Department of the Army Historical Summary

Fiscal Year 1981

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

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CENTER OF MILITARY HISTORY
UNITED STATES ARMY
WASHINGTON, D.C., 1988

The Library of Congress has cataloged
this serial publication as follows:

Library of Congress Catalog Card 75-647561

ISSN 0092–7880

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DEPARTMENT OF THE ARMY HISTORICAL SUMMARY

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1. Introduction

"The Army at Yorktown—Spirit of Victory" was a proud theme for fiscal year 1981. Numerous commemorative activities were planned and conducted as both the Army and the nation prepared to celebrate the 200th anniversary of the allied victory over the British at Yorktown; the celebration was scheduled for 16–18 October 1981. Reaffirmation of a proud past was also symbolized on 10 September 1981 when President Ronald Reagan, Secretary of Defense Caspar W. Weinberger, and Mrs. Douglas MacArthur dedicated a corridor in the Pentagon to the memory of General of the Army Douglas MacArthur, the last of the Army's five-star officers to be so honored.

While honoring past victories and heroes, the Army pushed forward in preparing to defend, if necessary, the liberties and freedoms for which so many had sacrificed so much. In this regard, 1981 was not a year of revolutionary change, but rather a year marked by successes of a more conventional nature. Priority of effort was directed toward strengthening the existing force rather than undertaking bold new initiatives. Steady improvement was made in recruiting, equipping, and training, familiar but vital areas which constitute the basic measure of force readiness.

But while the Army's achievements were more substantial than spectacular during this fiscal year, by the close of the period certain trends were evident which indicated that an important turning point had been reached for the Army and for the nation.

There was a palpable shift in attitudes away from the predominantly negative feelings toward the military which had characterized public opinion since the end of the Vietnam era. There were several components of this change as well as other interrelated factors and events which had been instrumental in causing and reinforcing it.

At the beginning of the fiscal year, a major concern of the American people was the fact that forty-four Americans were still being held as hostages in Iran, and no immediate resolution of the crisis was in sight. The outbreak of hostilities between Iran and Iraq in September 1981 served to underscore further the vulnerability of America's vital interests in that region, as did the continued military presence of the Soviet Union in Afghanistan. In addition, the emergence of a free labor movement in Poland

and the consequent threats of Soviet intervention heightened political and military turbulence in Europe even more. Tensions were especially acute during March and April of 1981, when Soviet forces, together with Czech and East German troops, conducted extensive maneuvers near the Polish frontier.

Within weeks of taking office in January 1981, the Reagan administration requested both a supplemental appropriation for the 1981 defense budget and a sharply increased appropriation for fiscal year 1982. Although public attention was often focused on the debate concerning two proposed strategic weapons systems—the MX missile and the B–1 bomber—the Army's manpower and materiel situation was the subject of considerable discussion, and much concern was expressed over the adequacy of current draft registration procedures.

On another level, there appeared to be an emerging consensus on the nature of the major threat to the nation's security. While the public was perhaps most aware of the sheer magnitude of the Soviet military buildup, a common perception of the Soviets had formed among influential members of the academic and journalistic communities as well as within the nation's civilian and military leadership. The Soviet Union seemed to exhibit some classic symptoms of decline: a nation with an aging, inflexible leadership facing a mounting series of economic and social problems, together with many signs of ideological stagnation within the country; and, externally, increasingly uncertain control over its East European satellites. Hence the widely expressed opinion that—following the usual historic pattern of a troubled dictatorship—the Soviet leadership might be more prone to use military force outside its borders to counter internal troubles.

There were also more positive events that helped to shape a new climate of opinion. The release of the American hostages in January 1981 resulted in a display of national emotion and unity and an outpouring of patriotism that older Americans compared to the days of World War II.

The nation once again asserted its technological prowess and its leadership in space exploration in a manner also reminiscent of an earlier period—the era of the moon landings of the 1960s. In November 1980, the first *Voyager* unmanned spacecraft flew past the planet Saturn, sending back a stunning array of pictures and scientific measurements. Then, in April, the space shuttle *Columbia* made its historic and successful first flight, opening a new era in the practical use of space. By year's end, *Columbia* was being prepared for a second flight. Finally, in September, *Voyager 2* made its flight past Saturn, coming even closer to the great

ringed planet than its predecessor and transmitting even more detailed and spectacular images.

These and other events during the year seemed not only to restore a sense of unity and purpose to the nation, but also to foster a return to more traditional values in American life, including a feeling of national pride. More than one social commentator expressed the opinion that the national spirit had at last recovered from the traumatic effects of the Vietnam experience.

The national mood was reflected within the Army in a number of ways, not the least of which was a renewed sense of confidence in the future. There were encouraging signs that at least some of the chronic problems and worrisome deficiencies of recent years were finally beginning to yield to persistent and frequently imaginative efforts at solution. Improvement was especially evident in the area of materiel, where the largest modernization program since World War II was gaining visible momentum. The first of the long-awaited M1 Abrams main battle tanks were delivered for field tests at Fort Hood, Texas, and a modernized version of the M60 tank continued to be fielded in quantity. The M60A3, although regarded as a transitional system, remained a formidable fighting vehicle with a stabilized main gun, which allowed firing on the move, advanced night vision, and gun-ranging and control devices. Also entering service was the UH–60A Black Hawk helicopter, which will eventually replace the familiar UH–1 Huey as the Army's principal utility and assault helicopter. Deployment of an improved TOW (tube-launched, optically tracked, wire-guided) antitank missile to Europe began this year, as did delivery of the Stinger man-portable antiaircraft missile, which will replace Redeye. Correction of one of the most critical and long-standing deficiencies in the Army's weaponry was in sight with the production of three new air defense systems: the Patriot system, successor to the aging Nike Hercules missiles, which went into production in October 1980; the division air defense gun (DIVAD), a twin 40-mm. cannon, which will replace the self-propelled Vulcan; and the Roland missile system. Production decisions were at hand for an advanced attack helicopter and a formidable self-propelled multiple launch rocket system, a weapon concept familiar to the Soviets since World War II but new to U.S. forces.

Important progress was also made in correcting deficiencies in the organization of combat forces. These corrections included restructuring the 101st Airborne Division (Air Assault) to remedy problems encountered during the REFORGER 76 exercise; acti-

vating new chemical defense units and combat electronic warfare intelligence (CEWI) units to counter the growing chemical warfare threat posed by Soviet bloc forces and to prepare for the modern integrated battlefield environment of the future; and completing plans to reorganize I Corps to form the last of three corps to which Army CONUS divisions would be assigned.

In the area of training, the formal opening of the National Training Center at Fort Irwin, California, on 1 July 1981 was a milestone. This facility provides both the space and the technical facilities to train and evaluate battalion-sized units in a simulated battlefield environment of unprecedented realism, including joint training in air-ground operations with U.S. Air Force units.

Perhaps the most gratifying progress was made in the personnel and manpower areas, where the Army had long struggled with some of its most intractable problems. A combination of financial incentives, quality-of-life initiatives, and aggressive and imaginative efforts by commanders and service members at all levels has resulted in the fulfillment of recruiting goals; the recruitment of the highest percentage of high school graduates in the history of the Army, reversing a widely noted unfavorable trend; and an improved retention situation, with the highest reenlistment rates of recent years. Both the new administration and the Congress manifested an increased awareness and concern about Army manpower issues and the need for supportive measures for improvement.

The favorable developments that have occurred during the past year do not justify complacency, however, for the Army still faces serious and stubborn problems inherited from a decade of neglect. Moreover, the progress that has been achieved will in itself create new problems and challenges. Over the next five years, some five hundred new weapon and materiel systems will be introduced into the Army inventory. Many of these will have a major impact on organizational structures, training, and logistics systems. The pace of modernization will be so rapid that, as Army Chief of Staff Edward C. Meyer observed, "change itself will be the principal challenge confronting the Army in the years immediately ahead." Yet, despite the challenges, or perhaps because of them, there was a new, positive mood at the close of fiscal year 1981, a growing feeling that the Army's problems were no longer something that could only be managed, but could be solved.

2. Operational Forces

Making appropriate and timely changes within the Army's operational forces to adapt their capabilities to new situations was a prominent guidepost this fiscal year. As summed up by the Chief of Staff, General Meyer, at the end of the year, the cumulative effect sought through such changes was the creation of forces flexible enough to respond to crises worldwide; forces capable of sustained operations under the most severe conditions of the integrated battlefield, which would involve the orchestrated application of chemical, nuclear, electronic, and modern conventional weapons; forces equally capable in all lesser conflicts; and forces developed wisely to make the best use of the nation's resources. Toward this end, several important changes were made or set in motion during the year; future changes designed to produce the cumulative effect described by the Chief of Staff were proposed in the Army's Program Objective Memorandum for fiscal years 1983–1987, submitted to the Secretary of Defense in June.

Organization and Deployment

To reduce the number of units reporting directly to the U.S. Army Forces Command (FORSCOM), the Army last year had begun grouping active Army divisions stationed in the United States under three corps headquarters. Two corps, the III Corps at Fort Hood, Texas, and the XVIII Airborne Corps at Fort Bragg, North Carolina, had received divisions at that time. Shortages of personnel and funds had forced the Army to delay establishing the third. In May of this year, the Department of the Army directed FORSCOM to establish the additional headquarters by reorganizing the I Corps, which in March 1980 had been reduced to zero strength after many years of operations in Korea. The corps was to be reorganized at Fort Lewis, Washington, on 1 October 1981 under the command of Lt. Gen. John N. Brandenburg, with its headquarters company to be furnished by the active Army and its other headquarters elements by the reserve components. The corps command was to include Fort Lewis, the 9th Infantry Division stationed at Fort Lewis, and other units as determined by FORSCOM after the corps was fully operational. Once established, the I Corps was to conduct contingency plan-

ning in support of the Eighth Army in Korea and the U.S. Army Western Command (WESTCOM) in Hawaii. It was also to serve as a late-deploying corps for NATO.

Among internal changes affecting active Army divisions was a complete restructuring of the 101st Airborne Division (Air Assault). During REFORGER 76, the eighth annual strategic mobility exercise to test U.S. and NATO plans and procedures, this division had introduced the airmobile concept to the training series when it deployed to Europe, transporting its personnel by air and its equipment by sea. Deficiencies noted in the airborne unit during that exercise prompted an extensive study and developmental process by which the U.S. Army Training and Doctrine Command (TRADOC) produced a new table of organization and equipment (J-Series) for the division. The new table was designed to improve and modernize the division's forward support, communications, transportation, artillery, and antiarmor and air defense capabilities and thus dramatically increase its fighting capability and sustainability. But FORSCOM became concerned that weight and size factors inherent in the table would adversely affect the division's ability to deploy and recommended that the table be tailored to eliminate the potential problem. The Department of the Army approved the recommended adjustments, and the division was formally reorganized under the modified table in September.

In connection with the High Technology Test Bed project involving the 9th Infantry Division at Fort Lewis, the Chief of Staff approved the fielding of an air cavalry attack brigade with the division for testing and concept evaluation. FORSCOM activated the brigade and two attack helicopter battalions in June. The evaluation of the brigade's performance will be used in determining whether the air cavalry concept could be applied to other divisions.

In the continuing effort to upgrade the armament and firepower of divisions, the Army made changes in the artillery of the 2d Infantry Division in Korea. Two of the division's direct support battalions exchanged their 105-mm. towed howitzers for 155-mm. towed howitzers and modernized ammunition. Its general support battalion, which had been a composite unit using both 155-mm. towed howitzers and 8-inch self-propelled howitzers, became a standard divisional 8-inch self-propelled battalion. The division's remaining direct support battalion will receive 155-mm. towed howitzers next year, at which time the division artillery's weapons will total fifty-four 155-mm. howitzers and twelve 8-inch howitzers. In another upgrading step, the Army

activated a combat electronic warfare intelligence (CEWI) battalion for the 2d Division in September.

Near the end of this fiscal year, President Reagan imposed a $13-billion reduction on planned military spending over the next three years. As part of the effort by the services to accommodate the cut, the Army would reduce the 7th Infantry Division at Fort Ord, California, to cadre status, or by about 8,000 spaces, in fiscal year 1983. This cut in spaces would, in effect, protect Army equipment modernization programs against reductions. According to plans, the division would be restored to its original strength in fiscal years 1986 and 1987.

Last year, the multiservice Rapid Deployment Force (RDF) was established at MacDill Air Force Base, Florida, as a joint headquarters under a Marine Corps commander, who was subordinate to the U.S. Readiness Command and its Army commander. Under the supervision of the Army commander, the RDF would prepare to respond to contingencies threatening American interests in Southwest Asia. Designated units of all four services could be placed under RDF command if needed. Considerable controversy over whether a force so constituted was workable led to a decision by the Secretary of Defense this year to make the RDF a separate unified command and to establish it in or near the Persian Gulf area. He originally scheduled the change to take place over the next three to five years, but in June he shortened the transition period to eighteen months.

In presenting his vision of the Army of the 1980s last year, the Chief of Staff, General Meyer, stressed that "developing cohesive units over time must be the central focus" of the Army's manpower efforts. Toward that end, the Army took steps this year to reduce personnel turbulence and its deleterious effect on unit stability by moving toward a unit replacement system instead of the existing individual replacement system. The change was essential, the Chief of Staff emphasized, if the Army was to achieve its readiness goals.

To test the unit system, the Army began forming special companies under Project COHORT (cohesion, operational readiness, and training). As planned, individuals would be recruited specifically for each of these companies and would train and serve together as a unit for the duration of their three-year enlistments; each company would retain the same commissioned and noncommissioned officers throughout the three years. After at least eighteen months in the United States, the COHORT companies would move overseas as replacement units and there serve the remainder of the period. By the close of this fiscal year, the Army

had formed twenty COHORT companies, all of which were still in training. Their movement overseas was scheduled to begin in fiscal year 1983.

Taking a much broader approach to improving unit cohesion and stability as the COHORT project got under way, the Chief of Staff directed a special task force to produce a regimental system under which infantry, armor, field artillery, air defense artillery, engineer, and aviation battalions would be assigned to regiments at permanent home bases in the United States and thereafter would serve alternating tours of duty between the home bases and overseas stations. Such a system would resemble the British regimental system and, in effect, would be an extension of the Army's Combat Arms Regimental System (CARS) introduced in 1957. The target date set for putting the system into operation was 1 October 1982.

Having some bearing on the prospective regimental rotation and replacement system was a new organizational standardization policy for similar MTOE (modified table of organization and equipment) units placed in effect in February. Organizational standardization, which had previously been handled independently within each major command, must now be done on an Armywide basis and must conform to precise levels of the appropriate base TOEs. Any modifications must have the approval of Headquarters, Department of the Army. The advantages of the new policy include the establishment of a single readiness standard for similar units, improved management of the procurement and distribution of resources, and the proper alignment of the units for rotation and replacement under the regimental system. Ground combat units were the first to be standardized under the new policy. The entire process should be completed by fiscal year 1985.

Affected by changes as a whole has been the Military Police Corps, whose structure during the past four years has been reduced by 1,995 spaces. Because of this substantial loss, the Army has had to make changes in organizational and operational concepts in order to maintain an effective military police force emphasizing the combat support role. With further space reductions scheduled for the corps during the next five fiscal years, the Army has programmed structural changes that will increase the number of combat support forces through the reorganization of specialized combat service support and general support units.

Europe and the Middle East

The significant challenge to U.S. security posed by the USSR has been sustained in Europe by a decade of enlargement, reorganization, and vigorous modernization among Warsaw Pact forces. They have emerged from this decade of change with a more balanced structure for conventional warfare and with both conventional and nuclear firepower greatly increased.

Among NATO forces facing the Warsaw Pact contingents at the end of this fiscal year were 208,948 members of U.S. Army, Europe (USAREUR). Under the command of General Frederick J. Kroesen, these troops were assigned to two corps—each composed of two divisions and one armored cavalry regiment—to four separate brigades, and to a complement of combat support and combat service support organizations. As evaluated by General Kroesen before the Senate Subcommittee on Preparedness of the Committee on Armed Services in February, these units satisfactorily met readiness standards. They were adequately manned at current authorized levels; were well equipped, although not with all the products of modern technology; and were well trained. But he pointed out an important limitation. While his command could "initiate effective and successful combat operations to defend the NATO sectors assigned" to it, it was a "high risk force" not manned at wartime strength, lacking reserves and without sufficient support forces to guarantee its staying power. Beyond that, and as a matter of greatest concern, he said that "the inadequacies of troop housing, the shortage of family housing, the makeshift, unsatisfactory, unhealthy working conditions for large segments of the command, the exorbitant backlog of maintenance and repair projects all contribute to a cancerous drain on the morale and commitment of the force as a whole."

Reflecting General Kroesen's assessment, the Army continued to increase USAREUR manning levels in logistical elements this year. It allotted 1,500 more spaces for combat service support units and programmed the activation of fifty-five additional logistical units. The filling of pre-positioned materiel configured to unit sets (POMCUS) reached a new high with the addition of a fourth division set in the Northern Army Group. POMCUS eventually will consist of seven major packages: enough sets to eliminate current shortages in the combat support and combat service support required by forward deployed forces and six division sets.

In 1978 USAREUR developed the concept of "US Army, Europe—An Army Deployed (UAD)," the objective of which is to have the command become a field army deployed at the highest possible level of combat readiness. The main features of the concept include relieving USAREUR of peacetime base support functions, placing troops in rehabilitated and modernized facilities, and acquiring additional facilities as needed, all to be achieved primarily through German host nation support. But while the Germans this year indicated a willingness to provide wartime host nation support, they showed little inclination to favor the features of UAD.

REFORGER 81, the thirteenth in the series of annual strategic mobility exercises, took place in September as part of the AUTUMN FORCE series of NATO multinational readiness exercises. Designed in part to provide experience in deploying reinforcements to Europe, the REFORGER exercise this year involved the movement of approximately 15,000 Army troops from the United States. Deployed units included elements of the 4th Infantry Division (Mechanized), a brigade of the 1st Infantry Division (Mechanized), a brigade of the 7th Infantry Division, a battalion of the 9th Infantry Division, a battalion of the 38th Infantry Division (Indiana ARNG), a company of the 82d Airborne Division, six tactical operations center groups, and about thirty combat support and combat service support units of both the active Army and the reserve components. The bulk of these units deployed personnel only—these by air—and received POMCUS equipment in Germany. The remainder moved personnel by air and equipment by air and sea. On arriving in Europe, the units moved through four aerial ports of debarkation and two seaports of debarkation to exercise positions previously determined in connection with wartime plans.

Over 50,000 USAREUR troops participated with the forces deployed from the United States in three joint and combined exercises. Exercise CERTAIN ENCOUNTER was a field training exercise in the central and eastern parts of the Federal Republic of Germany involving more than 70,000 NATO personnel; Exercise CARRIAGE CLOCK was a command post exercise involving about 8,000 NATO personnel; and Exercise SCHARFE KLINGE was a field training exercise in the Black Forest involving over 20,000 NATO personnel. Altogether the forces of NATO nations participated in twenty-eight exercises.

As the first of the NATO exercises was getting under way, terrorists attempted on 15 September to assassinate General Kroesen while he, accompanied by Mrs. Kroesen, was en route

by automobile to his headquarters in Heidelberg. The general and Mrs. Kroesen suffered minor cuts when an antitank grenade, fired from a nearby wooded hillside, exploded in the trunk of the automobile and shattered the rear window. The assassination attempt was the tenth attack made on American personnel and installations in West Germany in 1981. Suspected of making the attacks was the Red Army Faction, a left-wing terrorist group. It was also possible that the acts of terrorism involved a militant peace movement which had been spurred by reports of NATO plans to deploy a new generation of American-made nuclear weapons in western Europe.

In November, forces designated for the Rapid Deployment Force participated in a training exercise in Egypt. Called BRIGHT STAR, the exercise involved some 1,400 troops, including more than 900 men of the 101st Airborne Division (Air Assault), a New Mexico Air National Guard A–7 attack aircraft unit, and members of the RDF headquarters. The RDF commander, Lt. Col. Paul X. Kelly of the U.S. Marine Corps, was in overall charge of the exercise. Deploying from Fort Campbell, Kentucky, the home station of the 101st Airborne Division, were the 1st Battalion, 502d Infantry; part of one troop of the 17th Cavalry and of one company of the 101st Aviation Battalion; and a mix of support elements. Also deployed from Fort Campbell were UH–60A Black Hawks, the Army's newest troop transport helicopter; AH–1S TOW Cobras; and OH–58 Kiowa scout helicopters. Forty-five flights by C–5A and C–141 transports were needed to move the troops and equipment to Egypt. Egyptian troops were integrated into American units for the exercise, which included air assaults, day and night attacks, and defensive operations.

At the Army's request, the Office of the Joint Chiefs of Staff began to develop plans for acquisition of basing rights and for related construction in Southwest Asia for the years 1985 through 1987. Congress, in the meantime, allocated funds to support military construction planning in fiscal year 1982 for an RDF base at Ras Banas, on the Red Sea coast of lower Egypt. Such planning will further involve the Corps of Engineers in Middle East projects. In support of the RDF this year, the engineers established an area office in Oman. At the beginning of next fiscal year, they will establish an area office in Egypt to support the RDF base at Ras Banas, if construction funds are appropriated.

In another step taken this year to support Army, Air Force, and Marine elements of the RDF, equipment and supplies were loaded on ships for deployment to the Indian Ocean. These items

included ammunition, wheeled and tracked vehicles, artillery, food, and medical supplies. Some of the vessels were of the lighter-aboard-ship (LASH) type, carrying loaded barges in their compartments. These barges could be pulled ashore by tugboats, which were also carried aboard the LASH ships.

The Egypt-Israel Peace Treaty (Camp David accords) signed in March 1979 called for a United Nations peacekeeping force to be established as a buffer in the eastern regions of the Sinai Peninsula during the final phase of the Israeli withdrawal from the peninsula in April 1982. But the U.N. Security Council, anticipating a Soviet veto of a United Nations force, indicated in May of this year that it could not provide the force. This situation led to trilateral negotiations among Egypt, Israel, and the United States, which resulted in a decision to establish a multinational force and observers (MFO) for the mission. As programmed in July, the U.S. contribution to the force will be 1,164 Army personnel constituting an infantry battalion task force and a logistical support element for the entire MFO. The United States would also provide thirty-six military personnel for duty on the MFO staff. By the end of this fiscal year, other nations agreeing to provide forces included Fiji and Colombia, each of which offered a 500-man light infantry battalion, and Uruguay, which consented to contribute a 70-member transportation company. Stemming from provisions of the earlier Camp David accords, the Army Corps of Engineers meanwhile established the Sinai Construction Management Office in preparation for building facilities for the peacekeeping force on the peninsula.

A highlight of the year for the entire nation was the release in January of the Americans held against their will in Iran since November 1979. In anticipation of the release of the hostages, each military service had worked closely with the others and with the Department of State to develop a reception plan by which its returning members could be given immediate medical care and administrative support and could be rapidly reunited with their families. Under the prepared plans, the U.S. Air Force Hospital located in Wiesbaden, Germany, handled the medical processing. From there, the returning Americans were flown to Stewart Air Field at Newburgh, New York, and then taken to the U.S. Military Academy at West Point for a private reunion with immediate family members. Following that occasion, they were flown to Andrews Air Force Base, Maryland, for an official welcoming ceremony. Military members of the group were then released to their respective services and, after further processing, were placed on leave.

The Pacific and Far East

In assessing the military situation in Korea near the beginning of this fiscal year, General John A. Wickham, Jr.—who since 1979 has been the Commander in Chief, United Nations Command, ROK–U.S. Combined Forces Command; the Commander of U.S. Forces, Korea; and the Commander of the Eighth Army—stated his belief that "the forces we have in place here, plus those that are planned for reinforcement, are capable of defeating any North Korean attack." He acknowledged the substantial capabilities of the North Korean armed forces: they had three times the number of tanks possessed by the combined ROK–U.S. forces; twice as much artillery, most of which had longer range; twice the number of armored personnel carriers; twice as many aircraft; and four times the number of ships; and they had submarines, which the ROK Navy did not. Further, the North Koreans were continuing to build their armed forces in terms of quality and somewhat in size. He nevertheless estimated that his combined forces, augmented as planned, could win the battle, and without resorting to tactical nuclear weapons. His forces, too, he pointed out, were being steadily improved.

For six years, ROK and U.S. forces have participated in combined training under the TEAM SPIRIT series of exercises. This year's exercise was the most comprehensive yet staged. It involved more than 160,000 ROK (Republic of Korea) and U.S. troops, including nearly 30,000 U.S. participants deployed from outside Korea. Five divisions maneuvered against each other as units practiced defense against chemical warfare, sophisticated electronic jamming, live-fire air-to-ground and air-to-air maneuvers, and amphibious operations. As summed up by General Wickham, "TEAM SPIRIT is an essential training tool to improve our operations, logistics, interoperability of forces and interservice coordination. It helps assure that our forces would not have to respond to the real experience of combat on an *ad hoc* basis."

At the end of the year, the combined forces in Korea remained at a high state of readiness. The Republic of Korea was completing one program to raise the quality of its armed forces and had established a five-year plan for making further improvements. As the fiscal year ended, the Eighth Army numbered 25,808 members, about 15,000 of whom were in the 2d Infantry Division. Also in the division were some 2,100 South Korean troops, who had been provided under the Korean Augmentation to the U.S. Army (KATUSA) program, which dated from the early days of the Korean War. Besides the upgrading of artillery

and the organization of the CEWI battalion in the division during the year, it was now scheduled to exchange its gunship helicopters for the newer S-model Cobras. The division was somewhat light in strength because of the loss of two battalions when a withdrawal of the entire division was begun during President Jimmy Carter's administration. The withdrawal was subsequently canceled, and President Reagan has announced that the U.S. forces in Korea would be increased over the next two or three years.

With the objectives of improving plans for operations throughout the Pacific and increasing the capability of the Army to go to war in that region, the Department of the Army Pacific Operations-Logistics Conference convenes periodically, usually annually, to consider a wide range of operational and logistics issues. Courses of action are decided on the spot where possible, and specific tasks are assigned to commands for longer-term actions. This fiscal year, the Commander, U.S. Army Western Command, hosted the conference at Fort Shafter, Hawaii. It was cochaired by officials from the Office of the Deputy Chief of Staff for Operations and Plans and the Office of the Deputy Chief of Staff for Logistics and was attended by representatives of all major Army commands in the Pacific, U.S. Army Materiel Development and Readiness Command, and U.S. Army Forces Command.

The Army expanded its contacts with the Japan Ground Self-Defense Force (JGSDF) during the year. At the ninth in a series of logistics talks, Army representatives gave their Japanese counterparts the latest information regarding the Army's wartime standard support systems for foreign army forces and briefed them on rationalization, standardization, and interoperability. The Japanese valued these talks as a means of maintaining the prestige of the JGSDF vis-a-vis the U.S. Army and as a source of information useful in improving their defense force. In other contacts, mainly through U.S. Army, Japan, but also involving WESTCOM and FORSCOM, JGSDF members participated on a bilateral basis for the first time in an Army command post exercise, GOPHER BROKE X, for the defense of Japan. An Army – JGSDF Military History Conference held in July was another first. The principal participants were members of the Army's Command and General Staff College Combat Studies Institute and their counterparts from the faculty of the JGSDF Staff College. Covered at the conference were the experiences of the Japanese Army in fighting Soviet forces during the Nomonhan border incident in 1939 and the Manchurian campaign in 1945. In addition, the conferees developed the basis for future dialogue

between the Army and the JGSDF on ground tactical issues of current importance in Northeast Asia.

For the first time in more than thirty years, an official U.S. defense delegation composed exclusively of military personnel, half of whom were Army members, traveled to China in May to visit schools and units of the Chinese People's Liberation Army (PLA). The goals of the visit were to learn about the Chinese military education and training system; to exchange views on strategy, doctrine, and training; and to assess the potential value of future contacts. Visited schools included entry-level Army, Air Force, and Navy schools; an Air Force technical college; a military medical college; mid-level Army schools; and the PLA military academy. Units on the itinerary included an infantry division and elements of the East Sea Fleet. The visit was of particular significance because it provided U.S. military personnel with extensive access to leading members of the PLA. If sustained, such contacts may contribute to a better understanding of the requirements of a modern battlefield, especially as these relate to the Soviet threat.

Western Hemisphere

The U.S. Army Forces Command, headquartered at Fort McPherson, Georgia, and commanded by General Robert M. Shoemaker, remained the largest of the Army's major commands. Its primary mission was to organize, equip, train, and maintain the combat readiness of assigned units and soldiers in the event of their mobilization and commitment. Included in its mission was the supervision of the training and readiness of the Army National Guard. In addition, General Shoemaker served as the component commander of all Army forces designated for deployment to the U.S. Readiness Command and, for planning purposes, as commander of any Army forces assigned to the U.S. Atlantic Command.

Assigned to FORSCOM were forces of the active Army and U.S. Army Reserve located in the continental United States (CONUS), Puerto Rico, Alaska, the Virgin Islands, and Panama. The year-end authorized strength of its active Army forces was 278,200; that of its U.S. Army Reserve forces was 256,815; and the Army National Guard forces supervised by FORSCOM numbered 424,400. The active Army forces included 3 armies, 3 corps, 10 divisions, 3 separate infantry brigades, 1 armored brigade, 1 air combat cavalry brigade, 1 armored cavalry regiment, and numerous separate combat, combat support, and combat

service support units. The U.S. Army Reserve units included 19 U.S. Army Reserve commands, 28 general officer commands, 12 training divisions, 3 separate infantry brigades, and 2 maneuver area commands. The National Guard forces under supervision constituted 8 divisions, 22 separate brigades, 4 armored cavalry regiments, and 16 other major units.

Last year, the Army rated six of FORSCOM's ten active Army divisions as not being combat ready. As a result of advances in manning, equipping, and training, all ten divisions at the end of this year were pronounced "capable of deploying or executing their operational contingency missions." So, too, were FORSCOM's five separate brigades and its armored cavalry regiment.

FORSCOM's three armies—the First U.S. Army at Fort George G. Meade, Maryland; the Fifth U.S. Army at Fort Sam Houston, Texas; and the Sixth U.S. Army at the Presidio of San Francisco, California—commanded and trained assigned U.S. Army Reserve units and supervised the training and readiness of the Army National Guard, which it did through nine subordinate U.S. Army readiness and mobilization regions, each of which was commanded by an active Army general officer. These regions were further subdivided into twenty-eight readiness groups, each of which provided assistance to assigned reserve component units. This year, special programs to improve readiness in the reserve components were reinforced and new ones initiated with the aim of overcoming lagging strength levels among reserve component units. These actions along with an improved reserve component recruiting climate, brought about by Selective Service registration requirements and worsening economic conditions, produced a substantial increase in reserve component strength. This development was especially noteworthy considering that in the event of total mobilization, the reserve components were scheduled to provide some 53 percent of the Army's combat battalions, 65 percent of its deploying forces, and 60 percent of its logistical and combat service support units.

In addition to their normal duties, the commanders of the First U.S. Army and Fifth U.S. Army functioned in a special chain of command reaching from FORSCOM headquarters to the refugee processing centers established last year to handle the massive influx of Cubans that had begun in April 1980. At the end of last year, about 10,000 refugees remained at the center at Fort Chaffee, Arkansas, which had become the single facility for handling them. This year, the Cuban population at Fort Chaffee declined to around 500, but the illegal alien problem was exacerbated by the arrival of Haitians in southern Florida. Called

upon to provide facilities for detaining the Haitians, the Army made available to the Immigration and Naturalization Service a former air defense site, Krome North, in southern Florida and Fort Allen in Puerto Rico.

Chemical and Nuclear Matters

Concern over the disparity between U.S. and Soviet chemical warfare capabilities, with the Soviet Union having a decided edge, has led the Army to make concerted efforts to upgrade both its defensive and offensive capacities. As set by the Chief of Staff, "the Army's objective with respect to chemical warfare is to achieve both a credible retaliatory capability and a defensive posture which would deter enemy use of chemicals against U.S. forces and our allies."

In raising the level of chemical defense, the Army has for obvious reasons given priority to equipping its forward combat forces and those forces scheduled to be deployed early from the United States in the event of a crisis. Chemical defense units activated this year included three NBC (nuclear, biological, and chemical) companies to support the 4th Infantry Division (Mechanized), the 9th Infantry Division, and the 24th Infantry Division (Mechanized). These additions raised the number of NBC companies in the Army to twelve. Other units that were activated included a chemical (smoke) battalion, the first such battalion to be in the active force since 1973, and four smoke companies. Small NBC decontamination and reconnaissance teams were also activated to support separate brigades and armored cavalry regiments. In continuation of a program begun last year to establish NBC defense expertise in all types of units, a chemical officer (lieutenant) was added this year to the TOE of each field artillery battalion, as had already been done for infantry and armor battalions. The total number of chemical specialists authorized in the Army grew from 3,600 last year to 5,600 this year and is programmed to reach 9,800 by fiscal year 1987. The U.S. Army Chemical School at Fort McClellan, Alabama, increased its enrollment this year to more than 3,000 students.

Besides such chemical defense improvements in force structure and training, the Army, as pointed out by the Chief of Staff, needed to acquire "adequate war reserve stocks of protective clothing and equipment and develop new items which will reduce the operational degradation associated with protective ensembles." Required items included more efficient decontamination devices, more sensitive alarms, more effective antidotes, and

cooler and less cumbersome protective clothing. Fielded this year was an improved personal decontamination kit, the M258A1, which was simple to use and also provided the means for facial decontamination. About 100,000 of the new kits were issued to the forces in Europe and to early deploying forces in the United States. An in-process review of a new chemical agent alarm, the M8A1, that was more sensitive resulted in a recommendation that it be accepted as standard equipment. From another review came a recommendation, which the Army staff supported, that new chemical-agent–resistant coatings be adopted as a topcoat for mobile tactical equipment and other selected materiel. Plans call for the application of the coatings first to developmental items and next to fielded equipment.

Last year, the Surgeon General of the Army discontinued the use of TAB—a mixture of oxime, TMB4 atropine, and benactyzine—as the chemical nerve agent antidote in favor of a combination of atropine and oxime. TAB was dropped because it did not contain enough atropine and oxime and because it was itself incapacitating. This year, the TAB antidote was withdrawn from Army units, the fielding of a new atropine autoinjector was completed, and the fielding of the oxime component as a separate autoinjector was begun in Europe.

In an effort to improve protective clothing, the Army has developed a camouflaged overgarment designed with the same woodland pattern as the battle dress fatigue uniform. Plans call for its adoption next fiscal year. In search of even better protection, the Army funded an accelerated exploratory research project to develop new fibers and fabrics for a lightweight overgarment that would have reduced heat stress, longer shelf life, and longer wear life.

While it planned and funded the development of still other new items of defensive equipment, the Army judged its most serious chemical warfare deficiency to be in its ability to retaliate. The current stockpile of toxic chemical munitions, which was deteriorating through age and obsolesence, had to be modernized before it could be an effective deterrent to Soviet use of chemical weaponry. The Army believed that binary munitions for 155-mm. weapons were the best answer to the modernization requirement. These munitions form a lethal chemical agent from two nonlethal agents when they are combined, which occurs only after the artillery shell containing them has been fired. In addition to the safety afforded by binary munitions during production, storage, and movement, they would be, in the Army's judgement, the best weapon and agent mix for achieving a cred-

ible retaliatory capability. By the end of the fiscal year, the Congress had appropriated funds for construction and plant processing equipment for a binary munitions production facility at Pine Bluff Arsenal, Arkansas. Construction was scheduled to start in October 1981.

Provisions of the Military Construction Authorization Act of 1981 required the Army to remove all chemical munitions from Rocky Mountain Arsenal, Colorado, by 10 October 1981. The Army safely transferred these munitions to Tooele Army Depot, Utah, through a combination of air and ground movements between 12 and 28 August. A total of 888 Weteye bombs containing GB agent and three one-ton containers of bulk GB agent were relocated during the operation.

Among defoliants used in Vietnam during the war to kill vegetation and thus deprive enemy forces of concealment, the main one was a herbicide known as Agent Orange. In recent years, allegations that exposure to Agent Orange has resulted in a variety of maladies—cancer among them—have generated intense concern among veterans of the war. To date, these allegations have not been substantiated, but, as mandated by Congress, the Veterans Administration this year began an epidemiological study of the possible health effects of the herbicide. The study is designed to determine not only whether the agent can produce an adverse effect on human health but also whether a given veteran was actually exposed to the herbicide and, if so, to what degree. The Army will support the study by providing detailed records of herbicide spraying, troop movements, and unit membership during the war.

The Army periodically conducts formal system program reviews (SPR) as a means of bringing to the attention of senior management critical issues requiring special consideration. A chemical SPR was conducted last year under the chairmanship of the Vice Chief of Staff; in December of this year, a general officer in-process review, also chaired by the Vice Chief of Staff, was conducted to ensure that the recommendations resulting from the SPR were being translated into adequate action. For management purposes, the in-process review included the tactical nuclear program with the chemical program. Major chemical issues were addressed including training and doctrinal developments, munitions demilitarization, medical aspects, and equipment. Tasks were assigned to appropriate commands and agencies on those matters that needed new or improved action.

At last year's chemical SPR, the Vice Chief of Staff directed the preparation of an Army chemical action plan that would be

a comprehensive, time-phased blueprint for chemical warfare and for nuclear, biological, and chemical defense efforts in the 1980s and 1990s. The plan that was developed provided directions for near-term actions having a limited impact on resources that would rapidly improve readiness, such as training, and supplied guidance for mid- and long-range requirements that would have a significant impact on budgets, as in the case of stockpile modernization. The Chief of Staff approved the plan in June of this year.

Consideration of the tactical nuclear program at the combined nuclear and chemical in-process review conducted in December resulted in new directives for TRADOC and DARCOM. The Training and Doctrine Command was directed to accelerate its development of integrated battlefield models and scenarios to reflect current doctrine. DARCOM was assigned to review its nuclear survivability programs to ensure that automated data processing equipment and data storage devices could survive. Progress in accomplishing these tasks will be measured at the next in-process review, tentatively scheduled for October 1981.

In 1977 and 1978, public controversy over the Army's development of new nuclear weapons with "enhanced radiation" characteristics extended around the world and was particularly intense in Europe. Their development grew out of the Army's search for a nuclear means of stopping a massed tank or armored vehicle attack without unnecessary collateral damage and casualties to nonmilitary structures and personnel. Opponents of the new weapons believed that their reduced collateral damage feature increased the likelihood of their being used in battle, thus increasing the probability of nuclear warfare. In response to the opposition, President Carter deferred their production. This year, President Reagan announced that enhanced radiation warheads would be produced and assembled. They will be stockpiled only in U.S. territory, and any decision to deploy them will be made only after full consultation with the countries in which they would be based.

The Long Range Security Program (LRSP) is the European portion of the Army's worldwide Nuclear and Chemical Weapons Storage Site Upgrade Program. The upgrading of 102 Army storage sites in Europe under LRSP criteria involves the replacement, construction, or installation of security control centers fully protected against small arms fire as well as perimeter fencing, additional guard towers, igloo doors, security lighting, intrasite communications, and an intrusion detection system. The required upgrading is being achieved through a combination of

U.S. prefinancing and NATO funding. The improvements prefinanced by the United States are well on the way to completion; but those to be funded by NATO are scarcely beyond the planning stage because national concerns of various members have repeatedly clogged the funding approval process of NATO.

In April, a Nuclear Weapons Accident Exercise (NUWAX–81) was conducted jointly by the Department of Defense (DOD) and the Department of Energy (DOE) at the DOE's Nevada test site, in which the Army was the primary military player. The major objectives were to exercise and evaluate the Federal Emergency Management Agency's interface with DOD, the command and control of the joint DOD–DOE response forces, and the coordination of their technical and logistical support. These objectives were achieved, and the exercise also aroused greater awareness within federal and state governments of the need to plan and coordinate response procedures and to practice these procedures.

Military Support to Civil Authorities

The presidential campaign of 1980 and inauguration of 1981 created extensive requirements for Army support in communications and protection. For communications support, Signal Corps personnel were placed in a staging area at Fort Gordon, Georgia, and, from there, were dispatched in small teams to install and maintain radio equipment, to order commercial telephone service, and to provide communications support required by U.S. Secret Service protective details. Explosive ordnance disposal personnel also assisted the U.S. Secret Service in over 1,250 bomb searches throughout the United States and in several foreign countries. Following the election of President Reagan, the Army assisted both the outgoing and incoming administrations to ensure a smooth transition of the government's leadership. The Administrative Assistant to the Secretary of the Army was the Army's Coordinator for Transition. Army actions included the preparation of orientation materials for the Reagan DOD transition team, special debriefings and information for outgoing Army secretariat officials, and orientation materials and briefings for nominees to Army secretariat positions.

The Military Assistance to Safety and Traffic Program, better known as MAST, began its second decade of service shortly before the start of this fiscal year. During the year Louisville, Kentucky, became a MAST operating site when the 316th Medical Detachment (Helicopter Ambulance) began providing emer-

gency medical helicopter transport services in the Louisville area. With this addition, there was a total of twenty-nine operating MAST sites supported by thirty-one units representing both the active and reserve components of the Army and Air Force. During the year, these units flew 3,326 missions, evacuated 3,284 patients, and logged 7,638 hours. Since MAST operations began in 1970, Army aeromedical units and Air Force rescue and recovery units have flown more than 54,000 hours to complete some 24,000 missions. These missions included transporting a total of 25,000 patients plus medical personnel, blood, and human organs for transplant.

When civilian air traffic controllers of the Federal Aviation Administration went on strike and were later dismissed from their jobs by President Reagan, the military services were called upon to fill the void until the air traffic control system could be rebuilt. A total of 1,248 controllers from all services were provided for duty with the Federal Aviation Administration, of which 315 were from the U.S. Army Communications Command. It is expected that their support will be needed through June 1983.

There was little demand this year for military support in either domestic or foreign disaster relief. Of eighteen domestic disasters and emergencies declared by the President, only two required support, and this amounted to only minor logistical and troop support. In Italy, the strongest earthquake in sixty-five years occurred southeast of Rome on 23 November 1980, killing over 3,000 people, injuring over 5,000, and leaving more than 250,000 homeless. In response to requests from the Italian government, the Army provided 130 men, 4 UH–1 helicopters, 1,000 tents, and other equipment to assist in relief operations.

3. Force Development, Doctrine, and Training

Army efforts to mold men, units, and materiel into combat forces capable of meeting U.S. defense needs received a boost during fiscal year 1981 as a new administration moved to increase military spending to levels commensurate with arming and maintaining a military establishment second to none. The additional support sharpened debate, both within the Army and without, regarding the size and content of Army combat and support forces, the Army's ability to assimilate advanced weapons systems, the adequacy of training, the role of reserve components, and the adequacy of mobilization planning and procedures. These were but a few of the factors that figured in the force development process during the past year.

Force Development

The Army made no major changes in the existing 24-division (16 active and 8 reserve component) structure, but did make a number of adjustments within the structure, some of which are noted in Chapters 2 and 8. It considered organizing two additional divisions in the reserve components and adding an active brigade to the 24th Infantry Division, one of two active Army divisions having a National Guard roundout brigade as part of its organization. But the Army expanded neither its active nor its reserve forces and gave first priority to improving the readiness and modernization of the 24-division structure.

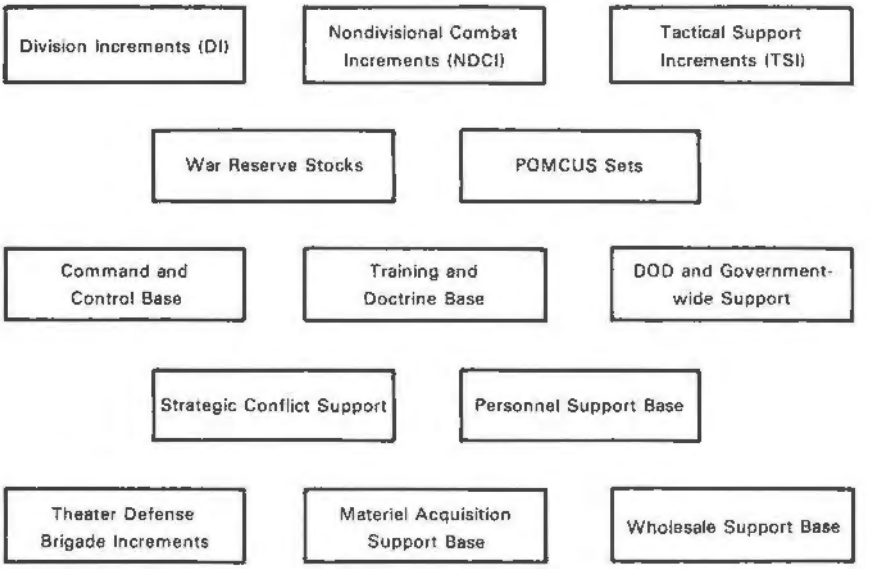
The Total Army Analysis (TAA) conducted during 1981 established the initial force structure used in developing the Army Program Objective Memorandum (POM) for fiscal years 1984–1988, including nondivisional and tactical support requirements and essential support force requirements. For the first time TDA (tables of distribution and allowances) units were included, and units required to support mobilization were identified. The Force Development Directorate, Office of the Deputy Chief of Staff for Operations and Plans (ODCSOPS), worked on revising Army Regulation 71–11, improving the TAA process, and placing the analysis on a biennial cycle.

Improvements in the TAA were part of a larger effort to strengthen the link between planning and programming aspects of the Army Planning, Programming, Executing, and Budgeting

System (PPEBS). In the past, planners have emphasized the development of combat forces to accomplish approved strategic requirements based on worldwide threats and have given little consideration to support forces, materiel, and training base requirements to sustain the combat elements. Programmers, on the other hand, had to deal with such down-to-earth factors as resource limits and budgetary constraints. As a result, planning guidance had little influence on program development.

Recent changes to the PPEBS have improved the link between planning and programming. Now planners develop and recommend macro force alternatives which describe operational and support forces in terms of structure, readiness, modernization, and sustainability. They weigh each alternative against projected resources to determine feasibility and recommend priorities for the allocation of available resources.

In developing macro force alternatives, guidance from the Office of the Secretary of Defense, the Joint Chiefs of Staff, and the senior Army leadership is considered in conjunction with an assessment of current force capabilities and resource constraints. Force alternatives, including operational and support forces, are developed. These forces are described by building blocks:



Each building block is examined in terms of NATO missions (both forces deployed and CONUS based), Northeast Asia (for-

ward deployed and CONUS based), and rapid deployment. Resources associated with each of the building blocks are fixed in terms of fiscal obligation, authority, and manpower. These blocks and associated resources are categorized in terms of force structure, readiness, modernization, and sustainability.

In force structuring, the numbers of active and reserve component division increments, nondivisional combat increments, tactical support increments, cadre divisions, and roundout brigades are considered. In building readiness, authorized levels of organization in terms of manning and equipping the operational and support forces, equipment levels associated with POMCUS, and manning and fiscal enhancements to the training and doctrine base are examined. For modernization, the procurement of more up-to-date equipment and the associated manpower needed to implement Army 86 structures are studied. The need for high technology development and testing for light and heavy divisions is addressed, and sustaining levels of war reserve stocks and the ratio of tactical support increments to division increments (tail-to-tooth ratios) are considered.

Alternatives are constructed in which the quantitative and qualitative aspects of structure, readiness, modernization, and sustainability are varied. To determine feasibility, mission postures are set, and the costs of these alternatives are compared with current and projected levels of fiscal obligation authority and manpower ceilings. The selection of the alternative which will be the basis for the Army Plan is a detailed process that includes briefings and discussions with the principals in both the Army secretariat and the staff. The Secretary of the Army and the Chief of Staff make the final decisions.

The Army Plan is the implementation memorandum for the Secretary of the Army's and Chief of Staff's planning guidance to programmers. It considers the decisions made on the major issues associated with the allocation of constrained resources to the macro force alternatives. Both operational forces and the support base are addressed. Facilities are also given prominent attention. Planning guidance is provided in four categories: readiness, sustainability, modernization, and force structure. The initial plan is scheduled for publication in December 1981 and will be the basis for the development of the Army Program Objective Memorandum and the Extended Planning Annex FY 84–98.

Phase II of the study for Improving the Definition of the Army Objective Force Methodology (IDOFOR), an important part of the Army's effort to develop a more effective force development process—described in the previous summary—was

carried out during the past year. IDOFOR II focused on providing a methodology for a non-NATO scenario, as well as for NATO, and the development of a risk assessment and acquisition strategy capability. This latter effort produced a methodology to examine production capability, personnel availability, and funding estimates and to recommend annual acquisition and retention objectives for critical equipment systems. Phase II also expanded development of the capability to design alternative forces within projected manpower and fiscal constraints for the period under review. This capability included the examination of other possible designs for force additions as well as the evaluation of various alternative forces. IDOFOR II methodology will be integrated into other Army force development studies, such as the Joint Strategic Planning Document (JSPD) Analysis and the macro analysis of force alternatives. This effort, termed IDOFOR III, will be conducted in fiscal year 1982.

The Army uses or has under development several automated management information systems to aid the force development process. There were a number of noteworthy happenings during the year concerning these systems.

The use of The Army Authorization Documents System (TAADS) continued to increase. Two new posts, Fort Drum, New York, and the Army Research Armament and Development Command, Dover, New Jersey, received the installation subsystem (ITAADS). This addition brought the number of installations covered to fifty-seven. Vertical TAADS, the subsystem used at major commands, is operational at seventeen locations. Headquarters, Department of the Army, processed 20,484 TAADS documents during the year.

Even as the use of TAADS expanded, the Army continued work on the Force Development Integrated Management System (FORDIMS), which will replace TAADS, the Army Force Program (AFP), and the Civilian Budget System (CBS). The Authorization Subsystem (replacement for TAADS) is currently operational. Testing of the Program and Budgeting Subsystem (replacement for AFP and CBS) started in March 1981. Completed tests on the Force Structure Subsystem (FSS), which was designed to support discrete guidance tracking, showed that a more flexible, less demanding form of guidance tracking was necessary. A general officer in-process review (IPR), conducted in December 1980, decided to discontinue work on the FSS and discrete guidance tracking and called for development of detailed specifications for a transition method of guidance tracking. Specifications for the transition system were completed in February

1981, and the U.S. Army Management Systems Support Agency (USAMSSA) began development. Work was temporarily halted in June 1981 so that all FORDIMS programming resources could be used to complete other testing. Development of guidance tracking is scheduled to resume early in fiscal year 1982.

Work on the Vertical Force Development Management Information System (VFDMIS) continued to accelerate during the past year. The Army won approval of equipment procurement for the system in the amount of $7.8 million covering fiscal years 1984–1986. A system product manager was designated in July 1981, and staffing of the product manager's office was begun. Automated Sciences Group, Inc., received a contract for design and program work and General Research Corporation obtained a contract to assist the product manager with functional requirements. Following a system review late in the fiscal year, the product manager sought the assistance of the Intelligence and Security Command in determining how to provide users who had unclassified remote terminals with access to a classified data base; he also enlisted the aid of the Communications Command in calculating equipment requirements.

Development of the Force Management Decision System (FMDS) began in August 1981. In September, functional requirements were developed and forwarded to USAMSSA for evaluation. FMDS will assist force managers and force integration system officers on the Army staff in conducting impact analysis for changes in force structure and asset conditions.

An improvement to the Logistics Structure and Composition System (LOGSACS), to provide management data dealing with pre-positioning of materiel configured to unit sets (POMCUS), was completed during the reporting period. It provides requisitioning authority to Combat Equipment Group, Europe, and enables the Army staff and the Depot Systems Command to manage POMCUS at varying levels of detail from individual sets to complete division sets. Furthermore, the POMCUS addition to LOGSACS reflects equipment changes caused by force modernization actions indicated in the Program Objective Memorandum.

In a related action, General Research Corporation worked on a contract it received in September 1980 to improve LOGSACS's Basis of Issue Plan (BOIP). The BOIP determines the equipment changes by unit that are required to support the fielding of new weapons systems, or the introduction of equipment items to augment or upgrade the Army's mission capabilities. The improvement, which is scheduled for completion early in fiscal

year 1982, will give to materiel procurement and distribution planners the requirements on a time-phased basis for fielding each new or improved item.

An improved BOIP will ease the strain of distributing increased quantities of weapons that come into the Army's inventory as a result of long-term modernization efforts. One such weapon, the Stinger man-portable air defense system, achieved initial operational capability in February 1981 with the 11th Armored Cavalry in Germany. The Stinger was the first new air defense system the Army had fielded since the mid-1960s. Production and deployment of Stinger to Europe was on schedule. Another system, the Improved TOW Vehicle (ITV), is an M113A1 Armored Personnel Carrier that has been modified to carry an armored TOW (tube-launched, optically tracked, wire-guided) missile launcher mounted on a powered cupola. The ITV provides armor and armored cavalry units with a long-range antitank capability. It would be routinely employed from concealed defilade positions that expose only the sights and launchers. Targets would be engaged from 2,000 to 3,000 meters to exploit TOW's range advantage. Distribution of ITVs to Europe began in February 1980 and will be completed in February 1982. Fielding in the continental United States will continue through October 1982.

The Army signed a contract with Litton Data Systems on 16 October 1980 for the purchase of forty-three Tactical Fire Direction Systems (TACFIRE), successfully concluding an intensive effort to restart the program that Congress had stopped during deliberations on the fiscal year 1980 budget. A contract for the final twenty-three sets required to outfit all active Army units was signed on 29 July 1981. During the year the Army received twenty-three sets ordered under previous contracts; final deliveries were in April 1981. Because of the break in the program, deliveries will not be resumed until the summer of 1982. Meanwhile, the 1st Infantry Division (Mechanized), FORSCOM, and the 8th Infantry Division (Mechanized), USAREUR, became operational TACFIRE units—the 1st in May 1981, and the 8th the following August. TACFIRE equipment was shipped to the 41st Field Artillery Brigade in September 1981.

The Army's plan to obtain 7,340 M60A3 tanks with thermal tank sights—1,741 from new production and 5,599 through conversion of older M60 series tanks—moved forward. By the close of the reporting period, 1,741 new M60A3s and 1,164 conversions had been funded. The number of new tanks produced reached 1,561; of these, 1,260 have been shipped to USAREUR,

which had first priority in distributing M60A3 with subsequent issue to FORSCOM units. Conversion of M60A1 tanks to an M60A3 configuration began in July 1981 at the Anniston Army Depot, and a similar program will get under way involving 458 vehicles at the Mainz Army Depot early in fiscal year 1982. An ODCSOPS proposal to convert M60A2 tanks to M60A3s did not mesh with production line scheduling and was discarded. Earlier plans to convert the 105-mm.-gun-equipped M60A2s with an M48A5 turret (the converted vehicle was designated the M48A7) were held in abeyance as DARCOM evaluated a new ODCSOPS proposal to make them over to armored vehicle launched bridges (AVLBs) and combat engineer vehicles (CEVs).

The sophistication and complexity of technologically advanced systems entering the Army's weapons arsenal has caused concern within the Army and the Office of the Secretary of Defense regarding how much combat support structure would be required to sustain U.S. forces in the early days of a NATO–Warsaw Pact conflict. The result of this concern was the Combat to Support Balance Study (CSBS), a sixteen-volume report published in September 1980 which showed the effects that various assumptions regarding workload, productivity, and the amount of host nation support would have on the size of combat service support forces. The study has served as an effective management tool for decision makers in determining appropriate levels, mixes, and phases of support for programmed Army combat forces in Europe. Following Chief of Staff approval, ODSCOPS, ODCSLOG, Training and Doctrine Command (TRADOC), and the Combat Analysis Agency (CAA) began carrying out the forty-nine specific actions contained in the study's implementation plan. The Force Management Directorate, ODCSOPS, is monitoring and coordinating the effort, which is proceeding on schedule.

Host nation support (HNS), an important element in the CSBS, is essential in satisfying shortfalls in the Army's ability to meet combat support and combat service support requirements of forward deployed and deploying U.S. forces. Over the past year the Army has continued HNS initiatives in the areas of policy guidance, doctrine formulation, and combat support and combat service support negotiations. Army HNS policies, procedures, and responsibilities were laid out for the first time in Army Regulation 570–9, published in January 1981. One month later, an interagency HNS Working Group was formed under the auspices and general guidance of the HNS Advisory Group of the Office of the Secretary of Defense. The group's broad objective is to

develop Rapid Deployment Force (RDF) support requirements and obtain host nation support for RDF contingencies. The first priority will be to acquire host nation support for the near-term RDF; the second priority is to acquire this support for future expansion of the RDF and to develop a strategy for entering HNS negotiations with certain Southwest Asia countries.

Negotiations for expanded host nation support for forward deployed and reinforcing forces continued. The signing of a memorandum of understanding (MOU) with Germany is expected soon, and work on detailed agreements covering military support, civil support, and reinforcement exercises is to begin in January 1982. A considerable portion of the support will be provided by German military units. The United Kingdom, Belgium, the Netherlands, and Luxembourg reviewed U.S. host nation support requirements presented to them in September 1980. HNS statements of principle have been signed with all of the countries except the Netherlands. They have agreed to provide the requested support. Detailed requirements will be set down in lines of communications (LOC) agreements. Efforts to obtain LOC agreements with nations of the NATO northern and southern regions continued. Umbrella, general, and technical agreements have been signed with Denmark, Norway, and Italy.

Since 1976, TRADOC has been involved in designing an objective heavy division for the mid-1980s and beyond. More recently, complementary efforts have been initiated to redesign the light division, the corps, echelons above corps, and contingency corps. Collectively, these several design initiatives are referred to as Army 86. The process by which these initiatives and other near-term redesigns of various Army elements, including the Rapid Deployment Force, are incorporated into the force structure constitutes the Army 90 Transition Plan.

In May 1981, Army 90 transition planning objectives were prepared to integrate approved organizational conversions into the force structure requirements process; to develop organizational conversions down to unit identification code (UIC) level of detail for active and reserve components; and to develop UIC conversions which accommodate all relevant factors, including systems modernization, doctrine, training, manpower, logistic support, facilities and construction, tactical support, stationing, and operational readiness. The objectives also envisaged publication of an annual transition plan to document organizational conversions over the program years, to institutionalize the planning process and management structure for guiding and directing the transition process, and to provide necessary resource man-

agement information on approved organizational conversions to major commands as soon as possible. ODCSOPS serves as the lead Army staff proponent for Army 90 Transition Plan development; the Transition Planning Implementation Group (TPIG), Requirements Directorate, has overall responsibility. In July 1981, major commands were provided with guidance needed to develop a detailed Army 90 Transition Plan to be forwarded to the Army staff by 15 January 1982. One of the key features of the plan was that similar heavy division active units were to convert to the new designs during six-month periods starting in the last part of fiscal year 1983; conversions of reserve components other than roundout units would start one year later.

The 9th Infantry Division's High Technology Test Bed (HTTB) program, reported on last year, is an important element in fielding a strategically deployable, lean, hard-hitting, and sustainable high technology light division by 1985. During the past year, operational and organizational (O&O) tests began for the brigade engineer company, the antiarmor company, and the mortar platoon. Allied involvement in the HTTB program increased during 1981 with New Zealand, the United Kingdom, Australia, and Canada assigning special project officers to the HTTB. Other countries have given briefings on concepts and equipment that are possible candidates for O&O testing. At the request of the Army Chief of Staff, a Defense Science Board Task Force, headed by Dr. Eugene Fubini, began a study to determine how technology could be integrated into the High Technology Light Division.

As noted in last year's report, ODCSOPS is sponsoring a comprehensive Casualty Estimation Study (CES) to develop a reliable methodology for estimating wartime casualties. The Concepts Analysis Agency (CAA) is responsible for Part I of the study, which pertains to short-term improvements in theater-level casualty estimates under conventional warfare conditions. Part II of the study is being done by the Army Models Improvement Program (AMIP) Office of the Combined Arms Center at Fort Leavenworth. The AMIP office will develop detailed methodology for Army wartime casualty estimation in two categories: (1) conventional plus chemical and (2) conventional, chemical and nuclear. The CAA should complete Part I of the study in December 1981. The remainder of the study will then be accomplished by the AMIP, with developmental work continuing through calendar year 1982.

The Aviation Requirements for the Combat Structuring of the Army (ARCSA) III study, which was conducted by the U.S.

Army Aviation Center, Fort Rucker, beginning in February 1977, developed the current aviation force structure. Based on study results, the Army Chief of Staff approved an aviation force structure consisting of 48 attack helicopter companies, 38 air cavalry troops, 46 combat support aviation companies, and 32 medium helicopter companies. Implementation of ARCSA III continued during the year with the inactivation of an aviation battalion and four separate companies, two of which were divisional support companies. In turn, two combat aviation battalions were activated, one at Fort Hood and the other at Fort Riley, while a combat aviation company was activated to support the brigade at Fort Benning. A follow-up study, ARCSA IV, which is scheduled to begin in April 1982, will be the basis for future aviation structure and planning. It will consider all Army 90 designs that have a major impact on the aviation force structure.

Concepts and Doctrine

Force designs coming from the Army 86 studies reflect ideas embodied in the Airland Battle, an evolving concept that describes current thinking on what is needed to win on the battlefield of the 1980s, especially in Western Europe. It envisages the integration of conventional, nuclear, chemical, and electronic means and the extension of the battlefield to bring the full potential of U.S. air and land forces to bear on the enemy's second echelon forces as well as on his assault forces. The concept of an extended battlefield with emphasis on maneuvering, disrupting enemy follow-up forces, and seizing the initiative by attacking, as well as defeating enemy assault elements, goes considerably beyond current doctrine for the use of corps and divisions. As the fiscal year closed, TRADOC and the Command and General Staff College were working on a major revision of Field Manual 100–5, "Operations," to incorporate the Airland Battle concept.

While the Army revamped its combat doctrine around concepts that incorporated the use of conventional, chemical, and nuclear means to meet the threat posed by Warsaw Pact forces, little progress was made during the past year to limit or ban chemical and nuclear weapons.

Since 1977, the United States and the Soviet Union have held twelve rounds of talks to reach a joint proposal for presentation before the United Nations Committee on Disarmament that would form the basis for negotiation of a multilateral chemical arms control treaty. The U.S. objective has been to obtain a comprehensive agreement banning the production, possession,

transfer, and use of chemical weapons. Progress in the bilateral discussions has lagged because of disagreement over verification, declaration of stocks and facilities, and when the ban would take effect. The Reagan administration put off the thirteenth round of U.S.–USSR talks pending reassessment of arms control policy and strategy. Delays in holding bilateral talks and the lack of progress in the discussions held to date will intensify pressure on the Committee on Disarmament's Warfare Working Group, which was established in 1980 to define chemical weapons control issues, to begin negotiation of a treaty.

Work on the Strategic Arms Limitation Treaty (SALT) lay dormant during 1981; the only work being accomplished was the development of a study entitled "Basic Considerations for U.S. SALT Policy." During the year, focus shifted from SALT talks to arms control negotiations as NATO's long-range theater nuclear force modernization decision of December 1979 received public and political attention, primarily from the Europeans. Encouraged by Soviet propaganda, intense pressure was brought to bear on the United States to commence the arms-control side of the two-track 1979 modernization decision. Continuous consultation with the alliance, through the NATO Special Consultative Group, was affected by delays in developing the U.S. negotiating position. Secretary of State Alexander Haig and Foreign Minister Andrei Gromyko met in New York on 23–26 September 1981 and announced that arms-control negotiations would open in Geneva on 30 November 1981.

Almost six years of study and work came to fruition in July 1981 with the publication of Field Manual 9–6, "Ammunition Service in the Theater of Operations." It describes basic ammunition doctrine for the Army and is the product of the Munitions Systems Support Structure (MS3) Study, which was begun in 1975 by the U.S. Army Missile and Munitions Center and School. The manual establishes doctrine for ammunition transfer points (ATP) in the brigade trains of divisions and separate brigades, replaces the direct support and general support conventional ammunition company with separate direct support (DS) and general support (GS) units, combines existing DS and GS special ammunition companies into a DS–GS unit, improves the man to machine ratio to provide for increased efficiency, and incorporates the throughput of ammunition into doctrine. During the Total Army Analysis (TAA) for fiscal years 1984–1988, all active and reserve component conventional ammunition units were scheduled for conversion to the new MS3 tables of organization and equipment. The conversions were spread

throughout the program years. Special ammunition companies are listed in the extended planning annex, pending receipt of major command advice concerning program timing.

Mobilization planning and testing continued to be a major concern within the Army and throughout the Department of Defense. PROUD SPIRIT, a command post exercise sponsored by the Joint Chiefs of Staff (JCS), began on 6 November 1980 and lasted until 18 November. The Army's participation, referred to as MOBEX 80 and to relate it to the previous biennial exercises—MOBEX 76 and MOBEX 78—continued until 26 November. MOBEX 80 tested the Army's critical mobilization and deployment procedures and provided the first opportunity to apply recommendations contained in the Army Command and Control Study–82, which stemmed from concerns of the Army and of the Office of the Secretary of Defense that the reserve component command structure was excessively layered and redundant. Particular attention was given to procedures and systems which had been deficient in previous exercises: the new Army Mobilization and Planning System (AMOPS), Army command and control, Army participation in the Joint Operation Planning System (JOPS) and the Joint Deployment System (JDS), and the Army wartime asset redistribution planning and management systems.

MOBEX 80 was most successful in providing valuable mobilization and deployment experience to many command and staff personnel throughout the Army. The training function, verifying capabilities, and identifying training deficiencies are primary objectives of the MOBEX series. And while no new major problems surfaced, results clearly showed that problems and deficiencies uncovered during MOBEX 76 and 78 had not been resolved, particularly in the areas of command and control, ammunition and equipment shortfalls, filler requirements, and the ability of industry to resupply basic items required to sustain the combat forces.

The Army formed the Mobilization Review Committee and the General Officer Mobilization Review Group to ensure that action would be taken to remedy shortcomings that hampered the Army's ability to meet mobilization and deployment requirements. The first committee reviews and monitors remedial action projects (RAPs), makes decisions regarding the sufficiency of proposed corrections, and recommends actions to the General Officer Mobilization Review Group on major issues. The other group acts on the recommendations and directs measures to be taken on these issues. Both bodies include representatives from the Army staff and major commands. An Army staff proponent

for each RAP submits quarterly updates to the review committee on the status of corrective actions.

In Exercise PROUD SPIRIT–MOBEX 80, the need resurfaced for a clear definition of essential information required for management of crisis situations and execution of mobilization and deployment by Headquarters, Department of the Army (HQDA). At the Four Star Mobilization Conference held on 31 January 1981 and chaired by the Army Vice Chief of Staff, the Deputy Chief of Staff for Operations and Plans was directed to coordinate the review of information requirements for the purpose of streamlining reporting procedures to provide only essential information to HQDA. The Operations, Readiness, and Mobilization Directorate of ODCSOPS initiated three parallel efforts. The first involved a review of data elements currently available to HQDA from automated data processing systems accessible through the Worldwide Military Command and Control System to extract only essential data elements in crisis situations. The second was a user survey of selected reports sponsored by the Office of the Joint Chiefs of Staff to identify nonessential reporting requirements and to streamline the Joint Reporting Structure, particularly for wartime information needs. The third effort was to identify critical information requirements for crisis management regardless of the capabilities of currently automated systems. The three efforts focused on efficiently using automated data sources and providing instructions for manual reporting where necessary, while guiding the development of automation improvements.

As a result of an analysis of information needs, use of transaction processing, and coordination with Forces Command, a reduction of 67 percent has been achieved in the data required by HQDA to monitor the status of force mobilization. Similar coordination with the Joint Deployment Agency has resulted in a 74-percent reduction of data needed by HQDA to monitor the status of force deployment.

Army staff analysis of data coming through the Joint Reporting Structure has focused on the Unit Status and Identity Report (UNITREP) as having the greatest potential for reduction of reporting requirements. For example, more than half of the data currently required from Army units to compile the report is not considered essential by the Army staff for wartime management. Further refinement and subsequent modification of joint reporting instructions will be undertaken in the coming fiscal year.

Critical information requirements by the Army staff for crisis

management were coordinated for publication in Volumes III and IV of the Army Mobilization and Operations Planning System (AMOPS). These documents will establish the requirement, unconstrained by limitations in current automated reporting systems, as a baseline for future improvements. Additionally, the U.S. Army Command and Control Support Agency is developing an integrated data base and necessary programs to support the HQDA Crisis Management Team within the current capability of automated systems.

AMOPS, described in some detail in last year's summary, is an integrated, short-range, capability planning system which supports Army participation in joint operations and deployment. It replaces the Army Capabilities Plan and HQDA Mobilization Standard Operating Procedures. Principal planning documents produced by the system are the HQDA Mobilization Plan and the major command mobilization plans, which collectively form the Army Mobilization Plan. Volume I of AMOPS, "Systems Description, Responsibilities, and Procedures," and Volume III, "Mobilization and Deployment Planning Guidance," were published during fiscal year 1981. Volume II, "Strategic Employment of Army Forces," and Volume IV, "HQDA Crisis Action SOP," should be out in the coming year. With the publication of Volume III, AR 135–300, "Mobilization of Reserve Component Units and Individuals," became redundant and was rescinded.

On 8 May 1981 the Joint Chiefs of Staff established the Joint Planning and Execution Steering Committee to allow the JCS to oversee the joint planning, mobilization, execution, and deployment process. The committee, chaired by the Director of Operations, OJCS, consists of general and flag officer representatives from the joint staff and the services. The Army also provided a full-time action officer as a member of the joint working group which assisted the committee in assessing deficiencies, formulating objectives, and putting together recommendations for corrective action.

The committee identified a number of major deficiencies: the current contingency planning process was regionally oriented and not based on real capabilities; it did not support deliberate planning and crisis response requirements and contained no option-developing capability for the JCS and the National Command Authority; deployment planning did not provide for meaningful collection of information at appropriate command levels; and deployment execution was not flexible.

Action through the end of the fiscal year focused on developing a model for a new joint process which would be both a

planning and an execution tool. It would support the application and direction of military force with the responsiveness and flexibility required by the National Command Authority; allow changes of direction and graduated application of force; give the capability to determine combat support and combat service support forces, materiel and transportation requirements, and shortfalls; and provide for the assessment of the total force's ability to meet national military strategy in the near term.

The Office of the Joint Chiefs of Staff, in collaboration with the military departments, developed plans for allocating among the services the 100,000 ready reservists that the President could order to active duty without declaring a national emergency, as provided for by Public Law 96–584, which the President signed on 23 December 1980. Before the new law went into effect the number of reservists who could be called was limited to 50,000. The Army allocated its portion to the major commands to meet premobilization requirements for minor contingencies or as a prelude to a declaration of mobilization.

The importance of industrial support and the condition of the training base received a great deal of attention during MOBEX 80 and throughout the remainder of fiscal year 1981.

In November 1980, ODCSRDA hosted chief executives from various industries to hear their views on what actions the Army should take to enhance the responsiveness of the industrial base and the effectiveness of planning with industry.

The conferees noted that significant improvement in industrial preparedness depended upon a clear national policy citing the need for an industrial base responsive to national security interests and that war reserve stocks should be increased to a level compatible with the ability of the base to meet sustaining requirements. Associated with war reserve stocks was the need to identify production constraints and to pace items, with the view of stockpiling those components or items which have long lead-times.

There was general agreement that both the private and Army-owned industrial base should be modernized to ensure adequate industrial production in an emergency situation. State-of-the-art manufacturing technology, greater attention to product quality, and increased capital buildup through such actions as tax incentives, improved contract and profit policies, and direct government investment would be necessary to modernize the industrial base. Failure to modernize and improve productivity would result in continued deterioration of manufacturing capability and responsiveness.

The conferees also observed that increased use of standard commercial components, particularly in technologies which were advancing more quickly than others, would increase emergency availability of military hardware and should also reduce the cost.

A second conference was held in May 1981 to continue the dialogue with key industry leaders, to inform members of the new administration concerning industrial base issues and problems, and to present a DOD Action Plan for Improvement of Industrial Preparedness. The DOD plan evolved from the MOBEX-80 industrial program and other recent studies, including the House Armed Services Committee report issued in December 1980 entitled "The Ailing Defense Industrial Base, Unready for Crisis." The plan was structured around three key elements: (1) national resource base—overcoming near-term materiel shortages and lead-time problems, improving critical raw material self-sufficiency, obtaining enough skilled labor, and improving productivity; (2) defense acquisition process—improving stability of Army procurement, creating a more attractive environment for the defense contractor, and improving equipment productivity; and (3) industrial preparedness—achieving more consistency in defense programs and funding, creating an organizational and legislative environment conducive to industrial preparedness, planning, and mobilization, and maintaining a responsive defense industrial base. The Army participated with representatives from the other military services on a Department of Defense task force organized to coordinate implementation of the DOD Action Plan.

ODCSRDA initiated a study within the American Defense Preparedness Association (ADPA) during fiscal year 1981 to determine what must be done in order for the industrial base to double end-item production of nine critical materiel items in six to twelve months. A crucial objective was to identify systemic problems that inhibited the accelerated delivery of end-items. In this regard the Army expects to identify affordable investment opportunities to eliminate bottlenecks in the production process, and to take advantage of those opportunities during the normal budget process or when increased periods of tension make a show of resolve necessary. The study results are due in the first quarter of fiscal year 1982.

The Army also made a major effort to budget for future acquisition of individual clothing and equipment and major end-items of equipment that were essential to support the mobilization training base. The shortage of equipment available to support mobilization expansion is the principal constraint upon the potential capability of the mobilization base to accept the 133,000

new soldiers for training during the first month of mobilization as required under current plans. To help alleviate equipment shortages, the Army refurbished a significant number of M–14 rifles during 1981. These are available as back-up support to the training base upon mobilization.

Mobilization planning has revealed that facilities available for the training base will also be insufficient, particularly in the areas of trainee billeting and training ranges support. Funding has been requested for the purpose of selecting specific locations at installations for the expansion of facilities upon mobilization, and for mobilization construction planning.

An automated planning system for management of the mobilization training base has been under development for two years. In the later part of fiscal year 1981, the first Mobilization Army Program for Individual Training (MOBARPRINT) was produced from this system. This document provides guidance to help reception stations, training centers, and service schools meet projected post-mobilization requirements for trained manpower.

During fiscal year 1981 the Office of the Chief of Engineers took several actions which stressed the importance of planning and positioned resources to support a full mobilization and deployment.

The Office of the Chief of Engineers, together with the CONUS major commands, identified construction needs for the first ninety days of a full mobilization. Subsequent requirements for the construction program from M-day to M plus 180 will be defined during the annual update of the Program Objective Memorandum (POM). The fiscal year 1983–1987 POM contains funding for advance planning and design, including development of standard plans for required facilities as well as site adaptations of these plans to facilitate early construction requirements. In a related action, the Civil Works Appropriations Committee provided funds in the fiscal year 1982–1987 time frame to make better use of Corps civil works assets in support of military construction in case of mobilization or a national defense emergency.

In other actions the Corps began to streamline procedures consistent with emergency laws, policies, and organizations; prepared legislative proposals in support of the Corps mobilization mission, which were under review by higher headquarters; and defined the basic concepts for an automated Mobilization Stationing System (MSS) that will provide mobilization planners with a means to gather information quickly and easily on key force structures and facilities.

In 1980, the Secretary of Defense directed development of

the Civilian-Military Contingency Hospital System (CMCHS) to supplement CONUS military health services in the event of a large-scale conflict overseas. Each surgeon general is responsible for the operation of his service's portion of the program in accordance with policy set by the Office of the Assistant Secretary of Defense (Health Affairs).

Hospital commanders, representing the Department of Defense as CMCHS coordinators, solicited local civilian hospitals, executed written agreements with hospitals selected for participation, and prepared local operations plans and tested them periodically. The DOD goal is 50,000 beds from accredited general medical and surgical hospitals. As of 30 September 1981, agreements totaling about one-half of the goal had been completed.

During the past year the Army acted to improve systems and procedures for accessioning and utilizing reserve component personnel and retirees upon mobilization.

The Mobilization Personnel Processing System (MOBPERS), which was described in detail in last year's report, was developed to correct a MOBEX-76 deficiency. The concept received limited testing during MOBEX 78, was adopted by the Army in 1979, and was implemented in October 1980. MOBPERS was fully tested in MOBEX 80, and the concept of pre-positioning reserve component personnel data (unit and IRR) using MOBPERS procedures and the accessioning of reserve component personnel into the active Army through the Standard Installation Division Personnel System–War Time (SIDPERS–WT) was successfully demonstrated. Problems were encountered, primarily discrepancies in source documents and data errors, but none surfaced that would invalidate MOBPERS. Data source coordination problems were resolved, and progress was made toward correcting errors. In addition, several modifications were installed to improve the mobilization process.

The Reserve Components Personnel and Administration Center (RCPAC) conducted a mobilization exercise in August 1981 to evaluate improvements made to MOBPERS since MOBEX 80. The test also evaluated Western Union mailgram procedures, the accuracy of the personnel data of the Individual Ready Reserve (IRR), and the automated data processing capabilities at the Emergency Relocation Site (ERS) and analyzed the adequacy of existing mobilization plans. Evaluation of the test results will be completed early in fiscal year 1982.

The Mobilization Personnel Structure and Composition System (MOBPERSACS) was revised and expanded in fiscal year 1981 to display wartime personnel requirements as reflected by

data of The Army Authorization Documents System (TAADS) submitted by major commands. MOBPERSACS also shows selected TDA units that are needed in time of war, MTOE units at wartime strength, and mobilization station arrival data and mobilization command. The Army staff, Military Personnel Center, and RCPAC use MOBPERSACS for mobilization exercises and for project training requirements, promotions, and distribution of the mobilization forces, including the IRR.

For the past several years the Army has been testing a pilot program that preassigns soldiers leaving active duty and entering the IRR to specific mobilization stations and unit assignments in case they are recalled to active duty during a mobilization. Because of the high turnover rate within the IRR, the geographical instability of IRR members, and the frequency of organizational and stationing changes of units that would get the preassigned reservists, the limited benefits of the Mobilization Preassignment Program did not outweigh the difficulties involved in terms of cost and management; therefore, the program was dropped in favor of predesignating IRR members under MOBPERS.

The problems encountered with the pilot Mobilization Preassignment Program did not deter RCPAC from initiating the Overseas Preassignment Program (OPP) during the first quarter of fiscal year 1981. The program covers IRR members who reside in USAREUR's geographic area. All preassignments are made to the 21st Replacement Battalion, which will then reassign members to meet requirements at the time of mobilization. By the close of fiscal year 1981, approximately 1,500 preassignment orders had been issued. The extensive turbulence of the overseas IRR population has meant that many orders have had to be rescinded only a short time after they had been issued. Experience has shown that at any given time only between 300 and 400 individuals hold effective orders preassigning them to the 21st Replacement Battalion. Presently a manual operation, plans call for the eventual automation of the OPP and its expansion to other overseas theaters.

In the spring of 1980 the Secretary of Defense directed the military services to put into operation by 1 October 1980 an Individual Mobilization Augmentation (IMA) program which would preassign individual reservists in peacetime to active force units and organizations where they would train for wartime jobs. Goals of the new program were to improve the pretrained individual manpower posture of the services, to eliminate reporting delays and the need for orientation or post-mobilization training, to bring IMA participants into the Selected Reserve where they

would be subject to active service under the President's authority to call up as many as 100,000 selected reservists without declaring a national emergency, and to increase the involvement of gaining organizations through peacetime training and administration. DOD Directive 1215–6 permitted the Army to transfer mobilization designees from the IRR to the Selected Reserve for participation in the IMA program, effective 1 October 1982. With the exception of membership in the Selected Reserve, the IMA program closely paralleled the Mobilization Designee (MOBDES) program, which had existed since 1948. The Army chose to build the new program around the old one.

The status of MOBDES assignments at the close of the last two fiscal years is shown below. The net gain in participants and authorized positions registered in fiscal year 1981, combined with the participant-gain-to-loss ratio of three to one maintained throughout the year, indicates the present vitality and future growth potential of the MOBDES–IMA program.

MOBDES–IMA Assignments

	(FY 81–30 Sep 81)		
	Officer	**Enlisted**	**Total**
Authorized Positions	9,483	1,821	11,304
Assigned Members	6,387	474	6,861
	(FY 80–30 Sep 80)		
	Officer	**Enlisted**	**Total**
Authorized Positions	8,779	1,204	9,983
Assigned Members	5,630	192	5,822

Headquarters, Department of the Army (HQDA), Letter 601–82–2, which established the involuntary Retiree Preassignment and Recall Program and provided the policies, procedures, and responsibilities for its implementation, was published on 28 August 1981. The Army continued to review mobilization tables of distribution and allowances to determine what positions could be filled by retirees. By the end of the fiscal year, 185,532 such positions had been documented in the requirements base.

An audit of the retirees available for preassignment against mobilization requirements was completed during fiscal year 1981. The total number of qualified (by age and health) retirees was approximately 250,000. Of that number, approximately 176,000 were from the Regular Army and 74,000 were from the reserve components. Comparison of assets and requirements by grade, skill, and location resulted in 95,087 matches with Regular Army

retirees. They will receive preassignment orders by the end of calendar year 1982.

HQDA Letter 601–81–2 also provided for a voluntary preassignment program. The effectiveness of a voluntary approach was indicated in October 1980 when retirees were asked to volunteer for duty with the Armed Forces Examining and Entrance Stations (AFEES) in the event of mobilization. Almost immediately, 1,500 volunteered. By July 1981, over 2,500 retirees had volunteered and received preassignment orders for the sixty-seven AFEES stations in the continental United States, Hawaii, and Puerto Rico. The program has been well received and is currently 94 percent filled.

Training and Schooling

Inadequate resources continued to hamper the Army's performance of its training mission during fiscal year 1981. Reporting on the situation to a congressional committee in April 1981, Army Chief of Staff General E. C. Meyer noted that the additional resources needed to fully support the training base amounted to approximately $428 million, 9,400 military positions, and 11,600 civilian positions. A good start was made in correcting the situation by halting the seven-year decline in the number of personnel authorized in the training base; but additional resources were still needed, particularly in the areas of base operations support, initial entry training, and officer training and education programs. Late in the fiscal year HQDA ODCSOPS Training Directorate initiated a study to determine more precisely the resources required for the Training and Doctrine Command (TRADOC) training base.

In an effort to improve the management of training resources, the Chief of Staff directed The Inspector General to examine the relationship between training proficiency and training resources. Consequently, The Inspector General Agency now conducts training management inspections on a worldwide basis covering both active and reserve components. Inspectors report on the adequacy and implementation of training policy and programs, the availability and use of training resources, the development and use of training procedures, and the readiness of units to perform assigned missions.

The expansion of basic training (BT) and the common skills portion of one-station unit training (OSUT) by ninety-seven course hours was partially implemented at Fort Knox and Fort Leonard Wood on 5 January 1981. A TRADOC evaluation per-

formed in May and June indicated that the expansion of enlisted initial entry training (IET) was producing a more highly motivated soldier who was significantly more skilled in combat survival. Plans moved forward to carry out the IET expansion throughout the Army early in fiscal year 1982.

IET has been affected by Project COHORT (Cohesion, Operational Readiness, Training), a test to determine the Army's ability to support a unit replacement system that would reduce turbulence, improve stability, and enhance the cohesion and readiness of units. COHORT is based on the four phases of the replacement unit life cycle: IET, stateside tour, deployment and tours outside CONUS (selected units), and termination and replacement. The twenty companies participating in COHORT include six mechanized, six light infantry, and three armor companies and five artillery batteries. TRADOC will conduct IET for ten of the units in OSUT at Forts Benning, Sill, and Knox. IET for the remaining units will consist of basic training at Fort Knox and advanced individual training (AIT) at either the 1st Infantry (Mechanized), 4th Infantry (Mechanized), or 7th Infantry Divisions. As part of the 36-month life cycle, seven companies will deploy to Germany from the 1st and 4th Infantry (Mechanized) Divisions for their last eighteen months, and four from the 7th Infantry Division will deploy to Korea for their last twelve months. The remaining nine companies will complete their life cycles by remaining with the 1st, 4th, and 7th Divisions. All twenty COHORT units will be terminated upon completion of the 36-month life cycle, and soldiers who enlisted for three years will be reassigned. Eighteen of the twenty COHORT units were formed in 1981; the other two will be organized in fiscal year 1982.

A cyclical surge in accessions in the summer of 1981 that exceeded the capability of TRADOC's infantry OSUT instructor and cadre was met by utilizing elements of USAR training divisions to augment TRADOC resources. One USAR company was used at Fort Dix, New Jersey, and two USAR companies were put into service at Fort Jackson, South Carolina. This measure was so successful in meeting the surge load that there was no need to burden FORSCOM, which was already strained by its support of reserve component summer unit training and ROTC summer camps. It also provided USAR training division units with an opportunity to perform their mobilization missions. Plans were well under way as the fiscal year ended to expand the scope of USAR training division augmentation to fifteen companies in the summer of 1982.

Implementation of recommendations of the Review of Education and Training for Officers (RETO) continued during the year. The first Combined Arms and Services Staff School (CAS3) class of 117 students graduated on 6 June 1981. The school's mission is to train officers of the active and reserve components to function as staff officers with the army in the field. Phase I of the CAS3 course is a 142-hour nonresident program that focuses primarily on staff functions. It will be presented in residence at Fort Leavenworth through fiscal year 1982 for validation before being offered on a nonresident basis to officers who attend the school in fiscal year 1983 and later. Phase I culminates with a qualification examination, which the officer must pass before proceeding to the resident phase. Phase II is the resident TDY program which requires officers to apply their skills and knowledge in a staff environment. The resident phase lasts nine weeks and will be conducted at the Command and General Staff College at Fort Leavenworth, Kansas.

In September 1980 TRADOC's commanding general directed an examination of the Basic Noncommissioned Officer Course for Combat Arms (BNCOC), which was at the time designed to produce a weapons and equipment expert who was competent in skill-level-three tasks in a specific combat arms military occupational specialty, to ensure that hard-hitting squad leaders, tank commanders, and section leaders were turned out. The examination led to recommendations which were approved in September 1981 for implementation beginning in fiscal year 1982. The revised BNCOC training program places greater emphasis on graduating specialists who are prepared to lead, train and direct the men under their command. The new course provides a 24-hour-a-day NCO academy environment. Trainer workshop instruction under the Battalion Training Management System will be expanded to include classes on methods of instruction and presentation of classes. Diagnostic tests will be used to identify weak students who require additional training as well as to select students who have demonstrated competency to serve as assistant instructors. A standard policy for determining graduation requirements will also be implemented.

During fiscal year 1981, the Army fielded Skill Qualification Tests (SQTs) for 613 of 1,145 MOS (military occupational specialty) skill levels. Scores on tests rose from 61 percent passing in fiscal year 1980 to 89 percent passing this year. The Army published new policy guidelines for implementing the SQT program within the reserve components. Despite changes begun in early 1980 and fully implemented by the end of fiscal year 1981,

the SQT program continued to experience growth pains. User units were particularly critical of the program's administrative costs, while Army studies showed that the tests resulted in "event-oriented" or surge training. A GAO (General Accounting Office) audit initiated in the spring of 1981 focused on these problems. The results of the audit should be available early in fiscal year 1982.

A significant achievement during the reporting period was the publication of common task soldier's manuals for skill levels one through four. These manuals set standards and conditions for tasks applicable to all soldiers and help to eliminate confusion.

A new program entitled Common Military Training (CMT) has been published in Army Regulation 350–1. CMT centralizes the management of Department of the Army training requirements and limits subjects to those that are absolutely essential. The program should reduce the multitude of training requirements levied on the field by Army staff agencies, which have tended to diffuse the Army's training priorities contained in Army Training and Evaluation Programs (ARTEPs) and soldier's manuals.

In October 1980 the Army instituted a new, simple three-item physical fitness test (pushups, situps, and a two-mile run) with standards adjusted for the physiological differences between men and women. Since no equipment is required, personnel can now be tested who could not before. More frequent testing can be conducted as well. Initial assessments show that 85 percent of the men and women in the Army are able to pass the test. About 5 percent of the soldiers tested reach the maximum score, indicating that the standards are challenging. The reserve components will phase in the new test over a two-year period.

A new fitness program for personnel over age forty is linked to an innovative system of cardiovascular screening. By using statistics available from the American Heart Association, the Army identifies personnel at risk of cardiovascular disease and prescribes additional medical evaluations. Although this program increases the load on the medical system, it will ultimately produce cost savings by identifying personnel with heart disease before a heart attack, since preventive treatment is less expensive than recovery care. The over-forty program is not yet available to the reserve components because of limited medical resources to conduct the necessary screening.

The Army continued development of the National Training Center (NTC) at Fort Irwin, California. Following Fort Irwin's reactivation as a FORSCOM installation on 1 July 1981, the 197th

Infantry Brigade conducted an extended training period (thirty days) to check out thoroughly NTC support functions, equipment, and tactical scenarios. In August 1981 construction of the new live-fire range was completed. The range has automated targets which can simulate attacking or defending enemy forces while friendly forces maneuver and engage with live fire. A total of six battalion task forces (three brigade rotations) trained at the NTC in fiscal year 1981. Brigade rotations will increase to eight in fiscal year 1982, nine in fiscal year 1983, and twelve in fiscal year 1984.

The Army's budget request for fiscal year 1982 included $29 million to acquire approximately 244,000 acres of land for maneuver training for the 4th Infantry Division (Mechanized). The training area, known as the Pinon Canyon, is located in southeastern Colorado, about 155 miles from Fort Carson. The project generated considerable political interest and debate. Congress held special hearings on the issues. In May 1981, the House Appropriations Committee started an investigation of the proposed acquisition. The final report, completed in July 1981, generally supported the project as being necessary, justified, and feasible.

Conduct of Military Operations on Urbanized Terrain (MOUT) training for NATO and CONUS-based forces remained limited during fiscal year 1981 because of a lack of training facilities. Construction was begun, however, on the Army's first new MOUT training facility at Fort Bragg, North Carolina. This facility should be completed by the summer of 1982 and will serve as a prototype for future construction in FORSCOM, USAREUR, and WESTCOM. By 1986 all major commands are scheduled to have facilities for MOUT training that will provide the experimental training necessary for validation of doctrine, individual and unit performance criteria, and necessary combat developments and testing.

Specialized training in the active Army during the past year included U.S. and Allied small unit exchanges and unilateral exchanges with Canada and the United Kingdom; the presentation of on-the-job and observed training to 100 individuals from fifteen foreign countries; and the continued revitalization of competitive marksmanship in both training and competition. Twelve FORSCOM infantry battalions participated in the three-week Jungle Orientation course conducted by the U.S. Army Jungle Warfare Training Center at Fort Sherman in the Republic of Panama. Four infantry companies and 1,200 soldiers assigned to FORSCOM major combat units conducted Arctic Orientation Training at the U.S. Army Northern Warfare Training Center,

Fort Greely, Alaska. Four other FORSCOM units—infantry battalions—also conducted Arctic Orientation Training. They trained at Fort Wainwright, Alaska, under the Rotational Battalion Combat Team Program. Three other brigades conducted cold weather training at Fort Drum, New York.

Exercising, training, and deploying the Army Rapid Deployment Forces (RDF–A) received increased emphasis during the year. In October 1980, BRIGHT STAR 81 demonstrated rapid deployment and joint and combined readiness of selected RDF–A units. Headquarters, Rapid Deployment Joint Task Force, and a reinforced battalion of the 101st Airborne Division deployed to Egypt to evaluate command and control, increase cooperation with the host nation, familiarize personnel with desert environments, evaluate standard operating procedures, and test selected logistical and communications concepts. RDF–A forces also participated in Exercise GALLANT KNIGHT 81 and in the BRIEF REPLY communication exercise.

In other exercises, Army forces participated in eight JCS-directed and thirty-seven JCS-coordinated exercises at a cost of $51 million in fiscal year 1981. These included two JCS-directed command post exercises; two major field training exercises (TEAM SPIRIT 81 and SOLID SHIELD 81); as well as large-scale USCINCRED field training exercises in the continental United States. LOGEX 81, conducted at Fort Pickett, Virginia, during the period 9–22 August 1981, was geared to the command and staff problems of combat support and combat service support (CS–CSS). The exercise featured an isolated U.S. corps as a 3⅓-division force with a full complement of support units in a Central Europe scenario during a sixty-day unconventional war. Approximately 3,300 individual players from 110 active Army and reserve component units, the U.S. Navy, Marine Corps, Air Force, Central Army Group, Southern Command, and USAREUR participated in the exercise.

The Training Management Control System (TMACS), which was described in last year's historical summary, made progress during the year. In September 1981, the Pulau Electronics Corporation received a contract to provide the 199 computer units that will be required (FORSCOM 101, USAREUR 63, TRADOC 15, EUSA 13, and WESTCOM 7). Pulau will conduct operator and programmer training at Headquarters, FORSCOM, using two of the portable desk-top computer units in October 1981. Five units each will be delivered to Fort Hood and Fort Carson in November 1981 to conduct field testing of the revised software. Sixteen computers are scheduled for delivery to Fort Leav-

enworth in late December for major command training sessions, and the remaining computers (171) will be delivered to the field during 1982 in accordance with major command requirements.

4. Intelligence, Automation, and Communications

The technological revolution of the decades since the Second World War has increasingly automated both military intelligence activities and signal communications, to say nothing of other aspects of the military scene. While automation thus serves both intelligence and communications, the two are especially linked with automation because of their basic need to transmit military information speedily and securely. By fiscal year 1981, the process of automation was proceeding at an accelerated pace in keeping with the Army's efforts to modernize its equipment. As one might expect, given the long lead-time required to field the new electronic systems, much of the Army's modernization of its intelligence gathering and signal communications during the reporting year is a history of research, development, and acquisition programs. During the year, there were also some organizational changes. In intelligence matters there was much attention to training, particularly in languages, which reflected the continuing worldwide scope of the Army's responsibilities. Several of the new systems were joint in nature, with the Army responsible, for example, for the ground stations of global satellite systems. This, too, was a mark of the continuing concurrence of joint- and single-service operations.

Intelligence

The Army continued during the reporting year with its plans to begin reorganizing military intelligence units in the reserve components in fiscal year 1982. At the same time, the Army continued to carry out the recommendations of the Intelligence Organization and Stationing Study of 1975 concerning the reorganization of certain active units at the corps level and below. Accordingly, in June and September 1981, the Army combined several tactical military intelligence and Army Security Agency units to form military intelligence (MI) battalions in support of the 2d, 3d, 8th, and 24th Infantry Divisions, respectively. To form these new battalions, the reorganizations combined the 2d Military Intelligence Company and the 329th Army Security Agency Company (Division Support) into the new 102d MI Battalion, the 3d MI Company and the 851st ASA Company into

the 103d MI Battalion, the 8th MI Company and the 415th ASA Company into the 108th MI Battalion, and the 24th MI Company and the 853d ASA Company into the 124th MI Battalion. The U.S. Army Intelligence and Security Command assembled a special study team, with representatives from all Army major commands, to determine both peacetime and wartime intelligence requirements in echelons above corps. The team was expected to report by the end of December 1981.

Effective 1 April 1981, the Army transferred the Current Intelligence Division of the U.S. Army Intelligence and Threat Analysis Center, an activity of the Intelligence and Security Command, to the U.S. Army Intelligence Operations Detachment, a field operating agency of the Office of the Assistant Chief of Staff for Intelligence, where it had been lodged for operational control since 24 October 1980. The mission of the Current Intelligence Division was to aid the Assistant Chief of Staff for Intelligence by providing and interpreting current intelligence from all sources for the Army secretariat, the Army staff, and the major Army commands. Considerations that influenced the return of the division to the control of the assistant chief were increased reporting requirements stemming from a rise in intelligence tensions, the Army staff's need for a reporting capability of its own, and a desire to reduce the responsibilities of the Intelligence and Threat Analysis Center.

In order to retain civilian personnel in critical overseas positions during times of national emergency, including persons performing key intelligence services, the Department of Defense proposed certain policy changes, which were pending at the end of fiscal year 1981. The proposed changes would require certain civilians to join the Selected Reserves as a condition of employment, would extend coverage of the Uniform Code of Military Justice to key civilians during periods of emergency, and would permit overseas commanders to require civilians holding designated positions to remain in place during mobilization or hostilities. The proponents of these changes believed that they would have a far-reaching, positive effect on the readiness of overseas units.

A personnel action pending at the end of fiscal year 1980 concerned whether or not to phase out meteorological observers (military occupational specialty 93E) and replace them with civilians, as had been urged in the plan presented by a task force set up to recommend improvements in the management of Army meteorological activities. This proposal interested military intelligence authorities, because commanders are necessarily as con-

cerned with the weather as they are with the terrain on which they might have to fight or with the number of opposing enemy forces. Because the U.S. Army Materiel Development and Readiness Command (DARCOM) had urged that meteorological observers be replaced by artillery ballistics observers (MOS 93F) rather than by civilians, who were in short supply, the task force's plan was not approved by the Vice Chief of Staff until July 1981. In order to secure its approval the staff dropped the recommendation regarding the meteorological observers, leaving the responsibility for resolving this matter to the Deputy Chief of Staff for Research, Development, and Acquisition. The solution reached by the interested parties, with some compromise before the end of the reporting year, was to begin replacing most of the meteorological observers with civilians in fiscal year 1983, eventually leaving only a few of these observers with military status.

During the past year the Army staff has given high priority to the training of signal intelligence personnel in a continuing effort to correct the problems associated with this training, problems that arose from the difficulty of making peacetime training meaningful. Inasmuch as most of the active and reserve military intelligence specialists are in combat intelligence units that support tactical forces in echelons up to and including corps, their peacetime training has generally been conducted under conditions far different from those they would encounter in wartime operations. Such a situation not only adversely affects individual and unit readiness, but also fosters job dissatisfaction and a low reenlistment rate. To deal with this matter, the Army in January 1980 issued a revision of its regulation on Tactical Intelligence Readiness Training (AR 350–3), which directed an expansion of the readiness program to include all intelligence disciplines in the reserve components as well as in the active forces. The purpose of the program was to improve both individual and unit skills necessary for combat intelligence. To do this, the training of personnel against real targets was emphasized in order to make training realistic and to counter dissatisfaction stemming from the artificiality of traditional peacetime training.

Opportunities for maintaining or improving individual skills provided by the readiness program included post-apprentice technical courses, self-study foreign language texts and tapes, participation in so-called live environment intelligence operations, and specialized operational training conducted by strategic and national intelligence agencies, all supplemented by educational centers, language laboratories, and foreign language courses. To make training more realistic and practical, the readiness program

provided during the past year for the acquisition of limited quantities of commercial equipment in lieu of military equipment not yet in sufficient supply for regular use. In one activity, intelligence specialists used normal tactical equipment to process raw data gathered by sensor-collecting devices, the data sometimes being transmitted to tactical units at or near their garrisons. This activity combined so-called in-unit and live environment training of a practical kind.

To improve training of communications or signal intelligence personnel, officials designed, as an aspect of the readiness training program, the so-called TROJAN projects to provide live signal intelligence training at two installations of the U.S. Army Forces Command. Funding for these projects is for fiscal years 1983–1987, which includes funds for expanding them and for establishing a project at another installation. Also funded for these years is a TROJAN project for Europe, for which U.S. Army, Europe, urged additional funding for fiscal year 1982.

To provide for improved intelligence training for the reserve components, Forces Command began to establish two consolidated training facilities, one at Fort Shelling, Minnesota, and one at Austin, Texas. Each of these facilities was to train reserve intelligence personnel in its general area. Both were to offer live training opportunities including training afforded by the TROJAN projects.

In fiscal year 1981, nearly 1,400 enlisted and warrant officer specialists participated in live environment or specialized operational training provided by the U.S. Army Intelligence and Security Command and national intelligence agencies. That was a 55-percent increase in participation over the previous fiscal year. Of the participants, 40 percent were linguists. Virtually all intelligence personnel in the active forces and many in the reserve components participated in intelligence activities within their units during the year. Officials responsible for the readiness training program believed that the measures taken during the past year not only increased individual proficiency and unit readiness, but also contributed to the contingency planning of tactical units receiving intelligence support.

As might be expected, language training was of particular importance to the Army, which during the fiscal year launched a substantial program for improving its linguistic capability for intelligence purposes. Although the results of its efforts would not be very fruitful for some time, fiscal year 1981 witnessed increased awareness and improvement in the management and training of linguists.

To capitalize for the first time on the number of persons in large urban areas speaking their native foreign tongues, the U.S. Army Recruiting Command sent out four teams of linguists, each to a different city—Pittsburgh, Boston, Sacramento, and Santa Ana. By the end of the year these teams were able to visit forty-five schools. The Army, working through the U.S. Army Training and Doctrine Command (TRADOC), sought to develop a career management field for linguists that was geared to a language instead of the awkward system that was keyed to a technical skill, such as voice interceptor. If such a career field were developed, it would be possible to improve and maintain language skills directly as a principal object of management rather than as something incidental to the skill. TRADOC, therefore, set about preparing new descriptions of career fields 96 and 98 (military intelligence and electronic warfare cryptological operations) with a view to converting them to linguistic career management fields.

Another problem with maintaining language skills was that speakers of some languages that would be needed in certain contingencies were scattered throughout the force structure, thus making skill maintenance training difficult. To overcome this problem, the U.S. Army Intelligence and Security Command began work on a language organization to which these specialists could be brought for training.

To provide special incentives for linguists—who heretofore could receive only a selective reenlistment bonus, which had proven inadequate for retaining linguists with much needed skills—the Army proposed skill shortage pay, which the fiscal year 1982 defense appropriation bill authorized along with combat arms pay. Another matter that impinged on morale and efficiency was the policy requiring short, unaccompanied tours in Korea, which resulted in repetitive overseas assignments and family turmoil and provided little time for the linguist to become familiar with his work. To correct this situation, the Army permitted selected linguists, going to certain locations in Korea, to serve two-year tours with their families accompanying them. Since the inception of this plan in the summer of 1981, fifteen selected linguists have gone to Korea.

Still another infringement on morale and efficiency was the practice of training tactical intelligence units in the continental United States by using recorded, dated intercepts. Informal surveys, demonstrating that working in an actual intelligence situation resulted in greater job satisfaction than working in a sterile environment, led the Army to establish training programs with real intelligence missions at two locations within the United

States. U.S. Army, Europe, planned to establish a similar program in fiscal year 1982.

Previously, the Office of the Deputy Chief of Staff for Operations and Plans, in addition to acting as executive agent for the Defense Foreign Language Program, had served as the Army Service Program Manager for linguists. In November 1980, the Service Program Manager function was transferred to the Assistant Chief of Staff for Intelligence.

Refresher-maintenance and intermediate language training within the Army is limited by the resources of the Defense Language Institute Foreign Language Center (DLIFLC) and by the availability of soldiers due for training. On the other hand, language training through other federal agencies and at U.S. and foreign academic institutions is more economical, both in time and money, for soldiers who otherwise would have to move. Recognizing this fact, the Army developed new programs to make use of these options. Furthermore, the U.S. Army Intelligence and Security Command took steps during the year to establish the Foreign Language Training Center, Europe (FLTCE), in Munich, Germany.

In order for field commanders to maintain language proficiency within their units on a day-to-day basis, the Army included funds in its fiscal year 1982 budget to provide diagnostic tools for determining deficiencies in language skills, remedial training for improving these skills, and performance tests for measuring their development. In further support of these objectives, the amended fiscal year 1982 budget included $1.2 million for the Defense Language Institute's Foreign Language Center for nonresident language training materials and course design and development. The Army also planned to start language proficiency sustainment courses in fiscal year 1982 for German, Arabic, Korean, and Chinese.

A common deficiency of language training materials heretofore had been that they often lacked spontaneity and were out of date in terms of actual linguistic usage. To help this situation, fiscal year 1982 funds will permit the Army to use video tapes of foreign television broadcasts in language training. In a related development, in the fourth quarter of fiscal year 1981, the Army authorized intelligence personnel to intercept foreign language transmissions during field training exercises. Previously, regulations had forbidden such use of foreign transmissions; as a result, linguists in training were exposed only to English language traffic.

The overseas program provided training for 125 students in

thirty countries during fiscal year 1981. Also during this year the Army established new training sites in Argentina, Bangladesh, Belgium, Indonesia, Malaysia, Panama, Peru, and Sudan, and it initiated negotiations to begin training in the People's Republic of China and in Malawi in Sub-Saharan Africa. To accommodate the expansion of this overseas program, the Army had to increase its training budget.

In another overseas intelligence training activity, the Army and Air Force sent a technical assistance team of four people (three from the Army and one from the Air Force) to Riyadh, Saudi Arabia, to help the Saudi Arabian forces organize and operate a joint intelligence school. The main purpose of this school was to provide training in tactical intelligence and imagery interpretation. During the period April–July 1981, the team set up and conducted one tactical intelligence course and partially organized another in imagery interpretation. There were problems getting the necessary equipment for the latter course, but the team expected it to begin on 15 December 1981, early in the new fiscal year.

Imagery interpretation is an important aspect of intelligence training, dealing as it does with the recognition, identification, location, description, and analysis of objects, activities, and terrain represented electronically or on film or through other media. To improve Army capabilities in this field, a joint working group made up of representatives from OACSI, TRADOC, USAICS, and INSCOM drafted the U.S. Army Air Intelligence and Imagery Plan during the summer and fall of 1981, but did not have it quite ready for approval by the end of the fiscal year. The study from which the plan resulted reviewed current air intelligence and imagery training and recommended changes relating to the Mobile Army Ground Imagery Interpretation Center and several imagery systems that had been recently introduced.

Before 1975, the Army had limited its technical training of tactical signal intelligence units to ways that proved unsatisfactory, either because they did not provide day-to-day tactical training or because related requirements took up the time needed for maintaining technical skills. As time went by, technological advances in communications and automation made alternative ways of training signal intelligence soldiers more efficient and cost effective.

In 1980, the U.S. Army Intelligence and Security Command conducted a worldwide evaluation of the technical health of U.S. signal intelligence units, which indicated the need for new and effective training. Because of new technology and training needs,

U.S. Army, Europe, laid down a requirement for a signal intelligence electronic warfare training simulator that would make use of new technology by tying both jammers and information collectors with emitter signals controlled from a single location. This equipment would pit the trainee against a simulated but nevertheless realistic signal intelligence problem. In planning for the year immediately ahead, the Army staff looked to the procurement of these tactical simulators in fiscal years 1983–1987 for all active and reserve combat electronic warfare intelligence units. The Army regards these units as very important because of their ability, when fully trained and equipped with signal intelligence and direction-finding equipment, to locate an enemy electronically and then to destroy the electronics upon which he depends for exercising his tactical doctrine.

Human intelligence (HUMINT in the jargon of the trade) is intelligence gathered directly by humans, as distinguished from intelligence collected by electronic, photographic, or other physical "nonhuman" means. In September 1981, the Deputy Chief of Staff for Operations and Plans and the Assistant Chief of Staff for Intelligence approved a draft statement of policies and procedures in the field of human intelligence. Among other things, the statement set forth the various ways in which human intelligence organizations in echelons above corps could meet the needs of tactical commanders, and vice versa. Of particular importance was the draft's validation of the need of corps commanders for an organic long-range surveillance ability. If approved by the Army Electronic Warfare Intelligence Committee in 1982 as expected, the statement would help shape the future human intelligence force structure.

Executive Order 11905, issued by President Gerald R. Ford on 18 February 1976, and Executive Order 12036, issued by President Jimmy Carter on 24 January 1978, which built on experience with the Ford order, laid down exacting guidelines for conducting U.S. foreign intelligence activities. As President Carter stated when issuing his order:

> Our intelligence agencies have a critical role to play in collecting and analyzing information important to our national security interests and, on occasion, acting in direct support of major foreign policy objectives. It is equally important, however, that the methods employed by these agencies meet constitutional standards protecting the privacy and civil liberties of U.S. persons and are in full compliance with the law.

Executive Order 12036 authorized the military services to conduct counterintelligence activities in coordination with the

Federal Bureau of Investigation (FBI) inside the United States and with the Central Intelligence Agency (CIA) outside the nation's borders in accordance with procedures agreed upon by the Secretary of Defense and the Attorney General. Both presidential orders required the executive departments and agencies to bring their directives and regulations into conformity with the new guidelines.

On 10 January 1977, in the wake of Executive Order 11905, the Army rescinded Army Regulation 381–150 of 26 July 1971, a broad rather than detailed guide to the Army's collection of intelligence by human means. Delay by the Department of Defense in implementing the new presidential requirements caused further delay down the line. Department of Defense Directive 5250.1 and Regulation 5240.1–R, which deal with the policies and procedures pertaining to foreign intelligence and counterintelligence, did not come out until November 1979; and 5240.2, which pertains to the assignment of counterintelligence responsibilities to military departments, was not issued until 18 December 1979. Consequently, the Army could not replace AR 381–150 with 381–100 and could not issue AR 381–10 and 381–20 until still later.

On 1 August 1981 the Army put out Army Regulation 381–100 on collecting human intelligence, with an effective date of 1 September 1981. The number of the regulation was changed because the number of a rescinded regulation cannot be used for five years. Without guidelines of its own or of the Department of Defense, the Army operated on the basis of national guidelines in the field of human intelligence during the period 1977 to 1981 as, in the final analysis, it always did and still does.

Army Regulation 381–10, on Army intelligence activities as a whole, was almost ready for publication at the end of fiscal year 1981. Following publication of Department of Defense Directive 5240.2, the Army prepared a revision of Army Regulation 381–20 of 10 September 1975 on counterintelligence operations. This revision implemented 5240.2 and would be ready for publication early in calendar year 1982. For the record, the new 381–10 used the number of a 1967 regulation, on channels of communication with the Federal Bureau of Investigation, that had been superseded by 381–20 of 1975. The new revision included the old delimitations agreement of 1949 between the intelligence agencies of the military services and the Federal Bureau of Investigation, which formed a part of 381–20 of 1975, as revised in 1979.

Counterintelligence support to Army operational security

programs had a high priority for at least five years preceding the reporting year. Emphasis with respect to counterintelligence support of operational security, however, has changed since the mid-1970s, from a determination of what may have been compromised in units and installations to an emphasis on giving advice and assistance in security matters. It is hoped that this new approach will prevent the loss of sensitive information rather than merely document such a loss, as sometimes happened in the past.

Major accomplishments in counterintelligence support of operational security during the past fiscal year were in two broad areas: there was a marked increase in senior-level support of the operational security program in general and of counterintelligence support in particular; and there was a shift in priorities from counterintelligence support of the Army in general to support of research, development, test, and evaluation activities within the continental United States, which became the premier counterintelligence priority. At year's end this counterintelligence support to research and its related activities was expected to continue, with emphasis on early identification of sensitive programs in order to support them throughout their course.

Intelligence support of the Army continued to depend a great deal upon automated data processing. An example of computer use in the reporting year was the success of the Intelligence Information Subsystem (a part of the Intelligence Data Handling System), which the Army had fielded in 1979 as its first mobile all-source automated means of intelligence support. In field exercises the subsystem supported both the U.S. Army, Europe (USAREUR), and the Central Army Group of the North Atlantic Treaty Organization (NATO).

In the case of the Intelligence Data Handling System, the Office of the Assistant Chief of Staff for Intelligence carried out its management responsibilities in various ways. It upgraded existing minicomputers of the U.S. Army Western Command (WESTCOM), the Intelligence Threat Analysis Center, the Foreign Science and Technology Center, and the U.S. European Command (EUCOM). It also took steps to install at existing sites such additional peripheral equipment as tape and disk drives, multiplexers, terminals, printers, and printer-plotters. At year's end there was a telecommunications satellite link between Korea and the Commander in Chief, Pacific, in Hawaii; a minicomputer was being installed at Arlington Hall Station to link the Intelligence Security Command and the Army Operations Center in the Pentagon; the Naval Photo Interpretation Center was installing a cathode ray tube to put the Photo Center on-line with

the Army Operations Center; and the Army had committed funds to upgrade the Analyst Intelligence Display and Orientation System in Germany. Also at year's end the Army Threat and Intelligence Production System was in the definition and design phase; and the U.S. Army Training and Doctrine Command had agreed to the extension of its jurisdiction to include the Department of Defense Intelligence Information System and the Army's Intelligence Data Handling System.

Extensive computerization of the Army's intelligence function can also be seen in the continuation of Project ASSIST (Army System for Standard Intelligence Support Terminals), under which it released to the field new automatic data programming, designated Version 4.1, and then proceeded with the development of Version 5.0. This latter version, when developed, will simplify the access of intelligence analysts to large data bases at remote computer sites. As the year ended, the International Nickel Company (INCO, Inc.) was under a multiyear contract to carry on the work under Project ASSIST in the areas of maintenance and improvement, technical support for intelligence installations outside the continental United States, personnel training, and administration, including required reporting of contract status. INCO, Inc.'s work covered simplification of machine instructions, modification of Bunker Ramo Company's Model 1569, provision of an information exchange with Datanet 355, a computer security system, programming for linkage with the Defense Intelligence Agency's on-line system, as well as other technical services. Other developments under Project ASSIST included the upgrading of major computer equipment at Headquarters, European Command, which involved the replacement of several minicomputers, and increasing computer and message capacity by the use of a wideband circuit and multiplexer at both EUCOM and USAREUR headquarters.

In the control and analysis of signal intelligence by automated data processing before 1980, each of the military services pursued its own course. As might be expected, this led to considerable duplication of effort and increased costs. In an attempt to develop a more efficient approach, the National Security Agency brought the services together early in 1980 and directed them to identify their signal control and analysis needs and to eliminate duplication. The services approved a joint statement of requirements which they submitted for approval by the National Security Agency in August 1981.

The Army not only pushed forward on several intelligence fronts during the past fiscal year but, as the Department of De-

fense executive agent, also opened, on 15 December 1980, a new remote triservice intelligence facility in a huge three-story underground structure adjacent to Schofield Barracks and Wheeler Air Base at Kunia, on Central Oahu, Hawaii. Before opening the facility, which represented a significant advance in intelligence operations in the area, the Army had to renovate part of the third floor of the structure that housed it. At the end of the fiscal year expansion of the new facility was in progress as plans continued for renovating the remainder of the third floor, part of the second floor, and a major part of the first floor. The structure had been built after the Japanese attack on Pearl Harbor as an underground parking facility for military aircraft.

Military intelligence personnel had representatives in several groups, including the Operations Subcommittee and the Imagery Planning Subcommittee of the Committee on Imagery Reconnaissance and Exploitation, which was reorganized to provide a more timely response to the requirements of the intelligence community. Managing the current collection and exploitation needs of imagery intelligence was the responsibility of the Operations Subcommittee; reviewing long-range requirements for collection and exploitation, for the purpose of making recommendations to the parent committee, was the responsibility of the Imagery Planning Subcommittee. Army representation in another working group led to the lifting of limitations on the timely and widespread dissemination of overhead imagery. The group expected to publish the first section of its findings in late 1981 or early 1982.

The Office of the Assistant Chief of Staff for Intelligence participated in the departmental management of the Army's Tactical Exploitation of National Capabilities Program, which provided for the development of connections between Army tactical organizations and national intelligence sources. An important occurrence in these matters was the redeployment of the digital imagery testbed—a prototype or experimental system for receiving imagery from various sensors to use in the timely exploitation of imagery—from Europe to its future home with the XVIII Airborne Corps at Fort Bragg, North Carolina. Before its redeployment to the XVIII Airborne, the testbed, in a very successful demonstration, supported CERTAIN RAMPART, a field training exercise of the VII Corps; REFORGER, the annual mobility exercise; and Exercise SHOCKWAVE of the U.S. European Command. This action provided both contingency support for REFORGER and training that was useful in developing the Tactical Imagery Exploitation System.

The Army also sent a representative to help revise the Joint Chiefs of Staff Test Plan to Assess the Capabilities of National Intelligence Systems to Support Tactical Requirements. The revision allowed the unified and specified commands and services to recommend exercises as vehicles for special projects and, of particular importance, to add teeth and flexibility to the old document by establishing a procedure through which the Joint Chiefs could take corrective action. The Imagery Intelligence Division, Office of the Assistant Chief of Staff for Intelligence, as the staff agency primarily responsible for Army actions under the revised document, coordinated Army personnel, communications, and funding for special project CONSTANT HORIZON, the vehicle for which was ULCHI–FOCUS LENS 81, a command post exercise of Combined Forces Command in Korea. CONSTANT HORIZON proved to be a milestone in the improvement of national intelligence support in the Korean theater.

The Imagery Intelligence Division was also the agency primarily responsible for the Army's participation in the Defense Reconnaissance Support Program. This was a major functional program which had been established within the tactical and other related intelligence activities of the Department of Defense to improve satellite reconnaissance support of operational forces. The division responded to planning, programming, and budgetary matters arising under this program in coordination with the Vice Chief, the Chief of Staff, the Undersecretary, and the Secretary of the Army.

The National Security Agency annually awards its director's trophy to the tactical and mobile military cryptologic collector that contributed the most significant signal intelligence data during the previous calendar year. Although the Army did not win this award for 1980, its nominee—the 372d Army Security Agency Company, 25th Infantry Division, Schofield Barracks, Oahu, Hawaii—won the runner-up trophy, which the director presented during ceremonies at Fort Meade, Maryland.

Automation

In order to consolidate management of command, control, communications, and computers under one head, as previously planned, the Army staff established, effective 1 October 1981, the office of the Assistant Deputy Chief of Staff for Operations and Plans, C4, and assigned these functions to him. He would also have membership on certain key committees of Headquarters, Department of the Army. The staff placed this important

new office in Operations and Plans, because the functions involved were important to operations.

Specific legislation (Public Law 89–306) and regulations provided the authority and procedures for acquiring automated data processing equipment along with its necessary programming and maintenance. The body of applicable regulations included Federal Property Management Regulations, Federal Procurement Regulations, Defense Acquisition Regulations (together with Army supplements), and Army Regulations. Army Regulation 18–1, "Army Automation Management," 15 August 1980, set forth basic policies and responsibilities and delegated authority for managing Army automation. This regulation and others in the same series established policies and procedures for most automation in the Army. During the past year the Army published a number of technical bulletins on various aspects of automation management. One of these, technical Bulletin 18–100, "Army Automation Life Cycle Management," 15 August 1981, provided a systematic and disciplined approach to the management of the entire life cycle of automated data processing projects. These regulations and bulletins, based on Department of Defense Directives 5100.40 and 7920.1, together with Instruction 7920.2, covered the use of computers for logistical and other general purposes. They were not concerned with so-called embedded computers—such as those built into weapons systems, those used by the Corps of Engineers in carrying out its civil works responsibilities, or those used by activities financed through unappropriated funds—all of which were handled separately.

Among the provisions of Army Regulation 18–1 were descriptions of the classes of automated data processing equipment as well as costs and acquisition authority. Acquisition authority not delegated to heads of Army staff agencies and major commanders remained under the Assistant Secretary of the Army for Installations, Logistics, and Financial Management. In these cases, the U.S. Army Computer Systems Selection and Acquisition Agency was responsible for actual acquisition.

Logistical planning anticipated an accelerated effort in the next decade to improve the operational capability of the Army's field forces by introducing complex automated data processing of even the "embedded" kind, which forms an integral part of communications equipment and weapons systems, as well as the self-contained kind. To accomplish these purposes, the Army formulated and published Department of the Army Letter 700–81–1, "Logistic Support Policy for Automatic Data Processing Equipment," 30 April 1981, which, with any revisions that might be

required, would provide needed guidance for the foreseeable future.

In logistical planning in the field, both functional and individual systems automation plans, as part of the Army Automation Planning, Programming, and Evaluation System, played important roles in obtaining recognition for automated systems as integral parts of the comparable DOD evaluation system. In July 1981, the Office of the Deputy Chief for Logistics submitted to the Office of the Assistant Chief of Staff for Automation and Communications four functional and sixteen individual plans, about the same number that had been submitted during fiscal year 1980.

Procurement of automated data processing equipment received substantial attention during the past year at most of the sites in the Base Operating System, together with other selected sites, as well as at European area communications sites. Of the first category there were approximately forty-seven sites in the continental United States, Alaska, Hawaii, and Panama that had obsolescent IBM 360 computers. The obsolescent equipment at these places, which provided the Army with nontactical administrative, logistical, and financial processing, was completely saturated, thus becoming difficult to maintain and inadequate for mobilization. To deal with this situation the Army staff and selected major commands jointly developed the high-priority Vertical Installation Automation Baseline (VIABLE) Project, which laid down a procurement schedule through fiscal year 1984. Army proponents of this project were confident that it would alleviate the problems caused by failing equipment and would enable the Army to obtain new equipment, at low operating costs, through open and competitive bidding.

Management of the project was according to the guidelines set forth in Office of Management and Budget Circular A–109, which encourages the use of industrial solutions to problems faced by government agencies. This policy required early involvement of the automated data processing industry in the acquisition program. After extensive review of the project within the government, industrial proposals for projects were the responsibility, first, of the VIABLE Source Selection Evaluation Board and, finally, of the In-Process Review Board, which reported, with its recommendations, to the Assistant Secretary of the Army for Installations, Logistics, and Financial Management. The evolution was in two phases: one phase evaluated concepts and possible solutions as well as compliance with requirements;

the other was an actual demonstration. As the year ended, the project was in the second, or testing, phase.

In the case of the European area communications sites during the past year, the Army replaced all fixed International Business Machine (IBM) 360 computers with automated data processing equipment from that company's 4300 Series. It also made improvements in the mobile equipment by upgrading the 360/30 computers of the division-level combined services support system in the 8th Infantry Division to a 360/40 central processing unit. This upgrading was done in August 1981 by leasing government-owned equipment, which brought about at least a 25-percent improvement in processing time. As the year ended, there were plans to upgrade similarly the 360/30 equipment of the other three divisions and of the three separate brigades of U.S. Army, Europe. Also at that time, there was $14 million in the Army's fiscal year 1982 budget for five so-called Interim Theater Automatic Data Processing Service Center systems. These would be mobile systems using equipment of the 4300 Series and would be located in the 200th Theater Army Maintenance Command at Zweibruecken, the 21st Support Command at Kaiserslautern, the 7th Medical Command at Karlsruhe, the 1st Personnel Command at Schwetzinger, and the 4th Transportation Command at Oberursel. The new systems were not expected to be in place, however, until the last quarter of 1983, but once established they would be able to meet wartime needs.

In the case of the fifty-one nondivisional direct support and general support sites in Europe, the Army had, by the end of the fiscal year, all but completed replacement of the National Cash Register 500 equipment with that of the Decentralized Automated Service Support System. This system was Honeywell's Level 6 computer, with certain specialized features, mounted in a mobile 35-foot semitrailer, which figured prominently in a plan to replace equipment in the higher echelons of the Army in Europe.

This plan was the Army Combat Service Support Automation and Communications Transition Plan, FY 81–88, which at first was called simply the Combat Service Support Transition Plan. The U.S. Army Logistics Center developed it with assistance from the Soldier Support Center, the U.S. Army Signal School, and the Health Services Command; the plan was expected to be integrated into the Army Command and Control Master Plan by early 1983. As submitted to the Combined Army Development Agency and distributed in September 1981, the transition plan would provide a procedure for eventually replacing existing au-

tomated data processing systems in field combat support units with two basic types of computer equipment.

One type of equipment was an expanded version of the Decentralized Automated Service Support System (DAS3), designed to meet the data processing needs of combat service support units at divisional, corps, and theater levels of operation; the other type was the similar Division Level Data Entry Device. The expanded version of the Decentralized Automated Service Support System was intended to replace the mobile IBM 360/30 computers and the UNIVAC 1005 computers in divisions of both the active Army and the reserve components and also to replace the SPECTRA 70–15 computers at the ports. The plan helped users to define requirements for developing, testing, fielding, and integrating combat service support and automated communications for all Army organizational levels in the field. In addition, it was a guide to those concerned with combat service support automated communications to help bring about a system that would be interoperable with the Battlefield Automated System, as provided in the Army Battlefield Interface Concept.

To meet the needs of field commanders for automatic and precise information on the location of friendly forces, the Army and the other military services developed a program that, following a series of tests, could be operational by 1988. The Army's name for the proposed program, the Army Data Distribution System, was much shorter than the combined name of the parts that formed the whole: the Position Location Reporting Systems, a combined Army–Marine Corps program; and the Joint Tactical Information Distribution System, an Air Force, Navy, and Army program. The full name of the composite system came from putting these two names together and adding the word *hybrid*. In its own shorthand, however, the military referred to it as PJH. The Position Location Reporting System of the Army and Marine Corps would serve soldiers on foot, in surface vehicles, or in aircraft by giving them their own location as well as that of friendly units or other similar information. It would use a master station, an alternate master station, and units in manpacks, vehicles, and aircraft. The proponents of this system completed the second phase of its developmental testing at Fort Huachuca, Arizona, in September 1981, and at the end of the year they were completing the second phase of its operational testing at Fort Hood, Texas. With an Army review scheduled for September 1982, the Army expected the system to be ready in 1986.

The Joint Tactical Information Distribution System, the other part of the composite system, was a triservice program to develop

a digital data information distribution system that would provide secure communications for navigation and identification. Through this system, information would be distributed at high speed. Its management was through a joint program office, with the Air Force as the lead service.

The composite system was developed to satisfy the need for communications able to support existing and programmed automated systems for maneuver control, air defense, fire support, intelligence electronics warfare, and combat service support. It is a computer-based system providing real-time, secure data communications, identification, and position location and reporting information to the tactical forces with rapid response times, resistance to jamming, security, and low levels of mutual interference with users of voice communications.

Another system in its early stages was the Theater Army Medical Management Information System. This was a complete system designed to provide operational support and command and control information regarding medical resources on the battlefield. Intended for use by major commands in a war zone, it could also be used by subordinate commands, hospitals, and medical reserve units. Within the overall structure there were subsystems concerned with medical logistics, medical regulating, patient accounting and reporting, and whole blood management. In its final form the system would have both manual and automated features and would be used to acquire, process, and disseminate information that would assist tactical and medical commanders in managing their medical resources. It would also connect with the Army Standard Supply System to exchange logistical information, with the Army Personnel System to exchange personnel and accounting casualty reporting information, and with the Combat Service Support Command and Control System to exchange command and control information. Initially the system would use the Honeywell Level 6 computer of the Decentralized Automated Service Support System in the medical supply optical and maintenance units and at the medical command levels; the Division Level Data Device, an IBM Series 1 computer, was envisioned at all treatment facilities and command and control units. Eventually both would be replaced by military computers.

The Academy of Health Sciences and the Office of the Surgeon General developed a product manager's charter for this system before the end of the fiscal year, at which time it was awaiting approval by the Assistant Secretary of the Army for Installations, Logistics, and Financial Management. As envisioned, the system would use extensive telecommunications and

mobile equipment that would not require environmental conditioning to operate. At year's end, preliminary contract work was expected to get under way in fiscal year 1982.

Communications

Since communications have become highly automated in recent years, the decision as to whether some subjects should be grouped under automation or communications is often purely arbitrary. However, in some cases the subjects fall naturally into one category or the other, as is the case with communications for tactical nuclear forces. As the executive agent for communications supporting tactical nuclear forces in Europe, the Army continued to develop and implement a series of projects to upgrade existing facilities. It expanded the voice conference system of the U.S. European Command and added a secure record capability; procured and installed new high-frequency radios for the EUCOM special purpose network, known as the Cemetery Net; completed the final testing of new satellite communications in preparation for deployment to Europe in fiscal year 1982; and continued a new program to develop improved high-frequency radios for mobile forces. The new radios permit easier operations, higher reliability, and increased maintainability. These radios are being developed in such a way as to allow for future modifications of a frequency-hopping capability which offers better protection and significantly improved resistance to jamming.

In another effort to upgrade military communications in Europe, the Department of Defense secured approval from the Federal Republic of Germany, in a 1978 memorandum of understanding with its Minister of Posts and Telecommunications, to procure 112 electronic digital telephone switches for use in modernizing the European Telephone System (ETS) network. The Army procured nineteen of these switches in fiscal year 1981 to add to the six obtained the previous year. The acquisition of equipment for such a large network must be accomplished over several years. At year's end, one switch had been cut over and was operational in Garlstedt.

By means of the Telecommunications Plan for the Improvement of Communications in Korea, the United States launched an ambitious effort to improve its military communications in the Republic of Korea. This project would be accomplished by integrating U.S. communications with those of Korea, thereby establishing a highly protected, high-quality communications system capable of supporting the military forces of both countries

under normal, crisis, and wartime conditions. The plan, dated in 1980, was approved by the Office of the Joint Chiefs of Staff in February 1981. The Army would be the lead military service in carrying out this plan and, accordingly, turned to the U.S. Army Communications Command at Fort Huachuca, Arizona, to undertake the work. By the end of the fiscal year the work had been funded, and preliminary engineering such as site and route surveys for cable trunks and technical control equipment was under way in Korea.

To manage its far-flung commitments, the United States operated the Worldwide Military Command and Control System, in support of which the Army continued to expand its automated data processing capabilities. This system provided an automated means for exchanging command and control information that supported decision making at the highest military levels. The medium for coordinating the decision-making effort was a subsystem in the form of an intercomputer network connecting the information systems that served planning, logistics, intelligence, readiness and mobilization management, deployment, and support of forces. The Army improved the capacity of the network to deploy and support forces by extending its connections to east and west coast ports through the command and control facilities of the Military Traffic Management Command. The Army improved its support of this system by upgrading the automated data processing equipment at Headquarters, Department of the Army, and at other key facilities to provide increased data storage, better processing, and additional local and remote terminals. In supporting the reconfiguration of the intercomputer network, begun during the last half of the fiscal year, the Army tried to improve reliability and performance by upgrading transmission rates of selected circuits, rerouting other circuits, and activating additional ones. The scheduled date for completing this reconfiguration was June 1982. In July 1981, the Army began surveys at the command headquarters of worldwide command and control sites to determine future information needs in the functional areas of nuclear operations, resource and unit monitoring, and conventional planning and execution for the period after 1985. The survey results, in part, will help determine the Worldwide Command and Control Information System that will replace the present worldwide system.

Another advanced military communications system of the period was the NAVSTAR (Navigation Satellite Timing and Ranging) Global Positioning System, which would provide accurate three-dimensional position information to its users anywhere on

or near earth. This system consists of a space segment, made up of eighteen satellites; a control segment, formed by control and monitor stations within the continental United States; and a user segment, composed of a manpack and a surface vehicle or an aircraft. Its development was a DOD program in which all services participated. Designated a major system, it was under a joint program office with the Air Force as the lead service. At year's end there were six satellites in orbit which could provide position information to the model user equipment sets located worldwide. Full-scale engineering and development contracts had been awarded in June 1979 to the competing contractors—Rockwell International/Collins and Magnavox. The Army would use the system with manpack, vehicular, and airborne sets to update and complement other position-navigation sets planned for the Army. Target dates for achieving operational status were 1987 for two-dimensional positioning, or limited capability, and 1988 for three-dimensional positioning, or full capability.

During fiscal year 1981, the Army, as the executive agent, continued to meet its responsibilities for the ground equipment of the Defense Satellite Communications and the Tactical Satellite Communications System. These were closely related projects concerning both strategic and tactical communications, with the Army developing the ground equipment, the Air Force developing and launching the space system, and the Navy developing systems unique to its own needs. In such systems, the satellite serves as a relay station between two terminals; therefore, terrain is much less a consideration than it is in ordinary terrestrial systems.

In carrying out its responsibilities under the Defense Satellite Communications System, which would provide secure point-to-point long-haul communications, the Army in fiscal year 1981 took possession of four medium satellite ground terminals and anticipated the installation of seventeen more in fiscal years 1982 and 1983. These terminals were of a model known by its joint nomenclature AN/GSC–39. Also during the year, the Army secured the authority to procure twenty-two new satellite terminals, which would lead to the replacement of the old terminals (known as AN/MSC–46 and AN/TSC–54) dating from 1962–1964. The Army obtained six new transportable terminals (Model AN/TSC–86) during the fiscal year and expected to deliver them to the field the following year. The Army also fielded the first shipment of Model AN/USC–28 jam-resistant equipment and planned to deliver and install an additional forty-eight sets worldwide in the next year. By installing six digital communications

subsystems during the reporting year, the Army increased to forty-nine the number of such units deployed.

The Army awarded a contract to develop connecting links with Defense Satellite Communications System control, which would lead to a later procurement contract. There were numerous joint actions approved during fiscal year 1981 to increase the capability and flexibility of the system in support of both the new Rapid Deployment Joint Task Force and its Army component. Developmental efforts begun in fiscal year 1981 would provide the system with an extremely high frequency capability by 1990. With award of the terminal contract and related support contracts in fiscal year 1982, the high-frequency modernization program would carry the system into the next century. Meanwhile, to guarantee the continuity of its work, the Army projected future construction and personnel requirements and initiated the necessary planning, programming, and budgeting.

The program for developing the Tactical Satellite Communications System has two phases, initial and objective. In the initial phase, the Army would field two single-channel systems in the ultra high frequency range and one multichannel system in the super high range. The single-channel Special Communication System, or AN/MSC–64 as it was designated, was in full-scale production in fiscal year 1981, with a scheduled completion date of 1983; it would provide secure command and control communications from the National Command Authority to various special units all over the world. At the end of the fiscal year, the Army awarded a production contract for the second of the single-channel systems, AN/PSC–3, a man-portable system for Ranger and Special Forces units. The Multi-Channel Initial System, or AN/TSC–85A and 93A, would provide communications down to brigade level. Its procurement was to end in 1983. Following its procurement and delivery in the field, low-rate multiplexers and jam-resistant features would be added.

In the second, or objective, phase of this project, the Army would field one single-channel and one multichannel system. The first, called the Single Channel Objective Tactical Terminal, an extremely high frequency system, was in an advanced state of development at year's end. Its fielding would depend upon the availability of a satellite suited to its range. At the end of the year the Multi-Channel Objective System, which would also operate in the extremely high frequency range, was still in the concept validation stage.

Another joint communications effort was made in support of the Joint Tactical Communications Program which, when all its

subsystems are integrated, will provide a large-scale, automatic, and secure digital system. Subsystems for which the Army was responsible included the AN/TTC–39 circuit switch and AN/TYC–39 message switch, on which General Telephone Electric Sylvania began production during fiscal year 1981 under a contract calling for six of the circuit switches and eighteen of the message switches. The Army also had charge of the Single Subscriber Terminal, for which Singer Librascope won a full-scale development contract in 1980. Not only did Singer Librascope keep production on schedule during the year, but it proposed a cost-effective value engineering change that would reduce complexity and costs throughout the life cycle of the equipment. Under this joint program the Army also had responsibility for the equipment and assemblages of the Digital Group Multiplexer, which it decided to produce in fiscal year 1981. There were problems with some proposed Army subsystems, which were still unresolved at the end of the year, including a Canadian protest in one case.

Experience with the Automated Tactical Frequency Engineering System, an Army undertaking, was to influence future concept development efforts associated with the Joint Tactical Communications System. This latter system was standardized for operating across all services for both voice and record traffic; it would use various kinds of equipment, including secure and nonsecure telephones, multichannel radios, teletype, and facsimile equipment. The Automated Tactical Frequency Engineering System was a project initiated by the U.S. Army Communications-Electronics Command and begun in 1980 to define, develop, and evaluate automated tactical communications-electronics planning and engineering capabilities. The Army field-tested the system and, during the reporting period, installed one terminal at the Department of Defense Electromagnetic Compatibility Analysis Center and another with the 5th Signal Command.

Still another very important joint program in which the Army had a role was that of supporting the Joint Interoperability of Tactical Command and Control Systems (JINTACCS) program. In May 1981, the Commander in Chief, Atlantic, conducted an operational effectiveness demonstration of the intelligence segment of this system as part of joint exercise SOLID SHIELD '81. Specifically tested in the exchange of intelligence information among service operational facilities were message standards that had been developed for JINTACCS. Under direction of the Joint Chiefs of Staff, development of message standards, known as Tactical Digital Information Link–J, continued for the Joint Tactical

Information Distribution System; during the past year, the service and defense agencies reached agreement on a schedule for further work in this area. Also continuing through 1981 was installation of the Joint Interface Test System of JINTACCS. Once the system has been installed at Fort Monmouth, New Jersey, configuration management testing, which in 1981 was done at the Navy's testing facility at San Diego, will be moved to Fort Monmouth.

In the area of combined operations, JINTACCS continued to support U.S. delegations to seventeen bodies of the North Atlantic Treaty Organization with direct technical assistance in developing command and control system standards for interoperability. Efforts were successful in preparing a program for the interoperability of artillery automatic data processing systems; at the direction of the Joint Chiefs of Staff, responsible parties surveyed the requirements to support the development of standards for interoperability with the command and control systems of our Pacific allies.

The Maneuver Control System is being developed to aid operations officers at upper and lower levels of command in the control of the tactical maneuver force. Work on this system began in 1980 with the deployment to Europe of a baseline system using tactical computer systems and terminals. Initially deployed with three tactical computer terminals, the fielded prototype system grew to seventeen computer terminals and three computer systems. Operational programming and functional capabilities grew as the entire program evolved and benefited from continuous feedback by field users.

Of basic importance in the Army's efforts to modernize communications was its research and development program for equipping infantry, armor, field artillery, and aviation units with radios to replace frequency-modulated equipment that not only was difficult to maintain, but also could not efficiently pass on digital data from other command and control systems. The vehicle for this effort was the Single Channel Ground Airborne Radio Subsystem, which would be both resistant to jamming and capable of being secured for voice transmission. After an extensive review of this program during the reporting period, the Army concluded that it should be continued as planned despite a $13-million shortfall in funding as well as other considerations. In particular, this decision involved maintaining the current schedule for the basic radio within available funds, as well as reprogramming within congressional limitations and transferring funds from other projects. Under this plan the Army would develop the basic receiver-

transmitter module of all three contractors for the manpack and vehicular sets, together with their electronic counter-countermeasure modules, and would defer the effort of all three contractors on some or all of their proposed refinements—the aircraft receiver-transmitter subsystem, the communications security unit, and the securable remote-control unit. Finally, in September 1981, the Army and the contractors agreed upon new contracts reflecting the new conditions.

A major concern of military communications is security. During fiscal year 1981 the Army took action to secure all frequency-modulated radio nets from theater to battalion levels. At the year's end this effort was well under way, but problems arose because of the incompatibility of the new VINSON communications security equipment with the widely used NESTOR equipment. To solve this problem the Army decided to distribute the VINSON equipment in such a way as to put the greatest possible distance between the two sets of equipment.

At every level of military activity, as in society at large, things are vastly more complex now than in the simpler past of only a few decades ago. This is certainly true in both military intelligence and signal communications, as well as in the steady improvement of the automated systems that transmit their information from soldiers to command posts and to headquarters in the field and at home, or wherever required, sometimes on the other side of the earth. Because the systems are so complex, much time is required from conception, authorization, research, development, testing, evaluation, and production to regular field use. Training personnel and units also takes time. Consequently, the Army systems that were only in the early stages of their life cycles during the reporting period would not be fielded and fully operational for several years. Training also would not be accomplished overnight either in languages, for example, or in the use of new equipment not yet fielded. The new undertakings would go forward, however, as the Army maintained the old and pursued the unending process of keeping its personnel, organization, and equipment ready for any contingency in matters of intelligence, automation, and signal communications, as in all other areas of its concern.

5. Manning the Army

In fiscal year 1981 the Army continued to reverse a variety of unfavorable personnel trends that had set in after the end of the Vietnam War. Although in the previous fiscal year the active Army had an average undermanning of 16,900, it was only 164 below the active duty strength authorized by Congress. In fiscal year 1981 the active Army not only met its overall recruiting goals but also retained, at year's end, more military personnel than programmed, in part because of the anticipated large fiscal year 1982 pay raise as well as other benefits.

The active Army entered fiscal year 1981 with an authorized end strength of 775,300 men and women. To capitalize on its improved recruiting and retention rates, the Army requested and received congressional authorization to increase the active duty end strength of 780,000. The active Army actually achieved an end strength of 781,042, or 1,042 above the final authorization and 5,742 above the initial authorization.

During fiscal year 1981 the active Army was manned on the average at 100.6 percent of authorizations, with an average overmanning of 4,100 for the year. On 30 September 1981, the active Army was manned as follows:

	Authorized Strength	Actual Strength
Officers	101,410	101,477
Enlisted Personnel	674,173	675,083
U.S. Military Academy Cadets	4,417	4,482
Total	780,000	781,042

The growth in the active Army paralleled increases in the Army Reserve and Army National Guard. At the end of fiscal year 1981 the Army Reserve reported an increase in end strength of 25,896 (the total of ready, standby, and retired reserves). The Army National Guard reported an end strength increase of 25,742. The end strength of Army ready reserves not on active duty (both National Guard and Army Reserve) rose in fiscal year 1981 to 837,458, an increase of 52,724.

All in all, improvements in monetary compensation, a weak civilian job market, a national commitment to improving the overall quality of military life, and a growing national concern

about the Soviet military buildup helped produce another encouraging year in manning the All-Volunteer Army.

Enlisted Personnel

In fiscal year 1981, as last year, the Army met in full its enlisted recruiting goals for the active Army, the Army National Guard, and the Army Reserve, obtaining 101.6 percent of its Total Army objective. The Army Reserve was especially successful, recruiting 104.5 percent of its total program objective. And, as last year, a substantial increase in the recruiting budget helped the Army reach its goals.

This overall success contributed to the Army's achieving several other goals: a higher recruitment of women and high school graduates and a lower recruitment of enlistees with Category IV (the lowest acceptable) scores on the Armed Forces Qualification Test (AFQT). A strong influx of women into the Army Reserve helped contribute to a Total Army female accession of 106.1 percent of the fiscal year objective. The active Army figure for Category IV recruits without prior service was only .9 percent over the 30-percent ceiling imposed by the Secretary of the Army to assist the Department of Defense in complying with the congressionally mandated all-service ceiling of 25 percent. (Actual Department of Defense Category IV accession for the fiscal year was 18 percent.) The 30.9-percent accession rate for Category IV Army enlistees without prior service was a marked improvement over the 52-percent rate in fiscal year 1980. But there is still room for improvement.The median test scores of Army recruits, unlike those in the other services, still fell considerably below those of a representative group of 12,000 young civilian men and women who took the AFQT in 1980. In the table below, comparative AFQT scores are given for categories I through V. (Columns may not add up to 100 percent due to rounding.)

Category	FY 81 Army NPS Accessions	Total DoD FY Accessions	1980 Youth Sample
I	2.2%	2.8%	4.4%
II	21.4%	30.3%	32.7%
III	45.5%	49.4%	31.7%
IV	30.9%	17.6%	23.8%
V	0%	0%	

The Army's primary recruiting goal for the fiscal year was to increase the enlistments of high school graduates, who tend to

have more stable military careers than nongraduates. In recruiting high school graduates without prior service, the Army achieved a Total Army accession of 73.2 percent, well beyond the congressional mandate of 65 percent and in excess of its own fiscal year objective of 72.2 percent. The active Army was especially successful in this regard, with 80.3 percent of its enlistees without prior service having earned a high school diploma, up from 54.3 percent in fiscal year 1980. The Army's improvement was greater than that of any other service. The table below presents the Total Army enlisted accessions for fiscal year 1981.

	FY 81 Objective	Actual	Percent of Program Achieved
Active Army			
Non Prior Service (NPS) Males	98,500	99,613	101.1
NPS Females	18,300	18,302	100.0
Prior Service	20,000	20,001	100.0
NPS High School Grads	94,300	94,730	100.5
Category IV NPS	30% Ceiling		30.9
Army National Guard			
NPS Males	45,100	47,021	104.3
NPS Females	5,500	5,426	98.7
Prior Service	45,150	43,989	97.4
NPS High School Grads	30,360	33,403	110.0
Category IV NPS	18% Ceiling		13.2
Army Reserve			
NPS Males	22,520	22,103	98.1
NPS Females	7,757	9,776	126.0
Prior Service	33,464	34,760	103.9
NPS High School Grads	18,166	19,580	107.8
Category IV NPS	30% Ceiling		29.9

A key incentive in the Army's recruiting program is the offer of cash bonuses. In November 1980 the Army raised the amount of its cash bonuses to enlistees in designated skill areas. The new maximum bonus of $5000 was offered to high school graduates in categories I–III on the AFQT who enlisted for four years' service in one of eleven designated combat arms military occupational specialties (MOSs) or one designated military intelligence specialty. Maximum bonuses were also raised, but to lower levels, for similar enlistees in nine additional MOSs; three new MOSs were added to the bonus eligibility list for the first time: 93E (meteorological observer), 98G (Spanish-American linguist), and 21G (Pershing electronic material specialist). Active Army enlistment bonus payments totaled $56.8 million for the fiscal year and had a marked effect on recruitment. Whereas in fiscal year

1980 only 18 percent of the new recruits who entered the critical MOSs were high school graduates in categories I–III, in fiscal year 1981 the figure was 41 percent.

Early in the fiscal year the Army also began to implement a long-range plan for recruiting and retaining qualified language specialists. In addition to the enlistment bonuses already in place, the plan provided for recruiting procedures targeted at various ethnic population centers in the United States; monthly payments of $100 to $150 proficiency pay to language specialists, particularly those in military intelligence assignments; assignment of some linguists to Korea on accompanied, rather than unaccompanied, tours starting in fiscal year 1981; and the creation of more opportunities for intermediate and advanced language training at the Defense Language Institute and at stateside and overseas colleges and universities.

Another enlistment incentive begun at the start of fiscal year 1981 reduced the length of overseas tours for first-term soldiers on three-year enlistments. Soldiers leaving for Europe or Japan after 30 September 1980 received full benefit of the reductions: six months for a married soldier's unaccompanied tour, and an average of twelve months for bachelors. Soldiers already overseas before the start of the fiscal year and not scheduled for stateside return during the fiscal year received a pro-rata reduction. This incentive reduced the first-term unaccompanied tour to eighteen months and the bachelor tour also to eighteen months.

By the end of the fiscal year all services except the Army claimed to have nearly 100 percent of the reservists, including members of the National Guard, that they would need if a crisis forced full mobilization. The Army was still short about 179,000 reservists, but was gradually making up the difference as more people either enlisted directly into the reserves or transferred in upon completion of an active tour of duty. Recruiting still looms as a major problem in the decade ahead as the number of draft age men (seventeen to twenty-one years old) continues to decline. As all the services try to expand their enlisted manpower upon a dwindling population base, the Army faces a difficult challenge in recruiting the quality of youths needed to operate increasingly complex weapons systems.

Although Congress terminated the Vietnam era G.I. Bill on 31 December 1976, it did provide a contributory educational program to replace the bill, effective 1 January 1977. In fiscal year 1981 the Army participated in the congressionally mandated Educational Assistance Test Program, during which three educational benefit programs were evaluated as possible replace-

ments for the Veterans Educational Assistance Program (VEAP). Initial congressional funding of the three supplemental programs was designed to last only through fiscal year 1981, and administrative delays and restrictions on publicity of the plans hampered early evaluation of their success.

During the fiscal year, however, the Army did obtain evidence that its enhanced-VEAP and ultra-VEAP, which provides substantially greater benefits than similar Air Force and Navy programs, helped the Army increase quality accessions by approximately 10 percent without decreasing quality accessions in the other services. A Rand Corporation study found that the authorized "equalizer" in educational benefits substantially improved the Army's ability to meet its recruiting goals. In the test cells, where both Army and other service enlistees were offered equal education benefits, the Army enlisted 7 percent fewer quality enlistees. The Rand study also suggested that the Army could attract more quality recruits to the combat arms by requiring a soldier to enlist in a combat MOS in order to qualify for the ultra-VEAP. By the end of the fiscal year 1981, however, the Army was preparing to expand the ultra-VEAP to all geographic areas in the nation while continuing to offer it to selected, highly technical noncombat as well as combat MOSs.

The Army's targeted recruiting programs have produced some criticism in recent years. The Army has learned that high school graduates are almost twice as likely as nongraduates to complete their enlistments. Consequently, the attempt to recruit as many high school graduates as possible has produced little criticism. The first-term attrition rates for fiscal years 1978–1981 are given in the following table (as percent of accessions):

		Accession Year			
Sex	Category	FY 78	FY 79[a]	FY 80[a]	FY 81[a]
Male	HSDG[b]	26.1	24.7	24.7	26.0
Male	NHSDG[c]	45.4	44.9	45.9	46.5
Male	All	31.9	32.7	36.2	31.2
Female	HSDG[b]	44.6	43.4	45.6	48.4
Female	NHSDG[c]	54.6[d]	46.7[d]	61.2	61.8
Female	All	46.7	43.5	48.3	49.3
All	All	33.7	34.1	37.8	34.0

[a] Forecasts based on current data (as of 30 Sep 81).

[b] High School Diploma Graduates

[c] Non-High School Diploma Graduates

[d] Basic Army policy denied enlistment to NHSDGs; a small percentage of GED certificate holders were enlisted (5 percent and 1 percent of female accessions, respectively, in fiscal years 1978 and 1979).

But the Army's attempt to turn away recruits with lower scores on the Armed Forces Qualification Test (AFQT) has proved more controversial. The Army staff contends that there is a strong correlation between high AFQT scores and later effectiveness as a soldier, especially as measured on the Skill Qualification Test (SQT). Former Secretary of the Army Clifford L. Alexander, Jr., however, considered the AFQT generally irrelevant and banned retention of soldiers' AFQT scores in their units' field records. In fiscal year 1981 the Department of Defense submitted to Congress a study disputing this view. Soldiers with lower AFQT scores fared poorly in the SQT, dropped out of the service in higher percentages than other recruits, and were promoted more slowly. In fiscal year 1981 the new Secretary of the Army, John O. Marsh, Jr., overturned his predecessor's view and brought the Army's evaluation of preenlistment tests into alignment with that of the other services. With strong congressional support, the Army will continue to recruit individuals who score well on the AFQT, and the scores will be used to assist commanders' decisions on assignments and promotion.

To improve its ability to measure a soldier's qualifications and potential for developments, the Army in fiscal year 1981 overhauled some of its testing procedures. In late 1980 the standard preenlistment test for all services, the Armed Services Vocational Aptitude Battery (ASVAB), was discovered to have been seriously miscalibrated since 1976. When corrected, it showed that in fiscal year 1980 over 50 percent of nonprior-service Army enlistees were in mental Category IV, the lowest acceptable, instead of 10 percent as originally reported. About 25 percent of all Army recruits accepted from January 1976 to October 1980 scored so low on the ASVAB that they would have been rejected had the test been properly calibrated. In October 1980 the Department of Defense introduced a new, properly calibrated test.

In the summer of 1981, because of poor test construction and equipment differences, the Army ordered a halt to the SQT for certain soldiers in three MOSs. Commanders were advised to adjust the promotion scores of soldiers who may have been harmed by the faulty tests. By the end of the fiscal year the Army faced congressional criticism that the SQT by itself could not reliably measure a soldier's effectiveness nor serve as a major guide in making assignments and promotions.

Congressional interest, particularly that of the House Appropriations Committee, has also focused on the budget and organization of the U.S. Army Recruiting Command (USAREC). On 27 October 1980 the Army approved the USAREC Reor-

ganization Study of 1980 and directed recruiting regions to realign themselves in accordance with the study, thus saving 156 personnel spaces (out of approximately 5,000). USAREC also proceeded to realign the district recruiting commands for additional savings. The Niagara Falls District Recruiting Command headquarters was closed on 30 September 1981, saving 19 spaces in addition to the 156 spaces saved through realignment of the recruiting regions. USAREC was authorized to use all saved spaces to meet recruiting requirements necessary to increase enlistments of both high school graduates and the number of enlistees with scores in the higher test categories.

Toward the end of the fiscal year the Deputy Chief of Staff, Personnel, was seeking authorization to nearly double the special duty performance pay (SDPP) of Army recruiters as well as permission to merge reenlistment and recruiter MOSs, thus qualifying reenlisting NCOs for the same SDPP as recruiters.

The table below represents the active Army enlisted recruiting resources in millions of dollars.

Category	FY 79	FY 80	FY 81
MPA			
Enlistment Bonus	34.7	39.8	56.8
Military Pay[a]	112.2	123.4	142.3
OMA			
Civilian Pay	19.1	20.4	22.9
Advertising	42.6	53.3	52.8
Recruiting Aide Specialist[a]	8.8	17.6	13.8
Recruiter Specialist	36.8	40.8	63.4
HQ Specialist (ADP)	3.9	5.4	8.2
Communications	9.7	12.2	14.3
Training	1.9	3.3	4.4
Facilities[c]	10.9	13.8	19.0
Total	280.6	330.0	397.9

[a] Includes pay for recruiters and recruiter aides.
[b] Includes travel and temporary duty.
[c] Includes leased recruiting stations, but does not include examining stations.

In fiscal year 1981 the Army did preliminary work for implementing a "pro-pay" plan as a supplementary cash incentive for enlisted soldiers. Congressional leaders have recently pointed out that a sizable minority of first-term Army recruits take advantage of the opportunity to change their MOS, even after receiving a cash bonus for enlisting in a shortage MOS. Congress has also noted that most of this movement is away from the combat arms specialties. The Army made plans to counter this tendency in fiscal year 1982 by rewarding current holders of shortage

MOSs with a supplementary monthly cash payment. The original plan was to grant up to $150 monthly to 22,000 NCOs in the combat arms and to 11,000 soldiers in precision maintenance, intelligence, and automated data processing MOSs. But toward the end of fiscal year 1981 the Army decided that unavoidable budgetary constraints for fiscal year 1982 made it necessary to use all bonus funds to increase recruitment reenlistment bonuses. The pro-pay plan had to be postponed indefinitely.

Even without pro-pay the Army managed to reduce MOS migration in fiscal year 1981. In fiscal year 1980, 34.5 percent of first-term combat arms soldiers went to noncombat arms skills; in fiscal year 1981, this figure fell to 26.2 percent. And movement from noncombat and noncritical skills to combat arms and other shortage skills increased—from 12.2 percent of first-term soldiers in fiscal year 1980 to 13.8 percent in fiscal year 1981. The Army achieved this increase by improving the possibility of promotion in critical MOSs and offering selective reenlistment bonuses similar to recruitment bonuses.

The task of recruiting high-quality first-term personnel becomes much easier when the Army is able to persuade many of its skilled soldiers to reenlist. Fewer recruits are needed, and the Army quickly gains a reputation for professionalism and leadership in its noncommissioned officers. As the Army adopts increasingly complex weapons systems, its effectivness depends more and more on highly competent NCOs. Retention is quickly becoming as vital an issue to the Army as recruitment.

In his fiscal year 1982 posture statement to Congress, the Chief of Staff stated that his most serious near-term manning problem was retaining midlevel NCOs. He asked that future increases in military compensation focus on pay raises, expanded bonuses, specialty duty pay, and responsibility pay for NCOs. The Army has been trying to increase the number of NCOs since fiscal year 1979, when the top five grades of NCOs made up 37.8 percent of the enlisted strength. In fiscal year 1980 this figure increased to 38 percent, and in fiscal year 1981 to 39 percent. Despite the improvement, serious shortages remained in the combat arms, where E–5 to E–9 strength was nearly 8,000 below objective near the end of fiscal year 1981. Voluntary reclassifications out of these combat skills among E–5 to E–9 reenlistees were many: 30 percent of infantrymen, 28 percent of artillerymen, and 26 percent of armor soldiers.

As a measure of the Army's problem with NCOs, in fiscal year 1980 the Army was authorized 264,800 personnel in the top five enlisted grades, but achieved an end strength of only

256,100. In fiscal year 1981 the Army reduced the shortage, achieving an end strength of 263,500 out of an authorized 266,100. To highlight this problem, in fiscal year 1981 the Army changed its two-level classification for enlisted men (first-termers and career) to a three-level classification (first-term, midterm, and career). The new midterm category covered all soldiers on their second or subsequent enlistment up to ten years of service. In fiscal year 1981 the Army fell considerably short of its midterm objective, obtaining 24,613 reenlistments out of a goal of 28,007, or 88 percent of the objective. Career-level reenlistments also fell short, 3.8 percent below the goal of 19,817. Only first-term reenlistments were a notable success: 34,601 reenlistments, or 118 percent of the goal. The total active Army result was about the same as last year, approximately 101 percent of the objective.

During the fiscal year, the Army considered further expansion of its reenlistment objective system. Thought was given to setting up an Army goal for reenlistments occurring outside the standard eligibility window—six months to estimated time of separation (ETS) for first-termers and three months to ETS for careerists—and to setting up a goal for reenlistment in critical specialties. None of these goals were feasible without further development of the Army's data systems and auditing capability. Development of these areas did begin during the fiscal year.

Based on its highly successful CONUS-to-CONUS reenlistment option for first-term soldiers, the Army on 1 November 1980 began a pilot program that permits careerists of rank E–6 and below to reenlist for selected CONUS installations with a promise that they will not be transferred for at least twelve months. This should help to improve retention of the midgrade careerist.

The Army's main incentive to reenlist is the Selective Reenlistment Bonus (SRB) Program, which gives bonuses to soldiers who reenlist in designated MOSs. In fiscal year 1981 Congress gave to the Army the authority to increase the maximum bonus from $12,000 to $16,000. Starting in fiscal year 1981 the Army expanded the program to include reenlistees who have ten to fourteen years of service (Zone C). This allowed about 400 linguists and other technicians to reenlist and receive a bonus in fiscal year 1981. Previously, only soldiers with twenty-one months to ten years of service (Zone B) were eligible for the reenlistment bonus. In October 1980 over 60 MOSs, mostly combat arms, were added to the Zone B program. In February 1981, 28 MOSs, again mostly combat arms, were either added to the SRB Program or authorized higher SRB payments.

Perhaps the most important change in the SRB Program this year involved Congress' extension of the maximum number of years of service for bonus computation from twelve to sixteen years. A soldier in Zone B with almost ten years of service could now reenlist for up to six years and receive a bonus based on the total additional obligation. Under the old twelve-year system, a soldier with nine years of service who reenlisted for six years could receive bonus credit for a maximum of three years of additional obligation. But even this innovation did not enable the Army to meet its fiscal year retention goal for NCOs.

Overall, however, the Army's retention efforts succeeded, with reenlistments rising from 62 percent of eligibles in fiscal year 1980 to 67 percent in fiscal year 1981. Increased pay and bonuses contributed greatly to the rise, but the Army refused to take it as a guarantee of similar success in the near future.

Several studies have noted a correlation between strong unit cohesion and soldier loyalty and effectiveness, both on and off the battlefield. In an attempt to reduce the high personnel turnover rate associated with the current individual replacement system, the Army in fiscal year 1981 began to test twenty Cohesion Operational Readiness and Training (COHORT) companies. The members of each of these companies would complete basic and advanced individual training together and serve fifteen months in the continental United States followed by eighteen months overseas. Each company would have the same noncommissioned and commissioned leaders for the three years. The first COHORT unit was formed in late March 1981 at Fort Knox, Kentucky; toward the end of the fiscal year the first COHORT company completed advanced individual training at Fort Carson, Colorado.

At the same time, the Army began to plan a more comprehensive move toward fostering unit cohesion. In fiscal year 1980 the Chief of Staff had directed the commander of the Training and Doctrine Command to develop a plan to convert the Army to a regimental system, similar to that of the British and Canadian armies. In April 1981, the Manning Task Force began to function within ODCSPER as the Army staff's focal point for planning the change.

The basic goal of the reform is to have soldiers spend more time in a single unit than the current individual replacement system allows. During fiscal year 1981 the Manning Task Force identified about 200 battalions that could be subordinated to a reduced list of four- to six-battalion regiments of the active Army. Initial studies suggested that the new system would not be directly

applicable to the National Guard or to the Army Reserve. Replacements in the new system would take place either by rotating an individual from battalion to battalion within his regiment or by rotating the battalions among the regiment's various assigned duty posts. One option considered was to allow the individual regiments to recruit directly into their own unit and then supervise the basic training of their recruits. Each regiment would be assigned a home post in the United States and one or more overseas duty stations, the battalions would take turns rotating between the home post and overseas assignments, and most of the regiment's recruits would be drawn from the region around the home base. This concept, or a variation of it, seemed likely to improve unit esprit de corps and to serve as a vital nonmonetary stimulus for reenlistments and highly motivated service. Full implementation of the new manning system will probably extend through the 1980s.

Until the new unit rotation system becomes completely operational, the Army will continue to focus on Space Imbalanced Military Occupational Specialties (SIMOS) to reduce the turbulence associated with overseas tours. An MOS with 55 percent or more of its spaces assigned abroad qualifies as a SIMOS. Soldiers in these specialties have much shorter CONUS tours between overseas assignments than average and tend to leave the Army at a much higher rate than other soldiers. About 30,000 soldiers in thirty-seven skills, mainly related to missile, nuclear, and electronic warfare operations and maintenance fields, currently are SIMOS. To assist in coping with the SIMOS retention problem, Congress in December 1980 enacted Public Law 96–579, which authorizes the Army to offer either $50 a month or a period of rest or recuperative absence to soldiers who extend their overseas tours for at least one year. The incentive seems to be working. Tour extensions for SIMOS personnel tripled during the first six months of 1981 compared with a similar period in 1979 (from 323 to 1,008).

The Army's increased recruitment and retention of enlisted personnel in fiscal year 1981 had a discernible influence on a growing national debate on the future of the all-volunteer force. The Army staff, anticipating a 50-percent decline in voluntary enlistments by fiscal year 1985, proposed a five-year program calling for reinstitution of the draft by the fall of 1984 to meet its goal of expanding the active force by about 100,000 over the next five years. But the Secretary of the Army rejected this proposal, arguing that the Army can meet its manpower requirements, at least through 1987, without reviving conscription.

Expanded recruiting and retention incentives, such as greater pay and benefits, and the increased use of civilians in noncombat jobs were expected to offset most of the decline in the size of the youth population eligible for military service. Furthermore, by the end of the fiscal year, looming budgetary constraints seemed likely to cause the proposed large increases in active Army strength to be shelved at least temporarily.

The active Army finished fiscal year 1981 with the following enlisted grade structure:

Grade	Strength
E–9	3,744
E–8	13,319
E–7	47,165
E–6	77,941
E–5	121,322
E–4	175,794
E–3	116,942
E–2	51,664
E–1	67,192
Total	675,083

Officers

In fiscal year 1981 the Army's officer program, like its enlisted program, achieved notable successes. Although the Army fell short of its accession goal by 522 officers, the end strength of the officer corps rose by 3,259 to a total of 101,477. Officer retention, especially of lieutenants and captains, was outstanding.

In accordance with the fiscal year 1981 Department of Defense Authorization Bill, the number of general officers in all services declined by 4 percent (in the Army, from 432 to 415). The following table breaks down the actual officer end strength by grade as of 30 September 1981:

Commissioned Officers*	
General Officers	415
Colonel	4,670
Lieutenant Colonel	10,932
Major	16,306
Captain	31,428
First Lieutenant	12,067
Second Lieutenant	12,087
Total	87,905

*Includes 373 commissioned officers not paid from Military Personnel, Army (MPA), funds.

Warrant Officers	
CW–4	1,483
CW–3	4,108
CW–2	4,795
CW–1	3,559
Total	13,945

In fiscal year 1981 the Army accessioned 11,194 active duty officers, compared with 10,874 in fiscal year 1980. Of these, 471 transferred from the Army National Guard or Army Reserve, and 1,917 were warrant officers. The following table breaks down officer accessions by source for fiscal year 1981:

United States Military Academy	952
Reserve Officers' Training Corps	3,981
Officer Candidate School	753
Chaplain, Judge Advocate General, Army Medical Department	2,282
Transfers from Other Components (including Individual Ready Reserve)	471
Direct Appointments, Reappointments, and Interservice Transfers	838
Warrant Officers	1,917
Total	11,194

As in previous years, the Reserve Officers' Training Corps (ROTC) furnished the largest single group of new active duty officers: 3,981 out of a total ROTC production of 6,174 officers. Average enrollment in college-level ROTC programs increased 2.7 percent over the previous fiscal year, from 63,326 to 69,663. The nation's changing attitude toward military service accounts for some growth, but successful managment also played a role. The Army continued to increase the number of ROTC units at the nation's colleges, universities, and high schools, and it further developed the ROTC–Selected Reserve Simultaneous Membership Program (SMP). The Army also awarded the first 1,035 of the 5,500 new ROTC scholarships authorized by Congress in September 1980.

The Expand the Base program, begun in fiscal year 1980, calls for the phased opening of extension centers, consisting of three officer instructors and one NCO, at colleges and universities that have not previously offered ROTC. The most successful centers will then be elevated to full detachment (host) status (five officers, four NCOs, and one civilian). In fiscal year 1980 forty-one extension centers were opened, and about 2,500 students (about 1,000 more than the Army expected) enrolled. In fiscal year 1981 forty-eight new centers were opened, and eight old centers were elevated to host status. By fiscal year 1983 the pro-

gram is scheduled to have elevated twenty-eight more centers, creating a total of 315 host detachments. An important feature of the expansion program is the assignment of an Army Reserve or Army National Guard officer to each of the host detachments, so that most of the 4,000 additional officers expected to be produced each year by the expansion and other initiatives can be channeled into units of the Army Reserve and the Army National Guard. In fiscal year 1981 fifty Army Reserve officers and fifty-one Army National Guard officers were assigned to host institutions.

The Army ROTC–Selected Reserve Simultaneous Membership Program (SMP) continued to be highly successful in fiscal year 1981. Subject to certain limitations, SMP permits eligible enlisted personnel assigned to a troop program unit of the Army National Guard or the Army Reserve to enter the Advanced Course (Military Science III and IV) of the ROTC academic program, and allows eligible ROTC Advance Course cadets to enlist in and serve as officer trainees with guard or reserve units. Participants in the program drill with their National Guard or Army Reserve units as officer trainees at the rank of cadet and are paid in the grade and years of service attained (but not less than the grade of E–5). Participants also receive ROTC training as well as a subsistence allowance of $100 per month for up to twenty months. On completing the ROTC program, SMP participants are commissioned and assigned to either an Army Reserve or National Guard unit, pending graduation from college. Upon graduation, these officers are assigned active duty, reserve forces duty, or educational delay, depending on the needs of the Army.

By the end of fiscal year 1980, the SMP program could boast of more than 2,000 participants. In fiscal year 1981 this number grew to more than 5,000, even while enrollment in the ROTC Advanced Course grew only 1.6 percent, based on opening year enrollment. Although most participants were already enrolled in ROTC when recruited into the SMP program, future emphasis will be placed on recruiting enlisted reserve component members who have had no ROTC training.

Improvements in officer retention paralleled those in officer accession. Officer retention in fiscal year 1981 continued the favorable trend of the previous five years. There were fewer losses among all types of officers than in the past fiscal year. In 1981, 2,248 officers resigned or were released from active duty, compared to 2,903 in 1980. Voluntary retirements also showed a drop, down to 1,983 after a four-year high of 2,637 in 1980.

Company grade losses were 3,793, compared with 4,226 in 1980. Despite these improvements, the Army still experienced officer shortages in some engineering, scientific, and technical specialties and in the warrant officer aviation skills. In fiscal year 1981, 1,100 authorized officer jobs went unfilled. Congress has authorized continuation pay to improve the retention of scientists and engineers.

One long-standing problem area in the officer force, the recruitment and retention of medical personnel, showed some improvement in fiscal year 1981, despite continuing shortfalls. Recruitment and retention efforts resulted in an even greater increase in the number of year-end active duty Medical Corps officers (from 4,627 to 4,909), but critical shortages still existed in several specialties, such as orthopedic surgery. The number of officers in the Medical Corps and Nurse Corps still fell far short of minimum peacetime requirements.

Passage of the Uniformed Services Health Professions Special Pay Act of 1980 has had a generally positive effect on retention. Many physicians no longer feel that military pay and benefits are a drawback to military service. But civilian pay is still considerably higher in some surgical specialties. As a result of increased pay and other management initiatives, the retention rate for first-term physicians (other than volunteers) now exceeds 30 percent and may rise to and stabilize around 33 percent in the near future. Volunteer physicians tend to have a much higher retention rate, approaching 70 percent. Since half of the present Medical Corps strength has entered active duty since 1978, it is unclear whether these retention rates will continue over a period of years. If they continue, however, the Army should have less trouble maintaining the strength of the Medical Corps.

To provide the armed forces with an officer management policy that is uniform, equitable, and tailored to contemporary manpower requirements, the Department of Defense and Congress in fiscal year 1981 finally agreed, after sixteen years of effort, on the Defense Officer Personnel Management Act (DOPMA). Congress passed it on 21 November 1980, the President signed it on 12 December, and it went into effect on 15 September 1981. Although DOPMA affects all commissioned officers, including generals, its primary effects will be, first, to create a single promotion system for all field grade officers on active duty and, second, to create eventually an active Army field grade officer corps that is all Regular Army. The new system will replace the old dual system of permanent Regular Army (RA) ranks and temporary Army of the United States (AUS) ranks as well as an

active Army field grade officer corps that since the Vietnam War has consisted of about 7 percent Other Than Regular Army (OTRA) officers.

On the new active duty list, officers will be grouped into competitive categories for promotion. These categories will be formally established in early fiscal year 1982, but they are expected to be the same as they were before DOPMA. They are as follows: (1) Army, which includes officers in specialties 00 through 54 and 69 through 97; (2) Judge Advocate General's Corps; (3) Chaplain Corps; (4) Medical Corps; (5) Dental Corps; (6) Army Nurse Corps; (7) Medical Service Corps; (8) Army Medical Specialist Corps, combined with Medical Corps for general officer promotion; and (9) Veterinary Corps.

Under the old officer management system, OTRA officers held temporary AUS ranks for active duty purposes and generally were separated or reduced in rank before RA officers. RA officers on active duty held both their permanent RA rank and an AUS rank, which usually rose before the RA rank. Active duty RA officers competed on the same list with active duty OTRA officers for AUS ranks, and had to achieve promotions that kept their RA rank within range of their AUS rank, or face involuntary separation. Both RA and OTRA officers on active duty could retire at their AUS rank even if it were higher than their RA or reserve rank. While retired RA officers who later worked as federal civilian employees had to accept a reduction in their military retirement pay, reserve officers and regular officers retired for combat disability who later worked as civilian federal employees could draw both their full military pension and their full civilian employee salary, subject to an overall limit equal to the current compensation of civilian Executive Level V employees ($57,500 in fiscal year 1981). DOPMA leaves intact the main retirement provisions of the Dual Compensation Act and the Civil Service Reform Act of 1978, but it requires far-reaching changes in the active duty treatment of regular and OTRA officers.

Under DOPMA provisions, the Army will replace the dual system in the active Army field grades with a single active duty list, which will eventually consist of an all-regular force. As of 15 September 1981, the effective date of DOPMA, the temporary (AUS) rank of field-grade active Army officers became their permanent rank, eliminating the temporary quality of the AUS ranks. In addition, a number of active Army OTRA field grade officers on active duty before 1 October 1981 were scheduled to be offered integration into the Regular Army. Active Army

OTRA lieutenants and captains who start active duty after 15 September 1981 will, if promoted to major, have to accept integration into the Regular Army or else leave active duty within ninety days. Those active Army OTRA lieutenants and captains who started active duty before 15 September 1981 may, if promoted to major after 30 September 1981, decline the Regular Army integration and continue on active duty to maximum tenure, subject to the needs of the Army and on the condition that they maintain a standard schedule of promotions.

These active Army OTRA officers, however, have several incentives to convert to the Regular Army. First, they will be eligible for up to thirty years' tenure in the Regular Army if they can advance to colonel, whereas the usual active duty tenure for OTRA officers is only twenty years. Second, they can take advantage of DOPMA's modification of the traditional up-or-out system in the Regular Army. Under the new system, RA captains who are twice passed up for promotion may be selectively continued to a maximum of twenty years' service; majors who are twice not selected for promotion may be continued to a maximum of twenty-four years' service. OTRA captains and majors in this predicament will probably obtain less liberal terms for selective continuation, such as those offered in the Selective Continuation Program, newly implemented in fiscal year 1980. This program permitted certain nonselected officers to continue in active service for three years or until they are eligible for retirement, whichever comes first. As a third incentive, during reductions in force, regular officers will be separated only after OTRA officers in their competitive area.

The eventual effect of these DOPMA-induced changes will be to create an all-regular officers corps in the field grades of the active Army, once all active Army OTRA officers who have declined the Regular Army conversion have retired.

DOPMA also contains other provisions that will have a significant effect on Army personnel policy. Under the DOPMA realignment of the ranks of field grade officers, the Army has until the end of fiscal year 1983 to reduce the number of majors and lieutenant colonels. DOPMA authorizes the decentralization to the field of promotions to captain, but in fiscal year 1981 the Army decided to postpone its plans to implement this provision. DOPMA mandates minimum time-in-grade standards for due-course officer promotions:

To First Lieutenant	18 months
To Captain	2 years
To Major	3 years
To Lieutenant Colonel	3 years
To Colonel	3 years

DOPMA also provides that an officer retire in the highest grade in which he served on active duty for six or more months; except that to retire voluntarily in a grade above major, the officer must have served on active duty at least three years in that grade. Prior law did not require any minimum period of service for an officer to retire voluntarily in his permanent grade; but for retirement in a temporary grade that was higher than the officer's permanent grade, Army policy required six months' satisfactory service in the higher grade. DOPMA doubles the maximum pay for involuntary separation, from $15,000 to $30,000. It also establishes uniform constructive credit rules for all the services that will improve Army accession of highly educated and technically trained officers, especially in the Medical Department and Judge Advocate General Corps. To allow for the mandated conversion of active Army officers with reserve commissions to the Regular Army, DOPMA increases the authorized strength of the Regular Army officer corps from 49,500 to 63,000.

The transition to an all–Regular Army field grade officer corps in the active Army may take a decade or more. DOPMA is the most complete revision of officer personnel management since the Officer Personnel Act of 1947.

In fiscal year 1981 the Department of Defense, with DOPMA now enacted, began work on companion legislation for the management of reserve officers. The Office of the Assistant Secretary of Defense (Manpower, Reserve Affairs, and Logistics) began to draft the Reserve Officer Personnel Management Act (ROPMA). The department organized a steering committee of general and flag officers representing all reserve components to resolve interservice differences and review the basic areas of proposed legislation. After two meetings in fiscal year 1981, the steering committee recommended that the proposed legislation address the problem of recruiting professionals into the reserves. Since DOPMA has constrained the services in appointing officers in grades above second lieutenant, the reserve components anticipate even more problems in recruiting civilian professionals and appointing them in the higher grades. It appears that the reserve components will request considerable leeway in granting con-

structive service credit to new reserve appointees, particularly to nonmedical and nondental professionals whose civilian experience warrants an appointment in a grade higher than major.

In its continuing effort to improve the professional development of commissioned officers, the Army made several changes in its Officer Personnel Management System in fiscal year 1981. It created Specialty Code (SC) 70, Intelligence Management, to identify multifunctional, senior (normally 06, but in no instance below 05) managerial positions in intelligence, primarily at the national or major command level. It fused SC 76, Armament Materiel Management, and SC 77, Tank-Ground Materiel Management to form SC 91, Maintenance Management. Also merged were SC 87, Marine and Terminal Operations, and SC 88, Highway and Rail Operations, to form SC 95, Transportation Management. SC 52, Atomic Energy, was redesignated Nuclear Weapons.

During fiscal year 1981 staff elements of the Office of Deputy Chief of Staff for Personnel, the Military Personnel Center, and the special branches continued to develop the Officer Force Management Plan, concentrating on synthesizing DOPMA constraints with projected force structure requirements for the 1980s. In a related development, the Office of the Assistant Secretary of the Army for Manpower and Reserve Affairs took the lead in planning for a fiscal year 1983 implementation of FORECAST, an automated information system designed to provide the Army with a comprehensive officer management and analysis tool. During fiscal year 1981 a FORECAST Technical Work Group, consisting of representatives from the Military Personnel Center, the Training and Doctrine Command, and the offices of the Deputy Chief of Staff for Personnel and the Assistant Secretary of the Army for Manpower and Reserve Affairs, selected the contractors to write the functional description of the system, helped them in their work, and prepared for the system development to be completed in fiscal year 1982. FORECAST will serve as a comprehensive tool, oriented toward the Army Planning, Programming, and Budgeting System, for projecting requirements in officer training, procurement, promotion, retention, skill development, and distribution.

Women in the Army

In fiscal year 1981 the sustained growth over the last nine years in the number and influence of women in the Army slowed

perceptibly, as both the Department of the Army and the Supreme Court involved themselves in a review of this process.

In June 1981 the Supreme Court ruled in *Rostker* v. *Goldberg* that Congress acted constitutionally in excluding women from the draft registration program that Congress had enacted in fiscal year 1980 as part of the U.S. response to the Soviet invasion of Afghanistan. Opponents of the draft had questioned the constitutionality of an all-male draft registration. The six-to-three majority opinion in the Supreme Court rested on the argument that Congress had intended to provide for a draft of Americans suitable for fighting as combat troops and that women, because of congressional and military restraints of the use of women in combat, are not suitable for purposes of a draft or registration for a draft. The Supreme Court refused to fault Congress' conclusions that volunteers will meet the need for any extra women in noncombat roles during a mobilization and that staffing noncombat positions with women during a mobilization "would be positively detrimental to the important goal of military flexibility." The Court concluded that Congress gave thorough consideration to the issue before excluding women from the draft registration and that the decision "was not the accidental by-product of a traditional way of thinking about women."

In a related action the Department of the Army in February 1981 decided to reduce its projected end strength for women soldiers, an action which brought to a virtual halt by June 1981 the recruitment of women for the fiscal year. It was resumed briefly at the end of the fiscal year, but only for high school graduates. The department had decided to review and evaluate a number of reports from field commanders who were questioning the effect of women soldiers on the readiness of their units.

Some field commanders have indicated that combat readiness is being affected by a high rate of female dropouts from the Army, especially during the first term; by the high number of pregnancies; and by low female stamina and upper body strength. Nearly 50 percent more first-term female soldiers fail to complete their enlistment than first-term male soldiers. From 8 to 10 percent of female enlisted soldiers are pregnant at any one time, and probably three-fourths of these would have to be evacuated along with dependents from potential war zones, such as Europe, in event of a mobilization. Furthermore, some women soldiers have trouble adjusting to certain military occupational specialties, such as heavy maintenance, that require exceptional upper body strength. In February 1981 the Army decided to pause at an active Army end strength of 65,000 women enlisted personnel,

to allow time for a more thorough study of these alleged problems.

In April 1981, under orders from the Chief of Staff, the Army formed a Policy Review Group on Women in the Army, under the direction of a general officer. The active Army consists of approximately 9 percent women, while the Army National Guard and the Army Reserve troop units are about 5 percent and 15 percent female, respectively. The decision to stabilize the female end strength, pending a review of the effect of the female soldier on Army readiness and combat effectiveness, did not limit the recruiting of females into the Army National Guard or the Army Reserve; but any policy revisions resulting from the final report of the Policy Review Group will affect these components. The director of the Policy Review Group was scheduled to present his initial findings to the Chief of Staff by the end of December 1981.

In a number of related actions, the Army staff and field agencies began to focus on the status of women in the Army. The Army Research Institute initiated a major study of women in the Army, to determine the causes of the differences in male versus female attrition in the Army's approximately 350 enlisted MOSs and to suggest ways to reduce these differences. The study was scheduled for completion during the second quarter of fiscal year 1982. The Army Audit Agency also conducted a similar survey and audit, whose results will be compared with the findings of the Army Research Institute. A final report should be completed by the end of the second quarter of fiscal year 1982. At the same time, the Training and Doctrine Command began to establish physical strength standards for each of the MOSs in order to allow the screening out of personnel who lack the physical requirements of a particular MOS.

One goal of these studies will be to determine the reasons for the unusually high number of females leaving the nontraditional MOSs. The Army in the past few years has opened about 94 percent of its MOSs to females, administratively excluding them only from MOSs likely to involve direct combat: namely, MOSs organic to battalion-sized and smaller units of infantry, armor, cannon field artillery, combat engineers, and low-altitude air defense. In fiscal year 1981 only 40 percent of the Army's enlisted women served in traditionally female skills—medical and administrative. Less traditional skills accounted for 25 percent; and nontraditional skills took up the remaining 35 percent, down from 39 percent in fiscal year 1980.

But in fiscal year 1981 this broadened approach to female

participation in Army work drew criticism from within the Army and prompted a suggestion that women be allowed to enlist freely in traditionally female MOSs. Several critics have pointed out that many MOSs open to women, such as transportation, will inevitably require them to work close behind the forward edge of the battle area and that they will at times be subjected to intense enemy fire. The critics have expressed doubts that women in general will be able to function as effectively as men in such an environment. The Army is fully aware of this skepticism, however, and has been giving men and women identical initial entry training and advanced skill training, including weapons qualifications.

With increasing evidence that sexual harassment contributes significantly to the high rate of female first-term attrition, the Secretary of the Army in May 1981 signed a memorandum for all personnel emphasizing the unacceptability of sexual harassment and its incompatibility with "the highest professional behavior and courtesy." The memorandum defined sexual harassment as

> (1) influencing, offering to influence, or threatening the career, pay, or job of another person—woman or man—in exchange for sexual favors; or (2) deliberate or repeated offensive comments, gestures or physical contact of a sexual nature in a work or duty-related environment.

The memorandum urged individuals subjected to sexual harassment to make it clear to the offending person that such behavior is offensive and to report the harassment to the appropriate supervisory level. During fiscal year 1981 the Army staff initiated a survey through the Soldier Support Center at Fort Benjamin Harrison, Indiana, to determine more precisely the extent and effects of sexual harassment in the Army.

In spite of the ongoing review concerning the proper role of women in the Army, the end strength of enlisted women rose from 61,351 in fiscal year 1980 to 64,884 in fiscal year 1981, and of officers from 7,615 in fiscal year 1980 to 8,385 in fiscal year 1981. In addition, there were 19,621 women in the Army National Guard and 49,618 in the Army Reserve (both Individual Ready Reserve and Selected Reserve). The decision to reduce the projected end strength in enlisted women, however, meant that the active Army fell far short of its original goal for fiscal year 1981 of 24,500 female enlistees without prior service, recruiting only 18,302.

Military Manpower and Personnel Management

Since October 1973 the Army has employed a system called ELIM–COMPLIP (Enlisted Loss Inventory Model–Computation of Manpower Programs Using Linear Programming) 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 recruiting objectives. Each year the Army refines ELIM–COMPLIP to improve enlisted loss projections and enlisted force management. Although a highly successful tool, ELIM–COMPLIP cannot discriminate by grade or military occupational specialty.

Furthermore, the system models only the enlisted force. Officer projections are done externally and entered into the ELIM–COMPLIP system, so that they are available for the various reports that the system produces. A five-year project is under way to develop a more comprehensive system called FORECAST—a modular, automated data processing system that will project active Army military strength (officer and enlisted) both in aggregate terms and by grade, skill, and unit. The system is designed to improve planning, programming, and budgeting and to enable the Army to better project the effects of alternative policies on its manpower. The system will function in modes adapted to times of peace, partial mobilization, and full mobilization.

By the end of fiscal year 1981 the Army staff had completed and tested a prototype of the Enlisted MOS Level Subsystem of FORECAST. The production version of the subsystem is scheduled to be completed in fiscal year 1982. This new module will be put into operation in fiscal year 1984 and will provide detailed skill and grade information. Also in fiscal year 1981, contracts were let to develop the Enlisted Mobilization Subsystem, the Unit Level Subsystem, and Officer Subsystem, all of which should be ready between fiscal year 1984 and fiscal year 1987. When combined with the existing capabilities of FORECAST, these subsystems should enable the active Army to project and plan for enlisted and officer strengths both in peacetime and during mobilization.

Development of the Manpower Evaluation and Tracking System (METS) continued in fiscal year 1981. METS, a three-phase program for monitoring manpower resources, compares data from the Army's manpower, personnel, and financial accounting systems. METS will allow the Army to ensure that manpower

and related dollars are being used for the purposes for which they were justified and authorized. During Phase I, completed in fiscal year 1980, the basic system structure was established to demonstrate both the feasibility and capabilities of the project. After Phase II, scheduled for completion by mid–fiscal year 1983, METS will provide data to manage the manpower and related resources of all the Army's manned units. During Phase III, METS will be expanded to provide automated, remote access to the system by major commands and interested agencies.

Design of an upgraded manpower programming system for the Army Reserve was finished in fiscal year 1979. This system, known as ARMPRO, provides manpower planning, budgeting, and programming information for Army Reserve troop program units similar to that supplied by ELIM–COMPLIP for the active Army. During fiscal year 1980 modifications in ARMPRO resulted in a more responsive program that reflects current Army Reserve policy. During fiscal year 1981 the test and validation phase of the development of ARMPRO was completed. The system will become fully operational in early fiscal year 1982.

In addition to these improvements in military manpower management, the Army continued to experiment with new approaches to civilian manpower management. In August 1979 the Chief of Staff authorized the testing of a revised method for determining Army manpower requirements. In contrast to the usual technique of reviewing many functions at a single installation, this new test, called Functional Army Manpower Evaluation (FAME), studied a single function (civilian personnel administration) at twenty-five representative locations. The test identified relationships between man-hours expended and the final product. From this data the Army staff developed man-hour equations that predict staffing requirements for civilian personnel administration throughout the Army.

On 24 July 1981 the Director of Manpower, Programs, and Budget approved the standards for civilian personnel operations that came from FAME and provided guidance to the major commands for application and implementation of the standards. The major commands are scheduled to implement the standards and formalize the resulting manpower requirements in tables of distribution and allowances before the end of fiscal year 1982. As a result of the successful FAME test, the Army has begun work on an expanded version of the test program—the Manpower Staffing Standards System, which will include the development of a functional dictionary to provide a language for and interface with The Army Authorization Document System (TAADS) and

the Army Management Structure Code System for manpower programming and budgeting.

To reduce the inordinate amount of man-hours needed to review TAADS periodically, the Allocation and Documentation Division of the Office of the Deputy Chief of Staff for Personnel contracted with ASM & Associates in March 1981 for the development of a computer program that will identify documents in need of review. The program, known as Automated Identification of Documents for Review (AIDR), will assist manpower analysts in screening out from the several thousand TAADS documents those that need detailed review. AIDR has two basic screening routines. One is fixed and looks at specific units and total increases in predetermined grades, specialty skill identifiers, and MOSs. The other is a flexible routine that monitors a known set of resource changes approved for implementation, such as a major strength change in a unit or several units. The first full operational test of AIDR is scheduled for the first quarter of fiscal year 1982. The results will be given to the major Army commands, and a procedure will be established for extending the AIDR program to TAADS offices of these major commands.

Organizationally, a DOD directive dated 12 March 1981, entitled "Department of Defense Management Headquarters and Headquarters Support," caused the Army to revise its list of management headquarters activities and to add approximately 1,900 personnel to the rolls of Army management headquarters activities from other Army personnel accounts.

Civilian Personnel

In fiscal year 1981 civilian personnel continued to be a high priority in the Army. Early in the fiscal year the Deputy Chief of Staff for Personnel publicly stated that the shortage of civilian employees was the Army's most important personnel problem, of more concern to the Army staff than active Army and reserve component recruiting.

Although the ratio of military personnel to civilians in military functions dropped sharply at the end of the Vietnam War and remained almost constant through fiscal year 1981 (about 2.4 to 1), the number of civilians in military functions (excluding indirect hire overseas support personnel) decreased greatly in absolute terms: from 367,300 in June 1972 to 310,000 in September 1980. Since 1974, the number of Army civilians in military functions has dropped about 10 percent, while overall federal employment decreased only 1 percent over the same pe-

riod. Because civilian support personnel take longer to mobilize than military personnel, the Army considers a strong peacetime civilian force a necessity if it is to win the opening battles of a future war.

In a joint statement to Congress early in the fiscal year, the Secretary of the Army and the Chief of Staff emphasized the critical role of Army civilians in the first stages of a war:

> The present civilian work force, on whom we will depend for many critical mobilization needs, is inadequate to perform even the everyday tasks of supporting the peacetime Army. It is far below levels required if a major mobilization is called. The gap between required and available personnel cannot be quickly closed by our emergency augmentation plans because of the current low civilian strength levels and the large surge in requirements at mobilization.

Before presenting the fiscal year 1981 supplemental budget request, the Army estimated that current civilian strength was 65,000 below the level needed to meet peacetime requirements.

Despite various hiring restrictions for civilian personnel imposed during the year, the Army civilian strength, including overseas indirect hires, increased from 360,508 to 372,111 in fiscal year 1981. The one-for-two hiring limitation imposed on the Department of the Army by President Carter in March 1980 lasted until 19 January 1981, when President Reagan imposed a total freeze on outside hiring that lasted until 17 February. When the freeze was lifted, the Army civilian ceiling was increased about 10,000 spaces. In July, in the midst of a Department of the Army hiring surge to reach the new increased authorization, the full-time permanent ceiling was suddenly reduced by 8,837 spaces. Since the Army now had a surplus of full-time permanent employees rather than a shortage, a hiring delay was imposed, which in turn delayed the starting dates for many new full-time permanent employees until after 30 September.

At the end of the fiscal year, civilian end strength in military functions was 372,111 against an authorized strength of 372,533, a fill rate of 99.9 percent. Employee strength in full-time, permanent positions was 289,156 versus an authorized level of 289,700, a fill rate of 99.8 percent. Although the Army was within the total employment ceiling, it exceeded the direct hire limit of 314,642 by approximately 3,600 employees. Representation of minorities and women increased from 18.8 percent to 19.8 percent and from 36.8 percent to 37.7 percent, respectively.

One of the main arguments the Army has used before Congress to justify increased civilian personnel is that commanders are reporting that large numbers of military personnel are being

diverted from military functions to jobs that could be held by civilians. During a mobilization, many of these soldiers would resume their military functions, leaving many important support jobs unfilled. In fiscal year 1981 the number of soldiers performing jobs for which documented requirements existed but for which civilian manpower authorizations or assigned civilians were lacking (known as borrowed military manpower) averaged, as in past years, 13,000 to 14,000. Another 12,000 to 14,000 troops a day were diverted to tasks still undocumented as requirements but necessary to peacetime support.

During fiscal year 1981, Congress authorized for the Army a total of 16,800 civilian spaces to reduce borrowed military manpower and other troop diversions. The Army allocated 6,500 of these spaces for use in fiscal year 1981, and the remainder for fiscal year 1982. From March through September 1981 about 6,000 civilians were hired, allowing some 5,400 soldiers to return to their military assignments, thus improving unit training and readiness. By 30 September 1981, reported borrowed military manpower had dropped to 10,500 soldiers. The Army Audit Agency and the General Accounting Office are scheduled to review the civilian increase in fiscal year 1982, and borrowed military manpower remains a special interest of the Department of the Army Inspector General.

In fiscal year 1981 the Army continued to implement the Stop Grade Escalation policy begun the preceding fiscal year. While the program set no absolute average-grade ceiling, the goal was to remain at or below the fiscal year 1979 average grade of 7.56. An increase in this average would be allowed only if proven to be necessary. In fiscal year 1980 the average grade remained at 7.56, but in fiscal year 1981 it rose slightly to 7.61.

The Army also successfully implemented the performance appraisal provisions of Title II of the Civil Service Reform Act of 1978 for merit pay, General Schedule (GS), and Federal Wage System (FWS) employees. A comprehensive two-phase training program for supervisors and managers of employees covered by these provisions commenced in December 1978 and ended before the system was implemented. The new merit pay performance appraisal system became effective on 1 October 1980. Implementation of the General Performance Appraisal System (GPAS), covering GS and FWS employees, began on 1 May 1981 and continued throughout the rest of fiscal year 1981. Negotiations with labor organizations, however, delayed the implementation at several activities, where management's last best offer was then put into effect, subject to further negotiation and modification.

By the end of the fiscal year about 270,000 employees, or 95 percent of those intended, had received written GPAS major job elements and performance standards.

The fiscal year 1981 program of encouraging cost-saving suggestions from employees proved less successful than in fiscal year 1980, but the program still realized savings of over $69.8 million from numerous employee suggestions and significant achievements. Adopted suggestions of military and civilian personnel saved $34.6 million. A civilian employee of the U.S. Army White Sands Missile Range won recognition as the outstanding contributor of the year for his suggestion which saved approximately $4.1 million the first year. The Department of Defense Appropriations Act of 1980 provided for full participation by reservists and National Guard members in the suggestion program, making them eligible to receive cash award for their inventions and scientific achievements.

On 9 September 1980 the Assistant Secretary of the Army (Manpower and Reserve Affairs) approved development of the Army Automated Civilian Personnel System (ACPERS), a fully automated information system to support mobilization and peacetime requirements of all functional areas of Army civilian personnel management. During its start-up phase (fiscal year 1981 to 1985) the system will be contracted to industry at a cost of $6 to $7 million. The contract is scheduled to be awarded in February 1983, with production deliveries to begin in February 1984. ACPERS will replace all automated civilian personnel systems currently being operated in the Army.

Unfair labor practice charges continued at an extremely high rate in fiscal year 1981 compared with the number filed before the passage of the Civil Service Reform Act of 1978. In conjunction with the Office of the Secretary of Defense, the Army recommended major changes in the way the Federal Labor Relations Authority handled these charges. To remedy the overlegalization and increasingly adversarial nature of the system, the Army urged several changes, such as requiring an informal attempt at resolution before formal charges were filed.

But the Federal Labor Relations Authority (FLRA) continued to expand the scope of bargaining in federal labor-management relations, and federal courts upheld a number of the authority's early decisions, such as those that required bargaining on stays of disciplinary actions and on details by seniority. Only in assigning work and contracting it out was management's right not to bargain left intact. Instead of asserting its right not to nego-

tiate, the Army began to emphasize discovering strategies for winning acceptable agreements at the bargaining table.

During the fiscal year a FLRA decision forced the Department of the Army to reassess its position on including many staff action officers in the merit pay system for supervisors and managers in grades GS–13 through GS–15. The Army's broad interpretation of the statutory term *management official*, used to determine which employees may be included in bargaining units and which employees are subject to the merit pay system, was invalidated by an FLRA decision that took a more restrictive view of the term. At the end of the fiscal year the Army was still assessing the effect of that decision on its merit pay system. Several thousand employees originally targeted for the new system, which is scheduled to go into effect 1 October 1981, will probably have to be excluded.

Bargaining unit membership increased slightly, from 198,722 employees in 613 bargaining units to 200,115 employees in 609 bargaining units (excluding Army National Guard figures).

In the DOD Authorization Act for 1978, Congress required a 6-percent reduction in the number of civilian employees at grade GS–13 and above by the end of fiscal year 1980. The DOD Authorization Act for 1981 amended the 1978 act, requiring a 4-percent reduction by 30 September 1981 and an additional 2-percent reduction by 30 September 1982. The Office of the Secretary of Defense, however, stated that the full 6-percent cut would be completed by 30 September 1981. Although the Army was successful in its fiscal year 1980 reduction program, ending the year 221 positions below the ceiling of 18,892, it ended fiscal year 1981 with 409 positions over the same assigned ceiling.

As of mid-September 1981, scientific and engineering positions accounted for 52 percent of the Army's total senior-level positions.

The Department of the Army has tried unsuccessfully to obtain OSD exemption of civilian physicians, employees in foreign military sales projects, and workers in other reimbursable programs from the high grade ceiling. In fiscal year 1981 prospects for congressional repeal of the statutory reduction appeared favorable. But the Office of the Secretary of Defense took no official position regarding the current ceilings or the possible repeal of the requirement. If the Department of the Army has to meet its assigned 30 September 1982 ceiling, it will have to cut over 800 filled positions during fiscal year 1982.

In fiscal year 1981 congressionally imposed pay caps and the steady erosion of benefits continued to make the Senior Executive

Service (SES) of the Army, as in other agencies, a troubled area. Although this year was better than last, recruitment and retention still suffered. Six large private industrial firms requested that they no longer be on the distribution list for Army SES vacancy announcements, and few SES applications were received from candidates outside the federal service. In fiscal year 1981, Congress' pay cap equalized the pay of officials at nine levels of responsibility, ranging from GS–14, step 9, up through SES Level V. Some gains were registered, however. SES vacancies were reduced from 79 at the end of fiscal year 1980 to 57 at the end of fiscal year 1981. Twenty-six Army SES officials, or about 12 percent of the total, retired during the year, compared with 55 in fiscal year 1980. The pay cap seems to have been the key factor in most of the retirement decisions.

In accordance with congressional actions and OPM guidance, the Army in early fiscal year 1981 awarded bonuses to only 52 of its SES members, compared with the original 178 eligible under the Civil Service Reform Act. Similar problems appeared in the program of Presidential Rank Awards for SES members. In April 1981 the Secretary of the Army forwarded to the Office of the Secretary of Defense five nominations of senior executives for the Distinguished Rank Award and twenty-one nominations for the Meritorious Rank Award. OSD forwarded all the Army nominations to the Office of Personnel Management, which convened the SES review panels. The President eventually approved only twelve Army awards, two Distinguished Rank and ten Meritorious Rank, a reduction of more than 50 percent of the Army's nominations.

One small victory in the management of the Army's SES program came on 22 May 1981 when the Deputy Secretary of Defense delegated authority to the Secretary of the Army to set or adjust SES pay to the ES–5 and ES–6 levels. Two pay rates for executives were adjusted to ES–6, and twenty-eight were adjusted to ES–5 for fiscal year 1981.

In October 1980 the Army announced a Candidate Development Program for SES managers with high potential. A screening and selection process chose twenty-six participants in nine functional fields. The candidates and their assigned advisers received orientation to instruct and advise them on the drafting of Individual Development Plans.

6. Human Resources Development

The field of human resources development in the Army encompasses almost all programs designed to improve the standard of living, education, leadership, and morale of Army personnel. It also includes preventive and remedial efforts in the areas of alcohol and drug abuse, accident prevention, discipline, and law enforcement.

To improve professionalism, the Army this year continued efforts to assure its officers and soldiers that they are important participants in a strong and vital arm of the nation's defenses and to show them in various ways that the Army as a whole has national support and a clearly defined mission and role. In July 1981, for example, the White House announced that President Reagan had created a new Military Manpower Task Force, whose goal would be to restore military people to first-class citizenship by awarding them better pay and new education benefits and, in general, by improving the quality of military life. The task force included several key White House advisers, all of the service secretaries, the Chairman of the Joint Chiefs of Staff, and the director-designate of the Selective Service System.

Leadership and Motivation

As it has since 1976, the Army this year used its Organizational Effectiveness (OE) program as one means of raising the quality of command and management practices. Almost 750 OE staff officers, trained at TRADOC's Organizational Effectiveness Center and School at Fort Ord, California, were available to assist unit commanders, especially those newly assigned, in setting goals, establishing methods of achieving them, developing leadership theory, and measuring unit progress. A principal objective of OE efforts was to increase a unit's combat effectiveness by making the chain of command more cohesive.

In the interest of promoting the ethical behavior of its leaders, the Army has developed a program of instruction in ethics for presentation in ROTC and basic officer courses. Given the importance of ethical behavior by all members of the military profession, a broader program of instruction is being developed for all officers and enlisted personnel. In a related matter, the Secretary of the Army approved the administration of an oath to commis-

sioned officers detailed as inspectors general. The Inspector General had recommended the oath as a means of further identifying inspectors general as impartial fact-finders and problem solvers. The oath will also remind newly detailed inspectors general of their moral and ethical obligations.

Semiannual soldier opinion surveys used throughout the Army to assess command climate confirmed this year that a major turning point had been reached in the way soldiers perceived the Army. The career intentions of enlisted soldiers were higher than at any time during the era of the all-volunteer force, and more of them than ever before expressed a willingness to recommend Army service to friends and relatives. Their expressions of job satisfaction and attitudes toward their leaders showed improvement. Likewise, assessments by officers of the leadership of other officers and noncommissioned officers and of soldier morale, discipline, motivation, and trainability reflected significant progress. The career intentions of junior officers had also noticeably improved, and officers in general expressed greater satisfaction with their jobs.

Quality of Life

This year the Quality of Life Program, after three years of planning and programming, at last received enough funding to make a noticeable difference for soldiers and their families. The living and working conditions of soldiers, especially in Europe, visibly improved.

The fiscal year 1981 budget provided a substantial increase in funds for the construction of family housing units and barracks, for the modernization of medical and dental clinics, for larger allowances for variable housing and permanent change of station, and for larger staffs and more supplies and equipment to support Army community activities relating to morale, welfare, and recreation.

This year the Army completed development of a resource packaging program titled "Personnel Readiness and Retention." Expected to cost $1.6 billion over five years, the program is designed to provide a balanced approach toward funding those needs of the soldiers that have the most affect on their intent to stay in the Army and their personal readiness to execute the Army's mission.

In the past, quality of life efforts have been handicapped in the competition for limited resources by the Army's inability to quantify the benefits derived from implementing the initiatives.

There was no obvious way to measure soldier satisfaction and its effect on soldier commitment. To cope with this problem, the Army hired the Orkand Corporation, a consulting firm, to develop a model to forecast the effects of quality of life initiatives and the necessary levels of funding to achieve the greatest improvement in retention. The model is scheduled for completion in April 1983.

Apart from securing adequate funding, Quality of Life program managers have focused their efforts on upgrading family life. In October 1980 the Army Officers' Wives Club of the Greater Washington Area and the Association of the United States Army sponsored the first Army Family Symposium, held in Washington, D.C. Almost 200 delegates and observers attended, consisting mostly of Army wives from installations and units worldwide. The symposium resulted in the creation of the Family Action Committee, composed of wives from the National Capital Region who had served on the original family symposium steering committee.

The committee recommended several actions which the Chief of Staff later approved. The Family Liaison Office was established within the Office of the Deputy Chief of Staff for Personnel to oversee all family issues. The Adjutant General's Office opened a Department of the Army Family Life Communications Line in the Pentagon on 8 September 1981. This 24-hour, toll-free service within the United States, the Virgin Islands, and Puerto Rico enables family members of active and reserve component personnel, civilian employees, retired personnel, and other service personnel stationed with Army elements to communicate directly with Headquarters, Department of the Army. Family members will be able to obtain information and referral regarding programs that affect family life. Major Army commands overseas are expected to set up an intracommand system by which appropriate calls can be referred to Headquarters, Department of the Army, for response by an Army staff or other agency.

In another initiative, the Department of the Army Periodicals Review Committee approved a quarterly family newsletter to be printed by TAGO and distributed to Army families worldwide. The Chief of Staff approved the basic concepts for a number of new job centers, career planning seminars, and a skill bank system. The Chief of Staff also directed the general use in Army publications of the terms *family member* or *spouse* in place of *dependent*, and he issued a policy statement supporting the right of family members to be employed without limiting a service member's assignment or position in the government. The policy state-

ment read in part: "The inability of a spouse personally to volunteer services or perform a role to complement the service-member's discharge of military duties normally is a private matter and should not be a factor in the individual's selection for a military position."

Pay, Leave, and Travel

The fiscal year 1981 Defense Authorization Bill provided improvements in military compensation. It increased military basic pay and allowances by 11.7 percent, provided a family separation allowance for E–1s through E–4s who are stationed overseas without their dependents, increased the PCS (permanent change of station) movement allowance for house trailers, increased TDY (temporary duty) per diem reimbursement from $35 to $50, and raised the limit on this reimbursement in high-cost areas from $50 to $75 a day. The bill also authorized substantial increases in military bonuses. It raised enlistment bonuses from $3,000 to $5,000, and reenlistment bonuses from $15,000 to $20,000. It authorized reenlistment bonuses, for the first time, for members of the Individual Ready Reserve and for active duty service members with ten to fourteen years of service. The bill also continued bonus authority for pilots, even though Congress appropriated no funds for this purpose.

The Military Pay and Allowance Benefits Act of 1980, which became law on 23 December 1980, provided an optional basic allowance for quarters (BAQ) for bachelor E–7s and above, and also set up a bonus pay, leave, and travel package for SIMOS personnel who extend their overseas tours. The act redefined Regular Military Compensation to include a new variable housing allowance (VHA) or overseas station housing allowance (SHA). Regular Military Compensation now included these allowances for subsistence.

The new variable housing allowance, which originated in the Nunn-Warner amendment that became law on 8 September 1980, is intended to help defray high housing costs for service members stationed in the continental United States. Personnel who are not living in government quarters but are assigned to a permanent station are eligible to receive the full difference between the average housing costs in their area and 115 percent of the average basic allowance for quarters. Personnel assigned to a permanent station outside the continental United States, and whose dependents reside in an area within the United States where the average cost of housing exceeds the average basic al-

lowance for quarters by 15 percent or more, are also eligible for VHA payments. The Department of Defense set funding levels this fiscal year, and the VHA will become an entitlement in fiscal year 1982.

The Nunn-Warner amendment also increased the PCS mileage rate from $.10 a mile to $.185 a mile, effective 1 October 1980.

The Omnibus Budget Reconciliation Act of 1981, which became law on 13 August 1981, change the semiannual adjustment of retired and retainer pay (which had been adjusted on 1 March and 1 September) to one that is annual (occurring on 1 March). Because of the new law there was no adjustment to retired and retainer pay on 1 September 1981. Such pay was scheduled to be increased on 1 March 1982 by the percentage increase in the Consumer Price Index for the period from 1 January through 31 December 1981.

Federal law requires that percentage increases in survivors' annuities and in pensions subject to the dual compensation restriction (5 USC 5532) must be handled on the same basis as percentage increases in retired and retainer pay. Therefore, percentage increases in the survivors' annuities and dual compensation amounts have also been placed on an annual basis.

Morale, Welfare, and Recreation

This fiscal year the Army continued to make progress in developing the effective and efficient management of resources and facilities used for morale, welfare, and recreation. With the concurrence of the Army Morale, Welfare, and Recreation Review Committee, The Adjutant General's Office established a users' task force to determine specific needs of the Army for information relating to the management, control, and oversight of nonappropriated funds. Task force members, representing Army headquarters and the major commands, discussed reporting problems and changes needed to achieve greater uniformity among the major commands in the management of nonappropriated funds. A major step agreed upon was to bring all Army commands except Korea into a centralized automated payroll system for employees paid with nonappropriated funds. By the end of the fiscal year, among those commands slated for incorporation, only Europe remained outside the centralized system. In another major step, in July 1981, new procedures were instituted for the reimbursement of nonappropriated fund programs with appropriated funds. The Army is now using fewer nonap-

propriated funds for operating expenses and ensuring that morale, welfare, and recreation (MWR) programs are administered in strict compliance with governing regulations.

During fiscal year 1981 The Adjutant General's Office nearly completed the establishment of the Nonappropriated Fund Central Banking Program in the United States. Under this program all cash resources from nonappropriated morale, welfare, and recreation funds will be concentrated at a central bank where they will be invested. Managers of morale, welfare, and recreation programs will draw upon the funds as needed for operations or facility improvements.

Congress has recently taken an interest in the number of military personnel assigned to morale, welfare, and recreation positions, both full and part time, and has put ceilings on the number of such positions. This fiscal year the Office of the Secretary of Defense directed the services to comply with the legislation.

TAGGEN's Army Community Service Division this year continued to administer several programs designed to improve the quality of life of soldiers and their families. One focus of the division's work was planning for implementation in fiscal year 1982 of the Army Consumer Affairs–Financial Planning Program. The program will be organized parallel to federal, state, and local consumer protection offices. It will offer guidance to service members seeking consumer information and will be a mechanism for resolving consumer complaints.

In May 1981 the Army expanded its Child Advocacy Program into a Family Advocacy Program, which now includes services to prevent spouse and child abuse and neglect. The program is designed to help prevent, evaluate, treat, and report child and spouse maltreatment, including physical and sexual abuse and physical, psychological, and emotional neglect. The detailed objectives of the program are expected to be published in AR 608–1 (Army Community Service Program) in June 1983.

As the fiscal year came to a close, the Army was preparing to conduct an "open season" to allow eligible retired service members to take part in or increase their participation in the Survivor Benefit Plan. Eligible members may enroll initially in the plan, increase their contribution, expand their current coverage to include their spouse as well as children, or elect coverage for someone with an insurable interest if the retired member has no spouse or dependent child. Congress, which authorized the larger program in August 1981, requires a two-year waiting pe-

riod before the designated beneficiary becomes eligible to receive an annuity.

As part of its community support effort, the Army participates in the ceremonial activities of Arlington National Cemetery. In April 1981 the Army accepted ten Lippizan stallions as a gift from Tempel Steel Company. The horses belong to a breed with 400 years of military tradition. The ten donated horses are descended from a herd of Lippizans that General George S. Patton, Jr., saved from the destruction of World War II for the Spanish Riding School in Vienna. The ten horses will be used by the Caisson Platoon of the 3d United States Infantry (The Old Guard) for ceremonial purposes at Arlington Cemetery.

The Armed Forces Professional Entertainment Office (AFPEO), in conjunction with the USO (United Service Organizations), continued to provide live professional entertainment to the Army overseas. Among the many entertainers sent abroad were Suzanne Somers, the Dallas Cowboy cheerleaders, Miss America, Miss Black World, the Crown Beauties of Soul, a troupe of former Miss Black Americas, and television star Norman Fell.

In October 1980 the Department of Defense assumed complete responsibility for the administrative processing of all touring groups selected by AFPEO and the USO. The USO agreed to provide press releases for all touring groups selected by AFPEO.

In this fiscal year the Army Photography Contest became an annual event. The contest in September 1981 at Aberdeen Proving Ground, Maryland, produced 72 winners from 831 entries. The winners will be entered in the 18th Interservice Photography Contest scheduled for December 1982.

The Army Art Contest held every four years was judged 25 September 1981 at Fort Meyer, Virginia. The 193 entries from 10 major Army commands represented 33 CONUS and 68 OCONUS installations and sites.

This year the Army lost its two-year-old title at the twenty-second annual Armed Forces Interservice Chess Championship, sponsored by the American Legion and the American Chess Federation. For the first time in twenty years of interservice chess competition, the sea services teams defeated both Army and Air Force teams. The ten-day event tested the chess skills of the six-member teams that were selected in earlier intraservice competition. The event took place in the American Legion Hall of Flags in September 1981.

Teams and individual competitors in a variety of sports took part in interservice, national, and international championships.

In interservice competition, Army victories included first-place finishes in track and field, boxing, soccer, and men's basketball. In international military competition, the Army was first in parachuting, helicopter flying, shooting, and boxing. SFC James Grant of Fort Bragg, the 1981 Army boxing coach, was selected as the National Boxing Coach of the Year by the USA Amateur Boxing Federation. Five Army boxers were selected to the 1981 All-American boxing team.

In 1981 the Army published a pamphlet entitled "Hazards in the Arts" to alert personnel in Army arts and crafts centers to the growing evidence of health hazards involved in exposure to many toxic art materials. In conjunction with federal health officials and agencies, the Army is looking for ways to minimize the hazards in its arts and crafts programs.

This fiscal year the number of Army libraries participating in the Federal Library Information Network increased from thirty-eight to forty-one. The Army purchased 191,318 cloth-bound books for its libraries and obtained 27,731 paperbound book kits of twenty titles each for distribution to military personnel without access to libraries. There were special purchases of children's books and Spanish-language publications.

This year the Army continued to increase funding for construction of a variety of morale support facilities. Most were sports facilities, but there were also two travel parks, five auto self-help centers, a craft shop, and two dependent youth activity facilities.

During fiscal year 1981 Army clubs had a total revenue of $256.81 million, a 7-percent increase over 1980. Sales increased 7 percent in 1981, up to $187.45 million. Net income increased 17 percent, up to $21.34 million (8.3 percent of revenue). The year's most notable progress came in food operations, which realized a $3.63-million net income (4 percent of sales) compared with a net income of $73,097 (.1 percent of sales) in 1980.

Braced by six consecutive years of favorable financial operating results, Army clubs were being renovated and built at an unprecedented rate in fiscal year 1981. At the end of the year there were fifty-two club projects in various stages of development, with $71 million in facility improvements scheduled over the next five years. During 1981 seven installations in the United States started new construction projects, and six others began renovations. Six projects were completed in fiscal year 1981. In Europe facility improvement projects costing $25 million were under way, and two club projects were being designed for the Army in Korea.

Package beverage stores increased their net income 10 percent from last year, up to $18.59 million. The stores distributed $6.47 million for morale support activities, compared with $4.47 million in fiscal year 1980. This fiscal year the package stores retained $2.37 million for capitalization. Total store revenue was $115.94 million, a 9-percent increase from fiscal year 1980.

The Adjutant General's Office this year began a phased reinstatement of recreational (slot) machines in overseas areas where permitted under status of forces or other local agreements. Army clubs in the Kaiserslautern and Frankfort military communities received 250 machines. Profits from the machines will be used to improve the clubs and other recreational facilities.

The Army Bands Office conducted auditions during the fiscal year to find potential band officers for its new career management plan, which was begun last year. The office also developed several successful recruiting measures to assist USAREC in attracting potential band members. This fiscal year the Army also developed a doctrine for using bands at division and higher echelons in support of combat operations. To assist commanders in maintaining morale among their troops, bands will offer music whenever opportunities arise. When combat becomes intense, band members are to assume secondary duties: security of command posts, perimeter defense, traffic control, and security for prisoners of war. Commanders will also take every opportunity to use their bands to foster good will among civilians in zones of operations.

Equal Opportunity

This fiscal year the newly appointed Secretaries of Defense and the Army published and disseminated policy statements outlining their commitment to equal opportunity. The equal opportunity staff at Headquarters, Department of the Army, continued to impress on all levels of command that fostering equal opportunity for Army minorities plays a key role in promoting soldier effectiveness and unit cohesion. The staff participated in several functions sponsored by Blacks in Government, Women's Forum, the National Association for the Advancement of Colored People, the Urban League, American G.I. Forum, Black History Month, Hispanic Heritage Week, Asian-Pacific American Heritage Week, the National Congress of American Indians, and others.

The equal opportunity staff took steps in conjunction with TRADOC to revitalize the Army's equal opportunity training

program. The Department of the Army conducted a program analysis of several major Army commands. The analysis resulted in a number of proposed policy changes to be implemented by the end of next fiscal year, including new and extensive instruction on countering sexual harassment.

Based on guidance received from the Equal Employment Opportunity Commission, the Department of the Army developed a Transition Year Affirmative Action Program Plan. Occupational series (job categories) were evaluated for representation of minority group members and women. Department of the Army representation was compared with civilian labor force data that reported the availability of women and members of certain minority groups with comparable skills. Where groups were found to be underrepresented in the Army work force, they were targeted for placement by numerical goals. Only four series were targeted in the transitional year. During a period when hiring restrictions were imposed, the Army succeeded in meeting or exceeding its goals for three of the four targeted occupational series in the majority of grade levels comprising entry, midlevel, and senior groupings.

The Department of the Army this fiscal year allocated 227 man-years and $6.2 million in administrative costs to survey its requirements for developing Federal Equal Opportunity Recruitment Programs. As a result, the Army identified each major operating component in the department that is required to develop and implement such programs and assessed the components' determinations of underrepresentations, internal and external recruitment activities, interagency programs, and establishment of representative applicant pools.

In the area of external recruitment, the Office of Personnel Management delegated to the Army the authority to conduct its own examinations, to identify jobs that could be redesigned by requiring bilingual or bicultural capabilities or by not requiring fluency in English, to recruit at historically black colleges and at colleges with a high enrollment of women and minorities, and to support interagency clearinghouses in metropolitan areas.

The purpose of the Army's Severely Handicapped Affirmative Recruitment Program is to hire employees with severe handicaps, such as deafness, blindness, or missing extremities. The program is open to disabled veterans. In fiscal year 1981 the Army was not able to meet its goal of obtaining at least 1.5 percent of all new personnel with severe handicaps.

Education

The Army's continuing educational efforts seek to benefit the Army as well as to support the soldier's personal and professional goals. Army benefits encompass efforts to support readiness through improved professionalism and skill proficiency, increased recruitment and retention, as well as advanced technology expertise. Support for the soldier is aimed at increasing self-esteem and motivation; enhancing professional development, military effectiveness, and leadership abilities; and providing productive postservice career skills.

In accordance with the fiscal year 1981 Department of Defense Authorization Act, the Army conducted one-year tests of four different postservice educational incentives: loan forgiveness; a miniature G.I. Bill proposed by the House Armed Services Committee; a noncontributory veterans educational assistance program proposed by the Senate Armed Services Committee; and an "ultra" contributory educational assistance program. For a four-year enlistment during fiscal year 1981, a recruit could combine one of these initiatives with an enlistment bonus in selected military occupational specialties. The test goal was to assess the effect of these special incentives over and above that of the preexisting basic contributory Veterans Educational Assistance Program (VEAP). The Army, like the other services, already supports the concept of a G.I. Bill—a noncontributory college educational incentive program that would replace VEAP.

In fiscal year 1981 the Army favored a G.I. Bill that would double the monthly allowance for soldiers with six or more years of honorable service. It would also authorize the transfer of all unused benefits to children and spouses of active duty personnel with more than ten years of service. In addition, the Army believes that a provision benefit is needed to fill critical specialty shortages. At the close of the fiscal year, Congress was considering a variety of draft G.I. bills.

The Army Continuing Education System (ACES) provides off-duty voluntary educational opportunities and on-duty job-related educational programs. ACES funds are administered by the Army Education Directorate, Office of the Adjutant General. These funds may be used to pay for off-duty college programs, vocational and technical courses, and skill development programs such as the Army Apprenticeship Program. The apprenticeship program allows soldiers to document their actual work experience and to earn a Department of Labor Journeyworker's Certificate upon successful completion.

The Basic Skills Education Program remained the commander's primary on-duty educational tool to upgrade reading, writing, speaking, listening, and math skills that are related to duty performance. Provided at no cost to the service member, the program calls for maximum decentralization and flexibility so that commanders may mold content and delivery methods to fit command and mission requirements. The commander is encouraged to give priority of enrollment to those soldiers with the greatest chance for success and, therefore, retention. Improvements are under way which will enhance the program substantially in the next few years.

During the fiscal year the English Language Branch of the Defense Language Institute's Language Center at Lackland Air Force Base, San Antonio, Texas, completed a six-month residency program for 200 soldiers needing instruction in English as a second language (ESL). The institute also began a similar three-month program for 151 soldiers to help in developing a long-range Army policy for providing English as a second language. By the end of the fiscal year, some 5,800 soldiers had completed the Army's resident and nonresident ESL courses, which are part of the Basic Skills Education Program.

The Advanced Skills Education Program (ASEP) is intended to provide on-duty remedial education to noncommissioned officers (E–6 and above) and to improve duty performance. Regionally accredited educational institutions are normally awarded contracts for the development of ASEP courses to meet objectives determined by the installation commander and education services officer.

The Servicemembers Opportunity College Associate Degree (SOCAD) program consists of forty-five accredited civilian schools which offer off-duty college associate degree programs in sixteen occupational areas. Extension of the SOCAD program to Europe, the Pacific, and the Far East, scheduled for this fiscal year, has been delayed.

This fiscal year saw the beginning but not the end of a controversy over sharp reductions in federal financial aid to school districts that must educate large numbers of students from legally nonresident military families, especially those who reside on federal property and pay no local property taxes. The basis of Congress' rationale for providing this impact aid since 1950 has been that federal property is exempt from state and local taxation and that some local school districts depend on such taxation as their main source of education funds. Without federal reimbursement, in the form of impact aid, local districts are left with the choice

of reducing the per-pupil expenditure for both military and nonmilitary students in the district, or raising local taxes on nonfederal real property, or eliminating the provision of a free public education to students from military families.

The Omnibus Budget Reconciliation Act of fiscal year 1981 provided $475 million for the Impact Aid Program, a reduction of $723 million from the previous year. In response to anticipated cuts in impact aid, several states and their local school districts prepared to charge tuition for the public education of members of military families. The Secretary of Defense, however, announced that no service member would be forced to pay for public education. He obtained a commitment by the Department of Justice to take school districts to court to ensure that children of military families would be educated at no expense to their parents. The concerned state education agencies likewise expressed their willingness to pursue court action to obtain tuition fees in lieu of impact aid.

At the end of the fiscal year two states (Virginia and North Carolina) had passed tuition legislation, and their local school districts had taken measures to charge tuition to military families. The Department of Defense was having difficulty in finding a congressional sponsor for a bill to prohibit any state or local education authority from denying a free public education to children of military families residing on federal property.

In response to a request by the Chief of Staff, four additional states have granted military personnel and their family members resident status for tuition purposes at state colleges and universities. Thirty-three states now extend such support. Seventeen of the twenty-one states who were asked for such support this year, however, have declined to return a favorable response.

Alcohol and Drug Abuse

The Army Alcohol and Drug Abuse Prevention and Control Program (ADAPCP) is made up of prevention, identification, and rehabilitation services. During fiscal year 1981 a total of 26,385 active duty personnel entered ADAPCP treatment programs. Of those individuals whose treatment year (360 days) ended in fiscal year 1981, a total of 17,065, or 65 percent, completed treatment and were returned to active duty.

The Department of Defense recently contracted for a study of drug and alcohol abuse in the military which shows that, while the Army has a better record in this area than the Navy or Marine Corps, its record does not match that of the Air Force. Of those

Army personnel who responded to the survey, 24 percent admitted at least some incidents of work impairment in 1979 and early 1980 because of alcohol use, and 22 percent (E–1 to E–5 only) because of drug use. Drug use occurred almost entirely among personnel in pay grades E–1 through E–5. Overall, the survey showed that military personnel had about the same incidence of drug and alcohol use as the civilian population. One notable exception was the much greater use of amphetamines and other "uppers" among 18–25 year olds in the military.

Accident Prevention

For the first time in two years several types of accidents in the Army increased during this fiscal year. Army motor vehicle accidents increased slightly from 5,194 to 5,208, although the accident rate decreased from 5.1 to 4.8 per one million miles traveled. Army Class A aviation accidents increased slightly from 37 last fiscal year to 43 in fiscal year 1981, and the Class A aviation rate rose slightly from 2.41 to 2.6 per 100,000 flying hours. The number of destroyed aircraft increased from 31 to 36. Accidents in privately owned vehicles increased from 1,860 to 1,863.

In spite of the increased accidents, however, fatalities decreased. This fiscal year the Army experienced a 15-percent reduction in fatalities, from 549 to 466, the lowest number recorded in many years. This was primarily the result of an overall reduction in military personnel fatalities from 504 to 415, an 18-percent decline. Deaths in Army motor vehicle accidents decreased 27 percent, from 59 to 44. Army aviation fatalities remained at 26, the same as last year. Deaths resulting from accidents in privately owned vehicles decreased from 292 to 287.

The Office of the Director of Army Safety served as the focal point for further study and development of the Army Safety Program 5–10 Year Plan, parts of which had been scheduled for implementation this year. The office also assumed responsibility for assisting the ODCSPER in studying chemical agents and related munitions systems and for developing a radiation protection program throughout the Army to coordinate and resolve issues in occupational radiation exposure and related matters.

Discipline, Law Enforcement, and Military Justice

Discipline in the Army improved considerably over the last fiscal year, but progress was uneven, with some areas reporting continued problems. Worldwide, crimes of violence have de-

creased 22 percent since the end of fiscal year 1974, and they decreased 4 percent in the past year. Crimes against property have declined 13 percent since fiscal year 1974, but increased 2 percent since fiscal year 1980. Marijuana use and possession has risen to an all-time high since 1974—10 percent higher than in 1974 and 26 percent higher than in 1980. Other drug offenses decreased by 36 percent since 1974, and decreased 3 percent since fiscal year 1980. AWOL rates have dropped 59 percent since fiscal year 1974 and were down 13 percent during the past year. Desertions have dropped 61 percent since fiscal year 1974 and registered a 19-percent decrease this year over 1980 levels. Total courts-martial were up 13 percent. Nonjudicial punishment was up 3 percent, and separations other than honorable were up 3 percent over fiscal year 1980.

The breakdown of court-martial statistics for fiscal year 1981 is as follows:

	Convicted	Acquitted	Total
General	1,262	164	1,426
Special	4,180*	414	4,594
Summary	4,070	348	4,418
Total	9,512	926	10,438

*In 1,220 of the special court-martial cases, the approved sentence included a bad conduct discharge. Also imposed during the year were 156,497 nonjudicial punishments under Article 15, Uniform Code of Military Justice.

The indiscipline index at the following table provides a comparison of quarterly rates for offenses, punishments, and separations less than honorable since the beginning of fiscal year 1977.

Over the twelve-month period ending 30 November 1980, 78,751 U.S. military and civilian personnel and their dependents were charged with offenses within the exclusive or primary jurisdiction of foreign tribunals. Of the offenses charged against Army members, 14,625 were subject to the primary jurisdiction of foreign courts. The Army obtained waivers of jurisdiction in 14,201 of these cases, which amounted to a waiver rate of 97.1 percent. Of U.S. personnel confined in foreign penal institutions during the twelve-month period, fifty-eight were Army personnel, civilians, or dependents.

On 7 November 1980 the Army Chief of Staff approved the permanent establishment of the U.S. Army Trial Defense Service (USATDS), a separate organization providing military defense counseling throughout the Army. USATDS will continue to be organized as an activity of the U.S. Army Legal Services Agency, a field operating agency of The Judge Advocate General. On 15

INDISCIPLINE INDICATORS—WORLDWIDE

(rate per 1000)

FY	Qtr	AWOL	DFR	Crimes of Violence	Crimes Against Property	Marijuana Use and Possession	Other Drug Offenses	Total Courts-Martial	Non-Judicial Punishment	Separations Other Than Honorable
77.....	1	10.4	4.7	1.58	19.48	7.60	1.38	2.71	50.58	4.66
	2	9.5	3.4	1.43	18.23	8.08	1.48	2.85	54.16	4.83
	3	12.7	4.5	1.51	19.28	7.33	1.47	2.34	54.84	4.32
	4	14.4	5.1	1.76	21.81	6.90	1.22	2.44	54.50	4.45
78.....	1	8.7	3.4	1.56	19.97	6.52	1.19	2.41	47.53	4.20
	2	10.1	3.3	1.49	17.91	7.32	1.42	2.51	51.87	3.99
	3	10.4	3.9	1.51	18.19	7.36	1.29	2.51	52.47	3.68
	4	11.2	4.8	1.48	18.58	6.91	1.19	2.46	48.52	3.74
79.....	1	7.8	4.2	1.36	18.15	6.60	1.42	2.23	45.03	3.57
	2	10.3	4.2	1.44	17.66	7.23	1.49	2.47	49.16	4.28
	3	9.4	4.4	1.49	18.88	7.52	1.79	2.72	51.29	4.72
	4	10.5	5.2	1.61	19.66	6.62	1.71	2.47	47.54	3.97
80.....	1	7.9	4.6	1.61	17.91	5.95	1.47	2.64	45.31	3.69
	2	10.9	4.8	1.56	18.18	6.95	1.45	2.96	48.56	4.52
	3	10.5	4.9	1.55	19.59	6.98	1.54	3.36	51.66	4.27
	4	12.3	5.3	1.74	21.43	5.59	1.16	3.10	51.34	4.21
81.....	1	8.3	4.1	1.53	18.99	6.86	1.25	3.34	49.95	4.00
	2	9.8	3.8	1.51	18.15	8.04	1.46	3.48	50.52	4.21
	3	8.9	3.9	1.35	18.11	8.25	1.38	3.56	48.67	5.03
	4	9.0	4.1	1.52	19.66	7.68	1.15	3.33	47.83	3.93

September 1981 the Army issued a change to Army Regulation 27–10, Military Justice, providing regulatory authority for USATDS. By 30 September 1981 approximately 215 judge advocates were assigned to USATDS and were stationed in field offices that serve all of the Army's commands.

During fiscal year 1981 USATDS continued to develop its capability to serve combat and combat support units. USATDS counsel participated in many local field exercises, in deployment exercises at Fort Irwin, California, and in a major REFORGER exercise with the 1st and 4th Infantry Divisions in Germany. The new organization also expanded its coordination with reserve units. Reserve defense counsel teams performed their two-week active duty training under the supervision of Senior Defense Counsel at ten posts throughout the continental United States.

On 15 September 1981 the Army published other important changes to Army Regulation 27–10: clarification of which personnel records of a convicted soldier may be presented to the military judge before sentencing, and a provision for the detailing of military judges from another armed service. During fiscal year 1981 the Army also conducted an extensive evaluation of AR 27–10, with an eye to a major revision. Major changes being considered deal with the administration of nonjudicial punishment and the inclusion of records of such punishment in a service member's personnel file. The revision is expected to be published next fiscal year.

Several amendments to the Manual for Courts-Martial were put into effect by Executive Orders 12306 and 12315, signed on 1 June 1981 and 29 July 1981 respectively. The most significant change dealt with producing witnesses during the sentencing portion of a court-martial. The change recognized that the requirement for the personal appearance of a witness during sentencing differed substantially from when the testimony of a witness is offered on the merits. This change allows evidence on sentencing to be produced through oral depositions, written interrogatories, and former testimony.

This fiscal year the Joint Services Committee, composed of representatives from all the services, worked toward a complete revision of the Manual for Courts-Martial. The goal is to complete the revision in fiscal year 1983.

On 14 May 1981, a bill was introduced in the Senate (S. 1181) which would amend the Uniform Code of Military Justice (UCMJ) to permit the general court-martial convening authority to place on involuntary excess leave those service members who have received a punitive discharge and are awaiting appellate review of

their court-martial; establish a two-year statute of limitations on petitions to The Judge Advocate General for review under Article 69, UCMJ; allow service secretaries to define, by regulation, the reasonable availability of individually requested military counsel; as well as several other changes. At the close of fiscal year 1981, passage of the bill was imminent.

On 9 March 1981 the Army established the U.S. Army Military Police Operations Agency (USAMPOA), a field operating agency under the staff supervision of the DCSPER, for one year pending the completion of an ODCSPER study to determine the best organizational structure for all agencies of Army law enforcement. The USAMPOA assumed responsibility for several functions formerly performed by the ODSCPER Law Enforcement Division, which has been renamed the Office of Army Law Enforcement. The mission of the USAMPOA is to monitor implementation of Army law enforcement policy, to develop and promulgate military police operational and technical guidance, and to disseminate this guidance to other Army law enforcement elements.

7. Support Services

The adage "an army travels on its stomach" is an apt reminder that a well-trained, well-equipped, and well-led army may come to naught unless the physical and emotional well-being of the individual soldier is also taken into account. Support services cover a wide range of activities which respond to this need.

Health and Medical Care

Army expenditures for medical services in fiscal year 1981 amounted to $2,016.2 million, $368 million more than for the preceding year. The increase was largely because of military and civilian pay raises, the continuing escalation of health service costs for beneficiaries at both Army medical treatment facilities and civilian facilities, a substantial jump in medical construction, and a rise in medical equipment purchases. The table below shows Army medical expenditures by appropriation category for the last two fiscal years (in millions of dollars):

Appropriation	FY 80	FY 81
Military Personnel, Army	640.2	681.0
Operations and Maintenance, Army	828.0	999.0
Research and Development, Army	91.5	90.0
Military Construction, Army	20.3	158.4
Other Procurement, Army	56.2	72.9
Reserve Personnel, Army	12.0	14.3
Total	1,648.2	2,015.6

The patient workload at Army medical care facilities did not reach programmed levels this year, although the actual workload exceeded fiscal year 1980 levels by a small margin. A larger workload would have been attained had it not been for personnel shortages in physician specialties and medical support. The average length of a hospital stay continued to decline—an average of 6.7 days in fiscal year 1981 as compared with 6.9 days in the previous year. The shorter stays were offset by a 1-percent increase in the number of hospital admissions. Both factors reflected national health care trends toward same-day surgery and intensive care units that promote shorter hospital days.

The Army, along with the Navy, the Air Force, and the Uni-

formed Services University for the Health Sciences (USUHS), prepared to carry out a directive from the Office of the Secretary of Defense that removed restrictions on sickle-cell trait (SCT) sufferers, which had disqualified them for flying, diving, and parachuting duties. The directive also required the services to begin a long-term check on service members with SCT to see if this policy change would have any adverse effects, and to institute mandatory testing for SCT and for glucose-6 phosphate dehydrogenase (G–6–PD). A USUHS–triservice methodology to monitor personnel with SCT during their careers was progressing, while plans to test all service members for SCT and G–6–PD were just getting under way as the fiscal year ended. In addition, the Army was preparing to evaluate applicants for flying, diving, and high-altitude low-opening parachuting for increased susceptibility to hypoxia, dehydration, and physical stress—conditions that were believed to be related to morbidity and the sickle cell trait. The Army also considered studying SCT at Fort Bliss, where five of seven Army trainee deaths occurred that may have been related to SCT.

Army Medical Department activities concerning health hazards were centered at the U.S. Army Environmental Hygiene Agency (USAEHA), a part of the Health Services Command. In 1981 USAEHA received the mission of validating health hazard assessment (HHA) efforts for nonmedical materiel, developing HHA standards and specifications, and acting as technical adviser on HHA matters to the office of the Surgeon General, the U.S. Army Medical Research and Development Command, and developers. USAEHA was also responsible for developing the Army's local occupational health hazard inventory (LOHHI) and served as the central repository for collected data. The LOHHI gave the Army information on hazardous operations and chemicals which the Surgeon General needed in order to advise the Secretary of Labor of potential health hazards within the Department of Defense, information to help physicians develop medical surveillance programs, and data for use in educating and training service members and employees concerning work hazards.

Army installations have had difficulties meeting their responsibilities in the area of occupational health, which include job-related medical surveillance and personnel protection, hazard identification and assessment, prevention and control of occupational diseases and injuries, and feeding data to the Department of the Army for consolidation and overall program evaluation. For the last several years the Army Medical Department has tried

to resolve problems at the installation level by developing an automated occupational health management information system (OHMIS), but has lacked the necessary resources to carry it through. Safety Sciences, Inc., received a contract this year to conduct an OHMIS study. The objective of the study is to determine the best alternative system for assembling, comparing, using, and evaluating personnel exposure information, baseline medical examination data, periodic medical surveillance data, occupational illness and injury information, workplace environmental monitoring data, personal protective equipment usage, observations of work practices, and hazard awareness education. The study should be finished in the spring of 1982.

Army Nurse Corps (ANC) strength at the end of the fiscal year was near authorized levels, 3,833 on hand compared to 3,859 authorized; however, it was not enough to meet requirements. So, 2,162 civilian registered nurses were employed as of 30 September 1981 to help meet the need for nursing care and services.

In fiscal year 1981 Army nurses participated in a wide variety of Army and civilian educational programs to promote their professional development. The goal of achieving an all-professional corps moved forward with 98 percent of all ANC officers holding baccalaureate degrees.

The Army Medical Specialist Corps (AMSC) expanded its support of the annual REFORGER exercise as two field grade officers, a physical therapist and a dietitian, took an active role in REFORGER 1981. The physical therapist worked at a division clearing station and provided both musculoskeletal evaluations and acute patient care. This was the first time in the REFORGER series that a physical therapist had been in such a forward position. The second officer served as chief dietitian to the 85th Combat Support Hospital.

Dietitians also served with the 5th Combat Support Hospital at Fort Bragg, North Carolina, during Operation BOLD EAGLE and assisted the 44th Medical Brigade in support of the Rapid Deployment Force. The dietitian assigned to the 44th developed a "quick-fix" hospital B-ration and subsequently collaborated with a dietitian from the Hospital Food Service Branch of the Academy of Health Sciences and with Natick Laboratories to develop a new ten-day, hospital B-ration.

As noted in last year's historical summary, the 1980 Department of Defense (DOD) Appropriations Act provided for sharp reductions in DOD veterinary activities and their consolidation within the Army over a five-year period. The 1981 DOD Ap-

propriations Act shortened the consolidation time to three years, ending in fiscal year 1983. Consolidation actions taken as of 30 September 1981 included a 10-percent reduction in DOD veterinary officer positions; disestablishment of the Air Force Veterinary Service; execution of memoranda of understanding and interservice support agreements with the Navy and Air Force; identification of veterinary officer research and development positions that could be filled by civilians; and, as discussed below, development of a warrant officer program in food inspection.

A particularly noteworthy accomplishment resulting from the consolidation was the creation of a food inspection technician warrant officer specialty (MOSC 051A). This action satisfied a congressional requirement to replace 30 percent of veterinary officers who perform food inspection functions with other specialists. The first increment of ten warrant officers was selected in July 1981. Their training in the new specialty will begin in November 1981 at the Academy of Health Sciences. A total of fifty-three warrant officers will replace veterinary officers as operational managers of food inspection functions and will provide day-to-day guidance to noncommissioned officers and specialists who actually perform the inspections. Veterinary Corps officers will serve as consultants to the Surgeon General, warrant officers, noncommissioned officers, and specialists for food inspection matters. Because of the diverse functions of veterinarians, further substitution would not be advisable.

One aspect of veterinary services consolidation which the Army considered harmful has to do with a provision of the 1980 DOD Appropriations Act calling for the civilianization of veterinary positions involved in research and development "to the maximum extent possible without jeopardizing legitimate military requirements." Approximately one-third of all veterinary officers were engaged in biomedical and subsistence research for the military. Military veterinary scientists had made valuable contributions to the understanding of such diseases as leptospirosis, meliodosis, viral encephalitis, malaria, scrub typhus, radiation illness and protection, and the development and improvement of surgical prostheses.

Lt. Gen. Charles C. Pixley, the Surgeon General of the Army, opposed civilianization. He pressed his case when the Assistant Secretary of Defense for Health Affairs directed a reduction of 102 military veterinary research and development positions to comply with the civilianization proviso contained in the 1980 DOD Appropriations Act.

On 8 July 1981, William D. Clark, Principal Deputy Assistant

Secretary of the Army for Manpower and Reserve Affairs, hosted a meeting attended by General Pixley; John F. Beary, Principal Deputy Assistant Secretary of Defense for Health Affairs; Brig. Gen. Garrison Rapmund, Assistant Surgeon General for Research and Development; Brig. Gen. Frank A. Ramsey, Chief of the Veterinary Corps; and others from the offices of Assistant Secretary of Defense for Health Affairs and the Assistant Secretary of the Army for Manpower and Reserve Affairs. The purpose of the meeting was to seek a solution to the problems posed by civilianization. Participants at the meeting pointed out the critical need for veterinary specialists to support essential DOD research and development programs; the inability to hire civilians to replace 102 military veterinarians; the adverse effect such replacement would have on the morale of the 102 incumbent military research veterinarians, who would lose their job space authorizations, and the inevitable attrition of these officers unless space authorizations were restored; and the serious jeopardy to existing and forthcoming programs which would result.

After the meeting the Army sent a memorandum to the Assistant Secretary of Defense for Health Affairs detailing the situation and requesting the restoration of the 102 spaces to the Veterinary Corps. These would be withdrawn one year after the completion of the consolidation of DOD veterinary services, but only as positions were successfully turned over to civilians. The Assistant Secretary had not responded to the memorandum by 30 September 1981.

At the close of fiscal year 1981 the Health Facility Modernization Program had thirty-three projects under construction (twelve hospitals, four dental clinics, six health clinics, and nine health and dental clinics). The value of the projects totaled just under $350.4 million.

Work began on fourteen medical construction projects during the year: eight in Europe, two in the Pacific region, and four in the continental United States. The projects in Europe comprised health and dental clinics at Amberg, Bad Hershfeld, Butzbach, Mannheim, and Wertheim; health clinics at Fulda and Illesheim; and a dental clinic at Heidelberg. The two projects in the Pacific were additions and renovations to Tripler Army Medical Center in Hawaii and to a dental clinic at Yongsan, Korea. Projects in the continental United States involved site work at the new Fort Carson hospital and construction at the Hunter-Ligget health and dental clinic, the Fort Sam Houston troop medical clinic, and the Fort Belvoir health clinic.

The Army completed fifteen medical construction projects

during fiscal year 1981: dental clinics at West Point and at Forts Bliss, Bragg, Knox, Lee, Ord, Polk, Riley, Sam Houston, and Sill; and, in Germany, health clinics at Baumholder, Karlsruhe, and Schwaebisch Gemuend and health and dental clinics at Bindlach and Mainz.

The Army obtained one hospital and one clinic, following either the closing or the conversion to the local community of eight U.S. Public Health Service (PHS) hospitals and twenty-seven PHS clinics. The clinic, which is located in St. Louis, Missouri, should eliminate the need to build a new clinic in Granite City, Illinois. Letterman Army Medical Center will use the former PHS hospital in San Francisco to satisfy both building space requirements and shortages of mobilization hospital beds.

Religion

From the American Revolution to the present, during wartime as well as periods of peace, Army chaplains have tended to the spiritual and moral needs of the military community. Chaplain activities during fiscal year 1981 had two primary thrusts: soldier support and professional development. Soldier support dealt with the many programs and services directed toward service members and their families. Professional development involved programs and activities to sharpen the skills of Army chaplains and those working with them in performing their duties.

The rapid growth of chaplain-operated family life centers continued during fiscal year 1981. Two training seminars for center directors were held during the year. The first, a week-long event held in Kansas, trained thirty-eight chaplains in the use of a new program designed to build family understanding and community cohesion and support. The second event, which took place at the Menninger Clinic, gave twenty-two chaplains a one-week refresher course and update on family ministry.

As a follow-up to the 14–16 November 1979 meeting of the Family Life Steering Committee held in Rosslyn, Virginia, a select group of chaplains and other concerned persons assembled at Colorado Springs, Colorado, in April 1980 to discuss new ways to train chaplains for family life ministry. The group recommended a program in which four graduate school students would participate in a supervised practicum at a major installation. The concept was accepted by the Chief of Chaplains in May 1981. Fort Knox was selected as the training site for a two-year test program that will begin in fiscal year 1982.

Army chaplains met with principal planners of the first Army

Family Symposium early in fiscal year 1981 to share their concerns regarding marriage and family life. The exchange of views led to several program changes, chaplain presentations at the symposium, and increased awareness of family-related chaplain programs. Chaplains gave strong support for the second Army Family Symposium, which will be held in fiscal year 1982.

The use of audiovisual materials to implement chaplain programs has been hampered by a moratorium on new film purchases. The ban does not affect related activities, such as gathering materials and script ideas, coordinating ideas for future films, publicity, script approval, preproduction meetings, and film festival participation, which have continued with minimal expenditure of chaplain funds. One film produced before the moratorium was distributed during the year and six more were almost ready for release. One of these was awarded a silver medal at the New York International Film Festival.

Several actions were taken during the year in regard to religious education programs and curricula. Multiethnic religious education workshops were held at Hampton Institute, Virginia, and San Anselmo Seminary, California, at which new resources, methods, and skills were identified and developed. Pilot workshops at the Presbyterian School of Christian Education, Richmond, Virginia, and at the Interdenominational Theological Center, Atlanta, Georgia, proved most beneficial to attending chapel activities specialists, directors of religious education, chaplains, and laity in developing practical help to fulfill their roles as teachers and leaders in Protestant religious education. In addition, a revision of the Unified Jewish Curriculum was completed and distributed; development of a new Jewish curriculum was well under way and should be completed in fiscal year 1982.

The 1981 Minority Ministries Training Course, held in Atlanta, Georgia, between 26 April and 1 May 1981, focused on ways both to help chaplains identify multicultural and multiethnic problems and to minister to them. Coretta Scott King, widow of Dr. Martin Luther King, Jr., was the keynote speaker.

Army chaplains relied more on internal resources in conducting parish development training workshops this year, as funding for outside civilian consultants was phased out. Twenty-one persons completed the first Parish Development Training Program, which was designed and directed entirely by chaplaincy personnel. The nine-month course covered a broad spectrum of theory and "back-home" projects designed to better equip chaplains, chapel activities specialists, and directors of religious education for performance of leadership roles in such areas as

training for the parish ministry, consulting, parish council and lay activities, transition sessions, and conflict management.

Several actions were taken during fiscal year 1981 to improve job satisfaction within the chaplaincy. On the recommendation of the Chief of Chaplains and following coordination with USAREUR, FORSCOM, TRADOC, and DARCOM, the Deputy Chief of Staff for Personnel approved changes in Army regulations to permit unmarried chaplains to compete for family housing on the same basis as those who were married. This action has improved the retention rate of Catholic chaplains and has served to ameliorate the severe shortage of Catholic priests in the chaplaincy; only 289 out of a desired level of 506 were in service.

Two initiatives taken during the year were aimed at improving the status of chapel activities specialists. The E–9 staff sergeant major position at the U.S. Army Chaplain Center and School was upgraded to command sergeant major in May 1981. Furthermore, beginning on 31 July, a chapel activities supervisor was detailed to the U.S. Army Military Personnel Center (MILPERCEN) to provide liaison between the Office of the Chief of Chaplains and MILPERCEN and to ensure that the needs of chapel activities specialists and the Chaplain Branch were met.

Katcoff v. *Marsh*, a civil suit filed on 23 November 1979 charging that the U.S. Army Chaplaincy violates the establishment clause of the First Amendment of the U.S. Constitution, remained in the discovery stage of litigation at the close of fiscal year 1981. The plaintiffs propounded 123 interrogatories, questioning virtually all aspects of the chaplaincy. Army lawyers responded to the questions and submitted several interrogatories of their own, which the plaintiffs answered. The plaintiffs also turned in 137 requests for admissions. The Army replied on 31 July 1981.

Casualty and Memorial Affairs

Army morticians overseas processed the remains of 685 bodies at six Army-operated mortuaries, while within the continental United States private mortuaries working under contracts with the Army handled the remains of 1,176 active duty personnel and their dependents. The Army's mortuary workload during fiscal year 1981 numbered 1,861 deceased persons. A Seventh Army mortuary recovered and identified the remains of one World War II soldier.

The Central Identification Laboratory in Hawaii identified the remains of repatriated Navy and Air Force personnel. The

laboratory recovered 101 remains during search and recovery missions to New Guinea, Wake Island, Tarawa, the Philippines, Enewetak, and Peleliu. Of these, nine were individually identified as U.S. World War II casualties.

The Concepts Analysis Agency (CAA) conducted a study of the Army's capability to handle personnel killed in combat for the Troop Support Division, Office of the Deputy Chief of Staff for Logistics (ODCSLOG). The study addressed the mortuary affairs management structure during both peacetime and major military operations. The study uncovered severe limitations in the Army's ability to provide graves registration support as well as training inadequacies in cemetery operations, mass casualty burial procedures, and operations in a nuclear, biological, or chemical environment. The study concluded that the mortuary affairs management structure lacked functional integrity and suffered from multiple sources of guidance, staff supervision, and technical support. Representatives from the ODCSLOG, the Logistics Center, and the Quartermaster School have developed a plan that deals with the problems noted in the CAA study, in support of which a program development increment package for fiscal years 1984–1988 has been prepared. Requested funds cover costs for training, force structure, and equipment that are needed to support a minimal effort.

The Columbarium for cremated remains was dedicated in Arlington National Cemetery on 26 April 1980, and the first inurnment took place two days later. As of 30 September 1981, the remains of 846 bodies had been inurned, an average of about seventy per month. Ground burials in Arlington and Soldiers and Airmens Home National Cemeteries numbered 2,823 for fiscal year 1981.

During fiscal year 1981 the Casualty Services Division of The Adjutant General's Center processed 994 active duty deaths; 6,078 retiree deaths; 185 deaths of service members who died within 120 days of separation, discharge, or retirement; and an estimated 450 cases involving seriously ill and very seriously ill individuals in overseas commands. The division also handled 741,000 records of emergency data.

Housing and Homeowners' Assistance

After a one-year delay caused by Office of Management and Budget (OMB) action, the new family housing construction program made rapid headway. Contracts totaling $47.699 million were awarded for 900 family units—500 at Fort Ord, California;

200 at Fort Polk, Louisiana; and 200 at Fort Stewart, Georgia. One-half of the Fort Stewart units will be smaller than the standard two-bedroom units (750 square feet of living space as compared with 950 square feet) and will be used by soldiers in grade E–4 with less than two year's service or by soldiers in lower grades who have dependents. Heretofore these lower-ranking enlisted members could get family housing only if there was a surplus.

Activity in the Family Housing Maintenance, Repair, and Improvement (MRI) Program picked up during the year. The Energy Conservation Investment Program, one of two programs eliminated by the Office of Management and Budget in fiscal year 1980, was restored, and several projects valued at $27.150 million were undertaken. The Minor Construction Program, which OMB also axed last year, was not restored. Work continued on four projects under the Line Item Improvement program with a total cost of $8.147 million; on one Productivity Enhancing Capital Investment Program project funded at $5.139 million; and on the Maintenance and Repair program, which received $215.338 million in funding for fiscal year 1981.

Acting on a request made by Lt. Gen. Marion C. Ross, the Deputy Commander of FORSCOM, General John W. Vessey, Army Vice Chief of Staff, approved the reestablishment of the Army Housing Committee (ARHOC) in March 1981. The committee, which comprised a steering committee and a working group, reviewed policies, goals, and objectives for housing unaccompanied enlisted personnel and assessed the adequacy of new and modernized facilities in meeting Army requirements. During the late spring and summer of 1981 ARHOC discussions centered on conflicts between guidelines emanating from the VOLAR experiment in the early 1970s and on current needs for unit integrity, cohesion, command and control, discipline, and readiness. The committee firmly rejected a return to open bays or squad bays. By mid-August, after consulting with TRADOC, FORSCOM, and various Army staff elements, it had developed broad criteria for barracks design that included (1) removal of E–7s and above as a "unit barracks" consideration; (2) increased barracks room size from 270 to 400 square feet; (3) two E–6s, three E–5s, and four E–4s and below to a room; (4) a bathroom with shower and tub combination for each room; (5) company day rooms to replace lounges; (6) return of company administration and supply to the barracks; and (7) maintenance of unit integrity at the battalion level and, wherever possible, at the company level. At year's end the Office of the Chief of Engineers was preparing architectural designs and drawings incorporating

the criteria. These designs will be reviewed by the ARHOC steering committee upon completion. The committee will then submit recommendations and design proposals to the Vice Chief of Staff.

Passage of the Military Pay and Allowance Act of 1980 (Public Law 96–579) granted service members in the grades of E–7 and above without dependents the right to elect to receive basic allowance for quarters (BAQ) rather than to live in government quarters. This right had previously been limited to O–4s and above. Installation commanders may deny service members the right to elect BAQ only if such a choice would have a significant adverse effect on operational requirements, unit discipline, law and order of the installation, health and safety requirements, protection of government property, or other areas of military discipline or readiness.

Administration proposals to terminate the Family Housing Domestic Leasing Program posed a hardship on service members who could face eviction from leased quarters before completion of their normal three-year tour. The Vice Chief of Staff and the Assistant Secretary of the Army (Manpower and Reserve Affairs) sought and won relief from the Office of the Secretary of Defense. As a result, the Family Housing Domestic Leasing Program will be phased out on an orderly basis by the end of fiscal year 1983. Because of this additional time, service families will not have to be evicted from current leases.

As executive agent for all military services, the Army paid $1.6 million under the Homeowners Assistance Program to 219 applicants in fiscal year 1981 as a result of base closures and realignment actions. Mortgage assumptions on eleven properties acquired during the period totaled $317,000.

Work progressed on the Housing Operations Management System (HOMES), which was described in last year's report. The Office of the Chief of Engineers submitted a mission element needs statement for approval, and funds to develop and deploy HOMES were programmed for fiscal years 1982 and 1983. In other actions, the Major Command Housing Automated Data Processing Advisory Committee was established to review the development of housing standard operating procedures and housing automated systems, and the U.S. Army Construction Engineering Research Laboratory conducted workshops to review standard procedures for the family housing assignment and terminations and housing referral functions.

In December 1980, the Army published its first comprehensive housing management training plan. The number of centrally funded intern spaces was increased from eighteen in fiscal year

1980 to twenty-four in 1981. Three intern spaces were allocated for on-site training in Europe. At its 17–19 November 1980 meeting, the Housing Management Career Program Screening Panel reviewed the records of 252 careerists. During the year, 243 careerists were processed for overseas assignments and 176 were processed for duties within the continental United States. The permanent format of the Housing Management Career Appraisal and Individual Development Plan was completed, as was the draft of a new Army regulation covering the Housing Management Career Program.

Food Services

At the close of fiscal year 1981, 1,072 dining facilities were in operation worldwide (655 in CONUS and 417 overseas). Of these, nine were free-standing specialty or short-order facilities, and five were officers' field-ration dining facilities. During the year, 230,746,000 meals were served, valued at $271 million. The one garrison bread bakery in Berlin and the one central pastry kitchen at Aberdeen Proving Ground continued to operate.

The Dining Facility Modernization Program, initiated in fiscal year 1975 and revitalized in fiscal year 1980, provides modern equipment for preparation, serving lines to support regular and short-order or specialty menus, properly equipped self-service areas, and a contemporary dining environment. Major Army commands have identified 221 dining facilities that require modernization at a cost of $183 million during fiscal years 1983–1987. The Program Budget Committee approved $10 million to modernize thirteen dining facilities in fiscal year 1983. The remainder of the needed funds is included in the Dining Facility Modernization Program Development Increment Package (PDIP).

Based on a major study by the Troop Support Agency of dining facility staffing requirements, the staffing guide for the facilities was significantly changed in August 1981. The need for more cooks and administrative personnel was recognized. Increases of up to 45 percent were authorized for facilities with extended operating hours and extensive field service and for dual serving lines; the need for an additional 25-percent increase was recognized for continuous, full-service operations. This represented an important step toward solving the dining facility staffing problem.

The fiscal year 1981 Military Construction, Army, program

included the modernization of two dining facilities (one at Fort Lewis, Washington, and one in Korea) at a cost of $699,000. There were no new dining facilities approved for construction in the fiscal year 1981 program.

Development of the Combat Field Feeding System (CFFS) by the Natick Research and Development Laboratories (NLABS) and U.S. Army Training and Doctrine Command (TRADOC) continued with considerable support from the Troop Support Agency (TSA). CFFS will be a company-level kitchen (tactical field kitchen) capable of operating from a prime mover or trailer. The basic ration for the kitchen will be the T-ration, a shelf-stable, fully prepared, heat-and-serve product. The CFFS will provide a hot meal to small groups, squad-sized units, or companies, and when consolidated it can feed battalion-sized units. On 15 December 1980, the Vice Chief of Staff of the Army approved the CFFS for further development. The DA Subsistence Review Committee examined the CFFS in February 1981 and provided implementation guidance. The Outline Test Plan, completed on 5 March 1981, specified a 28-day battalion-sized FDTE (force development test and experimentation) test of the CFFS for October 1982. This test will be a major factor in determining whether or not the system will be accepted. A letter of agreement between TRADOC and DARCOM for the development of the CFFS was signed on 13 March 1981 and subsequently amended to provide for HQDA in-process review approval.

An in-process review in March 1981 determined that the Automated Bakery System (ABS), another Natick Laboratories project, did not meet the needs of the Army for the late 1980s, and efforts to field the system were stopped. Actions in support of the field bakery will now be directed toward finding new technical approaches, developing canned bread, and upgrading the present M–1945 Field Bakery.

Two of the numerous, ongoing food service research and development projects have Armywide significance. The first project deals with a method for determining quality standards for food and food services operating under commercial contracts. To date, Natick Food Engineering Laboratories has surveyed the quality assurance practices of twenty-two nonmilitary hospitals, emphasizing methods and procedures used to measure the final food product and food service quality. Four food service contract companies were also contacted for information on their quality assurance programs. Based on survey results, a prototype quality

assurance and evaluation program will be developed that can be monitored by government personnel.

The second project of significance is a revision of the hospital B-ration menu to include components of both existing and new shelf-stable foods for use in a field environment without refrigeration. Natick Laboratories is developing recipes for a ten-day menu based on both the Army's ten-day plan and diet requirements for the 1990s.

The first U.S. Army hospital food service contract has been developed for application to Fitzsimons Army Medical Center; bids are currently under review. This action will be closely monitored as a feasibility test for contracting out Army hospital food service operations. Clinical dietitians will remain military to ensure that mobilization requirements are met.

During fiscal year 1981, five Food Management Assistance Teams of the Troop Support Agency provided dining facility management and technical assistance to active Army and reserve component commands and installations and food service personnel worldwide. The teams visited fifty-seven active Army commands and installations, including lengthy stays at Germany, Hawaii, Alaska, Puerto Rico, and the Far East. They toured 511 dining facilities and contacted and assisted 7,267 food service personnel. A total of 223 reserve component dining facilities and 1,580 food service personnel at separate brigades and armored cavalry regiments in eighteen states were assisted.

The Army Food Management Information System (AFMIS) is an automated system for controlling the head count, dining facility, and troop issue subsistence elements of the Army food program. The system is being developed as a totally integrated Class III system in accordance with prescribed Army life cycle management policies and procedures. The Office of the Assistant Secretary of the Army (Installations, Logistics, and Financial Management) approved the mission element needs statement on 9 September 1981. Developmental work was then initiated on the AFMIS product manager charter, the functional description, and the economic analysis.

Commissary and Subsistence Supplies

At the end of fiscal year 1981, 72 domestic commissaries and 7 annexes were operating within the fifty states and Puerto Rico. There were also 70 foreign stores and 27 annexes in operation. A new store opened at Fort Irwin, California; new annexes began operations at Fischbach, Germany, and Camps Casey, Edwards,

and Stanley in South Korea. Plans moved forward for opening new stores in Cairo, Egypt, and a new annex at Kirchgoens, West Germany.

Significant progress has been made during the past three years in reducing commissary losses. At the end of fiscal year 1978, 68 of 141 Army commissaries reported "out-of-tolerance" grocery losses, with the worldwide average loss set at 1.3 percent of sales. By the end of fiscal year 1981 only 33 stores had out-of-tolerance grocery losses, and the worldwide average grocery loss was down to .52 percent of sales. A significant factor in reducing losses has been the Command Inspection Program. It will be supplanted in fiscal year 1982 by inspections of the Troop Support Command Inspector General.

In compliance with Office Management and Budget Circular A–76, the Army initiated cost studies at the commissaries at Fort Leonard Wood, Missouri, and Yuma Proving Ground, Arizona. Conversion to contract will occur only if the cost study indicates an advantage to the government that is equal to at least 10 percent of personnel-related costs. Commissary food prices will not be affected.

Participation of commissaries in the Department of Agriculture's special supplemental food program for women, infants, and children increased significantly during fiscal year 1981. Twenty-eight commissaries in thirteen states were involved. Food sales per month under the program averaged $17,526 for each store.

The Automated Commissary Computer Entry Store System (ACCESS) underwent two pilot tests and a demonstration during the year. The contractor's product did not meet requirements, and alternative plans were being considered. The test of scanning equipment at the Fort Lee, Virginia, commissary in September 1981 has, thus far, won favorable comment from both customers and cashiers. A six-month evaluation of the application of scanning devices will be conducted before a decision is made on whether to expand their use to other commissaries.

In the area of subsistence, contractors completed deliveries of two million cases of meal ready-to-eat (MRE) rations in August 1981. This included shipments of annual replacement stocks to Europe and Korea. The Defense Personnel Support Center awarded contracts for four million additional cases of these rations, with delivery scheduled from January to December 1982.

The Subsistence Review Committee (SRC) was created in late 1971 to improve the Army's food program. Committee meetings in recent years have been limited to establishing priorities for the Army commissary construction program. To achieve improved

control over the commissary system and other important areas of the food program, the Deputy Chief of Staff for Logistics (DCSLOG) expanded the scope of the committee to include monitoring and reviewing major ongoing projects as well as critical problem areas in food service, subsistence supply, and commissary operations and helping the DCSLOG to resolve matters requiring a major effort at Department of the Army level.

The Academy of Health Sciences (AHS) hosted a conference on subsistence management in a chemical-biological-radiological (CBR) environment in late January 1981. Conferees concluded that a workable subsistence management system could probably function using existing capabilities with no significant loss of individual or unit effectiveness resulting from contamination of subsistence by CBR agents. Following the conference, the academy distributed a draft concept for the care of subsistence products threatened by CBR agents, which was being reviewed by interested agencies as the fiscal year ended.

Laundry and Dry Cleaning

Field laundry and bath operations received considerable attention during the year. A plan of action to identify and overcome shortcomings was adopted, and milestones were established to ensure timely completion of the task.

The practice of providing laundry bundle support was reviewed. The major Army commands responding wanted to continue or expand this service. Standardized pricing was also considered, with mixed results received from major Army commands. A decision will be made early in 1982 whether or not to continue this program.

Clothing and Personal Equipment

The Army took several initiatives in fiscal year 1981 involving uniforms. Black shoulder marks were approved for wear by enlisted personnel in grade of corporal and higher; a maroon beret was authorized for wear by soldiers in airborne units; black braid was added to female officers' green slacks; a black pullover wool sweater, approved last year, was fielded; a maternity uniform shirt was approved; and washable Army-green trousers with washable braid were approved.

The Army terminated the policy of granting exceptions to appearance standards based on religious beliefs for wearing beards, unshorn hair, turbans, or religious jewelry. This change

followed a review of the effect of these exceptions on the soldier's mission, health, and safety. Soldiers already in the Army may continue to enjoy the previously granted exceptions as long as they are otherwise eligible for service.

The temperate camouflage battle dress uniform (BDU) will be introduced as the Army's field-garrison uniform on 1 October 1981. The BDU has a wood (forestlike) color pattern, is infrared reflective, has reinforced elbows, knees, and seat, and is made with fabric that is 50-percent cotton and 50-percent nylon. The BDU includes a coat, hat, and trousers and represents the second phase of a multistage transition to all-camouflaged individual clothing and equipment. The first stage was the introduction of the desert camouflage BDU as an organizational item. It will be used mainly by the Rapid Deployment Force (RDF) in a desert environment. During fiscal year 1981 the RDF was completely outfitted in both day and night editions of the desert BDU.

Both the temperate and desert BDUs are part of the Army's Battle Dress System (BDS). This system includes three camouflage uniforms which will allow the Army to operate in temperate, desert, and arctic environments. Conversion to this system will require the modification of many existing items of individual clothing and equipment as well as the introduction of new items.

C.A.C.I. Inc.–Federal received a contract in September 1981 to examine existing Army personal-organizational clothing and individual equipment management procedures and to recommend a more cost-effective way of doing business. The study should be completed by mid-1982. A study advisory group has been established to monitor the contractor's progress, clarify requirements, and supply guidance.

Heraldic Activities

The Institute of Heraldry continued to provide heraldic services for the armed forces and other government agencies during fiscal year 1981. The emphasis of this year's work, however, was on Army items. These included the design and development of the Army Achievement Medal, Noncommissioned Officers Professional Development Ribbon, Army Service Ribbon, and Overseas Service Ribbon. To meet the needs of Army units, 158 distinctive unit insignia and 28 shoulder-sleeve insignia were designed and developed during this period. In the area of research, the institute is continuing its program of evaluating various materials and methods of manufacturing flags in order to provide alternative, less costly items and to broaden the procurement

base. The following statistics reflect, in part, the accomplishments of the institute: design of 510 items; completion of 1830 paintings and drawings and 174 sculptured items (molds, models, and casts); development of 130 items—some new and some modified—which were placed in the procurement system; and inspection of 134,508 items under the optional-purchase quality-control system during visits to fifty-five posts and base exchanges. In addition the institute performed 1,750 research and engineering support actions to assist the Defense Personnel Support Center.

8. Reserve Forces

Force Structure

Since 1968, when the Army National Guard (ARNG) and the Army Reserve (USAR) completed their last major reorganization, annual changes in the reserve components force structure have been kept to a minimum consistent with Total Army requirements to reduce personnel turbulence and, concomitantly, improve unit readiness. During fiscal year 1981 Forces Command activated 29 units in the reserve components, inactivated 24 units, reorganized 74 units, and relocated 37 units.

The Army National Guard added a fourth TOW light antiarmor battalion to its structure and consolidated existing combat and combat support elements in the Kentucky ARNG to form an additional separate armor brigade. In other actions the ARNG converted two engineer companies from float bridge to assault float bridge, added a chemical company (nuclear, biological, chemical defense) to the structure of both the 50th Armored Division and the 49th Armored Division, and activated a combat support aviation company as part of the 29th Infantry Brigade. Other activations included a medical group headquarters, a medical clearing company, and a medical detachment; an ammunition group headquarters, two ordnance battalion headquarters, four ammunition companies, and four maintenance companies; and a transportation company and seven transportation detachments.

As a result of Public Law 96–600, which authorized Guam to have a national guard, an ARNG headquarters element for the Territory of Guam was organized on 21 July 1981. It will serve as the nucleus for organizing a combat support battalion headquarters, a medical company, a signal company, a military police company, and two engineer detachments.

Plans moved forward to improve the ARNG's military intelligence structure, which Congress had determined was ineffective. FORSCOM developed a plan for the activation of 18 combat electronic warfare intelligence (CEWI) units (8 battalions and 10 companies) beginning in fiscal year 1982 to support the ARNG's 8 combat divisions and 10 separate brigades.

Major units in the Army National Guard as of 30 September 1981 are shown below:

5 Infantry divisions
1 Infantry division (mechanized)
2 Armored divisions
10 Infantry brigades (separate)
8 Infantry brigades (mechanized) (separate)
4 Armored brigades (separate)
3 Medical brigades
4 Armored cavalry regiments
2 Special forces groups
1 Infantry group (arctic reconnaissance)
131 Separate combat and combat support battalions
18 Hospitals
761 Separate companies and detachments
337 Separate headquarters

A forward element of the Army Reserve's 412th Engineer Command consisting of twenty-three inactive duty training spaces was established at Mannheim, Germany, on 15 May 1981. The Army Reserve plans to establish additional forward elements in Europe to perform planning, coordination, and liaison duties between their parent units and USAREUR units with which the reserve units would serve upon mobilization and deployment. Plans were also being developed to locate independent forward deployment USAR units to Europe.

TRADOC, FORSCOM, and the Army staff continued work on the realignment of the twelve USAR training divisions and the 5th Training Brigade. This action followed a determination that the existing structure was not responsive to either current training workloads or training base expansion, that it included nontrainers and installation support positions, and that there was little standardization among units in terms of functions and training support. Actions were under way to correct these deficiencies. Positions have been packaged into several categories—trainers, immediate training support, immediate base support, peacetime-only requirements, and elements which would not mobilize with the divisions. All purely peacetime requirements will be documented on a TDA (table of distribution and allowance) augmentation to the divisional MTOE (modified table of organization and equipment) so that training division MTOEs will be more standardized. Immediate training and base support positions will be noted and listed on a divisional MTOE. Bands will be given an independent MTOE, and aviation sections will have their own TDA.

At the close of the fiscal year the Army Reserve troop basis contained approximately 3,250 company- and detachment-sized 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
2 Theater army area commands (TAACOM)
3 Civil affairs commands
2 Corps support commands (COSCOM)
3 General hospital commands
9 Maneuver training commands
1 Infantry brigade
1 Infantry brigade (mechanized)
1 Infantry brigade (light)
2 Transportation brigades
3 Military police brigades
2 Engineer brigades
2 Medical brigades
4 Hospital centers
106 Hospitals (miscellaneous)
60 Separate battalions

Strength

The number of reservists and guardsmen participating in troop unit training increased in fiscal year 1981 as recruitment, reenlistment, and retention programs continued to produce good results. Army Reserve drill pay strength was 220,122 as of 30 September 1981, a gain of 17,495 over the previous year. The Army National Guard's assigned strength climbed to 390,659 as compared with 368,254 on 30 September 1980.

Recruiting achievements in the Army's reserve components can be seen in the table below. Both the ARNG and the USAR exceeded their enlistment goals.

ARNG	Objective	Actual
NPS Males	45,100	47,021
NPS Females	5,500	5,426
NPS Total	50,600	52,447
Prior Service	45,150	43,989
Total Program	95,750	96,436
HSG NPS*	30,360	33,403
Category IV NPS	18% Ceiling	13.2
USAR		
NPS Males	22,520	22,103
NPS Females	7,757	9,776
NPS Total	30,277	31,879
Prior Service	33,464	34,760
Total Program	63,741	66,639

HSG NPS*	18,166	19,580
Category IV NPS	30% Ceiling	29.9

*Includes high school seniors and General Education Development.

A key factor in the success of the recruiting effort has been the increased funding available for recruiting resources, especially in the areas of full-time recruiter pay, bonuses, and educational assistance. Funding levels of USAR enlisted recruiting resources for the past three years are given below.

	FY 79	FY 80	FY 81
Enlistment Incentives[a]	1.3	3.0	3.7
Military[b]	19.9	22.3	27.4
Recruiter aid support	0.5	0.7	0.8
Civilian pay	5.4	6.0	8.4
Advertising	11.1	12.6	13.4
Recruiter support[c]	8.7	9.3	10.4
Headquarters support (ADP)	—	—	—
Communications	—	—	—
Training	0.5	0.5	0.9
Facilities	—	—	—
Total dollars	47.4	54.4	65.0

[a] Includes enlistment bonus, educational assistance, and affiliation bonus.
[b] Includes full-time recruiter pay. Does not include man-day space (MDS) or retention NCOs.
[c] Includes vehicle leases.

ARNG enlisted recruiting resources are given below in millions of dollars.

	FY 79	FY 80	FY 81
Enlistment incentives[a]	4.0	9.1	12.9
Military pay[b]	26.1	30.9	40.2
Recruiter aide support (MDS)	1.0	2.1	3.3
Training	1.0	1.2	1.5
Civilian pay	1.7	1.8	2.1
Advertising	4.8	4.3	5.5
Recruiter support[c]	2.9	3.1	7.2
Headquarters support (ADP)	0.2	0.2	0.3
Communications	1.0	1.1	1.5
Facilities	—	—	—
Total dollars	42.7	53.8	74.5

[a] Includes enlistment bonus, educational assistance, and affiliation bonus.
[b] Includes full-time recruiter pay. Does not include man-day spaces or retention NCOs.
[c] Includes vehicle leases for fiscal year 1981.

The reenlistment records of both components over the past two years are indicated below.

	FY 80		FY 81	
First Term	**ARNG**	**USAR**	**ARNG**	**USAR**
FY Goal*	51.0%	50.0%	54.0%	50.0%
Eligible	19,654	8,540	18,904	10,000
Achieved	10,506	4,302	10,019	5,555
% Achieved	53.4%	50.4%	53.0%	55.6%
Career				
FY Goal*	68.0%	80.0%	72.0%	80.0%
Eligible	102,275	33,658	89,752	35,215
Achieved	72,630	25,744	63,174	28,876
% Achieved	71.0%	76.5%	70.4%	82.0%

*Based on percent of eligibles.

A major element of the reenlistment effort was the Selected Reserve Incentive Program (SRIP). The intent of the program is to influence members to reenlist in early deploying units and selected skills by offering $900 for a three-year and $1800 for a six-year commitment. The bonus is aimed at increasing the personnel readiness of these selected units and military occupational specialties (MOS). The application of eligibility restrictions allowed only about 21,000 of the 108,000 reenlistment-extensions to receive a bonus in fiscal year 1981.

As indicated in the table below, high retention rates have helped to keep annual losses relatively low as compared with total enlisted strength. Attrition, however, continued to be a serious problem. Almost 51,000 of the ARNG's losses for fiscal year 1981 were unprogrammed, that is, individuals who left before completing their term of service. During the past year the ARNG began forming a full-time attrition and retention force. Thus far 77 personnel have been assigned to work with the states on their attrition and retention programs. An additional 179 personnel were scheduled to join the force in fiscal year 1982.

ARNG	**FY 79**	**FY 80**	**FY 81**
Enlisted paid end strength	309,679	329,298	350,645
Total losses	84,196	74,031	73,070
Percent	27.2	22.5	20.8
USAR			
Enlisted paid end strength	154,408	169,165	187,245
Total losses	51,176	46,434	49,045
Percent	33.1	27.3	26.2

Individual Ready Reserve (IRR) strength rose slightly during the year as an increase in officer enrollment more than offset a drop in enlisted strength. In January 1981 a bonus program was begun which offered $600 to qualified members leaving the active and reserve components who would commit themselves to a three-year tour in the IRR or the Inactive National Guard (ING). It did not prove successful and was discontinued at the end of the fiscal year. Screening of the entire Standby Reserve, started on 1 July 1981 and scheduled for completion during fiscal year 1982, served to reduce further the number assigned to it. The status of the IRR and the Standby Reserve as of 30 September 1981 is shown below:

		Strength	Change
IRR			
	Officer	50,190	+12,334
	Enlisted	162,735	− 4,705
	Total	212,925	+ 7,629
Standby			
	Officer	4,156	−14,311
	Enlisted	858	− 82
	Total	5,014	−14,393

The policy of retaining eligible personnel in the ING rather than discharging them substantially increased this Ready Reserve resource during the year. ING strength as of 30 September 1981 was 8,871, a gain of 3,337 for the year. ING members were attached to units and would be available for military service in the event of mobilization.

Minority strength in the ARNG increased during fiscal year 1981, but at a slightly slower pace than overall strength gains, and reflected 25.7 percent of assigned strength as of 30 September 1981. Total minority strength at the end of fiscal year 1981 was 100,379—3,318 officers and warrant officers and 97,061 enlisted personnel. Of this total, 65,012 (16.6 percent) were Blacks, 27,623 (7.1 percent) were Hispanics, and 7,744 (2 percent) were other minorities. Minority women represented 2 percent of total minority officer representation.

The National Guard Bureau participated in Department of Defense workshops at national conventions of several organizations concerned with the problems of minorities, including the NAACP, GI Forum, the National Urban League, Blacks in Government, and Federally Employed Women, Inc. The recruitment

of Black officers received continued emphasis that was enhanced by the visits of the chief of the National Guard Bureau to historically Black colleges. Lt. Gen. La Vern E. Weber, Chief, National Guard Bureau, received the Roy Wilkins Award at the 1981 NAACP National Convention for this active support in the recruitment and advancement of Black officers in the National Guard.

At the end of the year there were 19,622 women in the ARNG—1,653 officers and warrant officers and 17,969 enlisted personnel. Women made up 5.1 percent of the enlisted ranks, 4.3 percent of officer strength, and 5 percent of overall strength—up from 4.5 percent at the end of the fiscal year 1980. Minority women represented one-fifth, or 330, of all women officers and 37.6 percent, or 6,751, of all enlisted women. The selection of women for state Officer Candidate Schools, ROTC, and the Simultaneous Membership Program has been the primary impetus for the increased accession of women into the officer ranks as well as for the increase in minority officers.

Led by innovative officer procurement programs, such as the Simultaneous Membership Program (SMP) and the Early Commissioning Program (ECP), the Reserve Officer Training Corps (ROTC) has emerged as a key source of officer accessions for the ARNG. During fiscal year 1981, approximately 1,200 officers were commissioned in the ARNG from ROTC. The assignment of fifty-one ARNG officers to ROTC detachments under the Expand the Base (ETB) program and the additional funding of ROTC scholarships for the Selected Reserve were significant factors in the current and projected increase of officer accessions from ROTC. ROTC was well on the way to becoming the primary source of new officers entering the ARNG.

The ARNG medical accession program, which was initiated in March 1979, has reduced the ARNG's shortage of medical officers. At the beginning of fiscal year 1981, only 46.5 percent of the positions authorized for ARNG medical officers were filled; by the end of the fiscal year, the number of medical corps officers on board had risen to 50 percent of authorized strength. The implementation of the fiscal year 1982 ARNG medical recruiting force should also help diminish the physician shortage. A total of thirty-two officers plus three enlisted personnel will make up the recruiting force. Plans have been initiated to place these people in twenty-eight states.

In the Army Reserve, AMEDD (Army Medical Department), enlisted strength assigned to troop program units increased to 22,905 by the end of fiscal year 1981. This total represented 76.6

percent of authorized strength and a growth of 7.6 percent over the previous fiscal year. Gains were also made in the number of medical corps officers serving the Army Reserve medical units and in the Individual Ready Reserve.

Personnel Management

In April 1981 the ARNG and USAR received authorization to man combat, medical, and military police units of battalion size and smaller up to 125 percent of wartime enlisted strength. The new overstrength policy also authorized lieutenant and captain positions in these units to be filled up to 125 percent of authorized strength.

In another move to provide additional personnel to selected units for improved training and mobilization readiness, the full-time manning (FTM) program was expanded during the year. Full-time manning for ARNG units increased from 1,108 ARNG and 624 active Army positions to 1,889 and 784, respectively. FTM positions in USAR units increased from 2,519 (2,073 USAR and 446 active Army) in fiscal year 1980 to 3,661 (2,923 USAR and 738 active Army) in fiscal year 1981. FORSCOM was authorized to apply 770 active Army spaces and 2,520 Army Reserve and Army National Guard spaces to the program in fiscal year 1982.

In addition to active Army and reserve component members, full-time support was provided by military technicians (federal employees occupying technician positions who must be members of the ready reserve as a condition for employment) and civil service personnel (federal employees other than military technicians). Under the congressionally directed test to determine the feasibility of using reserve component personnel on full-time duty in lieu of dual status civilian technicians, which ended 30 June 1980, 4,437 positions were converted (3,161 ARNG and 1,276 USAR). Because the Army was attracting enough personnel to meet its conversion goals, the budget was programmed for and Congress approved continued conversion in fiscal year 1981 of 2,836 (2,473 ARNG and 363 USAR) technician positions.

In order to pull the full-time support program together, a Full-Time Support (FTS) Force Management Plan (FMP) and Objective Force was designed. The FMP will consist of personnel management policies and numerical characteristics for each component of the objective force and will cover accession, professional development (including training and education), distribution and utilization, continuation, evaluation, promotion,

and separation (including retention in other programs). The plan will recognize the inherent differences between the USAR and ARNG work forces, as well as the various categories of personnel in the FTS programs (Active Guard/Reserve, military technician, civil service, and active component).

ODCSPER prepared a proposal to increase the number of additional unit-training assemblies authorized each year from twelve to twenty-four and to permit scheduling for administrative and support activities as well as for training. OSD had not acted on the proposal by the close of the reporting period.

The Army Reserve expanded its Long-Tour Management Program to cover over 5,000 USAR personnel serving full-time in Active Guard/Reserve status. They are working in a number of areas, including control and policy, career management, recruiting, retention, full-time manning, Army Reserve Technician Redesignation Program, JUMPS-SIDPERS, and reserve component projects. The greatest expansion was in the full-time manning program, which provides full-time support for reserve component units to increase their mobilization readiness.

In the first full year of operation, the National Guard Bureau's (NGB) Organizational Effectiveness (OE) program provided consultant support to National Guard units throughout the nation on a broad spectrum of organizational issues. More than 50 percent of OE field operations were conducted at the general officer level (separate brigade, division, and state headquarters). Several senior Army and Air National Guard officers attended training courses of the U.S. Army Organizational Effectiveness Center and School (USACECS), and forty ARNG general officer commanders participated in FORSCOM High Performance Programming Seminars.

The Office, Chief Army Reserve, gave additional focus to the myriad issues related to mobilization planning by establishing a Mobilization and Plans office on 1 April 1981. The office has worked with other mobilization agencies to resolve deficiencies uncovered in recent mobilization exercises, has participated in the preparation for future exercises, and has helped identify new issues relevant to real and potential mobilization situations.

At the Reserve Components Personnel and Administration Center (RCPAC), the Mobilization Plans and Requirements Office updated the five-year plan for personnel mobilization that it had issued early in fiscal year 1981, in light of comments submitted by the Army staff, FORSCOM, TRADOC, and DARCOM. This update ensured compatability of efforts throughout the Army's personnel mobilization community. The plan set goals

and methods of achievement for each RCPAC activity and encouraged a cooperative effort to produce the best possible mobilization procedures.

RCPAC used separate systems to support personnel management of Army reservists, one for officers and one for enlisted persons. The pilot program for officers—The Officer Personnel System, the Army Reserve (TOPSTAR)—began in November 1974 under the direction of the Chief, Army Reserve. Its success led to the approval of the Officer Personnel Management System–U.S. Army Reserve (OPMS–USAR), which was fully implemented in three phases from fiscal year 1977 through fiscal year 1979. The pilot program involving 5,000 enlisted personnel began in fiscal year 1978. Another 40,000 were added by the close of fiscal year 1981, and 40,000 more will be added in fiscal year 1982. Full implementation of the enlisted system was scheduled for completion in fiscal year 1987, at which time around 280,000 enlisted reservists would be under active management. RCPAC added improvements to both systems during fiscal year 1981, and work continued on the development of a combined Officer Enlisted Personnel Management System (OEPMS).

Module I of SIDPERS–USAR (Standard Installation Division Personnel System) became operational during fiscal year 1981, replacing the Reserve Personnel Information Reporting System (RPIRS). In addition to the data processing support formerly provided by RPIRS, module I of SIDPERS–USAR contained a telecommunications link to the CONUS armies data base, an automated retirement point accounting subsystem, a consolidated data base that included all members of troop program units, and a limited interface with JUMPS–RC for data verification. Module II of the system was still being developed at the close of the fiscal year.

In April 1981 a detailed functional system requirement for SIDPERS–ARNG was completed. Later in the year, staffing for the project was arranged. SIDPERS–ARNG will be implemented in two phases, beginning in the fall of 1983.

The microfilming of reserve records (MICORR) to convert the Official Military Personnel File (OMPF) of all troop program unit and Individual Ready Reserve (IRR) members to microfiche moved forward during the past year. To date, RCPAC has filmed approximately 40,000 office personnel files on updatable microfiche using the transparent electrophotographic process manufactured by the A.B. Dick Co. By the close of the fiscal year, RCPAC was concentrating on updating these records, while a private firm under contract to the Army was at work converting

86,000 officer and enlisted records down to the grade of E–6 to microfiche, which RCPAC will then maintain. About 275,000 records of personnel in grades E–1 through E–5 will be converted later.

In September 1979, FORSCOM submitted a mission element needs statement (MENS) for an automated data processing network that would link all levels of the reserve components unit command and functional structure and would provide more timely and accurate data on personnel and logistical readiness. Headquarters, Department of the Army (HQDA), approved the MENS for the new network, which was called the Continental Army Management Information System (CAMIS), on 25 October 1979. Resources were obtained in the 1983–1987 Program Objective Memorandum (POM) and CAMIS, a Class III system under AR 18–1, Automation Management. The product manager charter required for a Class III system was prepared by FORSCOM, staffed from interested commands, agencies, and HQDA, and approved by the Assistant Secretary of the Army (IL&FM) on July 1981. As the fiscal year drew to a close, FORSCOM was preparing to staff a complete CAMIS office and to develop the system for fielding during fiscal years 1985 and 1986.

In a follow-up action to the Army Command and Control Study–1982 (ACCS–82), the Office, Chief Army Reserve (OCAR), with FORSCOM support, requested proposals to develop a comprehensive USAR Automation Management Plan (USARAMP). The main purpose of the plan would be to acquire and field automated data processing support for the USAR that could be integrated with active Army systems and to facilitate the transition to wartime operations. The BDM Corporation won the contract for developing the plan. Completion was scheduled for January 1982.

Equipment

During fiscal year 1981 the status of ARNG equipment improved slightly, with the value of equipment on hand increasing by approximately $500 million. At the end of fiscal year 1981, the ARNG needed an inventory valued at $11.8 billion to meet full wartime mobilization requirements. To meet peacetime authorizations, the requirement was $10.4 billion. Equipment on hand was valued at $8.1 billion, leaving a shortfall of $3.7 billion from the wartime equipment requirement of $11.8 billion. On-hand assets met 78 percent of the peacetime authorization and 69 percent of the wartime requirement.

The following shows the overall status of ARNG equipment at the close of fiscal year 1981.

Equipment Level	Dollar Value Standard Prices
Requirement (mobilization)	11.8 billion
Authorization (premobilization)	10.4 billion
On hand assets	8.1 billion
Percent fill (mobilization): All assets	69 percent
Percent fill (authorization): All assets	78 percent

The ARNG continued to modernize its logistics management capability. Eight ARNG divisions, thirteen separate brigades, and three round-out brigades were operating under the Division Logistics System (DLOGS), but they were using antiquated UNIVAC 1005 equipment which was difficult to maintain and probably could not be supported in a theater of operations. Extension of the DLOGS to the four remaining brigades has been deferred indefinitely because of a lack of computer hardware. Looking toward modernization, one nondivisional direct support unit has received the new Decentralized Automated Service Support System (DAS3). This system automates routine supply management and provides the commander with constant inventory visibility. DAS3 will be extended to an additional forty-eight ARNG Direct Support–General Support (DS–GS) units during the next two years. Replacement of the DLOGS (UNIVAC 1005) with the DAS3 system is scheduled for fiscal years 1985–1987.

ARNG materiel readiness programs were effective, and operational readiness rates for most equipment were comparable to the active Army. One problem area has been the increasing shortfalls in stock-funded repair parts. The fiscal year 1982 shortfall is projected to be $83 million. This has forced a decrease in the amount of repair parts stocked at United States Property and Fiscal Offices (USPFO), an increase in order and shipment times, and a reduced capability to support mobilization.

Increased use of equipment located at Mobilization and Training Equipment Sites (MATES) and Unite Training Equipment Sites (UTES) has placed considerable strain on the ARNG logistics system. Manpower ceilings and constraints on technician funding have forced a growing portion of maintenance to be performed by unit personnel rather than by technicians, which results in the loss of training time.

Funding for ARNG organizational clothing and equipment continued to be a problem during fiscal year 1981. Procured from

the Army Stock Fund, adequate amounts of unit support items, such as medical field sets, tentage, tool and test sets, chemical defense equipment supplies, fire direction sets, mounts and installation kits, winter clothing, safety items, sleeping gear, and camouflage screens, are critical to unit mobilization and deployment readiness. At the current programmed rate of support, ARNG clothing and equipment shortages (totaling over $518 million at the end of fiscal year 1981) will not be filled until fiscal year 1987 at the earliest. Problems in this area are compounded by budget constraints, rapidly rising costs, and increased sophistication in authorized items of military equipment.

Thirty-four items or weapons systems are planned for introduction into the ARNG during fiscal year 1984 through fiscal year 1988 under the Army's force modernization program. The number of new systems programmed for introduction include the UH–60 helicopter, the M1 tank, the M198 howitzer, air defense weapons, mortars, combat vehicles, and personnel armor systems for ground troops.

Force modernization in the Army Reserve also increased during fiscal year 1982 through restructuring, mission realignment, and equipment upgrade. Thirty-one new equipment items were earmarked for the USAR between fiscal years 1982 and 1991.

Army Reserve equipment assets at the close of fiscal year 1981 are indicated below:

Equipment Level	Dollar Value (Millions)	% on hand
Requirement (wartime)	$7,546.5	25
Authorization (peacetime)	3,060.4	63
On-hand assets	1,916.0	

Facilities and Construction

The Army Reserve military construction program for fiscal year 1981 amounted to $46.9 million, including $3.7 million from a special appropriation to meet general construction needs in the reserve components. The total cost represented an increase of $16.9 million over the previous year's budget. The addition of $17.1 million in carryover funds brought the total amount available to $64 million, of which $50 million was obligated, leaving $14 million in carryover funds for fiscal year 1982. The construction program for fiscal year 1982 was budgeted at $39 million, and congressional action to increase this amount by ap-

proximately $25 million was anticipated. Total construction requirements have risen from $338.4 million at the end of fiscal year 1971 to $898 million this year. In addition to continued cost escalation, this increase is related to additional projects needed to replace obsolete or deteriorated facilities.

There were approximately 1,000 USAR facilities at the end of fiscal year 1981, ranging from permanent training centers to leased structures. Approximately 60 percent of the existing facilities were inadequate. Long-range military construction plans provide for replacement of deteriorated facilities, expansion of existing facilities to meet space requirements, and replacement of leased facilities with those that are government owned.

The Army National Guard military construction program received $42.3 million in new obligational authority in fiscal year 1981, an increase of $18.6 million over the fiscal year 1980 appropriation. Unobligated balances from prior years totaling $5 million brought the amount available to $47.3 million. Obligations for the year were $37.1 million, 78 percent of the amount available. During the year, contracts were awarded for 41 major projects totaling $30.3 million, or 87 percent of the amount programmed. This represented an improvement of over 6 percent when compared with the previous year. Major contracts included 19 armory projects and 24 nonarmory projects. Also awarded were 56 minor construction projects amounting to $4.8 million. Of the $740-million backlog of ARNG construction requirements, $651 million worth were identified as major construction projects.

Training and Readiness

The limited time allotted for training reserve component units to perform wartime tasks (thirty-eight or thirty-nine days per year) put a premium on developing and carrying out effective training programs that promote unit readiness and enhance individual proficiency.

The Battalion Training Management System, introduced in the reserve components in fiscal year 1980, has proved an effective tool in tailoring training to meet the specific needs of each unit. The Army Training Board, proponent of the system, conducted cadre course manager training for personnel at Army Readiness and Mobilization Regions, Readiness Groups, and Army Reserve Commands, who in turn ran numerous workshops on management concepts and principles for reserve component unit personnel. The knowledge brought back from the workshops

has helped unit commanders to select appropriate soldier manuals and Army Training and Evaluation Program (ARTEP) tasks, to establish priorities based on the importance of the tasks to the unit's preparation for performing wartime missions, and to determine whether training in these tasks should be accomplished during inactive duty training or annual training.

An evaluation of the Army reserve components' nuclear role, completed in January 1980, concluded that their artillery should have a dual nuclear-conventional capability. In response to the study, a working group composed of representatives from the Army staff and major commands recommended a number of actions to improve the administration and support of reserve component nuclear training programs. These actions led to an expansion of the affiliation program and the establishment in the Army National Guard of annual training assemblies to help artillery units attain and maintain a nuclear weapons proficiency equal to each unit's conventional readiness standards. FORSCOM Readiness Groups established nuclear weapons publications accounts and received responsibility for tactical nuclear training assistance. FORSCOM has been working with MILPERCEN to ensure that, whenever possible, personnel assigned to Readiness Group field artillery assistance teams have experience with nuclear operations. In addition, nuclear trainers have been assigned to nuclear weapon support units, and ancillary equipment has been redistributed based on the type and number of units being supported.

Reserve component specialized training included greater participation in command post exercises—WINTEX/CIMEX 81, LOGEX 81, and POTENT PUNCH 81—and in major field training exercises—BRIMFROST 81, OCEAN VENTURE 81, BORDER STAR 81, FLINTLOCK 81, SOLID SHIELD 81, and REFORGER 81. An additional 193 early-deploying reserve component units received deployment training in Europe and the Pacific during their annual two-week active duty training stint.

The number of USAR units or cells participating in overseas deployment training increased to 85. Of these, 78 went to Europe, 6 to Japan, and 1 to Korea. As the number of units deployed increased, the number of participants per unit decreased. This trend is expected to continue, and future deployments will probably involve an increase in participation by cells rather than by whole units.

Ninety-seven Army National Guard units or cells conducted annual training overseas. Many of the units trained with the commands to which they would be assigned under the CAPSTONE

program in the event of war. An additional twelve ARNG units or cells took part in the annual REFORGER field training exercise.

For the second time, a battalion-sized unit, 2d Battalion, 152d Infantry (M), 38th Infantry Division, Indiana ARNG, participated in the deployment program. The unit deployment from its home station to Europe, drew POMCUS equipment, took part in the REFORGER exercise, turned in POMCUS equipment and redeployed to its home station. The unit had a very successful training experience that is certain to add another dimension to its mobilization-deployment planning and training. For the first time an ARNG division headquarters took part in overseas deployment training. The Headquarters and Headquarters Company of the 38th Infantry Division deployed a tactical operations center (approximately 125 people) to Europe and participated in command post exercise CARRIAGE CLOCK, part of the overall REFORGER exercise. The 38th Infantry Division was hosted by VII Corps.

The National Guard Bureau, in coordination with FORSCOM, developed a new training initiative in fiscal year 1981 called the Key Personnel Upgrade Program (KPUP). Its objectives are to improve individual skills of key ARNG personnel through a one-on-one relationship with an active Army counterpart, to expose ARNG unit leaders and staff officers to active Army training and operational duties, and to foster Total Army policy through direct association between active Army and ARNG leaders. Despite limited funding, 200 personnel from ARNG divisions, combat brigades, and armored cavalry regiments participated in the new program. The response from both ARNG and active Army units has been positive, and plans are being developed to increase the program in fiscal year 1982.

Mobilization training for Individual Ready Reserve members progressed during fiscal year 1981, despite dollar constraints. Training included 6,669 mobilization augmentee or designee tours, 1,243 active duty site support tours, and 13,733 counterpart or school training tours.

Following the successful conclusion of a pilot program in 1978, the IRR aviation training program experienced steady growth in the number of aviators trained. In fiscal year 1980 the program covered 440 flying tours, 43 school tours, 102 mobilization designee tours, and 36 site support tours. In fiscal year 1981 participation increased to 500 flying tours, 78 school tours, 108 mobilization tours, and 52 site support tours. Approximately 450 aviators received training during the year, a figure that was expected to rise to about 800 per year by 1983. The program

has been successful in producing qualified copilots to fill active Army pilot shortages in event of mobilization and has reduced the requirements to train replacement aviators for the active Army, which costs over $100,000 for each new aviator.

In competitive sports, the USAR shooting team continued to strengthen its position as the dominant force in the field of competitive shooting in the United States. Of 95 major U.S. championships, including the National Gallery Championship, the Interservice International Championships, the National Rifle and Pistol Championships, and the U.S. International Shooting Championships, the Army Reserve won 40 titles. USAR shooters captured 9 of 14 places on the U.S. Air Gun Team, which competed in the world championships, and 16 of 57 positions on the U.S. shooting team, which will compete in the Championship of the Americas.

In the thirty-fourth annual Interallied Confederation of Reserve Officers Congress and Military Competitions held in Oirschot, The Netherlands, 3–7 August 1981, U.S. reservists placed first and second in the overall category and first in the novice team category. Other team and individual accomplishments included best overall marksmanship team score, best overall combined obstacle course team score, best orienteering team score, as well as two second-place finishes in submachine gun and rifle and a first-place win in pistol.

The CAPSTONE program started the fiscal year with all major Army commands and subordinate commands in receipt of the FORSCOM Implementing Plan. All depicted organizational associations were formalized and all associated units had been informed of their assignments. Major commands of the active Army and reserve components conducted coordinated planning and established training associations keyed on inactive duty training and annual training. Major elements of the CAPSTONE organizations participated in command post exercises, field training exercises, and logistic and REFORGER exercises. The Overseas Deployment Training Program was keyed to CAPSTONE organizations. The expanded Affiliation Program linked more active Army units with their reserve component associates.

The Affiliation Program continued to be one of the most valuable tools in helping reserve component units to improve their readiness and deployment posture. The program started fiscal year 1981 with 90 battalions and 67 company- or detachment-sized units. During the year 11 battalions and 134 company- or detachment-sized units were added. This expansion was the

first major step in aligning the Affiliation Program with CAPSTONE.

Recent developments during the year, including CAPSTONE and the creation of the Rapid Deployment Force, made it advisable to take an in-depth look at the concept of affiliation before proceeding with further expansion. FORSCOM initiated such an analysis during July 1981.

The final report on the Rapid Mobilization for Direct Deployment to POMCUS (RAMDEP) was completed and submitted to HQDA and FORSCOM on 30 January 1981. RAMDEP exercises clearly demonstrated that direct deployment was feasible, but that many refinements would be needed before the concept could become a reality. In a follow-up action, the Deputy Chief of Staff for Operations and Plans (DCSOPS) formed an ad hoc committee to develop an action plan to deploy reserve component units directly from their home stations. The committee consisted of representatives from the ODCSOPS, the Army National Guard Bureau, and the Office, Chief Army Reserve. By June 1981 the group had drafted direct deployment guidance for inclusion in the Army Mobilization Planning System (AMOPS). The guidance directed FORSCOM to develop direct deployment requirements and training and to select reserve component units for a direct deploying role. Nomination and selection of direct deploying units by FORSCOM is expected to be completed by June 1982.

Support to Civil Authorities

Fiscal year 1981 again saw the National Guard, in its role of organized militia, respond to the call from state authorities to help preserve and protect life and property and maintain order. This year 20,843 Guard personnel responded to 374 call-ups involving civil emergencies in forty-three states.

Guard personnel were placed on state active duty fourteen times to assist civil authorities in civil disturbance control operations. The calls involved eleven states and 5,122 personnel. These operations included 5 employee strikes, 5 civil disorders, and 4 potential civil disorders. Additionally, units were alerted to provide assistance in the event of a threatened postal strike.

During fiscal year 1981 there were 360 call-ups in forty states to assist civil authorities in dealing with other emergencies. Natural disasters accounted for 87 call-ups—46 forest fires, 19 floods, 9 snow and ice storms, 2 windstorms, and 11 tornadoes. Twenty-nine support missions were performed to preserve life

and protect property endangered by natural disasters. Included was the effort to eliminate the disastrous and elusive medfly in California, which caused massive damage to fruit crops there. Medical evacuation and support required 139 missions, and search and rescue operations involved 64 call-ups. Droughts and other water emergencies required 30 water hauls; and the presidential inaugural, security-traffic control, train wrecks, chemical spills explosions, emergency shelters, EOD (explosive ordnance disposal) support, and power outages accounted for the remaining 13 missions. A total of 15,721 National Guardsmen were called for duty in these areas.

9. Organization and Management

Organization

The success of large and complex institutions like the Army depends largely on their ability to adapt to changes in their environment. For the Army a critical factor in this process is maintaining command and management structures geared to identify, promote, and implement concepts, doctrines, and weapon systems which an expanding technology, the dynamics of a changing and sometimes volatile world, and domestic considerations require. During fiscal year 1981, the Army's efforts in this regard focused on mobilization, modernization, and resource management.

Various mobilization exercises like NIFTY NUGGET and MOBEX 80 led to efforts to improve the Army's mobilization planning. Secretary Marsh elevated the rank of the deputy for mobilization and analysis in June 1981 to Deputy Assistant Secretary for Reserve Affairs and Mobilization in the Office of the Assistant Secretary for Manpower and Reserve Affairs.

The Vice Chief of Staff also took action. Concerned that critical mobilization decisions had not been made soon enough to deploy troops in a timely manner and that the Army staff had trouble identifying what the critical decisions were, he directed the ODCSOPS Operations and Readiness Directorate to prepare an HQDA Mobilization Decision Matrix which would identify the decisions and the information required to support them. The Vice Chief of Staff approved an initial basic decision matrix in February 1981 with instructions to reissue it semiannually as an annex to the Army mobilization and Operations Planning System (AMOPS).

This decision matrix should prove a useful tool in resolving structural and procedural flaws in the mobilization process. Other questions, such as what staff agencies should be responsible for integrating programs related to mobilization and what was the most effective means of accomplishing mobilization programs, still need to be addressed. At one time or another Army staff agencies and the Government Accounting Office (GAO) have taken on these issues, but a satisfactory solution has been difficult to achieve. A possible approach might be to give central control over the vertical integration of authority back to subordinate

commanders and managers at all levels of command, who would either produce results or be replaced. The last office to exercise such authority over the Army staff was the Office of Assistant Vice Chief of Staff, which was abolished in 1974.

The successful implementation of programs to modernize and integrate the Army's numerous tactical ADPS (Automated Data Processing System) and the telecommunications networks designed to link with the Worldwide Military Command and Control System (WWMCCS) has eluded management in recent years, as evidenced by numerous shifts in Army staff responsibility for command, control, communications, and computer systems. In 1974 the Office of the Chief of Communications–Electronics (formerly the Chief Signal Office) was abolished and its functions assigned to ODCSOPS. This arrangement did not work out as well as expected, and in October 1978 these functions were transferred to a new Army staff agency, the Office of Assistant Chief of Staff for Automation and Communications (OACSAC). OACSAC's several missions included revising of the basic Army regulations on integration of ADPS and communications systems in the field, and establishing of an automation-communications career management program. ODCSOPS retained its traditional authority over command and control functions.

Two years later, Lt. Gen. Glenn K. Otis, the DCSOPS, Maj. Gen. Clay T. Buckingham, the ACSAC, and Maj. Gen. Thomas U. Greer, the Director of Management, requested another look at the problem. The resultant staff study recommended that ACSAC's automation and communications functions be consolidated with ODSCOPS command and control (C2) functions.

Informal discussions that took place among the principals over several months led to the Vice Chief of Staff's decision in May 1981 that ACSAC should be disestablished and its functions absorbed by a new Assistant DCSOPS for Command, Control, Communications, and Computers (C4), effective 1 October. Whether the ODCSOPS will be able to perform these functions more effectively than it had before the creation of OACSAC is an open question.

No agency now exists on the Army staff with the authority to integrate vertically the operations of all Army staff elements in the interest of the Army's total force structure. The heart of the matter is the Army's modernization program, which requires aggressive innovation to adapt rapidly changing technological advances to replace wasteful and obsolete ADPS, telecommunications networks, weapons systems, and their outmoded concepts and doctrines.

The Army Force Modernization Coordination Office (AFMCO) was created within the Office of the Chief of Staff in 1979 to ensure that the Army's numerous modernization projects were identified, coordinated, assigned to appropriate Army staff agencies and major commands, and monitored. In September 1981, AFMCO was assigned responsibility for coordinating the fielding of Army 86 organization and force structure changes.

The Vice Chief of Staff, the Director of Management, The Inspector General, and the new DCSOPS, Lt. Gen. William R. Richardson, were not satisfied with the progress being made, and plans were under way to bring AFMCO under the operational control of the DCSOPS as the fiscal year ended. Arrangements were also made to send a special team of investigators from the Office of The Inspector General to review the modernization management process throughout the Army and to recommend changes to the Vice Chief of Staff.

The Annual Historical Summary for Fiscal Year 1977 reported that General Meyer, then DCSOPS, directed the establishment of a point of contact for long-range planning within the Strategy, Plans, and Policy Directorate. Because no funds or personnel were available, nothing was done until this year. In October 1980 an Army Long-Range Planning (LRP) Group was formed in the Office of the Technical Advisor to the DCSOPS. This group is headed by a colonel and includes three action officers. The purpose of the LRP Group is to develop, coordinate, and produce products which deal with Army long-range objectives and strategic requirements. Particularly, the group is to provide impetus for and coordinate the Army staff long-range planning effort.

The Office of The Inspector General was restructured in 1981. The principal changes were a reduction in the number of deputies to The Inspector General and a consequent realignment of responsibilities. The Inspector General now has two deputies. Deputy The Inspector General (Investigations, Assistance, and Compliance) supervises the Investigations Division, Assistance Division, and Audit and Inspection Compliance Division. Deputy The Inspector General (Inspections) is responsible for all inspection activities of the Department of the Army Inspector General Agency. He supervises the Inspections Division, the Technical Inspections Division, and the Training Management Inspections Division.

A significant change in the emphasis of inspections by the Department of the Army Inspector General Agency (DAIG) is under way. DAIG general inspections of subordinate activities

were focused primarily on evaluating compliance with pertinent formal guidance. These "compliance" inspections were useful to the extent that they gave commanders an idea of how well subordinates were conforming to directives or regulations. However, they tended to address symptoms instead of causes, made the assumption that policy guidance and directives were correct, and isolated the problems of the inspected unit from the rest of the Army.

Current emphasis is on the systemic approach to inspections. This focuses attention on causes rather than symptoms, allows policy errors or ommissions to be discovered for resolution, incorporates unit problems into Army problems, emphasizes correction at the proper level, eliminates the significant waste of time and other resources, and minimizes the need for special, one-time preparation.

Another area of continued emphasis at DAIG is inspection compliance follow-up procedures. This essential step in the inspection process is designed to review proposed corrective actions, verify that the corrective action was carried out, and evaluate whether the problem was solved. The goal is to ensure that when problems are identified, corrections are made.

For several years the Office of The Inspector General has aggressively pursued automated assistance for its functions. This automation effort is called the Inspector General Management Information and Reporting System, or IGMIRS. IGMIRS provides automated tools to elements of the Inspector General Agency using data processing equipment and personnel of the U.S. Army Management Systems Support Agency (USAMSSA). Computer processing is accomplished on USAMSSA hardware, and resulting management reports are given to DAIG action officers. Coordination with USAMSSA is the responsibility of the Automation Management Office.

During 1980, The Inspector General judged IGMIRS to be potentially beneficial to inspectors general located at both major command (MACOM) and subordinate command levels and directed the extension of IGMIRS to the MACOMs. U.S. Army Computer Systems Command (USACSC) adapted IGMIRS for use on computers at each major command, and during 1981 the resulting standard system was installed at eleven MACOMs. Inspectors general at these commands are better able to assimilate all available IG information, as well as data from audit reports written on their unit by the Army Audit Agency, Defense Audit Service, and the General Accounting Office. Inspectors general can summarize data from findings contained within these reports

and present that information to their commanders in such a way that root causes of problems are identified.

As reported last year, the Army began a review, or "scrub," of positions in noncombat, nondeployable support units to relieve military personnel shortages in higher deployable combat and combat support units. Analysts conducting the scrub were required to identify position authorizations which could be eliminated and transferred to the deployable units to improve overall combat readiness. Analysts were also to identify positions which could be reduced in grade to permit better alignment of assets and position requirements.

Based on the response of field commanders to the review, the Vice Chief of Staff announced a modification of the scrub process in September 1980. This modification gave the affected commands and agencies greater flexibility in determining units and functions to which eliminated positions could be transferred. The Vice Chief of Staff initiated a review of the scrub action in September 1981 based on additional communications from field commanders. As a result of this review, the remaining portions of the TDA scrub would be canceled early in fiscal year 1982. Commands were directed to make use of the work already done and to report on actions taken by 31 December 1981.

Overall, MACOM use of the TDA scrub recommendations resulted in 493 position authorizations being moved to higher priority functions—105 officer, 2 warrant officer, 304 enlisted, and 82 civilian—and 2,274 positions downgraded—352 officer and 1,922 enlisted.

The Army continued its various base closures and realignments this year. In October the ASA (IL&FM) directed that family housing units at Fort Wadsworth, New York, be reopened and made available for occupancy. The Department of the Navy requested and received OSD approval to relocate the Naval Resale and Services Support Office to Fort Wadsworth from Brooklyn, New York. The disposal report for the transfer of Fort Wadsworth to the Department of the Interior was withdrawn. The Secretary of the Interior advised that his department would not pursue acquisition and management of land at Fort Wadsworth in the foreseeable future, and that this would be consistent with legislation that created Gateway National Recreation Area.

The Army announced in September that Fort Monroe would remain open and would continue as the home of the U.S. Army Training and Doctrine Command. The final environmental impact statement on the proposed realignment of Fort Indiantown Gap, Pennsylvania, was filed with the Environmental Protection

Agency in April 1981. The General Accounting Office undertook a review of the realignment study documents, which was completed in August. At the end of the year no decision had been made.

The realignment study for Fort Sheridan, Illinois, was revised in July. As space was no longer available at the Great Lakes Naval Base, only those proposals that considered Fort Benjamin Harrison as a possible relocation site were restudied. An Army Audit Agency review of the documents was completed in August, but no decision on the preferred alternative has been announced.

Secretary Marsh, in response to strong congressional pressure, announced in September that the Army would continue to operate its training center at Fort Dix. Repeated attempts have been made since the end of World War II to close Fort Dix in the interest of economy, but to no avail.

A decision to close Vint Hill Farms Station was near as the fiscal year ended. Such a move would involve consolidating Intelligence and Security Command (INSCOM) headquarters at Fort Meade, Maryland, after construction of new facilities there was complete. Elements of the Army Electronics Readiness Command, also located at Vint Hill Farms, would be transferred to Fort Monmouth, to the Tobyhanna Army Depot in Pennsylvania, and to the Harry Diamond Laboratories in Woodbridge, Virginia, while Company B, 303d Military Intelligence Battalion, would move to Fort Hood, Texas.

Financial Management

The table below shows the Army's obligations and outlays for fiscal year 1981 (in millions of dollars). As indicated, the Army's cumulative total obligations for the fiscal year were $56.3 billion against a plan of $56.4 billion, a variance of $151 million or −.3 percent. The Army's obligation of funds was adjusted in March to include President Reagan's supplemental appropriations request. Although not adjusted for final funding levels, the plan represented a goal by which the Army's budget execution could be gauged. At year's end, accounting reports showed that full obligation of funds had been achieved.

The Army's planned outlay for fiscal year 1981 was $39 billion, as shown on the table. Actual outlays were $37.6 billion, a shortfall of $1.4 billion or −3.6 percent. Reasons for this shortfall included (1) late receipt of the Reagan supplemental which allowed funds to be obligated but not disbursed, (2) a larger than anticipated amount of deobligations of prior year funds, and (3)

more favorable currency exchange rates than had been anticipated.

	OBLIGATIONS				OUTLAYS			
	1 Oct 80 - 30 Sep 81				1 Oct 80 - 30 Sep 81			
	FY 81 Plan	Plan	Actual	Variance	FY 81 Plan	Plan	Actual	Variance
Military Personnel	14,327	14,327	14,267	(60)	14,257	14,257	13,977	(200)
Operations	16,089	16,089	16,219	130	14,145	14,145	13,197	(948)
Procurement	11,956	11,956	11,796	(160)	6,845	6,845	6,860	15
RDTE	3,729	3,729	3,736	7	2,974	2,974	2,956	(18)
Military Const	1,361	1,361	1,631	270	875	875	802	(73)
Revolving/Trust Funds	9,248	9,248	8,943	(305)	225	225	133	(92)
Other	(278)	(278)	(310)	(32)	(278)	(278)	(310)	(32)
Total*	56,432	56,432	56,282	(151)	39,044	39,044	37,616	(1,427)

*May not add due to rounding.

Because of congressional budgetary and accounting practices, there is little correlation between congressional authorized annual obligations and the Army's annual outlays. The time lag may vary from one to ten years. Congress may compound the time lag by reducing funds for various projects from time to time or by failing to appropriate money for bills already submitted.

The Army's Commercial Activities (CA) Program was formerly known as the Commercial and Industrial Activities (CITA) Program. It is operated under instructions contained in OMB Circular A–76, which required that all commercial activities not required to be performed in-house (that is, by government employees) be subjected to rigorous cost comparisons with contractors in the private sector to determine the most cost-effective method for performing the activity.

In fiscal year 1981, decisions based on seventy-two cost studies released a total of 1,047 civilian spaces, which can be used for other Army activities. These studies also contributed to Army readiness by returning 663 soldiers to their military duties. The cost advantage to the government over a three-year period was $60 million.

Other significant accomplishments within the CA Program included the following: development of prototype Performance Work Statements (PWS)—twenty-eight have been distributed to the field and twenty-two more are in the development stage; drafting of a new Army regulation covering commercial activities to be published and distributed to the field in February 1982; and preparation of new management study guidelines. In addi-

tion, a management study course was being devised at the Army Logistics Management Center at Fort Lee, Virginia.

Army audit, inspection, and internal review activities uncovered sixty-eight potential fraud cases, which were referred to investigative organizations, and thirty-nine significant instances of waste, which were included in Army reports that provided a basis for reporting to Congress pursuant to the Inspector General Act of 1978 (PL 95–452).

The Army Audit Agency continued to devote significant audit resources to areas that were highly susceptible to fraud, waste, and mismanagement. The agency initiated two multilocation audits. The first, on fiscal year 1981 end-of-year buying practices, was in response to Office of Management and Budget concern. The second, on military pay, came about because a preliminary survey had disclosed weaknesses in internal controls. In December 1980, the agency issued an advisory report to field commanders suggesting ways to reduce the incidence of waste in vehicle and bus use, vehicle maintenance, fuel consumption, and credit card use. In February 1981, an advisory report was issued to the commander of the U.S. Army Troop Support Agency citing problems involving commissary operations that had been noted during audits at eight commissaries. The agency also audited a large number of Army clubs.

To intensify audit coverage of fraud and waste, the Army Audit Agency developed comprehensive guides for auditing installation contracting procedures and selected engineer functions. The guides emphasized fraud-oriented approach and were specifically designed so that junior auditors could quickly identify potential fraud and mismanagement. At classes conducted by the agency, more than 1,100 Army auditors and internal review personnel received at least three hours of formal training in basic techniques of evaluating internal controls and detecting wasteful and fraudulent conditions.

The Army Auditor General has a responsibility to evaluate the Army internal review function. During fiscal year 1981, this responsibility was carried out through performance of accreditation reviews at selected internal review locations. The agency outlined for the Comptroller of the Army thirty-five suggestions for improving the effectiveness and professionalism of the Army's internal review functions.

Internal review efforts were directed at programs identified by commanders and staff elements as affecting mission objectives. Primary emphasis was on internal controls and areas susceptible to potential fraud, waste, or other uneconomical or inefficient

practices. These reviews have provided objective evaluations of command problem areas along with recommendations for corrective actions.

The Army Criminal Investigation Command (USACICD) undertook several initiatives to enhance and support the Army's attack on fraud. The entire theory of economic crime was reexamined and redefined, and new policies were developed to better cope with economic crime on a reactive as well as preventive basis. USACICD's increased emphasis on detecting and investigating fraud and waste resulted in the discovery of over 2,500 such cases in fiscal year 1981. In addition, over 1,300 crime prevention surveys were begun. The command has also recently completed a one-year study to identify areas susceptible to economic crime. The study has been used to target crime prevention surveys, assign areas of special concern in economic crime, and identify skills required to meet the needs of field investigators. The Criminal Investigation Command and the Army Audit Agency signed a memorandum of understanding in October 1980 to formalize procedures for mutual support between the two organizations.

The Army Audit Agency issued reports on a number of audits which highlighted common problems at numerous installations. Actions taken on the audit recommendations should result in improved management of resources at all levels of command. The agency reported the following: the Army needs to make major improvements in identifying and recovering nonrecurring costs of equipment sold to nongovernment customers; Army installations need to follow Army and U.S. Treasury procedures for paying commercial accounts to avoid incurring significant interest costs; many basic tasks essential to successful operation of the TOW and Dragon missile systems could not be performed because operators lacked the necessary technical skills; year-end purchases did not always represent valid needs; Army installations needed to adhere strictly to operational and accounting controls over bulk petroleum; controls to monitor the use of commercial telephones in U.S. Army, Europe, and Seventh Army were not adequate to minimize unauthorized use; the Army was incurring significant costs while receiving little benefit from the DOD-directed Materiel Obligation Program (procedures for reconciling and validating unfilled orders); and a significant amount of energy savings from facilities operations could be obtained through local management actions.

The Army Audit Agency completed reviews of eighty-four cost comparisons under the Commercial Activities Program. These reviews identified the need for extensive adjustments to

the initial estimates of government costs used in deciding whether to perform the activities in house or by contract. The adjustments involved unrealistic staffing levels, improper use of inflation factors, and various errors in estimating direct, indirect, and one-time costs. The review helped ensure that Army decisions were based on realistic estimates and resulted in the most cost-effective method of performance.

The Army Industrial Fund (AIF) pays for industrial-commercial–type activities at arsenals, depots, laboratories, missile facilities, and port terminals which produce goods and services for departments and agencies of DOD as well as for customers outside of DOD. AIF capital is replenished by collecting from customers for goods or services rendered. There are currently twenty-seven AIF installations and activities in the Army with a total annual business of approximately $3.5 billion. Annual operating budgets are prepared at each installation and consolidated by the following major activity grouping: depot activities, missile commands, armament commands, proving grounds and laboratories, and transportation and terminal activities. Budgets are reviewed by the appropriate major commands (the U.S. Army Materiel Development and Readiness Command and Military Traffic Management Command), DA, OSD, OMB, and Congress. The Comptroller of the Army and the Deputy Chief of Staff for Logistics share management responsibilities for the AIF. The table below shows the costs (in millions of dollars) of goods and services sold.

	FY 1980	FY 1981	FY 1982	FY 1983
Depot Activities	$1,125	$1,331	$1,441.7	$1,570.5
Missile Command Headquarters	281	334	372.9	414.7
Transportation and Terminal Activity	168	171	194.6	205.4
Research and Development Activities (Laboratories)	419	495	438.4	448.3
Armaments Command (Arsenals)	341	329	366.6	430.8
Total	$2,334	$2,660	$2,814.2	$3,069.7

Records and Publications Management

The Army received 30,958 requests for information or records under the Freedom of Information Act (FOIA) during the

year. Over 100 man-years were required to process these requests at a gross cost of $2,610,648. A total of $165,286 was collected for search and copying costs as allowed by the act. These figures represent a steady increase in the number of requests received annually by the Army as well as a corresponding increase in cost and man-years expended.

The Army made two recommendations for legislative changes to the FOIA and one administrative recommendation. One proposal would exempt the Department of Defense from the provisions of the Freedom of Information Act during times of war or other hostilities; the other would extend the period of time for federal agencies to respond to requests made pursuant to the Freedom of Information Act. A recommendation was submitted to the Assistant Secretary of Defense for Public Affairs to eliminate or modify OSD-imposed triannual reporting of FOIA costs. These initiatives were still pending at the close of the reporting period.

The Army Privacy Program remained at maintenance level during 1980. Management attention focused on consolidating records into broad "system" descriptions. Continuing opposition by major Army field commanders to the burdensome reporting requirements of the Privacy Act prompted a query to DOD for modification. While OMB would not support a DOD legislative proposal to change or eliminate the annual report, some relief was obtained through DOD's withdrawal of supplementary data not required by OMB.

The Adjutant General Center's Access and Release Branch responded to roughly 3,000 requests from scholars, historians, private citizens, members of the media, and government officials for records or information from retired Army records. (These requests were in addition to the 951 requests under the Freedom of Information Act processed by the branch.) Approximately one-third of the requests were for copies of transcripts; the rest were for a variety of documents including obsolete publications, maps, general and special orders, and unit histories. Numerous requests were received for records from the Vietnam collection. Response time to these requests varied from one day to several weeks or months, depending on the research needed to locate documents. Many requests were referred to the National Archives and Records Service (NARS) for information in their custody. Others were referred to various records custodians throughout the Army.

A one-year contract study of the Army Functional Files System (TAFFS) conducted by Calculon Corporation was completed

on 30 September 1981. This study came about because of difficulties perceived throughout the Army in using TAFFS for retrieving general correspondence-type files. Calculon found that the development of office technology was eroding the usefulness of TAFFS and that TAFFS should be replaced because it cannot be automated, has major faults as a manual system, and lacks adequate management support. Calculon recommended an eighteen-month test of two concepts; the best features of each could be combined to form a single system for Army use.

One concept would require the development of a functional and subjective files classification system based on Army Regulation 340–2, "Maintenance and Disposition of Records in TOE Units of the Active Army, the Army Reserve, and the Army National Guard." Files would be decentralized and maintained and disposed of in the same manner as the current system.

The second concept, which Calculon labels as innovative, would use a file classification system based on the Army's regulation numbering system. This plan would include new procedures such as instant archiving—reproducing a copy of all permanent records at the time of creation and immediately retiring the record copy to a records holding area or federal records center. Retention or disposition of records would be based on usage. The central files system would be brought back; copies of files would be issued to users, and the record copy would be retained in the central file.

A task group was established during April 1979 under the joint leadership of the Office of Personnel Management (OPM) and the Department of Labor (DOL) to examine serious and widespread problems affecting efficient management of federal employees' medical records and to recommend solutions. Members of the task group also included representatives of the Departments of Defense, Army, and Air Force, as well as representatives of other federal agencies and organizations.

The group focused its attention on five major questions of policy: should there be a single medical record (folder) or should there be more than one repository for such documents; what constitutes an employee's medical records; who should have access to these records; where should the records be stored; and how should the records be maintained and for how long.

The task group received more than 110 responses from virtually every federal agency in the executive branch, the U.S. Senate, the U.S. Supreme Court, the General Accounting Office, the AFL-CIO, several independent unions, and private citizens. The group concluded that the primary cause of the medical rec-

ords problem was the lack of a uniform, governmentwide policy governing the maintenance and disposition of the records. Adding to the problem was the fragmented authority among federal agencies which establish and promulgate standards and regulations relating to medical records of employees and the absence of a universally accepted definition of the term *federal employee medical record.* As a result, many records which contain vital medical information on an individual's occupational health and well-being were frequently lost, misfiled in the employee's Official Personnel Folder, or destroyed prematurely.

In its final report, the task group recommended that an Official Medical Folder (OMF) similar to the Official Personnel Folder (OPF) be established as the permanent repository for all medical records of federal employees; that, with minor modification, the term *employee medical record* used by the Occupational Safety and Health Administration be adopted as the governmentwide definition for determining the content of the OMF; that OPM be vested with authority to establish policies and regulations governing the control and disposition of employee medical records, including issuance of policy guidance on access to and release of medical information contained in the OMF; that upon transfer of an employee from one agency to another, the losing agency should forward the OMF to the gaining agency in the same manner as the Official Personnel Folder and in a way that ensures confidentiality; and that upon separation from federal service, the employee's OMF should be retired to the National Personnel Records Center where it would be retained for a period of thirty years, unless a longer period is required by law or regulation.

Efforts continued during 1981 to establish control over the disposition of data retained in more than 3,000 automated systems. In coordination with functional managers and systems personnel, disposal standards for nonpermanent data were established for over 85 percent of proposals received from Army activities. Proposals for the disposition of master files were evaluated, and assessments of the value (historical, archival, reference, rights-and-interests, and so forth) of the data stored were made. As information on each system was gathered, many data errors were corrected and problems solved. For example, many systems with multiple master files did not make enough distinction between functional purpose and planned disposition. Detailed legwork and contact with records management officials ensured that all master files within the system were appropriately identified, and that the function and value of each was understood

by users. The inclusion of data in some systems relating to several functional areas led to problems in identifying the system with equivalent paper records having different disposition schedules. Measures were taken to ensure that each distinct data file was accurately correlated with existing paper record schedules for evaluation purposes. A continuing problem was the lack of formal ADP training of some records managers, which resulted in a communications gap between the records and automation managers and delays in obtaining and dispensing needed processing information.

In October 1980, the Declassification Operations Branch of the Adjutant General's Center began planning a review of retired Southeast Asia War records for declassification, pursuant to the requirements of Executive Order 12065. The project would cover approximately 60,000 cubic feet of records created during the years 1954–1975, including joint records over which the Army has served as executive agent since 1975. The collection was stored, warehouse fashion, at the Washington National Records Center (WNRC), Suitland, Maryland. Intermingling of classified and unclassified files at the time of original shipment required that most of the collection be treated as classified information. To minimize loss and destruction of records in a combat zone, instructions were given to Army field commanders in 1970 to dispose of no records and to ship all records being retired to the WNRC. This action saved many historically valuable records from being inadvertently lost or destroyed, but also resulted in a great deal of dispensible and ephemeral material being held long past its scheduled disposal date. The condition of the records made effective service, research, and retrieval difficult.

The National Archives and Records Service (NARS) agreed to provide essential support services for the declassification project (which would also separate the permanent and disposable holdings), including work space and materials; TAG would provide personnel to carry out the work. The project was expected to be completed by 31 December 1985, at which time the entire collection would be permanently transferred to NARS.

Because of increasing historical interest and the special needs of the Agent Orange Task Force to answer veterans' claims arising from purported defoliant and herbicidal contamination in Vietnam, the project began with the combat divisions (together with assigned and attached units) committed to the war in Southeast Asia. By the end of fiscal year 1981, work had been completed on the 25th, 1st, 23d, and 9th Infantry Divisions. This resulted in 100-percent declassification and approximately 65-

percent disposal of holdings judged to be transitory and ephemeral. The 4th Infantry, 1st Air Cavalry, and 101st Airborne Divisions were scheduled for processing during the first quarter of fiscal year 1982.

As part of its overall records management program, the Army administers a duplicate emergency files program to protect records needed to ensure the continuity of operations of essential Army functions and activities during and following a national emergency. Basic authority for management of the duplicate emergency files is Army Regulation 340–26, which is being revised to prescribe policies and procedures for the selection, distribution, storage, filing, safeguarding, and inventory of material placed in duplicate emergency files depositories, and to serve as a model for major Army commands in establishing their own duplicate emergency files program.

By and large, Army records management procedures have been developed in peacetime and geared to units and installations in the United States. Because these procedures were cumbersome to the combat commander on the battlefield during the Vietnam War, The Adjutant General's Office examined all areas of records management to see how each part of the program might be changed during wartime. The examination revealed that many peacetime administrative and reporting requirements could be suspended altogether. In other areas, such as the administration of the Privacy Act and the Freedom of Information Act, legislation has been proposed to waive requirements in wartime in order to divert manpower to more vital tasks. The proposals for managing Army information in wartime have been turned over to the Army Soldier Support Center for evaluation and analysis and the development of formal doctrine.

After sophisticated IBM model 3341 computers were placed in the data processing installations (DPI) at the St. Louis and Baltimore Publication Centers, it was discovered that one computer was enough to satisfy the requirements of both centers, thus allowing their consolidation under the Director of Publications, The Adjutant General Center (TAGGEN). On 5 January 1981 the St. Louis facility was closed, and all DPI personnel moved to the Reserve Components Personnel and Administration Center (RCPAC). The equipment was transferred to the Enlisted Records Center at Fort Benjamin Harrison. The consolidation meant a net savings of twenty-eight manpower spaces, which were reallocated within the directorate and TAGCEN to meet other requirements. The total projected savings over the next five years should amount to approximately $1.2 million.

The Adjutant General Center's Editorial Control Division, as part of its efforts to improve the readability of Army publications, developed and disseminated DA Pamphlet 310–20, "Administrative Publications: Action Officers Guide." The pamphlet provides guidance for the preparation and processing of administrative publications throughout the Army. Efforts to reduce the number of Army publications yielded the following results: 465 publications were rescinded, 516 were under revision, and 151 were earmarked for consolidation. New readability programs were established at four major Army commands; these were in addition to three programs already in existence. In a related development, the Micropublishing Program continued to move forward. By the close of the fiscal year, 667 publications had been converted to microfiche and others were in the process.

Proliferation of computer output microfiche (COM) continued to increase in fiscal year 1981 as a means of reducing administrative and automated data processing (ADP) systems costs and improving efficiency. There were currently 118 installations and activities producing documents using microfiche. The Computer Systems Command has improved the software programs used to support COM, making it more efficient and easier both for computer managers and for the customer agency.

The U.S. Army Soldier Support Center (SSC) took the lead in examining the concept of employing commercial portable microfiche viewers for use in deployable units. SSC procured seventy Information Design Cube II viewers and seventy Topper "46" viewers for field and garrison evaluation by selected tactical units. In coordination with the U.S. Army Training and Doctrine Command, units of the I Corps Support Command (COSCOM) were selected to use the equipment at their fixed-site locations as well as after deployment in a major field training exercise in fiscal year 1982.

Development of the Army Micrographics Management Information System (AMMIS) was begun in fiscal year 1980 for use by The Adjutant General Center's Micrographics Management Division and the major Army commands. It will contain an inventory of micrographics equipment and systems. Complete AMMIS data will not be available until fiscal year 1983. The benefits of AMMIS will be extended to the installation level via the Army ADP Resource and Performance Management Information System (ARPMIS). Under development by the Computer Systems Command (CSC) the ARPMIS will permit establishing, maintaining, and accessing a single integrated, Armywide data base

for automated data processing, word processing, automated documentation systems, and micrographics equipment.

The major hardware and software elements of the Advanced Micrographic Access and Retrieval System (AMARS) were substantially completed; however, demonstrations revealed operational deficiencies that must be rectified before factory acceptance and delivery of the system to the Reserve Components Personnel and Administration Center (RCPAC) in St. Louis. The issues have been analyzed in detail by Teknekron Research, Inc., the contractor. As a result, modification of the AMARS has begun to overcome the operational defects and to ensure full operability of the system. The pilot application will provide selected management officers with on-line access to official military personnel files of officers assigned to them.

TAGO contracted for an inspection of all microfiche Official Military Personnel File (OMPF) records in the Army system. The records are located at the U.S. Army Military Personnel Center, Alexandria, Virginia (active officers), the Enlisted Record Evaluation Center, Fort Benjamin Harrison (active enlisted personnel), and RCPAC (reserve officers and enlisted personnel). The inspection is required by the National Archives and Records Service's (NARS) Federal Property Management Regulation (FPMR) 101–11.507.2. The contract, awarded to the Micrographic Systems Technology Corp. in Falls Church, Virginia, requires reinspection of the active officer microfiche records to determine if the information has deteriorated since the previous inspection. It also requires an initial inspection of the other microfiche records to establish a basis for future comparison.

Administrative Management

The Installation Integrated Administrative Support System (IIADSS) combines word processing, internal communications, text and data processing, photocomposition, and micrographics into one system designed to improve office productivity. As noted in last year's report, a prototype IIADSS was set up at Fort Benning, Georgia, to demonstrate that integrating current technologies could provide more effective administrative support at a significantly lower cost. The demonstration's success led to the expansion of IIADSS, and by the end of fiscal year 1981 seven installations were using automated systems similar to the one at Fort Benning. The speed with which other installations could implement their system was improved by sharing computer programs and procedures used at Fort Benning.

In 1978 the Chief of Staff requested a major technological breakthrough to provide Army staff action officers with modern technological administrative support. The Adjutant General, under a project known as the Army Staff Automation Administrative Support System (ARSTADS), planned to integrate office automation techniques into one total system for the Army staff.

The Chief of Staff, complaining that the Army staff did not even have access to a basic word processing system, directed The Adjutant General to assign immediate priority to obtaining such equipment. This part of the project was dubbed the Administrative Systems Acceleration Plan (ASAP).

ASAP was developed by a team of TAGO administrative systems experts who surveyed and evaluated the needs of nine Army staff agencies and 3,000 people over a twenty-month period. During the current year the team completed surveys of ten Army staff agencies. They recommended procuring 480 pieces of equipment, ranging from word processors, microcomputers, and copiers to sophisticated laser printers and electronic micropublications and computerized graphics systems. In fiscal year 1981 over 100 word processors were installed, and another 210 were on order. When completed, ASAP could save as much as $12 million annually.

The first full-time office to monitor the Army's effort to reduce the administrative workload of unit commanders in the reserve components opened in June 1981. Established as a task force under the Reserve Components Coordination Council (RCCC), the Reduction in Administrative Workload (RAW) group surveyed reserve component units to validate unit commanders' complaints of excessive administration. Upon validation, the task force recommended screening DA publications to reduce administrative tasks, addressing specific issues raised by unit commanders, and establishing a full-time oversight office to keep resolved issues from cropping up again. Of the more than 1000 publications reviewed, 456 were rescinded from reserve component applicability and 516 were revised to ease administrative tasks, while 151 had valid administrative tasks.

Between 1 January and 3 March 1981, 155 postage metering systems were delivered to eighty-five Army installations and activities. By June, 22.1 percent of the Army's postage was metered.

A Transit Time Information System for Military Mail (TTISMM) is being developed by the Military Postal Service Agency to measure and analyze the flow of military mail to, from, and within overseas areas. TTISMM will measure transit times over complete routes between various origins and destinations as

well as the times for movement over parts of the complete routes. It will provide data for managers to establish benchmark transit times against which actual performance can be judged. This in turn will aid in detecting problem areas early. The Military Postal Service Agency (MPSA) had developed the basic procedures of TTISMM in coordination with the U.S. Postal Service. Testing of the new system will begin in October 1981.

On 14 August 1981, the DOD General Counsel sent a draft of proposed Space Available Mail (SAM) legislation to the Speaker of the House of Representatives. Such legislation would give DOD the discretionary authority to select transportation means for the overseas movement of SAM mail to minimize military mail transportation costs. The increased use of less costly transportation would be limited to situations in which the morale of service members would not be adversely affected. Use would also depend on the volume of mail to particular foreign destinations, security considerations, availability of seaport facilities, frequency of ship sailings, and costs associated with in-transit mail processing and overland transportation costs. The use of cheaper transportation for overseas movement of SAM would be determined on a country-by-country basis in coordination with the affected military service and appropriate field commanders.

10. Logistics

Readiness remained the key issue for Army logisticians during fiscal year 1981. Could they, inquired Lt. Gen. Richard H. Thompson, the Deputy Chief of Staff for Logistics since August 1981, improve their "readiness to logistically support mobilization and deployment of the Total Army and to sustain it indefinitely in any war it may have to fight"? General Thompson clearly thought that the Army had turned a corner by the end of the fiscal year. It had over the past several years better defined the problem and in the process developed the analytical tools that would permit it to better manage its supplies and equipment in the future. Still, shortages persisted, and the need to integrate a new generation of equipment that was just beginning to reach the troops could only exacerbate the situation. Nowhere were the imponderables and shortages of Army logistics better highlighted than in the support provided the Army's forward deployed forces.

Support of Forward Deployed Forces

Forward deployed forces are those combat units and the ancillary combat support and combat service support (CS–CSS) units stationed outside the continental United States (CONUS) and Hawaii. They include the four divisions, four separate brigades, and two armored cavalry regiments stationed in Europe, the 2d Infantry Division in Korea, the 172d Infantry Brigade in Alaska, and the 193d Infantry Brigade in Panama. Although General Edward C. Meyer redirected the Army's attention toward the possibility of war outside of Europe shortly after becoming Chief of Staff in June 1979, in 1981 the size of U.S. forces stationed on the continent and the accelerating Soviet buildup dictated that the Army expend the bulk of its logistic effort on preparing for combat in this theater. The effort consisted of operational projects, the pre-positioning of war reserve materiel stocks, pre-positioned materiel configured to unit sets (POMCUS), and the negotiation of agreements with the host countries to provide some degree of assistance through either cash outlays or supplies to U.S. forces stationed within their borders. The principles guiding these labors in Europe received an authori-

tative statement in the U.S. Army Training and Doctrine Command (TRADOC) Pamphlet 525–12, "Logistics Operations in the Communications Zone" (COMMZ), 30 June 1981.

In May 1978 the Vice Chief of Staff of the Army, General Walter T. Kerwin, approved twenty-one operational concepts designed to overcome gaps in logistics policy, doctrine, and planning. The U.S. Army Logistics Center (LOGCEN) selected ten of the twenty-one on which there was general agreement throughout the Army and which were not likely to change in the foreseeable future. TRADOC published these ten concepts in the form of Pamphlet 525–12. At the same time LOGCEN obtained comments on the other eleven, which it hoped to have ready for publication during fiscal 1982.

During fiscal year 1981 the Army maintained forty-two operational projects valued at $990 million to support worldwide Army operational and contingency plans. The projects, which included both pre-positioned and non-pre-positioned materiel, are intended to provide initial support to Army units in combat above and beyond current materiel authorizations. While an improved maintenance program permitted upgrading the condition of the supplies on hand, lack of funding prevented increasing the amount of equipment.

Pre-positioned war reserve materiel stocks, in contrast to the supplies in operational projects, are intended to sustain units once they are committed to combat. The Army acquires the reserve materiel in peacetime and stockpiles it overseas to reduce initial wartime transportation requirements and in-transit losses and to ensure that Army forces can fight until resupply arrives from the United States. Stocks pre-positioned in Europe and Korea will provide immediate logistical support to forward deployed units and to reinforcing U.S., NATO, and Korean units in the event of war. Supplies pre-positioned in stateside depots support Army elements of the Rapid Deployment Force. During 1981 inadequate funding allowed only a minimal increase in the size of these stocks, which currently are not enough to sustain the intense activity demanded in modern warfare. In Europe the lack of warehouses made it necessary to store equipment in the open, thereby increasing maintenance costs. To decrease the deterioration of wheeled vehicles in the NATO war reserve stocks and at the same time enhance the readiness of forward deployed units in Europe, USAREUR established a rotation program to exchange low-mileage wheeled vehicles in the war reserves with

high-mileage vehicles in the forward units. During 1981, the Office of the Deputy Chief of Staff for Logistics (ODCSLOG) revised the regulation dealing with reserve stocks, AR 11–11, to clarify responsibilities of Army staff agencies and major commands. At the same time the U.S. Army Materiel Development and Readiness Command (DARCOM) revised the companion regulation AR 710–1. ODSCLOG scheduled these revisions for publication early in 1982. ODCSLOG also sponsored conferences on war reserves—for Europe in August 1981 and for the Pacific in September 1981. Attended by representatives of the overseas commands, the meetings provided a forum for identifying problems of common concern and initiating actions to correct them.

The Army has had three stockpiles of pre-positioned materiel configured to unit sets (POMCUS) in Europe for over ten years. In an emergency the troops of three divisions would fly to Europe and receive their equipment there. Changes in authorized as well as the severe Armywide equipment shortage has meant that the amount of equipment in the sets has never reached targeted levels. The decision by the Carter administration to fill the sets with equipment withdrawn from units in the United States in addition to the traditional method, purchase, produced a beneficial result in fiscal year 1981. The amount of equipment in place came closer to the goals than ever before. In addition, the repair parts program for POMCUS improved more than in any other year. Unfortunately, this policy reduced the flexibility of Army units in the continental United States, which could only deploy at full strength to Europe. Crises in other parts of the world would result in an expeditionary force either undermanned or underequipped. The policy also slowed training, particularly for the reserve components. Troops had to double-up on equipment, thus lengthening the training time and increasing maintenance expenditures at a time when spare parts were also in short supply. The Reagan administration reversed the policy shortly after taking office, but this still left the problem of filling the POMCUS to authorized supply levels and reequipping the CONUS units. Production lead-time was such that even if the Department of the Army requested the funds for replacing all the withdrawn equipment, valued at $107 million, in the fiscal 1982 budget—which it did not—the new equipment would not reach the units until fiscal years 1984 and 1985.

The United States government had agreed to establish a fourth division set (DS) in Europe by the end of December 1980

and two more by the end of 1982 provided that NATO paid all construction costs and that the host nations supplied the sites. The warehouses for DS 4 were 96 percent complete by December 1980, but NATO did not expect the loading ramps and maintenance facilities to be done until December 1981. Substantial quantities of equipment began arriving at the Moenchengladbach site in November 1980 and were stored with little delay, because construction there was on time. Delays in completing the Herongen facilities, however, caused about 8 percent of all DS 4 equipment to be stored outside at the end of December 1980 and 12 percent by 1 April 1981. Completion of DS 5 and DS 6 is not scheduled until 1984, and the Army does not intend to ship equipment to them until all construction is finished. When fully implemented, POMCUS will consist of seven major packages: the six division sets and a package of combat support and combat service support (CS–CSS) units designed to supplement the inadequate number of CS and CSS units available to support the Army divisions and brigades already stationed in Central Europe. Reserve units deploying from CONUS will have to fill this gap and prepare the POMCUS equipment for distribution to the divisions flying in from the United States.

POMCUS makes sense only if the troops can deploy to Europe, receive their equipment, and move to their battle positions before hostilities begin. (The warehouses make tempting targets for a numerically superior Soviet Air Force.) The U.S. Air Force cannot move enough troops to Europe to man the equipment in the existing divisional sets within a "prudent" time following the start of mobilization. The lack of airlift at this time means that, in General Meyer's phrase, Army policy is "out of sync." Fast sealift will provide an interim solution, although once airlift is sufficient, sealift will simply increase the number of reinforcing divisions. During 1981 the Army began preparing for this long-term goal. DCSLOG issued a new authorization document which changed the composition of DS 2 and DS 3, previously designed to support heavy divisions. The Chief of Staff intends to use divisions from the West Coast and the Midwest for POMCUS, thus freeing units on the East and Gulf Coasts for redeployment using fast sealift.

Currently there are no Army aircraft included in POMCUS. In December 1980 General John W. Vessey, the Vice Chief of Staff, Army, approved a plan to test the feasibility of placing selected aircraft in POMCUS in humidity-controlled storage for

a certain period of time. DCSLOG planned to begin the test with fourteen fully modernized AH–1S Cobra TOW helicopters, two platoons with seven aircraft each. DARCOM, working in conjunction with the 21st Support Command, will place the aircraft in storage in January 1982. After six months they will remove one platoon and fly and test-fire the aircraft to establish the impact of storage on the time, man-hours, and resources needed to make them fully operational. DARCOM and the 21st Support Command will then return the aircraft to storage. They will keep the second platoon in storage for one year and then repeat the same procedure to establish the impact of long-term storage. The 21st Support Command will then issue the second platoon to a USAREUR unit. DARCOM will collect data on reliability, availability, and maintainability (RAM) for six months to further evaluate the total effect of this year-long storage. Upon completion of the DARCOM study, the Department of the Army will determine the feasibility of placing aircraft in POMCUS and the number and types that should be so deployed.

Host nation support (HNS), which is discussed in Chapter 3, is one of the means—along with operational projects, pre-positioned war reserve materiel stocks, and POMCUS—by which the Army seeks to achieve the total logistics support capability required by U.S. combat forces in time of war. The Office of the Secretary of Defense (OSD) formed an interagency HNS working group in February 1981 under the auspices and general guidance of its own HNS Advisory Group. Composed of representatives of OSD, the Office of the Joint Chiefs of Staff (OJCS), the State Department, the relevant commanders in chief, and the intelligence community, the working group's broad objective was to develop support requirements for the Rapid Deployment Force (RDF) and obtain HNS for RDF contingencies. The first priority was to acquire host nation support for the current RDF; the second priority was to obtain HNS for an expanded RDF. The working group divided into four subgroups which based their activities on group terms of reference and a fifteen-point agenda.

Efforts continued during 1981 to obtain support agreements on lines of communications (LOC) with the nations of the NATO northern and southern regions. The U.S. signed umbrella, general, and technical agreements with Denmark, Norway, and Italy. OSD suspended dialogue with Turkey and Greece for the time being. (LOC agreements fall into four general categories: umbrella, general or general technical, technical or technical an-

nexes, and joint logistic support plans [JLSPs]. The primary difference between them is in degree of specificity, with umbrella agreements consisting of general statements of principle and the others providing progressively more detail. JLSPs are very detailed; they would, for example, provide for the movement of a specific number of short tons of supply from one location to another on a certain day after the commencement of mobilization.)

Korean HNS, which has existed for many years in practice if not in name primarily through agreements between the U.S. services and their counterparts in the Republic of Korea, continued to exemplify allied cooperation during fiscal year 1981. The formal Combined Defense Improvement Projects (CDIP) Program, begun at the 12th Security Consultative Meeting in October 1979, contains all elements of support normally included in host nation support.

Japan HNS to U.S. forces there includes participation in the Relocation Construction Program (RCP) and the Facilities Improvement Program (FIP). The RCP allows the Japanese government to relocate U.S. military facilities in order to use the scarce real estate for development. In return the Japanese government constructs new facilities for the displaced service functions. The result is a consolidation of U.S. bases and a reduction in operating costs. The FIP is a cost-sharing arrangement whereby the Japanese government helps offset the cost to the United States of maintaining forces in Japan by funding troop housing and maintenance facilities. The FIP now extends over a three-year budget cycle, an arrangement that facilitates long-range planning.

Aviation contract maintenance in Europe provides a perfect example of the difficulties inherent in international support for the Army logistics system. During the 23d U.S.-German Logistic Staff Talks in November 1979, the Germans proposed the establishment of a helicopter maintenance capability within German industry which could be expanded in wartime. The Germans requested that the Army systematically determine the maintenance requirements of U.S. forces in Europe and develop appropriate procedures that would allow German contractors to participate. The Army concluded that contracting through the Defense Acquisition Regulation (DAR) provided the only available mechanism for placing work with German industries. The U.S. Army Troop Support and Aviation Materiel Readiness Com-

mand (TSARCOM) decided that there was not enough of a workload to establish a capability for major overhaul of aircraft within German industry in competition with in-house maintenance depots in the U.S. It recommended that a contract involving aircraft condition evaluation, flight safety inspections, and installation of modification kits could be structured for international competition. Consequently DARCOM directed TSARCOM to issue such a contract in July or August 1980 to be awarded by December 1980. TSARCOM also offered assistance to German industries that wanted to have their names added to the bidder's list.

As of 30 September 1981 the TSARCOM bidder's list contained about forty names, including six German firms and a few U.S.-based firms with subsidiaries in Germany. As a result of technical and administrative difficulties, issuance of the proposed solicitation slipped from July or August 1980 to March 1981. In the interim TSARCOM restructured the proposal as a basic ordering agreement with an initial workload of 5,000 to 6,000 man-hours. TSARCOM issued this request for proposal (RFP) in March 1981 and received solicitations from one U.S. and two German firms in April 1981. The command withdrew the RFP in July because of excessively high bids and a perceived need for further detailed evaluation of USAREUR aviation maintenance requirements. In that same month Joseph P. Cribbins, Special Assistant to the Deputy Chief of Staff for Logistics, visited Germany to review and establish the scope of aviation maintenance work generated in USAREUR that exceeded its capabilities. USAREUR estimated this total workload at 60,000 to 75,000 man-hours per year exclusive of any significant depot-level work. In August 1981 USAREUR and TSARCOM drafted a new statement of maintenance work needs and began preparing a new RFP, scheduled for issue during fiscal year 1982.

The problems with aviation maintenance or the strains endemic to the host nation relationship pale beside the fact that the five division equivalents which the Army maintains in Europe cannot be sustained in combat without reinforcement from CONUS before the outbreak of war. This situation resulted from an attempt to improve the "teeth-to-tail" ratio, the proportion of combat units to combat support and combat service support units, in Europe dating from the mid-1960s. Some 75 percent of all CS–CSS units are in the reserves, and as General Robert M. Shoemaker, the commander of U.S. Army Forces Command (FORSCOM), testified to the Senate Committee on Armed Ser-

vices in February 1981, their level of readiness was not as high as the Army desired. In a crisis the President would confront a genuine dilemma. If he did not reinforce USAREUR it might be "use(d) up in combat," to borrow the words of its commander, "because its replenishment, its sustained effectiveness, cannot be guaranteed." If the President did reinforce, he risked touching off the very conflict that he hoped to avoid. The example of the catastrophe of 1914 would ensure that considerable political pressure and a respectable intellectual rationale would exist for doing nothing. As early as 1979 the Department of the Army concluded that the reduction of CS–CSS units had gone too far in Europe. Then and in subsequent years the department had programmed additional combat support and combat service support units to replace a percentage of those previously allocated to the reserve components. In each year, 1981 included, the Army did not receive sufficient funds to do so.

While Europe remained the focus of Army planning during the fiscal year, the Middle East received increased attention as a possible theater of operations, as it has every year since 1973. One difficulty of operating in such regions is the lack of potable water. A 250,000-man force, for example, would require approximately five million gallons of water each day. Until recently, the Army had failed to address this problem adequately. It was capable of drilling wells and filtering water, but it lacked the equipment to treat saltwater, brackish water, or water contaminated by chemicals. In September 1980 OSD gave the Army responsibility for developing joint water doctrine and for supplying water to the other services during joint operations. The Department of the Army designated water supply as a combat service support function, with Army staff management responsibility assigned to the Deputy Chief of Staff for Logistics and functional responsibility delegated to the U.S. Army Training and Doctrine Command (TRADOC). TRADOC designated the U.S. Army Logistics Center as its executive agent for water resources and transferred responsibility for water supply combat developments from the Engineer School to the Quartermaster School. The Quartermaster School began to develop long-term, all-environment water support concepts, doctrine, and organizations. At the end of the year there were plans to transfer the responsibility for training development as well as the training itself to the Quartermaster School.

Meanwhile, the Logistics Center addressed the problem of

near-term support in arid environments, trying to determine what changes would help correct the worst deficiencies in existing doctrine, organizations, and equipment as quickly as possible. The results were published as TRADOC Pamphlet 525–11, June 1981.

Logistics Planning and Management

While logistics planning and management did not receive the public attention given the quality and quantity of logistic support to USAREUR, ultimately the former had a tremendous impact upon the latter. In 1981 initiatives in logistics planning and management centered on four areas: review of the entire logistics system; development of better criteria to judge the readiness of units and weapons; planning to ensure adequate supply and maintenance for major items of equipment which the Army intended to field in the future; and changes in the training and career patterns of logistics specialists.

The Army completed "Study of Army Logistics—1981" during the fiscal year, which ended on 30 September 1981. The Brown Board, which completed its work in 1965, had provided the last comprehensive study of the Army logistics system. The Besson Board in 1969 had focused on support for Southeast Asia. Concern over the lack of a recent study came to a head at the 1980 Commanders' Conference. In January 1981 General Meyer directed General John R. Guthrie, Commanding General of the U.S. Army Materiel, Readiness, and Development Command, to prepare "a foxhole-to-factory" study on Army logistics. Completed in August, the study contained some 275 recommendations dealing with all aspects of the logistics system, with special emphasis on the industrial base. General Meyer assigned responsibility for coordinating the assessment of the study to General Thompson, the Deputy Chief of Staff for Logistics (DCSLOG). General Thompson formed a Logistics Study 81 Assessment Team within ODCSLOG to oversee the review by the Army staff and to keep track of the implementation of adopted proposals. The Army put the first approved changes into effect in September.

While the "Study of Army Logistics—1981" sought to define the entire logistical system and improve its functioning by better relating its parts to the whole, the ODCSLOG pursued several limited reforms, the cumulative effect of which was to improve markedly the managerial tools available to direct the logistics

effort. These initiatives involved a revision of DCSLOG Regulation 701–2, "Logistics Plans—Direction for Army Logistics (DIALOG)," a change in the method of making materiel readiness reports to Congress, the automation of Department of the Army records, the approval of temporary loans to active units from war reserves and operational projects, and the expansion of the pacing item reporting system.

DIALOG, an outgrowth of the "Executive Summary of the Army Logistics Master Plan," last published in 1973, is an annual action plan for Army logistics, which sketches significant accomplishments of the preceding year, lists total Army goals, outlines the logistics goals designed to support those of the Army, and enumerates areas of concentration within each logistic objective designed to answer the question: "Where are we going?" It then gives specific actions to implement each of these objectives and the dates by which the Army plans to accomplish them. Largely because of the personal interest of Lt. Gen. Arthur J. Gregg, who was the DCSLOG until his retirement in July 1981, ODCSLOG reviewed the 1980 edition of DIALOG to make the objectives more definite, more measurable, clearer, and more concise. The office published these changes in DCSLOG Regulation 701–2 on 6 October 1980 and in Department of the Army Pamphlet 701–1 in January 1981. ODCSLOG encouraged each major Army command to develop its own supporting objectives to improve logistics further.

The Office of the Assistant Secretary of Defense for Manpower, Reserve Affairs, and Logistics (OASD MRA&L) made significant changes in the format and content of the Materiel Readiness Report to Congress during fiscal year 1981. The office hoped the changes would give the legislators a better picture of actual conditions within the Department of Defense and the Army. In line with this reform, the Office, Deputy Chief of Staff for Logistics (ODCSLOG) attempted to tie equipment readiness to budget appropriations. Although not totally successful, the effort was an improvement over previous attempts, which quickly became apparent when the Reagan administration proposed the fiscal year 1981 supplemental and the fiscal year 1982 amendments to previous budget bills. For the first time the Army tried to define how much additional readiness the increased appropriations would buy.

Throughout the year, various agencies on the Army staff and in the Office of the Secretary of Defense (OSD) evaluated several

models under development to relate resources to readiness. The models used one of two basic approaches or some combination of both. The first approach attempted to relate specific system readiness to appropriations. It appeared to have a more direct relationship to the appropriation process within the Department of Defense, the Planning, Programming, and Budgeting System (PPBS), and might have some validity in predicting the readiness of small units when the system involved was in fact their pacing item. The other approach, aimed at major combat units, tried to relate unit readiness to appropriations. At the end of the fiscal year the RAND Corporation was still working on the second approach.

A pacing item is a major weapons system, such as a tank or an aircraft, that is central to an organization's ability to perform its assigned mission. Because these items are critical to the level of readiness expected of a unit, the quantity on hand and their condition are subject to continuous monitoring and management at all levels of command. During fiscal year 1981, ODCSLOG expanded pacing item reporting to include selected combat service support units, thus marking the first time that the Army included logistics units in the pacing item system.

In another equipment-monitoring effort, General Gregg approved the conversion of the manual information system that recorded equipment loans made from the war reserves and operational projects to active units—a set of three-by-five cards maintained in the Directorate of Supply and Maintenance—to a computer system capable of generating semiannual lists of outstanding loans. The new method produced immediate results. ODCSLOG was able to reduce the amount of equipment on loan from $86 million worth in December 1980 to $45 million worth in September 1981. During the same period, the office reduced the total value of overdue loans from $52 million to less than $9 million, an 83-percent improvement.

ODCSLOG served two roles in the Commercial Activities (CA) Program, described in Chapter 9. It is the Army staff proponent for 48 percent of 179 generic functional areas designated as Army CA functions; and it is responsible for two field operating agencies vitally involved in the program—the U.S. Army Troop Support Agency at Fort Lee, Virginia, and the U.S. Army Logistics Evaluation Agency at New Cumberland, Pennsylvania. In 1981 ODCSLOG reviewed approximately forty-five Commercial Activities Proposed Action Summaries (CPAS), which provide the

information needed to assess the feasibility of contract performance.

ODCSLOG, working in conjunction with several other agencies, developed and published the "Useful Life and Residual Value Table" to simplify the computation of general and administration (G&A) expenses, an integral part of a commercial activities cost study. The table is a single reference document that gives all necessary information about the useful life and residual value of all items for which the Army must compute depreciation.

On 1 July 1981 the Army activated the National Training Center (NTC) at Fort Irwin, California. It was the first installation considered for contract operation of all base operation functions in which contractors were not performing any duties at the time the contract was awarded. After a review of industry bids and in-house costs, FORSCOM awarded a contract to Boeing Services International on 1 July 1981. FORSCOM calculated that the savings to the government would amount to $6.2 million annually, 19 percent lower than the original estimate. The contractor began full-scale operation on 1 October 1981.

The Defense Retail Interservice Support (DRIS) Program provides commanders with a means of improving retail operations by acquiring support from other military services and defense agencies through interservice agreements. During fiscal year 1981, the Department of Defense DRIS data bank recorded approximately 2,330 agreements in which the Army provided support valued at more than $150 million. Through another 1,120 agreements the Army received support valued at $90 million from other services and agencies. The program has experienced continuous annual growth over the past decade as reflected in the number of agreements and the dollar value of the support provided. ODCSLOG anticipates that the program will continue to grow. In March 1981 the Deputy Secretary of Defense placed additional emphasis on DRIS when he assigned each service an annual savings target of $10 million for fiscal years 1983 through 1987. ODCSLOG apportioned a share of the Army savings target to each major command. The Program Objective Memorandum (POM) for the 1983–1987 period reflected the new figures.

Joint Interservice Resource Study Groups (JIRSG) received continued attention within the DRIS program. In support of DOD's DRIS plan for fiscal years 1979–1983, sixty-seven JIRSGs had been established by 1981 to explore the possibility of in-

creased interservice support where there were geographic concentrations of DOD activities. The study groups determined capabilities and requirements in all 101 DRIS categories of support services. Each group was chaired by a full colonel or his naval or civilian equivalent. Their work was scheduled for completion in fiscal year 1983. Regular process reports to the ASD (MRA&L) and the military services as well as the draft report of a special audit by the Defense Audit Service (DAS) submitted in July 1981 indicated that the JIRSG procedure had failed to produce any significant consolidation of support capabilities. ODCSLOG recommended an alternative approach to the JIRSGs in September 1981, in which OSD would select two geographic areas that showed the greatest potential for base support consolidation. The department and the services would concentrate all efforts on the two geographic areas. The results would allow OSD to calculate more accurately the savings deriving from support consolidation in less promising geographic areas.

In July 1981 ODCSLOG recommended that Headquarters, Defense Logistics Agency (DLA), keep a record of interservice support agreements at the Defense Logistics Services Center, an action that would eliminate the need for the military services to keep such records. DLA agreed. Implementation will begin during fiscal year 1982.

The "Study of Army Logistics—1981," the reforms of the management information system such as the 1981 revision of DIALOG, the Commercial Activities (CA) Program, and the Defense Retail Interservice Support Program all dealt with the entire Army logistics system. At the same time ODCSLOG prepared plans which focused on areas within the total system. For example, before the Army fielded a major item of equipment in 1981, ODCSLOG prepared a detailed plan covering its distribution, supply, and maintenance and the monitoring of these activities. Thus the execution of the objectives of ODCSLOG's five-ton-truck study, discussed in the *Department of the Army Historical Summary for Fiscal Year 1980*, began in 1981. The U.S. Army Tank Automotive Command (TACOM) carried out the distribution plan included in the staff study. ODCSLOG expected the command to complete deliveries of the trucks purchased with fiscal year 1981 funds by July 1983. At the end of the fiscal year the Department of the Army was reviewing a TACOM plan for procuring 18,000 five-ton trucks in fiscal years 1982 through

1987 with deliveries stretching from August 1983 through September 1988.

The new five-ton truck presented a fairly simple problem for logistics planners. It was simply an improved version of a standard item of equipment which could be purchased "off the shelf." The organizations and the men necessary to man, maintain, and sustain the trucks already existed, and the amount of retraining required was minimal.

The same could not be said for the division air defense (DIVAD) gun, for which the Department of the Army pursued an innovative acquisition strategy during 1981. Until recently the standard Army development cycle consisted of three phases. In the concept phase DARCOM would develop a statement of what the Army required. In response, interested manufacturers would prepare engineering drawings and perhaps build a prototype. On the basis of these submissions DARCOM would select the proposal which appeared most feasible and award a contract for full-scale engineering development, the second phase of the cycle. The contractor would build three to five prototypes which the Army would review and make recommendations for improvement. Only if satisfied with the results and if the original requirement still existed would the Army award a full-scale production contract, the third phase of the cycle.

The DIVAD gun went through a two-phase development cycle. In the first, the Army prepared a general description of what it wanted and then allowed two contractors complete freedom to design and build prototypes. The only restriction on their independence was that all components had to be "off the shelf" with a history of reliable service. In May 1981 a source selection board chose Ford Aerospace and Communications Corporation to act as the production contractor. This selection marked the beginning of phase two, which involved maturation ("debugging" the prototype) and initial production.

In the standard development cycle, the contractor validated logistic planning during phase two, when he built the prototypes. The contractor provided the information needed to determine ammunition, spare parts, tools, maintenance manuals, and the personnel and special training required to field, operate, and repair the weapon. Once the contractor accomplished these preliminaries, the project manager (PM), who had direct access to the commanding general of DARCOM and the Secretary of the Army, initiated planning. Only then could the appropriate Army

commands and agencies begin to accumulate the men, information, and materiel needed when ODCSLOG actually deployed the weapons to the units in the field. To follow the same procedure for the DIVAD gun would have added unnecessarily to the expense. The quite different prototypes would have required radically different logistical support systems, and in the end the Army would use only one. Consequently, the Army expected only minimal logistic support planning and execution until after the selection of the production contractor. Planning which had previously taken two cycles to complete was now compressed into one and presented a unique challenge to logisticians. The project manager began logistics planning in conjunction with Ford Aerospace in May 1981.

The Army had devised the new procurement procedure in response to congressional concern about the length of time required to develop a new weapon. The service intended to use the new procedure selectively in place of the three-phase cycle. DARCOM would chose weapons for accelerated development on a case-by-case basis. The DIVAD gun represented the Army's first experience with the new system; the multiple launch rocket system (MLRS) was the second. Although it progressed more quickly than the DIVAD gun, MLRS was an even greater headache to logistics planners. The system was an "add-on" to the force. It replaced no existing weapons; it was entirely new. All logistics requirements for the MLRS were additions to existing requirements. Moreover, MLRS used a "shoot-and-scoot" operational technique, that is, it moved to a new position after launching a missile salvo. This method of employment required the development of flexible ammunition resupply practices and procedures to ensure that the empty launcher and the rockets arrived at the same place at the same time. The large size of the rockets and the rapid rate of fire of the launcher generated unique ammunition shipment, handling, and storage considerations. The project manager coordinated all logistics planning by the contractor and all the Army agencies involved during 1981. The logistics system would be ready to allow the weapon to be fielded on schedule during fiscal year 1983.

During 1981, the Army had an improved TOW (tube-launched, optically tracked, wire-guided) antitank missile, designated TOW 2, under development. A test and evaluation committee from DARCOM conducted a physical tear-down and maintenance evaluation (PTME) to determine the adequacy of

repair tools, test equipment, and operator and maintenance skills. The PTME revealed only minor shortcomings. In September 1981 the Department of the Army conducted a general officer in-process review which concluded that the TOW 2 should be classified as a standard item of equipment. This would enable DARCOM to begin work in fiscal year 1982 on parts catalogues and maintenance training manuals and would also allow DARCOM to apply fiscal year 1981 and 1982 appropriations toward modifying the basic TOW launchers to accept the TOW 2. At the end of fiscal year 1981, initiation of these actions awaited the approval of the PTME conclusions by the Deputy Chief of Staff for Research, Development, and Acquisition (DCSRDA). He withheld his decision pending completion of a U.S. Army Missile Command (MICOM) study on the best procurement strategy—competitive versus sole source. In contrast to MLRS, TOW 2 will present few problems to logistics planners because the existing TOW logistics system will support it with only slight modification.

Army Regulation 750–40, "Missile Materiel Readiness Report," continued to provide an excellent source of management information for use at MICOM, DARCOM, and the Department of the Army during 1981. After almost two years of operation, the report had proven simple to prepare and had gained wide acceptance in the field. Visits by The Inspector General and by Command Logistics Review Teams validated the accuracy of the data generated in the field. In June 1981, ODCSLOG conducted a special in-process review of the regulation and the reporting procedures, which resulted in a recommendation to further simplify preparation in the field. The change promised to increase the usefulness of the report at headquarters by adding existing missile systems not yet covered by the report and new ones as the Army fielded them. At the end of September 1981 ODCSLOG was drafting a revised regulation.

Logistics planning encompassed not only materiel but also people. Efforts by ODCSLOG to improve enlisted and officer professional development continued throughout the fiscal year. The revitalized Noncommissioned Officer Logistics Program (NCOLP) began to produce tangible results. The Resource Management Division in ODCSLOG made some 700 changes in the NCOLP documentation system which, when combined with the concomitant creation of major command and CONUS-installation NCOLP staff monitors, led to a better utilization of soldiers

in the program. Participation by noncommissioned officers increased to 90 percent of authorized levels.

In other personnel actions ODCSLOG provided information and assistance to TRADOC, the Office of the Deputy Chief of Staff for Personnel (ODCSPER), and the Office of the Deputy Chief of Staff for Operations and Plans (ODCSOPS) in four areas: evaluation of primary and basic technical courses to determine the adequacy of training; the Women in the Army Policy Review Group to study the impact of pregnancy and female authorization levels on readiness; the Manning System Task Force evaluation of the new rotation system and regimental affiliation; and a review of specialty designations needed to support the fielding of new systems. ODCSLOG also became the main coordination point for logistic specialties on the Army staff. On 1 October 1980 General Meyer directed that Army schools become the proponents for changes in military occupation specialties (MOSs) falling within their areas of expertise. ODCSLOG sent representatives to the proponency meetings on logistics specialties held at the various logistics schools. ODCSLOG conducted proponent reviews of the Logistic Executive Development Course (LEDC) and the Directorate of Industrial Operations Course (DIOC), which resulted in several improvements in their content. ODCSLOG also sponsored the establishment of additional specialty training and logistics precommand courses. These latter courses were designed for lieutenant colonels and colonels slated to command support battalions and divisional support commands.

In February 1981 General Vessey, the Vice Chief of Staff, approved the Army Aviation Maintenance Career Management Field 67 Study for implementation by TRADOC. TRADOC will revise the Career Management Field–Military Occupational Specialties (CMF–MOS) structure, the standards of grade authorization (SGA), the grade and skill level authorizations, all aviation maintenance training programs, and the appropriate incentives to recruit, train, and retain qualified soldiers in the aviation maintenance program. The Department of the Army Steering Advisory Group, chaired by the Special Assistant to the DCSLOG, will remain ad hoc during fiscal year 1982 and will monitor the implementation of the study.

Computer Applications

The application of automated data processing systems (ADPS) to logistics provides the possibility of establishing a highly re-

sponsive, decentralized organization. The wide dissemination of detailed information about the amount and condition of equipment and supplies in units and at installations allows higher headquarters to anticipate the needs of lower echelons more rapidly and accurately. Paradoxically, having such information gives higher echelons the illusion that they have a complete picture of field conditions, thus creating the psychological precondition for imposing rigid and overcentralized direction. What kind of logistics system would eventually result from these conflicting impulses remained problematic in fiscal year 1981. As in previous years, the Army's goals remained to achieve "state-of-the-art" status in both hardware and software—an exceedingly ambitious goal given the rapid advances in the computer field, the high costs, and the vagaries of the one-year budget cycle. In 1981, work on computer applications extended throughout the logistics hierarchy, from ODCSLOG down to the facilities on the post from which troops drew their equipment and clothing.

The Automation Management Office (AMO) completed and published the ODCSLOG Automation Plan (DAP), which is a four-phase program that will result in an automated information processing system for ODCSLOG. Implementation of the four major recommendations for automation are well under way: (1) reorganization of word processing support (phase I of the automation plan), (2) development of a program to monitor projects, (3) development of a program to track work on PPBS, and (4) establishment of a secure data link between the Logistics Evaluation Agency (LEA) at New Cumberland, Pennsylvania, and ODCSLOG.

The AMO study focused on only one office in the logistics system, albeit a very important one. Work on the Total Army Equipment Distribution Program (TAEDP), in contrast, concerned one element of the entire system. TAEDP is a collection of computer-generated information that projects Class VII (major equipment) end items, such as tanks, artillery, helicopters, and so forth, at the battalion level for the current year, the budget year, and the five years of the Program Objective Memorandum (POM). ODCSLOG and the Depot Systems Command (DESCOM) completed worldwide implementation of TAEDP during November and December 1980. They also added the phased equipment modernization (PEM) module to TAEDP, which permits the accurate tracking of new pieces of equipment as they come into the Army inventory. Under the old system, the Army

changed the TOEs of similar units throughout the service on the same day whether or not enough equipment was available to outfit all of them. In fact, it rarely was. TAEDP–PEM permits the Army to switch to a new TOE, battalion by battalion. The information generated by PEM for the current year will guide the distribution of equipment; that for future years will assist logistics planning. For example, PEM will inform the commander of an installation containing one or more tank battalions when M1s will replace M60s. Thus, he will know the dates by which he will have to enlarge the garage doors on post. PEM embodies the Department of the Army Master Priority List (DAMPL), the document which establishes the sequence in which battalions receive new equipment. DAMPL is based on NATO war requirements. ODCSLOG, ODCSOPS, and DARCOM began exploring ways to override the DAMPL to satisfy other needs as well, for example, new equipment for training in CONUS and the Rapid Deployment Force. ODCSLOG and DESCOM also began work on a module that would project the distribution and disposition of displaced systems, such as the M60.

The Logistics Data Network (LOGNET) is being developed to help in crisis situations. Entering a roster of troop units preparing to deploy into the LOGNET data base would trigger a series of automatic computations to indicate Class VII item shortages at unit and force levels, redistribute Class VII assets from designated sources to fill the shortage, and determine the amount of selected Class V (ammunition) and Class IX (repair parts) items available to sustain the force. The system would also determine the requirements for petroleum products in the force list. LOGNET would not be able to report the amount and types of fuel actually on hand within the units. On 7 April 1981, ODCSOPS published the functional description of LOGNET. The agency also signed a memorandum of agreement for development of the LOGNET prototype with the Defense Communications Agency (DCA), the organization responsible for constructing the system. DCA chaired a review of systems requirements held on 21 May, which approved a modified version of the ODCSLOG functional description and published it on 26 June. DCA awarded a design contract to TRW. In August, DCA selected the system hardware in conjunction with ODCSLOG, and the following month the two agencies and the contractor reviewed system specifications.

The Standard Army Ammunition System (SAAS) is a multicommand management information network which interfaces

with the Worldwide Ammunition Reporting System (WARS) and provides integrated reports of Class V (ammunition) stock in the logistics pipeline from the ammunition supply points at field army level through the Theater Army Materiel Management Center (TAMMC). The U.S. Army Logistics Center, operating in conjunction with Computer Systems Command, developed SAAS Level–1 for TAMMC and is working on SAAS–3 for COSCOM and SAAS–4 for the ammunition supply points.

In July 1981 the U.S. Army Audit Agency approved the Automation Economic Analysis (AEA) detailing the cost of development for SAAS–4. This permitted the DCSLOG staff to prepare a system decision paper. (A system decision paper is a formal document which details the status of an automated data system in the development cycle, the cost of continuing development, and the possible alternatives and their costs. It provides the basis for a decision by the Army staff on whether to continue to develop either hardware or software.) During August a representative from ODCSLOG chaired a field validation test for SAAS–1 System Change Package (SCP) 15 at the 200th TAMMC in Zweibruecken, Germany. This change provides an interface with SAAS–3 and allows the compilation of information concerning the amount of ammunition on order, the time it is due in, and the amount of ammunition in stages of transit but not yet delivered.

The losses that the Army faces in combat will require the ability to replace temporarily any damaged equipment undergoing repair. It consequently maintains a pool of spares for such a contingency, called a Combat Operation Readiness Float (CORF). The Concepts Analysis Agency (CAA) developed a CORF simulation model to use with the Wartime Requirements for Ammunition, Materiel, and Personnel (WARRAMP) program. CAA required additional information on battle damage and direct support repair rates before reaching any definite conclusions. Army Materiel Systems Analysis Agency (AMSAA) and DARCOM agreed to work with CAA to get this information. ODCSLOG anticipated completion of a working prototype by 1 January 1982 and of full development by March 1982.

In contrast to LOGNET, SAAS, and the CORF simulation model, which are still in development, the Standard Army Intermediate Level Supply Subsystem (SAILS) has been in place for some years. SAILS is the supply system operating at installation, corps, theater, medical activity, and selected U.S. Army

Reserve (USAR) sites. When first conceived, SAILS was to be part of the Standard Army Logistics System which was never developed. The comprehensive approach adopted at the beginning of the development cycle ensured that SAILS would be compatible with all other automated logistics systems. During 1981 the U.S. Army Logistics Center (LOGCEN) and the U.S. Army Computer Systems Command (USACSC) extended an expanded version of the system, SAILS ABX, to fifty-four locations throughout the world, thereby completing over 70 percent of the entire program.

As noted in last year's report, in 1980 LOGCEN completed a study of automated wartime functional supply requirements, which concluded that SAILS could not accommodate expected wartime volumes of information. As a result of this study the Army initiated the development of a new supply system capable of handling wartime loads. In March 1981 the Assistant Secretary of the Army for Installations, Logistics, and Financial Management approved the mission element needs statement (MENS) for the new system, called the Standard Army Retail Supply System (SARSS). ODCSLOG expected approval of a project manager (PM) charter for SARSS early in fiscal year 1982.

For important equipment, such as tanks and helicopters, the Army maintains a property book containing the names of individuals who are personally accountable for each item of equipment. In divisions or separate brigades, the property book is automated and maintained at the materiel management center. During 1981 LOGCEN and the Computer Systems Command worked to replace the current system, the Division Logistics System (DLOGS) Property Book, with the Standard Property Book System (SPBS). SPBS software has had a long period in development. Originally a part of SAILS during that system's early development, SPBS was made a separate subsystem by 1971 because of its increasing complexity. In 1977 Computer Systems Command tested a SPBS prototype at Fort Carson, Colorado, but opposition in ODCSLOG soon brought development to a halt. By fiscal year 1981 ODCSLOG had reversed itself. During the year, LOGCEN and USACSC reprogrammed SPBS to incorporate changes needed as a result of previous prototype testing and new regulatory and system interface requirements. USACSC scheduled divisional field testing for June 1982. When complete, SPBS will not only replace the Division Logistics System (DLOGS) Property Book at divisions and brigades but will

also operate at installations and corps headquarters. SPBS, which will interface with SAILS, SARSS, and the Direct Support Unit Standard Supply System (DS4), will provide an Armywide data base that will allow an individual item of equipment to be tracked throughout the logistics system.

DS4 is a computer program designed to assist direct support units in distributing supplies. Developed and maintained at a central location, DS4 is operable at multiple field sites on the Decentralized Automated Service Support System (DAS3), a decentralized computer hardware configuration. The DAS3 field systems will consist of automated data processing equipment housed in a mobile van and powered by standard military generators or commercial power. Capable of taking the field and dedicated almost exclusively to logistics operations, DAS3 stands in direct contrast to the philosophy which created the current generation of Army computers; they are immobile and concentrated in centers designed to process all information requests—logistic, administrative, and tactical. As of September 1981 ODCSLOG planned to employ DAS3 at first in nondivisional direct support or general support units (DSU–GSU), where it would replace the aged National Cash Register (NCR) 500. After replacing the NCR 500s, the Army will introduce the DAS3 into nondivisional direct support and general support units not currently automated and into Army divisions, brigades, and corps support commands (COSCOMs) as replacements for existing International Business Machine (IBM) 360 series computers.

Fielding of production model DAS3s began in December 1980. By 30 September 1981 the U.S. Army Computer Systems Command (USACSC) had distributed fifty-four DAS3s to the major commands. Until Computer Systems Command completes work on DS4 (expected in the fourth quarter of fiscal year 1982) the new computers will use Phoenix interim software. Phoenix refers to NCR 500 programs that are machine-translated to run on the DAS3. They take their name from the city in which the work was done.

DS4, SPBS, SARSS, SAILS, SAAS, and LOGNET provide aggregations of data at division and separate brigade levels. A new system, the Automated Retail Outlet System (AUTOROS), is being designed to support installation Self-Service Supply Centers (SSSC), Automated Central Issue Facilities (ACIF), and tables of distribution and allowance (TDA) shop supply. AUTOROS, in addition to automating routine supply functions, will provide

data for financial accounting. On 7 March 1980 the Assistant Secretary of the Army (ASA) for Installations, Logistics, and Financial (IL&FM) authorized the continued development of AUTOROS through prototype evaluation testing. TRADOC completed prototype testing of the SSSC module of AUTOROS in October 1980. ODCSLOG and TRADOC will ask the assistant secretary to approve a limited extension of the module in fiscal year 1982.

The Automated Central Issue Facility System (ACIFS) is designed to automate the Central Issue Facility (CIF) on Army installations. ACIFS provides total accountability for the temporary loan, receipt, issue, turn-in, inspection, exchange, and stocking of organizational clothing and individual equipment. The ASA(IL&FM), on 6 June 1980, authorized the installation of ACIFS at nine U.S. Army Forces Command (FORSCOM) sites, each supporting either a division or a higher unit. FORSCOM extended the system to Fort Benning during fiscal year 1981 and planned further extensions in 1982.

Work on Logistics Automated Marking and Reading Symbols (LOGMARS) began in 1976 with OSD as the proponent and with the Army as the executive agent through the DARCOM Packaging, Storage, and Containerization Center. LOGMARS has a bar-code source data acquisition technology similar to that used in supermarkets and department stores. It consists of bar-code labels and the equipment required to produce and read them. A portable wand scanning unit reads the code on a label and passes the information to a small hand-held computer for recording. If needed, an acousticoupler can also relay the information via telephone lines to a host computer at the installation, where the data is reconciled and then printed as part of the installation inventory. The system can inventory more items in an hour than can be done manually in a day. Tests at Fort Monmouth, New Jersey, indicated that LOGMARS could cut inventory time by as much as 68 percent. On 29 September the Director for Supply Management Policy, Office of the Assistant Secretary of Defense for Manpower, Reserve Affairs, and Logistics, chaired a senior advisory group (SAG) meeting on LOGMARS. It formally adopted symbol display characteristics throughout the Department of Defense, lifted a moratorium on testing by the individual services, and approved the implementation of LOGMARS by the services. SAG established the third quarter of fiscal 1982 as the target date for completion of specifications for the labels as well as in-

structions on how to prepare them. The Army planned to implement LOGMARS during fiscal year 1982 at wholesale, installation, and combat service support levels.

Army logisticians need to know not only the location of particular supplies and equipment but also the location of entire shipments of mixed cargo and the transportation required to move those materials from point to point. The U.S. Army Logistics Center during 1981 continued to develop computer programs and improve existing ones to fill these needs. The Department of the Army Movements Management System (DAMMS) is an automated data processing system designed to assist a theater transportation manager in monitoring the movement of cargo into, within, and out of the theater and to plan for movement of cargo in the theater during wartime. The DAMMS cargo movements module (CMM) provides the monitoring capability. Phase I, which covers the entry of cargo into the theater, was operational during 1981. LOGCEN completed the functional development and design of the DAMMS cargo movements module in March 1981 when the ASA(IL&FM) approved the system change request (SCR) and economic analysis (EA) of Phases II and III, the intratheater and export functions. In the same month LOGCEN completed the functional development and design work which laid out how the various modules and the phases of the entire DAMMS would interact. LOGCEN submitted an analysis of the various hardware changes needed to support DAMMS to the Office of the Deputy Chief of Staff for Logistics. These changes included amendments to DAS3 and the Division Level Data Entry Device (DLDED). ODCSLOG decided to fund the changes from the fiscal year 1983 budget. ODCSLOG plans to extend DAMMS to the Eighth Army in Korea and continues to study the problem of communications support requirements for DAMMS in Korea.

The Movement Planning Module (MPM) automates wartime movements in a theater of operations. It derived from a portion of the models in the U.S. Army Worldwide Logistics System (MAWLOGS) that dealt with movements planning. LOGCEN began technical conversion of the selected models in May 1981. The module when complete would permit simulation of various tactical situations, such as the damage or destruction of bridges, pipelines, railroads, or nontactical vehicles, and the identification of the best response to these conditions. At the end of the year

LOGCEN was developing the final functional description and economic analysis for the module.

Mechanization of Selected Transportation Movements (MECHTRAM) is an automated system that provides logistics and financial information on the movement of Army-sponsored cargo and passengers within the Defense Transportation System network. MECHTRAM also has the ability to forecast and budget for short- and long-range airlift and sealift requirements. The computer facility at the U.S. Army Management Systems Support Agency (USAMSSA) has provided automated data processing support for MECHTRAM since the system's transfer to that agency in 1978. The transfer did not include the descriptions and narration that accompanied the seventy-five programs encompassing the system. As a result the facility has experienced difficulties in maintaining MECHTRAM. To resolve the computer maintenance problems, USAMSSA developed a plan to evaluate and redesign the system. It expected to complete work on the redesign in the fourth quarter of fiscal year 1982.

The Department of the Army Standard Port System–Enhanced (DASPS–E) is a collection of interrelated computer programs designed to assist the operations of all major CONUS and overseas ports. During 1981 development work continued without any major setbacks. Technical development began in November 1980 when Alan J. Gibbs, the ASA(IL&FM), granted a waiver to the U.S. Army Computer Systems Command to begin technical design, programming, and testing. Approval of functional development was completed in August 1981 when Joel E. Bonner, Jr., Assistant Secretary Gibbs' successor, approved the final functional description (FD), economic analysis (EA), and detailed requirements document (DRD). Work on hardware requirements for the system also proceeded during fiscal year 1981. In December 1980 Computer Systems Command submitted a requirements operational capability (ROC) document for DASPS–E. It listed the functional requirements that the Decentralized Automated Service Support System needed to process DASPS–E data. These consisted of a series of performance standards for particular items of hardware, such as tape drives capable of reaching a certain speed, printers with a particular capacity, and communication interfaces over certain distances. In September 1981 General Thompson nominated a project manager for DASPS–E, and ODCSLOG prepared the project manager charter for submission to Assistant Secretary Bonner.

More than thirty years ago private industry used computers to reduce the number of people required to do routine administrative tasks. The Department of Defense first applied automated data processing systems to operational tasks and only now is using them in routine administration. The Transportation Operational Personal Property System (TOPS) is one such computer program. It supports routine administrative functions similar in all shipping offices regardless of service. During 1981 the Assistant Secretary of Defense for Manpower, Reserve Affairs, and Logistics directed the Navy to develop and test TOPS and to provide the other services with system specifications which satisfied the functional requirements of their systems. The Navy experienced difficulties which have, in effect, delayed the Army's development and implementation plans. Because TOPS promises to provide substantial manpower and financial economies within four years, the Department of Defense funded it through the Productivity Enhancing Capital Investment program, a procedure established to support programs which promised a quick return on investments.

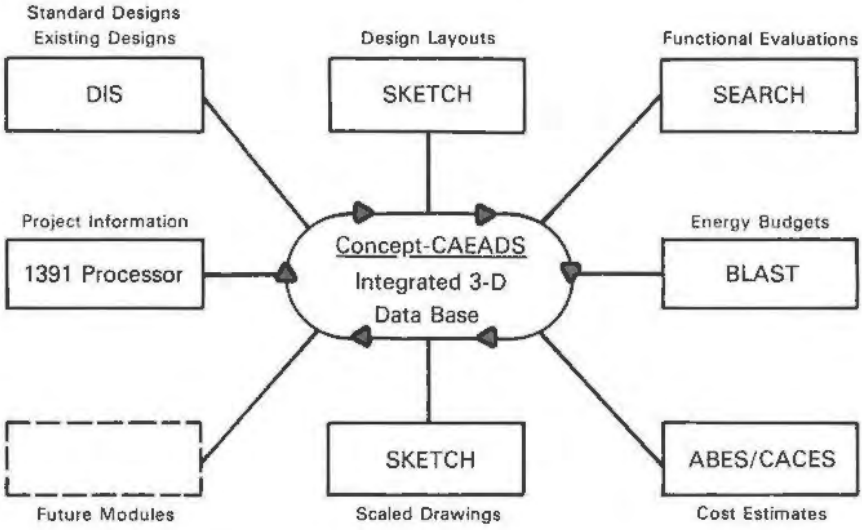
The Corps of Engineers has taken the lead in developing computer applications for the planning, design, and construction of buildings. Each year the Corps' Military Construction, Army (MCA), program deals with an average of fifty types of facilities in some stage of development. This volume of work, the repetition of these types of facilities year after year, and the pressure to keep costs low while at the same time meeting rising standards of safety, accessibility, and efficiency have encouraged the Corps to explore the possibility of using automated data processing systems. During the 1970s, computer technology evolved rapidly in the area of computer-aided design (CAD). Engineers first used computers to make calculations, then to handle basic data for accounting, specification production, and drafting. By the end of the decade these simple functions were being linked to allow construction of a geometric description of a design. Computer graphics and geometry could do everything that a balsa wood model could do and more, such as allowing an engineer to detect early in his design any interference between the layout of the heating and cooling systems in a building.

The Computer-Aided Engineering and Architectural Design System (CAEADS) is being developed at the Corps' Construction Engineering Research Laboratory (CERL), located in Cham-

paign, Illinois. The purpose of the project is to modify automated data processing systems developed independently over the past few years so that they interface and to develop additional programs when needed in order to provide computer support to engineers throughout the MCA design cycle, from predesign through final design, as shown below.

Design Phase	Typical CAEADS Tools	User
Predesign	Project Development Brochure (PDB) Processor Environmental Technical Information System (ETIS) Pollution Abatement Management System (PAMS) Installation Facility Mobilization Planning System Installation Graphics Analysis System Computer Evaluation of Utility Plans (CEUP)	Army installations, engineer districts
Concept Design	Design Information System (DIS) Computer-aided Facility Layout System (SKETCH) Systematic Evaluation of Architectural Criteria (SEARCH) Building Loads Analysis and System Thermodynamics (BLAST) Automated Budget Estimating System/Computer-Aided Cost Estimating System (ABES/CACES)	Office of the Chief of Engineers, engineer districts, A/E contractors
Final Design	3-D modeling of architectural, mechanical, and electrical systems CACES Computer-Aided Specification Preparation System (EDITSPEC) Automated Drafting	Engineer district A/E contractors

During 1981 CAEADS began to become available as an integrated system. Eight modules, some of which dated from before the beginning of the CAEADS system, were complete. Seven of the modules pertained to the early stages of design, primarily functional layout and analysis. They were combined and tested at the concept level of the design phase on more than one hundred MCA projects from the fiscal year 1984 budget. CERL called this combined system, only a small portion of the complete CAEADS, Concept CAEADS. Below is a drawing that represents the major integrated subsystems of Concept CAEADS.



The DD Form 1391 Processor is a CAEADS subsystem developed by CERL that is used in both the predesign and concept design phases of the MCA design cycle. It consists of a data base containing all the information found on DD Form 1391, including the status of the project and any comments from the review levels. In predesign the processor helps the facilities engineer prepare MCA project submittals by producing budget estimates and ensuring that the information submitted is complete and consistent. In the concept design phase it provides raw data for the Design Information System (DIS), a subsystem developed in the Office of the Chief of Engineers (OCE). DIS reviews the MCA project design that the Corps can use without modification or with only a few changes to satisfy the needs of a new project.

SKETCH, a computer-aided facility layout system also developed by CERL, lets the designer lay out and enter two-dimensional graphic building information in CAEADS. He can retrieve standard designs for modification or begin original ones using a graphics terminal. SKETCH is the crux of Concept CAEADS. Building information entered via SKETCH can later be retrieved for design evaluation. By the end of fiscal year 1981 CERL had developed interfaces between SKETCH and the other subsystems of Concept CAEADS. It had also begun work to link SKETCH to a three-dimensional data base that will be used in a final design phase.

The Systematic Evaluation of Architectural Criteria (SEARCH) is yet another subsystem that originated in CERL. It consists of a

collection of evaluation modules which ensure that a facility design is in compliance with criteria in design guides, technical manuals, building codes, and other documents. In its current stage of development SEARCH reviews floor-plan layouts provided by SKETCH for compliance with five sets of criteria: maximum and minimum areas, acoustic separation, walking distances, visual control, and accessibility to the handicapped. CERL was working on nine additional modules when the fiscal year ended: fire safety, equipment inventories, occupant load requirements, noise control, energy conservation, solar feasibility, spatial efficiency, and service subsystem terminal elements. SEARCH gives a designer the ability to check alternatives to the original proposal frequently and easily. He simply modifies the floor plan in SKETCH, then SEARCH automatically compares the new design to the evaluation modules. The designer may repeat this process as many times as necessary to obtain the best design. SEARCH lets the user identify and resolve design conflicts during the critical early stages of the work. Furthermore, it makes consistent evaluation of alternatives possible, greatly increasing the probability that a designer will produce the optimal design.

Building Loads Analysis and System Thermodynamics (BLAST) is a comprehensive set of programs prepared by CERL for predicting energy consumption and energy system performance and cost in new and redesigned buildings. It helps designers perform peak-load calculations, that is, the maximum BTU input required to bring a facility up to the design temperature on the coldest winter day, or the maximum amount of BTUs needed to be removed from the facility to reach the design temperature on the hottest day in summer. Peak-load calculations are needed to design the heating, ventilating, and air conditioning (HVAC) systems and to select the most appropriate equipment for a building. Because BLAST provides estimates of a facility's annual energy performance, a designer can use it to evaluate alternatives. In Concept CAEADS, BLAST automatically selects building information from SKETCH and makes calculations using meteorological data from the building site. The mechanical designer needs only to enter a concept HVAC description at a terminal. The description would include a thermal zone layout, materials to be used in walls, floors, ceilings, and roofs, and fan and plant locations. BLAST provides results in a short time, which means that repeated use is inexpensive. A designer can thus examine alternative designs to ensure that the final design of both the facility and the plant conserves energy.

The Automated Budget Estimating System (ABES), developed by the Middle East Division (Rear), extracts twelve criteria from SKETCH, such as gross floor area, building type, energy supply,

and number of floors, and generates a complete and detailed list of construction tasks and quantities of materials required to price a building. This information is then fed to the Cost Estimating System, also a product of the Middle East Division, which generates a direct cost estimate.

CERL estimated that the test of Concept CAEADS in support of the fiscal year 1984 building program, which was completed in February 1981, saved approximately $3 million, 20 to 25 percent of the total design costs. Budget submission reports from the test included function, energy, and cost analyses of alternative designs for 113 projects. The architectural and engineering firm of Hayes, Seay, Mattern, and Mattern of Roanoke, Virginia, prepared final reports and combined them with scaled drawings. The firm received technical assistance from CERL and from the University of Michigan and used computer terminals in the Engineering Division, Military Programs Directorate (MPE), Office of the Chief of Engineers. MPE reviewed and accepted the reports before giving them to the field offices to guide future design projects.

Work on predesign CAEADS is the least advanced of the three phases of CAEADS. The 1391 Processor is ready and integrated into Concept CAEADS. The Environmental Technical Information System (ETIS), developed by CERL, is available as a stand-alone system but is not yet integrated into predesign CAEADS. ETIS will determine the environmental impacts of new construction and its operation and maintenance. Still to be designed are the Project Development Brochure (PDB) Processor, the Computer Evaluation of Utility Plans (CEUP) System, the Installation Graphics Analysis System, the Pollution Abatement Management System (PAMS), and the Installation Facility Mobilization Planning System.

CERL planned in 1981 to concentrate its efforts over the next few years on the final design cycle of CAEADS. By the end of September 1981 it had developed an interface between SKETCH and a three-dimensional modeling system called ARCH: MODEL, which is still undergoing development. When complete, ARCH: MODEL will provide data structures and data retrieval of geometric and physical properties of the construction materials. A central three-dimensional data base will permit easy retrieval of plans, elevations, details, and sections.

The final design cycle of CAEDS will also include the Computer-Aided Cost Estimating System (CACES)—to permit detailed cost estimates of a project in the advanced stages of design—and EDIT-SPEC. This latter system simplifies preparation of project construction specifications based on Corps of Engineers guidelines. A writer marks a computer-generated list of a project's design conditions.

EDITSPEC automatically pulls all pertinent guidance and places it in the correct location in the project specification. EDITSPEC prints all specifications—formatted, paragraphed, correctly paginated, and ready to go directly into the construction contract. The Office of the Chief of Engineers assigned the Huntsville Division to test, maintain, and operate EDITSPEC. The division started the formal prototype test in May 1980 and completed it in December 1980. During the test, the division made cost comparisons between manual and EDITSPEC specification preparation methods. The test indicated that EDITSPEC would save about 35 percent of the cost of preparing specifications. The Corps anticipated a decision early in the first quarter of fiscal year 1982 on extending EDITSPEC to nineteen Corps of Engineers offices. CERL planned to test the final design in the fall of 1982.

The present system of preparing an installation master plan consists of making a negative engraving of a map and plan data, a process called scribing; leroying, or inking, descriptive data; and reproducing, including screening, the finished product. The inability to update maps and plans easily on a daily basis creates problems with regard to storage, retrieval, and assimilation of pertinent data before it is placed on maps and plans. Installation master plans prepared in this manner exhibit high quality, but the labor effort is so intense that current master plans are seldom available.

During 1981 various Corps offices worked on computer-aided graphics in installation master planning, which have begun to replace the current system. Ultimately CERL will integrate them into CAEADS. The Fort Worth District helped Fort Hood acquire an automated mapping system based on new aerial photogrammetric mapping of the installation, validation of master plan items, including utility systems, and access to a data bank provided by the contractor. The Savannah District completed an implementation study for an interactive graphics and analysis system and terrain analysis system, which is a primer on the subject of automated graphics. The district also contracted for a study to establish graphic standards for automated master planning and prepared a new technical bulletin to standardize master-plan presentation. Huntsville Division contracted to provide automated basic information maps, the new term for master plans, for two DARCOM installations. The Office of the Chief of Engineers funded the preparation of mobilization master plans for two military installations through the division.

The Energy Monitoring and Control System (EMCS) is an installation computer system which controls the operation of building mechanical and electrical systems to conserve the most energy and to reduce operating costs. During fiscal year 1981, OCE published

guide specifications for the four different EMCS sizes. As the state of the art advances—and it is dramatically—the overlap in capacity grows. The Corps prepared the final text of a technical manual on EMCS design, which it planned to publish during fiscal year 1982.

Suppliers and installers of EMCS experienced significant delays during 1981 in putting the new system in place. Problems in computer program development and shortages of electronic components were the most important factors. Experience gained during the year confirmed the wisdom of using a distributed processing configuration for large- and medium-sized systems, that is, to put the large- or medium-sized computer in a central facility and to put a micro- or small-sized computer in each building. The computers could talk back and forth. If a small computer was down, the large computer could operate the climate controls for the building and vice versa. Redundancy increased reliability.

The Chief Counsel's Office of OCE developed and implemented contractual methods to secure optional software licensing agreements to ease maintenance contracting and system expansion acquisitions. Software is a copyrighted product. Vendors who develop software and those who service it have to reach an agreement about royalty payments before a system goes on line. The new agreements promise dramatic savings in time.

The Defense Energy Information System (DEIS) is a computer-based Department of Defense report for compiling all energy consumption statistics. During fiscal year 1981 the DOD Energy Office was coordinating the final stages of a massive revision of DEIS. The Army Energy Office in ODCSLOG handled the Army portion of the revision, which will enable reporting installations to submit pertinent data on consumption, including changes in population, weather conditions, and real estate inventories. The information will allow the Department of Defense to evaluate each installation's energy efficiency for the first time.

The Medical Facilities Design Office (MFDO) of the Corps of Engineers used three automated systems as aids in the management of medical facilities design during fiscal year 1981: the Building Design System and General Design System (BDS–GDS), the Design Office Computer–Format for Review (DOC–FR) System, and the SKETCH and SEARCH subsystems of CAEADS. The Corps installed a DOC–FR interactive computer system in the Medical Facilities Design Office during April 1981. By the end of the fiscal year MFDO was using the system on the U.S. Army Hospital project at Fort Carson, Colorado. The system allows design review comments to be entered, stored, updated, and reported; organizes the comments for use during the review conferences; aids in the review of

the next project submitted; and furnishes reviewers with a system report organized by discipline, with all the previous conference notes and action items added.

BDS–GDS is a large integrated architectural design system which provides automated procedures for pulling together preliminary concept information covering development of alternative schemes for building layout and associated studies and provides design merit analysis dealing with measurements, materials, costs, heating, and lighting. Design development is relatively quick, allowing the designer to address a full range of options of siting, circulation flow, layout, energy efficiency, and cost. In many ways the system overlaps functions performed by Concept CAEADS, but BDS–GDS lacks many of the capabilities of Concept CAEADS. BDS–GDS, for example, cannot aid in the design of nonrectangular structures. It cannot prepare an energy budget for a facility because it cannot project energy use throughout the year. However, the system has the advantage of being available for immediate use. MFDO first used the system on the Troop Medical Clinic project for Camp Casey, Korea. Although work did not begin until February 1981, use of BDS–GDS saved approximately one year of design time. The Corps submitted the concept design through the Secretary of the Army to the Deputy Assistant Secretary of Defense for Installations and Housing.

MFDO used SKETCH and SEARCH to evaluate new medical projects and plans for renovation of existing facilities, for example, the Bremerhaven Hospital project. MFDO selected the final design on the basis of the analysis performed by the two subsystems of CAEADS.

Materiel Maintenance

Repair and modification of equipment are among the most important services provided to tactical units by logisticians. During 1981 the Army prepared to modify the M60A2 tank and pursued various programs to enhance the performance of equipment already in the field. These programs included the Army Oil Analysis Program, a new policy on printed circuit board maintenance, and an assessment of test, measurement, and diagnostic equipment calibration. Aviation maintenance, reflecting the increasing prominence given to Army aviation since 1973, also received much attention. Work continued on conversion to the three-level aviation maintenance concept. Revision of two key Army regulations, scheduled for publication in 1982, promised greater precision in reporting the condition of aviation equipment. Other areas of concentration in-

cluded aviation materiel and aviation depot roundout. Finally, in recognition of the importance of maintenance, the Army planned to initiate an annual competition for a unit maintenance award.

In May 1980 General Vessey, the Vice Chief of Staff, approved a recommendation from ODCSOPS to withdraw M60A2 tanks from the active Army and convert them with an M48A2 turret. ODCSOPS proposed to call the hybrid the M48A7. The M60A2 had been armed with a low-velocity 152-mm. cannon and missile launcher assembly which fired the Shillelagh missile as its primary round and a conventional shell as its alternative. The M48A5 turret mounted a high-velocity 105-mm. gun. By the end of 1981 both CONUS and USAREUR maneuver units had turned in all of their M60A2s—540 vehicles, the entire Army inventory—to the Anniston Army Depot in Alabama for refitting. In May 1981, because increased funds were available to the Army, ODCSOPS reevaluated the decision to convert the M60A2 to the M48A7. Instead, ODCSOPS proposed that the Anniston Depot convert them to an M60A3 model. This proposal proved impractical because the M60A3 production line would not be in operation during 1983 and 1984. At the end of the fiscal year ODCSOPS was preparing a decision paper for the Vice Chief of Staff which recommended converting the A2s to Armored Vehicle Launched Bridges (AVLBs) and Combat Engineer Vehicles (CEVs). ODCSOPS expected an evaluation of the action by DARCOM by January 1982 and a final decision sometime later.

The Army Oil Analysis Program (AOAP) is a key component of the Army's shift from a philosophy of maintenance on schedule to one of maintenance based on condition: "If it ain't broke, don't fix it." AOAP involves the collection of sample crank-case oil from engines and use of a pectrometer to identify trace metals. Concentrations above a certain level indicate the need for specific kinds of maintenance, depending on which metal has reached the critical density. The use of this diagnostic tool promises to reduce maintenance costs while enhancing safety. Originally developed to better service aircraft engines, the program spread to include other Army vehicles and continued to expand during fiscal year 1981.

The anticipated addition of two new laboratories during the first quarter of 1982 would bring the Armywide total to fifteen. In addition, the Material Readiness Support Activity (MRSA) of DARCOM initiated actions to establish a laboratory at the National Training Center at Fort Irwin, California, and provided on-site assistance to Egypt to determine what was needed to establish an oil analysis laboratory there. The quantity of oil samples analyzed and

the kinds of services provided by the laboratories also increased in 1981.

ODCSLOG, operating in conjunction with ODCSOPS, DARCOM, and the Computer Systems Command, continued to work on integrating automatic data processing equipment into the AOAP process. DARCOM proposed the adoption of the Navy stand-alone minicomputer system for the Army's oil analysis requirements. At the end of the year DARCOM was preparing a mission element needs statement for review by the Army staff.

General Meyer assigned to DCSLOG the responsibility for conducting an Armywide assessment of all test, measurement, and diagnostic equipment (TMDE) functions to find where improvements are needed and to develop plans for corrective action. The DCSLOG established a Department of the Army TMDE Action Team consisting of eight action officers to direct and coordinate the review. The team will begin work early in fiscal year 1982.

The rapid proliferation of solid state circuitry during the 1970s made maintenance policy for support of Printed Circuit Boards (PCB) obsolete. As the Army moved into a comprehensive modernization program, ODCSLOG worked to create a more definitive PCB maintenance policy. The office reviewed existing guidance as well as current and projected requirements and devised a new maintenance policy, which it sent to the field for review and comment. The office also requested that the field submit alternative policies if they appeared better adapted to local needs and conditions.

Much of the innovation in materiel maintenance during 1981 centered on Army aviation. The conversion of all divisional and nondivisional aircraft maintenance to the three-level-maintenance concept—that is, aviation unit maintenance, aviation intermediate maintenance, and depot maintenance—was completed. The new units which resulted still suffered some equipment shortages at the end in the year.

ODCSLOG devoted considerable effort to revising two Army regulations dealing with aviation: AR 95–18, "Aviation Safety of Flight Program," and AR 95–33, "Army Aircraft Inventory, Status, and Flying Time Reporting," both scheduled for completion early in fiscal year 1982. The Aviation Logistics Office in ODCSLOG collected and analyzed data for over one year following the implementation of 1979 in a major revision of the previous edition of AR 95–33. The new update of AR 95–33 will refine the 1979 regulation, place greater emphasis on achieving full mission-capable goals for each aircraft system, and highlight problems which most often prevent units from achieving these goals. (An aircraft is fully mission capable when it can perform all of its primary mission and meets the

equipment requirements for flight under visual meteorological conditions, both day and night, and for flights under instrument meteorological conditions.) The revision of AR 95–18 will add a new category to safety of flight (SOF) messages—those communications which warn or advise about unsafe flight procedures and materiel or maintenance deficiencies. In the 1973 edition of the regulation, these communications consisted of operational, technical, one-time inspection, and advisory messages. The draft revision added to classification *maintenance mandatory* to the list. It would require repair work and submission of a report when the task was complete but would not ground aircraft or limit their mission-capable status.

The Aviation Intensive Management Items (AIMI) program, established by the U.S. Army Troop Support and Aviation Materiel Readiness Command (TSARCOM) under authority contained in AR 710–1, applies to items in the Aircraft Component Intensive Management System (ACIMS); major aircraft components, such as engines, transmissions, rotors, and airframes; and items in short supply, such as bearings, helicopter skid shoes, and fuel pumps. Special management techniques applied to AIMI items include expedited shipment and return to depot, manual processing of requisitions, redistribution when feasible, and periodic negotiation of supportable levels within the major commands. The last element constitutes the most unique feature of the program. TSARCOM holds AIMI conferences semiannually with representatives of the major commands in attendance. The primary business of the meetings is to negotiate supportable levels with the customer commands and to ensure an equitable distribution of available assets. The conferees review the requirements of the major commands, examine available assets at both the national and user level, look at the quantities of unserviceable items returned by the customer, and establish supply levels.

Work on the problem posed by the disposal of finite-life aviation materiel, highlighted in the 1980 controversy over the mutilation of helicopter rotor blades which had exceeded their normal operating life, continued in fiscal year 1981. TSARCOM requested that DCSLOG assist in obtaining a DOD decision on disposal policy. As a consequence, the Office of the Secretary of Defense (Energy, Environment, and Safety) prepared a memorandum that required the Army to develop a system to ensure that any unsafe rotor blade turned over to a property disposal office would not be resold or reissued. At the end of the fiscal year ODCSLOG was developing the necessary safeguards and was continuing to review policy and procedures for disposing of other finite-life aviation items, such as gears and bearing assemblies. TSARCOM continued to mutilate un-

safe finite-life items before sending them to property disposal offices.

In 1976 the Department of the Army initiated an action in conjunction with DARCOM and the National Guard Bureau (NGB) to examine utilization of four of the National Guard's transportation aircraft repair shops (TARS). These shops have highly qualified aircraft maintenance personnel. In September 1979 the Department of the Army converted these shops to Aviation Classification and Repair Activity Depots (AVCRAD). DARCOM became responsible for peacetime training in preparation for mobilization. During mobilization the Army will assign the National Guard's AVCRADs to DARCOM. One AVCRAD will deploy early to Europe using POMCUS equipment. The three remaining AVCRADs will assist deploying FORSCOM units, prepare follow-on aircraft to meet deployment criteria, and supplement the DARCOM depot maintenance workload. The deploying AVCRAD will straddle the aviation logistics pipeline, acting as a terminus for aircraft, engines, and components deploying and returning to CONUS depots and providing back-up support for USAREUR aviation maintenance units. The concept is known as aviation depot roundout.

Responding to a growing need for formal recognition of exceptional maintenance efforts at the organizational level, ODCSLOG developed a unit maintenance award during 1981, which the Army will offer for the first time in 1982. As part of the ongoing Maintenance Improvement Program (MIP), the award will provide an incentive for improving unit readiness. The Philip A. Connelly and National Defense Transportation Association (NDTA) awards served as models.

Supply Management and Depot Operations

The Army Stock Fund is a big revolving credit deposit that ODCSLOG maintains to purchase repair parts, such as ball bearings, nuts, and bolts, that are held at Army depots until they are sold to units in the field. During fiscal year 1981 the Army Stock Fund provided some 255,000 different items for the Army. Obligations to replenish depot stocks during the year amounted to $5.8 billion, while the depots shipped $5.4 billion worth of repair parts to units. The Army Stock Fund will cover fewer items in fiscal year 1982. The Deputy Secretary of Defense, after receiving updated comments from the services, directed on 7 July 1981 that as a test they transfer 200,000 consumable items to the Defense Logistics Agency for management. The Army share is 36,000 items. At the same time he chartered a joint steering committee and a joint implementation

group to develop a plan to carry out this decision. The plan was virtually complete by the end of the fiscal year.

The Procurement Account Secondary Item Program purchases spare components, such as engines, transmissions, and helicopter rotor assemblies. These are "free issued" to the units. Funding levels for the program during fiscal year 1981 amounted to $856.5 million compared with $478.3 million during 1980. The increase of $378.2 million resulted from the need to support new weapons systems that the Army fielded as part of its modernization program, from inflation, and from increases in production lead-times. The fiscal year 1981 supplemental budget made a considerable contribution toward the purchase of spares and spare parts in the Army's war reserves. The budget allocated $34 million to the Army Stock Fund (ASF) War Reserves for use by the Army contingent of the Rapid Deployment Force. The Procurement Appropriation, Army (PAA), line of the Defense budget received an additional $27.7 million, of which $24.7 million went to weapons and combat tracked vehicles and $3 million went to aircraft.

Central supply and depot maintenance activities, funded out of Program 7 of the Operation and Maintenance, Army (OMA), line of the Department of Defense budget, cost approximately $3.9 billion in fiscal year 1981. These programs provided for the receipt, storage, issue, and transportation of supplies and equipment worldwide; for the maintenance of an industrial base; and for the performance of necessary maintenance of supplies and equipment held in inventory to ensure their readiness for issue to units when needed. During 1981 rampant cost increases caused budget supplements and amendments and prevented the program from being executed as planned. The Army's actual obligations for fiscal year 1981 in Program 7 and planned obligations for fiscal years 1982 and 1983, in millions of dollars, are noted below:

	FY 81	FY 82	FY 83
Central Supply (includes BASOPS and RPMA)	2,793.9	3,043.5	3,291.9
Depot Maintenance	1,376.9	1,540.2	1,770.4

The Army Industrial Fund (AIF) is a working capital fund sustained on an annual basis by reimbursements from customer units and organizations for goods and services furnished by arsenals, depots, laboratories, missile facilities, and CONUS port terminals. The port terminals charge their customers for the shipment of major items of equipment to other installations where they receive high-level maintenance, a term that describes major repairs such as rebor-

ing an artillery tube and overhauling major motors and tanks. During fiscal year 1981, the AIF received reimbursements of $2.6 billion. Of this amount DARCOM obtained $2.4 billion, which it used to finance such functions as depot maintenance and supply and research and development. The remaining $0.2 billion went to the Military Traffic Management Command for CONUS ocean terminal services. During fiscal year 1981 the AIF received "pass through" funding in the amount of $77.94 million from OSD. This funding reimbursed the principal of the AIF for inflationary costs not included in the stabilized billing rates and provided an improved cash position for future operations. While the cost of operations for the AIF will rise in 1982, the growth reflects salary increases and other inflationary factors rather than significant program increases. ODCSLOG placed special emphasis during 1981 on reducing overhead costs in AIF operations to obtain the lowest possible costs for customers.

Base Operations (−) is that portion of the budget devoted to the unglamorous day-to-day operation of Army installations, such as food service and minor equipment maintenance. The minus in parentheses indicates that it does not include real property maintenance (RPMA), which was formerly a part of the Base Operations line but is now a responsibility of the Corps of Engineers. Base Operations (−) did not experience any major funding inadequacies in 1981. Congressional support for the fiscal year 1981 program supplemental resulted in additional funds for food service equipment, furnishings for bachelor housing, and civilian personnel. In addition, year-end funds, made available by the Director, Operations and Maintenance, Army (DOMA), allowed funding of all unfinanced requirements in the Base Operations (−) area capable of execution. Compared to other years, actual spending conformed closely to planning. In 1981, direct obligations of Base Operations (−) amounted to $1.9 billion, 14.7 percent of the Operation and Maintenance Appropriation.

In 1978 the General Accounting Office recommended that the Department of Defense either designate or establish a single manager over aeronautical maintenance depots to stop waste. An aeronautical study group, chartered by the Joint Logistics Commanders (JLC) to evaluate several management alternatives including a single manager, recommended a JLC action group as the best solution. OSD established a Joint Aeronautical Depot Maintenance Action Group to recommend policies and actions necessary for efficient aeronautical depot support to the services. However, in March 1981 Frank C. Carlucci, the Deputy Secretary of Defense, directed the Assistant Secretary of Defense for Manpower, Reserve Affairs, and

Logistics, Lawrence J. Korb, to reexamine the single-manager issue. Of the several options given to the services by the Assistant Secretary, the Joint Chiefs of Staff and the services preferred the status quo; the services would continue to operate their aeronautical maintenance depots and retain the primary role of managing their logistic support functions. In September 1981 Deputy Secretary Carlucci approved this recommendation and established the DOD Aeronautical Depot Maintenance Management Task Force to oversee efforts to improve the capability and efficiency of both organic and contractual depot maintenance for aeronautical systems.

In March 1978 the Readiness Project Office (RPO) published a disposition plan for the M551—the Sheridan light tank. It instructed Army commands to dispose of M551s in place except for the quantity needed for the National Training Center and for U.S. forces remaining in Korea. In January 1981 ODCSLOG directed DARCOM to reevaluate the initial disposition. ODCSLOG proposed several possible alternatives: the potential requirements for active U.S. forces at Fort Benning, Georgia, in the Anti-Armor Missile Division of the Infantry School and at Fort McClellan, Alabama, in the Smoke Generator Company of the Chemical School; Foreign Military Sales of M551s in Korea and CONUS on an "as is, where is" basis; and use of assets stored in USAREUR for hard targets. TRADOC studied the question once more and came to the same conclusion: there were no proposed uses for the vehicle. On 30 April Secretary of Defense Weinberger offered all excess M551s in the Army inventory—1,089—to the Republic of Korea for $10,000 each. By the end of the fiscal year, the Korean government had not requested a letter of offer, and it appeared that the government might not desire any of the Sheridans or only a limited quantity.

Transportation

In the area of transportation two themes dominated during fiscal year 1981. One was a traditional theme found in all military forces: to develop better equipment and to refine doctrine. The second was primarily organizational, although it too had doctrinal implications. The Department of Defense, in particular the Deputy Secretary of Defense, Mr. Carlucci, decided that joint commands provided a more effective and economic method of organizing transportation than separate service commands.

On 24 July 1981 the Joint Chiefs of Staff agreed to integrate the Military Traffic Management Command (MTMC) and the Military Sealift Command (MSC) in order to improve the movement of mil-

itary units and cargo in peacetime and war. The integrated command would report through the JCS to the Secretary of Defense. The JCS formed a special task force made up of representatives from the services to develop an implementation plan. On 10 August 1981 the Deputy Chief of Staff for Logistics formed an Army task force to develop Army positions. Mr. Carlucci signed a memorandum to the service secretaries and the Joint Chiefs on 16 September 1981 approving the integration of the two commands and establishing 1 October 1982 as the date by which integration should be complete.

On 30 June 1981 Mr. Carlucci directed the Army and Navy to develop a joint plan to transfer sealift cargo along with passenger bookings and related contract administrative functions from the Military Sealift Command (MSC) to the Military Traffic Management Command (MTMC) by 1 October 1981. Lawrence J. Korb, the Assistant Secretary of Defense for Manpower, Reserve Affairs, and Logistics, gave the Army the responsibility to develop the initial draft of the plan. On 1 September 1981 the services forwarded the joint plan to Dr. Korb. The Army recommended the transfer of functions as directed; the Navy recommended holding the transfer of functions in abeyance and forwarding the plan to the JCS special task force for consideration in developing the MSC and MTMC integration plan. The joint plan left several issues unresolved, namely, funding, personnel, and dates by which MTMC and MSC would accomplish specific actions. On 16 September Mr. Carlucci approved the joint plan, and on 25 September Dr. Korb directed the establishment of Military Export Cargo Offering and Booking Offices (MECOBO) worldwide by 31 October. MTMC and MSC personnel would staff the offices under the supervision of MTMC. The Navy would select the MSC personnel. Dr. Korb directed the Army to submit a detailed staffing plan for the functional transfer by 15 October. It was to identify military and civilian personnel requirements by grade and position, the source (MSC or MTMC) of personnel who would actually fill positions in the MECOBOs, and any shortages of personnel.

Mr. Carlucci also directed that the services implement a plan for consolidating personal property shipping offices, first in the continental United States and then overseas. Consolidated Booking Offices (CBO) will provide a central point for booking shipments with the carrier industry on behalf of multiple transportation offices. Local transportation offices will retain the function of dealing directly with service members and their families about to change station. The creation of CBOs will bring greater discipline into the moving industry since each one will

have the power to suspend or disqualify carriers for a wider region.

On 20 February 1979 the Defense Audit Service recommended that the Military Airlift Command (MAC) transfer its Category B (planeload charter) flights, used to carry Army personnel and their families overseas, from military to commercial terminals. Congressional hearings supported the recommendation, and the Air staff reduced MAC's 1981 budget submission to reflect the change. MAC had made limited use of commercial terminals for the Philadelphia-Mediterranean routes since 1975 and the Los Angeles–Philippine routes since October 1979. On 4 January 1981 MAC opened its first inland commercial gateway at St. Louis with routes to Korea and Japan. Mr. Carlucci approved a MAC plan to transfer operations to commercial terminals on 23 March 1981. The plan would close terminal operations at Travis Air Force Base and McGuire Air Force Base and designate them as readiness terminals. In September MAC selected Oakland to replace Travis as a gateway to Japan and Korea, effective 1 January 1982. By the end of the fiscal year MAC had not found a replacement for McGuire. Commercial gateways in peacetime provide cost savings and increased convenience for military passengers, but they also involve certain disadvantages, such as the loss of military billeting, of medical and other support, and of the ability to meet wartime requirements easily.

The Office of the Deputy Chief of Staff for Logistics, as DA executive agent for the military customs inspection program, began a review of the program in November 1979, which it completed and forwarded to the Deputy Assistant Secretary of Defense for Manpower, Reserve Affairs, and Logistics (Program Management) in March 1981. The review recommended that the Department of Defense continue its program with no changes in the existing procedures for cargo, ships, and aircraft; that ODCSLOG refinements to the preclearance procedures for passengers and their baggage be implemented; and that the existing selective enforcement program be expanded to promote greater efficiency. ODCSLOG also proposed eliminating customs inspections of mail posted from APO or FPO facilities and bound for the customs territory of the United States. The Deputy Assistant Secretary approved the conclusions and recommendations on 5 May 1981, and the U.S. Customs Service concurred on 27 May.

Implementation of refinements to the preclearance parts of

the program began during fiscal year 1981. Prior to August 1978, military customs inspectors (MCI) examined all DOD air passengers and their baggage before their departure. The absence of U.S. Department of Agriculture (USDA) accreditation for this program resulted in additional inspections at the airports of entry into the customs territory of the United States. Beginning in August 1978, military customs inspectors began making inspections approved by both the U.S. Customs Service (USCS) and the USDA at designated overseas bases, thus eliminating the need for a second inspection. The changes in 1981 included a random selection of passenger baggage for thorough examination with the rest receiving only brief inspection and passengers answering a few questions, changes which brought the DOD practices into conformity with those of the USCS and the USDA. By the end of 1981 the Pacific Command had fully implemented the new procedures, and European Command and Southern Command were preparing to do so. In addition the Department of Defense expanded the preclearance program to include military aircraft departing from Rota, Spain, and from Howard Air Force Base, Panama. ODCSLOG anticipates expansion to other sites during fiscal year 1982.

The selective enforcement program came from an effort by the European Command to reduce manpower and other resources used in the military customs inspection program. The European Command established criteria based on risk assessment to determine which personal property shipments should be inspected. Selective enforcement used permanently assigned personnel as military customs inspectors rather than borrowed or temporary duty personnel, thus reducing overall manpower requirements. USCS approved this concept in July 1980 for implementation in the European Command on an interim basis pending assignment of permanent personnel. The Army obtained the permanent spaces required and implemented the program at forty-one USAREUR bases on a permanent basis during fiscal year 1981. The Air Force programmed personnel for fiscal year 1983, and the Navy studied the feasibility of also establishing permanent spaces. Following the adoption of the recommendations in the ODCSLOG report on the military customs program, the Department of Defense expanded the selective enforcement program to include the Philippines and Guam in the Pacific Command. The department plans to expand it to other areas in the Pacific Command and to the Southern Command during fiscal year 1982.

A DOD-sponsored group, chaired by an Army ODCSLOG representative, and an ad hoc committee organized by the Joint Logistics Commander Conference (JLCC) studied the feasibility of establishing a single service manager for DOD railroad equipment. The DOD committee was oriented toward transportation management and so approached the single-manager question from a mobility and operational viewpoint with a emphasis on equipment control, centralized funding, and establishment of a rail mobilization base for maximum use of resources in an emergency or in wartime. The JLCC committee recommended that each service retain all management, accountability, and funding responsibilities, with a single service manager's office of thirty people formulating policy and coordinating and assisting the services in rail management. The Office of the Assistant Secretary of Defense will review the recommendations of the committees to determine if a single manager for rail transportation will be cost effective in view of the substantial number of personnel needed to put the concept into effect.

Changes in transportation organization and procedures had one implicit aim: to increase the nation's ability to move troops and civilians more efficiently in both peacetime and war. A number of Army studies focused explicitly on the movement of troops in emergencies. In the past, deployment plans focused on reinforcement by air until the first ships began arriving in the theater of operations. The current shortage of airlift capacity has made Army planners turn to sealift as an alternative. Both Army and Navy plans until fiscal year 1981 assumed sea deployment would begin at M plus 10 or later. To improve this situation, General Gregg (DCSLOG until 31 July 1981) initiated the CONUS Mobility Analysis, a study of the movement of Army units from home base to the port of embarkation. The analysis helped identify areas for improvement in the movement system from the time the units are notified until they arrive at port and board the ships, specified ways to improve the Army's deployment posture, and resulted in the dispatch of appropriate directives to the major commands and a coordination of efforts by various agencies on the Army staff. FORSCOM incorporated many of these actions into Emergency Deployment Readiness Exercises (EDRE)—annual logistics maneuvers in which each Army TOE unit packs up and moves to the point of embarkation with minimal or no advance notice. The Army staff revised the regulatory guides and regulations for movement planning and integrated the changes into operational planning.

ODCSLOG initiated three programs to reduce the time needed to move a selected force from its home base or, in the case of National Guard or Army Reserve units, from mobilization stations to a port of embarkation. The Joint Deployment Agency (JDA) sponsored a fourth program. The first program involved the purchase and storage at deployment stations of blocking, bracing, packing, crating, and tie-down (BBPCT) materiel that local commercial stores would not have available in enough time or quantities to support the mobilization or deployment mission. The home installations would canvass designated sources yearly to make sure that sources and stock levels remained adequate. The second program concerned upgrading the loading and receiving facilities of selected installation sites. It provided funds to upgrade the loading facilities, ramps, hardstands, trackage, bridge plates, and hand tools necessary to load equipment. The third program involved the establishment of pre-positioned permits for the movements of basic load ammunition for the Army component of the Rapid Deployment Force through previously designated surface ports of embarkation. In peacetime the Department of Defense ships all ammunition overseas from four military ammunition ports, two on the West Coast and two on the East Coast. In wartime this system would be too cumbersome. Units would have to deploy carrying their own ammunition. The permits allow them to move through commercial seaports with live ammunition. By the end of the fiscal year, pre-positioned permits were in place for all the major Army combat units of the Rapid Deployment Force. ODCSLOG, working in conjunction with other Army staff agencies, FORSCOM, MTMC, and the Coast Guard, was developing permits for combat support and combat service support units. ODCSLOG anticipated it would complete these permits and have them in place by the end of the first quarter of fiscal year 1982. The program sponsored by the Joint Deployment Agency sought to enhance rapid deployment by developing an automated data processing transportation network that would connect the command and control levels of the JCS, the Joint Deployment Agency, and the transportation operating agencies at installations and depots with mobilization and deployment installations. JDA planned to brief the appropriate commands and staffs on the concepts by December 1981.

The high volume of fire on the modern battlefield with the resulting equipment damage and loss poses real problems in providing adequate resupply. One possible solution is to ship ammunition, spare parts, and component parts in containers rather

than as individual items. Such a procedure would shorten the turnaround time by decreasing the time needed to load and unload vessels and would lessen constraints on moving supplies through the theater logistics system. Logisticians liken the process to pouring a substance through a funnel with a wide mouth and a very narrow neck. Every point at which supplies must be handled provides an opportunity for friction and delay, for example, damaged unloading ramps at a depot or major mechanical failure in the trucks of a transportation battalion.

On 10 June 1981 Brig. Gen. Francis J. Toner, the Director of Transportation, Energy, and Troop Support in ODCSLOG, and Maj. Gen. Vincent M. Russo, the Director of Plans, Force Structure, and Systems also in ODCSLOG, cosponsored a general officer review of Army containerization efforts. The participants discussed many important areas of concern including funding, equipment, maintenance, operations, and personnel and drew up a list of questions for further investigation. General Toner directed that various major Army commands and staff agencies provide information or make detailed studies to answer the questions. Their responses arrived in August and September and formed the basis for a comprehensive information paper on the Army containerization program. The paper set forth the goal of the program: to ensure that the Army uses the most efficient and cost-effective container systems available.

During fiscal year 1981 DARCOM shipped an average of 160 containers of ammunition to Europe each month. The Military Sealift Command (MSC) vessel *American Ranger* transported most of the containers. Sufficient numbers of military standard containers (MILVANs) existed to allow DARCOM to use them exclusively. No commercial containers were required.

The United States Army, Europe (USAREUR), made several proposals to increase the use of the Containerized Ammunition Distribution System (CADS). USAREUR proposed increases of from 160 containers per month to 350 or 400 per month to take advantage of shorter turnaround times, decreased demurrage, and increased throughput to forward areas. Use of containers added to the cost of shipping—about $105 for each short ton. In an effort to figure more accurately the cost and savings associated with CADS, USAREUR proposed and Headquarters, Department of the Army, approved a test scheduled for April 1982 in which the Military Sealift Command will carry 400 CADS containers to Europe. The test will also determine Europe's abil-

ity to handle this higher volume of containerized ammunition and will establish the level of CADS to be used in the future.

The Strategic Mobility Division of ODCSLOG determined that the Army had only half the capacity it needed to move supplies and equipment onto a beachhead, referred to as logistics-over-the-shore (LOTS), given the various contingency plans for worldwide operations. ODCSLOG programmed additional watercraft to overcome the deficiency for fiscal years 1983 through 1987 in the Program Objective Memorandum. The Army and the Navy agreed to Navy support for Army LOTS operations using the Navy Auxiliary Crane Ship as a temporary container discharge facility (TCDF). ODCSLOG prepared requirements documents for the TCDFs and the new generation of watercraft, the commercial landing craft, the logistic support vessel, and the heavy amphibian. The documents were nearing completion at the end of the fiscal year. During 1981, ODCSLOG also reviewed the USAREUR Marine Reserve Fleet at Hythe, England, for possible redistribution to support Army units in the Rapid Deployment Force. ODCSLOG activated one additional Lighter Amphibious Resupply Cargo detachment. The craft has a sixty-ton cargo capacity. ODCSLOG anticipated activation of two more companies (four detachments).

The Transportation School at Fort Eustis, Virginia, will receive the first two production models of the amphibious lighter air-cushion vehicle (LACV). Designated the LACV–30, the new vehicle moves on a cushion of air. It is 76.7 feet long, 36.9 feet wide, and weighs 115,000 pounds; it uses an average of 260 gallons of fuel per hour and has a maximum over-the-water speed of fifty-seven miles per hour. It can move thirty-ton cargoes from ships to shore or even further inland if port facilities are unavailable. During fiscal year 1981 the Transportation School trained the first class of twenty-five soldiers to operate, navigate, and maintain the lighters in a fifteen-week course.

The Logistics Evaluation Agency (LEA) completed a study of the use of the floating army maintenance facility (FAMF), a concept used in Vietnam, to support the Rapid Deployment Force (RDF). The Military Sealift Command (MSC) developed the idea of using a barge as a tender. At the end of the fiscal year the Marine Corps was examining the MSC concept, called Bartender, to support Marine Corps aviation equipment. An Army representative at LEA was analyzing it for use in support of the Rapid Deployment Force as the year closed. The Office of Aviation Logistics in ODCSLOG will analyze and evaluate both studies

and send them to DARCOM and FORSCOM for comment. On the basis of this information the office will prepare a recommendation for the DCSLOG on the future use of floating maintenance facilities by the Army.

After a briefing to the Army Staff Council on 8 October 1980, the Army began funding a program to modernize the nontactical vehicle—formerly the utility vehicle—fleet, which had required too many replacements caused by a lack of procurement funds during recent years. Approval of an amended fiscal year 1982 budget request and a functional program deployment increment package for the fiscal year 1983–1987 Program Objective Memorandum should eliminate replacement requirements thereafter. Congress did not support a fiscal year 1981 supplemental request which would have accelerated nontactical vehicle modernization.

ODCSLOG initiated a proposal to delegate leasing authority to DARCOM so that all inventory activities would be located at the same headquarters. The office hoped to begin implementation during the first quarter of the new fiscal year. It also reviewed all management functions as they related to nontactical vehicles. The study concluded that while the current structure was adequate, ODCSLOG should incorporate all nontactical vehicle requirements in the Planning, Programming, and Budgeting System. The office increased its participation in developing the Army Materiel Plan and specification reviews to ensure that user needs were met. ODCSLOG asked the major commands to consider adopting the TRADOC–FORSCOM Automated Vehicle Management Information System in order to facilitate the collection of data about nontactical vehicles. ODCSLOG increased its overall liaison effort with the General Services Administration (GSA), which helped convince GSA to relocate its vehicles so that the Army might avoid the cost of some commercial leases.

Several Army installations, including Fort Campbell, Kentucky, and Rock Island Arsenal, Illinois, lost rail service because branch lines serving the installations were abandoned. Fort Campbell leased, with an option to buy, the eighteen-mile branch line which serves it. Rock Island Arsenal decided to acquire a small section of track to connect it with the Burlington Northern Railroad and replace its dependence on the bankrupt Rock Island Railroad, which discontinued service. Camp Edwards, Massachusetts, Fort Indiantown Gap, Pennsylvania, and Fort Dix, New Jersey, were on branch lines being considered for abandonment by the serving carriers. These installations faced a possible permanent loss of service because the present and foreseeable vol-

ume of rail shipments was too low to justify either the lease or acquisition of the line or a subsidy for the carrier. ODCSLOG planned to fill peacetime and mobilization requirements by using trucks.

Facilities, Construction, and Real Property

The Military Construction, Army (MCA), line of the Department of Defense budget provides funds for the construction of facilities. Major categories include operation and training; maintenance and production; research, supply, and administration; hospital and other medical construction; troop housing and community support; utilities, land improvements, and pollution abatement; planning and design, minor construction, and access roads; and NATO. Major projects during fiscal year 1981 included an addition to Tripler Army Medical Center, Hawaii, and renovation of the existing structure and the construction of a multiple-story permanent hospital at Fort Carson, Colorado.

The history of the FORSCOM portion of the MCA program for fiscal year 1981 illustrates the vicissitudes that go into arriving at the final military construction figure. FORSCOM submitted its part of the fiscal year 1981 MCA program to the Department of the Army in February 1978. It consisted of sixty-six command-sponsored projects costing some $215 million and represented those tasks considered most pressing by both FORSCOM headquarters and the installation commanders. In June 1978 FORSCOM revised the list to forty-one projects with an estimated cost of $262 million, and a second time in March 1979 to sixty-three projects costing some $205 million. However, insertions of previously deferred projects and changing priorities continued, as in past years, to pare down the recommended list. After intensive review by agencies in Washington, only three of the original projects remained as the program went forward to Congress. Congress began hearings on the total 1981 program in April 1980 and completed passage of both the authorization and appropriation bills by 1 October 1980. President Carter signed both bills into law later that month. This legislation gave U.S. Army Forces Command $272 million in authorizations—not including minor construction—and $184 million in appropriations to fund forty-six projects, including minor construction. Thirty-two of these projects, which were estimated to cost $12 million, were supported by the command.

The fiscal year 1981 and 1982 programs suffered from nu-

merous deferrals made in the fiscal year 1979 and 1980 programs. Administration budget cuts and overall lower funding guidance by the Department of the Army led to even more deferrals; as in previous years, the initial thrust for development of the fiscal year 1982 program was in the reprogramming of previously deferred projects. In April 1981, the Reagan administration submitted a budget amendment which reduced the fiscal year 1982 program to $256 million. It based the reduction on an anticipated lower rate of inflation and on savings from changes in the administration of the Davis-Bacon Act. The FORSCOM portion of this program contained some forty-one command-sponsored projects for a total cost of $153 million.

Although the deficiencies that resulted from underfunding military construction in the continental United States were serious, the situation was not yet critical. In Europe, however, the situation was more acute. General Frederick J. Kroesen, the Commander in Chief of USAREUR, complained:

> The inadequacies of troop housing, the shortage of family housing, the makeshift, unsatisfactory, unhealthy working conditions for large segments of the command, the exorbitant backlog of maintenance of repair projects all contribute to a cancerous drain on the morale and commitment of the force as a whole.

USAREUR was short some 15,000 barracks spaces in 1981. The deficiency was made up by putting six men in four-man rooms and five men in three-man rooms. The facilities were all quite old with two exceptions, the Berlin brigade post and the new brigade post at Osterholz-Scharmbeck in the north—both built and maintained by the German government. All the others belonged to the pre–World War II German Army. The oldest, a kaserne (small post area), dated from the fourteenth century. Most, however, were built during the Franco-Prussian War (1870–1871) and after, through the 1930s. The working conditions in the maintenance shops and supply rooms at these installations suffered from inadequate heating, lighting, and plumbing. The Army had tolerated expedients in the past simply because it regarded duty in Germany as temporary.

The situation was most appalling in the area of family housing. The command was short some 8,000 housing units for families authorized to come to Europe. The dependents had to either remain in the United States or live on the local economy. In addition some 23,000 young soldiers who were not authorized to bring their families at government expense brought them anyway. They lived off-post in substandard "ghetto" housing. On-

post housing was poorly designed and cheaply constructed. It dated from the 1950s when the Army still contemplated a short stay in Europe. Maintenance and operations budgets were underfunded. In 1981 a $500-million maintenance backlog existed. In practical terms this meant families were living in houses where inadequate heating systems had not been replaced, doors and windows leaked, and plumbing systems could not support the automatic dishwashers that the Army installed. General Kroesen first became familiar with the problem when he was made commanding general of VII Corps in July 1975. After a tour of the corps area he observed that "if someone told me we were going to suffer a Warsaw Pact attack on Christmas Day, I would still say family housing is our No. 1 problem." His estimate of the seriousness of the situation had not changed in the intervening period, but he was more optimistic that a solution would be found in the future. In 1981 the problem attracted media attention and a number of congressmen expressed concern.

Deterring a conventional attack by Warsaw Pact forces or Soviet adventurism in other parts of the world depends not only upon the strength of forward deployed forces in Europe and Korea or the Rapid Deployment Force, but also on the ability of the United States to mobilize a technically sophisticated mass army in time of crisis. During 1981 that capability weakened as the position of certain basic industries in the United States saddled with obsolescent plants and equipment, such as steel and automobiles, continued to decline in the face of foreign competition. General David C. Jones, the Chairman of the Joint Chiefs of Staff, testified in January 1981 before the Senate Committee on Armed Services that

> the more we look at mobilization, the more we are appalled at the lack of industrial preparedness in the country and the procurement problems that result. Because of low procurement rates, not only do we have to spend more than we should, but if we tried to crank up this country in a hurry and turn out things, we would find we are limited in many, many areas.

This problem, discussed at greater length in Chapter 3, is broad based, encompassing all of society, and is clearly beyond the ability of even all four military services working together to correct, let alone one. Yet the Army does what it can. The Production Base Support portion of the Army's military construction program provides the necessary construction for the development, maintenance, and retention of an efficient industrial base. Although five procurement programs provide funds for the construction of industrial facilities, current work is largely devoted

to the ammunition and tank programs. During fiscal year 1981, the Corps of Engineers placed $82 million under contract in projects. The ammunition program received $70 million, the tank program $12 million. Approximately $50 million of the ammunition program awards went to the cargo metal-parts facility, the administration building, and support facilities at the new Army ammunition plant in Mississippi. Design continued on projects valued at about $275 million.

Congress appropriated a total of $10.17 million for construction of research, development, testing, and evaluation facilities in fiscal year 1981. This figure included funds for the following Army projects:

Laser Test Facility, Camp A. P. Hill, Virginia	$ 930,000
Multiple-Use Instrument Sites, White Sands Missile Range, New Mexico	1,000,000
Research Animal Holding Facility, Fort Detrick, Maryland	1,350,000
Animal Housing Facility, Fitzsimons Army Medical Center, Colorado	790,000
Frost Effects Research Facility, Cold Regions Research and Engineering Laboratory, New Hampshire	$6,100,000

The Military Construction, Army Reserve (MCAR), program provides for the design and construction of facilities for the Army Reserve's training needs and mobilization mission. Typical facilities include Army Reserve training centers (ARTCS), organizational maintenance shops (OMSs), equipment concentration sites (ECSs), weekend training areas (WETAs), and annual training facilities (ATFs). During fiscal year 1981, the Corps of Engineers awarded construction contracts on projects valued at $42.2 million. At the same time contractors completed work on projects costing $27.2 million.

The Corps' portion of the fiscal year 1981 Air Force Military Construction Execution Program totaled $548.1 million. The Corps anticipated an award of $502.7 million, but only received $358.2 million. Criteria changes, redesigns, funding delays, and inadequate funding account for only a portion of the difference. The major cause was a reprogramming action that resulted in the deferment of fiscal year 1981 projects valued at $102.9 million. The Corps subsequently used the majority of these funds to implement fiscal year 1979 and 1980 projects previously deferred to allow the start of construction during 1980 of the space transportation system (STS) launch complex at Vandenberg Air

Force Base, California. Adding the $120.9 million in deferred projects, total execution for the fiscal year 1981 program amounted to $479.2 million, or 95 percent of the forecast and 87 percent of the total program, falling just short of the goal established by the Office of the Secretary of Defense. Design continued on an Air Force program that involved outlays of $1.26 billion for fiscal year 1982 and $3.9 billion for 1983.

In June the Corps halted design on MX projects totaling $365 million in fiscal year 1982 and $1.7 billion in 1983 pending President Reagan's decision on the basing mode. Organizational efforts in support of the MX weapon system continued with the development of the Corps of Engineers MX Program Agency (CEMXPA). Located with the Air Force program manager at Norton Air Force Base in California, CEMXPA is the outgrowth of the South Pacific Division's (SPD) role as the Army office with primary responsibility for the MX. It will eventually become a separate field operating agency. In the late spring CEMXPA began taking direct operational control of the program to include the $75 million MX test facilities under construction at Vandenberg Air Force Base, as well as design of the fiscal year 1982 and 1983 deployment facilities, totaling approximately $2 billion. CEMXPA worked through ten existing Corps divisions, districts, and laboratories to manage this sizable workload. In June the effort came to a halt pending President Reagan's decision on basing. At the close of the fiscal year the President had not yet announced his preference, but CEMXPA anticipated a substantial reduction of the program.

The Corps of Engineers also did work for various Department of Defense agencies. The total amount of construction awards for each agency in fiscal year 1981 was as follows:

Defense Logistics Agency	$ 4,349,000
Defense Mapping Agency	1,500,000
Defense Dependents School System	45,806,000
National Security Agency	5,067,000
Defense Communications Agency	16,500,000
Other DOD agencies	$35,249,000

The Corps of Engineers has had almost total control of the Department of Defense Recruiting Facilities Program since fiscal year 1980, when the General Services Administration (GSA) reclassified recruiting offices from general-purpose to special-purpose spaces and delegated five-year firm-term leasing authority

to the Corps. During fiscal year 1981, the Corps completed 1,853 actions related to the program. They included the establishment of new offices and the relocation, expansion, and upgrading of existing offices. As of 30 September 1981 the four services were operating approximately 7,500 recruiting offices.

In 1979 the U.S. government embarked on a policy of increased military presence in the Indian Ocean and the Persian Gulf to include the construction of facilities in the sultanate of Oman. The Corps of Engineers will construct facilities using U.S. appropriated funds at four locations: Masirah Island, Khasab, Thumrait, and Seeb. As of 30 September 1981 the Corps had awarded three construction contracts, two at Masirah Island at a programmed amount of $82.5 million and one at Khasab programmed for $3 million. The Khasab construction was supplemented by $1.8 million from Foreign Military Construction Sales funds for an extended runway and parking apron at Khasab airfield.

In addition to construction of a Rapid Deployment Joint Task Force (RDJTF) contingency facility in Oman, the Corps of Engineers is the construction agent for an austere staging base at Ras Banas, Egypt. The estimated program value over four fiscal years is $500 million. Under a U.S. Air Force foreign military sales case, the Egyptian Air Force purchased forty F–16 fighter planes from the United States. The Corps of Engineers assisted the Egyptian Air Force and the United States Air Force in the design of facilities at An Shas Air Force Base, Egypt, to support these aircraft. In addition, the Corps provided soil investigation, designed the foundations of microwave towers, and began design of a cargo terminal.

In addition to the other services and DOD agencies, the Corps of Engineers provided support to the U.S. Geological Survey (USGS) in Jidda, Saudi Arabia, and to the State Department in Moscow, USSR. The Corps continued work on the design of the $65-million U.S. Geological Mission, a project which is funded by the U.S. government. On 4 August 1980 Secretary of the Army Clifford L. Alexander directed the Chief of Engineers to assign four construction engineers to assist the Department of State in building a new U.S. embassy complex in Moscow. All four had reported to duty by May 1981.

At the close of fiscal year 1981 the Department of the Army controlled approximately 11,918,088 acres of land, which had cost $16.8 billion with improvements. During the fiscal year, the General Services Administration disposed of 2,556 acres of Army land and improvements in the United States, which had cost $9.5

million. In addition, the Army declared excess and reported to the General Services Administration for disposal 78,377 acres and improvements which had cost $183.1 million to acquire and build. At the end of the fiscal year there were 42,628 outstanding grants covering 7.2 million acres of Army and Air Force lands. One disposal action was particularly significant because it marked the first time the Army turned a major installation over to a state to encourage the creation of jobs in an area of high unemployment. In July 1981 Paul W. Johnson, the Deputy Assistant Secretary of the Army for Installation and Housing, presented a deed for the Michigan Army Missile Plant to the Michigan Job Development Authority. In exchange he accepted for the Army two buildings at the Detroit Arsenal constructed by the state of Michigan at an estimated cost of $25 million. The Army expected to increase efficiency and save energy by consolidating its activities at the Detroit Arsenal. Michigan sought to boost its economy by using the plant for automobile manufacturing. At the end of the fiscal year the state was negotiating an agreement with Volkswagen of America. Michigan expected to create 5,000 new jobs.

During 1981 the General Services Administration prepared real property surveys on twenty-one Army holdings, including two major properties: Fort McClellan, Alabama, and Fort Indiantown Gap, Pennsylvania. In eight of the reports, GSA recommended that the Army declare land surplus. The total came to 2,209.2 acres. The Army agreed to classify 73 acres excess and at the end of the year was still considering whether to add an additional 34.3 acres to this category. The 73 acres involved two properties: 60 acres at Byrd Field, Virginia, a National Guard facility, and 13 acres at Wayland, Massachusetts, an Army Reserve facility and former Nike site.

The Corps of Engineers acquired land for the U.S. Air Force, U.S. Department of the Interior, and the U.S. Department of Energy during fiscal year 1981. The Corps purchased land and improvements for air installation compatible-use zones (AICUZ) at eleven Air Force bases. Some three hundred acres were involved at a cost of $1.7 million. The Corps continued to buy land for the Department of the Interior's Big Thicket National Preserve in Texas. The Corps' Beaumont Project Office obtained 199 tracts containing 5,134 acres at a cost of $5,952,674. These purchases brought total acquisitions through 30 September 1981 to 1,361 tracts, consisting of 71,833 acres at a cost of $67,676,605. Also in 1981 the Corps acquired 45 tracts encompassing 90 acres at a cost of $34,439 for the Department of Energy's Strategic Petroleum Reserve program. Since the incep-

tion of the program the Corps had purchased 1,140 tracts containing 4,882 acres at a cost of $88.2 million. For all programs the Corps spent $1.7 million during 1981 in relocation assistance payments to 275 applicants displaced by its land acquisition activities.

Physical Security

In June 1981 General Vessey, the Vice Chief of Staff, directed Lt. Gen. Richard G. Trefry, The Inspector General, to assess the Army's capability to counter terrorism. Following an examination of policy, procedures, and organization, General Trefry concluded that the concentration of all matters pertaining to terrorism under the provost marshal led to the widespread belief that antiterrorist activities were a military police responsibility, with the result that commanders and operational staffs were not as involved in this area as they were in other operational issues. The growing evidence of a terrorist threat against U.S. forces, particularly in West Germany, had not led to any increase of physical security at U.S. bases. The only activity in this area, an upgrading of security at nuclear storage sites, was an on-going process unrelated to recent developments. General Trefry recommended that the Office of the Deputy Chief of Staff for Operations and Plans take the lead in crisis management for terrorist actions.

Lt. Gen. Glenn K. Otis, the Deputy Chief of Staff for Operations and Plans, saw the issue in broader terms: Could the Army defend itself against all types of criminal acts including conventional crimes against persons and property, demonstrations against the Army, and terrorist acts such as the seizure of hostages and the barricading of terrorists and hostages in an office or building on an Army post or installation? General Otis argued that ODCSOPS should be the agency responsible for identifying all problems and proposing solutions in this area. General Trefry agreed with this analysis, but Lt. Gen. Robert K. Yerks, the Deputy Chief of Staff for Personnel, disagreed. Generals Otis and Yerks then met with General Vessey to discuss the study by The Inspector General. General Vessey reaffirmed that the Deputy Chief of Staff for Personnel was responsible for installation security, while responsibility for overall security of the command rested with the Deputy Chief of Staff for Operations and Plans. DCSOPS was entrusted with the authority to develop plans to integrate military forces to counter all threats to the security of the command, including terrorism. Based on General Vessey's

decision, General Otis directed ODCSOPS to develop a comprehensive plan to coordinate Army security efforts and keep them priority items on the agenda of all commanders by giving each of the technical channels reporting to them some responsibility for security.

Shortly thereafter, General Meyer, the Chief of Staff, expressed concern over the potential for increased civil violence and disorder and directed the preparation of a Civil Disturbance Action Plan. A study by the Military Support Division of the Operations Readiness Mobilization Directorate in ODCSOPS revealed that both FORSCOM and the Military District of Washington believed that they had enough troops to successfully carry out the civil disturbance mission. Both the National Guard and active forces received training as required. The Army possessed enough equipment for use in civil disturbances in the continental United States both in units and pre-positioned in depots. The equipment was in good condition except that some communication equipment needed to be replaced. By the end of the fiscal year the Army was making the necessary corrections. Finally, the study found that current civil disturbance doctrine was still valid. General Otis recommended and General Meyer agreed that in the future ODCSOPS would consider civil disturbance planning as part of the Security of the Army plan.

A committee of ODCSOPS action officers wrote a draft of Army Regulation 30–20, "Security of the Army." The AR attempted to eliminate the attitude that security is a provost marshal function instead of a command function by requiring that the major commands direct their installations to prepare an operation plan that would meet several minimum conditions. The operation plan would integrate all existing security measures into a single command-directed plan. Each command would periodically review the adequacy of all security plans and procedures, particularly those concerning antiterrorism, civil disturbances, and crime prevention, in the light of possible threats. Concurrently the commands would assess their vulnerability based on a review of physical security surveys, counterintelligence and operational security evaluations, and crime prevention surveys and inspections by their criminal investigation division. Each command would establish a commandwide security awareness and training plan with particular emphasis on combating subversion, terrorist sabotage, and criminal activity. It would also assess annually civil disturbance training, equipment, and overall preparedness and hold semiannual command post exercises designed to train installation staffs to meet crises precipitated by terrorists

and other subversive or criminal elements. The Army staff and the major commands were reviewing the draft of the AR at the end of the fiscal year.

The increase in conventional crime on Army installations during 1981 led the Army to conduct a servicewide crime campaign from 7 to 21 September 1981. Major areas of emphasis in the campaign included the security of barracks, bachelor quarters, and family residences; the Army Operation Identification Program, which entailed recording items of personal property and placing an identifying code on each item; and neighborhood watches, which involved looking out for the safety and security of each individual's property and that of the neighbors. The objectives of the Army Crime Watch Campaign were to increase awareness concerning the nature and volume of burglaries and house breakings; increase active involvement in securing troop billets, senior enlisted and officer bachelor quarters, and family quarters; educate service members and families on practical, cost-free security measures that they could take to reduce opportunities for crimes against their living quarters and property; and encourage and assist neighbors to initiate collective measures to watch out for the security of each other's personal property and to report suspicious activities. The Army Operation Identification Program introduced a standard Armywide, owner-applied numbering system for marking personal property. Service members and their families were to mark their personal property using the social security number of the service member with a "USA" prefix. The prefix would alert any military or civilian law enforcement agency which recovered the property that it belonged to a member of the U.S. Army and that the individual could be located by using the Army World-Wide Locator System.

11. Research, Development, and Acquisition

The Army's Research, Development, and Acquisition (RDA) effort suffered severe budget constraints until early 1981. Within lower-than-requested funding levels, the Army tried to create a balance to achieve as great a degree of near-term readiness, modernization, maintainability, and mobilization as possible. But, as stated by Lt. Gen. Donald B. Keith, Deputy Chief of Staff for Research, Development, and Acquisition (DCSRDA), there were "significant shortcomings in each of these areas." During the early weeks of 1981 the new Reagan administration made significant changes in the budget request for fiscal year 1982. Within the revised budget, RDA dollars were substantially increased. The increase funded the most serious shortcomings. Specifically such programs as the M1 tank, the Bradley Fighting Vehicle System, Patriot, DIVAD, and Roland, to name a few, were in much better shape.

Planning and Budgeting

The initial approved program (IAP) for fiscal year 1981 was based on the President's budget of $4.234 billion, adjusted to reflect a "worst case" situation based on congressional actions of September 1980. In addition to deferrals for pending congressional reductions, constraints were placed on the Army research, development, test, and evaluation (RDTE) program by the Undersecretary of Defense for Research and Engineering (USDRE), who identified twenty-seven programs as being of special interest. These included defense research sciences, high-energy laser technology, the infantry man-portable antiarmor weapon (IMAAWS), identification friend or foe (IFF) radar development and equipment, division air defense command and control, Viper, aircraft electronic warfare self-protection system, NAVSTAR global positioning system, joint interoperability of tactical command and control system (JINTACCS), Chaparral, and joint tactical communications (TRI-TAC).

IAP deferrals totaled $601.8 million, of which $528.2 million was deferred by the Office, Secretary of Defense (OSD), and $73.6 million by the Department of the Army (DA). OSD deferrals included the following significant programs: ballistic missile defense (BMD) advanced technology ($10 million), BMD

systems technology ($30 million), IMAAWS ($21.3 million), SHORAD command and control ($15.4 million), tank gun ($57.2 million), and Chaparral ($20.8 million). DA deferrals included advanced attack helicopter (AAH) ($26.3 million), Hellfire ($10.3 million), DIVAD ($8 million), and SOTAS ($6.2 million).

The final RDTE&A appropriation, approved by Congress and signed by the President in late December 1980, amounted to $3.087 billion, $147 million less than the President requested. General reductions totaled $134 million, of which $120 million had been requested as a hedge against inflation. The remaining $14-million net reduction included program cuts of $151.4 million, which were largely offset by specific program increases of $137 million. Significant program changes included defense research sciences (−$12.4 million), missile and rocket components (+$6.2 million), high survivability test vehicle (+$25 million), commander's information executive system (−$8.4 million), Vulcan product improvement (+$9.6 million), advance rocket control system (+$29 million), corps support weapons system (+$7.2 million), Army helicopter improvement program (+$20.9 million), Hellfire fire and forget missile (+$6.9 million), and DARCOM ranges test facilities (−$10 million).

Based on guidelines of the new administration, a fiscal year 1981 supplemental was submitted to Congress in March 1981. This request reflected a net increase of $79.5 million to the appropriation, which was subsequently reduced to $41 million by congressional action. The major change imposed by Congress was disapproval of the $32-million increase requested for BMD systems technology. Three major fiscal year 1981 reprogrammings were approved by Congress during the year—interim tactical electronic processor (+$7.498 million), IFF development (+$2.5 million), and a classified project (+$2.2 million).

Zero-base budgeting remained the primary method for initial formulation of the RDTE&A budget request for fiscal year 1982 submitted to and reviewed by OSD and OMB during October and November 1980. OSD again expanded the Army's five-band presentation to eight bands for a more detailed display of RDTE&A programs.

The Army's RDTE&A budget request of $3.557 billion for fiscal year 1982 was submitted to Congress in January 1981. In March 1981, based on new administration guidance and submitted concurrently with the fiscal year 1981 supplemental request, an amended budget was proposed increasing the Army's RDTE&A fiscal year 1982 request to $3.905 billion. During the period, the House and Senate Armed Services Committees con-

sidered the revised 1982 budget request. A special amendment was proposed but not ready for submission until after the beginning of fiscal year 1982. As a result, neither the fiscal year 1982 authorization bill nor the appropriation bill had been cleared as of 30 September 1981.

At the close of the fiscal year, RDTE&A direct obligations represented 99.99 percent of fiscal year 1980 availability and 94.4 percent of fiscal year 1981 availability, both of which met or exceeded OSD goals. Overall RDTE&A disbursements for fiscal year 1980 were 92 percent and 57 percent for fiscal year 1981, both of which were within OSD goals.

Work began in the first quarter of fiscal year 1981 to develop the first HQDA Long Range RDA Plan (LRRDAP), which covered fiscal years 1983–1997. The objectives of the plan were to (1) provide a document that integrated RDA planning into the Planning, Programming, and Budgeting System (PPBS), (2) produce a coordinated plan that showed how the Army would develop and acquire materiel needed to fight in the 1990s and beyond, (3) create a mechanism to add stability to the RDA process, (4) invent a process that examined total resources available early in the development cycle, (5) provide additional focus for the Army's technology efforts, and (6) establish a link between the Army's five-year program and the period ten years beyond.

TRADOC and DARCOM provided user and developer input for the LRRDAP in January 1981 based on requirements developed from the TRADOC mission area analysis. ODCSOPS reviewed the information and assigned priorities, and then ODCSRDA formed a plan. The result, LRRDAP 83–97, was completed in July 1981. It consisted of two volumes. Volume I was a short summary-type document designed to be used by senior decision makers. Volume II contained the details of the plan. Work began on LRRDAP 84–98 in early July 1981, and a draft version was sent to users and developers for comment on 25 July 1981.

The Army has been using the total risk assessing cost estimate (TRACE) successfully for several years in research and development (R&D) to determine a project's budget. Nine Army R&D projects were funded in fiscal year 1981 using the TRACE budget concept. This year ODCSRDA initiated a study to evaluate the potential of applying the TRACE concept to procurement.

The obligation plan for the Army's procurement appropriation for fiscal year 1981 was $11.956 billion. This amount included $9.721 billion for direct Army procurement and $2.235 billion for reimbursable customer sales. The plan included all

fiscal year 1981 obligations from funds appropriated in fiscal years 1979, 1980, and 1981. Actual obligations fell short of the plan by $159.8 million—$173.8 million over the plan in direct funds and $333.6 million under for reimbursable funds. The lapse of funds for the expiring fiscal year 1979 program amounted to $108.9 million, which was $71.4 million in direct funds (including approximately $40 million for contingent liabilities) and $37.4 million in reimbursable funds.

Fiscal year 1981 saw significant improvement in funding for tactical and nontactical vehicle programs. The 1981 supplemental appropriation increased the budget for tactical wheeled vehicles from $226.9 million to $457.9 million. A five-year contract was signed with AM General Corporation on 8 April 1981 to produce 11,394 M939-series five-ton trucks, with an option to increase production by 100 percent each year. This vehicle will come in several different body styles: cargo, dump, tractor, van, and wrecker. The vehicles are urgently required to fill shortages in troops units, to meet interchange requirements (that is, support the fielding of new systems), and to fill POMCUS shortages. On 22 May 1981, a five-year contract was signed with Oshkosh Truck Corporation for 2,140 ten-ton trucks, with an option to increase production by 250 percent a year. This vehicle will come in cargo, tanker, recovery, and tractor versions. Additional competitive acquisition occurred for M915A1 commercial line haul tractors and numerous trailers and nontactical vehicles, including a small number of personal security vehicles (armored sedans) for key commanders in Europe because of terrorist threats.

Science and Technology

The 1981 summer studies of the Army Science Board and the Defense Science Board were "Equipping the Army in 1990–2000" and "Operational Readiness with High Performance Systems," respectively. The first provides recommendations to achieve a well-equipped, balanced force in the 1990s; the second provides recommendations to assist the Army in achieving acceptable operational readiness rates on its high performance systems.

The Army and the Defense Mapping Agency (DMA) signed a memorandum of understanding (MOU) initiating the DOD terrain-analysis program. DMA will produce standard terrain-analysis products while the Army will concentrate on turning out nonstandard terrain products for tactical and theater commanders. The Army submitted the first formal digital terrain data base

requirement to DMA to support weapons and intelligence systems. A prototype is being put together for testing at Fort Lewis, Washington, early next year. A significant updating of CONUS mapping requirements was made and submitted to DMA. Survey and assessment of all requirements was completed by subordinate commands and refined at the Office of the Assistant Chief of Staff for Intelligence (OACSI) to reduce many requirements and to gear mapping efforts toward priority operational plans and major training areas.

The Waterways Experiment Station (WES) started the airfield damage repair project for fiscal year 1981 by concentrating on two repair materials: a well-graded crushed limestone that would be capped, once bomb craters were filled, and a liquid grout and stone mixture that would harden after being placed in the damaged areas. These two methods provided an interim solution that met NATO requirements. Combat engineering units field-tested both methods with satisfactory results.

A proposal to redirect the airfield damage repair project called for backfilling the bombed crater with debris, cutting the jagged crater edges to uniform size, and then placing prefabricated matting or concrete slabs as the surface layer rather than using a limestone and grout-stone fill. Advantages of the proposed method would include less work and fewer personnel, greater permanency, all-weather application, and faster repair completion. WES is currently investigating the possibility of perfecting water-jet cutters so that they can cut the thick concrete required.

The U.S. Army Coastal Engineering Research Center (CERC) and the National Oceanic and Atmospheric Administration's (NOAA) National Ocean Survey jointly sponsored the Atlantic Remote Sensing Land-Ocean experiment (ARSLOE) during October and November 1980. Working groups from federal agencies and official participants from Canada, France, Japan, and Norway converged on CERC's Field Research Facility (FRF) at Duck, North Carolina, for a two-month research effort to gain knowledge on how ocean waves are transformed as they move to shore, to improve storm prediction techniques, and to verify data-collection methods. Both traditional oceanographic meters and the more recent remote sensing technology were included among the sensors used in ARSOLE. Three test sites were used during the experiment: the Elizabeth City area for land features, the mouth of the Chesapeake Bay for ocean fronts, and the FRF facility pier at Duck for waves. During the experiment a storm blew up on 23 October that lasted five days. Researchers now

have a "captured" storm, well documented with growth and decay of waves, energy transfer, and the effect of winds blowing with and against the direction of the waves. This represents unique data for use in oceanographic research.

The first of a series of field experiments, Snow-One, was conducted from 5 January to 13 February 1981. The U.S. Army Cold Regions Research and Engineering Laboratory, Hanover, New Hampshire, carried out the field experiment at Camp Ethan Allen Training Center in Vermont. Other Army commands and centers participated, as well as Navy, Air Force, Marine Corps, and academic and commercial research laboratories. Snow-One gave electro-optical systems researchers, developers, and managers an opportunity to establish an initial performance data base and to evaluate developmental hardware in a wet, cold environment. Measurements were made under conditions of rain, fog, and wet and dry snowfalls.

Results of Snow-One indicated that visibility through far infrared transmission appeared to be equally affected by falling snow; snow cover could pose a problem to both infrared and near millimeter-wave target location and tracking systems; transportation and operation of modular universal laser equipment was very difficult under winter conditions; and performance of the state-of-the-art snow characterization instrumentation used was excellent.

Ballistic Missile Defense (BMD)

A variety of factors provided impetus to the BMD research and development program this year. Some of these factors were the growing uncertainty of this nation's ability to influence the buildup of Soviet strategic weapons through negotiation, an increased awareness at all government levels of the BMD potential and the significant contributions it could make in the offensive-defensive strategic equation, confidence based on successful experimental and analytical verification of BMD concepts and hardware since the deactivation of the Safeguard system in 1976, and the decision to proceed with full-scale engineering development of the Air Force MX system. The BMD organization, in its research and development efforts, emphasized the more advanced, maturing projects in both the Advanced Technology and Systems Technology Programs.

The efforts of the more mature Advanced Technology Program included the designating optical tracker program, the endoatmospheric nonnuclear kill program, the forward acquisition

program, the optical aircraft measurements program, the miniature kill vehicle technology program, investigation of directed energy weapons, investigation of the applicability of distributed data processing, preparation of a millimeter-wave radar, and preparation of the Cobra Judy.

The designating optical tracker program provided data to verify the capability of long wavelength infrared sensors to perform generic BMD functions of designation and tracking under realistic conditions of engagement and the environment. Four flights in the program have successfully deployed the sensor above the atmosphere and obtained the required data on reentry targets. In fiscal year 1981 plans were completed for the remaining flights. Plans were also developed for future use of the program hardware.

The purpose of the endoatmospheric nonnuclear kill program is to establish a coordinated technology base to demonstrate a homing guided intercept and nonnuclear kill of representative reentry vehicles in the endoatmosphere. The BMD Advanced Technology Center (BMDATC), faced with budget cuts and other priorities for fiscal years 1981 and 1982, reduced this program to development of critical component hardware. Development of critical component hardware progressed, as did the effort to upgrade the three-degrees-of-freedom simulation to a six-degrees-of-freedom high fidelity simulation. BMDATC initiated design and validation of a gas reaction maneuver control system and began warhead-target interaction ground rocket sled tests.

The forward acquisition system program showed progress. The program is an integrated technology effort designed to resolve critical system and technology issues associated with the BMD forward acquisition function through a comprehensive ground test program. All necessary hardware was placed under contract and an integration contractor selected. The contractor will also furnish a wide-field-of-view, longway infrared test chamber.

The miniature kill vehicle program, which ended this fiscal year, developed solutions to technology issues concerning application of the homing interceptor (spinning kill vehicle) concept. This year's effort demonstrated that the regenerative piston injection liquid propulsion engine would meet requirements of mission durability and spin environment. Designs were completed for both a tactical tracking sensor and a data processing system to permit vehicle operation in high-target density and nuclear environments. The kill vehicle requirements were updated con-

currently with evolving threat descriptions, and a miniature kill vehicle responsive to the scenarios was designed.

Directed energy weapons exploiting either high-energy laser or particle beam technology have considerable potential for future BMD application. Space, aircraft, ground, and hybrid basing concepts have been investigated. Army BMD interest focused on space-based concepts offering unique potential for the engagement and destruction of both intercontinental ballistic missiles (ICBM) and sea-launched ballistic missiles. BMDATC analyses indicated a definite preference for use of space-based directed energy weapons as the leading edge of a multiple-layer defense system. These investigations emphasized the use of high-energy lasers because of a lag (on a relative basis) in particle beam technology. Using simulated ICBM components, the BMDATC successfully demonstrated viable kill mechanisms for the space-based laser. A number of high-energy laser candidates have been identified which, if successfully developed, could provide the basis for major increases in the cost-effectiveness of any future BMD space-based laser system. In addition to this high-energy laser activity, BMDATC continued to serve as technical manager and procurement agent for two efforts in the Defense Advanced Research Projects Agency's particle beam program: the Los Alamos Scientific Laboratory exoatmospheric neutral particle beam accelerator program and the Austin Research Associates collective ion accelerator proof-of-principle experiment.

BMDATC directed research to exploit, for BMD applications, the many potential advantages of the distributed data processing computer concept, such as increased throughput, availability, reliability, fail-soft capability, growth capability, and load sharing. Also investigated was use of distributed systems of microprocessors interconnected with various schema. A six-micro-processor-by-twelve-memory-board distributed data processing system connected by a crossbar switch was implemented, and testing was initiated. Investigation began of designs for ring and banyan interconnected systems. At BMDATC's Advance Research Center, the Control Data Corporation 6400/7600 mainframe computers were augmented with ten VAX 11/780 minicomputers to provide a distributed data processing capability. This testbed was used to support multiple concurrent BMD distributed data processing experiments in hardware architecture, algorithm development, and software engineering. Significant progress was made in the development of a computer-aided design system to support development of high quality software for BMD systems, which

will most likely require fault tolerance and a high degree of flexibility.

In fiscal year 1981 component development and fabrication continued on a millimeter-wave radar for use at Kwajalein Missile Range (KMR) in collecting data on BMD targets. Major components, procured and tested in the continental United States, were shipped to Roi-Namur Island. Installation of the antenna tower and radome support was completed in July 1981. Late delivery of drive gears for the gear boxes delayed shipment of the pedestal and caused a slippage in the original operational date for the radar.

Preparation of Cobra Judy, a shipborne S-band radar signature collection system to provide intelligence data for the U.S. Air Force Foreign Technology Division (FTD) and the BMDATC, also continued. For this effort, jointly funded by the Air Force Systems Command and the BMDATC, the U.S.S. *Observation Island* has been outfitted and made seaworthy. It now meets all the standards required for the Cobra Judy platform. Construction of a radar array turret was completed in 1981, and all electronic, computer, and recording equipment was installed on board the ship.

Major activity in the Systems Technology Program focused on the definition and development of systems for two principal efforts: the endoatmospheric low-altitude defense (LoAD) system and the homing overlay experiment (HOE) with technology for an exoatmospheric interceptor. The Systems Technology Project Office (STPO) of the BMD Systems Command also worked toward integration of endoatmospheric and exoatmospheric concepts into a layered defense system and toward the collection of data to support systems studies and concept evaluations.

Design and development of the HOE, a two-phase demonstration to prove technology associated with an exoatmospheric interceptor, showed significant progress. Critical design reviews of flight experiment equipment and various hardware flight items were completed and fabrication of flight hardware was begun. Development testing and manufacture of the first HOE flight experiment units were completed for the axial propulsion system, the fixed-fragment-net kill mechanism, and the back-up kill mechanism. Fabrication of the first HOE interceptor flight hardware (FB–1) was initiated. The HOE simulation laboratory facility was completed for validating the HOE flight software by exercising flight experiment hardware and software in a dynamic hardware-in-the-loop simulation. Testing of the HOE flight experiment hardware was begun during the last quarter of the fiscal year.

Engineering and development problems appeared in the sensor, requiring extensive management reviews and resulting in cost growth to Lockheed's contract, but no delay in the HOE flight experiment schedule. The design development hardware performed successfully in laboratory tests for flight vibration; however, difficulties continued in the development of the test hardware for design verification.

All activities relating to KMR preparations for the HOE were on schedule. A missile access stand obtained from the Navy's Polaris program with Lockheed was shipped to KMR and erected on Meck Island. Ground support equipment for the HOE booster, a modified Minuteman 1, was shipped from Hill Air Force Base. Using test launch software at Lockheed's Missile Space Center, Lockheed and McDonnell Douglas completed integration tests to verify that the equipment was compatible with the interceptor ground test unit.

The LoAD system, expected to be valuable in defending either the MX missile or silo-based ICBMs, gained attention and support from both the Department of Defense (DOD) and the U.S. Congress. Early in the year, the Secretary of Defense approved increased funding by approximately $346 million to ensure LoAD compatibility with the MX missile; later, Congress authorized an additional $15 million in fiscal year 1981 funds to protect the option of accelerating LoAD development.

The BMD organization and the Air Force Ballistic Missile Office worked together to ensure LoAD–MX compatibility. The two signed a memorandum of agreement on 7 October 1980 which established a formal relationship, outlined policy and responsibilities, and provided for the exchange of technical, operational, and program information. Similar relations were established with the Air Force's Strategic Air Command and Test and Evaluation Command. Later in the year, ties were formed with the Defense Nuclear Agency for coordination and resolution of LoAD technical issues and with the Department of Energy (DOE) for a joint feasibility study on a nuclear warhead for the LoAD interceptor.

In November 1980, the BMD Systems Command changed the acquisition strategy for the LoAD effort from an associate contractor structure to a prime and subcontractor structure. McDonnell Douglas received the prime contract; Martin Marietta Aerospace, Orlando, and the Raytheon Company received major subcontracts for the interceptor and the sensor and engagement controller efforts, respectively.

Testing to refine LoAD definition and development pro-

gressed. High explosive testing was performed on a scale model of the LoAD defense unit, and wind tunnel testing was done on the interceptor airframe configuration. The signature measurement radar installed at KMR to gather X-band signature data on incoming objects from ICBM flights was also tested. The radar successfully tracked and recorded data on a decoy that was specifically designed and flown for the test.

The preservation of location uncertainty (PLU) effort was marked by closer cooperation between the Air Force's MX program and the Army's BMD LoAD program. LoAD representatives participated as full members on all Air Force PLU working groups. Definition of PLU requirements for LoAD also received special attention in BMD studies.

Definition of a BMD layered defense system continued. Recent studies considered exoatmospheric, infrared nonnuclear interceptor technologies, as well as deep endoatmospheric, small radar, nuclear and nonnuclear interceptor technologies. A major study called "BMD Systems for the Nineties" added some credence to earlier assumptions that technology for exoatmospheric defense could be integrated into a tactical system in time to counter the threat projected for the coming decade, provided such developments were successful. The Undersecretary of Defense for Research and Engineering requested a BMD concepts study that would rely on a terminal endoatmospheric defense with an early deployment capability and low technological risk.

Because of the complexity and expense of existing overlay concepts, the BMD program manager formed a task force to study overlay concepts which were less costly and less complex. The possibility of a national decision to base the first MX ICBMs in silos rather than in multiple protective shelters underscored the need for an efficient defense system that could balance the advantages of advanced technologies with the demands of a deployment schedule like that of the MX missile. These requirements, together with the possibility of an early development of a robust terminal defense underlay, led to several new overlay concepts still in the formulation stage.

Results of the "Low Altitude Perturbation Study" funded by BMD through the Air Force's Foreign Technology Division, Wright Patterson AFB, were presented at BMD Systems Command (BMDSCOM) on 10 October 1980. A follow-up meeting held at McDonnell Douglas on 15 October 1980 completed low-altitude trajectory data requirements for LoAD radar data processing specifications and analysis. On 16 April 1981 representatives of Sandia National Laboratories, BMDSCOM, and the

BMD contractors reviewed "white papers" on projected maneuverable reentry vehicle (MARV) and antiradiation homer (ARH) threats. The MARV document has been completed and distributed; the ARH document has been delayed pending definition of LoAD program changes. The STPO Threat Office, Overlay Demonstration Task Force, and ATC personnel met with supporting contractors on 2–3 September 1981 and completed "Threat Parameters for Overlay Ballistic Missile Defense." This document defines the threat parameters for use in analyzing defense concepts considered in overlay BMD. Comparative BMD capabilities (red-blue) analysis continued to provide Soviet BMD information to support the BMD program manager at congressional and related briefings.

The STPO Weapons Office updated and published a two-volume document in August 1981 that gave technical information on preferred life cycle hardening design and updated techniques to be avoided. Warhead lethality analyses were accomplished in support of the joint DOD–DOE Phase 2 Warhead Study for LoAD initiated in January 1981; lethality contours were developed for combinations of threat models and four different generic defense warhead types. The Attack Working Group of the Weapons Office completed an overlay laydown definition analysis and published the results. Laydown analyses are currently in progress with regard to the new LoAD concept definition.

During fiscal year 1981, Kwajalein Missile Range (KMR) supported development and operational testing of U.S. Air Force ICBMs and payloads launched from Vandenberg Air Force Base. The operational tests comprised various Minuteman III operational configurations; the development tests included nose tip evaluations, various decoy configurations, and maneuvering vehicles. The fourth Army designating optical tracker mission was also launched from KMR. The Army Optical Station on Roi-Namur was closed at the end of the fiscal year.

Most of the modifications to the Army's long-range tracking and instrumentation radar (ALTAIR) to make it a contributing sensor to the Air Force Space Detection and Tracking System (SPADATS) were completed during fiscal year 1981. The interim system, which performs satellite catalog maintenance and detects new foreign launches, became operational.

During fiscal year 1981, construction began on a millimeter-wave radar, which had been under development since fiscal year 1979. It will be an adjunct to the ALCOR C-band radar system and will provide 35 GHz and 95 GHz radar capability along with a 95 GHz radiometer capability.

Participants in the triservice Strategic Systems Test Support Study (SSTSS) developed an overall approach ensuring nonredundant, cost-effective, responsive support for testing offensive and defensive systems in both the Atlantic and Pacific. They recommended retention of KMR as a terminal area testing asset, but identified a contingency instrumented test area in the Pacific, in the event that the Kwajalein atoll became unavailable. The study group assessed the present KMR midatoll corridor boundaries and decided to retain them. A broad ocean area terminal scoring point would be developed north of Roi-Namur for MX testing. A terminal area support aircraft (TASA)—a modified C–7A Caribou logistics support aircraft—would provide a surface missile impact location systems (SMILS), terminal telemetry, and optics data collection in lieu of P–3A/SMILS aircraft. Tugboats at KMR would be used to place and maintain deep ocean transponders in the KMR North array. The participants briefed the Deputy Director, Defense Test and Evaluation (DDTE), and the Major Range and Test Facility Committee on 24 July 1981.

Development

Low-rate initial production of the M1 Abrams tank program continued during fiscal year 1981 as did development test II. Operational test II was completed on 29 May 1981. The special meeting of the Army Systems Acquisition Review Council (ASARC) on 17 February 1981 changed the M1 tank type classification from limited production to standard. Later in fiscal year 1981 the Army sought the authority from OSD to enter full production. From June through August 1981, a group of industrial, scientific, and technical leaders convened for the third time to assess the current status of the tanks' power-train durability. The panel's assessment was that once corrective action already identified was completed, power-train durability should meet or exceed the Army's requirements on tanks produced after March 1982. The Army and OSD conducted detailed program reviews on the production status and test results of the M1 during August and September 1981. Based on these reviews, the OSD authorized the Army to enter full production. In March, two M1 tanks were modified to accept the 120-mm. tank gun system, and contractor testing was begun. Development of 120-mm. ammunition continued. On 15 September 1981, final composition of the first block improvement package was approved. Concurrently, because of technical problems in ammunition development, initial production delivery of the M1E1 Abrams tank (the 120-mm.–

equipped M1 tank) slipped from August 1984 to the last quarter of fiscal year 1985. Specifications on the M1E1 Abrams tank were expanded to include the M1 tank with block-1 improvements as well as the 120-mm. tank main armament system (XM256).

The Infantry-Cavalry Fighting Vehicles were renamed the Bradley Fighting Vehicles. The fiscal year 1981 program fully supported the continued development of the logistics, training, and maintenance support packages of the two systems. The Army received four production vehicles during fiscal year 1981. Three underwent testing by the contractor; the fourth was used for development and testing of automated test measurements and diagnostic equipment (TMDE).

Development and testing of the tube-launched, optically tracked, wire-guided (TOW) 2 missile system was completed in July 1981. The TOW 2 system included an improved missile with a six-inch diameter warhead and improvements to the missile guidance systems. Following development and operational tests, a review was conducted at Headquarters, Department of the Army, with the result that the TOW 2 system was classified as standard type, and full production was authorized.

Engineering and testing of modifications for the improved TOW vehicle (ITV) to fire TOW 2 missiles at full effectiveness were completed during fiscal year 1981. The modification has been approved for production and application to the entire TOW vehicle fleet.

The goal of the infantry man-portable antiarmor assault weapon system (IMAAWS) program is to produce a lightweight, high performance, man-portable replacement for the Dragon missile system. The IMAAWS is also intended to be the U.S. component of a cooperative development program with three other NATO partners to replace current antiarmor weapons. In September 1980 contracts were awarded to Honeywell and McDonnell Douglas to design, build, and deliver a number of advance-development prototype systems to be tested with elements of the Defense Advanced Research Projects Agency's Tank Breaker program.

One month later the Army canceled the contracts because of concern over the weight and bulk of the proposed systems. A study was undertaken to review IMAAWS requirements and to revise its description as appropriate. Completed in April 1981, the study results were inconclusive and led to the withdrawal of funds for critical technology development as well as the reallocation of IMAAWS program funds in the outyears to other higher-priority programs, and adversely affected the Tank

Breaker program. During the summer, Congress denied funding requested for IMAAWS in fiscal year 1982. At the Army Senior National Representatives (SNR) meeting in September 1981 at Fort McNair, Washington, D.C., the European partners in the cooperative development program for antiarmor weapons expressed concern over the continued delay in the U.S. part of the program.

Development of the squad automatic weapon (SAW) system continued during fiscal year 1981. Modifications to the system were assessed, and performance with improved ammunition was evaluated. The Fabrique National (FN) XM249 weapon was modified to incorporate the changes recommended during the selection process. Testing of the improved weapon (XM249E1) and ammunition (XM855 and XM856) began in June 1981 at Aberdeen Proving Ground. Initial test data confirmed that the weapon system will meet or exceed user requirements. Also during fiscal year 1981, the integrated logistics support package was refined; additional work was accomplished on the final license agreement, which was submitted to the contractor for final signature; and preliminary work was done to prepare the Lake City Army Ammunition Plant for production.

A highly successful competition for the division air defense (DIVAD) gun contract between Ford Aerospace and Communications Corporation and General Dynamics was concluded in May 1981. The Army awarded a contract to construct facilities with three follow-up production options to Ford Aerospace. The corporation began construction of a new facility for DIVAD gun production and worked on final production design.

The Army awarded an advanced development and low-rate production contract for the multiple launch rocket system (MLRS) to the Vought Corporation in October 1980. Maturation phase development, improved warhead, and practice warhead design flight tests of the basic system were conducted during fiscal year 1981. Program funding was increased by the fiscal year 1981 supplemental and fiscal year 1982 amendment to the President's budget. The International Association of Machinists and Aerospace Workers went on strike against FMC, maker of the MLRS carrier vehicle, on 4 April 1981. The strike was settled on 17 June, and work resumed on 22 June 1981. The FMC strike resulted in a four-month slip in MLRS program schedules as well as a cost increase in both development and procurement funding requirements.

The Pershing II weapon system continued in engineering development during fiscal year 1981. Two major technical problems

arose, one in the magnetron and the other in the thrust reversal system, and were solved. The proposed fiscal year 1982 Pershing II production buy, including a fiscal year 1983 option, was received from Martin Marietta. The proposed price exceeded the fiscal year 1982 funding allocated for the Martin contract. At the close of fiscal year 1981, intensive effort and analysis were under way to evaluate fully the contractor's proposal.

The Army's advanced attack helicopter (AAH) program entered the final stages of development in fiscal year 1981. In anticipation of future fielding, the Army approved the name of Apache for the AAH. The Army conducted a comprehensive operational test (OT II) in June–August 1981 at Fort Hunter-Liggett, California. Results indicated that the AH–64 was ready for production. Contracts were awarded to Hughes Helicopters, Martin Marietta, and General Electric for procuring hardware items with long lead-times.

In fiscal year 1981 full-scale engineering development began of an infrared capability for the Cobra sight. This innovation will enable the gunner to detect and engage targets at night and during periods of poor visibility.

Production of the UH–60A Black Hawk continued during fiscal year 1981 with 105 aircraft delivered to the Army. The fifth-year production contract for 80 helicopters was awarded to Sikorsky Aircraft Division, United Technologies Corporation, in May 1981. Production of T700 GE–700 engines also continued. On 2 February, General Electric Company received a firm fixed-price contract for 204 engines. The Black Hawk program was selected as the Army's prime candidate for multiyear procurement in fiscal year 1982. The required documentation was prepared and submitted to OSD.

The CH–47 modernization program continued on schedule. Following the contract award to the Boeing Vertol Company in late October 1980, conversion on nine CH–47A helicopters to the much improved CH–47D model was begun. Two of the three prototypes were returned to the manufacturer for use as production mock-ups and as guides for writing technical manuals. The third prototype underwent extended maintenance testing, and no significant problems were found.

The request for proposal (RFP) for the near-term scout helicopter (NTSH) of the Army helicopter improvement program (AHIP) was formulated, circulated for comment, evaluated, reviewed, and finally released to industry in January 1981. The Army convened a source selection evaluation board (SSEB) to consider the two responses from industry—from Bell Helicopter

Textron and from Hughes Helicopter, Inc. On 21 September 1981 the Army announced the award of a full-scale engineering development (FSED) contract for the AHIP's near-term scout helicopter to Bell Helicopter Textron.

Engineering development of the Hellfire modular missile system continued through fiscal year 1981, with contracts for items with long lead-times awarded during August 1981 in preparation for fiscal year 1982 production. Hellfire underwent 19 firings in the developmental test (DT) program, 27 firings in the AAH DT program, 4 firings in the Marine Corps laser designator operational test (OT), 12 AAH OT firings, and 33 missile firings in Hellfire OT. During the year, 42 missiles were produced under the engineering development contract. In preparation for ASARC-DSARC III, cost reduction efforts were investigated and required documentation was gathered in the Army and OSD.

The Defense System Acquisition Review council (DSARC) authorized Patriot to begin limited production in August 1980. The Secretary of Defense decision memorandum (SDDM) from the DSARC specified a series of verification tests to show that deficiencies had been corrected. The primary effort during fiscal year 1981 was conducting the first three of four unit tests specified by the SDDM. In each case the results indicated that the specified criteria had been achieved, and authorization was given for the Army to proceed with the agreed test programs. During the fiscal year 1982 budget process, the Army requested funds to allow a limited increase in Patriot production. Based on the testing success, Congress approved the request.

Contracts for the U.S. Roland air defense missile system were awarded to Hughes and Boeing on 10 December 1980 for 17 fire units and 400 missiles, with associated support equipment and spares. The Roland reliability evaluation test was successfully completed on 15 December 1980, and special evaluation tests were also successfully carried out at the White Sands Missile Range on 30 March 1981. A test and evaluation review was held on 8 May 1981 on the results of the meeting of the Defense Systems Acquisition Review Council (DSARC) III held in May 1979. Favorable test results and successful completion of all OSD action items resulting from the May 1979 DSARC III indicated that no technical or test issues remained. The first four production missiles were delivered to the government on 26 June 1981. The first Roland production fire unit was completed on 30 September 1981. Hughes was awarded a contract for the Roland trainer on 24 March 1981.

The Stinger passive optical seeker technique (POST) contin-

ued in engineering development during the year. POST contractor flight testing began in January 1981. Five flights were made during the year with the remainder scheduled for completion by early 1982. The development schedule was extended to sixty-three months because of difficulties in integrating and testing the sealed head and guidance electronics and in solving several anomalies detected during flight testing. These technical difficulties were successfully overcome.

During fiscal year 1981 USAREUR and FORSCOM reached agreement on the IHawk enhancement life cycle program (HELP). The Department of the Army approved the program, which will recycle missiles through the factory for reliability restoration and for the application of missile electronic counter-countermeasure (ECM) improvements. Restoration began in September 1981. As a result of the air defense systems program review in February 1981, U.S. Army Missile Command (MICOM) took the lead in promoting logistical and technical support to the U.S. Marine Corps and to international users of the IHawk system and formed a study group to develop a proposed long-range support plan.

Chaparral is the Army's short-range air defense (SHORAD) surface-to-air missile system. The major development effort for the Chaparral's forward-looking infrared (FLIR) night sight was completed in 1981. The effort culminated in the users operational test at White Sands Missile Range beginning in August. FLIR will help the Chaparral gunner to find his target during the day, at night, and in severe weather, whereas the Chaparral is currently limited to fair weather, daylight operation.

Viper antiarmor rocket development was completed during fiscal year 1981. The Viper tactical rocket and the tracer bullet trainer were type-classified as standard in August 1981, following a DARCOM in-process review and a decision by the VCSA. Operational test II was successfully completed in July 1981. As the fiscal year drew to a close, the Army was seeking congressional approval to produce Viper.

The year began with a continuation of the shakedown of the Copperhead initial production facility (IPF) and negotiations for the second-year production contract with Martin Marietta Corporation, the system developer. The IPF was completed in April 1981 and thirty-seven rounds were delivered for testing. As the year closed, production of related hardware items began, and major initiatives to reduce unit costs and to enhance reliability got under way.

Development of binary retaliatory weapons resumed in fiscal

year 1981. Binary munitions provide significant advantages over existing chemical munitions in terms of manufacturing, storage, transportation, and disposal. Research is under way on demilitarization of present stocks and on a binary modernization program to correct stockpile deficiencies of agent mix and ammunition type. Advanced development on the binary intermediate volatility agent (IVA) warhead for the multiple launch rocket system (MLRS) was also resumed. In addition, the eight-inch IVA binary projectile began advanced development after a decision was made to redirect the effort from an eight-inch VX–2 projectile to the more promising IVA concept. Congress appropriated $23 million to start construction and to provide initial equipment for an integrated binary munition production facility. Construction on the facility at Pine Bluff, Arkansas, was scheduled to begin in October 1981. Development continued on a new protective mask and on numerous biological and chemical detection and warning systems, items of collective protective equipment for shelters, vans and tactical armored vehicles, as well as decontamination systems for clothing and a rapid decontamination system for armored vehicles.

The family of scatterable mines includes four separate systems: (1) the 155-mm. artillery-delivered antipersonnel, area-denial artillery munition (ADAM) and the remote antiarmor mine (RAAM); (2) the ground-emplaced mine scattering system (GEMSS); (3) the modular pack mine system (MOPMS); and (4) the Gator scatterable mine system, a joint service venture funded and managed by the Air Force and developed by the Army. Development of all four systems continued on schedule in fiscal year 1981. ADAM and RAAM, in low-rate production, were approved for full-scale production by the validation in-process review. Under GEMSS, first-year production of the M128 ground dispenser and the M75 antitank mine continued, and the M74 antipersonnel mine entered first-year production. MOPMS continued in engineering development, overcoming some technical problems with the electronic components. Final Gator engineering development remained on schedule with the delivery of operational test hardware to the U.S. Air Force and the U.S. Navy.

Army efforts to broaden the high-energy laser technology base continued in the areas of laser energy devices, fire control and acquisition, optics, beam control and propagation, damage and vulnerability, and advanced directed-energy technology. The Army initiated two programs to provide an early demonstration of the system's capability upon which to base future decisions concerning laser weapon systems. The draft proposal for the

demonstrator of the forward area laser weapon was released for comment to industry and to government agencies in January 1981. Contracts were awarded to Hughes Aircraft Company and TRW for competitive preliminary designs on 31 July 1981. Technical requirement reviews for these preliminary designs were held during August 1981. The Roadrunner draft proposal was released for comment to industry and government agencies in April 1981, and the source selection evaluation board met on 21 September 1981.

The second production contract for the ground laser locator designator (GLLD) was let on 30 October 1980. This procurement calls for production of eighty units, using fiscal year 1980 funding. An option for follow-up production of an additional ninety units, under the fiscal year 1981 appropriation, was signed on 4 December 1980. Delivery and testing of the units procured under fiscal year 1979 appropriations began during fiscal year 1981.

Production continued on the AN/TAS–4 (TOW), AN/TAS–5 (Dragon), and the AN/TAS–6 (night observation device, long range). New production contracts were awarded to Texas Instruments Inc. and to Kollman Instruments Corp. to maintain a competitive base for future contracts. Contracts were also let for production of supporting equipment. A memorandum of understanding among three NATO nations for the sale and cooperative production of infrared common modules was nearing completion and should be signed soon.

Production continued on second-generation image-intensification night sights—the AN/PVS–4 (individual-served weapon sight), the AN/TVS–5 (crew-served weapon sight), and the AN/PVS–5 (night vision goggles). Work continued on third-generation image-intensification devices. The aviators night-vision imaging system (AN/AVS–6) was moving forward in engineering development, while the night vision goggles for ground troops completed advanced development.

An intense effort to identify cost alternatives for the stand-off target acquisition system (SOTAS), to be reviewed by the Army Systems Acquisition Review Committee (ASARC) and the Defense Systems Acquisition Review Council (DSARC), took place between November 1980 and April 1981. The objective was to correct the original underestimate of development time and effort and to set new and realistic program objectives. The ASARC review was held on 17 April 1981, and the review by the DSARC on 21 May 1981. A special task force of the Defense Science Board, meeting on 12 and 13 June 1981, concluded that

SOTAS was needed and was technically feasible. In late July OSD directed the Army to conduct a sixty-day review to find further program options for reducing acquisition costs. The review indicated that reducing the number of airborne systems to be procured from eighty-two to sixty-one and simplifying the radar would save approximately 24 percent in acquisition. It was also proposed that significant portions of the remaining development be put on a fixed-price basis. When negotiations with Motorola, the prime contractor, failed to produce agreement on a fixed-price contract, the Army proposed that radar development be resolicited. The matter had not been resolved by the end of the fiscal year.

Development continued on the improved 155-mm. nuclear projectile. A significant technological breakthrough was achieved in bonding the rotating band to a thin-shell titanium body. A program was instituted to test the projectile in NATO howitzers and to develop firing tables. Planned procurement was increased to meet the minimum Army requirement. Capitalization funds supporting the 155-mm. development were cut because Congress was skeptical about the need to have modern nuclear projectiles for both the 8-inch and 155-mm. howitzer systems. Options aimed at reducing the impact of the budget cut were being reviewed as the fiscal year ended.

On 7 July 1981, development contracts amounting to approximately $4 million each were awarded to AM General Corporation, Chrysler Defense Incorporated, and Teledyne Continental Motors for development by each of eleven high-mobility multipurpose wheeled vehicle (HMMWV) prototypes. The HMMWV will replace the M561 Gama Goat and the M274 Mule and will selectively replace M151 quarter-ton utility vehicles in tactically demanding environments such as TOW weapons carrier.

Rationalization, Standardization, and Interoperability (RSI)

Over the past year the RSI program has expanded to emphasize training and to implement the NATO Mutual Support Act of 1979 (PL 96–323). Emphasis has continued on strengthening the NATO long-term defense program (LTDP).

Two significant events took place during the year concerning NATO's international cooperative research and development. The first was the Four Power Senior National Representatives (SNR) meeting on 16–18 September 1981 in Washington, D.C.

The other was the election for the first time of a U.S. general officer to chair the NATO Army Armaments Group (NAAG).

The September 1981 SNR meeting, the eighth in a series that began in fiscal year 1977, approved the release of threat data on Soviet tank and antiarmor weapons jointly developed by the four powers as well as the release of additional information about the Soviet threat that the United States, United Kingdom, France, and the Federal Republic of Germany intend using to support future antiarmor weapons development. The data will be disseminated to other NATO countries as well. In addition the four powers signed a memorandum of understanding in April 1981, providing for reciprocity of information on improvements in the current generation of antitank guided weapons. For the United States, this involved an exchange of data on improvement of the TOW and Dragon antitank missiles. The Europeans are to provide information on the improvement of the HOT (Haut Subsonique Optiquement Teleguide tire d'un Tube) and the MILAN (Missile d'Infanterie Leger Antichar).

The United States in June 1981 said that it would nominate someone for the election of a new chairman of the NATO Army Armaments Group (NAAG). Subsequently, at its thirty-eighth meeting, the NAAG elected a U.S. general officer, the Deputy Director of the Weapons Systems Directorate, ODCSRDA, to the post. His term will expire in fiscal year 1983.

The U.S. Army also carried on staff talks with the military representatives of the Federal Republic of Germany, France, and the United Kingdom with primary emphasis on the development of combat doctrine and materiel requirements. An ad hoc committee began a NATO ammunition interagency review under the auspices of the NATO Army Board. In March 1981 all members of NATO endorsed this effort. Conversion of jet fuels from JP–4 to JP–8 within NATO was still being considered by the fuels working group of the Ad Hoc Committee on Equipment Interoperability. Cost and availability remained the main obstacles to full-scale conversion. The Army continued to participate in the American, British, Canadian, and Australian (ABCA) standardization program and was the host for the first meeting of the ABCA working group on collaborative training in April at Orlando, Florida. The Army also sent a delegation headed by the Vice Chief of Staff to the twenty-third meeting of the high-level ABCA conference known as TEAL, held in Montreal, Canada, in October. The conferees discussed means to extend and improve ABCA standardization efforts for fiscal years 1982–1983.

In other RSI developments, the Joint Roland Committee held

a special meeting in Paris, France, on 20–21 November 1980. Trinational agreement (U.S., French, and German) was reached on potential system modifications to be investigated for incorporation into the Roland weapon system to counter the post-1985 threat. In 1981 Germany joined with six other NATO nations (Belgium, Norway, the Netherlands, Greece, Turkey, and Italy) and formed a project group to study alternative forms of acquiring Stinger by a multinational consortium. A memorandum of understanding for NATO coproduction was submitted to OSD for staffing in July 1981. Foreign country interest in the Improved Hawk (IHawk) continued in fiscal year 1981. After a two-year hiatus clearance was obtained for travel to Taiwan, and two trips were made this year which significantly improved communications and progress of the Taiwan program. A letter of agreement was forwarded to the Arab Republic of Egypt at their request. The Egypt Improved Hawk program is proceeding on schedule. In October 1980 a contract was signed with Maschinenfabrik Augsburg Nurnberg for fifteen vehicles for Pershing II (PII) and the ground-launched cruise missile (GLCM) with an option for additional vehicles to support PII and GLCM fielding.

12. Security Assistance

Security assistance programs are the means by which the United States government seeks to achieve national security and foreign policy objectives by enabling allied and friendly nations to acquire and maintain the capability to defend themselves. During fiscal year 1981, Army security assistance programs fell into four categories: Military Assistance Programs (MAPs), International Military Education and Training Programs (IMETPs), Foreign Military Sales Financing Programs, and Foreign Military Sales (FMS) programs. Eighty-three countries and international organizations, such as NATO, participated in at least one of these four programs during the year. The programs provided defense equipment, services, and training to foreign countries under the authority provided by the International Security and Development Act of 1980 (PL 96–533), which amended the Foreign Assistance Act of 1961 and the Arms Export Control Act.

In all four programs, six countries accounted for 75 percent of the open case value. Four of the six were located in the Middle East. The table below lists them and the value of their cases as of 28 September 1981.

Countries	Value (in billions of dollars)
Saudi Arabia	$22.7*
Israel	3.0
Egypt	1.4
Germany	1.0
Jordan	1.3
Korea	$1.1

*Includes CDE programs.

As of 28 September 1981, the end of the fiscal year, seventy-six countries and organizations, listed in the table below, were receiving materiel from either MAP or FMS.

(Open Materiel Cases)

Argentina	Honduras	Pakistan
Australia	India	Panama
Austria	Indonesia	Paraguay

Bahrain
Barbados
Belgium
Brazil
Brunei
Burma
Cameroon
Canada
Colombia
Costa Rica
Denmark
Ecuador
Egypt
El Salvador
Fiji
Finland
France
Germany, Federal Republic of
Ghana
Greece
Guatemala
Haiti
Ireland
Israel
Italy
Jamaica
Japan
Jordan
Kenya
Korea (ROK)
Kuwait
Lebanon
Liberia
Luxembourg
Malaysia
Morocco
Muscat-Oman
NATO
Netherlands
New Zealand
Nicaragua
Nigeria
Norway
OAS
Peru
Philippines
Portugal
Qatar
Saudi Arabia
SHAPE
Singapore
Somalia
Spain
Sudan
Sweden
Switzerland
Taiwan
Thailand
Tunisia
Turkey
United Arab Emirates
United Kingdom
Uruguay
Venezula
Yemen
Yugoslavia
Zaire

Grant aid under the Military Assistance Program has declined steadily since fiscal year 1977. In 1981 Congress authorized MAP programs for four countries: Portugal, Spain, Sudan, and the Philippines. The following table provides comparative data on MAP for the past three fiscal years:

Fiscal Year	Number of Countries	Value (in millions of dollars)
1979	5	$157.0
1980	4	40.0
1981	4	19.3

Foreign governments find some pieces of American military equipment more useful than others. The table below lists the most popular items in demand by FMS and grand-aid customers. "Delivered" means actually shipped; "programmed" means that the Department of the Army had a firm commitment; and "planned" means that the Department of the Army has tendered or a foreign government has requested a letter of offer and agreement (LOA) or that a foreign government has requested price and availability or planning and review data. All the figures are as of 28 September 1981.

Nomenclature	Delivered	Programmed	Planned	Total
Helicopter, UH–1H	38	0	27	65
APC, M113A1/2	471	1,169	360	2,000
HOW, SP, M110, 8"	25	171	0	196
HOW, SP, M109A1/2	147	843	107	1,097
REC VEH, M578	0	58	5	63
REC VEH, M88A1	57	116	160	333
Tank, M60A1/3	74	630	162	866
Tank, M1	0	0	350	350
VULCAN, SP, M163	0	24	0	24
DRAGON Missile	30,889	17,104	17,777	65,770
TOW, Launcher	357	299	383	1,039
TOW, Missile	10,606	15,304	15,989	41,899
IHawk, Missile	429	1,337	1,008	2,774
IHawk, Battery Sets	4	27	67	98
Chaparral Missile	0	456	3,876	4,332
Chaparral Launchers	26	0	187	213

The International Military Education and Training Program provided instruction to military and related civilian personnel of friendly countries. During fiscal year 1981 the program consisted of $13.8 million for fifty-six countries.

Eligible foreign governments make Foreign Military Sales purchases of defense articles, services, and training from the U.S. government. The total FMS program (open cases) amounted to $40.8 billion at the end of the fiscal year. The Army had delivered $19.2 billion worth of equipment and services as of 30 September 1981, leaving $21.7 billion yet to be delivered. The Foreign Military Sales Financing Program provided credit and loan repayment guarantees. FMS financing was provided to thirty-two countries during fiscal year 1981. The program involved a total of $3.1 billion, with $1.4 billion allocated to Israel.

Administration and Management

Because of the sensitivity and importance of issues involved, the President often makes decisions in the security assistance area. The Secretary of State provides continuous supervision and direction of the Military Assistance Programs, the International Military Education and Training Programs, and sales and exports, including Foreign Military Sales and Grant-Aid Programs, in order to ensure that they are integrated with other aspects of U.S. foreign policy. The Secretary of Defense has the responsibility of determining the military equipment that a country needs, procuring it, supervising the training of foreign military and civilian personnel needed to operate and maintain it, and super-

vising its transportation and delivery. As a consequence, the secretary must also set priorities for procuring, delivering, and allocating military equipment.

Acting under the policy guidance of the Secretary of Defense and the oversight of the Secretary of the Army, the Undersecretary of the Army develops doctrine, negotiates and prepares procedures to implement international agreements, and carries out approved and funded foreign security assistance programs. Other key civilians in the process include the Assistant Secretary of the Army for Research, Development, and Acquisition, who implements security assistance at the secretariat level, and the Assistant Secretary of the Army for Installations, Logistics, and Financial Management, who reviews and resolves customer problems in all phases of supply and financial management. The Vice Chief of Staff of the Army also plays an important role. He acts as cochairman with the Undersecretary of the Army on the Security Assistance Steering Group, which serves as the advisory body for the Secretary of the Army and the Chief of Staff on all security assistance matters. The steering group assesses and interprets security assistance policy originating in OSD and other federal agencies and provides guidance to the Army staff for developing Army security assistance policy, plans, and programs. The steering group also allows top-level exchanges concerning ongoing and anticipated security assistance actions and provides oversight on Foreign Military Sales transactions. It reviews and recommends Army policy on all security assistance matters that affect the Army and recommends Army positions for the Army Export Control Board. The members of the steering group, except for the cochairmen, consist of deputy chiefs of staff, the commanding generals of DARCOM and TRADOC, and other high-ranking officers. The steering group receives staff support from the Army Security Assistance Coordinating Group, which is chaired by the Assistant Deputy Chief of Staff for Logistics (Security Assistance) (ADCSLOG[SA]), and consists of representatives from the Army staff and the major commands. The coordinating group also ensures that there is cooperation between the various staff agencies on certain security assistance cases. This detailed oversight of cases in preparation stands in contrast to the function of the steering group, which serves as a mechanism for final review.

Security assistance involves a large number of staff functions. Consequently, the steering group and the coordinating group are both very large and somewhat unwieldy when all members are present. Without cataloging all the agencies involved, two ex-

amples will convey the complexity involved. The Comptroller General, who is a full-time member of the steering group, provides overall supervision for "the budgeting, accounting, funding, and financial management for security assistance." The Surgeon General, on the other hand, only attends when the subject under discussion touches on medical matters. He exercises overall supervision, direction, and control on the Army staff concerning the provision of "medical materiel, training, and related services" to foreign governments. Three offices, because of their importance in the process, deserve more discussion: Office of the Deputy Chief of Staff for Logistics (DCSLOG), Office of the Deputy Chief of Staff for Operations and Plans (DCSOPS), and the Office of the Chief of Engineers (OCE).

The DCSLOG acts in security assistance matters primarily through the ADCSLOG(SA), who is aided by the Security Assistance Policy Coordinating Office (SAPCO). The Assistant Deputy Chief of Staff coordinates the development of all Army policies related to security assistance, including the preparation of Army regulations affecting the field. He provides guidance on policy to the commanding general of DARCOM, who is the executive agent for the Army in all security assistance matters. Acting in behalf of the Chief of Staff, the ADCSLOG issues directives to all major commands on the subject. He also acts as the appropriation director for the Foreign Military Sales budget and as the budget program director for supply operations of the Military Assistance Program. SAPCO is the primary Army staff element for coordinating the development of security assistance policy. It keeps the ADCSLOG(SA) and other key staff members informed of major security assistance issues and coordinates policy on processing export licenses for munitions and technology referred to the Secretary of the Army for decision.

The DCSOPS acts as the main point of contact on the Army staff for joint strategic objectives plans and force development for friendly and allied forces. His office assesses the political and military aspects of proposed security assistance projects and determines the Army's position regarding what level of readiness and what configuration a foreign army should seek in light of U.S. contingency plans. The DCSOPS informs the Joint Staff about the levels of support—both equipment and training—which a foreign army requires, and recommends what priorities should be assigned to each army. Within ODCSOPS, the Security Assistance Division of the Strategy, Plans, and Policy Directorate contains area desk officers who review specific programs and cases, analyzing them from the standpoint of Army policy. The

division may propose changes in legislation, Department of Defense policy, or State Department policy to bring them more in line with national objectives and with realities in the local countries.

The Chief of Engineers is in the same position as the Surgeon General; he attends meetings of the steering group only when the questions under discussion affect his areas of responsibility. The Chief of Engineers acts as the principal adviser and agent for design and construction of facilities in foreign security assistance programs and coordinates all activities associated with engineering.

When a foreign government wants military assistance, the procedures followed are similar whether the request is for equipment, training, or construction. Frequently, the foreign government applies for security assistance at the American embassy. After review and approval by the Department of State, the request goes to the Department of Defense. If design or construction of a facility is involved, OSD refers it to the Secretary of the Army, who sends it, after appropriate staffing, to the Chief of Engineers for study. The Corps of Engineers prepares a document, technically referred to as a case, that describes the services the Corps is requested to provide, the sources of funding, and the payment schedule. The Corps sends the case to the Secretary of the Army, who, after a review by the interested staff agencies, forwards it to OSD for decision.

Policy

During fiscal year 1981 the Army staff participated in the development and review of proposals for inclusion in the fiscal year 1982 legislation authorizing security assistance—the International Security and Development Cooperation Act of 1981. Policy issues supported by the Army included lifting restrictions on assistance to selected countries in Latin America, Africa, and Southwest Asia; establishing a Special Defense Acquisition Fund for advance procurement of military materiel for sale to foreign countries; and setting higher dollar thresholds for congressional review of Foreign Military Sales cases. The Army made a proposal to give the same concessionary sales terms and conditions to the Republic of Korea that Congress authorized in 1981 for NATO, Japan, Australia, and New Zealand. The Army also recommended establishing assistance training programs.

Congressional reaction in favor of the Special Defense Acquisition Fund became evident soon after the Reagan adminis-

tration presented its legislative proposals. Congress had rejected similar proposals on two previous occasions even though the idea had received favorable reports from the armed services committees. Since 1974 the Army had urged that the Department of Defense include such proposals in security assistance legislation, which was addressed by the Senate Foreign Relations and the House Foreign Affairs Committees, rather than in the defense legislation, which was addressed by the armed services committees. During 1981, this approach seemed to be successful, although Congress had not completed final passage of the legislation by the end of the fiscal year. If created, the fund should have a positive impact on the readiness of the Army. The Department of Defense could use the military materiel procured with fund dollars to fulfill urgent or emergency foreign requirements, thus avoiding diversions or withdrawals of Army materiel.

During 1981, the Army participated in the development of the new administration's conventional arms transfer policy approved by President Reagan on 8 July 1981. This policy, drafted by the State Department, received several reviews by the Joint Chiefs of Staff with assistance from the military services. The philosophy underlying the new policy was that arms transfers are an essential element of U.S. defense posture and foreign policy. The new program took a more practical approach toward authorizing, managing, and controlling arms transfers to foreign countries. It allowed, for example, security assistance teams overseas to do force planning with the host governments, an activity not heretofore permitted. Until enactment of the International Security and Development Cooperation Act of 1980, the Department of Defense handled requests for assistance involving construction and those involving equipment as part of the same program. The new law separated the construction effort from normal Foreign Military Sales to cover the design, construction, operation, and maintenance of real property facilities. It also raised the dollar level of Foreign Military Construction Sales (FMCS) that require congressional review from $25 million to $200 million.

Foreign Military Training

Training for foreign military students is funded from both the International Military Education Training Program and Foreign Military Sales. Over 6,000 of these students have received military training in the continental United States and overseas under U.S. Army sponsorship. The IMETP provided over $7

million; FMS training exceeded $27 million. The Fellows Program at the Army War College is the most prestigious training available under Army auspices for foreign students. Established by the Chief of Staff, General Bernard Rogers, in August 1977, its objective is to create and maintain special relationships with officers from military organizations of selected foreign countries. During the 1981–1982 academic year, students participated from Australia, Egypt, Germany, Greece, Indonesia, Israel, Japan, Jordan, Korea, Mexico, Nigeria, the Philippines, Saudi Arabia, Senegal, Sudan, Sweden, Thailand, and Yugoslavia. Over a period of years the Army attempts to give as many countries as possible the opportunity to take part in the program.

The Army formally opened the NATO Nike Training Center (NNTC) on 29 September 1980 at Fort Bliss, Texas. It operates independently as a separate NATO Maintenance and Supply Agency (NAMSA) facility and provides maintenance training to NATO countries on the European configuration of the Nike-Hercules missile system. Belgium, Germany, Greece, Italy, the Netherlands, and Turkey decided to improve the Nike system at the same time that the U.S. Army decided to phase it out. These events created the need for the center. Until then the Army had provided Nike maintenance training for the NATO allies. Two hundred and eighteen students attended during fiscal year 1981, and Fort Bliss provided administrative and logistical support valued at $2.3 million. FMS reimbursed these overhead expenses.

NATO and Europe

NATO interest in security assistance was high in fiscal year 1981 as efforts continued to improve combat effectiveness significantly through the modernization of armaments. Fiscal year 1980 momentum continued because the alliance recognized that the Soviets were continuing to build toward military superiority and perceived that the impressive modernization programs already carried out by the Warsaw Pact had resulted in a relative diminution of NATO's strength. At the end of the year NATO could look forward to some reinforcement as Spain prepared to join the alliance.

The U.S. commitment to weapon standardization and interoperability, along with increased host nation support, remained firm during 1981. Foreign Military Sales during the year were less significant than American cooperative initiatives and efforts for future arms development and production in three areas: (1) reciprocal procurement agreements among NATO countries to

make the total NATO defense market available to the defense industries of all alliance partners; (2) plans for coproduction of armaments as development is completed so that the weapon systems of one NATO country are available to other NATO forces at a low unit cost; and (3) "family of weapons" agreements for new development projects, so that new weapons systems incorporate modern technology from the NATO countries without duplicating research and development costs.

By the end of the year, the Army staff had identified four major trends regarding security assistance in the NATO region. First, allied efforts to assist NATO's two poorest members, Portugal and Turkey, had not produced the extensive modernization programs necessary. In the future the organization would have to increase its efforts to strengthen and modernize NATO's southern flank. Second, the Army would need to study future coproduction agreements very carefully with regard to their impact upon the U.S. production base and the accompanying release of sensitive defense technology. Third, the U.S. and the other member nations would continue to solicit their allies to purchase certain weapons in order to generate enough orders to keep production lines "warm" and, in some cases, to expand the production base. Long production lead-times frustrate modernization efforts even when funds become available. Finally, the basis for security assistance to some NATO allies required shifting from perceived relative formulas to recognized requirements. Negotiations throughout fiscal year 1981 moved in this direction by consistently pressing for "best effort" pledges rather than specific items of equipment or specific percentage formulas based on aid received by other nations.

Three European countries—Turkey, the Federal Republic of Germany (FRG), and Switzerland—participated in the Foreign Military Sales program to a significant extent during 1981. Turkey ordered, at a cost of $130 million, 348 kits for upgrading M48A1 tanks to the M48A5 configuration. Turkey planned to convert a total of 918 M48A1 tanks to M48A5s. By 30 September 1981 Turkey had shown an interest in manufacturing many of the items needed for modernization. Additionally during September, planning began on forming a combined U.S.-Turkey Tank Modernization Office in Turkey sometime during calendar year 1982 to oversee the entire program. During 1981 the Federal Republic of Germany accepted a new Foreign Military Sales case for a two-week training course on the use of a computer program to determine the effects of explosives on targets. The Corps of Engineers' Waterways Experiment Station scheduled

the course for presentation early in the first quarter of fiscal year 1982. In another Foreign Military Sales case the Corps of Engineers blew up a section of bridge construction to provide the German Army with information with which to evaluate the effect of explosives on bridges. Switzerland initiated a test program to select a new main battle tank in 1981. Two tanks, the U.S. M1E1 and the West German Leopard II, entered the competition. The Army leased two M1 tanks to the Swiss for a one-year technical test, and two more tanks for operational testing. The Swiss expected to complete their tests in the third quarter of fiscal year 1982 and make their selection during the fourth quarter. The Army staff was preparing a memorandum of understanding for Swiss acquisition and coproduction of the M1E1 as the fiscal year ended.

The Middle East and Africa

Defense Requirements Surveys continued to provide the first step in initiating or expanding security assistance relations with countries in the Middle East and Africa. These surveys consisted of either an on-site study to determine the requirement of a foreign government for a particular American weapons system or a wide-ranging study, also on-site, to determine the materiel, organizational, doctrinal, and manpower needs of foreign governments in light of the threat posed by potential enemies. During 1981 the Army conducted surveys in Saudi Arabia, Jordan, Egypt, and Sudan. Seven countries in the Middle East qualified during 1981 for either FMS credits, IMET, or Economic Support Funds. These last are monies contributed by the U.S. as either a grant or a loan to support friendly governments which face particularly difficult external security threats. The funds, administered by the U.S. State Department, may be used only to bolster the local economy as an offset to the government's abnormally large expenditures on defense and may not be used to purchase defense or defense-related materiel. Egypt and Israel received the largest FMS credits, while Jordan was the largest IMET client.

The security assistance program for Saudi Arabia continued to be the Army's largest program during fiscal year 1981. Total program value stood at $22.7 billion. Construction projects accounted for $18.8 billion; $1.9 billion was for Saudi Arabian National Guard (SANG) modernization, and $2 billion for Saudi Arabian Land Forces (SALF) modernization. At the end of the fiscal year the Army was considering plans to expand the Two-

Brigade Mechanization Program to include two additional brigades. In 1981 the Army and the Saudis drafted a Saudi Arabian Land Forces Aviation Master Plan which called for the procurement of 123 helicopters over the next seven years. The estimated cost exceeded $6.5 billion. The Security Assistance Division in the Office of the Deputy Chief of Staff for Operations and Plans expected that this program would be accepted and implemented during the first quarter of calendar year 1982. During 1981 the Saudi Ordnance Corps Program continued to improve the Saudi capability to maintain equipment provided under FMS.

On 24 August 1981 the United States and Saudi Arabia signed a six-year memorandum of understanding concerning the development of a comprehensive health care system for the Saudi Arabian National Guard. Since September 1979 when Prince Abdullah requested assistance from several countries, the U.S. has carried on negotiations with the SANG. The prince had asked for a complete health care system throughout his kingdom, to include construction and operation of hospitals and clinics, training programs, a logistics system, a field medical service, a medical records system, and a medical evacuation system. A team of Army Medical Department and Corps of Engineer personnel developed an intensive plan for accomplishing these objectives in August 1980. The Army provided the plan to the Saudi National Guard. Further discussions with Prince Abdullah revealed that his immediate interest was to open and have in operation two hospitals already under construction—one in Riyadh and one in Jidda.

Other countries expressed interest in the project and negotiated with the Saudi Arabian National Guard at the same time as the United States. In December 1980 the Saudis agreed that the British should operate the hospital in Jidda. Additionally, the Saudi National Guard and Great Britain entered into a memorandum of understanding for development and implementation of an entire health care system for the Saudi Guard. The following month the U.S. proposed that the U.S. operate and maintain the Riyadh hospital complex as a 200-bed acute-care facility. The Saudi Guard accepted the proposal, and the U.S. prepared an appropriate letter of offer and acceptance. However, the Saudi Guard wanted a memorandum of understanding similar to the one with Britain, addressing the entire medical project. Following detailed negotiations, the two countries signed the memorandum of understanding on 24 August 1981. The dollar estimates for a complete health care system were in the billions. For this reason there was considerable interest in and competition among U.S. health care corporations to obtain the contracts let by the U.S.

government. For the same reason considerable rivalry had developed between the U.S. and Great Britain over the award of these contracts.

The Department of State sent the first letter of offer and acceptance for the operation and maintenance of the Riyadh hospital complex to Congress in April 1981. The U.S. anticipated that the Saudi Arabian National Guard would sign the letter early in the first quarter of fiscal year 1982. The Army Medical Corps will oversee the letting of contracts to U.S. health care firms and supervise their fulfillment.

In fiscal year 1981 the major portion of support provided by the Corps of Engineers for foreign countries went to Saudi Arabia, as it had in past years. The Corps provided design and construction support under four programs: the Engineer Assistance Agreement Program, the Saudi Naval Expansion Program, the Saudi National Guard Modernization Program, and the Peace Hawk–Peace Sun Program. In addition, the Corps continued to work with and assist the Saudi Arabian Army Ordnance Corps in managing a modern logistics system. During the year contractors completed projects let by the Corps of Engineers valued at $985.6 million. The Corps awarded construction contracts valued at $1.8 billion as well as design contracts and contracts for the modification of designs valued at $35.2 million. The U.S. government approved Foreign Military Sales cases, including amendments and modifications, totaling $1.528 billion for implementation by the Corps and canceled cases worth $1.491 billion. In addition the Corps prepared master plan estimates and design and construction schedules for army aviation facilities for the Saudis. The construction program, which will probably fall to the Corps, has an estimated value of $2 billion.

Also in the Middle East, the Corps provided support for the Israeli-Egyptian Peace Treaty. The U.S. Air Force acted as the Department of Defense project manager and the Corps of Engineers as the construction agent for the design and construction management of two air bases in the Negev Desert. The Department of Defense approved the program, which was estimated to cost $1.044 billion based on the amended plan of work. Funding for the initial phases of the construction program, some $2.58 million, came from the Israeli Foreign Military Construction Sales (FMCS) case. Construction continued throughout fiscal year 1981 at the Ramon and Ovda sites. In addition to the construction of the two Israeli air bases, the Corps of Engineers managed the design and construction of two base camps in the Sinai to support the Multinational Force and Observers Peacekeeping Operation.

The Corps awarded the first increment of a contract on 2 September 1981. It expects the completed program to cost from $50 million to $100 million.

During 1981 the Corps continued its involvement in the construction and installation of equipment for the Jordan Armor Rebuild Facility (JARF). By the end of the year, construction was 50 percent complete and the rest was scheduled to be done by January 1983. The Corps also finished a management plan to guide the Jordanian armed forces in all actions necessary to start up and operate the JARF at its rated capacity. Total case value as of 30 September 1981 was $16.79 million.

As a result of the Syrian-Jordanian border crisis in December 1980, the Army expedited delivery of materiel provided by the Military Assistance Program and Foreign Military Sales to the Jordanian Army. Special airlifts delivered 1.13 million rounds of 5.56-mm. ammunition, 22,600 M67 hand grenades, 500 90-mm. high explosive tank cartridges, 2,000 81-mm. high explosive cartridges, 323 M60 machine guns, and 400 81-mm. illuminating cartridges. Jordan's largest purchase from the Army during fiscal year 1981 consisted of twenty-four AH–1S Cobra helicopters, which with support equipment totaled $2.1 billion.

During the fiscal year, Morocco, Tunisia, and Egypt were the most important FMS and IMET customers in northern Africa, with Egypt receiving the bulk of American attention. Egypt in 1981 continued to receive extensive Foreign Military Sales credits to finance security assistance programs begun in fiscal year 1980. The total program through fiscal year 1983 had a planned cost of $3.95 billion. The Army portion of the program was valued at $2.3 billion. The most significant items were 439 M60A3 tanks, 1,214 M113 vehicles, 12 Improved Hawk batteries, and an undisclosed number of I–TOWs. Security assistance provided during 1981 amounted to $900 million, with accelerated delivery of weapons receiving the greatest emphasis. These munitions included 128 M60A3 tanks, 105-mm. ammunition, M88A1 recovery vehicles, and associated spare parts and test equipment diverted from Army stocks to meet the early delivery dates. The Department of the Army in April 1981 directed the U.S. Army Training and Doctrine Command to send a fourteen-man mobile training team to Egypt to help the Egyptians incorporate fifteen CH–47 helicopters into their armed forces. The Egyptians had purchased the helicopters commercially. In addition to new equipment, Egypt benefited from twenty-eight Defense Production Assistance Projects, of which the Army had implemented twelve by 30 September 1981. The objective of these programs

was to strengthen the capabilities of the Egyptian defense industry as well as the Egyptian economy. Representing the Army, Maj. Gen. Clyde W. Spence, the Assistant Deputy Chief of Staff for Logistics (Security Assistance), conducted the first management review of Egypt's entire program with his Egyptian counterpart in September 1981. They discussed the complete program, identified and reconciled differences of interpretation between the two services, and laid the groundwork for new initiatives.

The Army increased the number of mobile training teams in sub-Sahara Africa in 1981. A majority of the teams were equipment oriented. However, nation-building projects, designed to improve a country's technical infrastructure or economy significantly, also increased.

The slumlike conditions in which ordinary soldiers and their families lived contributed to the Liberian Army's lack of loyalty to the Tolbert regime and fanned the violence associated with the coup that brought Master Sergeant Samuel K. Doe to power in April 1980. During 1981, a mobile training team worked with the Liberian government on housing for its army, while a second team helped upgrade command and control. A technical assistance field team (TAFT) deployed to Nigeria for one year to help the Nigerian Army develop its physical training program. Also, a defense survey team traveled to Nigeria to study the question of expanding the training facilities of that country's army into five new regions.

The U.S. placed increased emphasis on security assistance to Sudan during fiscal year 1981. The Army played a key role in preparing a military options package for the country. As a result the American and Sudanese armies developed a ground forces package which consisted of M60A3 tanks, M88 recovery vehicles, M114 towed howitzers, heavy equipment transports, ground surveillance radars, and M125A2 (81-mm.) mortar carriers. The Army staff planned to accelerate delivery of this equipment to Sudan early in fiscal year 1982 by taking it from U.S. Army assets.

Sudan, Nigeria, and Kenya were the leading Foreign Military Sales and International Military Education Training Program customers south of the Sahara during 1981. The Army staff expected further expansion during fiscal year 1982.

Pacific Region and Asia

Security assistance programs for the Pacific region and Asia during fiscal year 1981 continued to be affected by the instability

in the Indian Ocean area which was caused by several factors: the Soviet invasion of Afghanistan and the possibility of further Soviet advances into Pakistan and Iran; the threat of a wider conflict in Southeast Asia arising from the occupation of Kampuchea by the Socialist Republic of Vietnam, coupled with Thailand's tacit allowance of anti-Vietnamese elements operating from inside Thailand; the unresolved internal problems in the Philippines; and the consolidation of power within Korea by the regime of President Chun Doo Hwan.

U.S. support of military equipment previously furnished to Taiwan continued. The Department of Defense announced in early January 1980 the sale of new materiel to the Taiwanese. Deliveries began during 1981. Army equipment included self-propelled 155-mm. and 8-inch howitzers, .50-caliber machine guns, and IHawk missiles. Under the 1981 Foreign Military Sales program for Taiwan, forty Taiwanese personnel—nineteen officers and twenty-one enlisted men—received U.S. Army training, most of it of a technical nature, in twenty-three courses of instruction.

The United States continued to contribute to South Korean security through the Mutual Defense Treaty of 1954, the maintenance of U.S. troops in Korea, an extensive Foreign Military Sales program, IMET training, and technical cooperation in the development of selected Korean defense industries. The Carter administration in the fall of 1977 decided to withdraw all U.S. forces from Korea over a five-year period. In July 1979 President Carter decided, on the basis of new intelligence information regarding troop and equipment levels in the north, to defer any more withdrawals for two years. President Reagan canceled plans to withdraw ground combat troops, although some withdrawal of ground support personnel and transfer of key items of military equipment continued as scheduled. During fiscal year 1981, the Army added ammunition valued at approximately $81 million to U.S. war reserve stocks in the Republic of Korea (ROK), which are designated for use by ROK ground forces in the event of war. The Army provided instruction during the same period to eighty ROK personnel—sixty-seven officers and thirteen enlisted men—in various professional development and technical training courses.

Japan continued to acquire military equipment, services, and training of a defensive nature from the United States in 1981. Japan also continued to conduct a vigorous licensed production program which enhanced its defense posture, expanded that portion of its industrial base capable of defense production, increased

its self-sufficiency, and ensured interoperability with U.S. forces. Coproduction agreements with the United States involved the production of such systems as Nike and the IHawk. Discussions were held concerning coproduction of additional systems to include TOW, Copperhead, Stinger, the M110A2 howitzer, and the AH–1S helicopter. During the year, thirty-two Japanese Ground Self-Defense Force personnel received professional or technical training in the United States, and 1,503 officers and men participated in IHawk and Nike annual service practice at Fort Bliss, Texas.

The threat of incursions across the Thai-Kampuchea border by forces of the Socialist Republic of Vietnam continued to stimulate Thai concerns and requests for security assistance. Air defense and additional armor rated high on the priority list for Thailand. The U.S. and Thai governments initiated bilateral logistical planning between their respective services in order to provide Thailand with the expertise needed for long-range planning.

The U.S. Army, Navy, and Air Force conducted discussions in Washington with a Pakistani defense group in mid-July. The Army targeted its security assistance efforts on the deficiencies in Pakistani defenses and on the obsolescence of existing equipment. The Pakistani were mainly concerned with the early delivery of F–16 aircraft. However, armor, air defense, and other combat capabilities also received considerable attention. U.S. overtures to Pakistan, of which the Washington Security Assistance Conference was only one example, caused U.S. relations with India to cool during the year. India did not use all the IMET funds allocated to it during 1981, and the two governments did not conclude any major Foreign Military Sales arrangements.

Western Hemisphere

Nineteen Latin American countries received FMS financing or training under the International Military Education Training Assistance Program. Countries which in previous years rejected U.S. security assistance or had their programs terminated by the U.S. government because of human rights issues did not receive funds during fiscal year 1981. Congress prohibited Nicaragua from receiving assistance during 1981.

El Salvador and Honduras became the major recipients of security assistance in 1981, with El Salvador receiving more attention because of the fighting in that country. The United States provided $25 million in FMS credits to El Salvador. In addition

El Salvador received $25 million worth of security assistance by virtue of two decisions made by the President under Section 506 of the Foreign Assistance Act, which authorized him to increase assistance by one-fourth of the amount already approved by Congress without seeking additional authorization. El Salvador used $20 million of Section 506 authority to draw on Army stocks. Items provided included the lease of six UH–1H helicopters. The U.S. gave another eight UH–1Hs to El Salvador outright. The Army also provided a variety of small arms, crew-served weapons, ammunition, clothing, and combat gear.

Relations between the U.S. Army and Latin American armies remained generally good throughout the year. The proposed personnel exchange programs with Argentina and Chile and the passage of the Yatron Amendment, which approved incremental costs for IMETP recipient countries, helped maintain good relations. Before 1981 the Army prorated costs among students, that is, foreign countries paid the average cost per student. The incremental cost approach presumes that the Army would teach these courses for its own personnel whether or not foreign students were present. The foreign country is charged, therefore, only the additional or incremental cost to the Army caused by the added students.

Security Assistance Affiliated Program

An officer who selects a foreign area officer military occupation specialty goes through rigorous training. After completing foreign area officer courses at the U.S. Army Institute for Security Assistance, Fort Bragg, North Carolina, the officer must obtain a graduate degree in international relations or regional studies. He or she spends one year in the area of specialization and learns one indigenous language. Only then is preparation complete. Until 1981 the Office of the Assistant Chief of Staff for Intelligence was responsible for the overseas training of foreign area officers even though the Office of the Deputy Chief of Staff for Operations and Plans was the proponent for the foreign area officer military occupation specialty (MOS). In the current fiscal year Lt. Gen. James M. Lee, the director of the Army staff, transferred the responsibility to ODCSOPS effective January 1982. In other developments in the foreign area officer MOS, the Security Assistance Division in ODCSOPS established a Foreign Area Officer Steering Committee as prescribed by the Department of the Army for all MOSs. The committee met on 16 July 1981, set up a series of topics that it planned to address

including the structure of foreign area officer management, and broke up into working groups. At the end of the year the Army staff was working on the new Joint Manpower Program for the Rapid Deployment Joint Task Force. The new program reflected a substantial increase in foreign area officer positions.

The personnel exchange program (PEP) expanded during 1981 from eighty-six positions in fifteen countries to ninety-four positions in sixteen countries. The expansion included an agreement with Honduras for an exchange program as well as an increase of two positions for Australia, two for Canada, one for New Zealand, and three for the United Kingdom. Exchanges with Australia, Canada, New Zealand, and the United Kingdom made up the bulk of the personnel exchange program in 1981—seventy-five of the ninety-four approved positions. At the close of the fiscal year the government was actively considering expansion of the program to Colombia, Venezuela, and Mexico; moreover, the Departments of State and Defense authorized the Army to begin exploratory talks with the armies of Argentina and Chile. To assist efforts in Latin America, ODCSOPS designated the U.S. Security Assistance Agency, Latin America, as the focal point for regional matters of the personnel exchange program. The most important unresolved question affecting the future direction of the program was a legal one. Some countries viewed congressional prohibitions concerning reciprocal arrangements for formal training and medical care as impediments to realizing the full potential of the program.

13. Special Functions

Special functions include activities which deeply involve the Army in the life of the civilian community. The civil works program of the Corps of Engineers, which dates from the 1780s, includes navigation aids, waterways improvement, support of the President's hydropower program, and disaster response and recovery. The Army's environmental protection and preservation programs are designed to bring Army practices into conformity with federal laws and regulations in an area of increasing concern to the nation. The energy program involves the Army in a coordinated, governmentwide effort to develop alternative energy sources and to conserve energy. The Army's actions in all three areas have become controversial as public concern about the environment and energy has increased in recent years. As a result, the Army has become involved in litigation concerning these matters. Finally, in compliance with national policy the Army tries to use small and disadvantaged businesses when it awards contracts.

Civil Works

In fulfilling its major water resources development and navigation responsibilities, the Corps of Engineers also maintains, in peacetime, a technical work force essential for successful mobilization. As the decade of the 1970s closed, expenditures for operations and maintenance grew, while those for new construction began to decline. The country's water resources development program lacked new starts and was plagued by excessive delays and sometimes cumbersome regulations.

To invigorate water resources development and put the country's water program on a sound basis, the Reagan administration moved to implement a fresh approach, one built on a new model of public and private partnership. The Assistant Secretary of the Army for Civil Works initiated reforms in the Corps' regulatory program, planning process, project financing, cost sharing, and internal regulations.

On 17 February 1981 President Reagan signed Executive Order 12291 setting up the Presidential Task Force on Regulatory Relief and designated Vice President George Bush as chairman. The Corps worked with the Civil Works Assistant Secretary and

the Office of Management and Budget (OMB) to identify five basic issues that needed study and evaluation in the Corps' regulatory program. They were as follows: (1) reduction of permit processing time; (2) more authority for the individual states; (3) reduction of overlapping responsibilities; (4) expansion of the Corps' general permit program; and (5) improved definition of program objectives and jurisdictional limits.

Several senators and representatives introduced legislation in the 97th Congress to redefine the jurisdiction of the Army Corps of Engineers in granting permits to nonfederal interests for dredging and filling. The most notable legislation was the Tower-Bentsen Bill (S. 777), which sought to limit Corps jurisdiction to tidal coastal waters, waters now navigable or reasonably capable of being made navigable, and historically navigable waters. The bill would remove streams and adjacent wetlands upstream of these limits from the jurisdiction of the Corps. Congress did not hold hearings on this legislation during fiscal year 1981.

Following the fall 1980 Division Engineers Conference, the Planning Division of the Civil Works Directorate in the Office of the Chief of Engineers initiated an internal Regulation Reform Action Program (RRAP) to review, evaluate, and, as necessary, reform civil works planning directives and publications. The RRAP team recommended canceling thirty-one of the existing 102 publications and consolidating or eliminating the rest. It consolidated guidance into six engineer regulations and four engineer pamphlets. A 450-page *Notebook* replaced 1,700 pages of guidance and 7,000 pages of information. This internal process continues and will provide updates to the planning guidance.

Beyond the RRAP effort, the Director of Civil Works also instituted a Planning Improvement Program (PIP) to promote timely and economical completion of quality reports. Scheduled for implementation during the PIP of fiscal year 1982 are (1) creation of planning divisions in districts; (2) improvement of the Washington-level report processing system; (3) encouragement of better developmental assignments for planners; and (4) implementation of the recommendations by the Civil Works' blue-ribbon panel on report management. Most far-reaching of these will be the mandatory attendance of district engineers at the Board of Engineers for Rivers and Harbors meetings dealing with reports from their districts. (The Board of Engineers for Rivers and Harbors, established by Congress in 1902, is composed of seven senior engineer officers. Its primary role is to conduct independent reviews of Corps water resources projects and report its conclusions and recommendations to the Chief of Engineers.)

In March 1981 the Assistant Secretary of the Army for Civil Works transmitted to Congress the administration's proposed legislation for cost sharing of inland waterways and coastal and Great Lakes channels and harbors. These bills, S.809 and S.810, called for full cost recovery of federal construction and operation and maintenance costs for navigation projects. While the administration indicated its intention to recommend higher nonfederal cost sharing for other types of water projects, it made no further legislative proposals during fiscal year 1981. The Senate Environment and Public Works Committee held hearings on navigation user charges but did not report out any legislation.

Fiscal year 1981 funds appropriated for the Corps of Engineers' Civil Works Program totaled $3,099,962,000. This figure represented a decrease of $163,264,000 from fiscal year 1980 appropriations which had included $170 million in flood control and coastal emergencies and $45 million in operating maintenance and general supplemental funding for Mount St. Helens. The decrease occurred primarily because of the lower level of funding for the Mount St. Helens emergency ($25 million) in the year just ended. The 1981 appropriated funds included a supplemental appropriation of $109.05 million, of which $45.05 million was for pay increases. The table below provides a breakdown by title of the total fiscal year 1981 appropriations. The amounts include funds provided by the 1981 Energy and Water Development Appropriation Act (PL 96–367) and the 1981 Supplemental Appropriations and Recession Act (PL 97–12).

General Investigations	$ 134,013,000
Construction, General	1,593,892,000
Operations and Maintenance, General	967,905,000
Flood Control, Mississippi River and Tributaries	237,519,000
Flood Control and Coastal Emergencies	25,000,000
General Expenses	86,630,000
Special Recreation Use Fees	5,000,000
Permanent Appropriations	6,778,000
Revolving Fund	43,225,000
Total	$3,099,962,000

The largest appropriation—Construction, General—permitted work on 213 specifically authorized projects and 13 elements of the Mississippi River and tributaries project. Eighteen projects were completed during fiscal year 1981. The completed projects will provide local flood protection to 301,741 acres of flood-prone

land; reservoir storage to retain some 203,100 acre-feet of runoff for flood protection; and 167,300 acre-feet of storage for water. Projects included improvements to one coastal harbor, 8.2 miles of deep-draft navigation channels, 5.4 miles of beach erosion control, three hydropower generating units with a total installed capacity of 333,000 kilowatts, and four major rehabilitation projects.

Authorized full-time permanent civilian manpower in the Corps of Engineers has declined 7.4 percent from fiscal year 1971 to 1981. The table below shows the changes from 1971 through 1981.

Fiscal Year	Authorized FTP	Percent Change
1971	29,652	
1972	28,600	−3.5
1973	28,541	0.2
1974	28,541	0.0
1975	28,740	0.7
1976	28,548	−0.7
1977	28,650	−0.3
1978	28,602	−0.2
1979	28,558	−0.1
1980	28,238	−1.1
1981	27,445	−2.8

Beginning in fiscal year 1982, control of the Corps' manpower will be converted to the full-time equivalent of work-years expended rather than the level of full-time spaces authorized for use at the end of the year.

The Interagency Coal Export (ICE) Task Force, in which the Corps played a major role, submitted its report to the President in January 1981. The ICE report concluded the following: (1) world demand for steam coal would grow significantly; (2) the United States would increase its future share of world steam coal; (3) the internal port limitations in the United States would raise the cost of steam coal for foreign buyers; and (4) steps would have to be taken to simplify, coordinate, and remove unnecessary delays from the governmental review process for construction activities and to expedite implementation.

The Corps Institute for Water Resources neared the end of research on two specially mandated studies—the National Waterways Study and the National Hydropower Study. The institute held public meetings to present the basic conclusions that came

from the studies and to discuss potential recommendations. Most important, the waterways study concluded that waterway traffic, primarily for coal and grain, will increase. Although projected growth will be less than that experienced in recent years, and could be even lower depending on the user fees finally adopted, several locks will become congested by the turn of the century, and the need for more efficient replacement locks will increase. The draft report predicted the need for about $6 billion in new investment (in 1977 dollars) by the year 2003, primarily for new lock chambers which would provide additional capacity and selected deepening of channels to increase transport efficiency in both the inland and deep channel segments of the waterway system. Finally, the National Waterways Study concluded that apparent environmental risks would be predictable and manageable.

The National Hydropower Study, begun in 1977, recommended a national hydroelectric power development program, as well as institutional and policy modifications, to increase the effectiveness of hydrodevelopment in the next twenty years. At the end of the fiscal year the Corps headquarters, Corps elements, and other interested agencies were reviewing the draft.

The Corps, in cooperation with the U.S. Department of Energy, the Federal Energy Regulatory Commission, the Department of the Interior's Bureau of Reclamation, and the Rural Electrification Administration and the Farmer's Home Administration—both from the Department of Agriculture—sponsored an international conference on hydropower, Waterpower '81, in Washington, D.C., on 22–24 June 1981. The conference provided a forum for the exchange of ideas and information on hydropower among interested professionals and nonprofessionals in both government and business throughout the United States and in twenty-three foreign countries. Keynote addresses by the Assistant Secretary of the Army for Civil Works and by Senator Frank Murkowski of Alaska highlighted the conference. The Assistant Secretary challenged both public and private sectors to be more innovative and to search for more effective ways to stimulate and finance hydropower production. Senator Murkowski urged conference participants to continue their efforts to capture this renewable resource.

Under the national program for inspection of nonfederal dams, the Corps of Engineers updated and verified the inventory of dams. The revised inventory listed over 67,000 dams, of which about 21,000 were in the "high and significant hazard" category. By the end of September 1981 the Corps still had not obtained

the legislative authority it needed to keep the inventory current. Also under the program, the Corps inspected 8,794 dams and judged 2,917 of them, or 33 percent, as unsafe due to various deficiencies, primarily for inadequate spillway capacity. The Corps gave state governors copies of inspection reports on all dams having deficiencies and recommended remedial measures. On the bottom line, the Corps concluded that (1) the updated inventory of dams is a reliable data base for state dam safety programs; (2) the large percentage of unsafe dams and the lack of implementation of remedial measures indicate that dam owners are not willing to maintain their dams and that most states are not willing to require the needed maintenance; and (3) most states have shown a willingness to implement and maintain effective state dam safety programs if federally funded, but only a few states have indicated that they will continue these programs with federal assistance.

The Corps of Engineers Dam Safety Assurance Program was initiated with conditional operational studies conducted in fiscal year 1980. The program is directed toward completed Corps of Engineers projects including those operated and maintained by local interests, which may contain potential safety hazards when viewed from present day engineering standards and knowledge. The program intends to upgrade those features which have design or construction deficiencies related to dam safety without changing the original project's purpose.

The fiscal year 1980 appropriations included $8.1 million for studies and designs involving 170 projects. Fiscal year 1981 appropriations included $20.3 million for studies and designs involving 130 projects and $0.8 million for construction at one project.

Several Corps projects generated special public interest during 1981. The Tennessee-Tombigbee Waterway, which would connect Demopolis, Alabama, to Pickwick Pool on the Tennessee River, proceeded toward completion despite some continuing opposition. Total allocations since 1971 stood at $1.109 billion, leaving $671 million still needed to complete the project.

The Flood Control Act of 1965 (PL 89–298) authorized the Dickey-Lincoln project on the upper Saint John River, in Maine. While the project had reached a stage at which construction could begin, controversy over its usefulness made the prospects of Dickey-Lincoln uncertain; and by the end of the fiscal year no construction funds had been appropriated.

The Lower Snake River Fish and Wildlife Compensation Plan, authorized under the 1976 Water Resources Development

Act, was designed to compensate fish and wildlife losses associated with the construction and operation of the four dams on the Lower Snake River. Because commercial hatcheries lacked experience with rearing anadromous fish, the Corps argued that it should not seek authority to make a contract with commercial hatcheries to supply steelhead trout.

Heavy rains coupled with saturated ground conditions in the Salt River Basin during 23–28 July 1981 caused high runoff rates and a rapid rise in the pool created by the construction of the Clarence Cannon Dam in Missouri. The resulting overflow caused damage to the main dam embankment, terminal wells, sand chimney, sand drain, and instrumentation. The St. Louis District Engineer modified the existing contract to permit the repair of the main dam. As of 30 September 1981 the repairs were essentially complete. Upstream embankment protection was now provided to elevation 592. To achieve still greater flood protection during the 1982 construction season, the St. Louis District planned to raise the embankment protection.

The Corps also devoted considerable effort to a study of the Atchafalaya Basin, Louisiana. As Mississippi River flood flows increase, the project provides an additional outlet to the Gulf of Mexico by receiving flows through the Old River and Morganza Control Structures thereby relieving the flood threat to Baton Rouge and New Orleans. The floodway was formed by constructing protection levees an average of eight miles to the east and seven miles to the west of the Atchafalaya River. Because of extremely poor foundation conditions, these levees are subject to continuous settlement. The levees are from one to six feet below proper design grade. The floodway is intended to carry one half (1.5 million cubic feet per second) of the Mississippi River project flood flow.

The primary object of this 1981 study was to develop a multipurpose plan that would protect south Louisiana from Mississippi River floods while retaining and restoring the unique environmental features and long-term productivity of the basin's natural environment. The study addressed the operations of the Old River project; safe conveyance of project flood flows through the floodway and reduction of sedimentation; enhancement of fish, wildlife, and recreation resources on the floodway; safe conveyance of the projected flood waters through the outlets to the Gulf of Mexico; and protection of the backwater area east of Morgan City, Louisiana. A number of alternative plans were developed to meet the study objectives. The New Orleans District submitted a draft report and an environmental impact statement

to the Mississippi River Commission on 20 March 1981. The report addressed measures requiring congressional authorization, generally those relating to environmental preservation, as well as the features previously authorized by Congress, mainly for flood control.

The Corps held five public meetings between 14 July 1981 and 22 July 1981 to hear comments on the tentatively selected plan. Subsequent to the public meetings, the governor of Louisiana announced a compromise real estate plan for the basin in cooperation with the landowners in the basin, a chemical company, and environmental interests. By the end of the fiscal year the Corps had not officially reviewed the plan. Following a number of public meetings and suggestions by the governor, the New Orleans District Engineer will submit a final report to the Mississippi River Commission.

Environmental Protection and Preservation

Continued central management of the Army Pollution Abatement Program (APAP) during fiscal year 1981 resulted in significant progress toward bring Army installations into compliance with applicable air and water standards. The fiscal year 1981 Military Construction, Army (MCA), budget line funded twenty-two projects at a cost of $49 million. Of the 116 installations identified in 1978 as not being in compliance with applicable air and water standards, only 17 will remain in noncompliance upon completion of all projects in the fiscal year 1981 and prior year MCA programs. The Pollution Abatement Program will continue under central management by the Office of the Chief of Engineers for the forseeable future, in anticipation that Congress will require the Army to comply with solid and hazardous waste standards of the Resources Conservation and Recovery Act (1976) and with the Comprehensive Environmental Response, Compensation, and Liability Act (1980).

Congress passed the comprehensive Environmental Response, Compensation, and Liability Act in December 1980. This legislation, popularly referred to as Superfund, provides for federal response authority and polluter liability for hazardous substances released into the environment. The act also required that businesses or agencies report to the EPA by 9 June 1981 any past practices which might have caused hazardous or toxic substances to be introduced into the environment. The Army reported a considerable number of toxic sites, located on both active installations and land previously disposed of as excess. On 14 Au-

gust 1981 President Reagan issued Executive Order 12316, "Response to Environmental Damage," which made the Department of Defense responsible for hazardous substances on DOD installations. The department in turn delegated the responsibility to the secretaries of the military services. The Office of the Chief of Engineers informed the field of the areas of shared responsibility for hazardous materials and hazardous waste management between the Army and the Defense Logistics Agency.

A groundwater monitoring program was initiated during fiscal year 1981 under the technical direction of the U.S. Army Environmental Hygiene Agency, a Health Services Command unit, and the Huntsville Division of the Corps of Engineers. The program was designed to comply with the requirements of the Resources Conservation and Recovery Act. As a consequence of this law, all Army activities that handle (transport, treat, store, or dispose) hazardous waste filed applications with the Environmental Protection Agency (EPA) on 19 November 1980, which would allow the facilities to continue operating under an interim status until the EPA promulgates final permit procedures. If the activities had not requested an extension, the law would have required them to cease operation and contract out all functions involving hazardous waste.

In January 1980 the Army published regulations in draft form for comment, which put in force the Council on Environmental Quality regulations implementing the procedural provisions of the National Environmental Policy Act (40 *Code of Federal Regulations* 1500–1508). The Army published the final regulations in 32 CFR 651 on 20 October 1980, to take effect on 3 November 1980, and issued the same text as AR 200–2 on 1 September 1981.

In 1975 the Army initiated the Installation Restoration Program under the direction of the U.S. Army Toxic and Hazardous Materials Agency (USATHAMA), a DARCOM field operating agency which reports directly to the chief of staff of DARCOM. The program involves the identification, assessment, and restoration of Army properties that have been contaminated by hazardous materials. USATHAMA gave priority to installations where contaminants were migrating beyond the post boundaries and to those that had been identified as excess and were planned for release to other use. Most field work—some 85 to 90 percent—was performed by contractors under the supervision of USATHAMA. Over the past six years USATHAMA has undertaken assessments at 124 installations. The agency performed a record search, the first phase of an assessment, at each installation

to determine if the potential existed for contaminant migration. USATHAMA recommended follow-up survey work, the second phase of the assessment, for 47 of the 124 installations. As of 30 September 1981 USATHAMA had prepared fourteen survey reports at an average cost of $330,000 per installation. As a result of its assessment efforts, USATHAMA estimated that past operations may have caused environmental degradation at 195 Army installations. Because assessment activities were prioritized, the Army believes that most environmental contamination problems have already been identified and are being addressed.

During fiscal year 1981, USATHAMA performed record searches at 38 installations. It initiated efforts, including groundwater sampling and analysis of data, at 10 installations. USATHAMA completed survey work at 6 of the 10 installations and prepared survey reports on 3 of them: Navaho Depot Activity, Arizona; Fort Wingate Depot Activity, New Mexico; and Sacramento Army Depot, California. The funding level for fiscal year 1981 stood at $17.3 million. USATHAMA scheduled twenty-nine record searches and six surveys for initiation in fiscal year 1982. The agency anticipated the completion of final reports on 12 installations during the same period. The funding guidance for the new year, as of 30 September 1981, was $13.7 million. USATHAMA assisted the Navy in establishing its Installation Restoration Program during fiscal year 1981.

Fort Sill, Oklahoma, won the Secretary of the Army Environmental Quality Award for its superior program during 1980. The Army Environment Committee selected Fort McClellan, Alabama, as first runner-up and Fort Devens, Massachusetts, and Fort Huachuca, Arizona, as second runners-up. The committee judged the ten installations competing for this award on the overall quality of their written presentation and their program achievements. In recognition of the number of times that Fort Sill had won the award, the Undersecretary of the Army, James R. Ambrose, went to Fort Sill to make the presentation personally. The Army had held all previous awards ceremonies at the Pentagon.

The Army Energy Program

In August 1981 the Army Energy Office published the final version of the Army Energy Plan, first distributed in draft form in September 1980. The first major revision since the introduction of the plan in 1978, the 1981 edition included an update of

the world energy situation, program and funding information, and consumption data to make the plan more useful.

The Army's total energy consumption, as compared to the fiscal year 1975 adjusted consumption levels, is given below in trillion BTUs (British Thermal Units):

	FY 75	FY 81	Conservation (Percent)*
Installation Operations			
Purchased Electricity	89.68	90.73	−1.17
Natural Gas	44.81	38.62	13.81
Liquified Petroleum Gas	2.24	1.50	33.04
Coal	34.84	24.35	30.11
Purchased Steam	0.68	1.10	−61.76
Petroleum Heating Fuels	69.51	49.47	28.83
Subtotal	241.76	205.77	14.89
Mobility Operations			
Aviation Fuel	13.15	15.26	−16.05
Motor Gasoline	16.85	13.78	18.22
Diesel Fuel	16.39	13.39	18.30
Subtotal	46.39	42.43	8.54
Army Total	288.15	248.20	13.86

*A negative figure reflects consumption exceeding the baseline.
Source: Defense Energy Information System (DEIS)

The Army divides its energy program into two major components: installation operations and mobility operations. Most of the savings since 1975, some 14.89 percent, have accrued in installations operations because of the limits of existing technology and because of the proportionately large amount of energy expended in that area, 83 percent in 1981. The energy conservation program for facilities covers a broad range of actions directed toward an overall reduction in energy consumption of 20 percent by fiscal year 1985 from the 1975 totals. Included within this framework are actions aimed at shifting major energy loads from oil and natural gas to coal, which is far more plentiful, and increasing fuel storage facilities to minimize the impact of sudden supply shortages.

The Army has substantially reduced its energy consumption since the OPEC embargo of 1973. Reductions are continuing, although the descent is less rapid. The decreased consumption has not been enough to offset the increase in total energy costs that resulted from the rapid escalation in the unit costs of energy, basically oil, natural gas, coal, and electricity. Electrical consumption has proven the most difficult to reduce. Many local

management actions such as consolidation or inactivation of facilities, changes in temperature standards, fine tuning of equipment, and increased motivation of personnel have contributed significantly to overall savings.

The greatest energy-saving contribution within the program is made by the Energy Conservation Investment Program (ECIP). It attempts to reduce consumption through the revamping of existing fixed facilities and will play a large role in achieving the 20-percent reduction in energy consumption per square foot in existing Army facilities, mandated by Executive Order 12003. Additionally, ECIP helped offset the effect of continually increasing unit costs of energy on the Army budget. ECIP includes projects to install insulation, storm or thermal windows, and space temperature controls; to improve heating, cooling, and electrical plants and distribution systems; and to introduce of energy monitoring and control systems that use central processing units, waste heat recovery systems, solar hot water systems, and solid waste incinerators with heat recovery. Begun in the fiscal year 1976 program, ECIP was scheduled in 1981 to extend at least through fiscal year 1987. As of 1981, Congress had appropriated $270.5 million for 253 ECIP projects. The table below summarizes the accomplishments of ECIP (excluding family housing) since its inception, from 1976 to 1981.

FY	Congressional Appropriations $ Millions	Estimated Savings BTU × 10^{12}	Number of Projects
76	30.425	2.272	42
77	50.306	2.773	41
78	24.786	1.399	20
79	52.697	2.823	41
80	44.970	2.187	39
81	67.370	3.596	70
	270.554	29.115	

The Energy Engineering Analysis Program (EEAP), initiated by the Corps of Engineers in 1976, is an attempt to develop a systematic plan of projects to reduce energy consumption in existing facilities. All energy conservation techniques at each major Army installation are investigated to determine practicality and to quantify energy savings and costs. Techniques analyzed include major and minor building and equipment modifications, equipment replacements, energy management and control systems, and

operational and procedural revisions. From the EEAP studies came a list of projects, with priorities established by energy savings and economic criteria, for funding under the ECIP or by the military construction authorization. EEAP also develops low- and no-cost projects to be implemented by installation personnel. On a selective basis the studies also analyze conversion from critical petroleum-based fuels to coal or to renewable energy sources, such as solar or biomass.

As of 30 September 1981 the Corps of Engineers had EEAP studies under way at 105 installations in the continental United States, three in Alaska, twenty-nine in Europe, and nineteen in Korea, as well as at ten locations in the Hawaiian Islands and six in Japan and Okinawa. It had completed the initial portion of the studies at an additional thirty-seven CONUS installations and seven European. In the fiscal year 1981 program the Corps awarded 134 contracts and contract increments, valued at $17.4 million, for work at 126 different installations.

Approximately 67 percent of the ECIP projects proposed for fiscal year 1983 in the continental United States resulted from EEAP studies. Although representing only 39 percent of the dollar value of all ECIP projects in CONUS, they account for 47 percent of the projected dollar savings and 54 percent of the energy savings. In Europe 16.7 percent of the fiscal year 1983 ECIP projects resulted from EEAP studies. This represented 5 percent of the dollar value of the European ECIP projects and accounted for 4 percent of the expected dollar savings and 6.7 percent of the energy savings.

The Army continued to expand the use of solar energy on demonstration projects during fiscal year 1981. A family housing unit, heated and cooled by solar energy, became operational. It was the third project partially funded by the Department of Energy. The Department of Defense provided the money for four projects during the same period, making a total of thirteen DOD-funded facilities within the Army. The new projects included a school, a range operations center, a dining facility, and a hospital.

The Military Construction Authorization Acts of 1979 (PL 95–356) and 1980 (PL 96–125) required the installation of solar energy systems in all new facilities to the extent that such systems were cost effective. As a result the Army constructed eight projects that became operational during 1981 including approximately 950 family housing units using solar energy. The Corps of Engineers studied about twenty-five other projects during the year and found them not to be cost effective, except for a few

projects that were cost effective but which the Army did not have the necessary funds to build.

During 1981, shifting ideas of what constituted "cost effectiveness" had an impact on the Army's effort in solar energy. In January 1980 the Department of Energy published regulations that established a methodology for all federal agencies to use in determining cost effectiveness over the life cycle of a facility. The fiscal year 1981 Military Construction Authorization Act (PL 96–418) contained a solar requirement using essentially the same cost-effectiveness criteria as found in previous acts. Some thirty solar projects were cost effective under those guidelines. However, the fiscal year 1981 Military Construction Appropriations Act (PL 96–436) contained a solar requirement that for the first time employed cost-effectiveness criteria similar to the new Department of Energy regulations (10 Code of Federal Regulations, Part 436, Subpart A). Under the new standards only one solar project was cost effective, and Congress only funded it in the fiscal year 1981 Military Construction, Army, program.

Congress subsequently enacted a permanent solar energy evaluation requirement (10 USC 2688). Design studies by the Corps of Engineers for projects in the fiscal year 1982 military construction program took into account the requirements of 10 USC 2688 and 10 CFR Part 436. As the fiscal year ended, Congress was considering changing the requirements of 10 USC 2688 to bring it into conformity with PL 96–436 and 10 CFR 436.

The February 1980 workshop on joint energy activities sponsored by the Department of Defense and the Department of Energy sought to identify specific programs for improving energy efficiency and availability and to locate DOD facilities to use in carrying out projects of mutual interest. As a consequence of its participation, the Army selected during fiscal year 1981 the Red River Army Depot and Lonestar Army Ammunition Plant as the site for an energy "showcase." Major areas of innovation will include biomass, solar thermal, nonfossil fuels, lignites, and terratecture, the construction of underground buildings. The Department of Energy provided $204,500 to help start several of these programs.

Army Litigation

Army activities became the subject of frequent litigation in fiscal year 1981. There were few, if any, significant Army programs that were not made the subject of a lawsuit. In particular,

contractors challenged many actions and decisions relating to commercial interests as they tried to retain or obtain contracts.

The Relook cases, which concerned officers released from active duty because they were not selected for temporary promotion in 1975 and 1976, again constituted a significant workload for the Judge Advocate General's Corps. The U.S. Court of Claims had seventy-five cases involving 159 plaintiffs pending at the close of the fiscal year, while the U.S. Court of Appeals for the District of Columbia had another thirty-two cases pending involving 86 additional plaintiffs. The Army was attempting to settle those cases which the earlier decisions in *Dilley* and *Doyle* resolved and, where necessary, to litigate the cases on issues not previously decided. In addition, the Army tried to get plaintiffs in the District of Columbia to transfer their cases to the Court of Claims. These cases, however, involved a broad spectrum of issues and would probably require years to resolve. As an alternative to litigation, the Army was considering legislation as the year ended.

Although the Army had made some progress in resolving a number of the cases concerned with the testing of hallucinogens, several remained before the courts as of 30 September 1981. In *Stanley* v. *CIA*, the Court of Appeals overturned the decision by the district court favorable to the defendant and remanded the case to the lower court for possible amendment of the complaint. The Court of Appeals for the District of Columbia Circuit dismissed the case of *Nagy* v. *United States* for lack of prosecution. Pretrial discovery was completed in *Loeh* v. *United States*, and the case was set for trial in district court in November 1981. The case of *Chaffin* v. *United States* was remanded in the pretrial discovery stage. *Sweet* v. *United States* was tried in the spring of 1981, but the court had not announced a decision by the close of the fiscal year.

Thornwell v. *United States* was dismissed after Congress passed a private relief bill on Mr. Thornwell's behalf. The federal district court dismissed three related cases—*Barrett* v. *United States*, *Barrett* v. *Hoffman*, and *Barrett* v. *Arthur*—which concerned the death of a civilian after an Army research contractor had administered mescaline, as being barred by the statute of limitations.

Two cases concerning the atmospheric nuclear testing program, *Jaffee* v. *United States* and *Broudy* v. *United States*, were pending decision by the appellate courts at the end of the fiscal year. Three other cases, *Punnett* v. *Carter*, *Hinkie* v. *United States*, and *Hill* v. *United States*, were still pending trial proceedings in the district court. The district court, however, dismissed *Lombard* v.

United States on 30 September 1981. The Judge Advocate General expected the *Jaffee* and *Broudy* cases to offer the earliest appellate resolution of the question of whether the Feres doctrine—which holds that the United States is not liable for injuries to service members that arise from or were incurred incident to military service—also bars suits for alleged intentional constitutional torts by individual officials of the government.

The district court had voluntarily dismissed during fiscal year 1980 the case brought by the governor of Utah to prevent the movement of Weteye bombs from Rocky Mountain Arsenal, Colorado, to Tooele Army Depot, Utah, when the Department of Defense decided not to move the bombs. However, movement of the Weteyes became an important issue again in 1981, when the department reverted to its original plan. In *Women's International League for Peace and Freedom* v. *Weinberger* the plaintiffs sought an injunction to stop the movement of the bombs. The district court denied the injunction, however, and by August 1981 the Army had safely transported all the Weteye bombs to Tooele Army Depot.

Medical malpractice cases continued to provide a major part of the workload in tort litigation. The Torts Branch of the Litigation Division also handled numerous cases concerning aircraft and industrial accidents. Settlement negotiations were under way at the end of the year in the case of *United States* v. *Chamberland Manufacturing Company and Holcroft and Company.*

While the number of medical care recovery claims dropped to 4,281, over 1,000 less than during fiscal year 1980, the total recoveries on behalf of the government actually rose to almost $5.8 million during fiscal year 1981. United States Army, Europe, continued its record of leading all other offices with a recovery of almost $1.4 million. The addition of another attorney in the Tort Branch of the Office of the Judge Advocate General and the implementation of a newsletter to provide quick and uniform guidance to Army attorneys in the field gave new emphasis to medical care recovery efforts during the year.

The U.S. District Court for the Northern District of California returned a decision favorable to the United States in the case of *Mable Nevin* v. *United States,* a wrongful death action that arose from biological warfare testing on the West Coast in 1950. The government prevailed on the issues of proximate cause and discretionary function. (Discretionary function is the legal doctrine that an officer of the federal government may not be subjected to civil suits on the basis that he made the wrong policy decision.) In *Burchfield* v. *Gaon*—a suit against Army doctors for

failing to diagnose the long-term effects of nerve gas—the court, after denying a government motion for summary judgement, refused to substitute the United States as the defendant under Title 10, United States Code, Section 1089, which makes the United States the proper defendant for alleged medical malpractice by physicians in the Department of Defense.

In the case of *United States* v. *Reeves Telecom*—brought by the government against a land developer who built a dam that ultimately undermined a government railroad right-of-way—a decision on the amount of damages that the developer would have to pay the United States was still pending at the end of the year.

The two class-action cases seeking damages and injunctive relief for alleged violation of civil rights in the Chicago area, *American Civil Liberties Union* v. *City of Chicago* and *Alliance to End Repression* v. *Rochford*, neared settlement as the fiscal year ended. The defendants had reached a settlement agreement with a majority of the plaintiffs, including a settlement of the class action allegations in both suits, which required only final approval by the court.

The settlement in the case of the *Berlin Democratic Club* v. *Brown*, which challenged intelligence-gathering activities in Berlin, was partially completed in the last fiscal year. As required by the settlement agreement, the thousands of documents previously assembled and reviewed were released to the plaintiffs in March 1981. The plaintiffs received several extensions of time in which to make objections to deletions and withholdings made by the Army when it released the documents.

Katcoff v. *Alexander*, the lawsuit challenging the constitutionality of the Army's chaplaincy program on the grounds that it violates the First Amendment to the Constitution, is still in the pretrial discovery process. The Army will file a dispositive motion in fiscal year 1982, which should resolve the case.

At the end of the fiscal year two cases, *Lindenau* v. *Alexander* and *Mack* v. *Rumsfeld*, were pending. These challenged the Army's policies on the enlistment of sole parents in the Regular Army, the Army Reserve, and the Army National Guard. Army regulations currently proscribe the first-time enlistment of any applicant, without spouse, who has a child under eighteen years of age, unless the child is placed in the custody of another adult, by court order or as prescribed by state law; the applicant for enlistment is not required to pay child support. The plaintiffs asserted that the policy violates the equal protection and due process clause of the Constitution. The Army won the *Lindenau* case in district court, but the plaintiff appealed. The appeal was

pending at the close of the fiscal year. The district court certified that the *Mack* case was a class action. The plaintiff pursued an extensive discovery process, and the Army expects it to continue during fiscal year 1982 before trial on the merits.

In *Rich* v. *Secretary of the Army* the plaintiff is a former Army enlisted man whom the Army discharged because he had fraudulently concealed at the time of his enlistment that he had previously engaged in homosexual acts. He challenged the Army's policy concerning discharge of homosexuals. After trial on the merits, the district court decided in favor of the Army and dismissed the case. The plaintiff filed a notice of appeal; his appeal was pending at the close of the fiscal year.

In *Jackson* v. *Beasley* the plaintiffs asserted a class action on behalf of all Army recruiters assigned to the Southeast Region Recruiting Command who received unfavorable personnel actions as a result of violations of recruiting policy. The Army's motion to dismiss or for summary judgement was pending at the end of the fiscal year.

The plaintiffs in *Huerfano-Pinon Coalition, Inc.* v. *Marsh* brought suit challenging the proposed acquisition of land in southeastern Colorado for a training area for Fort Carson. They alleged that certain provisions of the United States Code authorizing the Secretary of the Army to purchase land are unconstitutional. The Army moved to dismiss the complaint, and the motion was pending at the end of the fiscal year.

During fiscal year 1981, the Tennessee-Tombigbee Waterway continued to be the focal point of complex litigation. On 20 October 1980, the U.S. Supreme Court denied the plaintiffs' petition for a writ of certiorari concerning the trial court's decision on the authorization questions. On 1 October 1980 the U.S. District Court for the Northern District of Mississippi ruled against the plaintiffs on all remaining counts of their lawsuit, concerning environmental and economic issues. The court's decision touched on six major subject areas.

(1) The Corps of Engineers, ruled the court, was still in full compliance with the National Environmental Policy Act (NEPA). The Corps had not improperly segmented the total project for purposes of its NEPA environmental impact statement, because the Tennessee-Tombigbee Waterway and the Black Warrior–Tombigbee Waterway are separate and distinct projects. The environmental impact statement properly analyzed all significant project alternatives. The Corps did not need to make a formal supplement to its 1971 environmental impact statement on the Tennessee-Tombigbee.

(2) The Corps' benefit-cost calculations were not reviewable by the courts. Congress determined that those benefit-cost ratios were adequate to justify the project's construction.

(3) The Tennessee-Tombigbee's official discount rate of 3.25 percent was legal, because the Secretary of the Army had the discretion, which he properly exercised in 1971, to determine that local interests had given satisfactory assurances of required local cooperation, thereby "grandfathering in" the 3.25-percent rate. (The official discount rate is the interest rate that the government is expected to pay on money borrowed to construct, operate, and maintain a facility over its lifetime. A statistical fiction used to develop cost-benefit studies, it is customarily based on the prevailing interest rate at the start of a project.) The court also found that the Corps was also in compliance with Section 221 of the Rivers and Harbors Act of 1970, which required that local interests enter into contractual arrangements to pay their portion of project costs before construction began.

(4) The plaintiffs' assertion that the Corps had not properly complied with the Fish and Wildlife Coordination Act was barred, because those claims could have been brought up in the 1971 Tennessee-Tombigbee litigation and because the statute gave plaintiffs no private right of action.

(5) The Corps properly complied with Section 404 of the Clean Water Act and related regulations in dealing with the discharge of dredged material. The Corps also complied with Section 401 of the same act regarding state water quality certifications.

(6) The Corps may or may not have published all of the regulations which it should have published in the *Federal Register*. The court refused to enjoin Tennessee-Tombigbee construction on the grounds of alleged failure to publish such regulations. If the plaintiffs cared to return to court, the court would consider an order requiring the Corps to publish all heretofore unpublished regulations as the law requires.

In November 1980 the plaintiffs filed an appeal to the Fifth Circuit Court of Appeals concerning Judge Keady's decision of 1 October. On 13 July 1981 the court of appeals ruled that the Corps must prepare a supplementary environmental impact statement. The language of the decision appeared to open the possibility that the plaintiffs might seek an injunction to stop all work on the waterway pending the completion of the supplementary environmental impact statement, but on 17 August the court clarified its position: There would be no injunction. In practical terms the July 1981 decision had no impact on construction; as

of 30 September 1981, completion was still scheduled for 1986. The court also held in its 13 July ruling that the 3.25 percent discount rate was not legal, but it did not stipulate what the rate should be. At the end of the fiscal year this issue remained moot.

The case of *Atchison, Topeka, and Santa Fe Railroad Company et al.* v. *Callaway* originated on 6 August 1974 as two actions, subsequently consolidated, which sought to halt construction of Locks and Dam 26. This was one of a series of locks and dams extending from Alton, Illinois, to St. Paul, Minnesota, and a key navigation structure affecting the entire inland waterway system of the midwestern United States. The plaintiffs alleged that the project was the first step in a multibillion-dollar plan to rebuild the upper Mississippi River navigation system without the consent of Congress, as required under Title XXXIII of the United States Code, Section 5, and that the Corps of Engineers had improperly assessed the benefits, costs, feasible alternatives, and impact on national economic development and environmental protection. The major issue was whether Section 5 allowed construction of the project without specific congressional approval. The court issued a preliminary injunction on 5 September 1974 based upon the finding that the plans for the project went beyond the needs of existing navigation by considering expected increase in traffic. The court also judged the environmental impact statement to be inadequate, because it did not consider the project on a systematic basis or investigate all reasonable alternatives. Subsequently, the Secretary of the Army terminated the authority for the project and directed that the Corps submit it to Congress for approval. On 2 May 1977 the court granted a motion by the defense to dissolve the preliminary injunction but denied its motion to dismiss; the court required the federal defendants to respond to a motion for summary judgement filed by the plaintiffs.

The federal defendants filed a response to the plaintiffs' motion along with a cross motion for summary judgement. On 4 October 1978 the U.S. District Court for the District of Columbia denied both motions for summary judgement, except for the part of the federal defendants' motion which argued that seeking congressional authority for a new project was not arbitrary and capricious; the district court then set the case for a status call on 25 October 1978 to discuss the issues to be tried in regard to the environmental impact statement. Before the court could hold status call, Congress passed Public Law (PL) 95–502, which authorized one new 1200-foot lock and dam, created an Upper Mississippi River Basin Commission to prepare a comprehensive master plan for the upper Mississippi River system based on spec-

ified transportation and environmental studies, and imposed a tax on fuel oil used in commercial waterway transportation.

The district court then allowed the plaintiffs to file an amended complaint. The federal defendants and the defendant-intervener, the Association for the Improvement of the Mississippi River, filed a joint answer and renewed separate motions for summary judgement. In its opinion the court held that in passing PL 95–502 Congress did not exempt the replacement Locks and Dam 26 from the National Environmental Policy Act; the plaintiffs were entitled to test the adequacy of the environmental impact statement which the Corps submitted to Congress with legislation that resulted in PL 95–502. On 10 September 1979 the court set the trial date. On the morning of the trial, the court dismissed various counts of the plaintiffs' complaint leaving two issues to be tried: the adequacy of the environmental impact statement under the National Environmental Policy Act, and whether the federal defendants had complied with postauthorization procedures. The case was tried in five days, 10–12 and 18–19 September 1979.

On 23 October 1979 the court filed its memorandum of opinion, which held that the environmental impact statement was adequate under the National Environmental Policy Act but that the federal defendants had failed to hold the required postauthorization meeting. Although the court entered a declaratory judgement to this effect in favor of the plaintiffs, it refused to provide injunctive relief. The court found in favor of the defendant on the issues arising from the National Environmental Policy Act.

On 20 December 1979 the plaintiffs filed a notice of appeal. Briefs were filed, and the court of appeals heard oral arguments on 16 January 1981. On 24 April 1981 the court issued its decision, affirming in part and reversing in part the district court's decision. The reversal was limited solely to the district court's failure to require a postauthorization public meeting. The St. Louis District of the Corps of Engineers held a public meeting in September 1981. The plaintiffs sought a writ of certiorari from the Supreme Court, which was denied in November 1981, thus concluding the litigation.

Loesch v. *United States* consisted of consolidated claims by six owners of land that was adjacent to or on tributaries of the Ohio River. They sought to receive compensation on the theory of inverse condemnation for damage to their land supposedly resulting from the construction and operation of high-lift dams on the Ohio River which they alleged caused erosion of their prop-

erties. Secondly, the plaintiffs accused the Corps of Engineers of fraud and misrepresentation in determining the ordinary high-water mark when it obtained flowage easement. In its finding the court indicated that both issues in the *Loesch* case hinged on the facts rather than on questions of law.

The court found that the record in this case clearly established that the construction and operation of the Ohio River high-lift dams did not cause floods, increase the number of floods, affect peaks, or increase the effects of flooding. The erosion taking place on the plaintiffs' land was not caused by or related to the construction and operation of the high-lift navigation dams. As to the alleged fraud, the court ruled that the record showed an honest attempt by the Corps to be fair and forthright with all riparian landowners in the matters relating to the dam projects. It denied relief to the plaintiffs on this ground as well.

Deltona Corporation v. *United States* was an inverse condemnation suit in which the plaintiff alleged that the Corps of Engineers' denial of its application for a Section 404 permit to dredge and fill the wetlands at Marco Island in Monroe County, Florida, south of Naples, imposed "a preservation easement" upon their property. On 25 November 1980 the trial judge issued a recommended opinion unfavorable to the government. On 19 August 1981 the Court of Claims rejected the recommended opinion and rendered a decision in favor of the United States.

The court held that while Deltona may have sustained economic loss, these losses did not constitute a Fifth Amendment "taking." The court cited the "stiffening" regulatory requirement of Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act as the key legal event in this case. The important factual event was that Deltona could not show that the benefits of its proposed project outweighed the damage to the wetland resource and that the proposed alteration was necessary to realize these benefits.

The court cited *Penn Central Transportation Co.* v. *New York City* when it rejected Deltona's argument that the diminution in property value, standing alone, can establish a taking. The true test for takings is whether or not the governmental action substantially advanced legitimate federal interests. The court held that the permit denial did not extinguish any fundamental attribute of ownership, nor did it prevent Deltona from deriving many other economically viable uses from its parcels. The Corps' regulations substantially advanced legitimate and important federal interests.

In *A.F.G.E.* v. *Brown* the American Federation of Government

Employees challenged contracting out under the Commercial Industrial Type Activities Program at Fort Gordon, Georgia; this case was pending before the appellate court as the fiscal year ended. The union made no appeal, however, from the dismissal of its lawsuit concerning contracting out at Selfridge Air Force Base.

Litigation still continued in the cases against Army hiring policies in U.S. Army, Europe, which favor German nationals or military dependents over other American citizens.

Equal employment opportunity class actions continued to concern the Army during fiscal year 1981. The Army won the first such suit that was actually tried, *Lawler* v. *Alexander*. In two other class actions, *Godwin* v. *Alexander* and *Valdez* v. *Froehlke*, the plaintiffs settled on terms extremely favorable to the Army. Nevertheless, plaintiffs continued to file other significant class actions, most notably *Emsley* v. *Weinberger* and *Harris* v. *Marsh*. The former was an across-the-board class action based upon alleged sexual discrimination, and the latter was based upon race. Several other class actions were still pending at the end of the fiscal year.

Plaintiffs filed a number of suits involving allegations of personal liability of government officials, including the Secretary of the Army, during fiscal year 1981. For example, in *Weiss* v. *Marsh* the plaintiff sued the Secretary of the Army and other Army officials in their individual capacities under the Equal Pay Act and the Civil Rights Act. The government moved to dismiss the allegations against the defendants in their individual capacities, but the court denied the motion pending trial on the merits. The case was in pretrial discovery at the close of the year.

Litigation over the issue of negotiability under Title VII of the Civil Service Reform Act of 1978, which concerns labor-management relations in the federal civil service, had become a major concern to the Army by 1981. The case of *Department of Defense* v. *Federal Labor Relations Authority* challenged the decision by the district court that the U.S. Forces, Korea, must negotiate ration control and vehicle registration regulations with the union. The case was briefed and was awaiting argument at the court of appeals at the end of the year.

In one of the two suits challenging the Army policy that prevents the enlistment of individuals who have had sex change operations, *Jane Doe* v. *Secretary of the Army*, the court decided in favor of the Army; the plaintiff did not appeal. The other case, *Joanne Michelle Clark* v. *Harold Brown*, was pending in the Court of Claims, but the parties were engaged in settlement negotiations.

During 1981 debarment actions against government contractors continued to be a matter of concern, with some of the cases moving from the administrative process into the courts. Once again the procurement activities of the Army and Air Force Exchange Service became the center of considerable controversy.

In addition to the significant cases mentioned above, over 1,300 other cases were pending against the Army as of 30 September 1981.

Small and Disadvantaged Business Utilization

The Department of the Army during fiscal year 1981 awarded $5.053 billion in small business prime contract awards, or 25 percent of the amount awarded to all businesses, against a goal of $4.323 billion. Actual accomplishments represented 117 percent of the goal. Contracts set aside exclusively for small businesses, covering those items which can only be bid on by small business, increased to $2.6 billion against a goal of $1.8 billion, or 12.9 percent of the total dollars awarded. This was the highest percentage of contracts set aside for small business attained by the Army in any fiscal year.

Contract awards to small disadvantaged firms totaled $801.4 million in fiscal year 1981, an increase of 46 percent over the previous year. Actual accomplishments represented 118.2 percent of the goal of $667.7 million.

It is federal policy that businesses owned by women should have the maximum opportunity to participate in contracts awarded by the government. Although there is no requirement to give preference to such firms, Army contracting offices tried to help those businesses owned by women to compete for awards. Awards made to such firms reached a total of $122.6 million in fiscal year 1981, greatly exceeding the goal of $74.7 million.

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☆U.S. GOVERNMENT PRINTING OFFICE: 1988-191-110/80385