sanitary engineering, and optometry. The Army Medical Specialist Corps met all of its accession objectives this year, including the additional qualified physical therapists authorized last year for service as health care extenders.

In addition to recruiting civilian-trained physicians' assistants, the Army reopened the military physicians' assistant training program, discontinued in 1977, by sending thirty-eight enlisted personnel to the Air Force school at Sheppard Air Force Base, Texas. Another 120 students were selected for attendance at the physicians' assistant school in the U.S. Army Academy of Health Sciences at Fort Sam Houston, Texas. This program will eventually result in accessions of 120 AMEDD warrant officers a year. The Army plans to continue recruitment of civilian-trained volunteers along with the military training programs.

At the end of the fiscal year, 329 students, including 124 designated as Army participants were attending the Uniformed Services University of Health Sciences at Bethesda, Maryland. The university will graduate its first class of medical students in June 1980. Fourteen of these are scheduled to enter Army graduate medical training.

A high-quality graduate medical education program that offers the opportunity for professional growth and development is among the strongest incentives for physicians to select military service as a career. The Army's first-year graduate medical education program filled 403 out of 410 internship spaces this year; the remaining seven positions were filled at the second year level of training. Over 80 percent of the applicants for internship

received either their first or second choice in specialty and location, thus making the program more attractive to prospective applicants in the future.

A major source of new officers for the Army Medical Department is the Armed Forces Health Professions Scholarship Program (HPSP). During fiscal year 1979, a total of 1,682 students participated in the Army's part of the program. There were 534 HPSP graduates (388 in medicine, 113 in dentistry, 15 in veterinary medicine, and 18 in optometry). This year the Army again stressed the need for legislation to increase HPSP benefits and make the program more competitive with other federal subsidy programs.

In an effort to improve retention as well as recruitment and help reduce the critical shortage of physicians and other AMEDD officers, the Army also continued to support legislative proposals to provide stabilized compensation and incentive pay for health professionals. Although members of the 96th Congress introduced six different bills relevant to special pay for military medical personnel, no final action had been taken on any bill by the end of fiscal year 1979.

The 95th Congress adjourned without enacting an amendment proposed by the Army to the so-called "Manchu Act." This act limits Army and Air Force officers assigned to the executive part of their respective departments to a four-year tour of duty and prohibits their reassignments to general and special staffs or secretariats in less than two years. The proposal, which would limit this restriction to general officers, has been resubmitted to the 96th Congress.

The Defense Officer Personnel Management Act (DOPMA) is the culmination of a number of efforts by the Department of Defense and Congress over the past fifteen years to update legislation pertaining to commissioned officers. It attempts to remove some inefficiencies, correct certain inequities in officer treatment, provide new tools for controlling the force during expansion and contraction, and establish more uniform promotion, separation, and retirement laws for each service. The DOPMA proposal achieves a satisfactory balance between the management interests of the Department of Defense and the personal rights of the individual officer.

Although the House of Representatives passed DOPMA in both the 94th and 95th Congresses, the Senate did not complete action on the bill either time. In the spring of 1979, Senator Nunn of Georgia reintroduced the DOPMA proposal. In August the bill was reported out of the Manpower and Personnel Sub-

committee of the Senate Armed Services Committee, and it was anticipated that DOPMA would be voted out of the full committee by mid-October 1979. The Army, as well as the other military services, has urged Congress to give high priority to passage of this important legislation.

Continuing review this year of the Army's Officer Personnel Management System (OPMS) resulted in a number of revisions to the OPMS specialty structure. When fully implemented during fiscal year 1980, these changes should strengthen the system and improve the professional development of Army officers. Five existing OPMS specialties will be deleted, one new specialty will be added, and ten specialties will be redesignated, expanded, or realigned. Major changes include a complete realignment of the specialties relating to personnel management and new career development patterns for aviators.

In August 1979 the U.S. Army Military Personnel Center announced plans to reorganize its Officer Personnel Management Directorate. After the reorganization, which will be phased in over a nineteen-month period, the directorate will have three vertically-structured divisions to manage the careers of lieutenants through lieutenant colonels (one for the combat arms, one for combat support arms, and one for combat service support) instead of separate divisions for each of the field grades. The present divisions for warrant officers and colonels will remain the same. By providing a single point of contact for each officer throughout his career from grade 0–1 to 0–5, the new organization should make the Army's officer management system more personalized, efficient, and effective.

On 15 September 1979 the Army began the transition to a new Officer Evaluation Reporting System (OERS), which will replace the system in use since 1973. The development of the new OERS took over five years and included an Army-wide field test conducted in 110 active Army, National Guard, and reserve organizations as well as a review of the performance evaluation systems of the other military services, government, industry, academia, and the armed forces of many allied nations. Several thousand officers from the field participated in the developmental process and, to a large extent, determined the makeup of the new system.

The new OERS incorporates several innovative features. It calls for active participation by the rated officer in the evaluation process, encourages continual two-way communication between the rated officer and the rater throughout the rating period, allows greater flexibility in the number of officials in the rating

chain, and increases the responsibilities of the senior rater from a purely administrative review to include an independent, critical assessment of the rated officer's potential. A new support form, which accompanies the officer evaluation report through the rating chain, provides additional information to all rating officials from the rated officer's point of view by giving each officer the opportunity to describe not only his duties and objectives but also his major accomplishments and significant contributions. The emphasis on better communication between senior and subordinate officers, objective setting, and problem solving should encourage professional development and increase organizational effectiveness by focusing performance more directly on mission.

Another innovation is the senior rater profile, used to track and maintain a record of the rating history of each senior rater. It places the assessment of each officer's potential in proper perspective by providing a comparison of a specific rating and the senior rater's normal rating tendencies. This information will be made available to boards and managers for use in making personnel management decisions. Another purpose of the profile is to stress the importance of the senior rater's responsibility to provide credible rating information, since it affects not only the course of each rated officer's career but also the quality of the officer corps and the selection of the Army's future leadership and, therefore, has great impact on how the Army accomplishes its mission.

To familiarize the officer corps with the new OERS, teams from the Military Personnel Center conducted briefings at major units and installations throughout the Army. Every officer received a pamphlet which explained the new system in brief and provided instructions for both rating officials and rated officers. Service journals published articles highlighting the salient features of the system. The Training and Doctrine Command developed instructional packages, which will train individuals affected by the OERS as well as those responsible for administering it. Also, Army Regulation 623–105, Officer Evaluation Reporting System, was completely revised to reflect all of the changes. After a transition period during which officers will receive a final closeout report under the current system, the new OERS will become effective in the active Army on 1 November 1979 and in the reserve components on 1 March 1980.

In order to increase promotion equity, the Chief of Staff in February 1979 established new policies for the temporary promotion of Army officers to the field grades. These policies are reflected in a five-year promotion plan that specifies both pri-

mary and secondary zones of consideration for promotion to each field grade during fiscal years 1980–84. The zones are defined by basic year groups, which are groupings of officers who began their commissioned service during the same fiscal year. Primary zone cutoffs are determined by the date of rank of the most junior officer in the year group who has never failed to be selected for promotion from the primary zone when first considered and who has never been selected from the secondary zones for early promotion to any grade. Secondary zones are composed of the two year groups junior to the group being considered in the primary zone for the first time, thus giving every officer two opportunities for early promotion to each field grade. The five-year plan was designed to provide each year group a total promotion opportunity of 80 percent to major, 70 percent to lieutenant colonel, and 50 percent to colonel. Secondary zone selection rates will be a maximum of 5 percent to major, 10 percent to lieutenant colonel, and 15 percent to colonel.

In a related action, the Army regulation on promotion of officers on active duty was revised effective 1 June 1979. It consolidated several interim changes as well as a number of promotion policies and procedures previously not covered by regulations. The new AR 624–100 explained in greater detail certain terms, practices, and procedures connected with promotions, revised the quality criteria for selection for promotion from a secondary zone of consideration, and changed the approval and review authority for promotion to first lieutenant and chief warrant officer, W–2.

During a review of mobilization requirements, the Army determined that it had an excess of reserve colonels in an active status. This excess was detrimental to the advancement of other officers because reserve promotions to colonel were supposed to be based on vacancies. Furthermore, the cost of maintaining the overstrength was estimated at more than $3 million. On 18 September 1979, the Secretary of the Army convened a removal board at the Reserve Components Personnel and Administration Center in St. Louis, Missouri. At that time, the Army had approximately 2,200 reserve colonels who were eligible for retirement and were not assigned to a unit. The Secretary directed the board to recommend 565 of these officers for removal, which was about half of the total excess. The guidance to the board clearly stated that it was not a qualitative retention board, since all 2,200 colonels were superb officers, fully qualified for service. Its task, therefore, was to determine which officers possessed the greatest potential to serve during future mobilization and rec-

ommend for retirement those with less potential. The board was scheduled to adjourn on 19 October 1979.

Women in the Army

The Women's Army Corps was disestablished effective 20 October 1978, pursuant to Section 820 of Public Law 95–485, as announced in Department of the Army General Order No. 20, dated 21 November 1978. The disestablishment of a separate corps for women reflects the integration of female soldiers into the mainstream of the Army and recognizes the role of women as full partners in national defense with equal opportunity for career development and advancement with their male counterparts. On 21 March 1979 the flag of the Women's Army Corps was officially retired after a final review at Fort McClellan, Alabama, and was put on permanent display in the WAC museum.

During fiscal year 1979, the number of women in the Army continued to increase. By the end of the year, there were over 61,000 women in the active Army, about 23,000 in the Army Reserve, and more than 14,000 in the Army National Guard. Female soldiers were stationed in forty-five of the fifty states and in seventeen foreign countries. About 8 percent of the active Army, 4 percent of the Army National Guard, and 12 percent of the Army Reserve were women, and further substantial increases in female strength were projected for both the active force and the reserve components. As Secretary of the Army Clifford L. Alexander stated: "The lesson of our experience thus far is clear. Women have the desire and the capability to serve well. They represent a resource that we cannot afford to neglect."

The number of women officers in the active Army rose from 6,292 to about 6,800 during fiscal year 1979. Female officer accessions for the year totaled 1,570, compared to 1,518 for fiscal year 1978. In recent years there has been a dramatic growth in female participation in various precommissioning programs. Increasing numbers of women have been attending officer candidate schools, with 103 receiving their commissions through OCS this year, an increase of 49 since last year. Female ROTC enrollment has skyrocketed from 212 during the 1972–73 school year to 15,365 during 1978–79, when one out of every four Army ROTC cadets was a woman. Some 817 females were commissioned through ROTC in fiscal year 1979. This year, for the first time, a woman was assigned as a full professor of military science for a major university ROTC program, and a woman was named the outstanding Army ROTC graduate for 1978.

With the admission of the class of 1983, the United States

Military Academy at West Point now has women in all four classes for the first time in its history. As of 30 September 1979, there were 333 female cadets, who comprised 7.8 percent of the 4,287 member cadet corps. There were also twenty women officers on the academy faculty and staff, and plans call for an increase in 1980. Women in the later classes have lower attrition rates and greater physical aptitudes than those in the earlier classes. Each cadet company has incorporated females into its ranks and women have been fully integrated into every facet of cadet life. The first women will graduate from West Point in May 1980.

Currently, 221 out of 285 commissioned and warrant officer specialties are open to women. At the end of the fiscal year, 56 percent of female officers in the active Army were in the professional branches, with the greatest majority in the Army Nurse Corps. Among the remaining 44 percent, concentrations were found in military intelligence, signal, ordnance, quartermaster, and adjutant general specialties. There were two female general officers: Maj. Gen. Mary E. Clarke, the last director of the Women's Army Corps and the present commander of the Military Police School/Training Center and Fort McClellan, and Brig. Gen. Hazel W. Johnson, U.S. Army Nurse Corps, who this year became the first black woman to reach the rank of general.

As the year ends, a plan is being prepared that will distribute women throughout the basic branch specialties in a sensible and fair manner, taking into consideration the current combat exclusion policy. The objective is to achieve a representative female officer force that satisfies operational requirements, individual career development needs, and the Army's affirmative action plan.

Although the number of enlisted women on active duty rose from 50,292 to 54,818 during fiscal year 1979, the Army had difficulty in recruiting women and fell 8.5 percent short of the accession goal for the year. However, the standardization of enlistment criteria for men and women, effective 1 October 1979, should facilitate female recruiting in the future. At the present time, 324 of the Army's 348 enlisted specialties are open to women, but many women still prefer to serve in the traditional female skills and appear reluctant to enter some of the other career fields. This attitude is reflected in the problems encountered in enlisting sufficient numbers of women for mechanical and technical specialties as well as higher attrition rates for female soldiers in such nontraditional skill areas. Nevertheless, the Army intends to continue recruiting women for a wide range of specialties. In general, enlisted women as well as female officers are

performing more than satisfactorily in the skills for which they were trained, as demonstrated by early promotion, selection for command and schooling opportunities, and efficiency evaluations.

The integration of male and female recruits in basic training was completed in fiscal year 1979. Last year, integrated basic training was offered only at Fort Jackson. In accordance with previous plans, basic training for men began at Fort McClellan and for women at Forts Dix and Leonard Wood in October 1978. After additional study, the Training and Doctrine Command implemented female basic training at Fort Bliss in November and Fort Sill in February, and decided that in the future enlisted women would be sent routinely to all TRADOC training centers, except Fort Knox, for basic training. The Army has adopted standardized and integrated basic training to ensure that women are provided the same fundamental battlefield skills as men.

For several years, the Army has been concerned about the physical ability of women, and some men, to perform certain military tasks. The Training and Doctrine Command has been studying the physical requirements associated with each military occupational specialty in order to develop gender-free physical standards that will determine who can perform effectively in each specialty, regardless of sex. Two physical classification tests are under development: a physical fitness test battery, which involves a test of muscle strength to include upper and lower body and cardio-respiratory endurance, and an X-factor test, which relates an individual's weight lifting capability with the physical requirements of a particular skill.

In November 1978 Armed Forces Examining and Entrance Stations began using the weight factor test to advise enlistees—both male and female—on their chances of success in their chosen MOS. No individual, however, was denied entry into a specialty on the basis of this test alone. Arrangements have been made to compare the performance in Advanced Individual Training of soldiers with the appropriate X-factor level for their MOS against those with a lower level in an effort to determine the correlation between physical strength and performance of duty.

An interesting experiment at Aberdeen Proving Ground, Maryland, has indicated that women have the ability to load and fire 105-mm. and 155-mm. howitzers. The six-week test, conducted by the Army's Human Engineering Laboratory, involved thirteen enlisted women who normally hold administrative jobs. The all-female teams achieved the prescribed rate of fire of both howitzers with no problem and, in several instances, exceeded

it. Male observers described their performance as professional and outstanding. Since the test was limited in nature and did not include all tasks required of a regular artillery crewman, it did not prove that women could perform all artillery-related functions, but it did open the door for additional studies along these lines. Eleven of the thirteen women who participated in the experiment felt that they could handle the job, but only five said they would want to trade their present jobs to become artillery crewmen.

One of the major issues associated with women in the Army is pregnancy. Although pregnancy is officially regarded as a temporary medical disability, field commanders are concerned over the high rate of pregnancy among enlisted women, prolonged absence from duty as a result of pregnancy, and nondeployability of pregnant soldiers. During fiscal year 1978, 2,068 pregnant soldiers chose to leave the Army, 2,626 had abortions, and 3,138 delivered and remained on active duty. This year, 2,791 chose to leave the service, 571 had abortions, and 3,387 delivered at full term. The substantial decrease in the number of abortions can be attributed, in part, to congressional restraints imposed on performance of voluntary abortions using federal funds or facilities.

The fiscal year 1979 Defense Appropriations Act prohibited the use of appropriated funds to perform abortions, except when the life of the mother would be endangered or severe and long-lasting physical health damage would result if the fetus were carried to term, when the mother was a victim of rape or incest, or when it was necessary to terminate an ectopic, or abnormal pregnancy. In January, the Army announced that hereafter only those soldiers who met the criteria established by the act may obtain abortions free of charge at Army medical facilities. Soldiers not qualifying for abortions at government expense who are stationed in overseas areas without access to acceptable civilian health care facilities may obtain abortions on a prepaid fee basis at the nearest military medical facility. Furthermore, government transportation is authorized for this purpose. Soldiers who need abortion counseling and are stationed where such services are not available locally are also entitled to government transportation.

The Army also changed its policy on maternity leave this year. In the past, pregnant soldiers were normally authorized up to four weeks of prenatal leave. Under the new policy, effective in August 1979, they will continue to perform duty until such time

as it is no longer considered feasible by the attending physician. The postpartum leave policy remains the same: usually not more than six weeks of authorized leave after the mother's release from the hospital with extensions available for medical reasons.

On 21 September 1979 the Secretary of the Army approved a new policy concerning evacuation of pregnant soldiers when, and if, general noncombatant evacuation from an overseas area is ordered. All personnel who have reached their eighteenth week of pregnancy will be evacuated. Other pregnant soldiers may be evacuated upon determination by a lieutenant colonel in the chain of command, in consultation with medical authority, that evacuation is in the best interest of the Army and the individual. In making the determination, authorities will consider the women's ability to perform in her specialty and the capabilities of supporting medical units.

This year a group of women received belated official recognition for their service as telephone operators with the American Expeditionary Forces (AEF) during World War I. They were civilian employees of the Signal Corps because at that time women could enlist in the Army only as nurses. Organized in response to a request from General John J. Pershing, the Signal Corps Female Telephone Operators had the important mission of operating the telephone exchanges of the AEF in Paris, France, at AEF Headquarters in Chaumont, France, at First Army Headquarters, and at seventy-five other cities and towns in France as well as in London, Southampton, and Winchester, England. Some of them also served in Germany during the occupation at the end of World War I. A total of 223 women went overseas in six operating units, starting in March 1918. Of particular note was the support given by a detachment of six female operators at Ligny, which was critical to the First Army's communications during the St. Mihiel offensive. One of the women, Chief Operator Grace D. Banker, received the Distinguished Service Medal.

On 15 May 1979 the Department of Defense Civilian/Military Service Review Board determined that the service of the World War I Signal Corps Female Telephone Operators should be considered active military service. On 2 July 1979 the Secretary of the Army delegated the responsibility for determining whether individual members of this group qualified for honorable discharges and veterans benefits to the Reserve Components Personnel and Administration Center in St. Louis, Missouri. By the end of the fiscal year, the Individual Service Review Board es-

tablished at the center had reviewed forty-two applications from surviving members of the group or their next of kin. The board approved thirty-five of these applications.

In a special ceremony held at Newport, Rhode Island, Secretary of the Army Alexander presented an honorable discharge certificate to Mrs. Estelle Pheeney, age 86. Mrs. Pheeney thanked the secretary on behalf of all of the women and said it was worth waiting sixty years for this honor. The other thirty-four former telephone operators received their discharge documents from Army commanders in ceremonies near their home towns across the country.

Military Manpower and Personnel Management

In the area of military personnel management, a plan approved earlier by the Army Chief of Staff was set in motion during fiscal year 1979 with the objective of broadening the scope of personnel management by incorporating the human dimensions of leadership, motivation, and commitment. Major features of the plan included: upgrading the Army's capability to perform research in support of personnel management; developing doctrine; training broad concept personnel managers; integrating research, doctrine, and training; providing a battalion administrative officer for each TOE battalion; and examining the structure of departmental level personnel management systems.

By contract, Booz-Allen and Hamilton, Inc., undertook the examination of the system's structure. The firm's proposals were placed before a general officer action planning conference, which gave strong support to several of the contractor's recommendations, among them: that there be further exploration of the Army's personnel management information systems with the goal of making them coherent and compatible; that the Deputy Chief of Staff for Personnel be provided with a directorate responsible for planning, systems design, and research; and that efforts be continued to identify personnel management functions and responsibilities that should be moved from the Army staff to field operating agencies or major commands. With conference results incorporated, the contractor's final draft report was being staffed within Headquarters, Department of the Army, at the close of the fiscal year.

The focus of efforts during the year to improve military personnel management was on the goal of ensuring that the Army has enough trained soldiers who are motivated and organized to achieve success on the battlefield, and, in particular,

on the goal of improving a battalion commander's ability to raise the readiness of the soldiers under his command. To achieve this particular goal, the Training and Doctrine Command developed a six-week training course for battalion S–1's and a pilot program for testing the augmentation of an S–1 with a battalion administrative officer. The S–1 training, scheduled to begin in October 1979 at Fort Benjamin Harrison, Indiana, will stress the preparation of a new estimate of the human situation, which, in addition to parts of the personnel estimate currently in use, covers the areas of quality of life, ability, organizational climate, commitment, and cohesiveness. In sum, it is a systematic, comprehensive, and coordinated approach to analyzing the human dimension of a battalion. To provide time for an S–1 to complete the estimate, it may be necessary to augment the S–1 with a battalion administrative officer, who would assume most of the administrative duties of the S–1. The pilot program, to be conducted from March 1980 through March 1981, will assist in determining whether the provision of a battalion administrative officer is worthwhile.

As a result of the realignment of Army staff responsibilities developed during fiscal years 1977 and 1978, military manpower management functions were consolidated under the Deputy Chief of Staff for Personnel on 1 October 1978. Subsequently, a task force established by the Director of Manpower, Plans, and Budget, within the Office of the Deputy Chief of Staff for Personnel, developed short-term improvements and identified long-range improvements needed to increase the effectiveness of the Army manpower management system. Upon the disbandment of the task force in June 1979, its on-going projects became a part of the coordinating mission of the Utilization and Standards Division within the Office of the Deputy Chief of Staff for Personnel.

Since October 1973, the Army has employed a system called ELIM-COMPLIP (Enlisted Loss Inventory Model-Computation of Manpower Programs Using Linear Programing) to reflect the current enlisted manpower status of the active Army and to project enlisted manpower variables seven years into the future. The results are used in budgeting, planning the use of the training base, and setting recruitment objectives. A new version of the system was developed during fiscal year 1979 with refinements that will improve enlisted loss projections and enlisted force management. At the end of the year, the new version was undergoing validation and calibration testing. Adopted for of-

ficial use early in the year was a version of ELIM-COMPLIP employed to project the female portion of the enlisted force to assist the management of its growth.

Development of another system called FORECAST began this year. A modular, multi-level, fully integrated ADP system for the support of active Army personnel management, FORECAST will include the management of both officer and enlisted personnel not only in peacetime but also under mobilization conditions. It will integrate functions currently being performed separately by a number of models and systems, and by so doing, will provide improved accuracy and consistency to Army personnel management.

A number of changes in policy governing borrowed military manpower—soldiers who perform recurring or constant work other than that to which assigned—were developed during fiscal year 1979. A principal change was the temporary suspension of existing regulatory prohibitions against the use of borrowed military manpower to replace civilians lost through reductions-in-force. There also was a redefinition of borrowed military manpower. The current definition in Army Regulation 570–4 had drawn considerable criticism from the Government Accounting Office, the Office of the Inspector General, and field commands. The redefinition sets very tight limits on what constitutes borrowed military manpower. Both the policy changes and the redefinition will appear in a forthcoming revision of AR 570–4.

When 55 percent or more of the spaces authorized for any given military occupation specialty are located outside the continental United States, that MOS is space imbalanced. This causes CONUS assignments to be less than twenty-four months between overseas assignments, which, in turn, results in high levels of dissatisfaction among soldiers over the frequency of overseas assignments and family separations. In fiscal year 1979, there were forty-four space imbalanced MOS's affecting about 40,000 soldiers. To alleviate this problem, the Chief of Staff, in July 1979, approved a proposed incentives program offering a soldier, with a space imbalanced MOS who extends his overseas tour for twelve or more months, a choice of one of four options: incentive pay of $50.00 a month during the extension, thirty days nonchargeable leave, fifteen days nonchargeable leave with travel to and from CONUS, or travel to and from CONUS for the soldier and dependents for the purpose of ordinary leave. A complete market analysis of the proposed incentives, including a worldwide sample survey of soldiers with space imbalanced MOS's, produced favorable results. Sufficient tour extensions

would be obtained, the analysis indicated, to cause all space imbalanced MOS's to act as if they were in balance, and, as a result, soldiers with space imbalanced MOS's would be permitted at least twenty-four months in CONUS between overseas tours. Projected for the program was an annual cost of $3.5 million with an annual offsetting PCS (Permanent Change of Station) cost-avoidance of $7.1 million, resulting in annual savings of $3.6 million. By year's end, enabling legislation for the program had been drafted and forwarded to the Navy and Air Force for coordination.

In the continuing effort to reduce personnel turbulence as a means of increasing operational readiness and lowering the costs of moving soldiers and their dependents from station to station, the Army's principal actions during fiscal year 1979 represented a reversal of past steps taken with respect to overseas tour length. Specifically, the Army carried out an earlier decision to reduce the tour length in Europe for first term four-year enlisted bachelors and, similarly, established an enlistment option for first-term three-year enlistees that would guarantee them shorter tour lengths in Europe.

In the case of the four-year enlistees, it had been a common development that after initial entry training and a normal 36-month overseas tour, they had less than six months remaining to complete their terms of service. Since, for reasons of economy and proper employment, persons with less than six months left in the Army were not rotated to CONUS, these individuals, unless they reenlisted or extended their enlistments, were required to spend approximately forty-two months in overseas areas. To alleviate this problem in Europe, the Army, beginning in January 1979, reduced the tours of four-year enlistees assigned to that area to twenty-four months. The tours of individuals then serving in Europe were prorated in a program completed in September 1979.

For some time, senior Army commanders in Europe had requested a reduction in tour length for the three-year enlistees, urging that an eighteen-month tour replace the existing tour of approximately thirty months. They argued that morale reasons alone justified a reduction, and pointed out that a large percentage of disciplinary problems involved personnel who had served in Europe for more than eighteen months. In a study of the matter undertaken last year, the Army Research Institute agreed with the position taken by the commanders in Europe. During fiscal year 1979, a tour length task force under the direction of Brig. Gen. John D. Granger completed a study to

determine if an eighteen-month tour for first-term three-year enlistees was warranted and feasible, and concluded that the program was required and that the Army could support it. Subsequently, the Army established the enlistment option for selected MOS's which became effective on 1 October 1979. Meanwhile, the Army carried forward studies of the impact of eighteen-month overseas tours for all three-year enlistees in recognition of the fact that monetary savings of PCS funds cannot be the sole basis for determining the lengths of overseas tours.

A military personnel management problem of substantial dimension involves those service members, male and female, who are sole parents. Single parents on active duty number approximately 18,200, which is about 2.4 percent of the Army's strength; about 13,000 are enlisted personnel and nearly 1,400 are officers. Under a new policy effective 1 January 1979, all sole parents and military couples with children as well, must be counseled by their commanders regarding their responsibilities and entitlements. They are also required to submit a formal dependent care plan outlining the arrangements they have made for the care of their children under a variety of circumstances. For example, they must affirm that they have planned for the care of their children in case of alert, field exercises, and temporary duty assignments. They must explain who will assume responsibility for the children if they are assigned overseas or unaccompanied tours, if they are deployed on short notice, or if dependents must be evacuated from an overseas area. If they have not provided an acceptable plan within six months of counseling, they will be barred from reenlistment. Meanwhile, remaining in effect is the policy permitting the involuntary separation of soldiers who, because of parental responsibilities, are repeatedly absent from duty, cannot perform prescribed duties, or are not available for worldwide assignment.

Civilian Personnel

In the first major revision of the Civil Service Act since its passage in 1883, President Carter, on 13 October 1978, signed into law the Civil Service Reform Act. This act is designed to improve government efficiency by raising the productivity of the federal work force and to balance management authority with employee protections. Most of the provisions, along with the President's Reorganization Plans No. 1 and No. 2, went into effect in January 1979. As provided by the reorganization plans, the U.S. Civil Service Commission was replaced by the Office of Personnel Management, which will supply leadership in man-

aging the federal work force, and the Merit Systems Protection Board, which will resolve employee complaints and appeals. The reorganization plans also established the Federal Labor Relations Authority to administer the federal labor relations program and investigate unfair labor practices within the government. Authority to enforce provisions of the Civil Rights Act affecting the federal government, including hearing and resolving certain discrimination complaints, which had rested with the Civil Service Commission, was transferred to the Equal Employment Opportunity Commission. It is with these four agencies that all federal employers will now deal in carrying out the provisions of the Civil Service Reform Act.

The Army, which is the largest single federal employer of civilian personnel, moved quickly to put the new law into effect. A special project office was organized within the Office of the Deputy Chief of Staff for Personnel, which was designated as the action agency for carrying out the provisions of the reform act. Policy decision authority rested in the Office of the Assistant Secretary of the Army (Manpower and Reserve Affairs), and a combined Army staff and secretariat implementation committee was established with the assistant secretary as chairman. Specific features of the reform act having the greatest impact on Army civilians included the requirement for a more meaningful appraisal of an employee's performance, the establishment of a merit pay system for higher grade supervisors and managers, and the creation of a Senior Executive Service (SES). It was on this last provision that the Army initially focused its attention inasmuch as the law required that the SES become operational on 13 July 1979.

Considered the keystone of civil service reform, the Senior Executive Service is designed to improve top management performance and efficiency. It brings to the federal government a concept long common within private industry, namely, that positions and people at the senior executive level are in a different organizational environment and therefore must be handled differently from other workers. The SES accomplishes this through a modified personnel system for most top level management positions in the federal government. Conversion to the new system received top priority in the Army. Potential SES jobs were identified, a new governing regulation was written, instructions to civilian personnel offices were issued, and orientation and training sessions were developed and conducted for SES members and their supervisors. Further, entirely new performance evaluation and incentive pay systems for senior executives were

developed, staffed, and published. By mid-July, the incumbents of 254 executive positions were converted to the SES. Only three eligible Army executives declined to join the SES, resulting in a conversion rate of 98.85 percent.

The provision for a merit pay system for supervisors, managers, and management officials in grades GS–13 through GS–15 affects approximately 18,000 Army employees. These individuals will no longer receive longevity step increases in salary but will have pay adjustments based on performance. Thus, only high achievers will be rewarded. Under the system being developed in the Army, authority to determine the amount of pay within the established minimum and maximum salaries for the three grades will be delegated to commanders. Under current plans, a performance appraisal system upon which merit pay is to be based will be staffed and field tested early in fiscal year 1980, governing policies and regulations will be published in May 1980, and, as required by law, a phased implementation of the system will be completed no later than 1 October 1981.

The same principle of holding employees more accountable for their performance also is the basis of a new performance appraisal system partially developed during the year for use in evaluating all other Army civilian personnel in both general schedule and wage grade positions who are not covered by the merit pay system and are not in the Senior Executive Service. When finally put into operation, the new appraisal system will provide a sound foundation for important management decisions such as placement, retention, training, rewarding, and removal of employees, and should result in a more productive civilian work force.

The Army's civilian strength decreased from about 405,000 on 30 September 1978 to approximately 392,000 on 30 September 1979. Of these, 328,000 were citizens of the United States and 64,000 were foreign nationals. Substantial reductions were made as a result of the Leach Amendment to the Civil Service Reform Act, which required that total civilian employment in the executive branch of the federal government be reduced to the level existing at the end of fiscal year 1977. The Office of Management and Budget allocated 11,000 of this 40,000-person reduction to the Department of Defense (DOD), although DOD strength was already below the 1977 level. The Office of the Secretary of Defense, in turn, allocated a 3,500-person cut to the Army. Conversion of civilian reserve component technicians to military status and contracting out certain jobs to the private sector caused further reductions in the Army's civilian strength.

Also, the President imposed a hiring limitation for approximately four months of the year during which the Army, like other agencies of the executive branch, could fill only half of its civilian vacancies. During fiscal year 1979, major reductions-in-force were conducted at Forts Benning, Dix, Jackson, Bragg, Polk, and Campbell.

During the 1970's there has been a steady decline in the Army's civilian manpower, which had reached a peak strength of over 577,000 in 1969. Army leaders are concerned about the reductions which have impaired the Army's ability to supply troop units, to maintain combat weapons systems, to support quality of life programs for soldiers, and to mobilize in case of emergency. In congressional testimony on 22 February 1979, Chief of Staff General Bernard W. Rogers stated, "This is the major challenge in my opinion that the Army faces today. How to accommodate itself to the continued cuts in civilian personnel and still perform effectively and efficiently."

Public Law 95–79 (Department of Defense Appropriation Authorization Act, 1978), required a 6 percent reduction in the number of employees at grades GS–13 and above by the end of fiscal year 1980. The Army reduced personnel in these grades by 2 percent in fiscal year 1978 and by 1 percent in fiscal year 1979, but supported the Office of the Secretary of Defense in its request to Congress to eliminate further high grade reductions. Neither the House nor the Senate Armed Services Committee, however, supported this request. The Commander of the U.S. Army Materiel Development and Readiness Command persuaded Congressman Clarence D. Long of Maryland to propose an amendment to the Department of Defense Authorization Act, 1980, to extend the time allowed to accomplish the reduction through fiscal year 1981. The one-year extension would give the military services a chance to make their case to Congress for removing from the law the requirement for reducing further the number of civilian positions at GS–13 and above. The House of Representatives approved the amendment, and it was expected to be passed by the Joint Conference during resolution of variances between the House and the Senate versions of the Department of Defense Authorization Act, 1980.

Although the Army suspended civilian average grade ceilings in 1978, the subject of average grade surfaces from time to time, especially during the budget formulation process. For example, average grade considerations were involved in the decisions to reduce the Army's funding for fiscal years 1979 and 1980. A review of the average grade program this year resulted in rec-

ommendations to the Vice Chief of Staff that a policy to stop grade escalation be adopted and that ceilings not be reinstated unless unjustified increases in average grade occur. The objective is to stabilize the average grade through more effective use of position management measures and monitorship. The decision not to impose average grade ceilings places responsibility for grade stabilization in the hands of each commander and agency chief.

During fiscal year 1979, the Army's successful record in employment and advancement of minorities and women continued. At the end of the year, 35.4 percent of the civilian work force were women and 18.1 percent were members of minorities. Of the ten specific numerical affirmative action goals established for fiscal year 1979, five were achieved and substantial improvements were recorded in the other five areas. In grades GS–13 and above, there were increases of 3.9 percent for minorities and 7.8 percent for women, as compared to an overall increase of only .04 percent.

The Secretary of the Army's Mobility, Opportunity, and Development (SAMOD) program, introduced last year to test new concepts of recruiting and training individuals with high potential for career positions, was conducted on an experimental basis in the Washington, D.C., area. During fiscal year 1979, 113 interns, 7 management interns, and 10 fellows were selected for the SAMOD program. Of these 130 positions, 23 percent were filled with minorities and 67 percent with women, thereby clearly demonstrating the program's support of affirmative action.

The Army continued to emphasize special employment programs for veterans, handicapped persons, and young people. Under a new plan for fuller utilization of the Veterans Readjustment Authority, 2,081 Vietnam-era veterans received special appointments and job training this year. There was continued progress in removing architectural barriers to the handicapped, and the Army established a goal of hiring handicapped persons in 4 percent of the vacancies filled by outside hire. The Army's 1979 summer employment program provided jobs for 13,824 young people; of these, 7,233 came from economically disadvantaged families.

Effective 1 October 1978, the United States Army Civilian Personnel Center was established as a field operating agency reporting to the Director of Civilian Personnel under the general staff supervision of the Deputy Chief of Staff for Personnel. The mission of the new center is to administer operational personnel

systems for centralized career administration, personnel data systems, and program evaluation; provide policy guidance and technical assistance to major commands, installations, and activities in civilian personnel program areas; develop procedures and recommend personnel policies, procedures, systems, and programs in support of the civilian component of the Army; and provide centralized management of the resources of the U.S. Army Civilian Training, Education, and Development Student Detachment and of civilian executive development funds.

The number of Army employees represented by labor unions declined for the third consecutive year. Civilian personnel covered by exclusive recognition decreased from 223,012 in 686 bargaining units to 222,543 in 674 units, probably as a result of continuing reductions in civilian strength as well as union efforts to consolidate their bargaining units. During fiscal year 1979, the Army offered four courses in labor relations for executives at various locations throughout the country. Each course was attended by approximately forty commanders and other top level management officials.

Last year the National Association of Government Employees filed a petition to consolidate all of its forty-six existing bargaining units at twenty-four installations into one Army-wide unit. The Army opposed this consolidation on the grounds that the proposed unit did not constitute a distinct and homogeneous grouping of employees who shared common interests. Furthermore, such a consolidation would promote neither effective dealings with the union nor efficiency of agency operations. On 30 January 1979, before a formal hearing of the matter, the union withdrew its petition. While no reason for this action was given, the withdrawal followed a conference in which the Army submitted twenty-eight exhibits supporting its position while the union failed to provide any documentation.

The enactment of the Civil Service Reform Act provided a statutory basis for the federal labor relations program, which formerly operated under executive order, and resulted in several important changes in the conduct of the program. Disputes about what can be negotiated, for example, have increased tremendously. From 1 January to 30 September 1979, unions filed twenty-one negotiability challenges with the Army, whereas only one formal challenge was filed during calendar year 1978. The Army, however, is not being singled out; government-wide, about 170 such cases were filed during the same period. The majority of the Army's cases involve the management rights portion of

the new law, such as the right to take personnel actions, to contract out work, or to determine the method and means of performing work.

This year, as usual, the Army continued to encourage cost-reduction suggestions from its civilian employees as well as military personnel, which resulted in first-year savings of $65.8 million. In October 1977, President Carter established a special program providing recognition in the form of a presidential letter of commendation to employees who saved the government $5,000 or more. The most important contributions are also considered for nomination for the Presidential Management Improvement Award. By the end of fiscal year 1979, the Army had nominated 1,568 civilian and military personnel for presidential letters and nine employees for presidential awards. The savings from the contributions of these individuals totaled $100,355,436.

On 13 October 1978, the Secretary of the Army and the Chief of Staff honored fifteen exceptional employees, including the outstanding suggestors of fiscal year 1978, in an awards ceremony at the Pentagon. This was the third annual ceremony recognizing Department of the Army personnel who exemplify the highest standards of professionalism.

6. Human Resources Development

Human resources development is an important part of personnel management and involves planning, organizing, directing, coordinating, and controlling activities. These activities are designed primarily for their effect on individual morale and organizational esprit, development of individual potential, and development of an organizational climate that enhances the attitudes, motivation, commitment, and sense of well-being of soldiers and their families. All the activities involved are related to leadership and discipline, job and career satisfaction, human relations, alcohol and drug abuse prevention, spiritual guidance and counseling, physical and mental well-being, community services, and maintenance of law and order.

Leadership and Motivation

Each year the Chief of Staff hosts the Army Commanders Conference in Washington, D.C., to discuss major problems confronting the service. In early October 1978, all of the senior Army leaders, except General Alexander Haig, Commander in Chief, U.S. European Command, met at the Pentagon to review the past year and prepare for the one ahead. The agenda centered on three topics—how to train, how to fight, and how to go to war. From the frank discussions, the Army leaders derived a framework for assessing the current status and what could be done to improve the combat readiness of the Army.

In August 1979, the Chief of Staff hosted the fourth leadership seminar at the Pentagon. Forty-six of the sixty-six retired four star generals attended the two-day meeting. At the sessions, senior active Army commanders and staff officers reviewed Army programs concerning mobilization, rapid reinforcement, and modernization. The retired generals then had an opportunity to ask questions and to give counsel based on their own experience.

To strengthen the image of trust and confidence projected by Army officers, the Chief of Staff initiated a trust review in 1977 to examine Army regulations, eliminating wherever possible those policies that undermine that image. The review sought to reaffirm the special trust that the Army reposed in its officers to act honorably and effectively under all conditions. By emphasizing ethical standards throughout the Army's educational

system and giving strong support to a reward system for officers demonstrating adherence to those standards and punishment for violators, the Army strived to bolster its two-century tradition of honorable service. The Chief of Staff, accordingly, approved the trust review report in August 1978. Of the sixty-three policies requiring changes in regulations, forty-seven were within the Chief of Staff's authority to revise. Thirty-nine have been completed and the remainder are to be executed by the end of 1979. Seven of the sixteen policies requiring approval by higher authority have been approved and are now in effect. Two have been disapproved.

In a related area, the amended Ethics in Government Act of 1978 emphasized the need to rebuild public trust in both the senior civilian and military leadership of the nation. Under the amended law, civilians in grade GS–16 and higher and general officers are required to file annual financial disclosure statements. Ground rules for post-retirement private employment were also clarified. Among the restrictions set forth was a permanent barring of these senior officials from making personal appearances or from soliciting on behalf of private firms in matters that they had been substantially involved in prior to retirement. There is also a two-year bar on those senior officials representing (or assisting in representing) anyone before the government in areas that had formerly been a part of their official responsibility and a one-year bar on attempts to influence the actions of the agency where the senior official had been employed.

The drive to sustain high ethical standards has been matched by continued efforts to improve leadership and management capabilities through organizational effectiveness. Organizational effectiveness is a military adaptation of an organizational development concept used in private industry. After three years of intensive study and several pilot programs, the Army made substantial progress toward the application of selected aspects of behavioral/management science technologies. By the end of the report year, the Army had sent 572 staff officers through the sixteen-week intensive training course at the Organizational Effectiveness Training Center at Ford Ord, California. Instruction in the service schools also expanded the knowledge base that permitted the skills of these officers to be used more effectively. Under the 3–10 year plan developed during the year, there will be a transition from focus on human relations to greater emphasis on broader total systems and complex organizations dur-

ing the 1980–86 period. In the future, more attention will be devoted to program management, resource/manpower structures, personnel selection/assignment, research, evaluation, education and training, and information.

At the unit level, a Command Climate Study conducted during the year investigated the importance of determining current attitudes and perceptions of officers, noncommissioned officers, and enlisted men concerning significant human issues and the possibility of developing a practical model to set forth the relationships betwen factors such as unit performance, organizational climate, motivations, satisfaction with the Army, ability, reenlistment, and commitment to deploy and enter combat. Data collections involved sixty combat, combat support, and combat service support battalions. From the preliminary results, the study group found that there was a strong correlation between battalion performance, satisfaction with the Army, intent to reenlist, and unit motivation. It was also found that positive factors foster a good command climate and include satisfaction with the job and with fellow personnel, good unit discipline, efficient administration and work processes, and effective personnel and property security in the unit area. On the negative side, it was found that there was an overcommitment of resources, an inadequate time to carry out tasks, a lack of adequate training facilities, a shortage in the midgrade noncommissioned officer ranks, a significant amount of personnel turbulence and turnover, and an inadequate amount of preparation for technical and leadership skill training.

The increase of women joining the Army has created some problems in the relationships between male and female soldiers of different rank. Fraternization, which encompasses both dating and marriage, produced instances of partiality, preferential treatment, and the improper use of rank or position in male/female relationships. In November 1978, the Secretary of the Army approved a new policy that was incorporated into AR 600–20. It states that such conduct is contrary to good discipline and morale and should be avoided. Commanders and supervisors were directed to counsel persons involved in such situations and take other appropriate action to eliminate the problem.

In recent years, union supporters have expended considerable effort to unionize the military force. Their efforts received a decisive setback when the President signed into law in November 1978 the prohibition of union organizations in the armed forces. All members of the active forces and members of the

reserve components were included under the legislation, and punishments were established for all persons attempting to enroll military personnel in unions or to use government property for such purposes. Nothing in the law prevented members of the armed forces from presenting grievances and complaints through established procedures, from seeking guidance or counsel from outside sources, or from communicating with Congress.

Equal Opportunity

In January, the Army published the third annual assessment report of its equal opportunity program. The report indicated that the Army had made progress in recruiting and retaining minority and women officers and enlisted personnel, increased the number of the same categories in the Reserve Officers Training Corps, and attained favorable minority and women selection rates for most promotion, command, and professional schooling boards. Among the areas that required further attention were the declining rate of black cadet enrollment at the Military Academy, the identification and correction of the factors that contributed to the high ratio of minority soldiers involved in adverse actions, and the provision of timely information for equal opportunity management initiatives to all soldiers at all levels of command. The report pointed out that the success of the Army's Affirmative Action Plan depended upon the personal involvement of commanders and functional managers and their understanding of the relationship between the plan and combat readiness.

As the Secretary of the Army noted in May, about 11 percent of new 2d lieutenants and 25 percent of noncommissioned officers in the Army were black. Also, there were twenty-one black general officers. He went on to say, "I can think of no other major American institution where blacks are as well represented at all levels." The fact that the officers corps only had a ratio of about one black officer to nine white while the enlisted ranks had reached a ratio of about one black to two white soldiers was best explained by the Assistant Secretary of Defense (Manpower) before a Senate committee. The disproportion, he maintained, was a reflection of conditions in American society. The percentage of blacks entering the Army as officers is about the same as the percentage of college graduates who are black—a result of maldistribution of opportunity. The opposite was true of enlisted soldiers since the absence of opportunities for blacks in the labor force led them to join the armed forces, an equal opportunity employer.

One area in the Army where minorities were not well represented was in the Military Police Corps, where blacks and Hispanic soldiers comprised only about 20 percent of the military police enlisted strength. To bring the ratio into line with those of other branches, the Army Recruiting Command launched an active campaign to attract more minority members into law enforcement specialties. In addition, the Law Enforcement Division developed a plan to supplement the Recruiting Command's efforts by having senior military police officers discuss the problem with the regional recruiting office in their area and help the recruiters follow leads on potential enlistees. All individual military police, provost marshals, and military police commanders have also been asked to talk to the minority members of their units to obtain referrals of friends or relatives who might be interested in becoming military policemen.

Discipline, Law Enforcement, and Military Justice

Improvement of Army discipline began with the volunteer era in fiscal year 1974 and continued through fiscal year 1979. Crimes of violence and crimes against property decreased slightly from last year. Though the rates for drug offenses rose slightly, they remained well below the rates for the first three years of the volunteer period. The desertion rate also showed a slight increase, but there was an overall decrease in absenteeism due to a drop in the AWOL rate.

The court-martial statistics for fiscal year 1979 are as follows:

	Convicted	Acquitted	Total
General	1,112	144	1,256
Special	3,464	487	3,951
Summary	2,033	277	2,310
Total	6,609	908	7,517

In 745 of the special court-martial cases, the approved sentence included a bad conduct discharge. There were also 146,411 nonjudicial (Article 15) punishments imposed during the year.

The Indiscipline Index, Table 1, provides a comparison of quarterly rates for offenses, punishments, and separations less than honorable since the beginning of calendar year 1974. Also shown are the AWOL and desertion rates for fiscal years 1974–79.

The Special Discharge Review Program, initiated in March 1977, provides former service members (with less than honorable discharges received during the U.S. involvement in Vietnam) an opportunity for a reconsideration and possible upgrading of their releases. As the 1 January 1980 deadline for applying for

TABLE 1—INDISCIPLINE INDEX, WORLDWIDE
(Rate per 1,000)

CY	Qtr	Crimes of Violence	Crimes Against Property	Marihuana Use and Possession	Other Drug Offenses	Total Courts-Martial	Non-judicial Punishment	Separations Less Than Honorable
74	1	2.04	21.70	8.59	2.24	6.85	56.49	7.79
	2	1.90	22.12	7.96	2.06	6.50	54.32	7.21
	3	2.21	22.45	7.79	1.92	6.02	52.78	7.05
	4	2.10	23.50	8.16	2.00	5.25	48.01	6.38
75	1	2.09	21.95	8.49	2.24	5.05	57.48	5.95
	2	1.98	21.96	7.58	2.31	4.25	55.76	6.21
	3	2.14	22.72	6.11	2.06	3.83	52.24	7.47
	4	1.75	22.04	6.45	1.82	3.33	45.72	6.11
76	1	1.65	20.44	8.61	1.61	3.18	51.87	6.05
	2	1.66	22.33	8.04	1.53	2.92	53.05	6.02
	3	1.93	22.79	8.33	1.58	2.63	56.95	5.01
	4	1.58	19.48	7.60	1.38	2.71	50.58	4.66
77	1	1.43	18.23	8.08	1.48	2.85	54.16	4.83
	2	1.51	19.28	7.33	1.47	2.34	54.34	4.32
	3	1.76	21.81	6.90	1.22	2.44	54.50	4.45
	4	1.56	19.97	6.52	1.19	2.41	47.53	4.20
78	1	1.49	17.91	7.32	1.42	2.51	51.87	3.99
	2	1.51	18.19	7.36	1.29	2.51	52.47	3.68
	3	1.48	18.58	6.91	1.19	2.46	48.52	3.74
	4	1.36	18.15	6.60	1.42	2.23	45.03	3.57
79	1	1.44	17.66	7.23	1.49	2.47	49.16	4.28
	2	1.49	18.88	7.52	1.79	2.72	51.29	4.72
	3	1.61	19.66	6.62	1.71	2.47	47.54	3.97

AWOL and Desertion Rates, Worldwide
(Rate per 1,000)

FY	74	75	76	77	78	79
AWOL	129.9	92.3	61.0	47.0	40.4	38.0
Desertion	41.1	26.0	15.4	16.7	15.4	18.1

discharge reviews draws near, the number of applications have increased, enlarging an already-existing backlog of cases.

During the twelve-month period ending 30 November 1978, a total of 79,346 U.S. military and civilian personnel and their dependents faced criminal charges for offenses falling within the exclusive or primary jurisdiction of foreign tribunals. Of the offenses charged against Army service members, 16,568 were violations of both U.S. and foreign law with the primary jurisdiction vested in the foreign courts. Host nations granted waivers in 16,261 of these cases, which amounted to a waiver rate of 98.1 percent. For the fourth consecutive twelve-month period, the number of U.S. personnel confined in foreign penal institutions declined. Of 143 military personnel in foreign confinement, 76

were Army members, a marked reduction from the 93 confined a year ago.

For the past several years, the Army's own confinement system has been under study. The study's objective is to determine the maximum use of resources and facilities in meeting both the needs of the Army and the needs of prisoners. Modifications to the Army Correction System include narrowing installation detention facility operations, reducing the size of correctional staffs, and centralizing correctional treatment of prisoners at the U.S. Disciplinary Barracks at Fort Leavenworth, Kansas, and the U.S. Army Retraining Brigade at Fort Riley, Kansas. Further action during fiscal year 1979 included closing the installation detention facility at Fort Jackson, South Carolina, on 1 December 1978. This action afforded the Army an annual savings of $11,500 with no deleterious effect on the correction system. Plans for streamlining the system further, based largely on recommendations developed at the Worldwide Correction Conference held at Fort Leavenworth in January 1978, were completed in May 1979. As a result of the new provisions, the Army expects to achieve substantial savings in manpower and money.

An additional assessment of the correction system conducted during the last quarter of fiscal year 1979 addressed the production of an even more cost-efficient system that could be expanded to support mobilization contingencies and, at the same time, achieve the overall objective of restoring the highest possible number of prisoners to duty as responsible and motivated soldiers. Specific proposals of the assessment include reopening the Fort Dix, New Jersey, detention facility as a branch disciplinary barracks for the confinement of prisoners held in minimum custody or serving sentences of eighteen months or less. The Fort Dix facility would also house all female prisoners, eliminating that mission for the U.S. Disciplinary Barracks. Male prisoners kept in medium and maximum custody and those serving sentences of more than eighteen months would continue to be confined at the U.S. Disciplinary Barracks. A resulting reduction in the prisoner population at the U.S. Disciplinary Barracks would leave a part of that facility idle, making it available to support a mobilization contingency. At the end of fiscal year 1979, the assessment was being staffed. Final recommendations are expected early in the next fiscal year.

A review of military police functions at installations within the continental United States by major commands, conducted for the fiscal year 1981–85 Program Objective Memorandum, identified 956 military police spaces that could be converted to

help fulfill combat unit needs. In identifying the spaces, the primary military police function selected for elimination was the vehicle registration program at U.S. installations. Other functions considered for elimination, for contracting out, or for transfer included animal control, money escort service, static security posts, gate guards, information booths, vehicle impoundment operations, and the monitoring of intrusion detection systems.

While the Army continued its efforts to prevent alcohol and drug abuse by its members, the emphasis, as in the previous fiscal year, was on law enforcement to suppress the flow of drugs to Army personnel. The Army placed particular emphasis on suppressing the trafficking of drugs in Europe, where there was a growing supply of heroin and other drugs coming in from Southwest Asia. The effectiveness of the drug suppression effort was visible in the amount of drugs seized. In calendar year 1978, the street value of drugs taken was $47.5 million, but in just the first nine months of calendar year 1979, the value of drugs seized exceeded $139 million. Aiming to improve the detection and seizure of illegal drugs, the Army obtained forty-six student spaces for military police investigators and supervisors in the National Training Institute Enforcement Training Course given by the Drug Enforcement Administration in Washington, D.C. The Army also arranged for four student spaces in similar courses given at the regional level by the Drug Enforcement Administration.

In another area of law enforcement, current Army policy on the interception of wire and oral communications for law enforcement purposes was promulgated in Army Regulation 190–53. The regulation provides guidance and procedures for law enforcement personnel and legal officers in obtaining approval for and conducting electronic surveillance, pen register operations, and telephone tracing activities. The new regulation became effective on 1 January 1979.

There were also significant changes during the year in the field of military justice. As established on 1 March 1979 in Change 18 to Army Regulation 27–10, some of the important modifications included a provision for a mental status evaluation of accused persons referred to trial by general or bad conduct discharge special court-martial; the designation of The Judge Advocate General as the authority next superior on appeals of punishments under Article 15 of the Uniform Code of Military Justice when no other intermediate superior authority is reasonably available; the incorporation of a revised Record of Proceedings (DA Form 2627) under Article 15; the addition of

formulas for determining maximum forfeitures and detentions of pay under Article 15; an update of references dealing with various restrictions that apply to membership of courts-martial and to related military justice duties; and the adjustment of forms for advice as to appellate rights and for the petition for grant of review so that they conform to current rules of the U.S. Court of Military Appeals.

Interim Change 102 to Army Regulation 17–10, which became effective on 1 September 1979, revised the filing procedures for records of nonjudicial punishment. Before this change became effective, the records of all punishments under Article 15 were placed in the performance section of the individual's official military personnel file, which is the primary source of performance data used for evaluation and selection of Department of the Army boards and career managers. Under Change 102, in the case of a change from enlisted to officer or warrant officer status, the record of punishment under Article 15 while in an enlisted status will be filed in the restricted section of the personnel file. The record of proceedings under Article 15 in which the matter was wholly set aside will also be placed in the restricted section of the official military personnel file, which is a protected record containing documents that must be retained permanently, but which will not be released to selection boards or career managers without special authorization.

Another feature of Change 102 affected the filing records of minor punishment. Minor punishment is defined as restriction or extra duty for fourteen days or less, detention or forfeiture of pay for no more than one month, correctional custody for seven days or less, admonition or reprimand, or any combination of these. Under Change 102, commanders received authority to file such records in unit records only or in the official military personnel file. Commanders exercising special court-martial convening authority will determine the filing in those cases involving enlisted personnel in grades E–1 through E–5. In the cases involving enlisted personnel in grades E–6 through E–9, warrant officers and officers, the determination will be made by commanders exercising general court-martial convening authority.

During fiscal year 1978, the Army began a one-year test within the U.S. Army Training and Doctrine Command (TRADOC) of a new, independent organization for military defense counsel, the U.S. Army Trial Defense Service (USATDS). Prompting the experiment was a common perception among soldiers of a conflict of interest on the part of military defense counsel under the existing system. By the end of the test in mid-May 1979, USATDS

counsel had participated in 246 general courts and 1,324 special courts and had counseled 15,620 service members on nonjudicial punishment matters. The TRADOC evaluation was based on the judgments of fifteen installation commanders and fifty-seven special court-martial convening authorities and the views of staff judge advocates, military judges, prosecutors, and the defense counsel. The evaluation stated that USATDS had proven to be operationally sound and had met all mission requirements. Specifically, USATDS had improved the supervision of the defense counsel and had raised the quality of defense services.

In June 1979, the Army Chief of Staff approved the expansion of the USATDS test to all commands in the United States, including Hawaii, Alaska, and the Panama Canal Zone. The Commander in Chief, U.S. Army, Europe, and the Commander, U.S. Eighth Army in Korea, were given the option of including their commands in the test. Under the expanded program, the Army will be able to test USATDS in larger and more diverse organizations, including combat and combat support units; will be able to try out cross support arrangements among TRADOC, FORSCOM, and other major command installations; and will be able to apply new policies and employ new procedures in areas where questions were raised during the initial test. Evaluations of the new program, which is scheduled to run from 1 September 1979 through 28 February 1980, will be prepared by 1 April 1980.

In a contingency planning matter, both the Commander, U.S. Eighth Army in Korea, and the Commander, U.S. Army, Europe, requested guidance with respect to negotiations for host nation support in any transfer of enemy prisoners of war within their respective command areas. The Department of the Army, which is the Department of Defense Executive Agent for the formulation of enemy prisoner of war planning, developed a position on the matter in coordination with the Department of State. As developed, the U.S. policy is to retain enemy prisoners of war, and not to transfer them under host nation support.

Alcohol and Drug Abuse

During fiscal year 1979, the Army continued its efforts to prevent or control the abuse of alcohol and other drugs by soldiers, retired military personnel, civilian employees, and their dependents. The concept of the Alcohol and Drug Abuse Prevention and Control Program (ADAPCP) is to conserve manpower through prevention, identification, rehabilitation, program

evaluation, and research. The ADAPCP directly supports and is an integral part of the Quality of Life program. The ADAPCP assists in reducing personnel turbulence primarily through the rehabilitation of personnel in the military environment where the abuse developed.

This year, of the 24,226 clients enrolled in the rehabilitation phase of the ADAPCP, 66 percent involved alcohol and 34 percent other drugs. Of the clients enrolled, 21,123 were active duty military personnel. Technical assistance was provided to commanders and installation programs through the Drug/Alcohol Technical Activity (DATA), which was created in July 1978 and includes a staff of twenty members.

The Drug and Alcohol Review Board was created in January 1979. The Director of Human Resources is chairman with other representatives from the offices of The Surgeon General, The Inspector General, other appropriate Army staff agencies, major commands, and agencies outside the Army.

Quality of Life

The original objective of the Quality of Life Program, established in early 1978, was to improve services and activities for enlisted personnel in their daily life. During the year, emphasis included not only health care, housing, education, and recreation, among other things, but also improved working conditions and more job satisfaction.

The need to bolster community life support activities has been generated by the volunteer Army concept and the mounting numbers of young married enlisted men in the service. In 1970, before the all-volunteer Army came into being, less than half of the soldiers were married. By the end of 1977, over 60 percent fell into that category, many more were sole parents, and a considerable number were married to other soldiers. The changing composition of the Army has necessitated increased attention to community services to sustain morale and retain highly qualified personnel.

Despite annual pay increases, inflationary pressures have made it difficult for many junior enlisted men and their families to maintain a decent standard of living. In the United States, for example, roughly one-third of the married soldiers in grade E–4 and below were eligible for food stamps. Overseas, however, where the program did not apply, the Army had to assist with cost of living increases and housing allowances to compensate for the gap between pay and inflation. In addition, the Army has

been able to establish and staff day care centers for the children in some areas, so that the wife of a soldier could work and supplement the family income.

In April, the Army initiated a nine-month test program in Europe allowing dependents to use military dining facilities. The experiment was so successful that the Army plans to open all dining halls to dependents and soldier's guests, worldwide. By providing wholesome and relatively inexpensive meals to junior members of the Army family, the impact of inflation upon the enlisted person's budget will be cushioned.

Recreation facilities such as clubs, swimming pools, bowling alleys, and gymnasiums were built, when funds were available, to permit soldiers to have access to facilities that afforded opportunities for entertainment and exercise. Most were either free or charged modest fees that enabled them to be self-sustaining.

Although the enlisted men of the all-volunteer Army have higher educational levels (over 80 percent have a high school diploma or its equivalent as compared to about 71 percent during the last year of the draft) many soldiers still have reading problems. The Army, therefore, has provided education programs to raise reading skills to help soldiers do their job.

The main thrust of the Quality of Life Program was set forth in March by the Army's chief personnel officer:

> Our commitment to the Army family has been made at the highest level. We know that the Quality of Life impacts on readiness and on attracting and retaining the quality soldiers the Army needs. We've got to continue to get better in this vital area, and through our efforts, provide meaning to the slogan: "The Army Takes Care of Its Own."

Pay, Leave, and Travel

After considering his pay agent's recommendation that federal military and civilian salaries should be raised an average of 10.41 percent to maintain pay comparability with the private sector, President Carter proposed an increase of 7.02 percent to Congress. Since the Congress did not disapprove the proposal, the 7.02 percent increase became effective on 1 October 1979.

On 19 July 1979 the Secretary of Defense directed the Deputy Assistant Secretary of Defense for Military Personnel Policy to form a working group with participation by the military services to study the adequacy of military pay. Phase I of the study, scheduled for completion in early fiscal year 1980, focuses on general compensation, variable housing allowances, and the reimbursement rate for permanent change of station travel expenses. Phase

II of the study will comprise a six- to nine-month review of special and incentive pay.

Also on 19 July 1979, the Secretary sent to Congress a legislative proposal on uniformed services retirement benefits. The proposal was based on recommendations made by the President's Commission on Military Compensation in April 1978. It would create a two-tiered annuity plan with immediate but reduced benefits for twenty or more years of service and larger benefits at age sixty. Those who serve ten to twenty years would be eligible to receive an annuity upon reaching the age of sixty. The plan would allow early cash withdrawal under certain circumstances, severance pay for service members involuntarily separated, and would contain a social security offset provision. Upon enactment of the proposal, service members on active duty and future members who had a written commitment to serve would have the choice of being under the old or new system.

Prior to approval of the retirement plan by the Secretary of Defense and the President, the Army maintained that the addition of enlisted severance pay to the current system would better serve the continued success of the all-volunteer force. During congressional hearings on the proposal held in April 1979, Army spokesmen expressed concern that long-term financial savings that would result through reduced benefits would not compensate sufficiently for near-term cost and adverse effects on recruitment and retention. By the close of the fiscal year, the appropriate committees had not acted upon the Department of Defense proposal.

A number of proposals in the area of pay and allowances still awaited congressional action as the fiscal year ended. These included legislative proposals that would provide a cost of living allowance for soldiers living in barracks, advance payment of overseas housing allowances, and an increase in the permanent change of station mileage allowance. Also, six bills had been introduced that would promote special pay for Army health professionals. Existing incentive pay programs for health professionals would continue through 30 September 1980 under authority of Public Law 95–114.

After a long struggle, Congress at last approved junior enlisted travel (JET) entitlements for soldiers assigned overseas and the program began on 17 October 1978. The new entitlements provided dependent travel, shipment of privately owned vehicles, storage of household goods, shipment of up to 1,500 pounds of household goods, and movement of a house trailer for service members in the grades of E–4 (less than two years service), E–3,

E–2, and E–1. Renewed concern over the safety of dependents overseas should war come rekindled discussion of the program in the Congress. Until the future of the program is assured, JET entitlement for soldiers reassigned within the continental United States will not be pursued.

Two proposals to improve military leave policies had been fully coordinated within the military departments, but had not yet been cleared by the Office of the Secretary of Defense. These involved funded emergency leave and environmental and morale leave.

The U.S. Army Finance and Accounting Center completed the changeover to centralized issuance of W–2 forms with the distribution of calendar year 1978 forms in December. During the third quarter of fiscal year 1979 the Finance and Accounting Center completed a major overhaul of individual retirement record procedures that eliminated the need to manually feed retirement information into the Standard Army Civilian Pay System. At the close of the quarter, the center put into operation the Treasury Direct/Electronic Fund Transfer System for military retired payments.

This past year the primary contractor for the Joint Uniformed Military Pay System–Army Automated Coding System (JACS) developed and installed a software package at Fort Jackson and Fort Hood under the minicomputer concept of computer support and at Fort Campbell (101st Airborne Division) under the commercial service center concept. The latter concept was deleted from further consideration after two months of testing due to less than satisfactory performance and high cost.

Documentation for JACS during this period included a revised general/detail functional systems requirement project master plan, a data collection plan, an acceptance test plan, a test site monitor procedures handbook, a systems extension plan, and twelve model standard operating procedures for military pay operations under JACS. In addition, a checklist for quality assurance reviews has been developed. A revised economic analysis has been initiated as the final document needed to obtain system approval from the Assistant Secretary of the Army (Installations, Logistics, and Financial Management.)

Education

To benefit both the Army and the nation, the Army has devoted much effort to its Continuing Education System. The programs within the system are designed to improve the professionalism and skill proficiency of service members; to at-

tract and retain highly qualified and well-motivated soldiers; and to help individuals fulfill their aspirations to continue their education while on active duty. During fiscal year 1979, policies governing the system were set forth in Army Regulation 621–5. At the direction of the Secretary of the Army and the Army Chief of Staff, the Deputy Chief of Staff for Personnel formed a study group that was to develop a plan by 30 October 1979 for improving the policies and operational procedures of the system as a means of ensuring that soldiers are fully productive in the increasingly complex Army of the future.

For a commander, the Basic Skills Education Program is the primary on-duty program to assist soldiers in achieving military skill qualification, improving duty performance, and advancing career growth. A relatively recent program, two of its three phases continued under test during fiscal year 1979. The first phase is designed to provide functionally illiterate soldiers with instruction in reading and arithmetic up to the fifth grade level and to give soldiers whose native language is other than English instruction in English as a second language. The purpose of the second phase is to raise language and computational skills to the ninth grade level. The third phase, due to begin in fiscal year 198, will provide functional instruction at still higher levels. Though still in its testing period, it has become clearly evident that the program is a successful one.

Incorporated in the Continuing Education System in fiscal year 1978 was the management of nonresident language training within the Army which includes all language instruction given outside the Foreign Language Center and English Language Center of the Defense Language Institute. During fiscal year 1979, the Army appointed coordinators to manage language training at major commands and installations, to ensure that nonresident programs follow established policies, and to serve as links between Army elements and the two centers of the Defense Language Institute. In the area of nonresident training in foreign languages, the Army field tested headstart courses in Japanese and Korean, which were scheduled for Army-wide use in fiscal year 1980. Similar courses in several European languages are already begin given to Army personnel taking assignments in host nation countries.

The Servicemen's Opportunity Colleges Associate Degree program provides an excellent opportunity for soldiers to earn an associate degree based on their military training and experience. Since its inception in 1977, the program has been progressively enlarged. During fiscal year 1979, twenty-one new

curriculums were developed for the program and are scheduled to be offered in calendar year 1980.

An outgrowth of the Army's vocational and technical programs, skill development programs offer opportunities for soldiers to participate in technically-oriented courses in support of an enlisted MOS. These programs also enable soldiers to qualify for certification in a trade or vocation, to develop a skill with benefits for service and post-service employment, and to build academic credits toward an associate degree in a vocational or technical field. DA Pamphlet 621–10, Army Skill Development Programs, published in August 1979, provides guidance and information on program development, equipment accountability, and course standardization evaluation criteria in several technical areas.

Patterned after apprenticeship programs in civilian industry, the Army Apprenticeship Program offers an opportunity for active duty soldiers with apprentice type MOS's to document their progress in perfecting a skill. Each soldier is awarded a Journeyman's Certificate upon completing the program designed for his or her MOS. As of the end of fiscal year 1979, there were 15,000 soldiers enrolled in the 74 programs open to service members in 133 MOS's. Twenty certificates were awarded during the year.

In the Veterans Educational Assistance Program, which was opened on 1 January 1977 as a replacement for the educational benefits offered under the G.I. Bill, 49,466 soldiers enrolled during fiscal year 1979. These represented about 32 percent of all new soldiers entering the Army during the year. A new money incentive feature to encourage enlistments in certain skills was added to the program for testing on 1 January 1979. To be eligible for the incentive, an applicant must be a high school graduate, must score 50 or higher on the Armed Forces Qualification Test, and must enlist in one of the specialties covered by the incentive feature. Incentives ranging from $2,000 to $6,000 are offered. Test results during the year were encouraging, and the Army plans to expand the use of this recruiting incentive in fiscal year 1980.

Morale, Recreation, and Welfare

The current fiscal year DOD Appropriations Act restricted the assignment or use of more than 9,901 full-time and 2,603 part-time military personnel in morale, recreation, and welfare activities. As a consequence, the Army lost 45 full-time and 640

part-time military personnel because of the ceilings of 3,648 full-time and 1,100 part-time spaces.

Retirement services and activities increased this year in order to provide a more effective channel of communication between the active Army and its alumni. The number of Army personnel on the retired rolls and benefiting survivors increased by 22,500 to 492,500. The Retired Activities Division also revitalized the retirement program overseas, particularly in Europe and Japan. The new installation retiree councils and the Chief of Staff Retiree Council are other means of improving Army-retiree relations. The Retired Army Bulletin has also been restyled into an informal newsletter called *Army Echoes.*

Since its establishment in 1851, the U.S. Army Soldiers and Airmen's Home has never had an enlisted person as one of its officers. The home's Board of Commissioners changed their policy last year, and now for the first time a noncommissioned officer, the Sergeant Major of the Army, William G. Bainbridge, has been selected as a nonstatutory officer.

Since becoming an official part of the Army Community Service Program in October 1978, the Army Child Advocacy Program (ACAP) has received increased interest by the Army. The program is actively involved in efforts to increase the identification and reporting of child maltreatment on Army installations. It requires installation commanders to appoint an ACAP officer to provide staff supervision in the program and provides for the formation of a Child Protection Case Management Team on each installation to assist in the diagnosis, treatment, and disposition of child maltreatment cases. It establishes procedures for early identification of child maltreatment along with detailed reporting requirements. Among other improvements underway are a series of regional conferences, workshops, and briefings for installation commanders about the entire Army Community Service Program with special emphasis on the Army Child Advocacy Program and their responsibilities for the program.

Congress provided funds and spaces for 124 Child Support Service Coordinators, and an additional 100 spaces were requested in the 1980 budget to provide one child care professional in each of the Army's 224 Child Support Service programs.

The 1979 Parade of American Music was sponsored by the National Federation of Music Clubs and the American Society of Composers, Authors, and Publishers. As a cosponsor of the project, the Army encourages participation in the activities of the Parade of American Music at military installations and in

military communities throughout the world. Army participating groups received 315 awards including 28 five-star Awards and 14 Proclamations issued by Army commanders.

The Army Chess Team took first place in the interservice Chess Championship conducted in September 1979 at the American Legion Hall of Flags, Washington, D.C. Each team member (three teams of six members each) played each opposing team member during twelve rounds of play.

The famed director, Joshua Logan, served as judge in the Army's first American Theatre Month, selecting the winners in various categories, which included production, direction, publicity, costumes, and set design. Mr. Logan created and staged a production of "Cherry," a musical version of "Bus Stop," at Fort Bragg, using talented local performers, both military and civilian. Logan's efforts won the acclaim of New York critics, directors and producers, and special recognition for the single most significant contribution to the American Theatre during American Theatre Month.

The Library Activities Division this year purchased about 30,000 paperback book kits for distribution to personnel without access to a library and nearly 200,000 volumes were bought for issue to libraries throughout the Army. In a recently begun six-month test of a computerized acquisition system, twenty-five installation libraries will forward requests to the Library Activities Division for consolidation and processing. The purpose of this test is to determine the most cost effective method of procuring books within a reasonable length of time.

A Federal Library Information Network test project, begun in 1977, includes shared cataloging and interlibrary loans through cathode-ray terminals. Initially, three library systems participated in the test. This year, the total expanded to thirty-five systems. Approval was also obtained for establishing an Army Library Management office of four people that is expected to be operational in early 1980.

During the current year, the Army competed in sixteen Interservice Championships; winning seven, placing second in six, third once, and fourth twice. Army members on armed forces teams or as individuals took part in twenty National Champion sports events, and also participated in ten events sponsored by the *Conseil International du Sport Militaire,* placing first in basketball, boxing, shooting, and parachuting.

The biggest problem faced this year by the Army Bands Office was a manpower adjustment to stay within a 2,596 manpower space allocation for band members. Another manpower squeeze

was averted when the Army Bands Office was directed to study the possibility of eliminating the U.S. Army Field Band. The study group, which included representatives from a number of commands and agencies having a responsibility for Army bands, recommended maintaining the "status quo" of these activities. This recommendation was supported by the Secretary of the Army and the Chief of Staff.

This year, the Armed Forces Professional Entertainment Office, in conjunction with the USO, provided 105 touring groups which visited U.S. military installations in Alaska, Greenland, the Caribbean, Europe, the Mediterranian, and the Pacific. This was the first year that 100 percent of the overseas commanders requests were met.

A leading management consulting firm under contract to the Army conducted a comprehensive financial and management review this year of the operations of the Hale Koa Hotel Armed Forces Recreation Center at Fort DeRussy, Hawaii. In its report, 104 recommendations for improvement were made which were adopted by the Army. One such recommendation transferred responsibility for operating the hotel to The Adjutant General.

Total revenue for Army clubs during fiscal year 1979 was $305.1 million with total sales of $258.3 million. Net income totaled $15.0 million or 4.9 percent of the total revenue. There were 324 club branches in operation at the close of fiscal year 1979, of which 89.3 percent were profitable.

This year, 151 graduated from the club management course at the Institute of Administration at Fort Benjamin Harrison, and 60 club managers graduated from the executive management course at Florida International University's School of Hospitality Management. Forty-three Army club food personnel were trained at the armed forces culinary course at the Navy Special Service Administrative Activity, Patuxent Naval Air Station, Maryland.

Increased club net income permitted the Army to improve club facilities. Projects costing $25,000 or more included the improvement or construction of fifteen club facilities at a cost of $9 million. The Army Club Loan program, which provides interest-free money from the Army Club Fund for construction and renovation of club facilities, had twenty-two loans outstanding at the end of 1979 with a face value of $19,560,000. Additional loans totaling $3,750,000 had been approved for use pending completion of construction.

This year, the Club and Community Activities Management Directorate was established to provide a single focal point for all

nonappropriated fund matters in support of Army morale, recreation, and welfare programs and activities. The new office provides policy direction, control, and financial and executive management for all nonappropriated funds activities operated as part of the Army morale, recreation, and welfare program. The Directorate provides technical supervision and technical management assistance for Army clubs and package stores, Armed Forces Recreation Centers, and other hospitality related activities with full-line food and beverage or other resale operations.

The centralization of policy and program management responsibilities for various categories of nonappropriated funds into a single directorate allows the Army to improve synchronizing the programming and use of funds appropriated by the Congress and also nonappropriated funds (income generated by the activities and dividends from the exchange service).

During fiscal year 1979, the Club and Community Activities Management Directorate made 180 technical management assistance visits to Army installations. These teams provided full-scale management analyses of club operations; developed programs, operating procedures and internal controls; and trained employees in administering the new programs and procedures.

Accident Prevention

In fiscal year 1979, the Army experienced 746 fewer accidents, 350 fewer disabling injuries, and a reduction of 100 fatalities from fiscal year 1978. This included military personnel injuries, civilian personnel injuries, Army motor vehicle accidents, privately-owned vehicle accidents, and other accident costs. The number of aviation accidents, aviation fatalities, aviation accident rates, and military personnel fatalities were the lowest yet recorded.

Organizational changes accomplished during the year placed the Army's accident program at the highest organizational level, increased visibility and support for the program at all levels, and reoriented accident prevention efforts to include all safety disciplines. Plans for improving accident prevention included increased support of the program at all organizational levels, increased safety in contingency plans and training activities, abatement of serious hazards in working areas, reduction of accident losses in both Army and privately owned vehicles, lowering civilian personnel injuries, and reducing aviation-related accident losses. Also, progress was made in revising systems safety management procedures to "design out" hazards during the ac-

quisition stage and thus avoid costly correction of deficiencies after equipment is installed.

Army commanders have identified a requirement for $360 million to correct safety and health hazards in Army workplaces and to meet the standards set forth in the Occupational Safety and Health Act (OSHA). For this purpose, $21.3 million in operation and maintenance and $3 million in military construction have been included in the fiscal year 1980 budget. Though far short of Army needs, this represents a considerable improvement over funding levels committed to OSHA projects in previous years.

7. Support Services

As a concomitant to the training and equipping of individual soldiers for combat duty, the Army had to sustain their morale in a time of peace. The absence of an immediate military challenge and the erosion through congressional action of some fringe benefits for military personnel made the task more difficult in view of the competition with the civilian sector for qualified personnel. Nevertheless, the Army did provide services and benefits that were attractive and, within the limits of its budget, sought to improve the quality of life in the service whenever possible. These support services, which ranged from health care to heraldic morale boosters, also included two items that were always of prime importance to soldiers—food and housing. They were a significant part of the Army's effort to combat discontent and to make service careers more satisfying.

Health and Medical Care

The double-edged struggle to combat rampant inflation in medical costs and to hold onto medical personnel continued to dominate the medical care scene during the year. Although the price of providing adequate care to active and retired military personnel and their families showed no signs of abating, the Army's effort to attract and retain qualified medical and dental officers did meet with some success. By the end of the report period, the actual number of physicians and dentists on active duty was 4,403 and 1,864, respectively, as compared to the recognized requirement of 5,935 and 2,363. Correspondingly, there was a 4 percent gain in the daily patient load and a 1 percent increase in clinic visits. The Army also made another small achievement by trimming the average length of stay in hospitals for all patients from 7.0 to 6.9 days.

Less encouraging were the shortages of physicians in reserve component units. As the Secretary of the Army pointed out in late November, over two-thirds of the Army's medical support units were in the reserve forces. The Secretary suggested that it might be necessary to consider the institution of reserve obligations for beneficiaries of all government-funded scholarship programs. At the direction of the Vice Chief of Staff, The Surgeon General began staff actions to obtain resources for an Army

Reserve Medical Department Officer Procurement Network (less Army Nurse Corps) which will focus on the shortage. The network is expected to begin functioning late in fiscal year 1980.

The Secretary also noted that despite the growing number of physicians in the active ranks, the Army still had to refer more of its members, particularly dependents, to the cost-sharing Civilian Health and Medical Program of the Uniformed Services (CHAMPUS). The services provided by CHAMPUS, he averred, had to be upgraded if they were to meet the requirements of the Army in a satisfactory manner.

In the meantime, the Army had taken measures to improve patient care, particularly outpatient care. Since its inception in 1972, the Army Nurse Corps Practitioner Program had grown, and the practitioners gradually assumed increased responsibility for patient assessment, treatment, and follow-up care for people suffering from common, minor, and chronic health problems. In the process, they, like the physicians' assistants, had enabled Army physicians to devote more time to complicated or serious illnesses. Serving in posts around the world, the practitioners offered personalized nursing care and health care services to the soldier and his family. The 197 practitioners in the program underwent specialized clinical training in civilian and military institutions to broaden their experience and increase their skills. As an indication of their effectiveness, 165 practitioners saw approximately 550,000 patients in the outpatient clinics during the report year; the remainder served as clinical nurse specialists.

Following the trend in the civilian sector, the costs of medical care rose steadily. Total Army expenditures for medical services under all appropriations came to over $1.5 billion, more than $100 million over the previous year. Salary increases approved by Congress for both military and civilian personnel, constant rises in the price of care in military facilities and from civilian sources, and climbing construction costs contributed to the larger expenditures. The distribution by appropriation was as follows:

	(in millions) of dollars)
Military Personnel, Army	578.5
Operations and Maintenance, Army	681.0
Research and Development, Army	72.9
Military Construction, Army	145.0
Other Procurement, Army	43.7
Reserve Personnel, Army	10.2
Total	1,531.3

In an effort to reduce some of the costs, the Army, along with

the other services, the Veterans Administration, and the Public Health Service, became a member of the Federal Health Resources Sharing Committee, which was chartered in February 1978. The main objectives of the committee were to encourage more joint planning and sharing of public health facilities, as well as to cut down on unwarranted duplication and excess services. The first evidence of success in this endeavor came when The Surgeon General accepted a subcommittee recommendation that a radiation therapy unit not be opened at the Eisenhower Medical Center at Fort Gordon, Georgia, since the local civilian community had an excess capacity to handle such treatment. Under consideration was another recommendation to close cardiac catheterization facilities at the Veterans Administration Hospital at Dayton, Ohio, and at Andrews Air Force Base in Washington, D.C., and to shift their work loads to Wright-Patterson Medical Center and the Walter Reed Army Medical Center, respectively.

The concept of sharing facilities to improve service to patients was also advanced by the regionalization of military optical laboratories in the United States on 10 October 1978. Under the new system, all personnel, regardless of service, would have their spectacle orders filled by the nearest laboratory possessing the required fabrication capability. Previously, the Army and Air Force members had to be serviced by Army laboratories, and Navy and Marine facilities had to submit their orders to Navy laboratories. The immediate benefits of the change were a reduction in the time between the eye examination and the delivery of the glasses and an equalization in the optical care received by members of all services.

Internally, there were a number of significant developments during the year. In the field of dentistry, the Army's move during the previous report period to grant dental commanders more control over dental resources at facilities was followed by the passage of Public Law 95–485 in October 1978. The act made the Chief of the Dental Corps responsible for all matters relating to dentistry and the dental health of the Army and also set forth the command and staff relationships between medical and dental activities at the headquarters and installation levels. The Army expected that the granting of more autonomy to the Dental Corps would result in improved medical-dental relationships and better utilization of available dental resources.

An increasing number of women became part of the Veterinary Corps during the year. Their number rose to 5 percent of the active duty officer strength or just slightly below the 6 percent

ratio in the civilian sector. For the first time, a female military veterinarian was selected for promotion to major and sent to graduate school to study microbiology. With more women enrolled in veterinary colleges, the upward trend is likely to continue.

By the end of the report year, the transfer of in-plant food inspection activities from the Veterinary Corps to the Department of Agriculture was completed. Army and Air Force veterinary personnel assisted in the government-wide food quality assurance efforts until the shift was made.

Army veterinarians, specializing in foreign diseases, were instrumental in suppressing an outbreak of Exotic Newcastle Disease in Southern California during the spring of 1979. The veterinarians examined almost 100,000 birds, ranging from parrots to chickens, and found that over 5,000 had contracted the disease and had to be destroyed. Fortunately, the outbreak was contained without endangering the large numbers of private and commercially owned poultry flocks in the area.

In the research field, Army veterinarians made significant contributions in the comparative pathology of burn injuries and wound infections and in the understanding of the healing processes associated with such injuries. They also developed new methods for enhancing the protective efficiency of available inactivated viral vaccines of military importance and made tests of two antiviral drugs, one of which showed great potential for the treatment of animals afflicted with Rift Valley Fever. In the study of experimental antimalarial drugs, the research veterinarians also developed a candidate drug that held promise of being effective in cases of relapsing malaria.

An analysis of integrated basic training programs by Army physical therapists led to changes in equipment used by women and a reduction in their training injuries. As a result of the studies, the female boot has been taken off the shelf and the first redesign since World War I has been initiated. At the same time, the high female injury rate during basic training has been reduced from 10 percent to less than 3 percent.

Since readiness is a key objective for all components, the Army sought to improve the medical materiel status of both active and reserve units. The majority of authorized major medical and nonmedical materiel was issued to seventeen combat support hospitals and one evacuation hospital of the active Army. Also, nonmedical equipment and medical equipment sets for use in training were issued to nineteen combat support hospitals and nine evacuation hospitals of the reserve components. In addition, the Army made efforts to reduce the time required to issue

medical equipment to units preparing for overseas movement by prepackaging many of the items and shipping the packages to combat equipment group storage sites in Europe. The 47th Medical Depot at Tobyhanna, Pennsylvania, sent a group to Europe in mid-1979 to assist in the inventory, preparation, and long-term storage of the fully-assembled sets.

In another development related to medical readiness in Europe, the Army completed an analysis called OMNIBUS 79, using computer simulation to depict losses expected in a major conflict. The analysis indicated that there would be shortages of medical units during the early period of the war with a corresponding deficit of operational surgical beds in the theater and in critical surgery related skills in doctors and nurses.

The Army's ten-year health facility modernization program, begun in 1974, moved steadily forward during the fiscal year. With an estimated completed cost of $1.3 billion, the program thus far has funded about ninety projects involving $0.5 billion in appropriations. The main thrust has been to replace older facilities of World War II vintage and to improve, mechanically and electrically, newer buildings in accordance with stringent requirements for hospital accreditation and for compliance with structural safety codes.

Among the appropriations approved for this fiscal year were funds for a replacement hospital at Fort Stewart, Georgia; an addition and alterations to facilities at Fort Hood, Texas, and Landstuhl Regional Army Medical Center, Germany; alterations for the Madigan Army Medical Center, Fort Lewis, Washington; and improvements for nine clinics in Germany. Other facilities receiving funds include dental clinics at Fort Riley, Kansas; Fort Carson, Colorado; Fort Knox, Kentucky; Fort Meade, Maryland; Fort Lee, Virginia; Fort Ord, California; Fort Bliss, Texas; Fort Sam Houston, Texas; Fort Polk, Louisiana; and Fort Sill, Oklahoma.

Since many of the dental clinics were housed in old, deteriorating buildings, the new replacements will not only permit modernization of the facilities, but will also centralize the scattered smaller clinics, make more efficient use of the available dental resources, and improve the level of dental care.

In the field of foreign medical assistance, the Army sent a mobile training team to Peru in March to survey the government's military hospital administration and medical logistics system. The team submitted a number of recommendations for improving the training of personnel and the organization and administration of the Peruvian military medical system. At the request of

the Saudi Arabian government, the Army also dispatched a team to Saudi Arabia in September to evaluate and design a medical logistical system—a project expected to take one to two years.

Religion

While Army chaplains performed their traditional duties in providing religious services, rites and sacraments, and religious education, they also placed increased emphasis upon special pastoral care activities such as child abuse and battered wives. Seminars held in 1978 and 1979 on child abuse and battered wives were followed by the publication of a guidance document on the role of chaplains in responding to family violence. The objective of the guidance was to enable chaplains to provide remedial assistance to affected families and to furnish information on the type of training required to carry out that task effectively.

Another indication of the expanding role of chaplains came in the addition of a special chaplain appendix to the revised Officer Evaluation Report. In an attempt to define more clearly the wide variety of specialties in the ministry, specific job titles appropriate for chaplains have been set forth. In addition, the desirability of having a supervisory chaplain involved in the rating of chaplains has also been enunciated.

The recruitment and retention of minority chaplains were the prime subjects of a Minority Chaplain Training Conference in May. After considerable deliberation, the approximately sixty conferees submitted a four-point proposal to the Chief of Chaplains that would improve ministry to minority troops, enhance minority chaplain recruitment, address priority concerns peculiar to minority chaplains, and attempt to resolve issues arising from the supervision of or by minority chaplains.

On the administrative side, the relocation of the Chaplain Board and School from Fort Wadsworth, New York, to Fort Monmouth, New Jersey, got underway, since Fort Wadsworth was destined for closure. The Chaplain Board completed its relocation during the year and the Chaplain School began a phased shift that is expected to be finished at the end of June 1980.

Housing and Homeowners Assistance

For some time the Army has sought to improve both the quality and quantity of troop housing for enlisted men. By the end of the year an estimated 85 percent of all eligible soldiers were in adequate quarters. The main emphasis went to the construction or modernization of housing for soldiers up to grade E–6. Soldiers in the upper three grades were encouraged to find

housing in the civilian community. To foster heavier reliance upon private housing, the Office of the Secretary of Defense has proposed an option permitting unmarried soldiers from E–7 to captain to receive a basic allowance for quarters, even if government quarters are available. Currently, only officers in the grade of major and above are accorded this choice. Legislative approval of the option had not been received by the close of the fiscal year.

The Army also made some progress in its family housing program. Construction contracts totaling $43.7 million were awarded for four projects. The units will be built at Fort Ord (560 units); Fort Belvoir (300 units); Fort Stewart (132 units); and one mobile trailer will be placed in Alaska—a total of 993 units. In all of those areas, suitable facilities were either unavailable, substandard, too expensive, or located at excessive distances from the post. To supplement current resources, the Army Leasing Program allocated 12,978 units (2,737 domestic and 10,241 foreign) in selected areas to help alleviate some of the shortages.

As executive agent for all the military services, the Army paid $2.2 million under the Homeowners Assistance Program to 109 applicants as a result of base closure and realignment actions. Mortgage assumptions on eight of the twenty-nine properties acquired totaled $134,866 for the fiscal year.

Food Services

The Army pushed ahead to improve the quality of food services, while attempting, at the same time, to hold down costs in the face of soaring prices. Of major interest was the announcement, in December 1978, that the Army would phase out the staple of three wars—the C-ration—and replace it with the individual MRE (meal, ready to eat). The new meals would depend more heavily upon thermally processed items packed in metal foil pouches that could be heated or eaten cold. Beef stew, meat balls, ground beef with special sauce, dried fruit, and pineapple nut cake are some of the items to be included in the new rations. Three freeze-dried items (pork, beef, and potato patties) are also included in the individual ration. The transition from the C-ration to MRE will be gradual, however, since the Army still has an inventory of C-rations that will last until 1983.

In an effort to combat the steep inflation in beef prices, the Department of Defense announced approval in March of the experimental use of soy-extended ground beef in military dining facilities for the remainder of 1979. Neither taste nor nutritional quality is affected to any unacceptable degree by the change, and the cost savings will amount to over $6 million annually.

The improvement of overall ambience and modernization of existing dining facilities continued during the year. Of the 464 dining facilities identified for modernization in the Military Construction, Army, program, 210 were scheduled to undergo the process by the end of fiscal year 1980. One of the major contracts let during the year covered the modernization of four dining facilities at Fort Hood, Texas, at an estimated cost of $2.7 million.

In other developments, the first shipments of the Mobile Field Kitchen Trailers were sent to Europe during the last half of the fiscal year, along with the required food preparation equipment. To assist in orientation and training of personnel needed to operate the 453 new field kitchens, the Quartermaster School dispatched a training team to the continent. For the second procurement, scheduled for fiscal year 1980, only the basic trailers and food preparation items not included in the unit modified table of organization and equipment will be acquired.

Although the Division Restructuring Study was completed during the year, the Army did not make a final decision on the recommendations concerning the consolidation of food services at the battalion level. Indications are, however, that a decentralized system supports a division in the field more effectively.

The initial version of a study conducted by the Natick Research and Development Command (NARADCOM) on feeding troops in the field during the 1990's was submitted to the Army in February 1979. The concept is based upon the development and utilization of tray-packed meals and a heating system to prepare the meals located as far forward as possible. Other options include feeding systems in combat vehicles, specialized heating systems in new vehicles, the consolidation of food heating and utensil washing systems for supporting troops not in the immediate battle area, and the utilization of disposable tableware and the elimination of messkit laundries. Since many questions remain to be answered, the study's proposals will undergo extensive examination and testing before a decision is made.

NARADCOM also continued its efforts to develop a replacement for the 1945 Mobile Field Bakery. The objective is to have a highly automated unit that can produce bread similar to the U.S. commercial products with a capacity three times that of the 1945 version. As an alternative, improvement of the old model was also considered. As yet, no decision on the final course of action has been made.

At the end of the year, the number and types of food service facilities in operation are as follows:

	CONUS	Overseas	Total
Dining Facilities	626	437	1,063
Garrison Bread Bakeries ...	0	1	1
Central Pastry Kitchen	1	0	1

The dining facilities served 228,530,837 meals with a total value of $260.5 million. The garrison bread bakery produced 404,000 pounds of bread and the central pastry kitchen produced 912,000 pastry servings.

The U.S. Army Troop Support Agency sustained its program of assistance to the operators of newly constructed modernized dining facilities through the employment of five Food Management Assistance Teams. During the year, they visited 82 active Army installations and 704 dining facilities and assisted 10,299 Army food service personnel. In addition, teams visited 259 reserve component dining facilities and assisted 1,746 reserve component personnel.

The eleventh Philip A. Connelly awards for excellence in Army Food Service were presented to Company A, 9th Signal Battalion, 9th Infantry Division, Fort Lewis, Washington, in the small dining facility (under 200 people) category; to Company E, 407th Supply and Service Battalion, 82d Airborne Division, Fort Bragg, North Carolina, in the large dining facility (more than 200 people) category; and to the 3d Battalion, 39th Infantry, 1st Brigade, 9th Infantry Division, Fort Lewis, Washington, in the field kitchen (providing food service to units of an active division in the field) category.

Commissary and Subsistence Supplies

As a result of the interest manifested by Congress and Defense officials in commissary store operations, the main thrust for the fiscal year was directed toward improving the Army's management of the facilities. The actions included efforts to bolster accounting, control, inventory, and security systems and to improve cashier operations and pricing procedures. The Troop Support Agency continued the Intensive Management of Property Accountability, Control, and Tolerances (IMPACT) project to improve control of commissary property accountability and to reduce unexplained and unidentifiable losses. Under this program, the agency conducted training services for field office personnel and commissary officers, sent out teams on unannounced inspections to spot problem areas and to provide assistance, strengthened security measures by having closed circuit television installed at some stores, and established a task force to investigate inventory losses which were particularly critical in

the Military District of Washington facilities. Since the Army commissary system operated 141 stores and 28 annexes at home and abroad, with sales of $1.2 billion, the efficient management of the massive enterprise was a matter of concern to all active and retired military personnel using the facilities. The Army took over the operation of two commissaries operated by the Panama Canal Company. Many of the personnel were retained in their jobs but the Army plans to improve the physical condition, security, and sanitary aspects of the stores.

Better management practices in the area of troop issue subsistence were key objectives during the year. Army management specialists visited major commands and reported that while most of them were providing adequate support to all authorized customers, a number of common weaknesses persisted. Among these were errors in computing the basic daily food allowance, failure to date items properly for shelf life or to change prices on reduced items in a timely fashion, lack of standard accounting and reporting procedures, and personnel turbulence that contributed to ineffective supervision of facilities. The specialists helped wherever possible in remedying the discrepancies.

In another important development, the Defense Logistics Agency (DLA) relieved U.S. Army, Europe, of its responsibility for peacetime wholesale subsistence support for both troop issue and the commissary system on 1 April 1979. The transfer involved DLA-owned cold stores in Bremerhaven and Kaiserslautern and nonperishable stocks at Germersheim, as well as the transfer of 508 personnel spaces and $9.8 million in funds. Only the funding for transportation of subsistence from the three storage facilities remained an Army responsibility. Arrangements for the wartime operation of the storage centers are to be worked out at a later date.

Clothing and Personnel Equipment

Since styles and materials are in a constant state of flux, the Army reviews its inventory of clothing and personnel equipment continually to stay abreast of style changes and advances in textile technology. Garment costs and fabric availability are other considerations in determining the direction uniform styles and composition will take in the future.

In line with the 1978 decision to phase out the familiar tan shirt and tan summer uniform in favor of a gray/green version for males, the Chief of Staff approved a similar shirt in June for female soldiers. The gray/green, as it is called, shirt replaces the white shirt, and the mint green summer uniform produced with

long and short sleeves, will be worn with a tie in conjunction with the three-piece ensemble of jacket, skirt, and slacks. The new combination takes the place of the olive green coat, skirt, and pantsuit uniforms. Guidelines issued during the year for clothing sales stores and issue points decree that the hem length of the skirts is to be no more than one inch above or two inches below the center of the knee and that the slacks reach only to the top of the instep with no break in the pant leg.

Other uniform changes include the adoption of a combat camouflage uniform and cap to replace the durable press utility uniform and cap and the procurement of fire retardant clothing for combat vehicle crewmen. In addition, the Army approved the design of black leather dress gloves for men and women and a new black windbreaker for both sexes. Under consideration are such items as the development of maternity uniforms, wash and wear trousers, slacks and skirts to wear with the new shirts, and medium weight gray/green shirts.

During the reporting period, the Army's uniform and appearance regulations were rewritten and consolidated into one regulation that covers both active Army and reserve component personnel. The new regulations provide a single source for information on uniform wear policies for the benefit of the individual soldier and his commander, and discipline and morale criteria.

As the year closed, the subject of whether members of the reserve components should receive clothing and equipment under the "issue-in-kind" system or receive their clothing and equipment through the "personal clothing allowance" method was under study.

In a related area, the Army was still studying the transfer of stores that sell military clothing to the Army/Air Force Exchange Service. Legal and technical details remain to be worked out before a final decision can be made.

Laundry and Dry Cleaning

Continuing the trend established in preceding years, private contractors took over the operation of three more Army laundry and dry cleaning facilities during the fiscal year. Although the government still owns the fifteen plants under contract, the contractors provide the personnel and management. Of the thirty-two remaining facilities operated by the Army, most, save those specifically exempted, will go under contract during the next four years. The Chief of Staff ordered that cost effective studies

be carried out on a regular basis to determine if and when contractors can provide adequate services at comparable prices.

To promote greater efficiency at the operating facilities, Army laundry and dry cleaning specialists made a total of forty-seven periodic visits to both U.S. and overseas plants. The Army also sent key personnel to Chicago for an annual dry cleaning and laundry seminar in July to help them keep up with developments in the state-of-the-art.

Casualty and Memorial Affairs

As the interval between the report year and the Vietnam War lengthened, the recovery and identification of remains tapered off. Of the remains identified at the Army Central Identification Laboratory in Hawaii only four, all Air Force personnel, were recovered from Southeast Asia. On the other hand, the total of soldiers or airmen killed during World War II recovered and identified increased from five in the previous year to ten in the report period. Eight were found in New Guinea, one in France, and one in Germany. The Army handled 1,142 remains of active duty personnel and their dependents within the continental United States during fiscal year 1979. There were 902 remains processed in five Army operated mortuaries overseas for the period.

The number of casualties was up slightly over the preceding year's tally. The Adjutant General Center processed 1,251 active duty deaths, 5,069 retired deaths, and 1,417 very seriously ill and seriously ill cases. A total of 692,500 records of emergency data was also processed. In a move toward establishing a fully automated casualty system, the center acquired an integrated word processing system during the year.

Activities involving the individual case by case review of Army personnel reported as prisoners of war, missing, or missing in action during the war in Southeast Asia continued under the provisions of the Missing Persons Act. The number of cases carried over from fiscal year 1978 was reduced by seventy-eight, leaving only four cases—one prisoner of war, two missing in action, and one missing (nonhostile action)—at the end of the report period. Some fifteen volumes of material that could not be correlated to any one individual by name, totaling approximately 10,000 pages, were mailed to the next of kin of prisoners of war, missing, or missing in action personnel under the Freedom of Information Act.

Most of the construction projects in the Army's master plan

for Arlington National Cemetery have been completed. Still in progress is the 5,000-niche modular columbarium for cremated remains that began in 1978; the project should be finished and ready for inurnments in early 1980.

Heraldic Activities

The Institute of Heraldry furnishes symbolic items for the Army and heraldic services for the other armed services and agencies of the government. There was, in general, a slight decrease in the number of services rendered during the report period in comparison to the previous year. Again, emphasis was placed on research for less costly, alternative materials in the development of heraldic symbols. Statistically, the Institute designed 380 heraldic items; made 2,114 paintings or drawings; 902 revisions, redesignations, or rescissions; and 92 models, molds, or casts. Of the 170 items developed, 75 are new. Support actions relating to research, development, and engineering, totaled 3,886 and quality inspections were performed on 126,372 items.

Also during this period, the Chief of Staff approved a new insignia for the Sergeant Major of the Army. The new insignia consists of the standard Sergeant Major grade insignia, modified to contain two equally sized stars placed horizontally within the insignia field.

8. Reserve Forces

The principal components of the Army, as identified in Title 10 of the U.S. Code, are the Regular Army, the Army National Guard of the United States, and the Army Reserve. The traditional role of the latter two—the Army's reserve components—has been to provide trained units and qualified individuals for active service in time of war or national emergency. The Army National Guard has the additional role, as part of the organized militia, of protecting life and property and preserving peace, order, and public safety.

Force Structure

The Army National Guard and the Army Reserve have not undergone a major reorganization since 1967–68, but each year their structures have been adjusted to reflect total Army needs. In recent years changes have accommodated the 24-division force and the annual Total Army Analysis. Modifications have also been made to improve command and control, training opportunities, and logistics management.

The major change in the Army National Guard's force structure during the year was the beginning of the conversion of signal units to achieve an integrated tactical communications system and the conformance with doctrine developed for echelons above divisions. Other changes in the guard's force structure included the reorganization of units in Alaska's maritime area to create a battalion-size combat force with an organic waterborne capability and the continued reorganization of aviation units to comply with plans noted in last year's report.

As of 30 September 1979, the Army National Guard contained 3,308 company-size or smaller units dispersed throughout the country in over 2,600 communities. Major units in the structure were:

- 8 Army divisions (5 infantry, 2 armored, 1 mechanized)
- 21 Separate brigades (10 infantry, 8 mechanized, 3 armored)
- 4 Armored cavalry regiments
- 1 TOW light antitank battalion
- 2 Separate infantry battalions
- 4 Separate mechanized battalions
- 2 Airborne battalions
- 7 Tank battalions
- 51 Separate field artillery battalions
- 45 Engineer battalions
- 17 Signal battalions
- 18 Hospitals
- 3 Medical brigade headquarters
- 2 Medical groups
- 9 Medical battalions

Army Reserve force structure changes during fiscal year 1979 consisted of eleven unit activations, twenty-nine inactivations, and nine conversions. The planned reduction of Army Reserve civil affairs units was accomplished with the inactivation of the 362d Civil Affairs Brigade, Dallas, Texas; the 307th Civil Affairs Group, St. Louis, Missouri; the 309th Civil Affairs Group, Southfield, Michigan; and the 451st Civil Affairs Group, Portland, Oregon.

At the close of the fiscal year, the Army Reserve troop basis contained approximately 3,200 units. Major organizations in the structure were as follows:

19	USA Reserve commands
12	Divisions (training)
2	Maneuver area commands
2	Engineer commands
1	Military police command
1	Theater Army area command
3	Civil affairs commands
9	Maneuver training commands
1	Infantry brigade
1	Infantry brigade (mech)
1	Infantry brigade (light)
2	Transportation brigades
3	Military police brigades
2	Engineer brigades
2	Medical brigades
4	Hospital centers
3	Corps support commands
3	General hospital commands
106	Hospitals (misc)
60	Separate battalions

Strength

The maintenance of strength levels needed to achieve prescribed readiness goals continued to be a critical problem for both of the Army's reserve components, Programmed strength levels for the Army National Guard (ARNG) and the Army Reserve (USAR) were based on estimated achievement capabilities rather than on peacetime objectives. Therefore, while selected reserve strength stabilized during the past year following an eight-year decline, a much more successful recruitment and retention effort will be required before authorized peacetime strength objectives can be attained. The table that follows shows the current strength situation.

Army Selected Reserve Manpower Programs
(figures in thousands)

	Paid Drill Strength			End FY 79 Program	
	30 Sep 78	30 Sep 79	Wartime Strength	Peacetime Objective Strength	Budgeted Strength
ARNG	341.0	345.5	436.4	418.0	348.7
USAR	185.7	190.0	276.5	260.0	200.3

The strength of the ARNG at the close of the year was 346,974 or 83.1 percent of authorized strength. Paid drill strength totaled 345,528 as compared to 340,996 one year earlier. Enlistments of

84,850 were 89.6 percent of the program. The goal of reaching an accession mix equally divided between new recruits and veterans, not expected to be reached until 1981, was attained early in the fiscal year. By the end of fiscal year 1979, the ratio had swung slightly in favor of nonprior service personnel (51 to 49) and for the first time since fiscal year 1972, new recruits exceeded the number of veterans who enlisted.

The Army National Guard continued to meet minimum standards of not enlisting more than 18 percent who were in mental category IV and not more than 45 percent who were not high school graduates. The number of high school graduates among enlistees reached 60 percent and the number in mental category IV was 9.9 percent, the lowest in seven years. Mental category I recruits without prior service reached 3.3 percent, the highest level since fiscal year 1973, when 7.7 percent was registered.

The upward trend in the strength of the inactive National Guard continued. The number carried in this category was 3,067 as of 30 September 1979 as compared to 2,275 one year earlier.

During the past year, ARNG commissioned and warrant officer strength was greater than it had been since 1961. The gains can be attributed to the implementation and expansion of officer and warrant officer accession programs. While the Officer Candidate School (OCS) program was the largest source of commissioned officers for the ARNG, the Reserve Officer Training Corps (ROTC) received increased emphasis as a source of ARNG officers. New initiatives within the ROTC area include the Simultaneous Membership program which allows advanced ROTC cadets to be members of ARNG units in an officer trainee status and the Cadet Troop Leaders Training Program which allows fourth year ROTC cadets who have completed Military Science III, to spend two weeks with ARNG units during their annual training. Because of the high percentage of minorities and women enrolled, ROTC is viewed as a significant source of minority and female officers for the ARNG.

The total Army National Guard AMEDD (Army Medical Department) officer strength at the beginning of fiscal year 1979 was 2,323, or 67 percent of authorization, with critical shortages existing in the Army Nurse, Dental, and Medical Corps. Since the implementation of the ARNG AMEDD Officer Accession Program on 5 March 1979, strength has begun to move upward. As of 30 September 1979, the Army Nurse and Dental Corps strength reached 85 percent and 93 percent, respectively, of authorized strength. Total AMEDD officer strength was 2,676, or 78 percent of authorization.

After an eight-year decline, Army Reserve paid drill strength stabilized in fiscal year 1979. Drill strength was 189,990 at the close of the fiscal year, an increase over the 30 September 1978 figure of 185,753. Enlisted accessions amounted to 54,579 as compared to 52,869 for the previous fiscal year. While attrition remained a problem, the favorable results obtained thus far from new recruitment and retention initiatives are sufficiently encouraging to program an increase in Army Reserve paid drill strength to 201,800 by the end of fiscal year 1980.

For the second consecutive year, the Individual Ready Reserve (IRR) registered slight gains—up from 149,427 at the close of fiscal year 1977 to 168,607 on 30 September 1978 and to 201,783 at the close of the current fiscal year. But the size of the IRR continued to lag far short of the pretrained manpower needed as fillers and casualty replacements during the initial stages of war. The practice of transferring individuals from the IRR to the Standby Reserve during the last year of their six-year military obligation, administratively discontinued in the spring of 1978, was eliminated by Public Law 95–485, which the President signed on 20 October 1978. In May 1979 the Army began testing a direct enlistment plan for the IRR that will be expanded in the coming year. A new enlistment option also began in May that permitted an enlistee to serve three years in a troop program unit followed by a three year stint in the IRR. Other actions under consideration to bring the IRR up to required strength included programs to reenlist IRR members who complete their military obligation, extending the six-year military obligation to enlistees over 26 years of age, computing military service credit for delayed entry recruits from the time an individual began active duty or active duty for training rather than at the time of enlistment, and reducing attrition in the active Army to promote transfers to the IRR of those who completed the active service portion of their enlistment obligation.

Standby Reserve strength declined from 82,677 on 30 September 1978 to 30,544 one year later. The Department of Defense moved forward with plans to sharply reduce reliance on the Standby Reserve as a source of mobilization manpower. The strength of the Retired Reserves increased from 391,304 at the end of fiscal year 1978 to 400,825 as of 30 September 1979.

The success of last year's reenlistment bonus test was followed by a comprehensive three-pronged incentive program to encourage enlistments and reenlistments in the Selected Reserves of all the military services. The program began in the Army

Reserve and Army National Guard on 1 December 1978. It offered prospective recruits a choice of a $1,500 cash bonus or an education assistance package with a maximum value of $2,000 for reenlistment in selected units. The reenlistment bonus, available to guardsmen and reservists with up to nine years of service, offered $900 for a three-year extension or reenlistment or $1,800 for a six-year retention commitment in selected units. Thus far, the bonus programs have proved effective tools in obtaining nonprior service recruits and retaining experienced soldiers, although much remains to be learned about the true drawing power of the incentives and the most effective bonus levels in terms of cost and reenlistment/retention ratios.

Army opposition to the findings of the Reserve Compensation System Study, which was noted in last year's report, was extended to include the Office of the Secretary of Defense (OSD) proposals made in August 1979 on inactive duty training pay and retirement points that were based on the study's recommendations. The Army, in a reclama to the OSD proposals, continued to favor the current system supplemented by bonuses to alleviate particular problem areas.

Experience under the Militia Careers Program, which was described in last year's report, is not yet sufficient to indicate its effectiveness in drawing high quality, technically skilled recruits into the Selected Reserve. The split training option, also reported on last year, has proved most successful. In the Army National Guard, for example, the new incentives and initial training options have led to an increase in the number of recruits who were high school graduates or seniors to 63.0 percent this year as compared to 55.3 percent in fiscal year 1978. Also, recruits in mental categories I through III were at 90.1 percent compared to 86.7 percent during the previous fiscal year.

The U.S. Army Recruiting Command (USAREC) completed the assumption of the Army Reserve's recruiting mission in May 1979. All Army Reserve recruiters were fully integrated in the command, but continued to work closely with Army Reserve units in local communities.

For new accessions, the Army National Guard relied on its full-time recruiting force, which was in its second year of operation. The guard continued to make good use of Armed Forces Entrance and Examining Stations in screening potential recruits.

The guard's reliance on ROTC for a large share of its junior officers should be enhanced as a result of the recent approval of simultaneous membership in the Army National Guard and

ROTC. Officer shortages during fiscal year 1979 were critical in three areas: combat arms, Medical Corps, and Army Nurse Corps.

The number of women in the Army's reserve components increased during the past year. More than 22,000 women served in Army Reserve troop program units, some 12 percent of unit strength. The number of women in the Army National Guard at the close of the fiscal year was 14,634, which represented 4.2 percent of the guard's total strength. Particularly gratifying has been a significant increase in the number of women entering the guard's officer ranks through ROTC and OCS. During the past year, enrollment of women in OCS has more than tripled.

Minority strength in the Army National Guard showed no substantial change over the course of the year. Minority strength on 30 September 1979 of 90,934 was 26.2 percent of the assigned strength. It included 2,751 officers and warrant officers and 88,183 enlisted men and women. Included in the figure was a black strength of 59,047, which was 17 percent of the assigned strength, and a Hispanic strength of 25,088, or 7.2 percent of the assigned strength. The minority officer recruiting effort helped increase minority officer representation in the Army National Guard by .78 percent in fiscal year 1979.

Minority strength in the USAR showed no substantial change over the course of the year. Minority strength on 30 September 1979 of 49,950 was 26.3 percent of the assigned strength. It comprised 2,439 officers and warrant officers and 47,511 enlisted men and women. Included in the figure was a black strength of 44,177, which was 23.3 percent of the assigned strength.

As a result of studies on the reserve component technician program noted in last year's report, Congress recommended that a test be conducted to determine if the military services could attract sufficient numbers of quality guardsmen and reservists to fill technician positions on a full-time military basis in order to alleviate a number of problems cited in the studies. These included career stagnation, civilian and military grade differences, and loss of reserve membership by Army Reserve technicians. The Army National Guard and Army Reserve were to convert 1,778 positions (1,042 ARNG and 736 USAR) from a civilian status to a military status during fiscal year 1979. Actual conversions amounted to 1,098 for the Army National Guard and 726 for the Army Reserve. The test will run through 30 June 1980.

Another action taken to improve the technician program was the formation, late in fiscal year 1978, of a team within the office

of the Deputy Chief of Staff for Personnel to manage the Army Reserve portion of the program. During fiscal year 1979, the team took a number of actions to bring about increased efficiency through more centralized management.

The Army National Guard technician requirement for fiscal year 1979 was 34,523, while the number authorized was 26,738. Actual technician strength at the close of the fiscal year was 26,794. The Army Reserve requirement for technicians was set at 9,670, while 8,430 was authorized and the actual strength as of 30 September 1979 was 8,258.

Personnel Management

The good results the Army's reserve components were having in recruitment and retention were offset to a large degree by the continued high attrition rate—only about one half of those who enlisted completed their six-year term of service. Some of the measures taken to combat this problem were noted in the previous historical summary. The Army also tightened discharge standards, recast initial training options to improve retention, and revised payments of enlistment bonuses to encourage people to honor their commitment. Also, the Chief of the National Guard Bureau has formed an attrition management work group chaired by a general officer which will collaborate with organizations formed at the state level in developing plans and recommending actions to lower the attrition rate.

While the Army was working toward lowering the overall attrition rate within its reserve components, efforts to administratively purge individuals who were not performing well continued. The Expeditious Discharge Program, which was described in detail last year, went into operation on 1 November 1978. Later in the year, the Department of Defense issued revisions to its directive on ridding the Selected Reserve of members who were not performing satisfactorily. The revisions stated that members who have not fulfilled their military service obligation could be ordered to active duty to complete twenty-four months of service, transferred to the IRR for the balance of their obligation, or discharged. Selected Reserve members whose participation was not satisfactory but who had completed their military obligation could be transferred to the IRR or discharged. Changes in Army regulations incorporating these and other revisions contained in the DOD directive had not been formulated by the close of the fiscal year.

In February 1979, the Army established the long tour management program for Army Reserve officers and enlisted men

on active duty training orders for periods of more than 179 days and statutory active duty tours. The program, which is managed and administered by the Reserve Components Personnel and Administration Center, provides a mechanism for selecting, assigning, promoting, and retraining participants who serve in such areas as recruiting, retention, personnel management, and special projects. At the close of the fiscal year, over 600 officers and 1,900 enlisted personnel were receiving effective management support under this program.

The Army National Guard's automatic data processing (ADP) capability has not undergone a major revision since 1970, while demands for information at both the state and national levels have greatly increased and have outstripped the guard's ADP capacity. During the past year, the Assistant Secretary of the Army (Installations, Logistics, and Financial Management) approved upgrading the Army National Guard's ADP equipment to a level equal to that of the active force. New equipment deliveries are expected to begin in fiscal year 1981 with completion by the end of that fiscal year. The result should be a superior ADP capacity that will eliminate current reporting deficiencies, permit broader adaption of standard Army management information systems, and increase mobilization readiness reporting accuracy.

During fiscal year 1979, the phased implementation of the Officer Personnel Management System-Army Reserve (OPMS-USAR) was completed, with the result that a personnel management officer at the Reserve Components Personnel and Administration Center oversees the career development of each Army Reserve officer, both commissioned and warrant. Under OPMS-USAR this past year, approximately 13,000 IRR officers received training in their mobilization specialties with active Army units for periods of up to 35 days, over 6,200 officers were scheduled for active duty training in conjunction with required education courses, and more than 5,100 Army Reserve officers were enrolled in correspondence courses. Unfortunately, funding shortages late in the year forced the cancellation or deferral of many mobilization training tours which caused a management credibility gap and lowered morale among the affected reservists.

Funding problems also placed strains on the credibility of the Enlisted Personnel Management System-Army Reserve (EPMS-USAR), and caused many of the 2,100 counterpart training tours scheduled for IRR enlisted personnel to be canceled or deferred. Since EPMS-USAR became operational in fiscal year 1978, the Reserve Components Personnel and Administration Center has

provided intensive personalized management and counseling to more than 20,000 enlisted personnel in the IRR.

Adaptation of the active Army's Standard Installation/Division Personnel System (SIDPERS) continued at a slow pace. The Army National Guard began development work on its version of SIDPERS, but lack of sufficient manpower for the project has hampered progress. The Assistant Chief of Staff for Automation and Communication approved a detailed functional system requirement document for the Army Reserve's SIDPERS and a number of programs were completed. The system integration test for SIDPERS-USAR was scheduled for the summer of 1980.

Results of a test of the Mobilization Preassignment Program (MPP) carried out from 7 August 1978 to 9 March 1979 indicated that the plan was effective in preassigning IRR members to specific units and mobilization stations in the event of war. During the MPP test, 7,778 of 18,965 individuals separated from active duty were preassigned to early deploying units and mobilization stations (M+60 day requirements). Also, 122,260 of those already in the IRR were preassigned through the Mobilization Personnel Processing System (MOBPERS). The test limited the issuance of preassignment orders to individuals having skills that matched mobilization requirements at Fort Benning and Fort Lewis, but Forts Dix, Jackson, Knox, and Sill have been added since the conclusion of the test. At the year's end, expansion and/or modification of the Mobilization Preassignment Program was awaiting decision on several key questions related to the plan and to the system that supports it.

Planning to use retired Regular Army and reserve component personnel to fill post, camp, and station positions within the continental United States, thereby freeing personnel for overseas duty, moved forward during the past year. The Reserve Component Personnel Administration Center completed work on a data base of information on category I personnel (those meeting age and grade criteria, are medically qualified, have a continental U.S. address, and have been retired less than five years), and prepared to begin work on a file listing category II (same as category I, but for those retired more than five years) assets. Meanwhile, the major Army commands and field operating agencies identified positions that could be filled by retirees. Analysis of these assets and requirements will provide information on which to base policies for issuing preassignment orders during peacetime to eligible retirees for predetermined mobilization positions. During the coming year, the development of the retiree

recall and preassignment program will be expected to adhere to the following schedule.

1 Oct 79	Develop estimate of Regular Army category I retiree inventory by grade and skill.
1 Oct 79	Match requirement and asset files.
Oct–Nov 79	Public relations information program for retiree recall at mobilization.
1 Dec 79	Establish DA policy and publish regulatory changes to clarify policies and procedures to be used in selection for recall, training prior to recall, utilization and training after recall, personnel management and personnel action procedures after recall, and benefits available.
1 Dec 79	Draft and staff legislation to permit preassignment of reserve retirees.
1 Dec 79	Establish a pilot program to provide orders to Regular Army category I retirees for early identifiable TDA (table of distribution and allowances) requirements.
31 May 80	Match updated requirements with retiree master file.
30 Jun 80	Full implementation of preassignment plan will be based upon requirements developed through the mobilization TDA program.
30 Sep 80	Begin preassignment of Regular Army retirees from transfer activities.
30 Sep 80	Complete category II retiree asset file (Regular Army only).

Equipment and Maintenance

During the past year, as in previous years, the lack of sufficient quantities of modern, first-line equipment was a major factor in preventing the Army's reserve components from attaining prescribed readiness objectives. While roundout units received the same equipment priority as their parent unit, and support units scheduled to deploy by M+30 days were issued equipment on a priority just below the active Army unit they support, recent NATO mobilization exercises indicated that the major equipment shortages and instances of equipment incompatibility noted were in the Army National Guard and Army Reserve. Of particular concern was the incompatibility of reserve component radio teletypewriters and tactically configured automatic data processing equipment with models used in the active forces. A recent appropriation of $89.9 million earmarked exclusively for Army Reserve component communications should help to alleviate this specific situation.

As will be noted, gains were made in equipment during fiscal year 1979. These gains may be threatened, however, if the decision to preposition additional division sets of equipment in Europe results in the withdrawal of equipment from the reserve components.

The value of major items of equipment issued to Army Reserve units in fiscal year 1979 amounted to $63.6 million as compared to $67.5 million during the previous fiscal year. Acute shortages existed in data processing, heavy engineer, and communications and electronics equipment. A new maintenance improvement program shows excellent promise in promoting more effective use of the time Army Reserve mechanics spend at their tasks. Army Reserve equipment assets at the close of fiscal year 1979 are shown below.

Equipment Level	Quantity	Dollar Value (millions)	Percent on hand Quantity	Value
Requirement (mobilization) ..	1,608,107	2,542	43	50
Authorization (training)	1,148,122	2,081	60	61
On hand assets	691,485	1,272		

The Army National Guard was also beset with equipment shortages, but its holdings were nevertheless impressive. For example, the Army National Guard had 28 percent of the Army's assets of 105-mm. gun tanks, 35 percent of its tube artillery, and 33 percent of the Army's armored personnel carriers. The following chart shows the overall equipment status of the Army National Guard at the close of fiscal year 1979.

Equipment Level	Dollar Value (millions)
Requirement (mobilizations)	$7,220
Authorization (training)	6,695
On hand assets (all inclusive)	5,020
On hand assets (standard only)	4,869
Percent fill (mobilization):	
All assets	69%
Standard assets	67%
Percent fill (training):	
All assets	75%
Standard assets	73%

During the past year, the modernization of Army National Guard equipment proceeded at a fast pace. Approximately 176 major items were upgraded at an expenditure of over $2.5 million. Plans proceeded on a four-year program scheduled to begin early next year to convert all gasoline-powered M113 armored personnel carriers in the guard's inventory to diesel power.

The Army National Guard took a number of actions during the past year to improve logistics management. It worked with the Materiel Development and Readiness Command toward the adoption by the guard of the Direct Support System. Better property accountability should result from the development of a new automated information system to track lost, damaged, or destroyed property. Plans were completed to convert the remaining two ARNG divisions and three separate brigades to the Standard Division Logistics System. Also, the Army National Guard completed the planning and budget justifications necessary to receive the minicomputers used with the decentralized automated service support systems found in nondivisional direct support and general support units. Initial receipt of the hardware will start next year and extend through fiscal year 1983, at which time all eighty-four eligible ARNG units should be automated.

Facilities

New obligational authority for the Army Reserve military construction program continued to decline in fiscal year 1979—$37 million as compared to $51.2 million in 1978. Carry-over funds not expended in 1978 brought the total available for obligation in 1979 to $68 million, which was about the same as the amount available in fiscal year 1978. Many of the Army Reserve's more than 1,000 reserve centers, 213 area maintenance support facilities, 3 installations, and 5 subinstallations are twenty- and thirty-year-old structures and require replacement, renovation, or expansion. The Army Reserve construction backlog to meet building needs was set at approximately $700 million. Army Reserve leaders expressed concern at the adverse effect inadequate facilities were having on recruitment, retention, proper maintenance, and effective administration.

The Army National Guard military construction program received $52.2 million in new obligational authority in fiscal year 1979, an increase of $2.8 million from the fiscal year 1978 appropriation. Another $4.2 million in carryover funds brought the amount available to $56.4 million. Obligations for the year totaled $55.2 million, 98 percent of the amount available—the highest obligation rate ever attained. During the year, contracts for sixty-seven major and thirty-one minor projects were awarded. Of the major projects, which cost $49.1 million, twenty-four were for armories.

The backlog of Army National Guard construction projects increased by $64 million during fiscal year 1979, to $736 million:

$369 million for armory replacement, additions, alterations, or rehabilitation (565 of the guard's 2,807 armories were considered inadequate); $98 million to bring 183 of 1,749 administrative and logistical facilities up to acceptable standards; $178 million for 239 projects at Army National Guard training sites; and $91 million for minor construction and planning.

Training and Readiness

NIFTY NUGGET, the mobilization and deployment exercise conducted in October 1978, uncovered or confirmed a number of deficiencies that were preventing the reserve components from performing in accordance with approved mobilization plans. Effective unit training remained a key element in gearing the Army National Guard and the Army Reserve to a readiness level that would match capabilities with requirements.

The NIFTY NUGGET experience increased the impetus to concentrate the limited time allotted for unit training (thirty-eight days per year) on wartime tasks. At the Army Forces Command (FORSCOM), which was responsible for the training readiness of Army Reserve units and for supervising the training of the Army National Guard, the development and execution of unit training programs was decentralized to the maximum extent. Battalion level headquarters were responsible for establishing training goals and objectives for subordinate units and supplying management guidance for allocating support resources for training; for coordination, supervision, and evaluation of training; and for the planning, organization and direction of combined arms training. Unit commanders took every opportunity to conduct integrated and concurrent training by incorporating other appropriate subject matter with instruction in the primary subject area. Unit commanders also conducted multiechelon training, combined arms training, and collective training. They placed primary emphasis on performance-oriented or "hands-on" training.

Other areas emphasized in training management include field training, realism in training, the correction of training deficiencies, and detailed preparation for training. The latter includes the formulation of three-year, annual, and quarterly training schedules, each of which become increasingly specific as continuous and developing areas of weakness are uncovered. Training was conducted as prescribed by the applicable unit Army Training and Evaluation program. Where such programs did not exist, commanders of affected reserve component units developed their own unit training programs in accordance with guidance provided by FORSCOM and other major Army commands. The

frequency of internal evaluations incorporated into the unit training programs was dependent upon each unit's training needs, personnel turbulence, and the availability of training resources. Periodic external evaluations were normally administered by the headquarters two echelons above the unit being evaluated. In those cases where reserve component units were sponsored by active Army units under various affiliation programs, the division or installation involved provided any necessary assistance.

The success of the test program described in last year's report, whereby operational readiness specialists were assigned to ARNG and Army Reserve units to assist company commanders in training, led to the development of an expanded, fully-funded program. The new Additional Full-Time Manning (AFTM) Management Assistance plan, which will begin early in fiscal year 1980, provides for the assignment of 1,108 guardsmen, 1,060 reservists, and 1,070 active Army members to early deploying and essential nondeploying reserve component units. Program participants will be additional full-time cadre, will augment the on-board technician force, and will represent a major step toward an eventual goal of 7 percent full-time manning.

The Army started the Gaining Command Program early in the year. It established for each unit deploying within the first sixty days of mobilization a tentative wartime assignment with the gaining corps or communications zone headquarters. Excluded were divisions, separate combat brigades, and armored cavalry regiments. The new program has permitted the establishment of a planning relationship between active and reserve component units and a mutual exchange of ideas and views between commanders and staffs. Plans are underway to expand the program to include nondeploying units scheduled to provide support and sustainability to overseas units.

Overseas training for reserve component units continued to pay dividends by providing realistic, mission-oriented training opportunities in locations where the unit would most likely deploy if mobilized, and by giving reserve component and active Army commanders the opportunity to exercise command and control over the assembly, movement, deployment, and maneuver of units. The fiscal year 1979 overseas training program involved forty-eight ARNG units and twenty-five Army Reserve units. Another opportunity for overseas training, the Small Unit Exchange program, included exchanges involving Army National Guard units and comparable Norwegian and United King-

dom units, as well as an exchange between Army Reserve special forces units and British special air service volunteers.

The Army National Guard's continental United States exchange program rewards units at the company, battery, and troop level for achievements in training, readiness, recruiting and retention, and provides an incentive for units that normally must train at the same annual training site year after year by giving them an opportunity to conduct annual training in a different environment. Additionally, it provides battalion staffs with experience in providing support to attached units and exercising command and control. Exchanges are conducted by like units in an annual training status using Air National Guard airlift. This past year, sixteen ARNG company and battalion-size units from fifteen states participated in the program. The Army National Guard also stressed adventure training, which is the conduct of operations by units in environments that approximate combat. Units that conducted adventure training during the past year included the 207th Arctic Reconnaissance Group, Alaska ARNG, two ranger companies (one with the Puerto Rico ARNG and the other with the Michigan ARNG), and the special forces elements of the 19th and 20th Special Forces Groups.

The Affiliation Program has proven effective in promoting the readiness of reserve component units. It was expanded in fiscal year 1979 by sixty-eight company- and detachment-size units (eighteen ARNG and fifty USAR), bringing the number of units in the program to ninety-three battalions (seventy-seven ARNG and sixteen USAR) and sixty-nine company- and detachment-size units (eighteen ARNG and fifty-one USAR). The program provides support to three types of affiliated units:

Roundout. Reserve component "roundout" units are assigned to raise understructured active Army divisions to the desired configuration. These units are assigned resource priority equal to their parent active division.

Augmentation. Augmentation increases the combat power of standard mix active Army divisions or brigades by adding reserve component units. Reserve component units will deploy with, or immediately after, active units and be given resource priority which corresponds to this deployment.

Deployment Capability Improvement. Reserve component units which neither round out nor augment active units, but which require dedicated active Army assistance to meet deployment schedules and are affiliated to improve their deployment capability.

For nonaffiliated units, the Active Component Support to the Annual Training (ACSAT) program was expanded during fiscal year 1979 and provided assistance to twenty battalion-size and forty company- and detachment-size Army Reserve units and to eight divisions, thirteen separate brigades, four armored cavalry regiments, and one TOW light antitank battalion in the Army National Guard. Also during the year, the division partnership pilot program that linked two Army National Guard divisions to active Army divisional elements got off to a good start. Mobile training teams and liaison visits by the 4th Division (Mech) and Army Readiness Region IX provided planning and training support to the California Army National Guard's 40th Division (Mech). Subordinate divisional elements of III Corps provided similar support to the 49th Armored Division, Texas Army National Guard.

As in previous years, reserve component units participated in a number of joint command post and training exercises, including LOGEX 79, BRAVE SHIELD 19 and 20, REFORGER 79, and SOLID SHIELD 79. Realistic training was provided for an additional seventy-one early-deploying reserve component units which deployed to Europe and other overseas destinations and conducted their two-week annual training under the supervision of U.S. Army, Europe (USAREUR), or other overseas commands involved in the Gaining Command Program (GCP).

The use of computer-assisted war games by Army National Guard units increased in fiscal year 1979. Over seventy-five battalion staffs participated in Computer Assisted Map Maneuver System (CAMMS) exercises, while all but three roundout battalions and eight augmentation units took part in Combined Arms Tactical Training Simulator (CATTS) exercises. Manual battlefield simulations were also available to aid the training of company and battalion level staffs.

It appeared that the guard and reserve's application of the Noncommissioned Officer Education System was proceeding along lines that were too divergent to make the most efficient use of available training facilities. This led to the assembly of a special action group composed of representatives from the National Guard Bureau, Office of the Chief, Army Reserve, Office of the Deputy Chief of Staff for Operations and Plans, TRADOC, and FORSCOM to develop a standardized program for both reserve components. The group developed detailed programs of instruction based primarily on ARNG and active Army courses. These were being put into general use as the fiscal year ended.

Support to Civil Authorities

The Army National Guard continued to provide support and assistance to state and local authorities. Over the twelve-month period, the National Guard responded 320 times to emergency conditions in forty-eight states and territories. This involved a total call-up of 39,829 guard personnel and the use of 384,463 man-days.

National Guard personnel were placed on state active duty twenty-seven times to assist authorities in controlling civil disturbances. Incidents occurred in eighteen states and involved 19,729 troops. They included twenty-one strike situations, two call-ups to assist law enforcement, and four demonstrations. Guard units assigned civil disturbance control missions conducted up to twenty hours of refresher training in control operations and conducted annual evaluations to determine state of preparedness during the period.

In this period, 20,100 guard personnel assisted civil authorities during 293 emergencies in forty-eight states and territories. Natural disasters accounted for 146 of the call-ups: 30 to fight forest fires, 46 for snow and ice storms, 54 for floods, 9 for tornadoes, and 7 for hurricanes. There were also 27 search and rescue missions, 36 water hauls, 33 medical evacuations, 53 support missions, and 2 security missions. Other emergencies included traffic control, chemical spills, power outages, train derailments, and emergency shelter.

9. Organization and Management

Organization

Effective management of the Army's limited resources of men, money, and materiel remains the primary objective in considering changes in the organization of the Army's staff and major commands. Nearly all of the projects referred to below are continuations of developments initiated in previous years.

The Assistant Secretary of the Army for Installations, Logistics, and Financial Management (IL&FM) was designated on 13 November 1978 as the Army Safety and Occupational Health Official. Centralization of these previously separate functions resulted from several safety management studies conducted within and outside the Army over the past five years. Under the new organizational structure at the secretariat level, a Deputy Assistant Secretary for Environment, Safety, and Occupational Health was created to assist the Assistant Secretary of the Army for IL&FM in performing these duties. Responsibility for environmental programs and policies was transferred from the office of the Assistant Secretary of the Army for Civil Works to this new office.

At the same time, Army staff responsibility for the Army Safety Program was transferred from The Inspector General to the Deputy Chief of Staff for Personnel, and the U.S. Army Agency for Aviation Safety at Fort Rucker, Alabama, was redesignated as the U.S. Army Safety Center. The Surgeon General continued to be responsible for managing the Army Occupational Health Program and the Chief of Engineers retained responsibility for environmental quality throughout the Army under the new organizational structure.

On 9 April 1979, the Office of Small and Disadvantaged Business Utilization was established within the Office of the Secretary of the Army. The core of the new office had previously been located under the Assistant Secretary of the Army for IL&FM. The director, who reports directly to the Secretary of the Army, is the principal advisor and assistant to the secretary for all matters pertaining to the implementation and administration of programs under the Small Business Act (as amended by the second session of the 95th Congress), the President's Mi-

nority Entrepreneur Program, other small business programs, the Labor Surplus Area Program, and the Women-Owned Business Program.

To assure that the Army secretariat took a more dynamic role in the development and promulgation of civilian personnel policy, the secretary directed the establishment of a Deputy Assistant Secretary for Civilian Personnel Policy in the Office of the Assistant Secretary for Manpower and Reserve Affairs. Prior to this action, civilian personnel policy duties had been combined with equal opportunity duties in a single deputy position. By separating the duties, the secretary was recognizing the importance of both civilian personnel policy and equal opportunity. The new office was formally established on 31 July 1979.

The secretary also directed the establishment of a Deputy Assistant Secretary for Human Systems and Resources in the Office of the Assistant Secretary for Manpower and Reserve Affairs, which was filled on 22 April 1979. This Senior Executive Service position serves as the secretariat focal point for the oversight, integration and advocacy of diverse initiatives which affect human resources and quality of service in people's lives.

A major reorganization of the Army staff reported last year was the creation of a new agency, the Office of the Assistant Chief of Staff for Automation and Communications, effective 1 October 1978. This involved disestablishment of the Directorate of Army Automation within the Chief of Staff's office and the telecommunications functions of the Telecommunication and Command and Control Directorate in the Office of the Deputy Chief of Staff for Operations and Plans. Two field operating agencies under the Director of Army Automation, the U.S. Army Computer Systems Selection and Acquisition Agency and the U.S. Army Computer Systems Command, were transferred to the new Army staff agency along with an Army staff support agency, the U.S. Army Management Systems Support Agency. The Joint Interface Test Force at Fort Monmouth, New Jersey, was also transferred from the Deputy Chief of Staff for Operations and Plans to the Office of the Assistant Chief of Staff for Automation and Communications.

As reported last year, a special Resource Management Study Group under the Director of Management, Maj. Gen. Thomas U. Greer, investigated alternative means of realigning the Army staff's resource management operations. The results of this study, approved and announced in August 1978, involved realigning resource management responsibilities throughout the Army staff. One of the most important was the consolidation of all manpower

(spaces) management under DCSPER, while DCSOPS retained responsibility for managing the Army's force structure (units). Responsibility for individual training policy was also transferred to ODCSOPS from ODCSPER.

A second major realignment assigned responsibility for developing Army-wide resource management policies to the Comptroller of the Army. An additional Assistant Comptroller of the Army for Resource Policy and Financial Planning was created in December and consists of three elements: the existing Management Planning Office and two new offices, the Resource Policy and Planning Office and the Resource Review and Analysis Office. A Resource Management Policy Handbook is being prepared to guide all Resource Management Offices throughout the Army.

Another fallout of the study was the special emphasis given to the conduct of resource management reviews. The function was assigned to the Program Analysis and Evaluation Directorate, Office of the Chief of Staff, where the Resource Management Review Division was established to conduct the reviews and perform affordability analyses.

As a result of a special investigation of Army nuclear matters conducted by The Inspector General from April to December 1978, the Nuclear and Chemical Directorate was established within the Office of the Deputy Chief of Staff for Operations and Plans, effective 2 January 1979. The new directorate serves as the Headquarters, Department of the Army, focal point for all Army nuclear and chemical matters, including all nuclear and chemical plans and policy and nuclear surety and management related functions.

Until recent years, the Army lagged behind the Navy and Air Force in modernizing its forces in terms of total weapons systems development which included training technicians to service new weapons and providing adequate supplies of spare parts. Beginning in the early 1970's, the Army shifted its research, development, and materiel acquisition policies radically. There are now nearly 200 new materiel systems of all types in some phase of development to be fielded in the 1980's, a period of very tight restrictions on various budget programs. Consequently, the balanced development of the new weapons systems will require tight, centralized direction and coordination. Realizing this, the Office of the Chief of Staff, U.S. Army (OCSA), Management Directorate was asked in 1978 to analyze the overall management procedures in terms of structure, function, and responsibility for Army force modernization. As a result of this study, the Army

Force Modernization Coordination Office (AFMCO) was established within the Office of the Chief of Staff on 27 February 1979 to coordinate the Army's force modernization programs and to ensure the effective fielding of new and improved weapons and materiel systems. Maj. Gen. Richard D. Lawrence, who was serving as Chief of the Tank Forces Management Office, was appointed the first chief of AFMCO. The materiel systems he is monitoring and coordinating are discussed in Chapter 11.

A new major command, the U.S. Army Corps of Engineers (USACE), was established and activated on 16 June 1979, the Corps of Engineers birthday. The new organization comprises those elements of the Corps of Engineers engaged in military construction and civil works programs under the direct command of the Chief of Engineers, including engineer research and development laboratories. It does not include combat and construction engineer units, facility engineers, topographic units, or Army engineers assigned to other major commands; therefore, it is not under the direct command of the Chief of Engineers. The civil works function retains its separate identity for budgeting purposes, and the 33,000 personnel spaces assigned to civil works are not accountable in the Army's end strength. In substance, the command organization, missions, functions, and responsibilities of the Corps of Engineers remain as they were in the past. The primary change is a recognition of major command status and the designation of USACE as the official title of the command organization. The Chief of Engineers continues his role of Army staff officer as well as commander of USACE.

Secretary Alexander, in April 1978, directed the Army to study the possible relocation of the Military Personnel Center (MILPERCEN) from Alexandria, Virginia, to Fort Benjamin Harrison, Indiana. The study concluded that such a move would not be cost effective and that anticipated losses of civilian employees who would not agree to move with the center would impair MILPERCEN's ability to perform its mission. Consequently, on 27 March, Secretary Alexander decided MILPERCEN should remain in Alexandria.

Studies on base closures and realignments continued. Five studies commenced in 1976, two in 1977, fifteen in 1978, and one in 1979. Secretary Alexander announced in March that all 1976 and 1977 studies and twelve of the 1978 studies have been completed and that decisions have been made on twelve of them. The status of six facilities studied will not change for various reasons, including heavy political pressures. They are the Dugway Proving Ground in Utah; the Applied Technology Labora-

tory at Fort Eustis, Virginia; the Logistics Systems Support Agency at the Letterkenny Army Depot in Pennsylvania; the Military Personnel Center at Alexandria, Virginia; the Army Management Engineering Training Agency at Rock Island Arsenal, Illinois; and the Ordnance and Chemical Center and School at Aberdeen Proving Ground, Maryland.

The activities to be realigned are: the Military Traffic Management Command's finance and accounting activities at Bayonne, New Jersey; the Theater Communications Security Logistics Support Center at Fort Kamehameha, Hawaii; One Station Unit Training at Fort Bliss, Texas; and several air defense units in Florida and Alaska. Three installations will be closed: Fort Douglas, Utah; Fort McArthur, California; and Fort Wadsworth, New York. The Army expects these changes will eliminate 1,621 military and 448 civilian spaces at an annual savings of $33.9 million.

Six studies have been completed on which no final decisions have been made: Fort Indiantown Gap and the aircraft maintenance unit at the New Cumberland Army Depot in Pennsylvania; Forts Hamilton and Totten in New York; U.S. Army Intelligence and Security Command units at Arlington Hall Station; and Vint Hill Farms and Fort Monroe, Virginia. Studies not yet completed involve closing Fort Sheridan, Illinois, and reducing operations at the Letterman Army Medical Center and the Presidio of San Francisco in California. In March, Secretary Alexander also announced that a new realignment study will investigate merging the Training and Doctrine Command's Combined Army Test Activity with the Combat Development Experimentation Command at Fort Ord, California.

Financial Management

The Army submitted a fiscal year 1979 budget request for $33,844.4 million to the Department of Defense on 1 October 1977. As shown in the following table, Defense and the Office of Management and Budget reduced this by $2,500.4 million, and the President, on 23 January 1978, submitted a revised request to Congress for $31,343.9 million. Congress reduced this amount further by $1,052.0 million, and the Army's fiscal year 1979 budget, as finally enacted on 13 October 1978, amounted to $30,291.9 million. Subsequent supplemental appropriations approved by Congress totaled $751.7 million, while transfers and reprogramming added $528.3 million.

During the fiscal year, the Army actually spent $28,800 million out of $45,500 million available. The latter amount includes $31,600 million in new appropriations, and an unexpended bal-

TABLE 2—CHRONOLOGY OF THE FISCAL YEAR 1979 BUDGET
DIRECT BUDGET PLAN (TOA)
(in millions of dollars)

	DA Submission to OSD	Amended President's Budget	Budget Approved by Congress[1]	Supplemental Approved by Congress	Approved Reprogramming and Transfers	Total Obligation Authority
Military Personnel, Army	9,393.9	9,180.0	9,154.3	493.6	55.2	9,703.1
Reserve Personnel, Army	578.7	532.6	517.8	13.6	35.4	566.8
National Guard Personnel, Army	855.0	747.1	738.7	33.6	14.8	787.1
Operation & Maintenance, Army	10,129.4	9,233.4	9,115.0	184.2	283.6	9,582.8
Operation & Maintenance, Army Reserve	444.6	420.8	416.9	3.4	—	420.3
Operation & Maintenance, Army National Guard	855.5	795.7	789.7	9.7	—	799.4
Army Stock Fund	105.0	74.0	74.0	—	—	74.0
National Board for the Promotion of Rifle Practice	.4	.4	.4	—	—	.4
Aircraft Procurement, Army	970.9	1,017.8	949.7	—	—	949.7
Missile Procurement, Army	802.7	773.2	736.9	—	25.0	761.9
Procurement of Wpns & Tracked Combat Vehicles, Army	1,829.4	1,636.6	1,511.1	—	25.4	1,536.5
Procurement of Ammunition, Army	1,745.8	1,420.1	1,218.1	—	−23.5	1,194.6
Other Procurement, Army	2,231.9	1,789.2	1,642.2	8.6	3.9	1,654.7
Research, Development, Test & Evaluation, Army	2,787.2	2,721.4	2,635.9	5.0	—	2,640.9
Subtotal, Excluding Construction	32,730.4	30,342.3	29,500.7	751.7	419.8	30,672.2
Military Construction, Army	1,004.3	917.1	711.5	—	98.9	810.4
Military Construction, Army Reserve	54.8	34.8	32.5	—	4.6	37.1
Military Construction, Army National Guard	54.9	49.7	47.2	—	5.0	52.2
Subtotal, Construction Accounts	1,114.0	1,001.6	791.2	-0-	108.5	899.7
Total Direct Budget Plan (TOA)	33,844.4	31,343.9	30,291.9	751.7	528.3	31,571.9

[1]Public Law 95–457

ance of $13,900 million carried over from the previous year. Of the total outlay, $10,900 million was for military pay; $10,400 million for operations and maintenance; $2,400 million for research, development, test and evaluation; $4,500 million for procurement; and $700 million for military construction. (Totals do not add due to rounding.)

The rate of inflation rose much faster than projected during the year. As a result, many programs and projects had to be reduced to stay within budget limits. The areas most severely affected were fuel costs, foreign currency purchases, stock fund supply operations costs, utilities, transportation of household goods, purchased services, custodial contracts, KP, automatic data processing systems support, overseas station allowances, purchases from industrial funds, and depot maintenance contracts.

Defense submitted a request for an additional $2,700 million to correct these problems of which the Army's portion was $479.9 million—$431 million to offset inflation and $48.9 million for additional recruiting costs.

The fiscal year 1979 Defense Appropriations Act established a new appropriation entitled Foreign Currency Fluctuations, Defense. Its purpose was to eliminate from the DOD budgetary process losses and gains to programs caused by unpredictable fluctuations of foreign currencies. These occur when exchange rates for foreign currency at the time of disbursement differ from exchange rates at the time the budget is developed. This year, the Army received from this special fund $57 million for transfer to its military personnel programs and $271 million for operations and maintenance.

Constrained manpower and dollar resources have placed a premium on discovering ways to increase productivity and reduce costs. This search has led to the development of the Quick Return on Investment Program (QRIP), the Productivity Enhancing Capital Investment Program (PECIP), and the OSD Labor Saving Capital Investment Program (LSCIP).

The QRIP provides funds for off-the-shelf capital tools and equipment which amortize in two years or less. Funds are readily available and the long delays experienced in the budget process are eliminated. No funds were appropriated for QRIP in fiscal year 1978, but during the four previous years, QRIP investments totaling $17.5 million saved $21 million annually. Additional investments of $4.9 million in fiscal year 1979 will save $6.5 million annually. Currently, projects funded in fiscal year 1980 have a dollar value of $1.8 million and potential savings of over $4 million.

PECIP minor and major projects are introduced into the programming and budgeting cycle; therefore, a longer period is required to obtain results. Submissions for the fiscal year 1982 cycle are well documented and positive results are anticipated. These projects have a dollar value of $1,000 or more and amortize in five years or less.

The LSCIP was instituted by the Office of the Secretary of Defense for fiscal years 1981–84. Each year, $105 million will be set aside to fund labor intensive projects. Each project must have a minimum cost of $1 million, amortize in four years or less, and result in a manpower or overtime savings of one-half the investment cost. The initial submission for fiscal year 1981 resulted in the approval of nine Army projects for $34.2 million with a savings of $58.5 throughout the four-year amortization period.

The Value Engineering (VE) program contributed substantial dollar savings in five major commands by eliminating unessential features to an item, process, or procedure. The VE program has two basic components, an internal effort performed by trained Army personnel and one for contractors designed to encourage changes that will reduce costs. Savings in fiscal year 1979 amounted to $216.5 million for the internal Army program and $43.8 million for the contractor program, representing a return on investment of about 19 to 1 and 14 to 1, respectively.

A major Department of Defense objective is to reduce the operating and support costs of weapons systems. The first step, taken by the Army in 1977 toward meeting this objective, was to obtain from Army managers the requirements for weapons systems operating and support costs. The results of that survey were used to design an automated management information system to identify, collect, and disseminate operating and support costs of selected major weapons systems. In September 1979, the GENASYS Corporation was awarded a contract for the second phase of a four-phase development program. The Army expects that the system will be fully operational by October 1984.

Efforts continued to isolate and predict long-term cost growth. Army materiel systems reported in the Selected Acquisition Report (SAR) have experienced approximately $18 billion in cost growth over their development estimates. About 80 percent of this was caused by understating the impact of escalation and about 8 percent was the result of cost estimating errors. The remaining 12 percent was due to disruption or turbulence in program requirements. These findings were further examined and clarified during the year by a Secretary of the Army Task Force, by Army participation in and contributions to the House

of Representatives, by Government Operations Committee Hearings on Cost Growth, and by Army contributions to the Summer of 1979 Defense Science Board Study on Cost Growth.

In early 1979, the Comptroller of the Army centralized the Audit/Inspection Response and Follow-up function and assigned it to the Army Finance and Accounting Center. Prior to that time, this function had been performed on a decentralized basis throughout the Office of the Comptroller of the Army. As a result, responses were developed by individual directorates and often were not coordinated. Follow-ups were left to the Department of the Army Inspector General, subject to his priorities and available resources. All audit/inspection reports received at the Office of the Comptroller of the Army are now sent to the Finance and Accounting Center for retention and dissemination to interested or affected organizations.

The Management Directorate within the Office of the Chief of Staff supervises the Army's Commercial and Industrial Type Activities (CITA) program, which involves between 35,000 and 40,000 individual operations, largely base and installation support functions. Congress in the past urged conversion of these activities to outside contractors, where it was cost effective. During the past year, seventy-seven CITA cost studies were scheduled for completion but forty-two were deferred until fiscal year 1980. There were 751 civilian and 35 military spaces associated with the remaining 35 completed studies. So far, there have been fourteen decisions made: six to retain the functions concerned within the Army and eight to contract the functions out. The estimated annual dollar savings to the Army was $1.2 million. Decisions had not been made on the remaining twenty-one 1979 cost studies by the end of the year.

In fiscal year 1979, the Army led all federal agencies in contracting with minority small businesses under the preference provisions of Section 8(a) of the Small Business Act, with awards totaling $203.9 million. This was over $50 million above the next highest federal agency total and was an increase of $60 million over fiscal year 1978. The Army has now led all federal agencies in awards under Section 8(a) for the past ten of the eleven years of this program. Total awards and subcontracts with minority firms reached $351.4 million in fiscal year 1979, an increase of 40 percent over the prior year and more than double the fiscal year 1977 performance. In addition, the Army's percentage of awards made by small business set-asides reached 10.8 percent, the highest percentage of such awards for the ten years that this data has been reported.

In April, the Army's Finance and Accounting Center at Fort Benjamin Harrison began to convert approximately 1,300 programs on its UNIVAC 494 and CDC 3300 computers to a new UNIVAC 1100/82 computer which has greater capacity and speed and better reliability than the two older models. The programs being converted range from simple utility programs to complex computational programs like the Joint Uniform Military Pay System (JUMPS). Conversion of these programs, involving the use of remote terminals, is scheduled for completion in January 1980.

The Comptroller's Directorate of Cost Analysis was reorganized to undertake the major task of developing concepts and tools to cost parametrically the entire Army. This program, known as Total Army Costing (TAC), consists of a family of computer programs designed to aggregate costs at several levels of detail in the multiple management languages of forces, appropriations, missions, functions, and programs.

Although still evolving, during fiscal year 1979 TAC produced 40 to 50 percent of the Army's total obligational authority by appropriation, mission, and life cycle costs of systems for the Extended Planning Annex of the Program Objective Memorandum. This information provided management greater visibility of costs by mission area, and linked personnel and dollar resources to system and mission areas. TAC has uncovered "disconnected" situations which might have led to the fielding of new systems without the acquisition schedule crews to operate and maintain them and acquisition schedules with early year and later year buys that were not in harmony. It has thereby aided in developing perceptions geared toward the improvement of the planning, programming, and budgeting system.

Micrographics

The shortage of critical storage space for records and archives has led to the development of an Army-wide micrographics program to save thousands of square feet of storage by reducing thousands of documents to a few small strips of microfiche. This year, The Adjutant General's Office (TAGO) began work on an automated micrographic storage system to fulfill large scale information storage, retrieval and dissemination requirements. The Advanced Microform Access Retrieval Storage (AMARS) system, when fully developed, is expected to provide a base for integrating and testing the many new advances in information technology and concepts expected to appear during the 1980's.

The initial objective of this project is to unite an automated

modular micrographic storage and retrieval device with high-speed computer indexing and controlling functions capable of rapid access and transmission. The site selected for testing the new system is the Reserve Components Personnel and Administration Center at St. Louis, Missouri. So far, a detailed site requirements analysis and a system design have been completed, detailed specifications developed, and a procurement contract signed. Installation at the site is scheduled for October 1980.

As reported last year, the Army awarded contracts to three firms, each of which was to develop a prototype hand-held micrographic viewer in order that the benefits of microform (micropublishing) might be obtained in a combat environment. During the current year, two prototypes were delivered and a third is still being developed. All three incorporate new advanced projection and packaging concepts, but none fully meet field army requirements. After all three prototypes have been delivered and tested, a detailed set of specifications will be written combining the best features of all three models.

The Army's publishing program is both mammoth and complex, and in order to introduce the new techniques of micrographics into this program, the Army Study for User Conversion to Micropublishing (known as IMPACT II) was initiated. A number of lengthy, repetitive standard publications have been used to test the system and its acceptability to users. These include DA Pamphlet 310–4, Index of Technical Manuals, Technical Bulletins, Supply Manuals, Supply Bulletins and Lubrication Orders; and DA Pamphlet 18–1–1, Army Inventory of Data Processing Systems. Organizations throughout the Army are being encouraged to propose additional suitable publications for micropublishing, particularly those used as standard references and those which are both voluminous and subject to frequent revision.

The Adjutant General approved a request from the U.S. Army Troop Support and Aviation Materiel Readiness Command (TSARCOM) to acquire a new advanced punch card retrieval system in conjunction with the projected move of TSARCOM headquarters to another location in the St. Louis area. The new system will be driven by an integrated master computer system and three computer subsystems. Remote terminals will be connected by fibre optic cables which are free of the static that interferes with standard cable operations. Development costs are expected to be $1.4 million under a contract awarded by TSARCOM to a California software company.

In 1975, the U.S. Army Finance and Accounting Center (USAFAC) at Fort Benjamin Harrison began converting eight

million original disbursement voucher documents annually in its transportation/government bill of lading series to microfiche. This year, The Adjutant General approved converting annually an additional 28.8 million original disbursement voucher documents received from 194 Finance and Accounting offices to about 107,000 source document microfiches. The ultimate result will reduce the mountain of records maintained in these offices, thus freeing a large number of filing cabinets and administrative space.

As reported previously, the Army's Computer Output Microform Program (COM) was designed to save money and improve the efficiency of the Army's Base Operations Information Systems (BASOPS) through the use of microforms. Standard computer output microfiche is being produced at twenty-nine of forty BASOPS installations. Five data processing installations in USAREUR began computer output operations, with V Corps the last to become operational. DARCOM began converting its depot automated SPEEDEX systems to microfiche this year.

Records Management

After a long delay, the Army Records Management Civilian Career Program is now in operation. The program is designed to improve professional training and assure merit promotion of personnel assigned to the Army's Records Management Program. It applies to GS–11 through GS–15 personnel who perform records management duties 50 percent or more of the time regardless of the title or series in which they are classified. Incumbents of positions at the GS–9 level performing predominantly records management duties are afforded voluntary registration in the program for subsequent placement laterally or for promotion to the GS–11 level.

In March, The Adjutant General initiated a project to establish an Army-wide program to manage and control forms and reports through an automated management information system. Other objectives of this program include preventing duplication and overlap, and reducing the cost of Army information programs.

The proposed system, which was under study as the fiscal year closed, will contain information on every form and report required by all Army staff agencies. The Army hopes to have the new system in operation by the end of fiscal year 1981. At that time, it will be evaluated and the economic soundness of extending it to the field considered.

The Army's Machine Readable Records Program provides a systematic program for authorizing the retention, retirement,

and disposal of information in Army ADPS based on directions from the Archivist of the United States. Information submitted by Army staff agencies and field commands is evaluated by records management analysts to determine the archival value of the information contained in these ADPS.

This year, The Adjutant General's Office became responsible for managing and retrieving the academic records of all DOD dependent overseas schools, including those of the Air Force and Navy. Currently, the Army answers over 100 requests for high school transcripts each month, and this will increase when the case loads from the Air Force and Navy have been transferred. Approximately 145 active and inactive secondary schools are included in this program. A TAG representative is visiting the five DOD dependent school regions (Atlantic, Germany North, Germany South, Mediterranean, and the Pacific) to locate records and assist in setting up an effective Records Management program.

The Adjutant General's Access and Release Branch processed 1,027 requests for copies of records submitted under the Freedom of Information and Privacy Acts. Worldwide, the Army handled 18,000 requests. There was a noticeable change in the type as well as the number of requests received under the Freedom of Information Act. They were, for the most part, for larger numbers of records. They contained only broad, general, and often only vague descriptions of the records desired. The requests, therefore, were substantially more complex and difficult to satisfy.

The change in the type and number of requests received probably resulted from many factors. First, the public is becoming more concerned about its rights and privileges and expects more information from its government.

Second, all three branches of the government have made it clear that the government's business must, and will, be conducted with openness and candor. The President, the cabinet, senior members of Congress, and senior members of the court system have made it clear in their public statements that the public has the right to know what the government is doing, or failing to do.

Third, the past few years have seen a noticeable increase in the number of organizations formed in the interest of public, or specific special interest groups. These organizations have learned that much of the information they need to conduct their business is available from the government just for the asking and are acting accordingly.

Last, those in private business, large and small, lawyers, authors, and researchers have learned the government is a vast storehouse of information. This information can promote their private commercial interests, and so, they too are taking advantage of the Freedom of Information Act.

In summary, during the past year the public has become much more aware of the benefits that can be derived from the act, and this has caused greater use of its provisions. The result has been more requests for more records and requests of greater complexity.

This past year, the Access and Release Branch has been deluged by court orders for masses of record cases involving the atomic bomb tests in the 1950's, such as *Stanley Jaffe* v. *Department of the Army.* These required worldwide searches for nuclear test records to determine who was there. The *Anthony Giles* v. *Clifford Alexander* case over drug records was fought on a document by document basis. Currently, the Justice Department and the Army are involved in litigation along with the Dow Chemical Company on American use of Agent Orange (a herbicide) in South Vietnam. Records on this subject alone may involve the review and examination of as many as two thousand linear feet of files.

The Privacy Act of 1974 requires the Office of Management and Budget (OMB) to submit an annual report to the President and Congress. OMB, in turn, requests Executive Branch agencies to submit extensive narrative and statistical data on the administration of this program. The OMB report for calendar year 1978 indicated that there were 215,255 requests from individuals for access or amendment to their Army records. This was an increase over the figure of 158,659 for calendar year 1977. Of the 1978 total, 214,598 requests were totally granted and 612 granted or denied in part. The remaining forty-five requests were totally denied, two less than in the previous year. The 657 requests either totally or partially denied led to forty-four appeals. Of these appeals, thirteen were either partially or totally granted. Seven Privacy Act related civil actions were filed against the Department of the Army during the year.

An Army correspondence course dealing with the Privacy Act and Freedom of Information Act programs was published. The five-hour credit course is available to Army military and civilian personnel. It provides instructions in the basic requirement of the acts and is primarily intended for those individuals actively involved in responding to requests.

The Editorial Control Division of The Adjutant General Center continued its efforts to improve the readability of Army reg-

ulations. During the report period, 265 different publications were edited. After editing, the reading grade level of the publications averaged eleventh grade, with some as low as ninth grade. The division again achieved an average 15 percent reduction in the number of pages in each edited publication. Through consolidation of related publications, forty-one publications were eliminated.

In 1977, The Adjutant General initiated a program to improve the Army publications system, including the development of a simpler initial distribution system. Under the current "Pull" concept systems, the user unit identifies its publications requirements, using a subscription system. Experience indicates that many users do not know their requirements, resulting in both overdistribution and failure to receive many required publications. The new or "Push" distribution concept was tested in the 2d Armored Division, Fort Hood, Texas, from August 1978 through February 1979. The six-month test clearly demonstrated the superiority of the Headquarters, Department of the Army, centralized control of publications initial distribution over the demand subscription system. By linking with property book records, the proponent, working with The Adjutant General Center, can accurately determine the actual initial distribution needs for equipment publications and administrative publications by specific identification of the target audience. Test results showed a decrease in both accounts and requirements for administrative publications, an increase in the number of copies of equipment publications required, and an overall decrease in distribution of both administrative and equipment publications for which there was no need.

Efforts are underway to test the "Push" concept for equipment publications in the European Community Command environment. Concurrently, automated systems are being developed to support extension of "Push" to TOE units.

During the current year, the U.S. Army Adjutant General's Publication Center in Baltimore was assigned responsibility for determining standard account numbers and for setting up standard mailing addresses for all established and new accounts at both the St. Louis and Baltimore Centers. Savings of over one million dollars were also realized this year by using third class bulk rate mailing procedures in the initial distribution of publications.

Administrative Management

In 1978, The Adjutant General directed that an automated administrative support system be designed, developed, tested,

and operated within The Adjutant General's Office (TAGO) to demonstrate that the technology exists to automate administrative support functions at all levels of administration within the Department of the Army in a totally integrated environment.

This year, the Chief of Staff approved further development of the concept of automating administrative support functions for the entire Army staff. Additionally, an automated administrative support system called The Adjutant General Automated Administrative Support System (TASS) is being developed within TAGO to serve as a model for other agencies.

During the current year, equipment was procured and installed at Fort Benning for a test of the prototype Installation Integrated Administrative Support System. This system, if successful, will tie together administrative functions at Fort Benning. Integrated functions would include expanded text processing, electronic mail and message forwarding, automated post locator, automated orders preparation, photocomposition, micrographics, automated transfer-point processing, document tracking, and suspense control. So far, the test has indicated an average monthly increase in word processing of 60 percent, with 1.5 million lines processed in the highest month. The photocomposition equipment installed has returned $7,000 over the cost of the equipment during its first six months of operation. Ultimately, the new system will be able to provide more effective administrative support functions with fewer resources.

In 1976, at the request of the Department of Defense, the Army's Logistic Management Institute reviewed the military postal management and practices of the three military departments. The review concluded that, while the existing postal organizations were fulfilling their assigned responsibilities satisfactorily, some economies and improvements could be made through reorganization. Of the four alternatives proposed, the Assistant Secretary of Defense for Manpower, Reserve Affairs, and Logistics (MRA&L) selected the single manager concept as the most desirable. The Secretary of the Army has been tentatively designated as the single manager for the Military Postal Service, after negotiations were completed in September with the other services, JCS, and the OSD staff. If the proposal is approved by the Deputy Secretary of Defense, the Army will be required to consolidate postal headquarters elements of the Army and other services in the National Capital Region into a Postal Service Agency staffed by all services with a general officer heading it. This agency would be a separate field operating agency of The Adjutant General with operational control of consolidated mail

terminals on the east and west coasts and wholesale postal elements overseas. Minimal additional Army resources would be required since the agency will be formed from current assets of all services and jointly funded.

Postage meters were studied and evaluated this year at the urging of Congress and The Inspector General. The study found that postal meters were cost effective and should be gradually introduced Army-wide over several years. The estimated annual savings from the use of meters was $4.3 million.

In summary, after two decades of operating on a shoestring with completely inadequate financial and manpower resources, the Army's Records Management Program has obtained some of the resources needed for effective operation. The most significant achievement was the adoption of a Records Management Civilian Career Program, assuring that professionally qualified personnel rather than mail and records clerks will eventually be assigned to perform records management functions. Unfortunately, the same could not be said of the National Archives and Records Services (NARS) which continued to operate on a shoestring with fewer and fewer people and completely inadequate storage and retrieval facilities. Some records have been lost in fires caused by inadequate and dangerous storage facilities in Suitland, Maryland, and at St. Louis, Missouri. These conditions have not been corrected and the Army has little direct control over the situation. Only the development of fireproof micrographics equipment and the transfer of existing records to this new media offer a satisfactory solution to the problem, given congressional reluctance to fund authorized programs to provide the NARS with adequate storage and retrieval facilities.

10. Logistics

Ranking high among the expressed concerns of senior Army officials were significant deficiencies in force readiness—the ability to rapidly mobilize, deploy, and fight. Correcting the many problems presented a broad challenge to those responsible for logistical support. While materiel readiness, per se, remained a very important part of this challenge, it became apparent that the ability to receive units into the theater, integrate them into the operation, and sustain them as long as necessary is vital to successful support of the Army. Decisions in recent years to reduce supporting forces, thereby increasing the combat-to-support ratio and providing more initial fighting punch, have made the maintenance of this ability more difficult. The expected introduction of many new items of weaponry and equipment in the 1980's will add to the complexity of the situation.

Although primarily a period of identification and clarification of logistical problems, the past fiscal year saw improvement in many of the Army's logistics programs. Among logisticians, there was a heightened awareness that improvement must not only continue but also expand and accelerate, to help ensure a sufficient level of force readiness in the future.

Support of Forward Deployed Forces

In our national defense policy of deterring military aggression and protecting our vital national interests, the defense of Europe is second only to the defense of the United States itself. Army logistics doctrine must be written to work in Europe and be adaptable, where necessary, for contingencies in other areas. NIFTY NUGGET, a massive simulated mobilization exercise conducted in October and November 1978 by the Department of Defense in conjunction with other federal agencies, tested the United States' ability to mount and logistically sustain a large military force in Europe in the event of a nonnuclear attack by Warsaw Pact forces. Important deficiencies the exercises uncovered included inadequate airlift capability and, in Europe, shortages of prepositioned equipment and insufficient storage facilities. Progress during the year in a number of key programs (and the institution of others) looked toward the alleviation of these problems.

The Office of the Deputy Chief of Staff for Logistics continued to work closely with the Office of the Assistant Secretary of Defense (Manpower, Reserve Affairs, and Logistics) toward further refinement of the Logistics Master Plan for NATO. Of ninety-nine tasks contained in the revised plan published 1 May 1979, the Army is in the lead with action on twelve.

Another continuing effort is the air line of communication in which repair parts are shipped directly from the wholesale supply point in the continental United States to the direct support unit in Europe. This procedure eliminates the need for intermediate overseas depots and frees resources for other priority requirements. The aim is to reconfigure the logistics structure into that envisioned for wartime operations—a structure that cannot be made effective without a reduction in order-ship time (the elapsed time between the placement of an order and the reception of the materiel by the direct support unit). Order-ship time for the air line of communication to Europe continued to improve in fiscal year 1979 and by 30 September 1979 had reached an average of 25.9 days against a goal of 20 days. Depot processing time at New Cumberland Army Depot in Pennsylvania, the base installation for shipments to Europe, was 2.5 days by the end of September, surpassing the target of 3 days. By that time, the number of support units of U.S. Army, Europe, served by the air line of communication was ninety-five, or six more than the previous year.

The Minimum Required-Logistics Augmentation, Europe, project, begun in 1974, provided for establishment of a line of communication throughout the United Kingdom, Belgium, the Netherlands, and Luxembourg in support of U.S. Army, Europe, in the event of hostilities. Continuing project actions included maintenance of prepositioned equipment, operation of storage sites, provision of equipment to fill shortages, unit training, and acquisition of an additional storage site. At the second annual project conference held in March 1979, conferees established and assigned responsibility for twenty-seven objectives which should allow for more intensive management of the project.

The Office of the Deputy Chief of Staff for Logistics participated in the implementation of logistics initiatives agreed to by NATO nations as part of the NATO Long-Term Defense program. Key features, agreed to for implementation or further study, include harmonizing NATO communications zones, improving war reserve levels, and establishing required NATO logistics staffs and organizations. The program progressed through increases in prepositioned war reserves and NATO funding of

some of the storage facilities required in Europe. Also, the Army assigned several staff officers to a new logistics coordinating center at Headquarters, Allied Forces Central Region.

Host nation support continued to be a primary consideration for achieving the total logistics support capability that our combat forces would require in war. Progress was evident in some of the functional areas in which support had been requested from the Federal Republic of Germany; however, much additional work remains to be done in order to obtain necessary support commitments. While general and technical agreements have been concluded with the United Kingdom, Belgium, the Netherlands, and Luxembourg, only one detailed line of communication plan has been completed. Negotiations aimed at obtaining lines of communication support agreements continued with Norway, Denmark, and Italy, but the dialog with Turkey and Greece was temporarily suspended for political reasons.

As a possible supplement to the Army aircraft depot maintenance programs, the Army, in fiscal year 1979, contracted with several German firms for modification and maintenance of aviation equipment. With a view toward expanding the number of such agreements, the Department of Defense, in June 1978, submitted to Congress for the second time proposed legislation that would remove cumbersome legal requirements that host nations find objectionable.

Outside of the European area of concern, work continued on air lines of communication to Hawaii and Alaska, with both lines expected to be in operation early in fiscal year 1980. The existing Military Airlift Command channel from Travis Air Force Base, California, to Hickam Air Force Base, Hawaii, will serve the line to Hawaii. The Alaska line is designed to operate between Sharpe Army Depot, California, Travis Air Force Base, California, and Elmendorf Air Force Base, Alaska.

In the area of logistics support for Pacific operational plans, improvements have been made in closing the gap between requirements and capabilities. A Memorandum of Understanding that resulted from an April 1979 meeting of action officers from the Department of the Army, the U.S. Army Materiel Development and Readiness Command, and all Army major commands in the Pacific, called for computation and structuring of resupply packages for U.S. forces and designation of multiple ports of debarkation for supplies. In regard to Army withdrawal from Korea, representatives of the Office of the Deputy Chief of Staff for Logistics visited Korea, attended conferences at U.S. Army Western Command and U.S. Army Materiel Development and

Readiness Command, and participated in Army staff reviews of withdrawal matters.

Security Assistance

The Army continued to support attempts to improve the defense posture of the United States' friends and allies by furnishing weapons, training, and other military services on a grant aid or sales basis. New security assistance constraints imposed by legislation and by President Carter's policy on the transfer of conventional arms were considered in the careful review of requests from foreign countries seeking to acquire advanced weapons systems and related services. Some reductions in arms sales as a consequence of this review are evident, but the major reductions resulted from Iranian cancellations both before and after Iran's revolution in early 1979. The level of foreign military training continued at roughly the same level as in recent years.

Congress passed two laws directly affecting security assistance. The International Security Assistance Act of 1979 directed the President to take into account improvements in the human rights records of countries receiving assistance, authorized lifting of the arms embargo on Turkey, and supported the President on arms control measures. The Department of Defense Appropriation Authorization Act of 1979 prohibited sales of certain types of stocks and war reserves, thus protecting Army readiness.

Seventy-eight country programs comprised the Army's worldwide security assistance responsibility. Of $28.7 billion allocated, $13.1 billion had been delivered by the close of fiscal year 1979.

Grant aid under the Military Assistance Program has been declining since fiscal year 1977. A tri-service ceiling of $210.3 million was established for fiscal year 1979 of which $157 million was allocated for country programs as follows:

Greece	$32,260,000
Jordan	41,020,000
Philippines	15,475,000
Portugal	25,270,000
Spain	42,400,000

Annual investment in the International Military Education and Training Program has remained close to $30 million since fiscal year 1976. However, during the past year, the program only consisted of $23.9 million for forty-two countries.

Eligible foreign governments purchase defense articles, services, and training under the Foreign Military Sales Program. Total Department of Defense new orders for the year were $13.0

billion; the Army-managed share of $4.3 billion represented an increase over the fiscal year 1978 total of $2.9 billion. This was attributed to almost $2 billion in new orders during the fourth quarter. Foreign military sales for the year reflected the President's policy on conventional arms restraints, including a reduction in the dollar volume of new commitments to nonexempt countries for weapons and weapons-related defense articles and services. Under the Foreign Military Sales financing program, which provides credit and loan repayment guarantees to enable eligible foreign governments to participate, $1,973 billion was allocated, including $1 billion earmarked for Israel. In all, twenty-six countries received financing.

Funded under both the International Military Education and Training Program and the Foreign Military Sales Program is the International Fellows Program at the U.S. Army War College. The objective of the fellows program is to establish and maintain special relationships with military officers of selected foreign nations. During the academic year 1979–80, sixteen nations participated.

The Army takes part in security assistance coproduction projects approved by the State and Defense Departments for manufacture or assembly of U.S. defense materiel on foreign soil. Interest in these programs remained high among foreign governments seeking to achieve self-sufficiency, modernize forces, and capitalize on benefits derived from the impetus of standardization and interoperability. During fiscal year 1979, the value of active, closed, and pending coproduction projects totaled $4.49 billion, of which $2.25 billion will eventually be returned to the U.S. economy. In addition to NATO, countries participating in these programs were Germany, Italy, Japan, Korea, the Netherlands, the Philippines, the Republic of China, Turkey, Switzerland, and the United Kingdom.

Events relating security assistance to individual NATO members were mixed during the year. Greece wanted to reintegrate its conventional forces with NATO, but the problem of Greek and Turkish tension over Cyprus and other issues hindered progress toward NATO cohesion on the southern flank. Among other objectives, security assistance for Greece and Turkey was designed to promote alliance cohesion by arresting their centrifugal tendencies. In addition to providing unilateral assistance to Portugal and Turkey, the U.S. made efforts to encourage assistance from other NATO allies, particularly the Federal Republic of Germany, the United Kingdom, and France. Developments in Spain and France suggested increased and continued coopera-

tion with NATO. One small but noteworthy breakthrough was the expanded accreditation of the U.S. Army Training and Doctrine Command liaison officer to the French Army staff.

In the Middle East and Africa region, defense requirement surveys continued to be an important part of security assistance efforts, with new surveys being conducted in Kenya, Iran, Egypt, and Oman. As a result of the Israel-Egypt Peace Treaty, the U.S. security assistance relationship with Egypt expanded dramatically. Congress approved a $1.8 billion assistance package, of which $1.5 billion was Foreign Military Sales credits. The United States-Israel security assistance relationship remained steady throughout the year. Despite disagreement with Saudi Arabia over the Israel-Egypt treaty, U.S. programs for that country continued to expand.

During the fiscal year, the United States-Iran security assistance relationship underwent a drastic change. As a result of political turmoil and the downfall of the Shah, a provisional government was established and the armed forces of Iran were virtually destroyed as an effective military force. The large U.S. military assistance advisory group was evacuated by mid-fiscal year 1979, and our Foreign Military Sales program came to a standstill. All existing sales programs were terminated pending resolution of the political situation.

Nine Latin American countries received Foreign Military Sales financing or training, or both, under the International Military Education and Training Program. Countries that in previous years had rejected U.S. security assistance or whose programs the U.S. government had terminated due to human rights issues did not receive security funds. Military-to-military relations with Latin America generally remained good, although reduced security assistance still caused somewhat strained relations with some countries.

In the Pacific region, planned compensatory equipment transfers from the U.S. 2d Infantry Division to the Republic of Korea Armed Forces were largely placed in abeyance by the President's decision to slow troop withdrawal from Korea. Normalization of relations with the People's Republic of China and imminent termination of the mutual defense treaty with Taiwan required that Taiwan security assistance requests be processed through the quasi-official American Institute on the island. The occupation of Kampuchea by the Socialist Republic of Vietnam stimulated Thai requests for expedited security assistance, which the U.S. began to meet. Completion of Philippine base negoti-

ations resulted in a U.S. commitment to make a determined effort in fiscal years 1980–84 to reach a cumulative total of $500 million in military and economic assistance to the Philippines.

Closely akin to the security assistance program, although not a part of it, is U.S. support to the United Nations. Since 1973, the U.S. has supported the United Nations Emergency Force, which was established in that year to act as a buffer between Egypt and Israel in the Sinai. Because of the Egypt-Israel peace accord, the Emergency Force's mandate was allowed to expire on 24 July 1979. Still receiving U.S. aid were the United Nations Disengagement Observer Force, which served as a buffer between Israel and Syria in the Golan Heights; the United Nations Truce Supervision Organization in Palestine; and the United Nations Interim Force in Lebanon, which was established along the Israel-Lebanon border in March 1978 following the incursion by Israel into Lebanon.

The U.S. provided approximately $2.05 million worth of goods and services to these United Nations activities in 1979. All Department of Defense support during the year was provided on a reimbursable basis.

Logistics Planning and Management

Efficient planning and management are vital if the Army logistics community, with its far-flung, variegated, and important responsibilities, is to function effectively. In October 1978, the Deputy Chief of Staff for Logistics revised his plan for manning, equipping, training, managing, and sustaining the Army by publishing a list of actions to enhance logistics readiness and provide a common direction for the entire Army community. The list, known as Direction for Army Logistics, incorporated recommendations of the major Army commands and the Army staff. At the close of the fiscal year, the plan was being expanded to make it a more useful working document, to identify major accomplishments, and to provide clear, concise, and measurable interim and long-range objectives in attaining Army logistics goals.

During the fiscal year, the logistics community took a number of steps aimed at ensuring the availability of logistic and materiel support when a materiel system is fielded. The Integrated Logistic Support Enhancement Program gained recognition for logistics as an equal partner with cost, schedule, and performance in figuring overall cost in the materiel acquisition process. Also as a result of the program, the Deputy Chief of Staff for Logis-

tics gained membership on the Army Systems Acquisition Review Council and integrated logistics support became a council agenda item.

The Department of the Army Inspector General in August 1977 completed an audit survey and special inspection of the management of and accountability for Army materiel at the retail level. In October 1977, the Department of the Army Property Accountability Task Force was established within the Office of the Deputy Chief of Staff for Logistics to implement the inspection's recommendations. Sixteen of the eighteen recommendations, including the new Army report of survey system, had been implemented by early spring 1979.

In March 1979, the Office of the Secretary of Defense Steering Group on Oversight of Defense Activities ordered a combined review by all the Armed Services of the Army's property management initiatives to determine whether the Army's new way of doing business could be adopted by all Department of Defense components. The review team had the task of measuring the effectiveness of the new system from data collected each quarter from major Army commands. Initial indications were that the new procedures had been well received by units in the field and had resulted in a higher rate of pecuniary liability in cases involving possible negligence, a much reduced administrative processing time, and increased awareness by commanders of their responsibilities in property accountability.

For commissioned officers, the major development during the year in the area of logistics personnel and training was the Deputy Chief of Staff for Logistics approval of the Army Logistic Specialties Committee recommendation to consolidate the Traffic Management specialty with the Transportation Management specialty. The committee also undertook a major two-year effort to define the Army's field grade requirements for general logistic officers. For enlisted personnel, the Deputy Chief of Staff for Logistics continued efforts to revitalize the Noncommissioned Officer Logistics Program.

Adding greater efficiency to the Army's management of its logistics was the service's continued participation in interservice support agreements. Under the Defense Retail Interservice Program, the Army took part in 900 separate agreements with other services, departments, and agencies. During the fiscal year, the Army exchanged support totaling approximately $175 million and 2,400 man-years. In May 1979, the Army Logistics Evaluation Agency completed a comprehensive study of the Army Defense Retail Interservice Program, and implementation of the

resultant approved recommendations should be completed in fiscal year 1980. At the direction of the Office of the Secretary of Defense, a Joint Interservice Resource Study Group was established for each of sixty-seven geographic areas, worldwide, having a concentration of Department of Defense activities. The groups will study all 101 defense retail interservice support categories for possible interservicing in their areas.

In 1973, the General Accounting Office recommended that management of conventional ammunition be centralized for all the services. The Department of Defense agreed and issued a directive in November 1975 designating the Secretary of the Army as the Single Manager for Conventional Ammunition, effective 1 October 1977. The secretary is thus responsible for centralized management of procurement, production, supply, maintenance, and renovation of conventional ammunition within the Department of Defense. Under a phased plan for implementation, the secretary's program responsibilities were limited in the initial phase so the procedures could be established, experiences evaluated, and recommendations developed for expansion of the secretary's role in the second phase. A General Accounting Office draft report, dated August 1979, stated that the goal was not yet achieved and called for expanded authority for the single manager. Although the Army agreed with the proposed conclusions, the other services did not concur. Attempts to develop an acceptable directive by the Office of the Secretary of Defense is continuing.

Logistics Systems

The Army, as well as the other military departments and defense agencies, is participating in the development of the National Supply System, a charter for the operation of which President Carter approved on 9 August 1979. Under the system, the Office of Management and Budget will establish standard policies and procedures to improve the efficiency of the wholesale supply operation of the federal government. The Office of the Secretary of Defense, with Army coordination, agreed with the Office of Management and Budget that although the National Supply System will consist of an integrated system of broad policies and procedures, each department and agency will manage its own supply system. Thus, the central system authority will not become involved in operations at the department and agency levels.

Within the Army, a number of logistics systems continued under development. The Standard Army Ammunition System is designed to provide an integrated supply and maintenance

management system for conventional ammunition. The Standard Army Maintenance System seeks to provide functional procedures and associated automatic data processing support for maintenance of materiel at all levels of command. Eventually replacing two systems currently in use will be the Direct Support Unit Standard Supply System, which will give the entire Army one direct support level supply system. In support of the level between wholesale and the ultimate user, the Army is testing the Standard Army Intermediate Level Supply Subsystem. During the year, the Army made gains in the development of all these systems and expects full implementation of them within the next few years.

Logistics was one of the first areas in which the Army employed automatic data processing equipment. The initial computer support for operations was with punched card processing techniques and first generation computer technology. As technology advanced, both the amount and efficiency of support have increased. However, because of continually growing requirements and dwindling personnel resources, the Army must continue to upgrade its computer support to meet the logistical requirements of a modern, mechanized force. In 1979, the Army awarded a contract for new mobile minicomputers to replace outdated computers used at the first level of supply support. At the second, or corps level, initial installation of new computers resulted in a 50 percent reduction in data processing time. Plans for the post, camp, and station level call for the purchase of more powerful computers or for a comprehensive service contract with private industry.

The Total Army Equipment Distribution Program relates projections of equipment distribution to current budget and program objectives. An evaluation of the program's projections between July and September 1979 found them timely and accurate, and the Army staff continues to use them extensively.

Materiel Maintenance

Keeping today's complex equipment and weapons systems in a high state of readiness is crucial to the Army's fighting capability, and equipment readiness is directly dependent upon proper maintenance. When audits and inspection reports from the field indicated a need for improved maintenance practices, the Deputy Chief of Staff for Logistics, in coordination with other staff agencies and major Army commands, developed the Maintenance Management Improvement Program. Launched in February 1979, this program seeks to focus command attention on

problem areas, upgrade maintenance operations, strengthen maintenance training, improve personnel management, and improve publications, tools, and repair parts support. Actions taken during the fiscal year included briefings of major commanders, simplification of some maintenance procedures and administration, course improvement at service schools and at the unit level, development of a maintenance manpower utilization system, and updating of maintenance publications.

Army logisticians sought uniformity and standardization of maintenance functions at wholesale, retail, and Headquarters, Department of the Army, levels through development of the automated Standard Army Maintenance System. Work on the project during the year consisted primarily of drafting and staffing requirement documents for the retail level of the system.

Improving field command readiness is the aim of maintenance assistance and instruction teams. A new Army regulation to be published in fiscal year 1980 will give these teams added responsibility, including monitorship of the Sample Data Collection System, a procedure for collecting field maintenance and performance data on selected items of equipment for a specified period of time by using sampling techniques. The Sample Data Collection System will reduce the burden on field units of data collection and provide a manageable volume of information to the wholesale equipment developer.

In July 1978, the U.S. Army Metrology and Calibration Center completed a 2½-year study of the Army's test, measurement, and diagnostic equipment support system. Recommendations included merging levels A and C calibration, combining calibration and repair functions, and placing Army-wide command and control of test, measurement, and diagnostic equipment support under the U.S. Army Materiel Development and Readiness Command. Implementation of the recommendations requires reorganization plans submitted sequentially by geographic areas. Plans for Europe were approved in September 1979 and plans for the Western Pacific and the continental United States were in preparation as the fiscal year ended.

The elimination of waste is an important concern of those in the materiel maintenance field. When a 1977 Army report cited excessive usage rates and failures to meet full life expectancy of lead acid batteries, the Deputy Chief of Staff for Logistics declared a "War on Battery Waste." Initiated in 1978, the campaign included an extensive publicity program, revision of the battery maintenance manual, and publication of a Department of the Army pamphlet on battery maintenance. Indicative of the "war's"

success was the reduction, by 40,278, of the number of batteries used during the first three quarters of calendar year 1979 as compared to the same period in 1978.

When equipment cannot be returned to an operable condition on the battlefield within the time limits prescribed by the using commander, as much of it as possible must be recovered and evacuated to a rear area for repair and reclamation. As part of the Division Restructuring Study at Fort Hood, Texas, a Battlefield Recovery and Evacuation Study has been examining the recovery and evacuation capabilities of the current Army division.

In view of the issues raised by NIFTY NUGGET, and of the expanding requirements for transferring equipment to prepositioned stocks, it was clear that problems associated with the serviceability standards for such transfers had increased significantly. The variety of existing criteria and standards, differing interpretations of serviceability, and a proliferation of terminology in various publications all contributed to the confusion that had developed. A Department of the Army conference on the question, held in October 1978, directed the U.S. Army Materiel Development and Readiness Command to write a technical manual giving standardized definitions and serviceability standards for the transfer of equipment between units. The manual was drafted and sent to the field for comments, and is scheduled to be published in the next fiscal year.

As a result of interest in materiel warranty execution and management expressed by the House Appropriations Committee, the General Accounting Office, and the Defense Audit Service, the U.S. Army Logistics Evaluation Agency reviewed Army policies and procedures pertaining to materiel warranties. Representatives of the Logistics Evaluation Agency worked with members of the Office of the Deputy Chief of Staff for Logistics and the Materiel Development and Readiness Command to develop a new regulation covering the subject. A preliminary draft of the regulation was circulated in July 1979.

In 1977 the U.S. Army Materiel Development and Readiness Command began discussions with the National Guard Bureau over the possibility of using the guard's transportation aircraft repair shops during mobilization. Early in fiscal year 1979, the Vice Chief of Staff, Army, approved such use of four shops located in Connecticut, Missouri, Mississippi, and California. The four shops have been redesignated as Aviation Classification Repair Activity Depots (AVCRAD) and during mobilization will classify, identify, and process reparable secondary supply items.

Supply Management and Depot Operations

Much of the materiel that flows through the Army depot system is financed by the Army Stock Fund, a revolving fund established to finance inventories of supplies and other stores and to provide working capital for industrial type activities. The fund is replenished through annual appropriations incorporated in the Army's budget. Stock fund obligations for fiscal year 1979 totaled $4.2 billion in support of $3.8 billion in net sales. The Army was authorized to obligate approximately $383.2 million of the procurement appropriation for secondary items, compared to $436.5 million obligated the previous year. This decrease is attributable to a reduction in the reimbursable program (all transactions in which the issue of Army materiel is paid for by the receiving activity), primarily at the U.S. Army Missile Command. Total returns from users were $726.8 million, which is 17 percent higher than had been forecast.

Of the 1979 operation and maintenance appropriation of $9.5 billion, some $2.8 billion, or 29 percent, was allocated to central supply and depot activities. These two areas provide for the receipt, storage, issue, and transportation of supplies and equipment worldwide; the maintenance of an industrial base; and maintenance of supplies and equipment. An increase in the allocation for these activities of $140.6 million over that for fiscal year 1978 reflects Army emphasis on the need to improve force readiness.

During the past year, directorship of the Army Industrial Fund was transferred from the Comptroller of the Army to the Deputy Chief of Staff for Logistics. Army Industrial Fund working capital, acquired initially through congressional appropriation, is sustained on an annual basis by customer reimbursements for goods and services furnished. Typical activities financed under the fund are ordnance plants, depot supply and maintenance activities, and research and development activities. The total obligation authority for the fund for the fiscal year was $2.4 billion.

In February 1979, the Base Operations Division was transferred from the Comptroller of the Army to the Deputy Chief of Staff for Logistics, and the engineer functions (maintenance and repair of real property, minor construction, operation of utilities, and other engineering support) were transferred to the Chief of Engineers. Approximately 31 percent, or $3.0 billion, of the operation and maintenance appropriation was allocated for base operations. Although the amount of money available for base operations was greater than that in the previous fiscal year, salary increases and the overall pressures of inflation ne-

cessitated a special emphasis on efficiency and economy. To combat a downward trend in the civilian manpower available to provide base operations support, the Army has begun contracting with private firms for industrial and commercial services.

With the aim of increasing the number of reparable secondary items returned from the field for depot repair, the Army initiated the Reparable Secondary Recovery Improvement Program in March 1978. The program merged with the Repair Parts Improvement Program in January 1979, and full implementation is expected within the next few years.

In December 1978, the Defense Logistics Analysis Office proposed that management responsibility for all consumable items be transferred from the military services to the Defense Logistics Agency. Consumable items were defined as those other than major end items (tanks, aircraft, missiles) and components that are repaired or overhauled in military depots. After a comprehensive study, the Army concluded that the proposal did not provide a proper foundation for a transfer decision, and so informed the Deputy Secretary of Defense. The Deputy Secretary directed the Defense Audit Service to review the Army's findings, and although the review had been completed by the end of the fiscal year, the Defense Audit Service has not yet submitted its report.

In 1978, the Department of Defense instituted a retail inventory management stockage policy for direct support and general support units and installations in the continental United States. The policy, which excludes end items, clothing, subsistence items, medical items, bulk petroleum, ammunition, and war reserves, seeks to minimize costs and to limit the echelons between the consumer and the wholesale level to one. Implementation of the policy within the Army, which continued during fiscal year 1979, rests with the U.S. Army Logistics Center and the U.S. Army Materiel Development and Readiness Command.

A June 1978 Department of the Army study, Logistics Concepts for Use in Policy, Planning, Doctrine, and Training, created new logistical missions for U.S. Army, Europe. In conjunction with the results of the study, a general officer conference held in April 1978 led to the decision that the corps base stockage would be expanded from 8,000 to 15–20,000 lines. Funding for the expanded stocks, whether through the Army Stock Fund, or some other means, had not been resolved by the end of the reporting period.

In Korea, a suspension system problem in M60A1 tanks necessitated their replacement with M48A5 tanks from the conti-

nental United States. The change was completed in July 1979, 3½ months after approval of the action and fourteen days ahead of schedule.

Transportation

In April 1979, the Joint Service Cost Benefit Evaluation Committee, including two Army members, completed a concept document for the Defense Intransit Item Visibility System to create a large data bank to keep track of cargo in transit. At the end of the year, a full economic analysis of the concept, which the Senate Appropriations Committee had requested, was underway.

Planning and development of the subsystems of the Terminal Operations and Movements Managements System advanced during the year. A joint service systems design group engineered a plan to correct problems of equipment obsolescence, operational inefficiency, and lack of wartime and backup capability in the Department of the Army Standard Port System. In September 1979, the Office of the Assistant Secretary of the Army (Installations, Logistics, and Financial Management) approved, as the cargo module of the Department of the Army Movement Management System, the Visibility of Intransit Cargo System, which automates the theater cargo function of movements management.

On 1 October 1979, as a result of suggestions by the Deputy Chief of Staff for Logistics, the Military Traffic Management Command, the Military Sealift Command, and the Military Airlift Command began billing the Agency for International Development directly for port handling and ocean and air transportation. Previously, such billings had been estimated and billed to the Agency for International Development by Army depots as added items to other services they provided to the agency. Direct billings will more accurately compensate the Army for expenses incurred in support of the agency.

Facilities, Construction, and Real Property

The Army's facilities engineering operation is as complex as a large corporation, involving 174 major installations, a work force of approximately 47,300 soldiers and Army civilians, and real property having a replacement value of some $127 billion. Fiscal year 1979 costs incurred to operate and maintain the Army's real property amounted to $2,336,000,000, a 6.8 percent increase over the $2,187,000,000 cost incurred in fiscal year 1978. During the past year, expansion of the Integrated Facilities System brought the total number of installations served to forty-four. The number of fires increased and fire losses to real prop-

erty were 23 percent higher than for fiscal year 1978. Also, two fire related deaths were reported, neither of which was in family housing. Although total energy consumption at Army installations continued to decrease, the dollar cost of energy again rose due to increases in the cost of heating fuels and electrical power. At the close of the fiscal year, the total Army maintenance and repair unfinanced work load stood at $2,026,000,000; the Army backlog of maintenance and repair for all appropriations was $1,496,000,000, of which $1,309,000,000 was in the Operations and Maintenance, Army, accounts; and deferred maintenance for family housing was reported at $530,000,000. Because of manpower shortages, the contracting out of maintenance and repair work continued to grow. This trend should accelerate as policies and procedures promoted in DA Circular 235–1 and OMB Circular A–76 are implemented and additional functions are converted to contract where it is determined to be more economical to do so.

In fiscal year 1979, the Army requested $917,100,000 for military construction and received from Congress a total obligational authority of $753,980,000. The majority of the congressional denials and reductions focused on U.S. Army, Europe. While expressing little concern over the validity of U.S. Army, Europe's, individual projects, Congress cut the European command's portion of the military construction request by approximately $61 million on the basis that NATO and the host nations should assume a greater role in funding projects that enhance the security of the alliance.

The 1979 appropriation provided $34.9 million in new obligational authority for minor construction projects, of which $10.9 million was for specified locations approved in the regular program and $24.0 million for exigent locations. An additional $12.9 million in prior year funds was also available for obligation. At the close of the fiscal year, all of the funds for exigent locations and $7 million of those for specified locations were committed to finance approved projects. Actual obligations, however, were $23.9 million, due primarily to overseas currency reevaluation requiring time-consuming reprocessing of projects, and to general inflation in construction costs.

In order to match facility capabilities to force structure requirements, the Army conducts long-range logistic base structure planning. In progress is an update of the Department of the Army Worldwide Maintenance Facilities Priority List, which contains every known maintenance facility requirement as submitted by the major commands. To support the Army Ammunition Plan,

the Office of the Deputy Chief of Staff for Logistics (Directorate for Supply and Maintenance) has continued to assist development of a Total Force Ammunition Storage Facilities program to double the capacity of U.S. Army, Europe.

The impact of the Panama Canal Treaty on military basing has required the development of a Regional Complex Master Plan to determine the most cost-effective base structure in Panama for the life of the treaty. Completion of the plan, which would be based on interservice consolidation, was tentatively set for mid-1980.

The Army Corps of Engineers Construction Engineering Research Laboratory (CERL) during the year completed a technical manual on the computerized Pavement Management and Repair System. CERL also completed and published system documentation on the supervision and administration cost/rate forecast model to be used by the Office of the Chief of Engineers in predicting costs for Corps of Engineer district offices. In addition, CERL developed a users manual, operational procedures, and a data base for a computer-based document search and retrieval system for use in updating construction management guidance. Progress was also made on several computer-aided engineering and design systems.

Through the Corps of Engineers, the Army serves as the construction agent for other components of the Department of Defense. The Air Force program totaled $429 million in 1979, of which $267 million was actually awarded. Of the $162 million shortfall, $97 million was due to criteria changes by the Air Force for the Space Transportation System Launch Complex at Vandenberg Air Force Base, California. Construction for the Navy amounted to $10.7 million and, for the Defense Nuclear Agency, the Defense Logistics Agency, the Defense Mapping Agency, the Defense Dependent School System, and the National Security Agency, a total of $139.3 million.

The Corps of Engineers also provided engineering and construction support to four foreign governments: Saudi Arabia, Israel, Jordan, and the Federal Republic of Germany. As in past years, the major support was for Saudi Arabia, where construction projects with a total value of $718.4 million were completed, and design and construction contracts totaling approximately $2.2 billion were awarded. As a result of the Egypt-Israel peace treaty, on 6 April 1979, the United States signed an agreement with Israel to construct two air bases, with all costs in excess of an $800 million congressional appropriation to be paid by the Israeli government. At year's end, design of the project was well

underway with initial construction beginning. For Jordan, the design, specifications, and cost estimate for a $62.2 million armor rebuilding factory were completed. The Federal Republic of Germany entered into Foreign Military Sales agreements for design and construction of an expansion of the flammable storage area for their cargo facility at Dulles International Airport, Chantilly, Virginia, and for design, construction, and testing of a reinforced concrete bridge section.

In the United States, approximately 20 percent of the second increment of site development was completed for the construction of the Mississippi Army Ammunition Plant. A contract for the third increment of site development and contracts for $33 million worth of projectile metal parts production equipment were awarded during the year.

Capability master planning is a comprehensive process which identifies an installation's total potential for expansion and develops plans to support both current and future missions. The past year saw the revision of this concept as applied to Army forces garrisoned overseas.

Under development was the Tables of Organization and Equipment (TOE)/Tables of Distribution and Allowances (TDA) Facility program involving the design and construction of facilities with a cost of nearly $500 million during the next five years. Individual projects in this program will be guided by technical manuals which provide a method for determining the amount of space required for TOE units to properly maintain their assigned vehicles, and a method for determining the amount of space required for TDA maintenance activities. New design criteria for standard TOE maintenance facilities is under development to provide guidance for design and review of projects in conjunction with the space requirements established. Such guidance should promote savings by reducing design costs and by standardizing the type of construction and quality of details to reflect a more austere industrial technology.

The four-year-old design guide series at year's end included standard guidance and flexible procedures for the planning, design, and improvement of a wide range of recreation service facilities, criminal justice facilities, administrative offices, service schools, housing for unaccompanied personnel, and others. The guides are tailored to fit local programs and at the same time are sensibly standardized to achieve economies of scale in construction. Two guides were published during the fiscal year, bringing the number issued thus far to ten. Others are in preparation.

In response to field reviews conducted on behalf of the physically handicapped by the United States Architectural and Transportation Barriers Compliance Board, major Army commands began correcting violations identified at Army facilities. The Army is complying with the board's request to develop a long-range plan establishing priorities and funding targets for barrier-free design and barrier removal. These actions also anticipate requirements set by the Comprehensive Rehabilitation Act Amendment of 1978 concerning employment opportunities for the severely handicapped.

Acting as executive agent for the Department of Defense Recruiting Facilities Program, the Corps of Engineers took more than 900 separate actions involving the establishment of new offices and the relocation, expansion, and upgrading of existing ones during 1979. At the end of the fiscal year, there were approximately 6,440 recruiting offices for the four services.

In an effort to determine the best organization for the management of the Army's real property maintenance activities, the Office of the Chief of Engineers sponsored a contract study of facility maintenance systems in government and private industry. The contractor recommended that management of these activities in the continental United States be centralized under the Corps of Engineers using a revolving fund to enable the installation commander to retain control of planning, programming, and budgeting. An ad hoc study group formed by the Chief of Engineers prepared an implementation plan that would have reassigned the installation facilities engineer organization to the Corps of Engineers division/district structure, with the aim of providing more efficient management, particularly in contracting of real property maintenance functions. Since the plan proved to be highly controversial and met stiff opposition from most of the Army's major commanders, the Army postponed its implementation and elected to develop a test of it at installations in the National Capital Region.

By direction of the Department of Defense, the Army continued to analyze opportunities for achieving increased economy and efficiency through the interservice consolidation of real property maintenance functions in selected geographic areas. A pilot, industrially-funded consolidation of Fort Sam Houston and four Air Force bases in the San Antonio, Texas, area produced mixed results in its first year of testing. Studies of possible consolidations in the Fayettville, North Carolina, area and in the Panama Canal Zone were completed, and decisions on implementation were pending at the end of the year.

At the close of fiscal year 1979, the Department of the Army controlled approximately 12.3 million acres of military land, which, with improvements, had an acquisition cost of $14.7 billion. During the fiscal year, the General Services Administration (GSA) disposed of 1,264 acres of Army land in the United States and made improvements having an acquisition cost of $17.3 million. In addition, the Army declared in excess and reported to GSA for the disposal of 84,889 acres of Army land and made improvements with an acquisition cost of $196.7 million. At the end of 1979, there were 41,467 outstanding grants covering 6.4 million acres of Army (military and civil works) and Air Force lands.

Continuing its program of land acquisition for other government agencies, the Corps of Engineers acquired, for an estimated $4.2 million, approximately 910 acres of land, with improvements, to expand clear zones at eighteen Air Force bases. For the Department of the Interior, acquisitions by the Beaumont Project Office at the Big Thicket National Preserve in Texas totaled 321 tracts containing 3,366 acres and costing $9.5 million, bringing total acquisitions through fiscal year 1979 to 1,078 tracts consisting of 75,860 acres at a cost of $58.4 million. Also acquired, for the Department of Energy's Strategic Petroleum Reserve Program, were 394 tracts containing 1,967 acres and costing $14.4 million. Acquisitions for this program through fiscal year 1979 totaled 1,032 tracts with 5,114 acres at a cost of $86.7 million.

In accordance with Executive Order 11954 dated January 1977, GSA conducted forty-five real property utilization surveys of Army-controlled properties in 1979. Of 34,575 acres of land that GSA recommended to be declared as in excess of Army needs, the Army agreed to the disposal of 1,575 acres.

During the year, the Corps of Engineers expended $4 million in relocation assistance payments to 774 applicants displaced by Corps projects.

Physical Security

Losses of Army weapons, ammunition, and explosives continued to be minimal, with the exception of Army National Guard losses of weapons. During the year, the National Guard suffered three armory break-ins with a cumulative loss of 217 weapons. In an effort to speed a security upgrade of National Guard armories nationwide, the Army approved full federal funding of installation of intrusion detection systems. Additionally, steps were taken to tighten management oversight procedures of the physical security upgrade program in the individual states.

In the area of nuclear security management, the Law Enforcement Division of the Office of the Director of Human Resources Development implemented the concept of a less static, more tactical posture for nuclear security response forces. The division also initiated a move to have the Defense Nuclear Agency install a nuclear security training, test, and evaluation site at Fort McClellan, Alabama. Replicating a European nuclear site, the McClellan installation would aid military police training and offer controlled evaluation of evolving security equipment and procedures. The Law Enforcement Division and the U.S. Army Materiel Development and Readiness Command developed a draft regulation for securing Army nuclear reactors, incorporating closed circuit television, intrusion detection systems, and a phased response force. However, manpower and funds for implementing the new standards are not yet available.

Improvement of security at chemical sites continued. To increase retention of well-qualified guards, the Under Secretary of the Army solicited aid from the Director of the Office of Personnel Management, who approved special pay rates at two sites. A long-term solution is in the Federal Employees Compensation Act, which was before Congress at the end of the fiscal year.

11. Research, Development, and Acquisition

In a jointly prepared statement to the Senate Subcommittee of the Committee on Appropriations for the fiscal year 1980 procurement and R&D budgets, Dr. Percy A. Pierre, Assistant Secretary of the Army for Research, Development, and Acquisition (ASARDA), and Lt. Gen. Donald R. Keith, Deputy Chief of Staff for Research, Development, and Acquisition (DCSRDA), commented on why equipment modernization has lagged in recent years.

During the Vietnam conflict R&D efforts on equipment that would be appropriate for a modern mechanical battlefield were constrained. Emphasis was placed on developing and procuring equipment for Southeast Asia. During the same period, the Soviets began an incredible modernization program for their tactical forces. It has manifested itself in a fielded Army that is both qualitatively and quantitatively superior to ours. Recognizing this, the Congress has supported us in a "catch-up" R&D program during the 1970's that is just now ready to bear fruit—and it is badly needed to either make our Army a credible deterrent or, if deterrence fails, to give our soldiers a reasonable chance to fight outnumbered and win.

Budget, Management, and Acquisition

The initial approved program for fiscal year 1979 was based on the President's budget. It included constraints which were placed on the Army Research, Development, Test, and Evaluation (RDTE) program by the Under Secretary of Defense for Research and Engineering (USDRE), who identified certain program elements as being of special interest. Total programs 6.1 (basic research) and 6.2 (exploratory development) were designated as a USDRE interest in order to maintain the approved dollar level in those categories. Twenty specific programs were identified as special interest and funds could not be reprogrammed from them without the prior approval of USDRE. The key special interest programs were identified as: large caliber and nuclear technology, unattended ground sensors, aircraft survivability/EW self-protection equipment, tactical electronic-warfare systems, NAVSTAR global positioning system, major RDTE facilities (DARCOM), and joint interoperability of tactical command and control systems. Department of Defense and Department of Army deferrals totaled $342 million and $60 million, respectively. Some of the significant programs deferred were:

identification, friend or foe (IFF) unit development; unattended ground sensors; tactical operations system; NAVSTAR global positioning system; terminal homing system; composite rotor blade; and M60A1 tank PIP.

The Department of Army Research and Development budget approved for fiscal year 1979 was $2,635.9 million. Congress passed the Defense Appropriation Act reducing the Army's RDTE request of $2,721.4 million by $85.5 million in RDTE funds. The appropriation for RDTE funds included a $10.0 million budget offset for estimated collections from RDTE surcharges on foreign military sales. Congressional action reduced the RDTE technology base by $5.1 million. Other reductions included $8.0 million for terminal guidance technology, $10.3 million for Assault Breaker, $46.3 million for the tactical surveillance system, and $4.0 million for battlefield system integration. In addition, $10.1 million for the Pershing II program was transferred to the Air Force. The Army's RDTE budget request for fiscal year 1980 of $2,855 million was submitted to the Program and Budget Committee in August 1978. The fiscal year 1980 budget for $2,927 million presented to Congress in January 1979 incorporated the decisions made during a review by the Office of Management and Budget (OMB) and Department of Defense (DOD).

Zero base budgeting was the primary method for the formulation of the Army Research and Development budget which was submitted to the Office of the Secretary of Defense and the Office of Management and Budget (OSD/OMB). In addition to the three basic levels, OSD expanded the budget into nine bands resulting in a more detailed display of RDTE programs. Consolidated decision package sets (CDPS) were also required. The CDPS provided narrative justification for funding requested above the minimum level.

The Army continued to use total risk assessing cost estimates (TRACE) techniques in estimating costs for all major materiel developments. Ten systems were identified as having TRACE deferrals totaling $40 million in fiscal year 1979.

Congress appropriated a total of $3,437,000 for construction of RDTE facilities during the fiscal year. This figure included funds to expand the environmental test facilities, Ft. Huachuca, Arizona, and to air condition selected laboratories at the Natick Laboratories, Massachusetts. In addition, Congress appropriated $26,166,000 for construction of production and administrative buildings to support Army RDTE and production efforts. This figure included funds for the surface launched unit fuel-air ex-

plosive (SLUFAE) production facilities, Hawthorne, Nevada, AAP; Watervliet Arsenal, New York, modernization; and an engineering administration building at Picatinny Arsenal, New Jersey.

The Office of the Deputy Chief of Staff for Research, Development, and Acquisition (ODCSRDA) and the Office of the Deputy Chief of Staff for Operations and Plans (ODCSOPS), began creating essential elements of the Long Range Research, Development, and Acquisition Planning Program in 1979. Mission Area Analyses were begun by ODCSOPS through the Army Training and Doctrine Command (TRADOC) while Science and Technology Plans, compatible with Mission Area Analyses, were begun by ODCSRDA through the Army Materiel Development and Readiness Command (DARCOM). Establishment of the Long Range Research, Development, and Acquisition Planning process is expected to result in early identification of system funding requirements to support the future Army and to provide a stable baseline against which constancy of requirements may be measured over a multiyear period.

The activities of the Army Advanced Concepts Team for the year were reduced due to limited funds. The program included development of a second generation thermal imaging system suitable for tank fire control (fitting in the space of the first generation system), demonstrations of a zero stage fan for uprating turboshaft engines, and of a large caliber, regenerating liquid propellant guns.

A technology base prereview for Program Objectives Memorandum 81–85 was held by the Research, Development, and Acquisition Committee in March 1979 to resolve issues and establish priorities for programs 6.1 (basic research) and 6.2 (exploratory development) in the program funding categories. To provide the basis for this review, technology base funding profiles and single project funding/single program element reports were prepared. Funds were allocated in accordance with the stated user needs as listed in the Science and Technology Objectives Guide (STOG) and emphasis was given to the solution of major Army problems.

The fiscal year 1979 obligation plan for the Army procurement appropriations was $7,144,000,000. This amount included $5,787,000,000 for direct Army procurement and $1,357,000,000 for reimbursable customer sales. The plan covered all obligations incurred during the current year from funds appropriated in fiscal years 1977, 1978, and 1979. Obligations incurred during fiscal year 1979 exceeded the plan by $68.2 million direct and

$80.0 million reimbursable. Successful achievement of the 1979 obligation plan resulted from obligating $1,191,000,000 in September. The lapse for the expiring fiscal year 1977 funds was $169.3 million. The lapse of $108.9 million in direct funds included $90.0 million for contingent liabilities. The lapse of $60.5 million in reimbursable funds resulted from use of government equipment to satisfy customer requirements.

The fiscal year 1980 Army procurement budget submitted by the President on 22 January 1979 contained a total obligational authority (TOA) request of $7,123,000,000. This was an increase of $.9 billion over fiscal year 1979. Action by the authorization and appropriations committees resulted in a net decrease of $147.0 million in the authorization appropriations. Aircraft procurement, Army (APA), was increased by $43.2 million for AH1S helicopters and C–12A aircraft. Missile procurement, Army (MIPA), and weapons and tracked combat vehicles, Army, were reduced by a total of $162.4 million.

The Army worked to coordinate and provide emphasis for several technologies with a potential for solving significant problems in fulfilling their user requirements. These special "Areas of Emphasis" required multilaboratory involvement in research and development which spanned the technology base. The areas identified were gun propulsion technology; millimeter wave radiation; smokes and aerosols; targets versus background signatures; fire control; armor and armor penetration; command control, communications and intelligence; and mobility/installations energy utilization. Programs have been developed which divide the labor among the responsible laboratories. This makes for better use of funds and lessens overlaps. Significant results obtained were improved smokes; improved tracking capability in fog, haze, and battlefield dust or smoke environments; significantly improved lifetime of gun tube barrels; determination of foreign target versus background signatures in the European environment; and organization of system engineering groups to address problems in interoperability and electronics equipment.

The annual in-house laboratory independent research (ILIR) review was held in late November 1978 and covered the present process, the future evaluation process, and the basic thrust of the program. The review initiated a major effort to revitalize the ILIR program to provide for new, innovative, high-risk tasks. Individual guidance letters were provided each participating laboratory by the Deputy for Science and Technology, OASA(RDA). The letters covered general program and specific laboratory guidance for fiscal year 1979. The general program of $16 mil-

lion initiated a joint project program between laboratories to increase program coordination and laboratory interchange on scientific topics.

A major effort to utilize the Modernized Army Research and Development Information System (MARDIS) to provide scientific data for managing the basic research program was undertaken in late fiscal year 1978 and early fiscal year 1979. Initially, it was determined that the MARDIS system could not provide the quantity, quality, type, or format of information required to effectively manage the research effort at Headquarters, Department of the Army (HQDA). Numerous changes to software and data submission requirements were made to provide the appropriate information in the form required. At the end of the fiscal year, final software changes were underway and laboratory submissions were being prepared.

Preparation of the new publication Compendium of Field Activities Key Scientific Capabilities was begun by the Directorate for Army Research to provide the Army laboratory system, newly assigned individuals to the Army staff, and emergency program planners with information on each laboratory's mission, organization, major areas of interest, primary areas of research and development, and key personnel to contact.

The Army Science Board (ASB), the senior scientific advisory body to the Department of the Army, consists of ninety individuals appointed by the Secretary of the Army for a two-year term. The ASB was created by reorganization of the Army Scientific Advisory Panel (ASAP) in late 1977. Responsibility for the ASAP was transferred from the DCSRDA to the ASA(RDA) in June 1977 at the same time the latter was designated as the Scientific Advisor to the Secretary of the Army. In this first full year of operation, three general membership meetings were held at various locations. Among other activities conducted by groups, committees, and individual board members were reviews of the Army's personnel organizations and program procedures and facilities at an Army ammunition plant after explosions have occurred, air defense programs with the ODCSOPS, reviews of statistical data being developed in the irradiated food program, and reviews of the Army's posture. Assessments were made on the technical maturity and risks associated with the Hellfire, Assault Breaker, and Stinger post development programs, and on a particular aspect of the Patriot air defense system critical technology. A chemical decontamination/contamination avoidance program was proposed, the Ballistic Missile program and its directions reviewed and reported on, and the future use of the

Army's computers reviewed. The board's summer study team sought ways to improve the materiel acquisition system, visited various installations in Europe to gain first-hand knowledge of their activities and to show support for their goals, and visited Army laboratories to provide assistance and to acquire information for use at the annual in-house laboratory independent review.

The Army Science and Technology Objectives Guide (STOG) was published and distributed to appropriate agencies in May 1979. The STOG again served as the primary requirements document for the Science and Technology Base Program of research, exploratory development, and nonsystems advanced development.

Science and Technology

Research programs concerned with characterizing the realistic battlefield environment, ice engineering, restoration of paved surfaces, soil reinforcement, barrier and antitank ditch creation, and related matters were continued in fiscal year 1979 by the Corps of Engineers.

The U.S. Army Atmospheric Sciences Laboratory (ASL) also continued research to characterize a realistic battlefield environment. ASL completed an initial version of the electro-optical systems atmospheric effects library (Interim E-O SAEL) which assessed the obscuration effects of the realistic, dirty battlefield. Interim E-O SAEL addresses the central European area and is applicable to systems operating in the ultraviolet, visible, and infrared spectral regions plus selected near millimeter wave frequencies. Obscuration effects have been modeled for atmospheric gases, adverse weather (fog, haze, rain, and snow), smoke, and dust produced by artillery fire. Interim E-O SAEL also addresses the effects of turbulence on low power laser transmission, the backscatter of laser energy from an obscurant, and the vertical variations of fogs and hazes. Dusty Infrared Test II (Dirt II) was conducted to determine dust obscuration effects on Army weapons systems. Dynamic weather scenarios for wargaming were generated for Army weapons systems and provided, as requested, to Army organizations. An improved smoke obscuration model and improved wind field models for smoke application were developed as was the disturbed infrared transmission (DIRTRAN) model to predict the growth, transport, diffusion and observation effects of dust produced by artillery shells. The complex refraction index of various dust samples an other atmospheric aerosols was measured and the response characteristics of aerosol particle counters were determined for measuring

both spherical and irregular particles, characteristics of atmospheric aerosols, and battlefield dust. A Memorandum of Understanding (MOU) between the ASL and the U.S. Army Cold Regions Research and Engineering Laboratory (USACRREL) in fiscal year 1979 initiated the necessary research tasks. the USACRREL was designed as the principal laboratory for Corps of Engineer participation with the major thrust of research focused on the winter battlefield environment. A winter field research site was established at Camp Ethan Allen, Vermont.

The problem of ice accretion on rotor blades is extremely serious in Europe because of the variety of conditions that can combine to vary the ice accumulation. The USACRREL has developed a model to simulate the amount of ice accretion on an object by ascertaining the object's characteristic dimensions and the surrounding conditions of temperature, cloud liquid water content, and droplet size spectra. The model will permit simulation of ice on helicopter rotor blades under various weather conditions encountered during winter in Europe. It also gives a reasonable method of comparing the characteristic ice accretions that can result from both varying external conditions and varying the characteristics of the collecting object.

A broad-band impulse radar system has been used to profile ice and snow covered lakes and rivers. Ice thickness, possible surface fractures, subsurface ice accumulations, water location and depth, bed geometry, and anomaly location may be determined from the data. The ice thickness data may be used in calculations of bearing capacity for specific vehicle traffic, a technique that was successfully employed in JACK FROST, the Army winter exercise conducted in Alaska.

Several nondestructive techniques for detecting moisture in roofs were evaluated. It was found that for Army use, on-the-roof surveys with a hand-held infrared scanning camera were the most accurate and cost effective. Results of this finding have been distributed to Army facility engineers and engineer districts and divisions worldwide. In the process of conducting this study, numerous Army roofs were surveyed and the results used to significantly improve roof maintenance programs. It is estimated that direct cost savings on the surveyed roofs easily exceeded $1 million.

Magnetic induction and radiowave methods have been used to obtain information on permafrost and active layer boundaries, occurrence of massive ice in the form of large wedges and lenses, thaw cones beneath arctic river channels and lakes, and potential or possible aquifers. These techniques are applicable for site

selections in cold regions where information is required on variations of subsurface materials and properties.

Research and development conducted at the U.S. Army Waterways Experiment Station (USAWES) included: extension of the capabilities of Army mobility models, developing concepts for grid and membrane reinforcement of soils, techniques for using slurry explosives, fixed installation camouflage, military hydrology, nuclear weapons effects, structural response to nuclear weapons, and fixed fighting positions. The Army Mobility Model (AMM), a computer model to predict wheeled or tracked vehicle speeds, fuel consumption, load carrying capacity, or vibration levels on any specified mission has been under development at USAWES. The obstacle, ride dynamics, power train, and vehicle performance modules of the AMM were updated and revised. Improved submodels to predict vehicle performance in all types of shallow snow and in crossing linear features such as water obstacles were developed. A modeling concept to deal with ground movement rates through urban areas was formulated. A soil dynamics theory was applied in predicting the steering performance of high speed, tracked combat vehicles. A tracked vehicle transient steering simulation model was integrated with elements of the AMM.

Repair and Restoration of Paved Surfaces (REREPS) activities included construction of a pavement test track containing simulated repaired bomb craters. Traffic applied included C–141 and F–4 aircraft loadings. The repaired craters performed well under 5,000 aircraft loadings which were representative of the operational requirements in Europe. Results indicate that the use of a clean granular material, such as washed gravel or crushed stone, to backfill the craters and a crushed stone surfacing is the quickest to construct and requires the least equipment and personnel.

Grid and membrane reinforcement of soils for use in lines of communication where movement of Army vehicles over otherwise impassable areas are being developed. These concepts have potential for access to and egress from river and swampy areas and for crossing sandy beaches. Experiments using grids and membranes in soft soil conditions have shown that a reduction in thickness of surfacing material of up to one-half of the present criteria can be achieved.

Development of techniques for rapid creation of barriers, excavation of defensive positions, and demolition using slurry explosives was continued by USAWES under the military evaluation and application of commercial explosives program.

USAWES participated in field testing of the new blasting agent explosive which replaced an earlier unsatisfactory version. A demonstration was conducted of the Badger plow, which is ideal for placement of plastic pipe for antitank ditching.

An updated fixed-installation camouflage methodology is being developed. The focus of this technology is to prevent detection and/or identification of those elements of fixed installations critical to combat survival and capability. Camouflage of fixed-installations received increased emphasis with the participation of USAWES in two NATO groups—the Special Group of Experts on Camouflage, Concealment, and Deception and the Military Agency for Standardization of Camouflage, Concealment, and Deception. A large-scale field experiment was initiated in the Federal Republic of Germany (FRG) to develop and evaluate new concepts and material for defeating thermal surveillance and target acquisition systems. Baseline data acquisition and site and materiel selection have been accomplished to date.

Research is underway to improve the Army capability in forecasting hydrologic conditions on the battlefield. A coordinated Army hydrology program plan of research was prepared and a workshop was conducted to evaluate existing capabilities for using radar and weather satellite data. Potential applications of this data under battlefield conditions were identified. Guidelines for groundwater intelligence products in arid regions were developed and a contract was let for development of an improved steamflow prediction capability.

Techniques are being developed for predicting cratering, ground shock, and fallout effects of tactical nuclear weapons and the vulnerability of targets to these threats. Research on effects of explosions on earth and rock-fill dams has produced a methodology for predicting damage to four different types of dams. Tests were conducted to determine ground shock (stress and motion) delivered to buried structures as a function of explosive charge/structure depth and range. Significant progress was made in the verification of a method to simulate radiation fallout from cratering nuclear weapons.

Methods to predict the response of structural targets to low yield nuclear weapons are being developed with supplementary funding from the Defense Nuclear Agency. Three major field tests were completed during the fiscal year: tests simulating overpressure environments from low yield nuclear weapons were conducted at Fort Polk, Louisiana; height-of-burst tests were conducted at the Defense Research Establishment, Suffield, Alberta, Canada; and an earth penetrator simulation test was con-

ducted at Ft. Knox, Kentucky. Data from these tests have been used to develop a calculational model for vulnerability predictions of shallow-buried structural targets.

The Concepts Analysis Agency requested USAWES to evaluate the survival of very hard field fortifications. The evaluation was to establish if a fixed, fortified, fighting line would be effective and cost less than defensive positions using mechanized forces for defending Europe. Designs of very hard fighting positions were analyzed. To accomplish the analysis, a computer program was developed.

The Engineer Topographic Laboratories completed a preliminary design of the quick response multicolor print system for map reproduction (QRMP). The QRMP employs the dry xerography process to provide multicolor maps up to 24 x 30 inches in size. Studies completed during the fiscal year indicate that paper handling and registration problems can be solved by using a single station multiple pass approach to QRMP operation.

Ballistic Missile Defense

The Ballistic Missile Defense (BMD) program maintains the superiority of United States BMD technology and is the only strategic effort designed to keep the U.S. ready to develop and deploy an active defense against missile attack. The program is structured to be consistent with all current arms control negotiations, and the BMD Program Office periodically participates in reviews of the Antiballistic Missile (ABM) Treaty. The 1978 review, held in October and November, resulted in no changes to the treaty.

In fiscal year 1979, the BMD program was authorized 65 military and 421 civilian spaces. Funding totaled $315.1 million and included $113.5 million for the Advanced Technology program, $114 million for the Systems Technology program, and $87.6 million for the Kwajalein Missile Range.

The Advanced Technology program is directed toward advanced development and evaluation through field tests of component and BMD subsystem technology, including decoy discrimination, data processing, radar, and optics.

The more advanced technological activity underway in fiscal year 1979 is the Designating Optical Tracker program. This program is a five-flight program to provide data on the capability of long wave length infrared sensors to perform the BMD generic functions of designation and track under realistic engagement geometric and environmental conditions. The program will obtain long wave length infrared measurements with a sensor de-

ployed above the atmosphere on reentry target complexes. Data analysis and the final report were completed on the first measurement flight which was successfully flown during December 1978. Planning, coordination, and testing were initiated for other flights with different target conditions. A study was also initiated to examine use of designating optical tracker equipment for other programs.

Fiscal year 1979 was the first year of a three-year program designed to establish a valid technology base toward the flight demonstration of an endoatmospheric homing intercept and nonnuclear kill of a typical reentry vehicle. Major efforts were applied to finalizing concept definitions for the most promising endoatmospheric nonnuclear kill system and subsystem, to identifying and continuing or initiating developments of all critical components, to evaluating the direction of these developments through technical analyses and computer simulation efforts, and to structuring integrated ground and flight test plans to identify all hardware and software interfaces and validate both hardware and simulation developments. The program will evolve along a broad technology front, from a definition and analytical phase in fiscal year 1979 to a hardware design finalization and preparation for individual and interacting components ground testing phase in fiscal year 1980.

The Forward Acquisition Sensor System (FASS) program was established in October 1978. In fiscal year 1979, the BMD community was surveyed for talents to assist in concept definition and design of such a system. Teledyne Brown Engineering, Nichols Research, Lincoln Laboratories, and McDonnell Douglas Astronautics Company were selected to perform the major technical effort. During the reporting period, a state-of-the-art early warning augmentation probe for the launch under attack mission was defined and the system threat was documented. Requirements and configuration for an intelligence probe were also defined.

A study to determine the feasibility of collecting data on BMD targets with a millimeter wave radar at the Kwajalein Missile Range in the Pacific was completed in fiscal year 1979. Results of the study led to a final design for the radar and the beginning of component development and fabrication. Contracts for hardware have been signed with various contractors. The radar is scheduled to be operational in late 1982.

Corba Judy is a shipborne S-band radar signature collection system to provide intelligence data for the U.S. Air Force Foreign

Technology Division and the BMD Advanced Technology Center. The Office of the Assistant Secretary of Defense (Communications, Command, Control, and Intelligence) initiated the program in August 1975, assigning the U.S. Air Force Electronic Systems Division responsibility for procurement. The program is jointly funded by the Air Force Systems Command and by the BMD Advanced Technology Center. A Cobra Judy contract was signed with the Raytheon Company in March 1979, the preliminary design review was completed in June, and the critical design review was completed in September 1979. Procurement is now underway. The ship, U.S.S. *Observation Island,* has been towed to the Maryland Shipbuilding and Dry Dock Company for refurbishing and modification.

The Advanced Technology Center particle beam program primarily consists of the Los Alamos Scientific Laboratory Exoatmospheric Neutral Particle Beam Accelerator program and the Austin Research Associates collective in accelerator proof-of-principle experiment known as the auto-resonant accelerator. The Los Alamos Scientific Laboratory, New Mexico, has made significant advances in ion source development and has nearly completed the facilities necessary to house the accelerator test stand which will be used to test the major components of the neutral particle beam accelerator. Austin Research has made substantial progress in their high gradient accelerator experiment by characterizing the electron beam and identifying the specific cyclotron wave which is required for ion trapping and acceleration. This experiment is scheduled for completion in September 1980.

The primary thrust of the Systems Technology program in fiscal year 1979 continues to be validation of advanced technologies to reduce the risk of incorporating them into a system concept capable of being deployed. An evolutionary system concept for defense of the Minuteman Intercontinental Ballistic Missile (ICBM) and other high value military targets have been formulated. Based on the Site Defense technology progressively upgraded with technology emerging from the Advanced Technology program, it avoids technological obsolescence, reduces system cost, improves system effectiveness, and reduces lead-times for BMD system options responsive to the evolving threat. Optional system concepts considered, updated, and/or undergoing system validation by simulations, experiments, and tests in fiscal year 1979 include the Layered Defense System (LDS), the Homing Overlay Experiment (HOE), the Underlay Experiment,

and the Low Altitude Defense Experiment. Other systems technology efforts involved projections and analyses of threats and analysis of weapons effects.

A three-phase system definition, analysis, and refinement effort ended in fiscal year 1979 for the Layered Defense System (LDS), a system which will be capable of exoatmospheric and endoatmospheric protection against Soviet reentry vehicles and sophisticated multiple independently targetable reentry vehicles. Phase I, initiated in 1977, investigated alternative system concepts (mobile, deceptive, and fixed-site overlay and underlay systems) to defend Minuteman silos. Phase II, concept definition, resulted in definition of the system approach. Phase III, preliminary design, developed an LDS baseline design and explored mission alternatives for the system. The preliminary design review was held in March 1979, the LDS Preliminary Design Description Report was published in April, and the System Technology Program, System Implementation Plan was published in June 1979. Analysis of the LDS application, evolving threat, and underlay and overlay system evaluations continues and will serve to update the system design, system implementation plan, and the system validation plan.

Efforts began in fiscal year 1977 on the Homing Overlay Experiment (HOE), a two-phase demonstration to prove the technology associated with the overlay portion of the LDS. The Lockheed Missiles and Space Company received a contract in August 1978 covering Phase I, the demonstration of an interceptor homing in on, and destroying by nonnuclear means, an ICBM reentry vehicle. An option to perform Phase II, a three-flight program to demonstrate the ability of a long-range long-wavelength infrared sensor to perform detection, discrimination, and designation functions, was later deleted from the contract effort and integrated into the forward acquisition program underway in the BMD Advanced Technology program. An experiment design review was held during 19–23 February 1979. The broad ocean area was selected for the flight intercepts to reduce safety problems associated with two-body collisions. The Director of Military Programs recommended approval of fiscal year 1979 site defense military construction, Army, funds for use on construction at the Kwajalein Missile Range in support of the intercept flight. The U.S. Navy approved transfer of a C–3 access stand to the BMD Systems Command for erection and checkout of the interceptor at the Kwajalein Missile Range. The Under Secretary of Defense for Research and Engineering concurred for the U.S. Air Force to provide fourteen Minuteman I missiles

for the experiment: seven for interceptor components and seven for target delivery. The Space and Missile Systems Organization is to serve as project director for the Air Force portion of the HOE effort. The Lockheed Missiles and Space Company received additional funding to accelerate intercept flight tests by six months and was asked to preserve the ability to accelerate the flight program by twelve months. Fiscal year 1980 funding reductions later resulted in the first accelerated flight being changed back as originally scheduled.

The underlay experiment portion of the LDS consists of upgraded defense components of a more familiar variety such as sprint-like, high-velocity interceptors, coupled with high-technology radars and commercial-type data processing systems. This portion is the culmination of a program which started as the site defense prototype demonstration and was later modified to a technology program exploring and validating key technology issues associated with a terminal BMD system to defend Minuteman silos or other hard targets. The fiscal year 1979 effort included gathering test data on a number of live target tracking missions and evaluation of that data through simulations and analyses. Sixteen live-tracking missions (fourteen targets-of-opportunity and two dedicated targets) were performed during the year to test various aspects of the system or to gather data for future use. The BMD components performed as expected in all missions. Considerable data was obtained from these missions; however, the fact that some of the reentry vehicles and decoys were not placed in tank breakup clutter, as intended, prevented full accomplishment of all objectives. The data obtained from the live-tracking tests, as well as data obtained from hundreds of tests where targets were simulated, was reduced, analyzed, and used to validate available simulations. Using the simulations and further analyses, tentative conclusions were reached relative to the performance of this type of a terminal defense system and to the resolution of the key technical issues associated with its development. Further testing, using several target-of-opportunity missions and two dedicated target missions, is planned to increase confidence in the tentative conclusions drawn from the testing already completed.

The Low Altitude Defense System is a near term technology point defense system employing an inertially guided interceptor, an acquisition radar, and a distributed data processor, all downsized derivatives of the Baseline Terminal Defense System. Currently in the system definition phase initiated in 1977, it is expected to be valuable in defending either the new U.S. Air Force

MX missile system or the earlier silo-based ICMB's. During fiscal year 1978, several contractors participated in preliminary definition studies for all subsystems. Subsystem and system requirements were further defined and updated in fiscal year 1979. By 30 September 1979 the program plan was in the final stage of preparation for review by top management. The plan calls for the development of pre-prototype hardware to be tested at the Kwajalein Missile Range. Since the system must operate in a severe nuclear environment, the prototype demonstration program is to address nuclear survivability as well as the distributed data processing system, low altitude discrimination, and battle operation.

In 1979, the Systems Technology program effort continued to upgrade terminal defense/underlay components with technology developed in the Advanced Technology program. Included in this effort were such projects as the advanced digital signal processor to increase radar efficiency and versatility; investigation of advanced commercial computer systems and several distributed data processor configurations to increase the computer throughput made necessary by the increasing threat; and the optical adjunct to increase detection range.

A continuing effort in systems technology is the projection of threats and preparation of threat data to serve as a baseline for all BMD studies and system concepts. In fiscal year 1979, system threats were prepared for use in the forward acquisition system, rapid deployment, and air mobile MX studies. The 1979–1986 Threat Projection for Ballistic Missile Defense Studies document was completed and published. This document contains the latest intelligence threat details and projections for the Soviet Union, the Peoples' Republic of China ICBM's, and submarine launched ballistic missiles, and is intended for use in all BMD studies and system concept evaluations. Final reviews of the fiscal year 1978 Red/Blue study effort (comparison of Soviet and U.S. BMD capabilities) were conducted, plans were completed for the fiscal year 1979 effort, and funds were provided for its continuation. The Systems Technology Project Office requested the Department of Energy to provide two experimental, threat representative, reentry vehicles. These vehicles, being built by Sandia Laboratories, New Mexico, should be available to the Advance Technology Center for test purposes in fiscal year 1980. Upon receipt of $565,000 from the Electronics System Division, Hanscom Air Force Base, Massachusetts, the Systems Technology Project Office contracted with Teledyne Brown Engineering for a study entitled ICBM/SLBM Attack Geometry

Simulations. Results of this effort will be incorporated in the Warning Information Correlation Threat Model intended to provide a common threat baseline for all missile warning and defense sensor systems as well as provide data for software development.

A joint Department of Energy/Department of Defense Ballistic Missile Defense Warhead Study was initiated in November 1978. The group conducting the study has completed reviewing the rapid deployment concept and has initiated review of the Low Altitude Defense System. Related efforts completed include investigation of various Soviet attack scenarios for the Minuteman SLBM interdiction attack laydown, the overlay X-ray precursor laydown, and the overlay debris gamma precursor attacks. Other weapon effects accomplishments in fiscal year 1979 included publication of Weapon Effects Engineering Problems and Guidelines, which provides technical information on life cycle hardening design techniques. Also, development of a Critical Issues Chart was initiated to provide a detailed description of known weapon effects problems matched to a system, activity, or experiment.

In fiscal year 1979, the Kwajalein Missile Range, operated by the BMD Systems Command, provided support to numerous agencies. Support of the increasingly complex U.S. Air Force developmental and operational tests of ICBM's launched from Vandenberg Air Force Base, California, continued. Fourteen of these flights were advantageously used as target-of-opportunity flights in support of the tracking missions of the Army's underlay experiment. The Kwajalein Missile Range provided extensive base and technical support to the systems technology and test facility on Meck Island during the fourteen targets-of-opportunity and two dedicated target live-tracking missions. Support was also provided for the Army's successful designating optical tracker missions and for the Army's optical station on Roi Namur in the Pacific.

On 6 April 1979 the Department of Defense approved a modification to the long-range tracking and instrumentation radar currently supporting defensive and offensive weapon systems development and test programs conducted at Kwajalein Missile Range. By early 1981, the modification will add to the radar a space detection and tracking system capability, operational in both low and high altitude surveillance. In addition to its present mission, the radar will then serve as a contributing space detection and tracking system sensor providing the Space Defense Center with data on new foreign launches, space object

identification, satellite catalog maintenance, and deep space satellite surveillance.

In fiscal year 1979, an ad hoc committee evaluated alternatives to the Kwajalein Atoll for establishing a major test range in the Pacific Ocean. The Analysis of the Relocation of Kwajalein Study determined that the Northern Mariana Islands were a suitable location for a major test range as well as a supplemental range to Kwajalein in support of the of the expanding requirements of the planned MX and TRIDENT II test programs.

Development

Significant developments continued in all major categories of the new generation of Army weapons and equipment. New systems advanced in engineering development as others approached production decision or continued in development. Much attention went to the expeditious product improvement of critical current systems.

The Patriot flight test program continued to be extremely active during the first quarter of fiscal year 1979. In early October 1978 a multiple simultaneous engagement was accomplished utilizing Regular Airborne Guidance Section (RAGS) missiles. The missiles were successfully launched and simultaneously guided in the track-via-missile phase. As stated previously, the first successful modular digital airborne guidance section (MDAGS) missile firing was achieved in late September 1978 at White Sands Missile Range (WSMR), New Mexico. Because of the success of the RAGS program and the advent of the more reliable MDAGS missile, the project manager directed, on 26 October, the cancellation of the remaining RAGS missions. Fire Unit No. 3 was march ordered on 25 November after satisfying all shipment requirements. It was driven to WSMR arriving in El Paso, Texas, on 2 December. Limited climactic tests with Fire Unit No. 4 were completed at the Andover production facility, New Hampshire, and the fire unit was moved to Bedford, New Hampshire, for the physical teardown and evaluation review (PT&ER) which began on 16 October. Fire Unit No. 5 was transported by air in a C–5A from Hanscom Field, Massachusetts, to Holloman AFB, New Mexico, on 27 February 1979 to supplement the tactical equipment already emplaced at WSMR. The equipment was emplaced on 3 March with baseline testing being completed on 16 March. The arrival of Fire Unit No. 4 and the Command and Coordination Set at WSMR in April completed the Patriot battalion configuration for OT II (operational testing). June and July were devoted to preparing for initiation of Army testing.

March order and emplacement exercises and the maintenance enhancement program (MEP) demonstration were conducted.

The Patriot baseline logistics support analysis record (LSAR) was established in October 1978 as the TRADOC/DARCOM review team completed its review of all task packages. The MEP proposal was received on 20 November. A seven-month effort was authorized on 2 October with the full program scheduled for contract coverage in April 1979. A successful MEP demonstration was conducted in July. Formal negotiations on the Patriot initial production facilities (Buy 1) were completed in February. This contract was recommended for award by the Contracts Requirements Review Board and was awarded on 15 March. The contract amount is $57.8 million, and covers the February 1979 through December 1981 effort to establish the Patriot production line. The first in a series of three Patriot weapon system production readiness reviews (PRR) was completed. The review team found no reason to delay the scheduled start of Patriot production. Authority to negotiate the Patriot production program was approved on 28 February 1979. An engineering development contract and procurements ancillary to engineering development are being processed, and proposals for engineering service, Patriot initial production facilities, and longlead critical material were received and evaluated. A Patriot ad hoc working group was established to effect necessary coordination of Department of the Army staff and command activities in support of preparations for a Patriot DSARC III. The first quarterly meeting of the group was held on 15 October 1978.

During the course of fiscal year 1979, operational and developmental testings, as well as joint U.S./European testing of the French/German developed U.S. Roland systems, were completed. The testing of Roland demonstrated that it meets the Army's all-weather Shorad missile system requirement. Accordingly, in April 1979, the Army recommended that U.S. Roland enter production. DSARC III, held in May, authorized low-rate production only, citing system reliability concerns. The Secretary of Defense directed that a DSARC III-B be held to verify that system reliability would meet requirements before authorizing full-scale production of U.S. Roland. Procurement of the initial production facilities to manufacture the Roland system in the United States progressed and by the close of the year the Army was ready to begin fabricating low-rate production fire units and missiles. There was substantial controversy this year about the Roland program for fiscal year 1980. The House Armed Services Committee recommended termination of the program, while the

Senate Armed Services Committee later recommended that the program continue and enter production. By the end of the year, the Congressional Joint Authorization Conference resolved that the program continue.

The Divisional Air Defense (DIVAD) Gun is a fast reacting, armored, air defense system mounting either twin 35- or 40-mm. guns with acquisition and search radars. The system will be mounted on an M48A5 tank chassis. The DIVAD continued in a unique development cycle which combined the use of competition, fixed-price contracts, and minimal government management. Management of the contractors was performed primarily by use of the quarterly reviews conducted at each contractor's plant. In addition to the quarterly reviews, a special program overview was presented to four key Army and OSD managers on 23 July 1979. The project manager's office concentrated its efforts on preparations for the production phase of the program. The government, independent of the two DIVAD development contractors, awarded a contract for the development of an XM714 fuse for use with either 35- or 40-mm. DIVAD ammunition. The Army also completed several tests to measure lethality of the two candidate rounds.

The General Support Rocket System (GSRS), a free-flight rocket capable of delivering massive, conventional large area coverage munitions, will have the primary mission of counterfire, suppression of enemy air defense (SEAD), and other interdiction type missions. Because of low technical risks and the urgent need for the weapon, the acquisition cycle was shortened from eighty-four to sixty-three months. In the two years since development started, the two competing contractors have each delivered three systems to the Army. Over a hundred rockets have been flight tested.

The Pershing II (PII), a major modification to the Army's Pershing IA, will provide much greater range and accuracy. Program activity focused on the initiation of the PII engineering development program. In August 1978, the Secretary of Defense directed the Army to prepare and present a program for the development of an extended range configuration of PII as soon as possible. As a result, the first quarter of fiscal year 1979 was spent in very intense preparation for an ASARC II and DSARC II for an extended range PII. The ASARC II reconvened in early December 1978 to give its final approval to the revised PII program plans. The Army then presented to the DSARC its proposed program for the acquisition of a PII missile system which has a significantly increased range over the currently

fielded PIA missile system. The Deputy Secretary of Defense signed a decision memorandum on 20 February 1979 approving PII engineering development and directing the Army to maintain options for the possible acceleration of the PII's initial operational capability by as much as sixteen months. Meanwhile, Phase III development of the PII earth penetrating warhead and airburst surface/burst warhead moved forward. Primary contractor activities during the year centered around initiation of missile and ground support equipment design, the conduct of wind tunnel and captive flight testing, and the procurement and fabrication of the working model hardware.

A production contract for 126 electronic identification, friend or foe (IFF) units for the Chaparral launcher was awarded in June 1979. With application of electronic IFF, the Chaparral crew will no longer have to depend solely on visual identification techniques. A production contract for a new smokeless rocket motor for the Chaparral was awarded in September 1979. The smokeless motor virtually eliminates the heavy smoke trail given off by the missile. As the fiscal year closed, planning and preparation activities were underway for two new improvement efforts. These efforts include a forward looking infrared (FLIR) target detection subsystem for the Chaparral launcher and a new guidance unit for the missile based on passive optical scanning technology (POST).

Product improvement testing (PIVT) for the Improved Hawk was successfully completed for the first four Hawk product improvement programs (PIP's). In addition to the PIVT, which was a hardware test, the software required to field the improvements was successfully tested. The root cause analysis of the Tracker Adjunct System (TAS), PIP was completed during the year and activities associated with a fiscal year 1980 procurement are proceeding. Based upon successful completion of 960 hours of RAM testing, a production contract was awarded for the RAM/EMCON PIP in May 1979. A program to upgrade the missile performance in situations where electronic countermeasures are used was initiated. The development contract was awarded in December 1978. Two new PIP's were submitted and technically approved during the fiscal year but have not been funded. They are Improved Hawk Mobility and the Two Position Pintle Nozzle Motor. Production contracts for ground support equipment and missiles were awarded in excess of $133.0 million. The PIP production procurements mentioned earlier brought this total to approximately $167.5 million. Work on a major high and medium air defense study (HIMADS) was continued during 1978

and 1979. The purpose of the study is twofold: (1) to determine the best method of Patriot/Hawk interoperability after deployment of Patriot in the early 1980's, and (2) to determine if the Hawk system in some form should remain in the active Army inventory indefinitely after Patriot is fielded.

The Stinger, a low altitude air defense missile system is manportable and shoulder-fired. It homes in on the heat emitted by either jet or propellor driven aircraft. Initial production continued during the year. The fiscal year 1979 engineering services contract and the second production contract were awarded in February and April 1979, respectively, and a contract for production of IFF interrogators was awarded in March. Engineering development of Stinger/POST continued. The technical difficulties encountered in the incorporation of microprocessor signal processing and with the packaging and positioning of the electronics within weight and space limitations were solved. Efforts continue by the contractor in verifying the design of the POST guidance assembly and in producing the first POST flight vehicles for the contractor flight tests.

Hellfire began the third year of its sixty-three month full-scale engineering development program and the flight test phase achieved notable success. In November 1978, the Army selected the Martin-Marietta laser seeker for integration with the missile. Planning began for an engineering development program for an imaging infrared (fire and forget) seeker to complement the laser seeker in the Hellfire system. A baseline cost estimate was completed and a cost and operational effectiveness analysis and necessary program documentation were begun.

The Viper antiarmor rocket system is a one-shot, shoulder-fired, throw-away weapon that is issued as a round of ammunition, like a grenade. It is being developed to replace the current light antitank weapon (LAW) as the antiarmor weapon for the individual soldier. Safety problems in developmental testing have led to the redesign of certain components and the postponement of planned fielding for a year.

The TRADOC special study group for close combat antiarmor weapons systems early in the year recommended to the Vice Chief of Staff and the Under Secretary of the Army that a new competitive development program for a supersonic laser beam-rider antiarmor missile be initiated. The recommendation was denied due to cost problems and the commitment by OSD for cooperative development programs with our European allies. In lieu of a new development program, a major product improvement effort for the TOW (tube-launched, optically-tracked, wire-

guided) antiarmor system was approved. Also, continued production of the improved TOW missile was approved. The medium range antiarmor system (Dragon) was also involved in the discussions with the European allies. TRADOC and DARCOM were asked to study the Dragon system and to recommend a course of action to correct any problems.

Revised threat estimates indicated that the TOW system would become less effective as newer Soviet tanks were fielded and as the likelihood increased that battlefield smoke and electro-optical countermeasures (EOCM) would be employed against antiarmor systems. To increase TOW system lethality and to harden the system against EOCM, the Army began a program to develop improved warheads and modifications to the guidance system and command link.

The advanced attack helicopter (AAH) continued in full scale engineering development during 1979. The initial prototype target acquisition designation system (TADS) and pilot night vision systems (PNVS) were delivered by Martin-Marietta and Northrop for use in system integration and check-out. The two Phase I flight prototype helicopters were returned to flight status after modifications were completed to bring them to Phase II configuration. The first successful airborne firing of a Hellfire ballistic missile from the AAH took place on 3 March 1979. This and other successful ballistic launches led to the first guided Hellfire launch from the AAH on 18 September 1979. The AAH development effort was restructured in July 1979 to consolidate all remaining operational testing at the end of the program. Plans to award a production contract in December 1980 were delayed one year.

In 1976, ASARC III determined that the UH–60A Black Hawk was ready for production and type classification standard and that because there were no operational issues, operational testing (OT) III was not necessary. As a result, the peculiar ground support equipment (PGSE), the test measurement and diagnostic equipment (TMDE), and certain mission-flexibility kits were developed. A force development test and experimentation (FDTE) on the UH–60A began at Fort Campbell, Kentucky, on 11 June 1979. Due to a failure of a primary hydraulic servo, all aircraft were grounded until 20 August when, after corrective changes were made, the FDTE resumed. The grounding prevented achieving initial operating capability (IOC) for the UH–60A by the fourth quarter of the fiscal year. The IOC and the ASARC IIIA dates were both rescheduled to October and November 1979, respectively. Action was taken in July 1979 to

direct the completion of qualification testing and submission of type classification recommendations by July 1980.

The CH–47 modernization program continued ahead of schedule and within contract milestone costs. During 1979, three YCH–47D modernized aircraft successfully completed their initial flights and are now ready to begin extensive government flight testing in early 1980. Other accomplishments during the year included: final qualification of the fiber glass rotor blades; completion of forward and aft transmission endurance tests; completion of engine and auxiliary power unit qualification tests and award of the engineering and planning for production contract to Boeing Vertol Company.

The COBRA/TOW continued its modernization program through phased product improvements to the AH–1. Contracts were let for purchase of 66 new AH–1S production models and for conversion of 137 AH–1G's to AH–1S's with a twenty millimeter cannon and a wing stores management subsystem being the major improvements. Full scale engineering development continued on a fire control subsystem, the major modernization of the AH–1.

In fiscal year 1979, the XMI program completed developmental and operational testing II (DT/OT II), underwent Army and Defense Systems Acquisition Review Council (ASARC/DSARC) III reviews, initiated full scale engineer development (FSED) testing, and initiated planning for the conduct in fiscal years 1980–81 of DT/OT III and contractor tests using low rate initial production (LRIP) XMI's and/or XM1 production components. Significant shortfalls were disclosed in mission reliability and power train durability. Both the ASARC and DSARC III reviews of March and April, respectively, directed and/or recommended further testing. The ASARC III recommended LRIP of 110 tanks used to support DT/OT III testing. The Deputy Secretary of Defense approved the 110 tank LRIP and placed constraints on second and subsequent year production.

The U.S. 120-mm. gun development and production effort was expedited by Dr. Perry, USDRE, and the licensing agreement for the United States development of the system was signed by the U.S. Army and the German developer, Rheinmetall, in February 1979. The U.S. 120-mm. gun program started on 8 March 1979. On 23 March the ASARC approved a revised program leading to first production delivery of a 120-mm. gun XMI tank in August 1985. This represents a one-year slip in the planned production date due to a delay in obtaining a satisfactory license agreement. In June 1979, the Army was directed by the Secretary

of Defense to continue planning for first production delivery of a 120-mm. gun XMI tank in August 1984 as originally scheduled. In August 1979, the 120-mm. gun XMI tank was designated the XMIE1.

Follow-on evaluation of the medium towed 155-mm. howitzer, M198 was conducted with artillery and marine units at Fort Bragg, North Carolina, from October 1978 through February 1979. Evaluation results confirmed that the M198 met all design and test requirements. Force development test and experimentation was conducted at Fort Bragg in October 1978 to determine the feasibility of employing the M198 in direct support of light infantry operations. Results confirmed the suitability of the M198 for use in the direct support role. Production validation testing began in August 1979 and is scheduled to be completed by the end of October 1979. Initial operational capability was achieved in April 1979. The initial production of nineteen howitzers was produced in-house except for the fire control portion. For follow-on M198 howitzer production, a competitive contract was awarded for the M39 carriage.

Eight Infantry Fighting Vehicle (IFV)/Cavalry Fighting Vehicle (CFV) prototypes were fabricated and delivered to the Army for evaluation. The 25-mm. gun competition was completed and Hughes Helicopter received the winning cannon contract. Prototype qualification testing by the government was initiated at the conclusion of contractor testing. OT II training began in the summer of 1979. The IFV/CFV prototypes have a total of 7,000 miles on them, and 19,715 25-mm. rounds have been fired along with 9 TOW missiles.

The General Support Rocket System (GSRS) carrier vehicle is a fully-tracked, self-propelled weapons platform. It features a man-rated cab that permits completion of an entire fire mission from inside the cab. Simplicity of operation and maintenance have been designed into the vehicle. Having maximum component commonality with IFV simplifies logistics, reduces training requirements, minimizes vehicle cost, and gives maximum system reliability. The complete system has undergone firing, mobility, and endurance testing.

When the Improved TOW Vehicle (ITV) was officially adopted for Army use in June 1978, a conservative production start-up was directed to assure that reliability problems found during development and operational testing had been corrected. Initial production tests (IPT) were started at the Yuma Proving Ground, Arizona, in March and continued through June. Concurrently, additional user testing and follow-on evaluation were conducted

at Fort Polk, Louisiana, during April and May 1979. In both series of tests, the ITV met or exceeded all performance requirements. Full production of the remaining vehicles under contract was authorized at a program review on 6 July 1979, and on 29 July the Army exercised a contract option for an additional quantity of ITV's.

The Copperhead project completed development test firing in September. The final design configuration was established and the technical data package suitable for reproduction was completed. Operational test II was conducted between March–June 1979. Efforts continued in establishing the initial production line at the prime contractor's plant in Orlando, Florida. The Army Systems Acquisition Review Committee (ASARC) met in September and recommended that the Copperhead guided projectile enter production beginning in fiscal year 1980.

The advanced development systems of the Standoff Target Acquisition System (SOTAS), two of which are now in Europe, performed well in four exercises. The winter weather encountered in REFORGER 79 confirmed the need for an additional adverse weather capability. The major contracts for the engineering development program were let during the year. Contracts for the development of the modular integrated communications navigation system (MICNS); of the airborne electronic subsystem, the ground stations, and the ground positioning subsystems; and of the design, modification and testing of the EH–60B Black Hawk variant were signed in May, June, and September 1979, respectively. In recognition of budgetary contraints, the Army reduced the procurement objective to those sets necessary to support the active force structure. The previous profile, which was approved at DSARC II in August 1978, had been based on supporting both active and reserve units.

Progress continued in the growth of high energy laser technology for potential Army missions. Technological advancement was made in the formulation, evaluation, laboratory construction, and testing of new laser devices. The examination of existing propagation and laser damage mechanisms continued. Progress was made in the further development of experimental chemical lasers, repetitively pulsed electric discharge lasers, and fire control. Chemical laser efforts were oriented toward advancements in components and electric discharge laser efforts were concerned with development of power supplies and conditioning equipment.

During the fiscal year, administrative and contractual arrangements were made to conduct engineering development of

a remotely piloted vehicle (RPV) system. A cost-plus-incentive fee contract was awarded to Lockheed Missiles and Space Company in August for the full-scale engineering development of an RPV system. Contract value is $101.1 million over a period of forty-three months.

The XM736 persistent nerve agent (VX) binary projectile is an artillery munition developed by the Army in an effort to upgrade the U.S. deterrent/retaliatory chemical warfare capability. The binary concept uses two nontoxic chemical components which are separated until the projectile is fired. Setback forces from initial firing, forward inertia, and spinning on the way to the target mixes the two components to form an active nerve agent which is distributed over the target. Presidential and congressional approval for construction of production facilities and subsequent production has not yet been obtained. Early functioning and leakage problems encountered during the safety phase of DT II were resolved during the fiscal year. Design modifications were made to the base plate and the rear chemical canister. The safety phase of DT II was successfully completed and a safety release to initiate OT II was issued.

The Dragon Night Tracker (AN/TAS–5) was type classified as standard and entered full scale production. Initial production of the night sight for the TOW missile system and the tank thermal sight were made. These passive infrared sights provide the basic systems with the capacity to attack enemy tanks at night.

The Army initiated a program to incorporate some improved components into the five-ton truck in 1971. Multiyear procurement of the improved truck was to begin in 1978. However, technical problems delayed the program for over a year. The House Appropriations Committee (HAC) learned of the delay and directed an investigation of the Army's total five-ton truck program. In February 1979, the report stated that the Army's requirements were overstated and that the technical improvements were not worth the additional cost. In June, the HAC directed the Army to terminate the improvement program, buy current production model trucks, and restudy its requirements. The Army ended its improvement program and bought current model trucks with fiscal year 1978 funds.

A major Army mission is to ensure the adequate flow of supplies and materiel to the various field elements deployed worldwide. As a part of the total resupply system, a program was begun in December 1974 to achieve a high-speed, amphibious, air cushion vehicle lighter capability. The prototype Lighter, Air Cushion Vehicle, thirty-ton (LACV–30) was procured in March 1975, and

subjected to intensive development and operational testing from October 1976 to January 1978. The LACV–30 is an air cushion vehicle craft that travels over water, beaches, soft or firm ground, snow or ice at speeds of up to fifty miles per hour. The craft has an open deck space with a total payload capacity of thirty tons. An Army executive meeting to review the program was held on 15 January 1979 with decisions made to accept the LACV–30 as a standard Army item, begin procurement of production items, and conduct a follow-on evaluation test with the initial four craft produced. A program was conducted on the LACV–30 to test proposed improvements to the craft prior to production. A contract for initial procurement of four LACV–30's with options for follow-on buys of eight more craft, was awarded to Bell Aerospace Textron in September 1979.

The artillery versions of the family of scatterable mines (FASCAM), both antitank and antipersonnel, are in full production. Routine testing is being done before full fielding in fiscal year 1980. The Ground Emplaced Mine Scattering System (GEMSS) completed successful user and development tests. The modular pack mine system (MOPMS) is in the final stage of development and full-scale prototypes have been built. The mine, for delivery by high performance aircraft (GATOR), made technical advancement in its final stages of development. This R&D program is under the Air Force lead for Army, Navy, and Air Force joint use.

The Defense Advance Projects Research Agency (DAPRA)/Army/Air Force new antitank concept program known as Assault Breaker, couples an Air Force airborne target acquisition/tracking/command guidance system with an Army ground tactical fire control center and surface-to-surface missile system containing terminally guided submunitions. It is to be used against second echelon, long-range moving enemy armor concentrations. This program is not for use in the battle area as it does not distinguish between friendly and enemy tanks. A joint DAPRA, Army, and Air Force steering group was formed to provide guidance throughout the ongoing technology demonstration. A joint executive committee, chaired by the USDRE with Army participation, has been organized to establish policy for the Assault Breaker program. The U.S. Army Missile Comand (MICOM) is the agent for Army participation in the technology investigations, and a mission element need statement (MENS) describing the need for a Corps Support Weapons System (CSWS), which envisions a nuclear and nonnuclear interdiction weapon to provide improvements over Lance, was prepared by TRADOC. A total

of $9.2 million has been approved for fiscal year 1980: $3.0 million to set up a project manager's office and associated requirements, and $6.2 million for including the Lance T22 missile in the technology demonstration.

The Armored Combat Vehicle Technology (ACVT) program is designed to provide information to the CSA and the Marine Corps Commandant that will measure the battlefield value of lightweight combat vehicles and medium caliber automatic cannon. The aim of 75-mm. developments in the fiscal year was to provide accurate medium caliber automatic gun systems for use on the high mobility/agility (HIMAG) and high survivability test vehicle-lightweight (HSTV-L) test-bed vehicles, which are the principal data generators for the ACVT programs. The major accomplishments in fiscal year 1979 were the development of high-performance 75-mm. KE and HE ammunition and the development of a working automatic gun mechanism, which included the introduction of a new high-strength steel. The major problem was the slow feeders.

Rationalization, Standardization, and Interoperability (RSI)

Over the past year, the Army's RSI efforts have led to the publication of both policy and procedural guidance, priorities, further efforts for implementing the NATO Long-Term Defense Program (LTDP), and hardware initiatives. Army policy and responsibilities for RSI were promulgated with the publication of AR 34–2, Rationalization, Standardization, and Interoperability. Basic Army policy for RSI states:

> The U.S. Army will actively seek the rationalization, standardization, and interoperability (RSI) of doctrine, weapons systems, logistics, equipment, and procedures within NATO on a priority basis to conserve resources and release the combined combat capability of U.S., NATO, and ABCA forces.
>
> RSI is the means to help strengthen alliance capabilities through the use of combined and integrated alliance resources, rather than the use of strictly national resources. To this end, rationalization of doctrine, requirements, tactics, and procedures is essential for successful long-term alliance programs and initiatives. Maximum benefit will be achieved through multi-national cooperation.

AR 34–1, U.S. Army Participation in International Military RSI Programs, is the procedural complement to AR 34–2. It specifies action/administrative agent assignments, program orientations, and the procedural mechanisms for ensuring that United States and U.S. Army interests are properly represented.

On 5 April 1979, the Vice Chief of Staff, U.S. Army, signed

a letter titled, Army Priorities for RSI. This letter designated the Army's general priorities for RSI, which are: implementation of the NATO Long-Term Defense Program (LTDP); support of the OSD/JCS high-priority areas; standardization of doctrine, requirements, and procedures; and interoperability and standardization of weapons systems and equipment. Additionally, specific near-term priority actions for Army staff and major command emphasis were designated.

In accordance with guidance promulgated by the draft OSD 1981–85 Consolidated Guidance, LTDP actions are treated by the Army as tantamount to mandatory programming guidance. LTDP actions were, with very few exceptions, programmed at the basic level. Efforts continue to implement those items approved for action, and to refine those measures requiring clarification of further study prior to implementation. Of the 123 approved LTDP actions, 21 require action by the Army. At U.S. urging, the LTDP was addressed as a separate book to the NATO Defense Planning Questionnaire (DPQ) for 1979. This was done in order to maintain the identity of the LTDP, as well as provide a simpler mechanism for identifying national progress in implementing measures. Both cost and quantity data were provided by the U.S.

In the OSD/JCS high-priority areas, actions are underway to convert the various fixed-plan and transportable wideband systems into a single system with substantial support of our survival requirements. NATO has recently agreed to install automatic digital network (AUTODIN) terminals at selected NATO subscriber locations. In addition, the use of the NATO teletype automatic relay system (TARES) by the U.S. Air Force will result in a fully adequate, highly survivable record communications system.

NATO countries have been invited to provide representatives to the U.S. Test Integration Working Group (TIWG) for the SINCGARS-V radio system. Negotiations have been conducted with Germany, the Netherlands, and the United Kingdom to prepare a Memorandum of Understanding outlining the terms and conditions under which foreign candidate radios could be offered to meet the SINCGARS requirement. All three nations plan to offer candidate systems.

With the approval of the DARCOM-proposed ammunition interoperability plan as the Army's plan on 12 July 1979, a framework has been established for the generation of technical data relating to the interoperability of ammunition between national weaponry on a NATO-wide basis. This plan, in addition to pro-

viding a cohesive framework, also establishes general priorities and approaches for pursuing further efforts.

For the past year, the Army has been engaged in an extensive program to establish the interoperability of ammunition, both in training and in combat, with our NATO allies. This program was directed by DARCOM in response to the priority placed on ammunition interoperability by OSD, JCS, NATO, and in support of USAREUR interoperability initiatives.

In 1977, USAREUR requested that the Department of the Army grant permission for U.S. units to fire foreign ammunition during training, under the provisions of NATO Standardization Agreements (STANAGS) (2838–2857) on ammunition interoperability, in order to foster interoperability and build confidence in the stockpiles of other nations. The benefits of this proposal were recognized, but permission could not be granted. Support for a similar effort by USAREUR was provided by OSD, JCS, and NATO in their designation of the five high-priority areas for NATO standardization and interoperability. Interchangeable ammunition is the third priority item.

DARCOM embarked upon a certification program, concentrating on the achievement of bilateral agreements with Central European countries regarding 155-mm., 175-mm., and 8″ artillery ammunition; 105-mm. tank gun ammunition; and 81-mm. and 4.2″ mortar ammunition. This effort has been a major task. Initially, the program of work was structured to satisfy the Commander in Chief, USA, Europe (CINCUSAREUR), requirement for training. The methodology for certification was implemented through a series of working meetings with representatives from Germany, Canada, the United Kingdom, the Netherlands, Belgium, France, and Norway. Signed bilateral Memorandums of Agreement with each country on the complete round interchange of artillery, tank gun, and mortar ammunition, which constituted safety certification for firing in training, were the result of these meetings. These agreements also provided for exchange of malfunction data and changes to the technical data package (TDP). An additional benefit of this exercise is that not only is ammunition being certified as safe to fire, but data is being generated which allows that ammunition to be fired more accurately.

In mid-1979, DARCOM/ARRADCOM prepared and submitted to the Department of the Army an Army ammunition interoperability plan (AAIP), providing a framework for extending these efforts to other calibers and other nations. This plan establishes objectives, an approach, and priorities for a broad, ongoing effort. The result of this program will be the

ability of U.S. units to safely and accurately employ nearly all varieties of allied ammunition, with the exceptions clearly delineated. Formal approval was granted on 12 July 1979. The AAIP is essentially a developer's plan, leading to the generation of technical information. An equally important part of the effort is the distribution and use of that information. On 27 July 1979, the Department of the Army International Rationalization Office (DAIRO) hosted an Ammunition Interoperability Working Conference in the Pentagon to clarify and discuss plans for implementing this information. Representatives of involved and interested Army staff agencies and major commands were invited. Future developmental efforts, training and service school programs of instruction (POI) revision, and the potential for firing allied ammunition during CONUS training were among the subjects discussed. The most contentious of the potential acquisition and distribution of these issues was that of allied ammunition for CONUS training. Acquisition, storage, and distribution problems were considered. In light of the essentially identical physical characteristics of allied ammunition to U.S. munitions, the problems envisioned did not seem to be offset by training benefits and the question was dropped.

The U.S. and a number of its NATO allies have signed Memorandums of Agreement relating to various types of ammunition. Other agreements are under consideration. Also exchange firings with the Federal Republic of Germany (FRG) forces have been conducted on the 203-mm. and 155-mm. howitzers.

With the initiation of exchange firings in USAREUR, pressure began building with NATO to embark on a similar effort throughout the Alliance. In 1978, Commander, Northern Army Group, Central Europe (COMNORTHAG), directed units in the northern region to pursue a program of ammunition interchange during training. Efforts had already been started within the Conference of National Armaments Directors Panel AC/225, Panel IV (Surface-to-Surface Artillery), to prepare a plan for the determination of ammunition interoperability NATO-wide. This effort was initiated and carried by the U.S.

The draft NATO Ammunition Interoperability plan is patterned after the U.S. Army plan with those modifications felt necessary for NATO adaptation. Its objectives are to determine the interchangeability status, maintain existing interchangeability, identify alternatives if noninterchangeable, assure future interoperability, document agreements, disseminate information, expand the scope of STANAG's, and enable troop firing exercises.

The methodology proposed—making interoperability deter-

minations for NATO—is essentially the same as that discussed for the Army. It should be noted that, while efforts, so far, have centered on the complete-round interchange of ammunition for training, the potential need for component fuse, projectile, and prop charge interchangeability has been recognized. DARCOM/ARRADCOM, in conjunction with the U.S. Army Test and Evaluation Command (TECOM), has been requested to begin a low-key program to determine the extent of component interchangeability. We do not envision mixed firings during peacetime, but such information would be disseminated for use during conflict. The approach is a "form, fit, function" one, in keeping with the fact that most current European components are either built to U.S. specifications, or outgrowths of U.S. products.

With one exception, the approach for combat firings is the same as that for peacetime. From the combat standpoint, the ultimate goal of this plan is to permit the safe and accurate firing of mixed components of various national origins. This would allow the use of a U.S. fuse with a German projectile and United Kingdom prop charges, for example.

Priorities proposed for NATO adoption reflect the same general priorities as those of the U.S. bilateral efforts. Prioritization will be by type, within family, and by country. While we have made significant progress, the NATO ammunition interoperability plan is still a draft, and has not yet been formally accepted by NATO. The plan was briefed to the Conference of National Armaments Directors Panel AC/225, Panel IV, in November, and received their endorsement. During the Military Agency for Standardization meeting in November 1979, the draft allied Ordnance Publication (AOP), based on the data contained in the fire control matrices, was presented. The need for the development of training support and training aid materiel has been considered. Due to the physical similarities between U.S. and allied ammunition currently certified, there appears to be no need for such material at this time. In the few instances where different nomenclatures/markings occur, as with German and Norwegian ammunition, appropriate field manuals will be annotated to provide the requisite information. Should ammunition be certified in the future which possesses significantly different identification or physical characteristics, appropriate graphic training aids (GTA) cards or training extension course (TEC) lessons will be developed.

The development of a remotely piloted vehicle (RPV) system for target acquisition and designation is a high-priority project within the Army. A U.S./United Kingdom Memorandum of Un-

derstanding has been consummated, providing for an exchange of information on RPV's with a view toward ensuring interoperability. Working groups have been established to explore specific areas of interest.

The Stand-Off Target Acquisition System (SOTAS) has been successfully demonstrated to several NATO countries, and the engineering development phase has been structured to further interoperability goals. The deployment of two interim systems has further demonstrated SOTAS' capabilities in a field environment. Several NATO nations have expressed interest, though none have specific requirements. The Army's laser target designator (LTD) and ground laser locator designator (GLLD) are compatible with all U.S. laser-guided munitions. Additionally, all laser designators have been designed in compliance with NATO STANAG 3733, ensuring interoperability within NATO. Interoperability between the LTD and the United Kingdom laser ranger and marked target seeker has been demonstrated.

The Army continued to participate in the Conference of National Armaments Directors Group on material standardization. This group is developing plans for improving STANAG in the area of assemblies, components, spare parts, and materials.

The bilateral staff talk program, an important mechanism for increasing doctrinal compatibility between U.S. and NATO countries, continued with strong support from all participants. Army staff talks between the U.S. and Germany, which began in 1975, went into their sixth and seventh formal meetings in March and September 1979, respectively. They resulted in the signing of two more concept papers in March 1979: No. 10, Nuclear-Biological-Chemical Defense, and No. 11, Night Operations. This brought the total of agreed concept papers to eleven and left seven more in combined staffing preparation. A common requirements document for remotely piloted vehicles was signed with German representatives in May, and a four nation Memorandum of Understanding for a field artillery multilauncher rocket system gained United States, Federal Republic of Germany, United Kingdom, and French signatures in June 1979. A common requirements document for a terminally guided warhead to this system was also signed by U.S./Germany representatives. Agreement was reached to standardize test procedures; to harmonize U.S./German symbology and graphics; and to enhance the interoperability of the U.S. tactical operations system (TOS) and the German HEROS system for command and control, and the U.S. TACFIRE and the German ADLER artillery fire control system.

Bilateral staff talks between the U.S. and the United Kingdom had begun in fiscal year 1978. They continued with a third formal meeting during late February–early March 1979. The exploration of doctrinal similarities and differences continued. A joint concept for the Warsaw Pact threat was updated in March, and work is in progress toward joint concepts for armor force operations beyond 1990, and science and technology. The parties also exchanged views on division reorganization projects and sought agreement on a process to harmonize equipment requirements. A fourth meeting is scheduled for October 1979.

The Chiefs of Staff of the U.S. and French Armies, in January 1979, agreed to explore the possibility of staff talks in the combat development field. The first formal talks were held in September 1979. They included a mutual recognition that advancing Soviet technology posed a great challenge to the Western Alliance as well as a recognition that differing systems, structures, and concepts existed based on the two nation's differing alliance roles—the U.S., immediate engagement of attacking forces; and France, a strategic reserve with a specific counterattack mission. Shared concern with respect to several broad subjects was affirmed, including doctrine, training, and equipment for military operations in large urban centers. Questions of technological impact on roles of the tank and of other major systems were discussed.

With regard to hardware, the Army continued to support greater cooperation with our European and worldwide allies on research, development, testing, and evaluation; dual production; and cooperative doctrinal development.

A supplement to the Memorandum of Understanding with the Federal Republic of Germany (FRG) on night vision systems was completed which provided for the transfer of technology of all parts of the U.S. common module infrared sight system. This transfer will let the FRG manufacture these parts for use in configurations tailored to German requirements. Another cooperative effort with the FRG was the second realistic battlefield sensor test conducted at Grafenwoehr, Germany. These tests were conducted to determine the effects of artillery caused obscurants (dust and smoke) on current and planned electro-optic sensors.

A preliminary study, concerned with the purchase of German manufactured administrative and materiel handling vehicles, was conducted in 1976 and the program was approved in January 1978. The approval to expand this program to include vehicles that are not in use or planned for use by the FRG (provided the additional types of vehicles are interoperable with vehicles used

by the FRG forces) was granted in December 1978. The Army was appointed executive agent for the FRG program and will purchase for the Army and Air Force. Because of potential logistical problems, the Air Force and Army agreed to buy limited quantities (Army, 125 vehicles; Air Force, 100 vehicles) during fiscal year 1978. Basic ordering agreements for the service requirements were signed in May and deliveries began in October 1978. The Army procurement for fiscal year 1979 was 243 vehicles at a cost of $1.8 million.

The Army continued to provide both financial and manpower support to the international test control commisssion (TCC) during the year. Technical testing on the candidate weapon systems (both ammunition and weapons), which began in April 1977, was completed in July 1979. It was conducted at four test sites: Cold Meece, United Kingdom, Meppen, Federal Republic of Germany; Bourges, France; and Eglin AFB, United States. The one-year military troop test on the candidate weapon systems was completed 11 May 1979. This test involved troops from six different nations, speaking four different languages, firing all candidate weapon systems through a series of firing exercises. The TCC, with the assistance and advice of representatives from the eleven participating nations, is presently analyzing test data from all test sites.

But not all NATO RSI programs were successful. Attempts to obtain United Kingdom acceptance of the AGT 1500 turbine engine for their MBT 80 tanks were turned down. Instead, the United Kingdom opted for 1,500 h.p. diesel engines from Rolls Royce. Negotiations with the Netherlands to coproduce XMI's were also unsuccessful. The Netherlands opted for a similar arrangement with General Electric for the Leopard II. Other ongoing RSI efforts include a NATO committee which is developing standard requirements for tank track and the 120-mm. gun program.

The fiscal year 1980 Memorandums of Understanding between the Japanese Defense Agency and the United States Department of Defense, and the implementing agreement between the Japanese Defense Agency Hawk project manager (PM) and the USA Hawk PM were signed in May 1979. The Memorandum of Understanding authorizes coproduction in Japan of improved Hawk modification kits to convert basic Hawk assets to the improved configuration and for production of major items including the missile.

12. Special Functions

In the field of special functions, the Army and the civilian community work together. The Civil Works program, conducted by the Corps of Engineers, directly affects the residents and economic interests of the nation. It also provides a valuable training ground for Corps of Engineers officers, enabling them to practice skills useful in the military defense of the nation. Similarly, the Army's environmental protection and preservation programs are designed to keep pace with the nation's efforts to protect its natural resources; but, the service role is primarily supportive. In the conservation of energy, however, the Army is more directly involved, since in the modern world, mechanization dominates all facets of military operation, and energy, whether oil, gas, coal, or other types, is a critical factor. Since many of the Army's activities, vis-a-vis their civilian counterparts in the cited areas, have tended to be more controversial in recent years, the Army's lawyers have had to handle an increasing variety of cases defending its actions.

Civil Works

In recent years, the Army's responsibility for civil works has been focused on the development and maintenance of the nation's water resources. The Corps of Engineers administers all programs relating to that area, including hydropower, flood control, navigation, and inspection of high-hazard, nonfederal dams for safety. As a member of the water Resources Council, the Army has played an important role in developing a planning manual and in revising the principles and standards for planning water and related land resources projects. Both are important aspects of the President's water policy reforms.

During the report year, appropriations for civil works increased slightly over the 1978 total and again approached the $2.8 billion mark. As indicated below, the most significant increase was in the funds for flood control and coastal emergencies and the sharpest decrease was in Construction, General, funds. The breakdown for the fiscal year includes funds appropriated by the Energy and Water Development Act, 1979 (P.L. 95–482) and the Supplemental Appropriations Act, 1979 (P.L. 96–38).

Civil Works Appropriations for Fiscal Years 1978 and 1979
(in thousands)

	FY 78	FY 79
General Investigations	107,046	137,978
Construction, General	1,537,820	1,343,711
Operation and Maintenance, General	768,870	833,100
Flood Control, Mississippi River and Tributaries	253,081	223,035
General Expenses	60,000	68,900
Permanent Appropriations	11,720	8,276
Revolving Fund	21,525	46,000
Special Recreation Use Fees	6,000	3,300
Flood Control and Coastal Emergencies	18,000	126,000
Alaska Hydroelectric Power Development Fund	5,450[1]	
Total	2,789,512	2,790,300

[1]Deferred in FY 78.

Although the Congress appropriated almost $200 million less is fiscal year 1979 than in the previous fiscal year for Construction, General, there was a significant upturn in the number of new starts in both preconstruction planning and in construction projects. The following breakdown reveals the return to a normal pattern in fiscal year 1979 after the new starts had been reduced to zero in the previous fiscal year.

Construction, General Project Breakdown
Fiscal Years 1977, 1978, and 1979

	FY 77	FY 78	FY 79
Preconstruction Planning Projects	(104)	(106)	(91)
New Starts	19	0	27
Continuing	59	97	56
Completions	26	9	8
Construction Projects	(254)	(231)	(229)
New Starts	24	0	32
Continuing	193	210	187
Completions	37	21	10

Many of the projects operated and maintained by the Corps of Engineers produce hydropower essential to the nation. Although the total number of hydropower projects remained at 67, the number of generating units rose from 313 to 320 and for the total number of units installed, capacity increased from 17.8 million to 18.6 million kilowatts. The new units permitted the Corps to retain about 11 percent of the Federal Energy Regulatory Commission's estimate of the conventional hydroelectric power potential of the forty-eight continental states, approximately 3 percent of all U.S. generating capacity, and 4 percent

of all U.S. electric energy produced—the same as in the previous years.

The seven new units, which added almost 790,000 kilowatts to the Corps capacity, included four units at the Chief Joseph project on the Columbia River in Washington (each with 95,000 kilowatt capacity) and three units (each with 135,000 kilowatt capacity) at the Lower Monumental project on the Snake River in Washington. A total of 8,655 kilowatts were added by rewinding and increasing the capacity of two generators, one each at the Fort Peck, Montana, and Norfork, Arkansas, hydroelectric power plants. In the meantime, construction continued on five new projects that will have an installed capacity of over 900,000 kilowatts and eight new units are being added at Bonneville on the Columbia River to boost its output by almost 560,000 kilowatts.

In the construction of water resource facilities, the same monetary pace continued as in the past few years. In the huge navigation development of the Tennessee-Tombigbee Waterway in Alabama and Mississippi, the Corps awarded a $271 million contract—the largest ever in the Civil Works program—to the firms of Morrison-Knudson, Brown, and Root, and M.K. Eby, who will jointly excavate the divide cut section of the project. Other major projects underway include the Red River Waterway in Louisiana and hydroelectric developments at the Bonneville Second Powerhouse in Oregon and Washington and the Richard B. Russell Dam and Lake in Georgia and South Carolina.

Since the passage of the National Dam Inspection Act in 1976, the Corps has become heavily involved in dam safety activities. The failure of several major dams with resultant catastrophic losses led Congress to give the Corps authority to inspect all dams that presented a high potential for loss of life and property if they should fail. In December 1977, the Corps initiated a four-year program under the act to inspect more than 9,000 nonfederal dams. By the end of fiscal year 1979, a total of 4,660 inspections had been initiated; 4,300 had been completed; and 3,670 inspection reports had been approved and notification furnished to the dam owners and to the governors of the states involved. The Corps is on schedule at the halfway point in the inspection program with 4,700 dams to inspect during the final two years.

Of the dams inspected, 1,160 had deficiencies that rendered them unsafe and 63 had the potential for immediate failure that required emergency action. Full or partial drainage or breaching relieved the pressure in most cases. Although immediate repairs

were made by some owners, the overall response could stand improvement.

Environmental Protection and Preservation

During the past decade, the nation and the Army have become increasingly involved in the protection and preservation of the environment. Since the passage of the National Environmental Policy Act, the Army has made significant progress in some areas to comply with the provisions of the law, but much remains to be done.

In November, the Council on Environmental Quality published regulations that supplanted the former guidelines used in implementing the procedural provisions of the act. To integrate environmental considerations more fully into the federal decision making process, the new regulations require more concise documentation and more public participation in the early phases of proposed actions. All agencies must give public notification of the initiation of an environmental impact statement and permit public participation in the development of the scope of the statement. The Army, accordingly, will have to identify the most environmentally acceptable alternative and provide a detailed rationale if that alternative is not selected. Environmental assessments are now available to the public by a requirement to publish a finding of no significant impact (FONSI) in the news media and to provide the finding to affected persons. In addition, in cases of national concern, the finding must be published in the Federal Register. Interim Army guidance implementing the new regulations was issued in August and the final version is to be published by the end of 1979.

Compliance with the new regulations was one of the principal areas of discussion at the Worldwide Real Property Management System Conference held during the year in New Orleans. (The former worldwide conferences for environmental personnel and for facilities engineers were combined at New Orleans to achieve cost savings and bring the two groups together.) Other prime topics considered were air and water pollution control, solid waste management, and the handling and disposing of hazardous and toxic materials. One of the major items of concern that surfaced at the conference was the need to obtain more compliance agreements for pollution abatement projects in order to forestall litigation. Follow-up action by project managers will have to be increased to ensure that the agreements are secured.

In the field of environmental and water quality operational studies, the Corps of Engineers continued work on the six-year

program of applied research investigating high priority environmental quality problems. Under the management of the Waterways Experiment Station (USAWES), Army technical and scientific personnel sought to promote new or improved technology to solve identified problems associated with reservoir or waterway projects. The newly developed techniques were then tested at field study sites established at four reservoirs and two waterway projects to demonstrate their applicability. During the year, baseline environmental information was collected and analyzed at the six sites.

Under the Clean Air and Clean Water Acts, as amended, administrative extensions for compliance with the standards set forth could not go beyond 1 July 1979 and 1 April 1979, respectively. Operation of polluting sources beyond those dates are violations and will subject Army officials to enforcement actions, including possible fines, closure of the sources, and, in the case of willful and knowing violations, individual criminal sanctions.

In early 1979, a review of sources at approximately fifty-nine installations was made to determine the alternatives that were available to bring these sources into a state of compliance after the 1979 compliance dates. The alternatives considered included changes in operational procedures; shifting operations to "clean" facilities; temporary shut-down of nonessential facilities or temporary modifications to the facilities until a permanent solution could be effected; legal relief through administrative or civil actions; and legal relief through a Presidential exemption. In considering the alternatives, there were fifteen installations which could not be brought into compliance but whose continued operation was vital to the Army mission and which could not be shut down without potentially serious implications to the national security of the United States. Some form of relief was essential to permit their continued operation.

The Army initiated a two-pronged approach to the problem. The first was to initiate a request for Presidential exemptions for the fifteen installations under the provisions of the applicable laws and the second was to negotiate administrative agreements granting extensions to the offending facilities. As a result, key policymakers within the Environmental Protection Agency, Office of Management and Budget, Department of Justice, Department of Defense, and the Army determined that a Presidential exemption would not be requested until all possible alternatives had been explored, including court and, if necessary, appellate proceedings.

In March, the Environmental Protection Agency and the

Army negotiated a "Federal Compliance Agreement" for the fifteen installations which extended the compliance schedules for the polluting sources beyond the current statutory deadline. Although the agreement satisfied the Environmental Protection Agency's enforcement requirements, it did not preclude enforcement actions initiated by private citizens or state or local regulatory authorities. No proceedings, however, were initiated against the fifteen installations during the remainder of the year.

To fund the pollution abatement program, the Army received $75 million to correct known pollution sources. It also sought an increase for the fiscal year 1980 Military Construction program that would provide $141 million and entail some sixty-four projects.

In the spring of the year, the Army initiated early planning actions for compliance with the new Resource Conservation and Recovery Act. The law covers solid waste, hazardous waste, and toxic materials and had a significant impact upon operations at Army installations when the Environmental Protection Agency began to implement it on 1 January 1980. Although the scope of corrective action that the agency requires is, as yet, undetermined, the costs to the Army are certain to be sizable.

Under the Sykes Act, as amended in 1978, the Department of Defense was to receive funds annually to enhance the fish and wildlife habitat and to develop public recreation facilities on military installations. For the first time since the act was passed in 1968, the Department of Defense obtained an appropriation of $1.5 million to devote to this purpose. The Army's share of the appropriated funds came to $900,000 and the monies were used primarily for wildlife habitat improvement and the repair and development of ponds and lakes on approximately thirty Army installations.

Each year the Secretary of the Army and the Secretary of Defense present awards to the military installation conducting the best environmental quality program. For the second time within six years, Fort Sill won both the Army and Defense awards for calendar year 1978. The award committees commended Fort Sill for significant accomplishments in the areas of pollution abatement, resource recovery, wildlife management, and historic preservation.

The Army Energy Program

The Army Energy Plan, published in February 1978, described the world, national, and defense energy environment the Army would likely face during the medium-range (1985) and

long-range (2000) periods. The plan set forth objectives and goals that were the basis for the programs established during the year. As this fiscal year came to a close, an extensive revision of the plan was underway to update the world situation, program and funding guidance, and energy consumption data. The revision is expected to be published by June 1980.

The Army surpassed its objective of an 8 percent reduction in total energy consumption, based on the 1975 figures, by attaining a savings of 7.65 percent. The excellent efforts made by all commands to achieve the goal were slowed somewhat by the necessity to place increased emphasis on operational readiness and training, to expand and modernize Army installations, and to contend with a more severe winter than in the baseline year of 1975. Once again the Army was able to reduce its usage of coal, heating oils, gasoline, and aviation fuels. It was the first year in which electrical consumption decreased, but consumption of diesel fuel, natural gas, and liquefied petroleum gas began to rise. The following, expressed in British Thermal Units (BTU's) presents a comparison between the 1975 figures and those of fiscal year 1979.

Army Energy Consumption
(in trillion BTU's)

	FY 75	FY 79	Percent Saved
Installations Operations			
Purchased Electricity	87.59	86.68	1.04
Natural Gas	44.13	36.78	16.66
Liquefied Petroleum Gas	2.35	2.30	2.13
Coal	33.83	27.78	17.88
Purchased Steam	0.70	0.84	−20.00
Petroleum Heating Fuels	63.05	54.13	14.15
Subtotal	231.65	208.51	9.99
Mobility Operations			
Aviation Fuels	13.01	12.70	2.38
Motor Gasoline	16.11	14.56	9.62
Diesel Fuel	15.77	14.52	7.93
Subtotal	44.89	41.78	6.93
Army Total	276.54	250.29	9.49

The drive to cut energy consumption throughout the government and especially in the Department of Defense, which accounted for over 80 percent of the energy that federal agencies consumed, was vigorously supported by Army efforts during the year. Initiated in 1976, the study of Army installations, to determine where energy reductions could be made and what they would cost, continued under the Energy Engineering Analysis

program. Some thirty-six installations, including six Defense Logistics Agency facilities, were undergoing analysis at the close of the fiscal year and fifty others in the United States are scheduled for study in the year ahead. The program directors plan to survey installations in Korea and Europe as well.

One method for reducing energy consumption at installations is through the use of energy monitoring and control systems that measure and regulate heating, ventilation, air conditioning, and lighting. The elimination of waste through more efficient operation saves both energy and manpower costs. During the year, the Army continued to use the three systems put into operation previously, had another in field test status, twenty-five in design or various stages of construction, and a total of twenty-eight in the Military Construction, Army, program through fiscal year 1981.

In an effort to develop alternate sources of energy to supplement existing supplies, the Army expanded its solar energy program. In addition to two demonstration-type projects at Fort Hood, six Defense-funded facilities, including a bachelor enlisted quarters, two barracks, and three Army Reserve centers, are operational; ten Defense-funded facilities and one Department of Energy-funded facility are under construction; and seventy projects for the next two fiscal years are under design or study. The inclusion of a clause in the Military Construction Authorization Act, 1979, requiring that all family housing and 25 percent of other construction placed under design use solar energy systems whenever engineering analyses demonstrate them to be cost-effective, argued that the expansion in that field would increase in the future.

Under the provisions of the energy Conservation Standards for New Buildings Act of 1976, the government had to incorporate reasonable energy conservation features into all new federally financed buildings and design energy budgets had to be established by August 1979. As a result, the Army developed interim energy budgets early in the report year based upon the best available Department of Energy data. In March, the Department of Defense modified the interim energy budgets, and the Army proceeded to design its new facilities accordingly.

The Army and the Department of Energy also worked closely together in the more esoteric areas of energy development. The Department of Energy provided $500,000 for the concept design of the Army's energy showcase installation—the Red River Army Depot/Lone Star Army Ammunition Plant complex in Texas. The major research areas under investigation include fuels derived

from wood and refuse; solar thermal, nonfossil transportation fuels and lignite technologies; and the use of the terrain in the construction of facilities to conserve energy. In addition, the Department of Energy made funds available for photo-voltaic development and utilization, synthetic mobility fuels, and solar heating and cooling projects.

In the field of bulk petroleum fuels and their distribution, the Army began to carry out the recommendations of a study approved by the Vice Chief of Staff in March 1978. After the first annual Petroleum Materiel Requirements Conference was held at Fort Lee, Virginia, in November, the Army began development of a master petroleum materiel requirements plan. The plan will identify equipment requirements and status, procurement funding priorities, materiel acquisition schedules, and special requirements for overseas theaters.

In a related development, the transfer of the Zweibrucken-Huttenheim pipeline system to Germany, approved in August 1978, took place on 2 July 1979. The shift placed all central European military pipeline distribution systems under single managership and is expected to enhance the bulk petroleum support provided to NATO forces in that area.

Army Litigation

During the report year, the range of Army litigation activities continued to broaden dramatically. Cases involving environmental law, constitutional rights, procurement law, personal privacy, and the Freedom of Information Act were but a sampling of the challenges faced by the legal staff.

A variety of suits have risen from the Army experimentation programs in drugs and from nuclear and bacteriological testing. Two cases involving LSD experiments in the 1950's, *Nagy* v. *United States* and *Stanley* v. *CIA,* were dismissed due to the Feres doctrine, but are being appealed by the plaintiffs. Similar government motions for dismissal of two other cases, *Chaffin* v. *United States* and *Loch* v. *United States,* were denied, in part, on the grounds that the government's alleged failure to warn the plaintiffs after they left the service of alleged health hazards of the tests constituted a separate tort not barred by the Feres doctrine. In the leading case arising out of the nuclear testing program of the 1950's, *Jaffee* v. *United States,* the Supreme Court denied the plaintiff's petition for certiorari for review of his claims for damage against the United States. The damage claim against individual defendants was also dismissed in the district court but is being appealed.

The collection of evidence continued in the case of *Mabel*

Nevin v. *United States,* cited in last year's report, involving the transporting, dispersing, and testing of bacteria in San Francisco Bay in 1950. Another case of a similar nature was filed by Department of the Army civilians employed at the Rocky Mountain Arsenal, *Burchfield* v. *Gaon,* who are suing doctors in their individual capacity for failure to diagnose the long-range effects of exposure to nerve gas.

In a related case. *Thornwell* v. *United States,* the plaintiff sought $10 million from the United States and thirty past and present Defense and Army officials for permanent injury allegedly resulting from the administration of LSD to him during a 1961 intelligence investigation. The suit was stayed pending the outcome of private relief legislation before Congress.

In another development, the first Agent Orange herbicide suit, *Coffey* v. *United States,* was filed by a former soldier under the Federal Torts Claim Act. Numerous suits have also been filed against the manufacturers of the herbicide.

In *Cole* v. *Gray,* the District Court found that the actions taken by certain National Guard officials in investigating alleged misuse of funds by the plaintiff and in relieving the plaintiff of his National Guard commission were within the scope of their official immunity and not actionable. Preparations continue in the case of the *National Lawyers Guild* v. *Attorney General,* which is a constitutional tort action for declaratory judgment, injunctive relief, and damages brought against New York City and federal agencies for an alleged conspiracy to disrupt the organization and membership of the guild through various means of surveillance. In the *Berlin Democratic Club* v. *Rumsfeld* case, involving similar charges, the parties were exchanging settlement positions at the close of the year.

In the class action suits being pressed by a number of Army physicians to secure additional pay if they were on active duty or release from active duty commitments if they had not reported, three physicians were either released or excused from active duty commitments based on a breach or contract theory on the part of the Army; all three cases are being appealed by the Army. One class action suite, *Harper* v. *United States,* seeking variable incentive pay for Army Forces Health Professional Scholarship Program physicians was dismissed, but another, *Turner* v. *Secretary of Defense,* filed on behalf of Berry Plan physicians, is proceeding to trial.

Two suits that challenged the Army policy precluding enlistment of persons who have undergone sex surgery moved forward during the year. One, *Joanne Michelle Clark* v. *Harold Brown,*

was dismissed but is being appealed, while a second, *Jane Doe* v. *Secretary of the Army*, is in preparation. An action questioning the legality of disparate enlistment eligibility criteria for women, *Beaman* v. *Alexander*, became moot after Secretary Alexander had the regulations changed to apply the same criteria for both sexes as of 1 October 1979. Of six suits in progress during the period challenging the Army's standards that bar enlistment of sole parents having custody of minor children, two were decided favorably to the Army. The court ruled that the women's claims were neither justifiable nor reviewable.

The litigation on cases involving the passing over of officers for promotion by boards that had no reserve officer membership resulted in a setback for the Army. Although the district court upheld the Army claim that its Relook Boards were a valid substitute for improperly constituted promotion boards, the Court of Appeals in the District of Columbia reversed the lower court's decision. In a similar case, the Court of Claims refused to apply a harmless error test, but granted that the Relook Boards were adequate substitutes. The Army has recommended seeking certiorari in both cases.

In lawsuits concerning civilian personnel, only one new equal opportunity class action was filed—a significant drop from the previous year. That suit and three others were successfully defended, two were settled, and two are in the final settlement negotiation stage, leaving only eight pending by the end of the fiscal year. No decisions of significance occurred in foreign civilian personnel cases; however, cost of living cases continued to be litigated.

The American Federation of Government Employees (AFGE) has filed suits against the government for contracting out services in a number of instances in recent years. The Army successfully defended a challenge, made in *AFGE Local 1815* v. *Alexander*, over the award of a contract to a private firm to provide instrument training to undergraduate rotary wing pilots at Fort Rucker. The Third Circuit Court of Appeals also upheld the district court's dismissal of a suit by AFGE Local 2855, challenging the right of the Army to contract out for various stevedoring functions at Bayonne, New Jersey, and, in the process, rejected the underlying basis for the union's challenge.

In the area of medical care recoveries, the number of new claims recovery actions totaled 4,443 during the report period. About $3.9 million was collected in calendar year 1978 and, of this amount, $724,000 was collected by the U.S. Army Claims Service, Europe, from 584 claims. Several favorable decisions

from no-fault jurisdictions in New York, Colorado, and Michigan have upheld the right of the United States to recover medical care costs under various insurance laws and the medical payments clause of the injured party's insurance policy.

Other affirmative litigation suits are underway. In *United States* v. *Chamberlain Manufacturing Co. and Holcroft and Co.,* the United States initiated a suit against a subcontractor to recover for damages to government furnished property and in *United States* v. *Reeves Telcom,* to recover for negligence against a developer who built a dam in a retirement village that changed the flow of subsurface waters and undermined the government's railroad right-of-way. Both cases are expected to result in substantial recoveries for the government.

In commercial suits, litigation continued in a wide variety of cases. The plaintiff in *Gavett* v. *Alexander,* successfully challenged the law requiring the Army to sell rifles at cost only to the National Rifle Association. The Army negotiated a settlement against the subcontractor of a prime contractor for excess payments of monies in *Libby Welding Co.* v. *Electric Machinery Manufacturing Co.*— $950,000 was returned to the contract appropriation. Although the case is on appeal, the Army gained a favorable decision in *Wilkenson* v. *Engel Van Lines, Inc.* The plaintiff had challenged the effectiveness of limitations on carrier liability contained in "tariffs" entered into between the Department of Defense and industry. An adverse decision would have removed the basis for the Department of Defense rate system.

Environmental litigation also took place at home and abroad. In Berlin, the Army successfully opposed an attempt to halt the construction of a family housing area. The plaintiff sought to apply the National Environmental Policy Act's requirement for impact statements to a housing project being built in the occupied area at German expense and in compliance with German law.

At home, the state of Alabama and a group of commercial fishermen have instituted proceedings against the Army for the release of DDT, manufactured at Redstone Arsenal between 1947 and 1970, into the lakes and streams of the state. The Army's position in the *Environmental Defense Fund, Inc.* v. *Sand* case, involving the enlargement of existing navigation channels in the coastal area of Louisiana, was upheld by a district court, but is under appeal. The court maintained that the benefit/cost ratio was judicially reviewable as to the consideration of environmental factors, that a congressionally set discount rate could not be reviewed, and that the benefit/cost ratio, though reduced, was not misleading. Furthermore, the court found that the Corps of En-

gineers had not violated the Endangered Species Act, the Fish and Wildlife Coordination Act, or the Federal Water Pollution Act.

A number of suits have been initiated to halt work on portions of the huge Tennessee-Tombigbee Waterway in Alabama and Mississippi since 1974. In that year, the Fifth Circuit Court of Appeals decided that the environmental impact statement complied with the National Environmental Policy Act and that, although the court could review substantive controversial projects initiated by agencies, the action of Congress in appropriating funds for the waterway had supplanted the Corps recommendations that the waterway be built and thereby precluded such review. Nevertheless, the Environmental Defense Fund, the Louisville and Nashville Railroad, and others have filed lawsuits alleging a lack of congressional authorization for the project as planned and the inadequacy of the environmental impact statement. A hearing on the issue of authorization was held in January and the court eventually gave forth an opinion and order dismissing the charges in the complaint that the Corps lacked the authority to construct a 300-foot wide channel. That order has been appealed and trial on the other issues and the benefit/cost ratio has been deferred until the Fifth Circuit Court of Appeals rules on the matter of authorization.

Small and Disadvantaged Business Utilization

In fiscal year 1979, the Army led all federal agencies in contracting with minority small businesses under the preference provisions of Section 8(a) of the Small Business Act, with awards totaling $203.9 million. This was over $50 million above the next highest federal agency and was an increase of $60 million over fiscal year 1978. The Army has now led all federal agencies in awards under the Section 8(a) program for the past ten of the eleven years of this program. Total awards and subcontracts with minority firms reached $351.4 million in fiscal year 1979, an increase of 40 percent over the prior year and more than double the fiscal year 1977 performance. In addition, the Army's percentage of awards made by small business set asides reached 10.8 percent, the highest percentage of such awards for the ten years that this data has been reported.

13. Conclusion

During fiscal year 1979, the Army was, to a very large extent, an Army deployed. American soldiers stood side by side with men and women of the other services and allied forces, opposite a potential adversary possessing the most massive accumulation of sophisticated weaponry ever assembled during peacetime. Reinforcing units in the United States have prepositioned major critical items of equipment, supplies, and munitions in overseas areas. Completing this total Army effort to provide for the security of the country, the civilian work force operating maintenance and supply depots in the United States responded directly to requirements of overseas commanders.

In past years, the United States has relied on technological superiority to offset the numerical advantage of Warsaw Pact forces, but at the close of fiscal year 1979, there was a technological gap as well. In the coming year, new families of weapons, including the XM1 tank, the infantry and cavalry fighting vehicle, the Stinger, Roland, and Patriot missiles will be introduced to the field, and work will continue on other projects, including the advanced attack helicopter, modernization of theater nuclear forces, and improvements in chemical defense. But even under the best of circumstances, it will be the mid-1980's before the Army can expect to fully field a new generation of weapons that will be on a par with Warsaw Pact holdings. In the meantime, the Army will be even more dependent upon the ingenuity and resourcefulness of its soldiers and junior leaders.

Index

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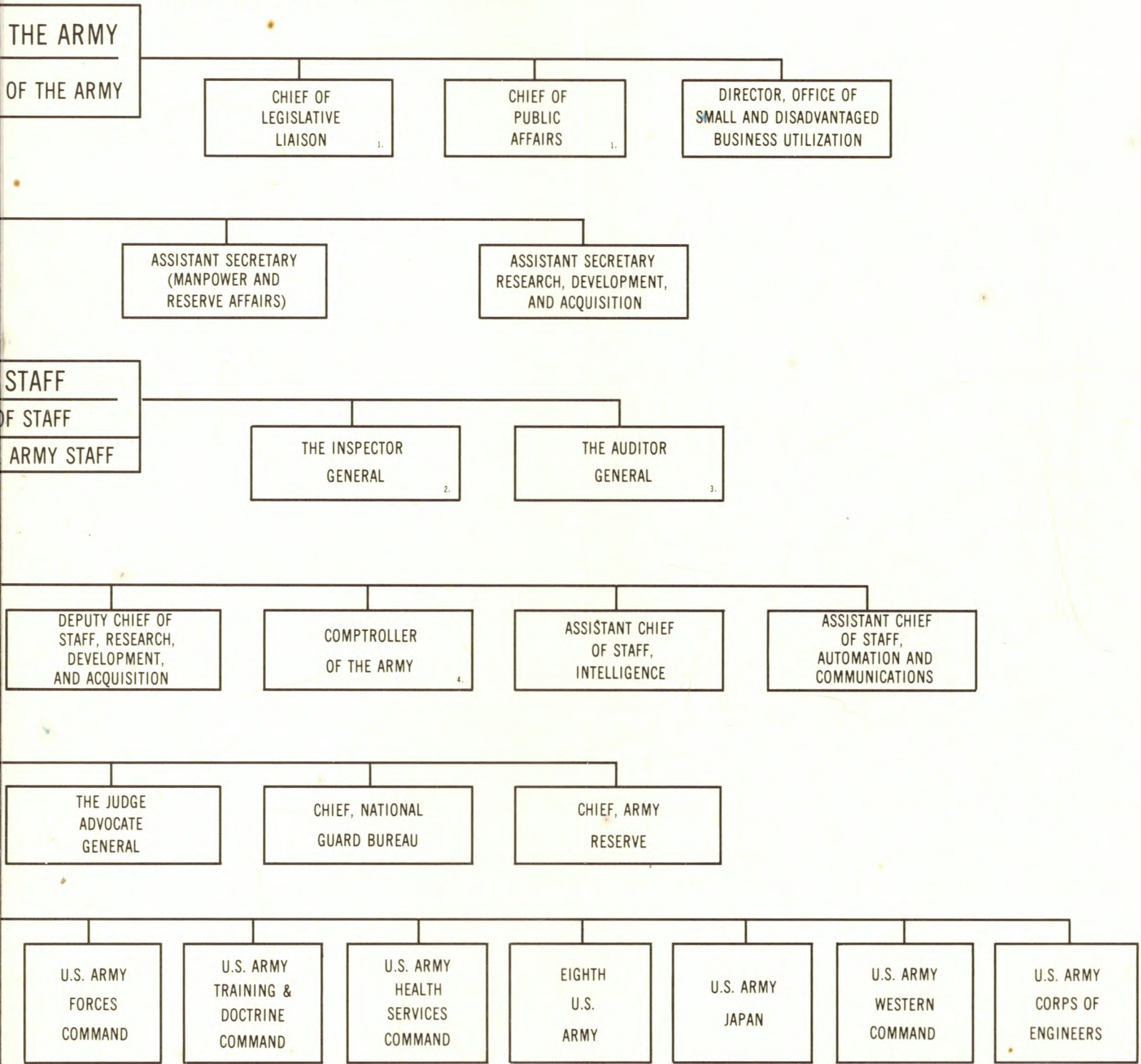
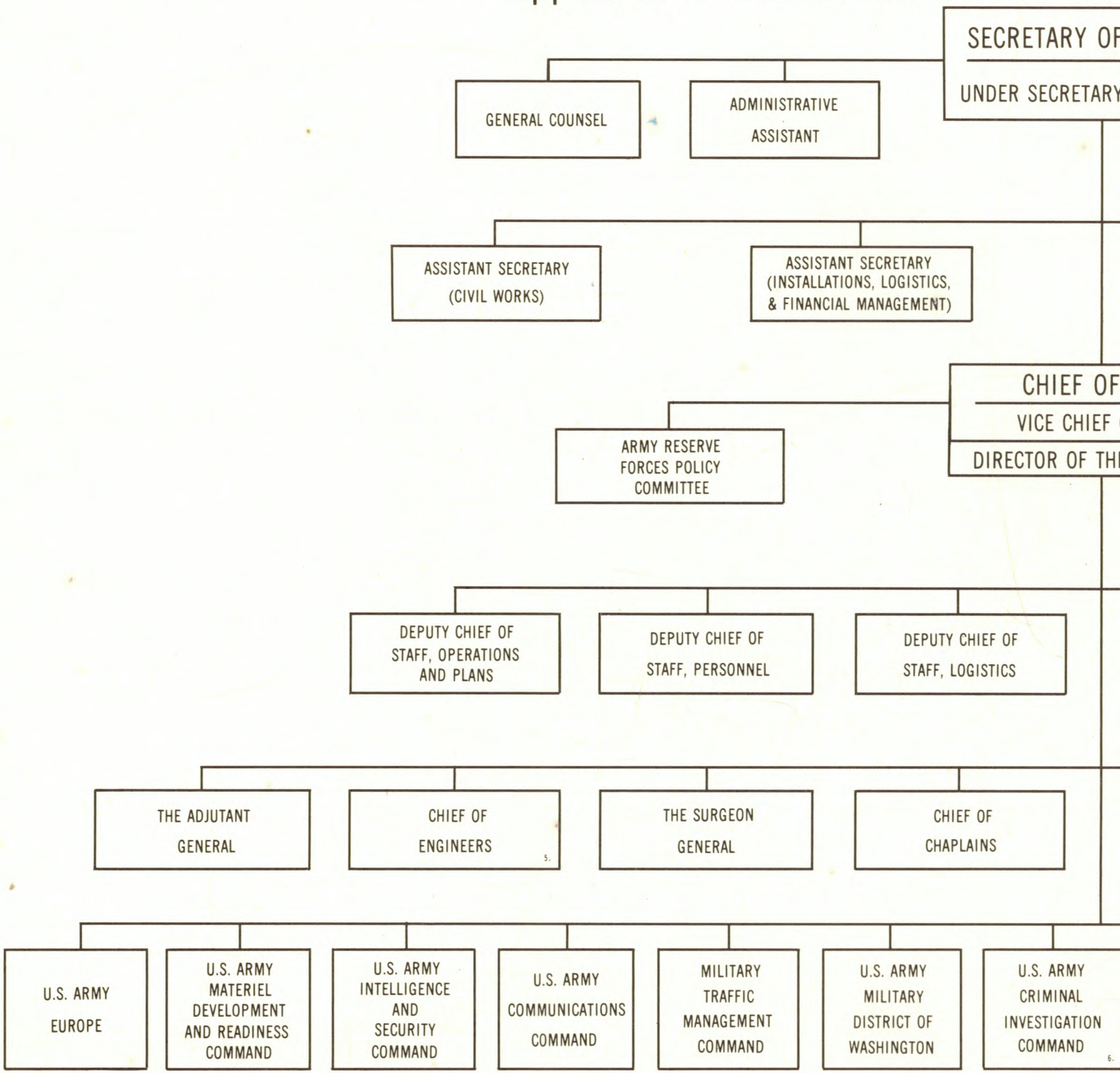


AS OF 30 SEPTEMBER 1979

Appendix A. ORGANIZATION OF TH



1. THE CHIEF OF LEGISLATIVE LIAISON AND THE CHIEF OF PUBLIC AFFAIRS REPORT DIRECTLY TO THE SECRETARY OF THE ARMY AND ARE RESPONSIVE TO THE CHIEF OF STAFF.
2. THE INSPECTOR GENERAL SERVES AS THE CONFIDENTIAL REPRESENTATIVE OF, AND REPORTS DIRECTLY TO, THE SECRETARY OF THE ARMY AND TO THE CHIEF OF STAFF UPON THE MORALE, DISCIPLINE, AND ECONOMY OF THE ARMY.
3. THE AUDITOR GENERAL REPORTS DIRECTLY TO THE CHIEF OF STAFF WITH CONCURRENT RESPONSIBILITY TO THE SECRETARY OF THE ARMY.
4. THE COMPTROLLER OF THE ARMY IS UNDER THE DIRECTION AND SUPERVISION OF, AND IS DIRECTLY RESPONSIBLE TO, THE ASSISTANT SECRETARY OF THE ARMY (IL & FM), WITH CONCURRENT RESPONSIBILITY TO THE CHIEF OF STAFF.
5. THE CHIEF OF ENGINEERS REPORTS THROUGH THE ASSISTANT SECRETARY OF THE ARMY (CIVIL WORKS), TO THE SECRETARY OF THE ARMY ON CIVIL WORKS MATTERS.
6. THE COMMANDER, U.S. ARMY CRIMINAL INVESTIGATION COMMAND, REPORTS DIRECTLY AND CONCURRENTLY TO THE SECRETARY OF THE ARMY AND THE CHIEF OF STAFF ON CRIMINAL INVESTIGATION MATTERS.