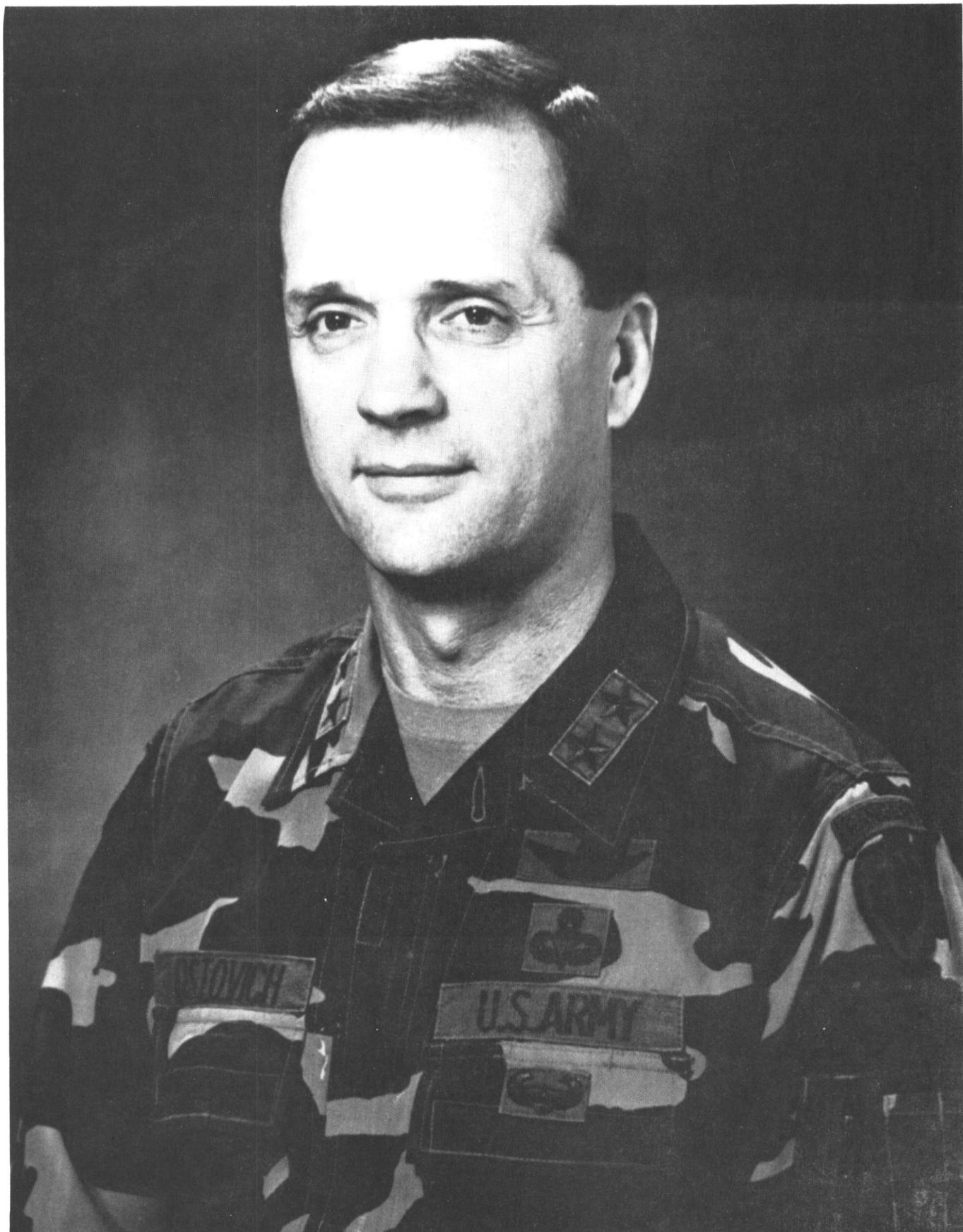




**UNITED STATES
ARMY AVIATION CENTER
1990
ANNUAL
HISTORICAL REVIEW**

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MAJOR GENERAL RUDOLPH OSTOVICH III
COMMANDING GENERAL

UNITED STATES ARMY AVIATION CENTER

ANNUAL HISTORICAL REVIEW
(RCS ATZQ-MH)

1 January 1990 - 31 December 1990

By

John W. Kitchens

Burton Wright III

JUNE 1991

FORT RUCKER, ALABAMA

COMMANDER'S INTRODUCTION

The year 1990 was a particularly exciting and productive period for Army Aviation. At the beginning of the year the Army was completing the remarkably successful Operation Just Cause, in which Aviation played a major role in a night time assault against the forces of the Panamanian dictator, Manuel Noriega. At the end of the year, Army Aviation was preparing to "steal the show" by launching spectacular anti-armor attacks against the forces of another dictator, and also an international aggressor, in Operation Desert Storm. In between these two events, a great deal was accomplished in order for Aviation to maintain its status as the Army's most lethal, versatile, and deployable force during a period of increasingly tight defense budgets.

In the aftermath of Just Cause, Army Aviation participated in the reconstruction of Panama by transporting building materials and supplies into remote regions, areas practically inaccessible except by helicopter. We also continued our involvement in counter drug operations by working closely with the U.S. Drug Enforcement Agency throughout the Caribbean area. These and other demonstrations of the usefulness of helicopters have prompted several Latin American countries to acquire more helicopters and to make arrangements with the U.S. to train more aviators. Their need for an expanded Spanish language helicopter training program caused us to take steps during 1990 toward the creation of the Helicopter School of the Americas.

The single most important accomplishment in the areas of training and leader development during 1990 was the reorganization of the Aviation Officer Basic Course (AVOBC). In order to provide the young lieutenants better leadership skills as well as to make them aviators, the basic course was divided into two parts. The first part consisted of four weeks of orientation and common core training prior to the thirty-six to forty weeks of flight training. The second and longer part of the AVOBC consisted of intensive leadership training; this was after flight training and immediately before the young officers went to their first duty station.

In the area of doctrine, we devoted considerable effort to defining and quantifying the roles of Army Aviation on the nonlinear battlefield of AirLand Battle-Future (ALB-F). The studies encompassed low, medium, and high density conflict contingencies, as well as the mission and organization of aviation forward support battalions. In a related action, U.S. Army Aviation Center (USAAVNC) doctrinal planners developed concepts of the roles and missions of Army Aviation in the post Cold War Army for the next twenty years. Several new doctrinal manuals were

published in 1990, and several others were updated. We developed a totally new concept for gunnery, which will be published in 1991 as TC 1-140, "Helicopter Gunnery." Increased efficiency was accomplished in 1990 by the consolidation of all USAAVNC doctrinal development and writing in the Directorate of Training and Simulation.

An Aviation Systems Program Review (ASPR) was held at the USAAVNC in July to address and resolve several issues, thus enabling Army Aviation to achieve its full potential on the future battlefield. The ASPR led to several directives by the vice chief of staff of the Army. The most important of these was the Department of the Army (DA) chartering of the Aviation Requirements for the Combat Structure of the Army (ARCSA) V study to decide how best to organize Army Aviation consistent with ALB-F doctrine. Other issues considered and approved in concept at the ASPR included maintenance or E companies in AH-64 battalions, two pilots for the Kiowa Warrior, door gunners for assault aircraft, the command aviation battalion, and the forward support battalion for heavy division aviation brigades.

The ARCSA V study began in September with the major purpose of recommending force structure changes in Army Aviation for the 1995-2004 time period in order to implement the ALB-F concept. The study, which is scheduled to continue through August 1991, deals primarily with table of organization and equipment (TOE) building block units and the integration of aviation assets into the ALB-F force structure. An underlying assumption of the ARCSA V study is that the relative size of the combat arms branches in the new, downsized Army will be proportional to their battlefield contributions. Therefore, we expect that Army Aviation's percentage of the Army's total force strength will increase as the total Army force is downsized.

The USAAVNC completed its portion of the U.S. Army Training and Doctrine Command (TRADOC) Long Range Plan in 1990. This plan envisions the Light Helicopter (LH) as the centerpiece for the modernization of Army Aviation, with the first operational aircraft to be sent to the field in 1997 or 1998. A secretary of Defense directed systems review, as well as other studies of the LH program during 1990, demonstrated that the LH is clearly the most cost and operationally effective way to modernize our light helicopter fleet. It was also revealed that both projected risk and development program cost of the LH can be significantly reduced by delaying full-scale development for one or two years. Secretary of Defense Cheney endorsed the continuation of the LH program in August. A Source Selection Board, which has been called the most successful Army source selection process ever used, was created to work

with the two competing contractor teams and the Army to ensure that the contractor finally selected would be able to build an aircraft which will serve our purposes and for a price which we are authorized to pay.

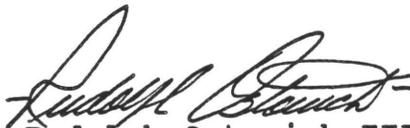
The armed OH-58D is being used in regimental and divisional cavalry squadrons until the LH is deployed. In January, the secretary of the Army selected the name "Kiowa Warrior" as the new popular name for the armed OH-58D. At the same time, he announced the decision to fully arm all 243 of the Army's fleet of OH-58Ds and to modify up to eighty-one of them to the more versatile and effective multipurpose light helicopter configuration.

During 1990, we went a long way toward resolving the problems that have plagued the AH-64 Apache helicopter since it was first deployed. Almost all of the problems have either been corrected or are in the process of being resolved. The unprecedentedly high operational readiness rate of the AH-64 in the harsh environment of Southwest Asia during Operation Desert Shield attests to our success on this front. Considerable progress was also achieved during 1990 in testing and developing Longbow, a major target acquisition and weapon system designed to be retrofitted to 227 of the Army's 807 Apaches and also to be incorporated into the new LH. A remarkably successful test of a Longbow-equipped Apache with an Army crew at the controls was conducted at Yuma, Arizona, in 1990.

Finally, I must return to Operation Desert Shield to call attention to this demonstration of Army Aviation's unique ability to respond to crises anywhere in the world with sufficient speed and force to hold the line while other troops arrive, and thereby to serve our national policy and goals.

Another aspect of Desert Shield was the massive mobilization action conducted by the USAAVNC and Fort Rucker during the last four months of the year. Two active duty units at Fort Rucker deployed to Southwest Asia in September and another in October. Most USAAVNC and Fort Rucker tenant organizations were involved in the mobilization, training, and deployment of reserve component units--both at Fort Rucker and at Camp Shelby, Mississippi. During 1990, twenty-six reserve units, consisting of over 2600 personnel, were mobilized at Fort Rucker. Nineteen of these units deployed to Southwest Asia before the end of the year. Additionally, Fort Rucker personnel managed the mobilization of the 155th Armor Brigade, consisting of over 4100 personnel, at Camp Shelby. While stretching our resources for the mobilization and deployment actions, we also went into a full-time mobilization posture for the first time ever. We were training virtually around the clock, seven

days a week, and during the Christmas holidays. Notwithstanding a few minor glitches, which the experience is preparing the USAAVNC and the Army to be able to avoid in the future, our involvement in all aspects of Desert Shield proceeded remarkably well, and we are justly proud of our accomplishments.



Rudolph Ostovich III
Major General, U.S. Army
Commanding Officer

PREFACE

In accordance with Center of Military History and U.S. Army Training and Doctrine Command (TRADOC) guidelines, the annual historical review for the USAAVNC is organized topically. Also, the emphasis of the review is on the major missions and functions of the USAAVNC, i.e., on training, leader development, doctrine, combat developments, and mission support. Each of these topics constitutes a separate chapter of the review. The main body of the text is followed by three appendices, which deal respectively with the USAAVNC organizations at Fort Rucker, the U.S. Army Aviation Logistics School (USAALS) organizations at Fort Eustis, and tenant organizations at Fort Rucker; they briefly describe the mission, function, organizational framework, leadership, and personnel strength, and provide some other information. Other appendices include staff directories, a list of acronyms, and an index.

Although the USAALS activities have been integrated into the overall topical organization of this review, that school's involvement in events is usually noted, similarly to the manner in which the involvement of particular Fort Rucker-based USAAVNC agencies or tenant organizations is noted when appropriate.

In addition to the acronym list in the appendix, most acronyms are defined at least one time in each chapter in which they are used; very common or frequently used ones, however, may be defined only one or two times in the text.

This entire review and all sources cited herein are unclassified. Some classified documents are cited, but only unclassified information was taken from them for this review. These and other classified documents relating to calendar year 1990 are filed in the safe in the Aviation Branch History Office and constitute a classified addendum to this historical review.

The annual historical review is only one of several parts of the historical record of the USAAVNC for any given year. Cost and time constraints require that the review cover only the most important developments of the Army Aviation Center in the fulfillment of its principal missions. The writing of the histories of the individual subordinate units and tenant organizations is the responsibility of the historical officers appointed by the respective directors and commanders.

These historical reports submitted by each organization, along with primary documents, transcripts

of oral interviews, and other materials, were used as references in writing this historical review. All materials submitted to the History Office and those collected by the historians are kept on file in the History Office. Along with the historical review itself, these documents constitute the complete historical record for the year.

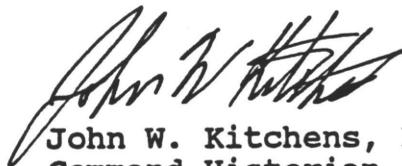
The documents, staff historical reports, and other sources cited are located in the 1990 document file in the Aviation Branch History Office. The documents submitted by directorates, departments, and other USAAVNC and tenant organizations are filed according to provenance. Most other source materials are filed according to the chapter in which they are cited. Transcripts of oral interviews are in the oral history file. Each time a document is cited in this historical review, the final notation in each citation (e.g., "DOTD" or "Chapter I file") indicates where the cited document may be found in the Aviation Branch History Office records for 1990.

Considerable effort was expended to obtain documentary support for the feeder reports submitted to the History Office. Several organizations provided adequate documentation, and when available, these documents constituted the major sources for this narrative. When documents were unobtainable, the historians were forced to rely on feeder reports. Efforts were made, however, to substantiate questionable and undocumented statements in feeder reports before they were used.

The deputy command historian, Dr. Burton Wright III, was primarily responsible for writing Chapter II and Chapter III. The command historian wrote the other chapters, but Dr. Wright assisted in locating and obtaining some of the supporting documents cited--especially those pertaining to Operation Desert Shield. Ms. Ruth Norton, a temporary employee of the History Office, also provided invaluable assistance in collecting and processing data on Operation Desert Shield. Some documents relating to this operation and to Operation Just Cause were not available to the historians at the time of the writing of this review but were expected to become available later.

In the process of writing an annual historical review, the historian inevitably becomes indebted to many persons for their advice, assistance, and support. We wish to express our sincere appreciation to those who supported this endeavor in various ways. We especially

thank those who patiently explained technical matters to us and the unit directors/commanders and historical officers who cooperated with us in our efforts to obtain documentary materials to support their historical reports.

A handwritten signature in black ink, appearing to read "John W. Kitchens". The signature is fluid and cursive, with a large initial "J" and "K".

John W. Kitchens, Ph.D
Command Historian

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CHAPTER I

MISSION AND ORGANIZATION

A. Historical Background

The United States Army Aviation Center (USAAVNC) traces its origins to the Department of Air Training, established in 1942 at Fort Sill, Oklahoma, for the purpose of training Army liaison pilots and mechanics. On 16 January 1953, as a result of the rapid increase in the need for trained aviators and aviation mechanics during the Korean War, the United States Army Aviation School (USAAVNS) was established as the successor to the World War II era Department of Air Training. Continued growth of Army Aviation contributed to overcrowding at the Oklahoma post, which resulted in the Army's decision to move the USAAVNS to Camp Rucker, Alabama. The move occurred during the last three months of 1954. The following year, the Army Aviation Center was established at Rucker, and the post gained permanent status by becoming Fort Rucker.

Although some flight training continued to be conducted at other locations for many years following the establishment of the school and center in Alabama, the trend has been toward consolidating flight training at Fort Rucker. This was essentially achieved by 1973, and the following year, the school and the center were consolidated as the U.S. Army Aviation Center.¹

Throughout the mid and late 1970s there was increasing need for, and Army-wide sentiment in favor of, the creation of a separate Army Aviation Branch. There was also continuing and deep seated opposition, however, from aviators and non-aviators alike. As a result of studies, surveys, and considerable formal and informal dialogue conducted from 1980 through 1982, the remaining opposition to a separate branch diminished considerably, and the Aviation Branch came into being by an order of Secretary of the Army John O. Marsh, Jr., with an effective date of 12 April 1983.²

¹Richard K. Tierney, Forty Years of Army Aviation (Fort Rucker, Alabama: USAAVNC, 1982), pp. 9-20; Richard P. Weinert, History of Army Aviation: 1950-1962 (2 vols. Fort Monroe, Virginia: U.S. Army Continental Army Command, 1971 and TRADOC, 1976), I, 102-34, II, 184-209, passim.

²See, e.g., TRADOC Review of Army Aviation, 4 vols. Fort Monroe, Virginia: Headquarters TRADOC, Sep 82, I, 1-10; General Orders no. 6, Secretary of the Army John O Marsh Jr and Gen John A Wickham Jr, 15 Feb 84, sub: Army Aviation

Since the mid 1970s, and especially since the creation of the Aviation Branch in 1983, there has been a tendency toward the consolidation of all aviation-related activities and training under the auspices of the USAAVNC and the branch chief. In 1984, for example, aviation officer courses and an enlisted aeroscout observer course were implemented at Fort Rucker. In 1986 the U.S. Army Air Traffic Control Activity (USAATCA) was transferred from the U.S. Army Information Systems Command (USAISC) at Fort Huachuca, Arizona, to the USAAVNC at Fort Rucker.³ The Noncommissioned Officer Academy (NCOA) was established at the USAAVNC in 1987.

One of the most recent and significant steps in the process of the consolidation of Army Aviation was the incorporation into the USAAVNC of the U.S. Army Aviation Logistics School (USAALS) at Fort Eustis, Virginia, in 1988. This important development was the culmination of a long evolutionary process and of many studies and plans.

The Department of Aviation Maintenance, which conducted advanced aviation mechanics training, existed as a part of the USAAVNS at Fort Sill, Oklahoma, and was transferred to Camp Rucker in 1954.⁴ Although organizational maintenance training for enlisted personnel has been conducted continuously at Fort Rucker down to the present, aviation maintenance training also continued to be conducted at other locations.

After World War II, most Army mechanics for rotary wing as well as fixed wing aircraft were trained by the Air Force at Keesler Field, Mississippi, and Sheppard Air Force Base, Texas, and then, from early in 1951, at Gary Air Force Base.

Aviation logistics training in the Transportation Corps and at Fort Eustis began during the Korean War era. On 11

Branch, USAAVNC History Office files; Transcription of interview by author with Maj Gen Ellis D Parker, 5 Jul-31 Aug 89, USAAVNC History Office, oral history files.

³Ltr DAMO-ZA, Lt Gen Carl E Vuono to distr, 20 Mar 86, sub: air traffic control transfer plan (also encls), USAAVNC History Office, 1986 document file, USAATCA.

⁴USAAVNC, U.S. Army Aviation Center, Fort Rucker, Alabama: History, 1954-1964 (USAAVNC: Fort Rucker, Alabama, 1965), p. 14. This publication constituted a composite historical supplement or review for the first decade of the USAAVNS/USAAVNC existence at Fort Rucker.

August 1952, for example, the responsibility for logistical support of Army Aviation was transferred from the Ordnance Corps to the Transportation Corps, and the Transportation School began the field maintenance training of aviation mechanics in June 1954. Then, after extended negotiations, the Air Force agreed in 1955 to transfer the depot support of Army Aviation to the Army; this function was assigned to the Transportation Corps and School at Fort Eustis. During the following years, aviation maintenance training at Fort Eustis expanded rapidly and became one of the most prominent parts of the mission of the Transportation School. Since maintenance training was provided at both Fort Rucker and Fort Eustis, several studies were conducted to determine the advantages of consolidation at one place or the other, but conflicting interests and anticipated costs of expansion of facilities at either location prevented any change.⁵

Shortly after the creation of the Aviation Branch in 1983, the USAALS was established at Fort Eustis, effective 1 October of that year. The USAALS was made the proponent for all aviation logistics training, but placed under the auspices of the commandant of the U.S. Army Transportation and Aviation Logistics School (USATALS). The division of responsibilities for aviation-related functions was inconsistent with the new branch charter, and recommendations and plans were made for the gradual consolidation of the aviation mission area--including the logistical support. The rationale for the USAAVNC's becoming the proponent for all aviation matters involved cost effectiveness, standardization, training effectiveness, logical and consistent development of doctrine, and organizational responsiveness to defense needs.⁶ Most of

⁵Weinert, History of Army Aviation..., I, 136, II, 2, 43-48; Emma-Jo L. Davis, History of the United States Army Transportation School, 1942-1962, Ft. Eustis: U.S. Army Transportation School, 1967, p. 292, passim; History of the Air Training Command for 1 January 1955 - 30 June 1955, 4 vols text and documents, Part III, Liaison and Helicopter Training for Army Aviation Personnel, Programs and Controversies, 1946-1955, Headquarters, Air Training Command, pp. 222-245.

⁶Ltr ATCG, Gen William R Richardson to distr, 11 Jul 83, sub: establishment of aviation proponentcy, Tab C of 'Implementation Plan: Transfer of the U.S. Army Aviation Logistics School, Fort Eustis, Virginia, to the Command and Control of the Commander, U.S. Army Aviation Center,' 7 Sep 88 [hereinafter referred to as 'Implementation Plan--Logistics,'], 1988 document file, USAALS; 'Army Aviation Logistics at Fort Eustis,' DA, USAALS: Ft. Eustis, Virginia,

the planned consolidation of the Aviation mission area was completed before 1988, but notwithstanding repeated branch efforts to realign the USAALS under the USAAVNC in accordance with the terms of the Aviation Branch charter, the logistics school remained separate for almost five years after the creation of the branch.

In December of 1987, however, the vice chief of staff of the Army (VCSA) directed a special study group to conduct a comprehensive study and evaluate the manning, management, and support of aviation logistics, ...to provide recommended corrective action(s), and develop an implementation plan.⁷ The commander of TRADOC subsequently approved the recommendations of the special study group to transfer command and control of USAALS to the commander of the USAAVNC. The approved realignment plan also contained the following provisions: (1) the commander of USAAVNC would be responsible to the commander of the U.S. Army Logistics Center (USALOGC) as well as to the commander of the U.S. Army Combined Arms Center; (2) the commander of USALOGC would have tasking authority over USAALS for aviation logistics matters; (3) USAALS would share existing facilities at Fort Eustis with the Transportation School; (4) the commander of the U.S. Army Transportation Center and Fort Eustis (USATCFE) would provide base operations support to USAALS; (5) the realignment would be implemented within existing resources; (6) a memorandum of agreement (MOA) would be prepared jointly by the commanders of USATCFE and USAAVNC.⁸

The MOA was signed by the USAAVNC commander on 20 September 1988 and by the USATCFE commander on 23 September 1988. In addition to endorsing the provisions of the TRADOC-approved realignment plan, the MOA stipulated other details concerning the relationships that USAALS would have with USAAVNC on the one hand and USATCFE on the other. The USAAVNC assumed command and control as well as resource

Sept. 1989.

⁷Memo, Gen Arthur E Brown Jr for distr, sub: aviation logistics study--study directive, Tab D of Implementation Plan--Logistics.

⁸Msg, General Thurman to distr, 17 Jun 88, sub: command and control of the Aviation Logistics School, 1988 document file, USAALS; Implementation Plan--Logistics.

management responsibilities for USAALS as of 1 October 1988.⁹

B. Mission

The primary mission of the USAAVNC during 1990 was the command, operation, and administration of the USAAVNC and other resources at Fort Rucker and of the USAALS at Fort Eustis. Specifically, the center was responsible for the training and leader development of officers, warrant officers, warrant officer candidates, enlisted personnel, and assigned civilian personnel in various aspects and phases of aviation and aviation logistics. The USAAVNC was also the proponent for Army aviation and aviation logistics-related combat developments, doctrine, training devices and literature, occupational specialties and career management fields, air traffic control, and flight standardization. Finally, the center served as the TRADOC integrator for all actions pertaining to aviation materiel developments, supported operational and user testing, ensured the total system integration of aircraft and equipment, and provided support to assigned, attached, and tenant activities at Fort Rucker, Alabama.¹⁰

An additional major mission of the USAAVNC during the latter part of 1990 was support of mobilization for Operation Desert Shield.

The mission of the USAALS was to develop and conduct aviation logistics training for active Army and reserve component personnel; to support and evaluate aviation logistics training in the field; to conduct and guide development of logistic support concepts, doctrine, materiel, and organizations for Army Aviation; to perform proponent functions for 15D and 151A areas of concentration and for career management field (CMF) 67; and to support the

⁹MOA, Maj Gen Ellis D Parker, cdr USAAVNC, and Maj Gen Samuel N Wakefield, cdr USATCFE, 20 Sep 88 and 23 Sep 88, sub: operating procedures U.S. Army Aviation Logistics School, Implementation Plan--Logistics; Permanent orders, USATCFE, to distr, 14 Sep 88, sub: U.S. Army Aviation Logistics School, Implementation Plan--Logistics.

¹⁰Implementation Plan--Logistics; USAAVNC, Organization and Functions Manual: USAAVNC Regulation No. 10-1 (USAAVNC: Fort Rucker, Alabama, 1 March 1988), pp. 9-11.

Army Aviation Branch chief and the Combined Arms Support Command commander.¹¹

C. Command and Control

Overall command and control of the USAAVNC, including the USAALS, was vested in the commanding general, who was supported and assisted by all other members of the USAAVNC command group. Maj. Gen. Rudolph Ostovich III served as the commanding general of the USAAVNC throughout 1990. The commanding general was responsible for the implementation of policies and directives of the DA and of TRADOC. He was also the principal adviser to and representative of the commanding general of TRADOC for equipment, doctrine, training, tactics, and techniques of aviation and aviation logistics. Through the assistant commandants of USAAVNC and of USAALS, the commanding general established, maintained, and supervised the agencies and departments established for the efficient execution of assigned missions. The commanding general also served as chief of the Army Aviation Branch.

The assistant commandant of the USAAVNC in 1990 was Brig. Gen. (P) Robert S. Frix from 1 January until his reassignment to Central Command on 10 August. Col. Malvin L. Handy, the deputy assistant commandant, served as acting assistant commandant until the arrival on 9 October of the new assistant commandant, Col. (P) Thomas J. Konitzer. The assistant commandant of the USAAVNC served as principal assistant to the commanding general, assisted him as directed, and assumed command in his absence. The assistant commandant also directed and was responsible for all aspects of training conducted at Fort Rucker and played a major role in assisting the commander in directing combat developments, evaluation and standardization, and air traffic control. He frequently represented the branch chief in providing guidance to and maintaining close relationship with aviation brigades and battalions throughout the Army and in directing the execution of various special missions and projects in support of the branch and of aviation training.

Col. Ernest F. Estes continued as chief of staff until his retirement on 19 June 1990. Col. Malvin L. Handy served as acting chief of staff until Col. Patrick J. Bodelson assumed the duties of that office on 13 August. The chief of staff served as principal assistant to the commanding

¹¹ "Army Aviation Logistics at Fort Eustis," (Ft. Eustis, Virginia, Sept 1989), passim; Historical report USAALS, CY 90.

general and assistant commandant in the command and management of the USAAVNC and Fort Rucker, advising and acting for them as directed. He supervised and directed the staff to ensure coordinated action in accomplishing the assigned missions of the Aviation Branch and of the USAAVNC. The chief of staff exercised primary authority, under the commanding general, over center support activities at the USAAVNC. These included resource management; plans, mobilization, and security; internal review; public affairs; legal affairs; aviation pronency; liaison; and safety.

The deputy assistant commandant (DAC) throughout 1990 was Col. Malvin L. Handy. The DAC served as principal assistant to the assistant commandant in the accomplishment of administrative and management duties associated with assigned aviation training responsibilities and as the primary point of contact for mission training activities. Among other specific duties, he monitored and integrated assigned training elements and effected coordination among training elements, higher headquarters, integrating centers, and other schools, installations, and activities. He also reviewed and assigned taskings to training elements and advised and assisted the assistant commandant in directing the execution of various tasks and assignments.

The garrison commander from 8 February 1990 until his retirement on 31 July was Col. James B. Sauer.¹² Col. Michael H. Abbott assumed the position of garrison commander on 4 September and served for the remainder of the year. The garrison commander was the principal assistant to the commanding general in the command and management of garrison activities of the USAAVNC. The garrison commander had primary responsibility in the areas of personnel and community activities, industrial operations, engineering and housing, civilian personnel, logistics, post security, information management, contracting, equal employment activity, and reserve component support. He also chaired boards and committees relating to various personnel and garrison activities.

Cmd. Sgt. Maj. Roy McCormes served as the USAAVNC and Aviation Branch command sergeant major throughout 1990. The principal function of the command sergeant major was to serve as the primary adviser to the commanding general on all matters pertaining to the enlisted soldiers of the USAAVNC and of the Aviation Branch. He monitored and influenced assignments of senior noncommissioned officers and all aspects of aviation-related enlisted training and made recommendations to the commander regarding these

¹² See the section on organizational changes, below.

matters. The command sergeant major was also the principal adviser to the commander on all matters relating to discipline, esprit de corps, and proficiency of the enlisted members of the command and of the branch. Command Sergeant Major McCormes significantly expanded communication with aviation noncommissioned officers (NCOs) and soldiers in the field.¹³

The aviation logistics school counterpart to the assistant commandant of the USAAVNC was the assistant commandant of the USAALS. Col. Thomas M. Walker served in that position until 29 May, when he relinquished his duties to Col. William J. Blair during a change of assistant commandant ceremony. Colonel Blair was directly responsible to the commander of the USAAVNC and served as his principal assistant in the management of all aspects of aviation logistics training at the USAALS.

The deputy assistant commandant of the USAALS was Mr. Rodney J. Schulz, and the sergeant major was Sgt. Maj. Jerry T. Pittman. Both served in their respective capacities throughout the year.¹⁴

D. Organizational Changes in 1990

The Office of Garrison Commander, which was consolidated with the Office of Chief of Staff, effective 1 June 1989, in compliance with TRADOC directives and School Model 89, was reestablished as a subordinate element under the commanding general effective 2 February 1990. Most of those staff supervision responsibilities and other tasks and functions that had been transferred to the chief of staff

¹³The above description of the functions of various members of the command group was based in part on notes on interviews by the author with the members of the command group during the month of January and February 1991. Other sources included USAAVNC, Organization and Functions Manual, pp. 01.01-01.07; Memo, ATZQ-CG, Maj Gen Ellis D Parker for Cmd Sgt Maj Roy McCormes, 19 Jun 89, sub: duties and responsibilities of the command sergeant major; and Memo, ATZQ-RFM (570-4g), Col Ernest F Estes for distr, 1 Mar 90, sub: staff supervision responsibilities and functions of the garrison commander; Army Flier, passim; Historical report, SGS, CY 90.

¹⁴"Change of Assistant Commandant" program, USAALS; Historical report, USAALS, CY 90.

and other offices were returned to the garrison commander by this 1990 organizational change.¹⁵

Also in accordance with School Model 89, the Directorate of Aviation Proponency (DAP) was sharply reduced in size and responsibility, effective 16 July 1989.¹⁶ A new organization, the Aviation Planning Group, was established as a subordinate branch of the DAP, but under the operational control of the chief of staff, in January 1990. This office was tasked with serving the commanding general by preparing speeches, briefings, articles, and correspondence; by coordinating overseas travel, special projects, and relations between the commander and other headquarters; and by reviewing and analyzing publications, briefings, key staff actions, and other events/developments of particular interest to the commander.¹⁷

On 1 June 1990, the DAP was disestablished, the Aviation Proponency Office (APO) was elevated to staff level, and the Aviation Digest and the new Aviation Planning Group were placed under the operational control of the APO. The personnel proponency functions formerly performed by the APO continued to be performed by the same office and staff, but as an office subordinate to the new APO and with a different name: viz, Personnel Proponency Office.¹⁸

¹⁵ Msg ATRM-MS, HQ TRADOC, 271640Z Apr 89, sub: School Model 89 approval and requirement to implement, 1989 Chapter I file; Memo ATZQ-REM (570-4g), Col Willis R Bunting for distr, 20 Apr 89, sub: headquarters reorganization, 1989 Chapter I file; Memo, ATZQ-RFM (570-4g), Col Richard N Roy for distr, 22 Feb 90, sub: establishment of Office of the Garrison Commander, Chapter I file; Memo, ATZQ-RFM (570-4g), Col Ernest F Estes for distr, 1 Mar 90, sub: staff supervision responsibilities and functions of the garrison commander, Chapter I file.

¹⁶ Memo ATZQ-RFM (570-4g), Col Willis R Bunting for distr, 15 Jun 89, sub: establishment of DAP provisional, 1989 Chapter I file;

¹⁷ Memo, ATZQ-RFM 570-4g, Col Ernest F Estes for distr, 22 Jan 90, sub: establishment of Aviation Planning Group, (also encl), Chapter I file; Memo ATZQ-RFM (570-2a), Howell L. Flowers for AG & DCP, 7 Feb 90, sub: USAAVNC Provisional TDA #90-8, APO; Historical Report, APO, CY 90.

¹⁸ Memos ATZQ-RFM (570-4g) Col Ernest F Estes for distr, 25 May 90, subs: disestablishment of DAP (Provisional), and Aviation Proponency Office, APO; Historical report, APO, CY 90.

Another major organizational change in 1990 consisted of the merging of two departments; the Department of Combined Arms Tactics and the Department of Gunnery and Flight Systems were merged to form the new Department of Tactics and Simulation (DOTS). The merger was implemented on a provisional basis on 1 June and officially executed on 2 October. This merger combined academic and simulation training of aviators in one department, thereby providing a single focus and direction and also saving manpower spaces. Additional savings were effected by consolidating the publishing of all doctrinal literature in one department.¹⁹

During 1990, the USAALS continued to adjust internal administrative policy and operating procedures in accordance with USAAVNC policy and guidance. In December of 1990, a memorandum of 8 June 1989 prescribing temporary operating procedures for the USAALS was rescinded. The merger of the two organizations was complete; the relationship between them had become stable, cohesive, and clearly defined; and the temporary operating procedures had become redundant and unnecessary. The only significant internal organizational change at the USAALS in 1990 was that the Project Manager-Aviation Apprentice Mechanic Study office was disbanded, and responsibility for that program was transferred to the Leader Development/Personnel Proponency Office.²⁰

At the end of 1990 the USAAVNC consisted of twelve directorates at Fort Rucker and three at Fort Eustis; there were three training departments (including the Noncommissioned Officer Academy) at Fort Rucker and three at Fort Eustis. Also at Fort Rucker under the USAAVNC commander, there were two separate commands (Aviation Training Brigade and 1st Aviation Brigade), the U.S. Army Air Traffic Control Activity, four TRADOC systems managers or project offices, and several personal and special staff offices. Also located at Fort Rucker were over two dozen

¹⁹ Memo, ATZQ-RFM (570-4g) Col Richard N Roy for distr, 29 May 90, sub: consolidation of DCAT and DGFS, DRM; Memo ATZQ-RFM (570-4g), Col Ernest F Estes, for distr, 4 May 90, sub: MOI for consolidation of DCAT and DGFS and the realignment of the doctrinal literature program, DRM. See also Chapter IV, Doctrinal Literature, and Appendix I, DOTS.

²⁰ Memo ATZQ-RFM (570-4g), Col Patrick J Bodelson for distr, 3 Dec 90, sub: operating procedures for the USAALS, USAALS; 1st End ATSQ-LAC-P (ATZQ-RFM/26 Sep 90), Col William J Blair for cdr USAAVNC, 23 Oct 90, sub: operating procedures for USAALS, USAALS; Historical report, USAALS, CY 90.

tenant agencies, which were supported by the USAAVNC and which conducted activities closely related to the mission and functions of the Army Aviation Center. In addition to its directorates and training departments, the USAALS had two mission support offices under the assistant commandant.²¹

During the latter part of 1990, steps were taken at the USAAVNC to revise and update USAAVNC Regulation 10-1, Organization and Function Manual to reflect the numerous changes that had occurred since the current manual was published in March 1988. This action was underway at the end of calendar year 1990.²²

Two major reorganizations of tenant activities at Fort Rucker in 1990 impacted significantly on the USAAVNC. The first was the consolidation of the U.S. Army Aviation Engineering Flight Activity (USAAEFA) with Fort Rucker's U.S. Army Aviation Development Test Activity (USAAVDTA). The USAAEFA was located at Edwards Air Force Base and subordinate to the U.S. Army Aviation Systems Command in St. Louis. The USAADTA was one of the nine test centers assigned to the U.S. Army Test and Evaluation Command, located at Aberdeen Proving Ground. After consolidation, which began in January and became effective on 1 October, the two former organizations became the Aviation Technical Test Center, with headquarters at Fort Rucker's Cairns Army Airfield, and subordinate to the Army Test and Evaluation Command. The USAAEFA became the Airworthiness Qualification Test Directorate of the Aviation Technical Test Center. Former employees of USAAEFA remained at Edwards Air Force Base, and those of USAAVDTA remained at Fort Rucker.²³

The other major USAAVNC tenant activity affected by reorganization action in 1990 was the U.S. Army Test and Experimentation Command (TEXCOM) Aviation Board. The U.S. Army Aviation Board was an integral part of the USAAVNC until the general TRADOC reorganizational plan of 1988,

²¹ See the organization charts at Appendix IV and Appendix V.

²² Memo, ATZQ-RFM (10-5a), Howell L Flowers for distr, 17 Dec 90, sub: Organization and Functions Manual, USAAVNC Regulation 10-1, Chapter I file.

²³ Army Flier, 4 Oct 90; Profs Msg, 23 Oct 90, Col Troy Burrow for distr, sub: USAAVNDTA consolidation/reorganization/name change, Chapter I file; "Activation of the Aviation Technical Test Center," brochure distributed by Aviation Technical Test Center, Oct 90, Appendix III file.

which consolidated all of TRADOC's test and experimentation activities under the new TEXCOM, headquartered at Fort Hood, Texas. The mission of the new TEXCOM Aviation Board remained the same as that of the U.S. Army Aviation Board, and most of its activities continued to be conducted at Fort Rucker.²⁴ During the latter part of 1989, however, and throughout 1990, studies were conducted to determine the advisability of combining TEXCOM with the U.S. Army Operational Test and Evaluation Agency in order to improve efficiency and reduce costs. The decision was made to go forward with this consolidation, and the permanent orders were issued in November 1990. The TEXCOM Aviation Board was redesignated as the Aviation Test Directorate, under the command of the U.S. Army Operational Test and Evaluation Command (OPTEC), and relocated to West Fort Hood, Texas. The effective date of the reorganization was 8 November; relocation began in December 1990 and was scheduled for completion by 10 March 1991. Some forty-four Department of the Army (DA) civilians and forty-one military spaces were affected. Some civilian personnel were offered the opportunity to relocate to West Fort Hood. A small Test and Evaluation Coordination Office was to be formed at Fort Rucker to perform liaison and staff coordination functions between the USAAVNC and both the Operational Test and Evaluation Command at Alexandria, Virginia, and the TEXCOM Aviation Test Directorate at West Fort Hood.²⁵

E. Conferences, Ceremonies, Awards, and Visitors

The annual Aviation Brigade Commanders Conference was held at Fort Rucker on 3-7 December 1990 and was hosted by the Department of Tactics and Simulation (DOTS). One hundred persons, including sixty-four aviation brigade and battalion commanders, attended the conference. The theme of the 1990 conference was "Training to Focus Combat Power." General Ostovich opened the conference with a review of major developments within and affecting Army Aviation during 1990 and some observations about its current status and

²⁴ John W. Kitchens, United States Army Aviation Center 1988 Annual Historical Review, Fort Rucker, Alabama, June 1989 (hereinafter referred to as Kitchens, 1988 AHR), pp. 3, 135.

²⁵ Permanent orders 62-4, 62-11, and 62-14, Betty J P Osweiler, Headquarters Test and Experimentation Command, Fort Hood, Texas, 14 Nov 90, OPTEC; Historical report, OPTEC, CY 90; "TEXCOM Aviation Board Contingency Reorganization Plan, 24 Jul 90," Appendix III file; Army Flier, 13 Dec 1990.

degree of participation in Operation Desert Shield. During the first phase of the conference, representatives from the Army Safety Center, Aviation Systems Command, Army Aviation Logistics School, Department of Tactics and Simulation, Directorate of Training and Doctrine, Directorate of Combat Developments, Directorate of Evaluation and Standardization, and Aviation Training Brigade reported to the conferees on the respective major activities and issues of each organization. During the second phase of the conference, the conferees were divided into five working groups (Combat/Combat Support, Combat Service Support, Modernization, Reserve Component, and Training) to identify and address major issues within each topic). During the third phase, the leader of each group reported back to the whole conference.²⁶

Subject matter expert (SME) exchanges were held at Fort Rucker throughout the year with representatives from Venezuela, Italy, and Japan. The Department of Combined Arms Tactics/Department of Training and Simulation hosted the exchanges and provided aviation specific briefings. The Brazilian-U.S. Army Staff Talks were held in Brazil in July 1990. The director of DOTS attended with aviation specific briefings prepared by the DOTS staff. A follow-up exchange, also held in Brazil, focused on airspace management.²⁷

The Third Annual Aviation Noncommissioned Officer Symposium was held at Fort Rucker from 24 to 29 June. The symposium theme in 1990 was "Army Aviation Warfighting 2000." Topics of discussion included possible effects of budget cuts, hardware acquisition programs, adaptation from high to low intensity conflict threat, personnel impacts as the size of the Army was reduced, methods of fielding new aviation equipment, and reductions in institutional training.²⁸

The annual Army Aviation Logistics and Maintenance Commanders' Conference, scheduled to be held at Fort Eustis in 1990, was cancelled because of realignment of resources in support of the Persian Gulf crisis.²⁹

²⁶ Agenda of conference and historian's notes on CG's speech, both in Aviation Commanders Conference folder; Addendum to historical report, DOTS, CY 90.

²⁷ Historical report, DOTS, CY 90.

²⁸ Army Flier, 21 Jun 90.

²⁹ Historical report, USAALS, CY 90.

The major public ceremony held at Fort Rucker in 1990 was the formal opening of the new U.S. Army Aviation Museum on 26 May. Approximately one-half of the \$5 million cost of the museum was raised by the U.S. Army Aviation Museum Foundation--mostly through voluntary contributions. Construction of the new museum building began in April 1989 and was completed in November of that year. From that time until the grand opening, the museum staff moved aircraft into the new building, painted and reconditioned aircraft, and prepared exhibits.

The grand opening reception, held on the evening of 25 May, was attended by approximately 500 invited guests. Opening day attendance for the ceremonial ribbon cutting was over 2,500. A total of nearly 12,000 people visited the facility throughout the Memorial Day weekend. The principal speaker at the opening ceremony was Congressman William Dickinson. The USAAVNC commander, Maj. Gen. Rudolph Ostovich III, and retired Lt. Gen. John J. Tolson III (representing the Army Aviation Museum Foundation) also spoke prior to the ribbon cutting. Following the formal opening of the museum, a ceremony was held for the purpose of inducting three aviation Medal of Honor recipients into the Army Aviation Hall of Fame. The inductees were the late Maj. William E. Adams, Brig. Gen. Patrick H. Brady, and Sp3c. Gary G. Wetzel.³⁰

Five memorialization ceremonies were held at Fort Rucker in 1990. On 25 May, the small group instruction building for the Aviation Officer Advanced Class was dedicated in memory of Major William E. Adams. Maj. Adams commanded an assault helicopter company in Vietnam, where he was killed in action in 1970. He was posthumously awarded the Medal of Honor.

Another major classroom building was dedicated in memory of Brig. Gen. William Wallace Ford on 21 September. General Ford was one of the earliest advocates of the use of small aircraft, organic to ground forces, as artillery spotters. His efforts led to the creation of the Department of Air Training at Fort Sill, Oklahoma in 1942 and hence to the birth of modern Army Aviation.

One of Fort Rucker's three newest stagefields was named Stinson Field and dedicated on 1 August 1990 to an Alabama-

³⁰ Memo, ATZQ-PA (215), Col Ralph J W K Hiatt for distr, 2 May 90, sub: MOI for installation festivities 25-25 May 90, Chapter I file; Kitchens, 1989 Annual Historical Review, p. 108, Army Flier, 24, 31 May 1990; Historical report, DPCA, CY 90.

born pioneer aviatrix, Katherine Stinson Otero. Stinson became a licensed pilot in 1912. She was the first woman to fly in the Orient and set several other flying records. Denied the opportunity to serve her country as a pilot during World War I because of her gender, she served as a Red Cross ambulance driver in France. Ill health, which developed during the war, forced her to discontinue flying shortly afterwards, but she lived to the age of 86 and died in Santa Fe, New Mexico, in 1977.

The USAAVNC simulator building was named the Goodhand Simulator Complex on 29 October in memory of Brig. Gen. O. Glenn Goodhand. Goodhand was a liaison pilot during World War II, a participant in the formation of the Army Aviation Directorate, a pioneer in the development of night flying aerial observation, and a member of the Army Aviation Hall of Fame.

The fifth memorialization ceremony at Fort Rucker in 1990 was of the Molinelli Aerial Gunnery Range Complex, dedicated on 7 December, in memory of Maj. Gen. Robert R. Molinelli. Molinelli was a pioneer in the development of air cavalry tactics and of armed helicopter integration into the combined arms force. The Directorate of Logistics and DynCorp, the aircraft maintenance contractor, prepared a Vietnam era AH-1 Cobra as a permanent display at the gunnery range.³¹

The Martin Luther King Day featured speaker at Fort Rucker in 1990 was the Rev. E. Murray Branch, the recently retired pastor of Dexter Avenue Baptist Church, where King was once pastor. In accordance with tradition, a series of events, starting with a luncheon and culminating with a banquet were held during February in celebration of Black History Month. The featured speaker at the luncheon was Dr. Willie D. Larkin, of the Alabama Cooperative Extension Service, and, at the banquet, Alabama State Representative Sundra Esscott-Russell, from Birmingham.³²

The speaker at the National Prayer Breakfast on 9 February was Maj. Gen. Norris Einertson, chief of chaplains of the U.S. Army. The focus of his address was on the

³¹ Copies of the programs of these memorialization ceremonies, from which most of the data were taken, are in Chapter I file. See also: Army Flier, 31 May, 2 Aug, 8 Nov, 13 Dec 90; and Historical report, DOL, CY 90.

³² Army Flier, 17 Jan, 1 Feb 90; Historical report, DPCA.

collapse of communism in much of the former Communist world.³³

The 1990 Hispanic Heritage Month luncheon was held on 19 September. The principal speaker was Col. William A. DePalo, Jr., the commandant of the U.S. Army School of the Americas, Fort Benning, Georgia. Several other public events were held during the month. The 1990 theme was "500 Years of Hispanic Heritage."³⁴

The theme for the Asian-Pacific American Heritage Month was "Asian-Pacific Americans: Commitment, Contribution, and New Direction." A Hawaiian Luau on 11 May was a highlight of the celebration. During American Indian Week (22-28 September), typical American Indian foods were served in the dining facilities. On Women's Equality Day (24 August), the Federal Women's Program Committee set up a display and voter registration table at the main post exchange.³⁵

It was announced in April of 1990 that Fort Rucker was runner-up in the U.S. Army Community of Excellence competition for 1989. That was the fifth consecutive year that Fort Rucker had won honors in TRADOC and Army competition. The TRADOC Community of Excellence evaluators visited Fort Rucker in mid-June for the 1990 competition.³⁶

Fort Rucker held its third annual Women of the Year Awards ceremony on 29 March. Winners included Ms. Eugenia Berta, Capt. Kathy Reynolds, CWO2 Deborah Howard, Bonnie Niver, Holly Berry, and Audrey Gomes. The Fort Rucker Federal Women's Program was selected as one of the winners in the DA "Showcase of Stars" competition in 1990.³⁷

The commanding general of the U.S. Army Transportation Center and Fort Eustis, Maj. Gen. Samuel N. Wakefield, awarded the USAALS the first place trophy for exceptional contribution to the Fort Eustis "Catch the Winning Spirit"

³³ Army Flier, 15 Feb 90.

³⁴ Historical report, EEO Office, CY 90; Historical report, DPCA, CY 90.

³⁵ Historical report, DPCA, CY 90.

³⁶ Army Flier, 3 May, 21 Jun 90; E-Mail msg, Capt William D Platz to all Profs users, 23 Apr 90, sub: 1989 Army Community of Excellence competition results, Chapter I file.

³⁷ Historical report, EEO Office, CY 90.

competition, conducted during the month of July 1990. Budget savings of \$7.5 million qualified USAALS as the winner. The USAALS submitted total budget savings of over \$15 million to the FY 90 Fort Eustis Systematic Productivity Improvement Review in TRADOC competition. This helped Fort Eustis to receive the nomination as a TRADOC installation in competition for Department of Army awards.^{3*}

Two Fort Rucker employees received major Department of the Army awards in 1990. Mr. Joseph L. Haley, an aerospace engineer for the U.S. Aeromedical Research Laboratory received the Department of the Army Research and Development Award for 1989 for developing a crashworthy seat for the OH-58 helicopter. The award was made in a ceremony in May 1990. The second major civilian award in 1990 went to Ms. Carol A. Fudge, secretary to the chief of the Biomedical Research Division of the U.S. Army Aeromedical Research Laboratory. Ms. Fudge was named Department of the Army Outstanding Handicapped Employee of the Year for 1990 and was presented the award by the secretary of the Army at a Department of Defense ceremony on 4 December.^{3*}

Capt. Jody S. Sanders of the 1st Battalion, 223 Aviation Regiment, Aviation Training Brigade, was awarded the Soldiers Medal, the highest honor given by the Army in peacetime. In the award ceremony on June 29, Maj. Gen. Rudolph Ostovich III praised Capt. Sanders for having "risked personal misfortune to pull a soldier from a burning helicopter and save his life." This rescue followed a mechanical failure in a UH-1 helicopter, which caused the aircraft to fall 70 to 100 feet. Although injured himself, Sanders helped his more seriously injured co-pilot from the aircraft, which was leaking fuel and already on fire.^{4*}

Another Fort Rucker soldier, Capt. Jerry Cornell of the U.S. Army Aviation Development Test Activity, received the prestigious MacArthur Leadership Award in 1990. This award ceremony was held at the Douglas MacArthur Memorial in Norfolk, Virginia, on 15 June and was hosted by the chief of staff of the Army, Gen. Carl E. Vuono. Cornell was one of the twenty-six lieutenants and captains from each of the

^{3*} Historical report, USAALS, CY 90.

^{3*} Army Flier, 31 May, 13 Dec 1990.

^{4*} Army Flier, 5 Jul 90.

Army's major commands and Army staff agencies selected for the award.⁴¹

The Order of the Daedalians, Brigadier General Carl I. Hutton Award, presented annually to the U.S. Army unit that demonstrated outstanding professionalism and contributed greatly to the advancement of flight safety in Army Aviation during the previous year, was awarded in 1990 (for performance in 1989) to the 377th Medical Company (Air Ambulance), Republic of Korea. The Aviation Center's nominee for the Brewer Trophy, presented annually by the National Aeronautic Association for significant contributions of enduring value to aviation and space education in the United States, was Lt. Col. (Ret.) Robert E. Harry for his outstanding contributions to the international rotary wing community. The American Legion Aviator Valor Award, presented annually to the Army aviator who displayed a conspicuous act of valor or courage during an aerial flight the previous year, went to CWO4 Robert Fladry for conspicuous bravery and heroism during Operation Just Cause in December 1989.⁴²

The USAAVNC, in cooperation with the Army Aviation Association of America (AAAA) developed the criteria, standards, and procedures for a new order for Army aviators in 1990. This new order, the Order of Saint Michael, was to recognize only a select number of aviators who made outstanding contributions to Army Aviation and demonstrated the highest standards of integrity, moral character, professional competence, and selflessness to duty. The award was named for Saint Michael, referred to in Judeo-Christian writings as an archangel who waged war against evil. As Saint Michael has been considered to represent courage, justice, and gallantry, so too the individuals selected for this order were intended to have exemplified these qualities and to have represented the best of Army

⁴¹ Army Flier, 28 Jun 90.

⁴² Ltr, Col Joel H Hinson to Mr. Malvern J Gross Jr, 31 May 90, sub: Brewer Trophy nominee, APO; Memo ATZQ-DAP-PO (672), Col Joel H Hinson for national commander of Daedalian Foundation, 11 Apr 90, sub: nomination for 1989 Hutton Memorial Aviation Safety Award, APO; Memo ATZQ-DAP-PO (672), Col Joel H Hinson for vice commander of American Legion Aviators' Post 743, 24 Apr 90, sub: nomination of 1989 American Legion Aviator Valor Award, APO, Historical report, APO, CY 90.

Aviation. The first Order of Saint Michael Award was scheduled to be presented at the 1991 AAAA convention.⁴³

The Army Aviation Center chapter Army Aviation Association of America annual awards banquet was held on 6 December 1990. Army Aviation's 'Trainer of the Year' award went to Chief Warrant Officer Michael S. Kather, a standardization officer with Company B, 1st Battalion, 14th Aviation Regiment of Fort Rucker's Aviation Training Brigade. The winner of the 'Air Traffic Controller of the Year' award was Sfc. Gregory B. Harkness of the 58th Aviation Regiment, based in Korea. Other air traffic control awards went to Sfc. Charles W. Sheets, and S. Sgt. Jimmie R. Carmichael. Selected on another occasion, Fort Rucker's drill sergeant of the year was Sfc. Jade M. Anderson of Company C, 1st Battalion, 13th Aviation Regiment, 1st Aviation Brigade.⁴⁴

A delegation from the Federal Republic of Germany visited Fort Rucker in late August to exchange ideas and plans for flight safety programs with the U.S. Army Safety Center. The German delegation was headed by Brig. Gen. Hans-Joachim Griese.⁴⁵ Other foreign visitors to Fort Rucker in 1990 included Dr. Jacob Vortman from Israel, General Karadayi from Turkey, Sir Anthony Skingsley from the United Kingdom, Col. Jacob Reschef from Israel, Col. Cesar Osvelio Mendez Gonzales from Venezuela, and Lt. Gen. Georges Joseph Jean Baffeuleuf from France. Congressman William L. Dickenson visited Fort Rucker several times as also did Lt. Gen. Ellis D. Parker. Other U.S. military leaders who visited included Gen. John W. Foss of TRADOC, Lt. Gen. Carl Stiner of the XVIII Airborne Corps, Lt. Gen. James W. Crysel of the Second U.S. Army, Lt. Gen. Leonard P. Wishart III of the U.S. Army Combined Arms Center, and Lt. Gen. Teddy G. Allen. High-ranking civilian visitors included Mr. Harold Stugart of the U.S. Army Audit Agency, Dr. Paul Berenson of TRADOC, and Mr. Michael F. Fisette of the Army Materiel Command.⁴⁶

⁴³ Memo ATZQ-AP-P (672), Lt Col Michael C Pascoe for CG, [1990], sub: The Order of Saint Michael (with four enclosures); APO.

⁴⁴ Army Flier, 13 Dec, 15 Feb 90; Historical report, USAATCA, CY 90.

⁴⁵ Army Flier, 6 Sep 90.

⁴⁶ Historical report, Protocol Office, CY 90.

During 1990, Fort Rucker's 98th Army Band performed at 381 on-post events--including changes of command, departure ceremonies for troops deploying to Saudi Arabia, graduation ceremonies, the Fourth of July concert, the Special Olympics, Armed Forces Day activities, and the Christmas concert. The band also performed at thirty-six off post functions, and buglar details performed at 317 funerals and memorial services. Over 230,000 people heard the band perform during 1990.⁴⁷

⁴⁷Historical report, 1st Brigade, CY 90.

CHAPTER II

TRAINING

As a result of Desert Shield, General Carl Vuono, the Chief of Staff of the Army directed the U. S. Army Aviation Center (USAAVNC) and other training bases to cancel the Christmas Exodus to improve the overall force readiness of the Army. Accordingly, USAAVNC scheduled an additional eight days of training during the holiday period.¹

A. Initial Entry Rotary Wing Training

The new multi-track approach to initial entry rotary wing (IERW) training, which the first students completed in February and March 1989, continued in 1990 with a total of 1,576 students graduating.² Of those 1,576 graduates, 606 were officers and 970 were warrant officer candidates (WOCs). Broken down according to track, 179 officers and 292 WOCs were trained for the OH-58, 272

officers and 332 WOCs for the UH-1, 86 officers and 220 WOCs for the AH-1, and 69 officers and 126 WOCs for the UH-60. The graduates consisted of 1,150 active U.S. Army personnel, 288 from the Army National Guard, 59 from the U.S. Army Reserve, 25 from the U.S. Air Force, 45 from Europe/NATO, and 9 other allied officers. Eighteen or 1 percent fewer students graduated in 1990 than had graduated in 1989.³

Upon completion of Warrant Officer Candidate School, technical service specialty graduates proceeded to other installations for specialized training and certification. Aviation graduates were given IERW training by learning to fly the UH-1 helicopter. Academic classes concentrated on the basic principles of flight to include aerodynamics, aeromedical, aircraft maintenance, navigation, weather and instrument training. Each candidate received approximately sixty hours of flight

¹Memo ATZQ-DPT-P (310-1q), Col J. W. K. Hiatt for chief of staff, 28 Nov 90, sub: cancellation of Christmas Exodus -- action memo, DPTMSEC: ATZQ-DPT-RT (350), Col Patrick J. Bodelson for distr, 27 Nov 90, sub: cancellation of Christmas Exodus, DPTMSEC.

²Kitchens, AHR 1989, p. 19.

³Academic records report, CY 90; Historical report, ATB, CY 90.

training in the UH-1 along with thirty hours of flight simulator time.⁴

The inclusion of U. S. Air Force personnel in the IERW course increased slightly from 1989, averaging seven per class during 1990.⁵ During the year, forty-one Air Force personnel entered IERW training. This year was the final entry of non-rated Air Force students because the Air Force proposed to send pilots to Ft. Rucker already flight qualified.⁶ The Air Force also developed and proposed a specialized rotary wing qualification course dealing with the use of rotary systems peculiar to the Air Force.⁷

A memorandum of agreement for using Air Force pilots at USAAVNC was approved on 22 January, and two instructors were assigned to the Aviation Training Brigade (ATB). This was helpful in alleviating the Army's instructor pilot shortage, and also provided valuable experience for the Air Force pilots.⁸

The Directorate of Training and Doctrine (DOTD) hosted a conference in October at Fort Rucker on air-to-air training (ATA) for IERW students. The conference discussed how to fit ATA into the IERW training.⁹

⁴Historical report, 1st Aviation Brigade, CY 90.

⁵Kitchens, 1989 AHR, p. 20; Historical report, 3588th FTS, CY 90.

⁶Historical report, 3588th FTS, CY 90.

⁷Msg R 071400Z Jun 90 HQ, ATC to HQ MAC et al., sub: Helicopter Training Conference, 3588th FTS; Memo CC LTC C. L. Hutchinson for Col Hiatt, 6 Jun 90, sub: USAF Rotary Wing Qualification Course, 3588th FTS; Historical report, 3588 FTS, CY 90.

⁸Memorandum of agreement between 3588th FTS and 1-223 Aviation, sub: Utilization of U.S. Air Force Pilots in U.S. Army UH-60 Instructor Pilot Positions, effective date. 22 January 1990; Historical report, 3588th FTS, CY 90.

⁹Memo ATZQ-TDI-F (351e) dir, DOTD for cdr, ATB, et al, 15 Oct 90, sub: Air-to-Air (ATA) Training in Initial Entry Rotary Wing (IERW) Course, DOTD; Historical report, DOTD, CY 90.

B. Graduate Flight Training

A total of 2,552 aviators graduated from advanced and refresher rotary courses at Fort Rucker in 1990 with graduate training provided under contract by Burnside-Ott. A total of 527 graduated from the fixed-wing courses during 1990.¹⁰ This training was provided by Flight Safety International.¹¹

During 1990, ATB flew 428,305 hours compared to only 348,783 hours in 1989. The military flew 230,505 hours, and Burnside-Ott flew 197,800 hours.¹²

In 1990 USAAVNC developed a course to train OH-58D Kiowa Warrior dual-seat qualified aviators. This new course was structured to last four weeks with six-eight students per class and twelve classes per year. The training was to begin in January 1992.¹³

During 1990 the Directorate of Training and Doctrine (DOTD) began a program of instruction (POI) change to the CH-47D instructor pilot course. The two most important modifications shortened the course from ten to eight weeks and reduced the number of hours from 376 to 319.¹⁴

The 1-13th Aviation Regiment of the 1st Aviation Brigade provided command, control, and administrative operational support for all students in graduate flight training at Fort Rucker.¹⁵

The 1st Bn, 223d Aviation Regiment trained fifty-two aviators from Columbia, El Salvador, and Bolivia in day/night combat skills in the UH-1H. To accomplish this mission, all academic and flight training material for

¹⁰ Academic records report, CY 90.

¹¹ Academic records report, CY 90; Historical report, ATB, CY 90,

¹² Historical report, ATB, CY 90.

¹³ Msg from Col Clarence Belinge for Col Sendak et al., 4 Nov 90, sub; OH-58D, Chapter II File.

¹⁴ Memo ATZQ-TDI-F (351e) DOTD for distr, sub: Charge # 1 to POI 2C-SIG2/2C-SQIC (CH-47), CH-47D Instructor Pilot Course, Dates June 90 (Expires 30 September 91), DOTD; Historical report, DOTD, CY 90.

¹⁵ Historical report, 1st Brigade, CY 90.

six UH-1H and two UH-60 POIs had to be translated into Spanish.

In addition, the 223d trained twenty-nine students who were police officers from Columbia, Peru and the Procuraduria de Mexico. This increased output was due to repeated requests from the U. S. Army's Southern Command to assist Latin American countries in drug interdiction.

C. Weapons, Gunnery, and Simulator Training

Simulators provided Army aviation with the answer to flight training at a fraction of the cost of aircraft operating time. To that end, Army aviation's combined arms warfighting and developmental complex officially opened on 31 January. Built at a cost of \$2 million, the complex accommodated twenty-four computer-driven interactive simulators.

As a result of the computer networking available in the new complex, an Army pilot at Fort Rucker, an Air Force pilot at Nellis Air Force Base (AFB), Nevada, a tank battalion commander at Fort Knox, and an artillery battalion commander and his staff in Germany can all be in a simulator linked simultaneously to the same scenario.¹⁶

During the year the Department of Tactics and Simulation (DOTS) provided 110,831 hours of simulator training. In 1988 104,270 were provided, and in 1989 a total of 110,226.¹⁷

D. Enlisted Training at Ft. Rucker

A total of 2,277 students graduated from enlisted aviation courses at Fort Rucker in 1990. This was a decrease of forty-eight over CY 89.¹⁸

The Aviation Center developed the skill qualification tests (SQTs) for 93B (aeroscout observer), 93C (air traffic control operator), and 93P (aviation operations specialist). SQTs were developed at Fort

¹⁶ Army Flier, 15 Feb 90.

¹⁷ Historical report, DOTS, CY 90.

¹⁸ Academic records report, CY 90; Kitchens, AHR, 1989, p. 25.

Gordon for aviation related courses 68L (avionic communications repairer), 68N (avionic mechanic), 68Q (avionic flight systems repairer), 68R (avionic radar repairer), and military occupation specialty (MOS) 93D (ATC systems, subsystems, and equipment repairer).¹⁹

The enlisted aeroscout observer training began in 1984 when a 67V OH-58 mechanic was trained in observer tasks and given the specialty code Z1. During the period 1984-86, 135 observers were trained before the 67V Z1 specialty was changed in 1986 to MOS 93B. Since that time, 849 aeroscout observers have been trained at Fort Rucker.²⁰

With input from the 1989 aviation commander's conference, USAAVNC determined in 1990 that more hands-on flight training was necessary for the aeroscout observer to function. This included a six-hour increase in hands-on flight training bringing the total training time to fifteen hours.²¹

In June, a conference on the MOS 93B was held at the Aviation Center video teleconferencing center. Subject matter experts (SMEs) stationed at Forts Campbell, Bragg, and Hood were linked with Fort Rucker and discussed the program of instruction (POI) for the course.²²

This year the first class of enlisted aerial observer students trained in the OH-58D graduated. The first group of Kiowa Warrior trained soldiers who graduated were between twenty and thirty-two years of age, and ranged in rank from private to staff sergeant.

Aerial observers' training began in the left seat with eighteen hours of emergency aircraft handling and the operation of complex communication and navigation systems. Next the soldier moved into day combat skills

¹⁹ Historical report, DOTD, CY 90.

²⁰ Fact sheet ATZQ-TDI-E Mr. Wolfington for distr 3 Dec 1990, sub: MOS 93B Aeroscout Observer. 1990 Aviation Brigade Commanders Conference files.

²¹ Msg from MG Ostovich, sub: Enlisted Aerial Observer Program. 9 Apr 90, DOTD; Historical report, DOTD, CY90.

²² Memo for Record ATZQ-TDI-F (351e), Arnold L. Rumphrey, Project Officer for DOTD, 21 Jul 90, sub: FY90 Critical Task/Site Selection Board Results for MOS 93B, Aeroscout Observer, DOTD; Historical report, DOTD, CY 90.

training and learned to acquire, identify and locate targets with the mast mounted sight. The last phase of training developed the observer's skills in night combat fighting. They performed all of the previously mastered tasks at night using AN/AVS-6(V)1 night vision goggles. Thermal imaging systems and the laser rangefinder/designator were also used during the training. The observers ended each phase of the course with a hands-on evaluation of critical tasks.²³

On 1 October, a consolidated thirty-two week MOS 93D Air Traffic Control Systems, Subsystems, and Equipment Repair Advanced Individual Training (AIT) course was implemented at the United States Army Signal School located at Fort Gordon. This course covered a variety of skills for entry level students, developing them into an MOS qualified soldier who could be quickly integrated into the maintenance section. Previous training fielded soldiers that were untrained in some of the skills required for a MOS 93D assignment.²⁴

To support a strategy of complete instruction, a revised individual training plan and two separate course administrative data were submitted to the U.S. Army Training and Doctrine Command (TRADOC) requesting approval for two additional skill identifiers producing courses that provided training for the low density radar system AN/FSC-84 and the radio transmitting set AN/FRN-41.²⁵ In November, TRADOC approved the implementation scheduled for October 1991, at USAAVNC.²⁶

Based on Department of the Army guidance, maintenance responsibility for the aviator's night vision imaging system was changed from signal MOS 93E to aviation MOS 68N at the aviation unit maintenance (AVUM)

²³ Historical report, ATB, CY 90.

²⁴ Historical report, DOTD, CY 90.

²⁵ Individual Training Plan, MOS 93B, Air Traffic Control Systems, Subsystems and Equipment Repairer, USAAVNC, August 1989, DOTD; Historical report, DOTD, CY 90.

²⁶ 1st End, ATOM-P (ATZO-TDI) 12 Apr 90. Ms. Corrigan for cdr, USAAVNC, DOTD; Course administrative data sheet, 15 Feb 90, AN/FSQ-84, Radar Systems Repair, DOTD; 1st End ATOM-P (ATZQ-TDI) 7 Apr 90, DOTD; Ms Corrigan for cdr USAAVNC; Course Administrative Data Sheet, 15 FEB 90, AN/FRN-41, Repair Radio Transmitting Set, DOTD; Historical report, DOTD, CY 90.

level and to 68R at the aviation intermediate maintenance (AVIM) level.²⁷

In September through coordination with the project manager's office and USAAVNC Noncommissioned Officers Academy (NCOA), training was provided to instructors with equipment and time allocated to institute training at the Academy in 68N and 68R for the basic noncommissioned officers course (BNCOC).²⁸

The Maintenance Training Division of the Department of Enlisted Training (DOET) conducted training for MOSs 67N and 67V. In October 1990 the division was tasked to provide a comprehensive review of the current 67N and 67V reserve component configured courses. The review was to be completed by early 1991.²⁹

Air traffic control (ATC) training was provided to AIT students in MOSs 93B, 93C and 93P. The Federal Aviation Administration (FAA) control tower operator examination was also administered to ATC students. In March the soldier training publication for air traffic control was developed and submitted to DOTD, USAAVNC.³⁰

In April the Army joined with other armed services and the FAA in a study to determine whether training costs could be reduced by consolidating the air traffic control training conducted separately by the FAA and each armed service. The Army Aviation Center provided information for the task group conducting this study. By year's end, the feasibility part of the study had been completed and preliminary cost data was being analyzed. It was to be determined whether consolidation/collocation of the training at any recommended site (i.e., Fort Rucker, Keesler Air Force Base, Memphis Naval Air

²⁷ Basis of issue plan cover sheet. 1 Aug 90, DOTD; Historical report, DOTD, CY 90.

²⁸ Memo ATZQ-NCA (350), CSM Taylor for NCOA, 17 Sep 90, sub: After Action Report on Aviator's Night Vision Imaging System (ANVIS) An/ASN-6 Course, DOTD; Historical report, DOTD, CY 90.

²⁹ Memo ATSQ-LTD-D (351), Colonel R. B. Terry, Jr for Commander, USAAVNC, 26 Oct 1990, sub: Reserve Component Configured Course (RC3) Program, DOET; Historical report, DOET, CY 90.

³⁰ Historical report, DOET, CY 90.

Station, or the FAA Academy at Oklahoma City) would be cost effective.³¹

The development of lesson plans for teaching 93P (aviation operations specialist) automated flight records was a continuing process. Version 2.1.1 of the Automated Flight Record, DA Form 759, was revised and implemented in October 1990.³²

The reserve component configured courseware cell of DOTD re-wrote active duty aviation courses to meet the training needs and requirements of reserve components. During 1990, the cell developed POIs for the following courses: one skill level 1 course (68N10); eight BNCOC courses (68L30, 68N30, 68Q30, 68R30, 93B30, 93C30, 93D30, and 93P30); and two ANCO courses (93C40 and 93F40).³³

Management of the development of enlisted testing, to include SQTs and self development tests (SDTs), was continued during the year. A second version of the battle focused SQT was completed for eight aviation MOSs. These SQTs were to be fielded in FY 91 and emphasize the use of tests which fit the mission essential task list for units that employ aviation MOSs.³⁴

The Chief of Staff of the Army, General Vuono made two decisions in July which had a major impact on both SQTs and SDTs. General Vuono directed the SQT be eliminated and the SDT be established in FY 92. He felt noncommissioned officers (NCOs) no longer needed to be tested for MOS competence, but for their professional competence.³⁵ The SDT was to evaluate NCOs in leadership, training, and MOS knowledge. Initial SDT

³¹Msg R 021230Z Apr 90, cdr TRADOC for cdr USAAVNC, sub: Air Traffic Control Operator/Maintenance Training, DOTD; Memo ATZQ-DAP-PO (611-1a), Col J. H. Hinson for DOAP, sub: Air Traffic Control (ATC) Operator/Maintenance Training, DOTD; Historical report, DOTD, CY 90.

³²Historical report, DOET, CY 90.

³³Historical report, DOTD, CY 90.

³⁴Historical report, DOTD, CY 90.

³⁵Msg R 031500Z Jul 90, CSA for ALARACT, sub: Soldier SQT and NCO Self-Development Test (SDT), DOTD; Historical report, DOTD, CY 90.

development for all aviation MOSSs began at Fort Rucker in November.³⁶

In accordance with directives from TRADOC, the enlisted training cadre at Fort Rucker reviewed all programs of instruction, critical task lists, and individual training programs, checking them against the battle focus task lists. If a task was to be taught in BNCOC and ANCOC, it was shortened or eliminated from the AIT course. In August, 1989 TRADOC announced a 10 percent reduction in course length for the FY.³⁷ A second 10 percent reduction was directed by TRADOC in December 1989 and developed by Fort Rucker but not implemented.³⁸

Changes to the new TRADOC Regulation 350-10 allowed USAAVNC to drop the end-of-the-course comprehensive test in AIT courses. This time was applied to the new field training exercise to accommodate additional common military training.³⁹

On 7 July, AIT students completed a land navigation course taught by soldiers of the 1st Aviation Brigade. Many of the AIT participants were in the 93B aeroscout observer course, and land navigation was a critical part of their observer skills.⁴⁰

The Department of Enlisted Instruction was tasked to review the joint computer-based instruction system and

³⁶ Historical report, DOTD, CY 90.

³⁷ Msg R 1477307 Aug 89, cdr TRADOC for cmdt, USAAVNC et al., sub: Training Course Eliminations and Strength Reductions, DOET; Historical report, DOET, CY 90.

³⁸ Msg 3508307 Dec 89, from cdr, TRADOC to cmdt, USAAVNC, et al, sub: AIT and OSUT Reductions, DOET; Historical report, DOET, CY 90.

³⁹ Memo ATZQ-DET-EA, Master Sergeant S. F. Rocxwell to Mr. Funkhouser, DOET Operations, 19 Sept 90, sub: End-of-Course-Comprehensive Test (EOCOT), DOET; Historical report, DOET, CY 90.

⁴⁰ Army Flier, 19 Jul 90.

other computer-based instruction 21 June 1989.⁴¹ One of the systems reviewed was the Air Force air traffic control course at Keesler AFB. As a result of this meeting DOET met with the personnel in the Directorate of Evaluation and Standardization. Both continued their analysis, but computer based instruction training was still under review and not implemented during 1990.⁴²

In 1990 the Interservice Training Review Organization study of Air Traffic Control Operator/Maintenance Training Phases I and II was convened.⁴³ The lead department for this study was DOTD assisted by Air Traffic Control Activity personnel.⁴⁴

The 1st Aviation Brigade provided command and control and administrative and operational support for AIT students at Fort Rucker.⁴⁵

E. Aviation Logistics Training at Fort Eustis

During the FY the U.S. Army Aviation Logistics School (USAALS) trained personnel in the following areas: 1,263 AIT students, 751 career management field (CMF) 67 series students along with 25 Advanced Noncommissioned Officers Course (ANCOC) and 114 Army aviation maintenance course students for a total of 2,153. This was a decrease of 809 over total students trained for 1989.

Throughout all of USAALS for CY 90, 2,807 students were trained at the skill level 1 (AIT) in the career field 67. During the year USAALS also trained 758

⁴¹ Memo ATTG-CI (350), TRADOC for cmdt, USAAVNC, et al., 21 Jun 1989, sub: Joint Computer Based Instruction System (JCBIS) Use for Delivery of Training, DOET; Historical report, DOET, CY 90.

⁴² Historical report, DOET, CY 90.

⁴³ Msg R0119417 May 90, 3395th Technical Training Squadron, Kessler AFB, Ms for ATC Randolph AFB et al., sub: Interservice Training Review Organization (ITRO) Study of ATC Operator Controller/Maintenance Training Phase I Meeting, DOET; Historical report, DOET, CY 90.

⁴⁴ Historical report, DOET, CY 90.

⁴⁵ Historical report, 1st Brigade, CY 90.

students in ASI Q2 (enlisted)/ASI H2 (Officer), ASI B7-67H, ASI W5, and ASI XI; USAALS also trained 174 students in BNCOC at Fort Eustis.⁴⁶

The Aviation Logistics School's Department of Aviation Systems Training (DAST) graduated a total of 143 students in MOS 67N30, 508 in 67T10, and 100 in 67T30. Four hundred ninety-six students were trained in the 67U10 MOS and 94 in 67U30.⁴⁷ USAALS also graduated 995 maintenance officers during the year in the following systems: UH-1, AH-1, CH47B/C, CH-47D, AH-64, OH-58D, OH58A/C, UH-60, and ALSE.⁴⁸

The Advanced Attack Helicopter Division (AAHD) conducted classes in support of ten programs of instruction. During the FY, USAALS' classes provided training for a total of 35 officers and 620 enlisted personnel. Army National Guard students who attended these courses totaled 8 officers and 144 enlisted personnel.

The Scout Helicopter Division (SHD) provided aviation maintenance training pertaining to the repair and maintenance of all systems peculiar to the OH-58, and conducted training in support of eleven different POIs. A total of 178 enlisted personnel and 5 foreign students graduated. One hundred twenty-three of these enlisted students were trained in MOSSs 67S10/20/30 and 23 in 67V30. The remaining thirty-two soldiers trained in 68 series MOSSs.⁴⁹

The Attack Helicopter Division (AHD) trained 271 soldiers in the 67Y10 course which was a significant reduction in student load. This, in turn, increased the instructor-to-student ratio and decreased the student attrition rate.⁵⁰

The Advanced Attack Helicopter Division designed a special 68J armament course for the North Carolina and Utah National Guards. This course permitted soldiers,

⁴⁶ Historical report, USAALS DATT, CY 90; Kitchens, 1989 AHR, p. 30.

⁴⁷ Historical report, USAALS DAST, CY 90.

⁴⁸ Historical report, USAALS DAST, CY 90.

⁴⁹ Historical report, USAALS DAHT, CY 90.

⁵⁰ Historical report, USAALS DAST, CY 90.

who had completed student training at Fort Eustis, to instruct their own National Guard 68J students using USAALS' lesson plans, slides, and course material. Upon completion of the course of instruction these students were sent to Fort Eustis and given the standardized MOS test. A total of seven students and three instructors participated.⁵¹

The Department of Advanced Aviation Logistics Training (DAALT) was responsible for the development of SQTs for six 67 and 68 MOSs at the skill level 40.⁵²

The Aviation Logistics School considered consolidation of training in certain MOSs at the request of the Army Personnel Integration Center. As a result, USAALS proposed that AIT for students in MOSs 68B and 68D be combined in a training program for a new MOS. If approved, this program is expected to be operational in 1993.

Beginning in July, the general subjects portions of the 68F10 and 68J10 POI's were combined and trained only in the Department of Aviation Trades Training (DATT) reducing the number of instructors, classrooms, and equipment required. The Aviation Logistics School also proposed that certain technical portions of the training provided 68J10 and 68F10 be combined to form a new MOS training program for maintenance on the AH-64 helicopter's armament and electrical systems.⁵³

The Department of Attack Helicopter Training, (DAHT) was involved in the design, development, implementation, and management of radiosonde training for the 67A10 apprentice mechanic course. The ten developmental personnel assigned to this test course came from the internal resources of DAHT, DATT, and DAST.⁵⁴

In April the 24th Infantry Division (Mechanized), Fort Stewart, Georgia agreed to test the 67A10 program, but was deployed to Saudi Arabia in August 1990. Consequently, on 4 September, U.S. Army Forces Command (FORSCOM) sent a message requesting an alternate infantry

⁵¹ Historical report, USAALS DAAHT, CY 90.

⁵² Historical report, USAALS DAALT, CY 90.

⁵³ Historical report, USAALS DATT, CY 90.

⁵⁴ Historical report, USAALS DAST, CY 90.

division to test the program.⁶⁶ On 27 November, Fort Polk, Louisiana agreed to task F Company, 5th Aviation Regiment (5th Infantry Division), to be the new test unit.⁶⁶ The first class of this program graduated on 7 December.⁶⁷

Due to increasing shortfalls created by Operation Desert Shield, the AVIM unit at Fort Polk, Louisiana was unable to provide training for future 67A10 students as planned. These shortfalls occurred while a class was in session, so students were absorbed into existing resident training programs at Fort Eustis.⁶⁸

During the FY the Department of Advanced Aviation Logistics (DAALT) revised the instruction program for the AIT students in fast track courses. The fast track program was designed to provide additional instruction to a select student group on the army maintenance management system, the supply system, and special tools. Fast track lesson plans, practical exercises, examinations, and student handouts were rewritten to meet the new BNCOC standards.⁶⁹

The Leader Development/Personnel Proponency Office of USAALS was assigned the task of conducting the project manager-aviation apprentice mechanics school study in January 1989, and completed the study in April.

The Department of Aviation Trades Training provided SMEs to the study group at USAALS who were in 1990 considering the feasibility of consolidated training in

⁶⁶Msg R 041400Z Sep 90, cdr FORSCOM to cdr 1st Inf Div Mech, et al., sub: United States Army Aviation Logistics School Evaluation of Aviation Apprentice Mechanic Concept, LPN USAALS; Historical report, USAALS LD/PPO, CY 90.

⁶⁶Memo AFZX-J-CDR, Col Billy K. Solomon for assistant commandant, USAALS, 14 Dec 90, sub: USAALS Test for the Army Apprentice Aircraft Mechanic Program, USAALS LD/PPO; Historical report, USAALS LD/PPO, CY 90.

⁶⁷Historical report, USAALS LD/PPO, CY 90.

⁶⁸Historical report, USAALS DAST, CY 90.

⁶⁹Historical report, USAALS DAALT, CY 90.

MOSs 68G, Structural Repair, and 68H, Pneudraulics Repair.⁶⁰

The Scout Helicopter Division of the Department of Attack Helicopter Training implemented instruction in the new MOSs 67S30 and 67V30. This training was to replace the 66S30 and 66V30 courses. A MOS 67V30 reserve components course was completed ahead of schedule by the division between January and May and is currently used within the USAR school system.

The USAALS' Scout Helicopter Division participated in the statement of work (SOW) review for the OH-58D Kiowa Warrior. Key personnel, along with representatives of DAHT and Aviation Support Command, St. Louis, reviewed the SOW for the Kiowa Warrior as it pertained to MOSs 67S, 68F and 68J. The major focus of the review was on the composite armament and electrical training. In addition, usage, design, shipment, warranty, and cost were discussed during the review and numerous concerns about implementing the program surfaced. The Aviation Support Command was receptive to ideas and suggestions generated by the meeting.⁶¹

The Directorate of Training and Doctrine (DOTD) submitted individual training plans on MOSs 67N, 67R, 67S, 67T, 67U, 67V, 67Y, 68J, 151A, special qualification identifier E, and aircraft maintenance officer functional training to TRADOC. Job analyses and coordinated task analyses were completed for 67R, 67S, and ALSE.

Training strategy was developed by the Enlisted Analysis Branch of USAALS' DOTD for the proposed MOS 67A10 Aviation Apprentice Mechanic program. Job descriptions for MOSs 67A10, and 67B10 were completed. An individual training guide to be used for the 67A10 soldier was also completed. The career management field for the 67 series MOS began 1 April.⁶²

The proposal to merge the additional skill identifier XI (AH-64 Maintenance) for MOS 68F and 68J into a new MOS was staffed to major commands. The projected training start date was October 1991. A proposal to establish a new skill identifier W5 (OH-58D maintenance) for MOS 68J was submitted for approval. The

⁶⁰ Historical report, USAALS DATT, CY 90.

⁶¹ Historical report, USAALS DAHT, CY 90.

⁶² Historical report, USAALS DOTD, CY 90.

W5 (68J) training was scheduled to begin at USAALS in FY 92. The W5 ASI for 68J, 68F, and 68N will be merged to form a new MOS in the future.⁶³

The skill identifier W5 was proposed for elimination for MOSs 68B aircraft power plant repairer and 68D aircraft power train repairer, and instead, USAALS' DOTD proposed the two MOSs be merged into MOS 68D.

The MOS 68H aircraft pneudraulics repairer was scheduled for elimination effective in FY 93. The critical tasks associated with this MOS were to be transferred to other 67 and 68 series MOSs. The Program of Instruction Branch of DOTD submitted twenty-six course administrative data memorandums to TRADOC for CMF 67 during the year.⁶⁴

The plans branch of DOTD developed a pilot program to be tested using the 68J10 MOS in reserve component units. The pilot program directed by the Commanding General, Combined Arms Support Command & Fort Lee will test the ability of a unit to perform its normal function, conduct additional training, and determine the feasibility of acquiring basic electronic training through a vocational/technical school. The branch also initiated a study to determine which current resident courses can be modified in such a way that portions of the course can be distributed as "distance training."⁶⁵

The USAALS' Aviation Systems Training Department upgraded CH-47C training devices so they could be used for CH-47D training, and upgraded development and production of three UH-60 main landing gear training devices. The delivery date for these systems was arranged for 1992.

Due to budget reductions, USAALS was unable to maintain ground maintenance trainer aircraft in ground operable status. This situation caused a loss of quality of training for enlisted students.

The Aviation Logistics School initiated and implemented training for the Israeli Air Force by designing a specialized maintenance training course for the AH-64 helicopter that combined all Additional Skill

⁶³ Historical report, USAALS DOTD, CY 90.

⁶⁴ Historical report, USAALS DOTD, CY 90.

⁶⁵ Historical report, USAALS DOTD, CY 90.

Identifier (ASI) XI courses into the 67R transition course. A total of twenty-four Israeli soldiers attended this course during the year.**

The division's training program received three additional AH-64 aircraft. The increase in aircraft coupled with an increase of students resulted in an expanded training program.

The first production of videodisk programs for the AH-64 began in July with the filming of four subject areas: hydraulic system, pressurized air system, multiplex data bus system, and landing gear system.*7

To support Operation Desert Shield, USAALS returned five AH-1 helicopters plus components to active service. Five turbine engine trainers, 5 main rotor hub trainers, 15 hydraulic servo cylinders, and 5 synchronized elevator horns were also returned to active inventory.** A classroom systems trainer was shipped to Fort Rucker by USAALS to support training for Operation Desert Shield and was returned after instruction ended.

The USAALS' Directorate of Evaluation and Standardization (DOES) hosted the third annual worldwide maintenance test pilot training update in Williamsburg, Va. Two hundred-one Army maintenance managers and test pilots attended the update along with Army contractors and representatives from the helicopter industry. This annual training update prepared experienced maintenance test pilots to become maintenance evaluators.

The conference provided the latest information available on maintenance standardization and aircrew training programs. Keynote speaker for the update was Major General Rudolph Ostovich III, Commander, USAAVNC, Fort Rucker and USAALS and the guest speaker was Mr. Joseph Cribbins, Special Assistant to the Deputy Chief of Staff for Logistics.**

**Historical report, USAALS DAHT, CY 90.

*7 Historical Report, USAALS DAHT, CY 90.

** Historical report, USAALS DAHT, CY 90.

** Lieutenant Colonel Douglas A. Cahill and Chief Warrant Officer George S. Hrichak. "The 1990 Maintenance Test Pilot Training Update. U.S. Army Aviation Digest. September/October 1990, pp 62-65, USAALS-DOES; Historical report, USAALS DOES, CY 90.

The Department of Aviation Trades Training was presented the third prize award in USAALS 'Catch the Winning Spirit Competition' after realizing a savings of \$9,341 in training costs for the year.⁷⁰

F. Apache Single Station Unit Fielding and Training (ASUFT)

By the end of the FY, the Apache Training Brigade (ATB) fielded seventeen trained AH-64 battalions. Including the initial three battalions that did not field under the ATB, the U.S. Army had a total of twenty battalions by year's end.

The Reserve Components (RC) AH-64 units had difficulty obtaining combat ready status for the following reasons: 1. They didn't meet the requirement of 100 percent of equipment and 100 percent MOS qualification for unit members. Collective skills such as air land battle doctrine, AH-64 tactics, techniques, and procedures were weak. To deal with these problems, ATB refocused its organization and modified RC training programs that incorporated new equipment training teams and doctrinal training teams into reserve unit cycles.⁷¹

G. Other Training

The Department of Tactics and Simulation reviewed and updated a total of ninety-six separate correspondence texts. A total of fifteen mobile training teams provided doctrinal instruction on combined arms and aviation specific subjects to active and reserve units.⁷²

The Aviation Training Brigade (Augmentation) was approved in June to supplement the Fort Rucker Training Base Expansion plan during periods of national emergency or mobilization by providing refresher training for Ready Reserve aviators. Upon full mobilization, the unit was to be comprised of 546 personnel of which 120 were to be instructors and civilian support. During peacetime, the

⁷⁰ Historical report, USAALS DATT, CY 90.

⁷¹ Fact sheet AFVU-AH LTC Gregory L. Cook 28 Nov 90, sub: Apache Training Brigade (ATB), 1990 Aviation Brigade Commanders Conference.

⁷² Historical report, DOTS, CY 90.

unit was designed to exist as an individual mobilization augmentee detachment of sixty-six personnel. The Department of the Army approved the 0191 Mobilization table of distribution and allowances (TDA) in October. Approximately twenty-eight IRR personnel had been assigned to individual mobilization augmentation positions by the end of the year. An additional thirty-five of these reserve aviators were attached to the unit for additional flight training period for pay or retirement points only.⁷³

The 1st Aviation Brigade was responsible for training all international students at USAAVNC, and the management of the Department of Defense Informational Program which was designed to expose students to various aspects of life in the United States. The Brigade helped to train 250 international students representing forty different nations. These students attended thirty-seven different courses at Fort Rucker.⁷⁴

To assist in training aviators to fly at night in the often featureless terrain found in Southwest Asia, the Aviation Training Brigade (ATB) conducted test flights in Saudi Arabia using two highly experienced instructor pilots from ATB along with two similar pilots assigned to Operation Desert Shield aviation units. Two UH-1H aircraft with radar altimeters were used and pilots equipped with AN/AVIS-6 goggles. A series of flights were conducted over three different types of terrain found in Southwest Asia (scrub, dry lake bed, and sand dunes) at various altitudes, airspeeds, and lighting conditions. Video and audio tapes, interviews, and quantitative data were used to develop the information contained in their planning guide.⁷⁵

The Staff and Faculty Development Division of USAAVNC conducted the following courses: Instructor Training, Systems Approach to Training, Counseling and Human Relations, Small Group Instruction, Leadership Assessor Training, Staff Officer Orientation, Educational Statistics, Skill Qualification Test Developer's

⁷³ Historical report, USAR Advisor's Office, CY 90; Memo ATZQ-RFM (570-3a), Howell L Flowers for distr, 22 Oct 90, sub: 0191 Mobilization TDA, USAR Advisor's Office.

⁷⁴ Historical report, 1st Aviation Brigade, CY 90.

⁷⁵ Outbrief, USASC/USAAVNC/ARI/C2NVEO, Major David R. Brosthom, sub: Desert Shield NVG Evaluation; Historical report, ATB, CY 90.

Workshop, and Team Leader Training. The number of students trained during the year totalled 547.⁷⁶

The Department of Tactics and Simulation prepared briefings addressing ongoing tactical training actions at the Aviation Center for the deputy assistant commandant who attended the 1990 Tactics and Directors Conference at Fort Leavenworth during June.⁷⁷

The Aviation Center maintained relationships throughout the year with various Army training centers to include the National Training Center, Combat Training Center, Joint Readiness Training Center, and the Combat Maneuvers Training Center. USAAVNC supported these training centers by assisting with SMEs for conferences and field training exercises.⁷⁸

Aircraft survivability equipment training (ASET) at USAAVNC was upgraded by the development of two systems that replaced the current ASET system. The ASET II system was a portable, desk top computer which allowed aircrews to train in their aircraft on the ground or in a classroom.

The ASET III was an inflight ASET that enabled a crew to respond to computer generated threats during flight operations. One newly designed computer program for both systems replicated the air defense assets of a Soviet motorized rifle regiment. Although originally developed for the OV-1, USAAVNC attempted to incorporate ASET equipment into the Longbow Apache, the OH-58D, and the light helicopter.⁷⁹

During the year directed energy warfare (DEW) reached a stage where they were considered to be a serious threat to Army aircraft. Up to that time, USAAVNC had not addressed the problem of DEW weapons. These weapons were not covered in training in the IERW, aeroscout observer, aviation maintenance, air traffic controller or aviation operations specialist. DEW

⁷⁶ Historical report, DOTD, CY 90.

⁷⁷ Historical report, DOTS, CY 90.

⁷⁸ Historical report, DOTS, CY 90.

⁷⁹ Memo ATZQ-TDS-AS (70-17A) DOTD for distr 12 Jun 90, sub: Embedded Aircraft Survivability Equipment (ASE) Training-ACTION MEMORANDUM, DOTD; Historical report, DOTD, CY 90.

briefings and materials as well as those on radio frequency weapons were to be included in future aviation training at USAAVNC.⁸⁰

The Army Aviation Center worked on several initiatives that developed more realistic field training. The multiple integrated laser engagement air-to-air system continued development. This system was scheduled to be installed on AH-64s and used at the National Training Center in air-to-air combat in 1991. This laser system allowed AH-64s to take part in force-on-force engagements and to electronically determine hits and kills, thus enhancing overall training.⁸¹

In the arena of air-to-ground combat training, USAAVNC continued to work on the development of an air-to-ground simulation system for the AH-64. During 1990 the prototype stage was reached with twelve systems being requested on a limited procurement urgent directive from Department of the Army for further testing and evaluation. When used in training, the air-to-ground engagement system allowed pilots and ground troops to determine results of air-ground combat.⁸²

The Safety School of the U.S. Army's Safety Center trained nearly 300 aviation safety officers during the year. Aviation NCO safety training was given to 500 NCOs. In addition the Safety School developed a new senior NCO safety course.⁸³

The Air Assault School again conducted an air assault course at Camp Sherman, Panama for troops of the

⁸⁰ Memo ATZD-TDS-AS (70-17a) Col F. E. Edwards to cdr, Combined Arms Training Activity 29 May 90, sub: Directed Energy Warfare (DEW) White Paper, DOTD; Historical report, DOTD, CY 90.

⁸¹ Memo ATZQ-TDS-AS (600d) Cpt Grotz to dir, DOTD 13 Nov 90, sub: Trip Report - Orlando, FL, 5-8 Nov 90, DOTD; Memo ATZQ-TD (1) DOTD to distr, sub: AH-64 Multiple Integrated Laser Engagement System (MILES)/Air-to-Ground Engagement System (AGES) II Assessment Report, DOTD; Historical report, DOTD, CY 90.

⁸² Memo ATZQ-TDS-AS (70-17a) DOTD to chief of staff, 4 Oct 90, sub: Department of the Army (DA) Directed Limited Procurement Urgent (LPU) of Air-to-Ground Simulation (AGES) II for the AH-64A, DOTD; Historical report, DOTD, CY 90.

⁸³ Historical report, USASC, CY 90.

193d Infantry Brigade.** Nineteen personnel from Fort Rucker provided the training. Of the 158 soldiers who began the course, only 116 graduated two weeks later.

The Air Assault School's training at Fort Rucker resulted in the graduation of 1,300 fully qualified air assault soldiers and provided physical, common task, and slingload training to 500 Reserve/National Guard soldiers deployed to Saudi Arabia.**

During the year, the Directorate of Reserve Components Support (DRCS) was responsible for the administration and training of 181 Individual Ready Reserve (IRR) soldiers, 49 other miscellaneous reservists, 2,124 for annual training, and 8,704 for inactive duty training for a total of 11,058.

Thirty-one Reserve units trained at Fort Rucker during the FY. Taken together, the DRCS also provided logistical support for 26 USAR centers, 56 USAR units, 6 senior ROTC schools, and 42 junior ROTC schools, a substantial increase from 1989.**

The Ready Reserve aviator sustainment training program was designed to provide UH-1 sustainment training to members of the IRR identified by the aviation branch of the U.S. Army Reserve Personnel and Administration Center and sent to Fort Rucker for nineteen days of training. The program began on 16 January and ended on 21 September. During that period, 170 IRR aviators received an average of 13.8 hours of UH-1 flight time and an average of 6.08 hours of synthetic flight training.**

In July, the Office of the Staff Judge Advocate (SJA) conducted consolidated unit legal training on a

*⁴ See Kitchens, 1989 AHR, p. 37.

*⁵ Army Flier, 2 Aug 90; Historical report, 1st Aviation Brigade, CY 90.

*⁶ Historical report, DRCS, CY 90; Memos ATZQ-DRC (870-5), Col Clifford L. Massengale for DRM, 8 Jan, 7 Feb, 7 Mar, 6 Apr, 7 May, 7 Jun, 9 Jul, 7 Aug, 10 Sep, 4 Oct, 8 Dec 90, sub: Feeder Information for CSFOR-78 Report; See: Kitchens, 1989 AHR, p. 38.

*⁷ Memo for record ATZQ-RA, Col James H. Fitzgerald, 26 Sep 90, sub: FY 90 RRAST Program after action report; Historical report, USAR Advisor's Office, CY 90.

quarterly basis. As they did in 1989, the SJA in cooperation with the Internal Revenue Service and the Alabama Department of Revenue offered a forty hour income tax assistance course for unit tax assistants.**

**Historical report, OSJA, CY 90.

CHAPTER III

LEADER DEVELOPMENT

A. Commissioned Officers

Since implementation of the new three phased Officer Basic Course on 12 September 1990, 112 officers have graduated from Phase I. Five hundred forty-three officers graduated from the old AOBC course.¹

During the year, the Aviation Officer Basic Course (AVOBC) saw changes intended to give new lieutenants a firmer understanding of the combined arms team and the part aviation plays in that team.

Phase I of the new course consisted of common core training lasting four weeks. New lieutenants were to get 116 hours of aviation training from the Department of Tactics and Simulation (DOTS), and in addition to aviation subjects, students also received training in land navigation, M16A1 qualification, weapons familiarization, physical training, and the leadership assessment and development program.

In order for lieutenants to progress to Phase II or IERW training, they had to be certified by the Commanding General, U.S. Army Aviation Center (USAAVNC). He determined if the lieutenants had mastered the requisite skills to continue in the course.

Initial entry rotary wing training consisted of 2 weeks of preflight, 10 weeks of primary instruction, and 8 weeks of instrument instruction. After they completed twenty weeks, the officers were tracked into a specific aircraft. This training lasted between sixteen to twenty weeks depending on the aircraft they were assigned. Lieutenants then proceed to Phase III which concentrated on leadership skills necessary for an aviation platoon leader. Toughened criteria to enter Phase III were adopted specifically to develop well-rounded junior leaders. The remodeled course allowed the USAAVNC to put new aviation lieutenants into the field who were not only good aviators, but good combined arms leaders as well.²

¹Academic records report, CY 90.

²Army Flier, 18 Oct 90. Also see: Transcript of oral interview with Colonel Thomas Green, Director, DOTs, 20 Dec 90; Historical files, Command History Office, CY 90. Also see: Historical report, 1st Aviation Brigade,

The Directorate of Training and Doctrine (DOTD) reviewed the new Military Qualification Specialty II (MQS II) manual to determine whether an officer (O-1 level) could accurately evaluate his/her training, and take action to rectify problems.

MQS II tasks mandated that officers show hands-on proficiency, and provided a thorough self-development program of retraining for those who failed. The new manual allowed the deficient officer to correct problems at his/her own pace.³

To develop aviation leaders who were proficient in the areas of repair, flight operations, and logistics, USAAVNC began a system that allowed officers from the Pre-Command Course, the Basic Course, and the Advanced Course to interact with contractor organizations that supported flight operations. In this way, students at all levels can take advantage of their expertise. Visits with contractors were scheduled to begin in FY 92.⁴

A new task list was developed by DOTD for the Basic and Advanced Officer Courses. Two task selection boards met [16-17 April (AVOAC) and 14-15 May (AVOBC)] to finalize the list. All other proponent agencies concurred with the critical task list for both courses.⁵

The Directorate of Training and Doctrine also developed and implemented an Aviation Field Grade

CY90; Historical report, DOTS, CY 90.

³Memo to distr, sub: Programs at Officer Basic and Officer Advanced Course to Verify Proficiency and MQS II (Lieutenant) Tasks, DOTD; Historical report, DOTD, CY 90.

⁴Memo, ATZQ-TDI-0 (351e), dir, DOTD to distr, sub: Contractor Maintenance Training in USAAVNC, DOTD; Memo, ATZQ-TDI-0 (351e) IUTD to dir, DOTD, sub: Maintenance Training for Aviation Leaders Joint Working Group (JWG), DOTD; Historical report, DOTD, CY 90.

⁵Memo ATZQ-TDI-0 (351e) 31 May 90, sub: Aviation Officer Advanced Course (AVNOAC) and Aviation Officer Basic Course (AVOBC) Critical Task Lists, DOTD; Historical report, DOTD, CY 90.

Refresher Course and a Safety Officer Course. These courses were completed within the year.⁶

Because of fewer new instructor personnel in 1990, DOTD's Staff and Faculty Development Division discontinued the Staff Officer Orientation Course, and taught Small Group Instruction, Systems Approach to Training Manager's Course, and Supervisor's Instructor Training Course on an as needed basis.⁷

In 1990, the Department of Tactics and Simulation was given the mission to design a qualification course for Aviation Brigade commanders who have AH-64s assigned to their brigade. A program of instruction (POI), lesson plans, and a decision brief were prepared for approval. The qualification course was designed to familiarize commanders with the maintenance issues and concerns of AH-64s, aeromedical factors affecting AH-64 operations, technical operations of the AH-64, and NVS operations. The normal length of the AH-64 Brigade Commander's Course would be four weeks, 2 days.⁸

Doctrinal training for pre-command training courses at USAAVNC focused on the battlefield of the future. This training covered the following subjects: habitual relationships on the non-linear battlefield; simulation of non-linear battlefield in battle gaming exercises; "team" decision-making exercised during command classes; decision making skills during precommand courses; sustainment training courses for the field using modern technology that exploits networking capabilities with other command teams.⁹

A revision of the USAAVNC phase of the Pre-Command Course reduced its length from three weeks to just over eight days. Implementation of the abbreviated course began in October.

⁶Historical report, DOTD, CY 90.

⁷Historical report, DOTD, CY 90.

⁸Decision Briefing Slides. AH-64 Brigade Commander's Course. Historical report, DOTD, CY 90.

⁹Memo ATZD-TDS-AS (70-17A) Col F. E. Edwards to cdr, U.S. Army Combined Army Training Activity 10 Apr 90, sub: Tentative Training Issues for Warfighter XI Follow-On, DOTD; Historical report, DOTD, CY 90.

In November, USAAVNC's SMEs were sent to the Command and General Staff College (C&GSC) to provide aviation doctrine training to C&GSC students and also to Fort Sam Houston to provide aviation doctrinal instruction to the U.S. Army Medical Department Officers Advanced Course.¹⁰

Capabilities of USAAVNC's Night Vision Device Operation Facility were greatly improved because of the continuing experience of aviation units in Saudi Arabia. Training films developed in the Saudi Arabian desert expanded the exposure of aviation students to the full spectrum of simulated flight conditions in a non-hazardous environment.¹¹

The Office of the Staff Judge Advocate provided over 150 hours of instruction in support of Aviation Officer Basic and Advanced classes that covered legal topics such as military justice, law of war, code of conduct, and standards of conduct. USAAVNC programs that covered military justice, law of war, code of conduct, and standards of conduct were also taught.¹²

B. Warrant Officers

A total of 863 Warrant Officer Candidates (WOCs) in aviation specialties graduated in 1990. In non-aviation specialties, 646 candidates successfully completed the WOC.¹³

Warrant Officer Candidates from A Company, 1st Battalion, 145th Aviation Regiment collected a record 178 pints of blood of which twenty-three members were first time donors, a new record.¹⁴

The 1st Aviation Brigade provided military development training to WOCs in the Warrant Officer Candidate School. This training was conducted by a cadre of commissioned officers, warrant officers, and noncommissioned officers. The brigade ensured that the students who become warrant officers meet the United

¹⁰ Historical report, DOTS, CY 90.

¹¹ Historical report, DOTS, CY 90.

¹² Historical report, OSJA, CY 90.

¹³ Academic records report, CY 90.

¹⁴ Army Flier, 26 Jul 90.

States Army's highest standards. Warrant Officer Candidate training consisted of physical training, military leadership, counseling, situational training and academics.¹⁵

C. Noncommissioned Officers at Fort Rucker

During 1990, Basic Noncommissioned Officer Course (BNCOC) graduates were distributed as follows: The 93 series Military Occupation Specialty (MOS) graduated 201 in the following courses: 25-93B30, 72-93C30, 30-93D30, 74-93P30. The 68 series MOS graduated a hundred students in following courses: 18-68L30, 41-68N30, 19-68Q30, 22-68R30. There were a total of eighty-three graduates in Advanced Noncommissioned Officer Courses (ANCOC) in 1990 in the following MOSs: 31-68P40, 20-93C40, 3-93D40, 29-93P40.¹⁶

On 1 October, the Noncommissioned Officer's Academy (NCOA) implemented the new common leader training for both the ANCOC and BNCOC. New POIs were based on a concept developed by the U.S. Army Sergeants Major Academy. Phase I of both ANCOC and BNCOC consisted of an NCO common core of learning and contained theory, principles, and 'how to' instruction conducted in a classroom environment. Phase II contained branch-related common tasks, leader development, and hands-on advanced, technical training, conducted in a field setting.¹⁷

These new POIs were originally scheduled to have been implemented at USAAVNC in October 1991, but were implemented 1 October 1990 because all preparations were completed.¹⁸

The use of small group instruction methodology was expanded to 90 percent of classes in BNCOC and ANCOC. The success of this approach in permitting students to

¹⁵ Historical report, 1st Aviation Brigade, CY 90.

¹⁶ Academic records report, CY 90.

¹⁷ Memo ATSS-DC 21 Jun 90, sub: Revised Basic Noncommissioned Officers Course (BNCOC) Common Leaders Training (CLT), NCOA; Memo ATSS-DC 21 Jun 90, sub: Revised Advanced Noncommissioned Officers Course (ANCOC) Common Leaders Training (CLT), NCOA; Historical report, NCOA, CY 90.

¹⁸ Historical report, NCOA, CY 90.

gain valuable knowledge from the experiences of their peers had been successfully tested to justify its expansion.

Basic NCO courses conducted by the NCOA at Fort Rucker in 1990 consisted of 93P30 (flight operations sergeant), 93C30 (air traffic control supervisor), 93B30 (aeroscout observer), 68L30 (avionic flight system repairer), 68N30 (avionic mechanic), 68Q30 (avionic systems repairer) and 68R30 (avionic radar repairer). NCO academy personnel developed a 93D30 (air traffic control system, sub-systems equipment repair supervisor) POI. The first class for this MOS began in April.

Advanced NCO training was provided by the NCOA in four MOSs -- 93C (air traffic control supervisor), 93P (flight operations supervisor), 68P (avionic equipment maintenance supervisor) and 93D (air traffic control systems subsystems, and equipment supervisor).

In 1990, the NCOA continued to implement the history program that began in 1989 which included a class on the history of the NCO. Advanced students continued their staff rides to the Horseshoe Bend battlefield near Montgomery, Alabama through 1990.¹⁹

Although scheduled for a possible 1990 transfer from Fort Eustis to Fort Rucker, the Career Management Field (CMF) 67/68 MOS had not yet taken place due to funding constraints.²⁰

D. Leader Development at USAALS

In FY 90, a total of 269 ANCOC students were trained at USAALS' Department of Advanced Aviation Logistics Training (DAALT). The total BNCOC students trained in DAALT was 614. Fast Track Advanced Individual Training (AIT) students who graduated totalled 110. ANCOC was revised to include the Tactical Army Combat Computer System with instruction set to begin on 1 October 1990.²¹

The noncommissioned officer educational system students trained at the USAALS during CY 90 totalled 850

¹⁹ Interview with SFC Long, Operations NCO, NCOA, 5 Feb 91.

²⁰ Historical report, NCOA, CY 90.

²¹ Historical report, USAALS LD/PPO, CY 90.

with 567 in BNCOC and 283 in ANCOC. These personnel completed leadership training which consisted of 2 weeks, 2 days for BNCOC and 5 weeks, 2 days for ANCOC. Of the BNCOC students, 7 were trained in 67H30, 90 in 67N30, 28 in 68B30, 19 in 68D30, 6 in 68H30, 38 in 68J30 MOSs. Of the ANCOC students, 3 were trained in 67H40, 38 in 67R40, 111 in 67T40, 12 in 67U40, 80 in 67Y40, 27 in 68K40, and 12 in 68J40. Other advanced instruction at USAALS included training 111 students in the MOS 67R20/30 and 1 student in the 66R20 Technical Inspector (AH-64 Apache) courses.

During FY 90, DAALT conducted thirty-seven field training exercises (FTXs) involving 2,589 students. Advanced individual training soldiers participated in DAALT FTXs as well as those from ANCOC and BNCOC. Aviation Logistics School FTXs were designed to better prepare the aviation soldier to perform leadership skills and aviation maintenance while in a field environment.

During FTX training both maintenance and survival skills were reinforced. Leadership skills were emphasized for the ANCOC/BNCOC students by providing them the opportunity to organize and operate an aviation unit in a realistic environment.²²

The Advanced Helicopter Division of USAALS rewrote the 67Y30 BNCOC course which eliminated the 66 MOS series. To eliminate the 66 series required the incorporation of all technical inspector information into the BNCOC. During the merger, seventy-five students were trained in the 67Y30 MOS without a break in instruction. The rewrite of the 67Y30 BNCOC course led to a complete revision of the same course for the reserve components. Army Reserve schools and National Guard academies used the new program beginning on 24 April.²³

Implementation of the Aircraft Armament Repair Supervisor (68J30) BNCOC course with two separate tracks (AH-1/AH-64) began in CY90 (1 Apr). The 68J30 (AH-1) course is 19 weeks, 2 days and 68J30X1 (AH-64) course is 15 weeks.²⁴

Four hundred ninety-one officers graduated from the Maintenance Management/Maintenance Test Pilot (MM/MTP)

²² Historical report, USAALS DAALT, CY 90.

²³ Historical report, USAALS DAHT, CY 90.

²⁴ Historical report, USAALS DOTD, CY 90.

course, 14 from the Aviation Maintenance Warrant Officer Technician/Tactical Certification (WOOTC) course (4D-151A), and 83 from the Aircraft Armament Maintenance Technician (AAMT) (4D-SQIE) course. Of the MM/MTP Officers, 12 were trained in OH-58D, 26 in CH-47D, 127 in UH-1, 2 in CH-47B/C, 61 in AH-64, 73 in AH-1F, 128 in UH-60, and 62 in OH58/A/C helicopter systems. Of the AAMT students, 37 in the 4D-SQIE (AH-64), and 46 in the 4D-SQIE (AH-1) helicopter weapons systems course.²⁵

The USAALS' Officer Analysis Branch of the Department of Training and Doctrine completed a job analysis for the Aviation Maintenance Officer Course. The branch also coordinated the development and implementation of aviation logistics modules at the Aviation Pre-command Course for battalion/brigade commanders. A USAALS' task force completed a task analysis, course design, development, and implementation of the aviation logistics officer advanced course.²⁶

²⁵ Historical report, USAALS DOTD, CY 90.

²⁶ Historical report, USAALS DOTD, CY 90.

CHAPTER IV

DOCTRINE

A. AirLand Battle-Future

AirLand Battle-Future (ALB-F) was a TRADOC Combined Arms Combat Development Activity (CACDA) project to redesign the Army, incorporating concepts for future forces. The CACDA at Fort Leavenworth drafted three ALB-F concepts in 1988 and sent them to the USAAVNC and other centers for review. The DCD at the USAAVNC worked on the concepts during 1988 and 1989.¹

In December 1989, the TRADOC commander directed that CACDA and branch proponents develop force designs to support the ALB-F nonlinear warfighting concept. During 1990, there were several action officer workshops, meetings of the General Officer Steering Committee, and map exercises that refined and quantified the ALB-F concept and force design on a worldwide basis in low, medium, and high density conflicts. The USAAVNC's ALB-F priorities remained on the air attack division at the corps level, the air cavalry regiment, and retaining aviation brigades organic to the heavy divisions.²

The DCD published a draft version of a white paper in May demonstrating how Army Aviation would contribute to ALB-F warfighting. The paper described in detail the responsibilities and procedures of air reconnaissance units, attack helicopter units, and air cavalry units (of company, battalion, and/or brigade size). Based on ALB-F input from the U.S. Army Combined Arms Center, the study outlined how future aviation units would operate at division and corps levels. The white paper included an appendix outlining the background, characteristics, and status of aircraft and materiel being developed to support Army Aviation forces of the future. The Combined Arms Center called for seven new battlefield functional mission area concepts, and Army Aviation would play roles in all seven.³

During 1990, the USAALS-DCD continued to work the aviation logistics support aspects of the ALB-F concept. To accommodate the restructuring of aviation assets

¹See, e.g., Kitchens, AHR, 1988, p. 49.

²Historical report, DCD, CY 90.

³Aviation white paper--draft, 2 May 90, DCD; Historical report, DCD, CY 90.

within heavy divisions, an operational maintenance battalion was designed. The operational maintenance battalion consolidated aviation unit and intermediate maintenance functions into operational maintenance companies. For light divisions, such support was to be provided by systems and subsystems repair companies designed by the USAALS as elements of aviation forward support battalions. The aviation forward support battalions were to have all the capabilities found in ground brigade forward support battalions. Also in 1990, the USAALS-DCD completed an evaluation on transportation requirements for movement of aviation fuel and ammunition supplies of the aviation brigade under ALB-F doctrine.⁴

A white paper entitled, "Aviation Branch Future Vision," was published in June in response to TRADOC requests for a "clean sheet" approach to developing a post Cold War Army. This paper postulated that future aviation missions would be characterized by contingency missions and rapid world-wide deployments; that battlefields of the future would be much less dense than those prepared for during the Cold War; and that they would be non-linear, extremely lethal, and characterized by rapid movement. The USAAVNC concepts team aimed at designing an aviation-based maneuver force that was strategically deployable and capable of producing both extreme differentials of tempo and wide consensus within the combined arms team. The USAAVNC team developed three chronological concepts to provide a logical flow to aviation's future. The first, for the next five years, provided for the deployment of one air division at each corps to provide the operational level commander with a means rapidly to maneuver aerial fires and troop life in order to defeat large or elusive enemy formations. The second, for the following ten years, provided for deploying one air mechanized division at each corps to provide the operational level commander with the higher tier of mobility requisite for victory on a high-tempo battlefield. The third, for the following ten years, placed all combined arms functions into new-technology air vehicles (not necessarily rotorcraft) that could rapidly apply combat power across vast differentials of time and space. The study then proceeded to outline recommended changes in organization, technologies, training, materiel, leader development, tactics,

⁴Historical report, USAALS-DCD, CY 90.

techniques, and procedures to accommodate these evolving concepts.⁵

B. Doctrinal Literature

Doctrinal development at the USAAVNC was centralized in 1990 by consolidating it in the Department of Training and Simulation (DOTS). Accordingly, DOTS absorbed personnel, equipment, and functions from the Directorate of Training and Doctrine, the Department of Enlisted Training, and the Aviation Training Brigade. The DOTS acquired the internal capability of editing and illustrating its own material and more than tripled the doctrinal publications it normally produced in a year.

The USAAVNC updated and published FM 1-111, "Aviation Brigades," in August 1990. "Aviation Brigades" was a doctrinal and tactical guide for employing aviation brigades in combat. It described the organizational structure of all aviation brigades at echelons-above-corps, corps, and division. It also described command and control and communications, combat support, and combat service support for brigades. The operational concepts in the manual were based on AirLand Battle doctrine as established in FM 100-5 and the employment principles described in FM 1-100. The manual was intended for theater, corps, division, and brigade commanders and their staffs. It was also to be used by all aviation commanders and staff officers within aviation units and by all soldiers of those organizations.⁶

FM 1-101, "Aviation Battlefield Survivability," was also updated in 1990 and published in December. This manual described the countermeasures, techniques, and procedures that enhanced aircrew survivability on the modern battlefield. It provided an overview of low-intensity conflict and threat air defense, artillery, tactical aircraft, and electronic warfare systems. The manual described direct energy weapons, combat search and rescue operations, survival equipment, and rescue devices. In addition, it described critical planning elements that aircrews should consider during premission planning. The publication was an unclassified information source for aviation personnel to refer to

⁵ "Aviation Branch Future Vision," USAAVNC DCD, 20 Jun 90, DCD.

⁶ HQDA, Aug 1990.

during institutional training. The manual was based on the doctrinal and tactical employment principles outlined in FMs 1-100, 1-111, 71-100, and 100-5. It applied primarily to aviation unit commanders and their staffs, and aircrews assigned to aviation units.⁷

Several other publications were updated in 1990 due to changing doctrinal concepts and approved recommendations from the field. These included the following: FM 1-112, Tactics, Techniques, and Procedures for the Attack Helicopter Battalion⁸; FM 1-114 "Tactics, Techniques, and Procedures for the Regimental Aviation Squadron"; TC 1-214, "Aircrew Training Manual, Attack Helicopter, AH-64"; and TC 1-215, "Aircrew Training Manual, Observation Helicopter, OH-58A/C."⁹

The USAAVNC also produced several new doctrinal manuals in 1990 describing new methods, techniques, and doctrine relating to the evolving missions of Army Aviation. One of these was a white paper entitled "Army Aviation in the National Drug Control Strategy." This publication established the doctrinal framework for Army Aviation's role in the national drug control strategy and reflected the most current national, political, and legal aspects of military support to federal, state, and local law enforcement agencies.¹⁰

Other new doctrinal publications included the following: ARTEP 1-100-MTP, "Aviation Brigade/Battalion"; STP 1-93P1-SM, "Aviation Operations Specialist"; STP 1-93P24-SM-TG "Aviation Operations Specialist"; "U.S. Army Aviation Employment in Counter-Drug Operations"; "Emerging Tactics, Techniques, and Procedures for the Employment of the OH-58D Kiowa Warrior"; "Army Aviation and AirLand Battle-Future" and "U.S. Army Aviation Desert Operations--Southwest Asia Focus."¹¹

During 1990, the USAAVNC prepared and published the first true tactics, techniques, and procedures manual for the OH-58D. The TRADOC Systems Manager-OH-58D played a key role in the preparation of this document, which was entitled "Employment of the OH-58D Kiowa Warrior." The

⁷ HQDA, Dec 90.

⁸ USAAVNC, Nov 90.

⁹ Historical report, DOTS, CY 90. The publication on desert operations is described in "Operation Desert Shield," in Chapter VII.

document described the tactics, techniques, and procedures used by OH-58D aircrews in air cavalry/reconnaissance troops, target acquisition and reconnaissance companies, and attack helicopter companies and battalions. It covered the OH-58D's possible organization and its capabilities and limitations. The basic cavalry and attack missions remained the same as were described in field manuals 1-112, 1-114, 1-116, and 1-117, all of which still applied to the OH-58D. The new publication applied to commanders and staffs who would lead, employ, or fight with the Kiowa Warrior and to soldiers assigned the above type of organizations. It would serve as a reference for flight crews who were learning to understand and conduct reconnaissance, security, and attack helicopter operations and contingency missions in units equipped with the Kiowa Warrior. The four main sections of the document were: a systems overview; pre-mission planning procedures for aircrews; aircraft employment; and multipurpose light helicopter operations.¹⁰

The USAAVNC, in coordination with a contractor, BDM International of Leavenworth, Kansas, published "U.S. Army Aviation Aircraft Survivability Equipment (ASE): Tactics, Techniques and Procedures," in December 1990. The manual described the U.S. Army ASE equipment, the associated tactics, techniques, and procedures to be employed to optimize the use of the equipment, and the anticipated threat to U.S. Army Aviation in Operation Desert Shield. ASE equipment enabled Army aviators to stay in flight, accomplish their missions, and survive to fight another day. The December 1990 publication focused on information which addressed the five steps to survival of the ASE protection strategy: viz, tactics, signature reduction, warning, decoying and jamming, and vulnerability reduction. It applied most importantly to Army aviators who would fly the missions required to support aviation operations and to aviation commanders and their staffs who would plan and direct those operations. The publication addressed capabilities and limitations of ASE, ASE radar oriented systems, ASE

¹⁰ "Tactics, Techniques, and Procedures for the Employment of the OH-58D Kiowa Warrior," advance copy, USAAVNC, Nov 90, TSM-OH-58D; Historical report, TSM-OH-58D, CY 90.

infrared systems, threat ADA systems, and other topics.¹¹

During 1990, the USAALS completed the revision of FM 1-544, "Standardized Maintenance Test Flight Procedures," published the revised manual on 4 September, and provided copies to field units beginning on 1 October.¹² The USAALS-DOTD assumed responsibility for development of seven Army Training and Evaluation Program mission training plans and for other doctrinal and training products, effective 1 October 1990.¹³

¹¹ U.S. Army Aviation Aircraft Survivability Equipment (ASE) Tactics, Techniques, and Procedures, BDM International Inc, 15 Dec 90. This document is classified SECRET and is located in the History Office safe, but only unclassified information was used.

¹² Historical report, USAALS-DOES, CY 90.

¹³ Historical report, USAALS-DOTD, CY 90.

CHAPTER V

COMBAT DEVELOPMENTS

A. Aviation Systems Program Review

An Aviation Systems Program Review (ASPR) was held at the USAAVNC in July of 1990. Several issues were discussed, and recommendations were made to improve the near term warfighting effectiveness of Army Aviation. The objective of the review was to establish a credible point of departure from which Army Aviation could transition into the future in order to achieve its full potential as a lethal, deployable, and versatile force. The review was based on the following assumptions: the continuation of current warfighting doctrine; the Light Helicopter (LH) to be the centerpiece of aviation modernization; force structure to be sized to four corps and twenty-three divisions; the basic aviation organization within the division and the corps to be the aviation brigade; the continuing validity of the guidance by the chief of staff of the Army on aviation modernization; and the increasing importance of low intensity conflict and contingency operations. The review focused on force design/structure, force modernization, and logistics. The force structure issues presented to the vice chief of staff of the Army (VCSA) at the July meeting included an E company for aviation battalions, door gunners/maintainers, command and control aircraft, two pilots for the Kiowa Warrior, the command aviation battalion, and the aviation forward support battalion. Force modernization issues included command and control for AH-64 battalions, command and control for maneuver commanders, utility fleet modernization, aircraft distribution to first-to-fight units, and aviation ground support equipment. Logistics issues presented to the VCSA were aviation unit readiness reporting and expanded special repair activities.

The ASPR led to several directives on key aviation issues by the VCSA. First, the DA was to charter the Aviation Requirements for the Combat Structure of the Army (ARCSA) V study to address how best to organize Army Aviation consistent with AirLand Battle-Future (ALB-F) doctrine. The concept of the E company of USAR units without equipment was approved. HQDA was to elevate the priority for acquisition of forward arming refueling point equipment above the funded line. HQDA was to elevate the operational need statement for command and control aircraft in the attack battalion and would review the dollar requirement to procure additional equipment. The expansion of the special repair activity concept was approved. Two pilots for the Kiowa Warrior was approved

in concept. HQDA would address the utility modernization shortfall in its update to the Army Aviation Modernization Plan (AAMP) by September 1990. The procession of the required operational capability for command and control consoles in UH-60 aircraft for maneuver commanders was to proceed. HQDA was to examine and redistribute aircraft as appropriate to match capabilities with unit mission requirements. The concept of door gunners for assault aircraft in the contingency corps was approved. The concept of restructuring the division aviation brigade headquarters and headquarters company to give it the capability it required was approved; the force structure issue was to be addressed in the ARCSA V study. The concept of the command aviation battalion was approved. And support was given to the concept of a forward support battalion for the heavy division aviation brigade.

The directives by the VCSA required a dynamic action plan to track the progress made on each issue. The DA tasked Army agencies to participate in the process, and a General Officer Steering committee and a Council of Colonels were established to review the status and provide guidance on the various issues. The initial Council of Colonels convened at Fort Rucker on 2 November 1990, with sixteen colonels on the council and twenty-six other persons attending. The TRADOC, AMC, and DA were all represented. The Council of Colonels was to continue meeting quarterly, and the General Officer Steering Committee, semiannually, culminating in a point review to the VCSA in August 1991.¹

The Council of Colonels was chaired by Col. Theodore T. Sendak, director of DCD, and the General Officer Steering Committee was headed by Maj. Gen. Rudolph Ostovich III. At its meeting in November 1990, the Council of Colonels discussed several issues to be considered by General Ostovich's committee in February of 1991. These issues included the following: (1) priority distribution of equipment to first-to-fight units; development of means to ensure availability of adequate maintenance equipment; more soldiers and more money for equipment for forward arming and refueling points; continuation of the implementation of the company E concept staffed by reserve component soldiers; increasing

¹Msg 1931600Z Jul 90, Maj Gen Rudolph Ostovich III to distr, sub: Aviation Systems Program Review, TSM-OH-58D; Historical report, DCD, CY 90; "1990 Aviation Systems Program Review," DCD. See also, Army Flier, 19 Jul 90.

the size of aviation brigades by forty-one soldiers; the creation of a command aviation battalion and an aviation forward support battalion for every heavy division; the designation of a command and control aircraft for AH-64 battalion command and control; providing a command and control aircraft for maneuver commanders; and modernization of utility aircraft to supplement the 1443 Black Hawks to be procured.²

B. Equipment Requirements

Long Range Plan

The Directorate of Combat Developments completed the TRADOC Long Range Plan in 1990. This plan was a prioritized list of projected key events/developments for the near term (90-97) and far term (98-07).

In the near term, the existing programs to be continued included: the LH as the centerpiece for modernization with the first operational aircraft to be sent to the field in FY 97; continued procurement of the AH-64 Apache with a procurement objective of 975; retirement of the AH-1 Cobra to begin in FY 90 and continue through FY 07; the armed OH-58D to be used in regimental and divisional cavalry squadrons as an interim to the LH; UH-60 Black Hawks to be procured through FY 07 to a quantity of 1417; approximately two-thirds of the UH-1 Iroquois fleet to be retired by FY 07; the CH-47D program to continue through FY 92 for a total of 472 aircraft; development of new aviation life support equipment with reduced weight and bulk; continued development of radar warning receivers, pulse jammers, infrared jammers, and other aircraft survivability equipment; installation of air-to-air Stinger missiles on selected quantities of MH-47E, OH-58, AH-64, and UH-60 aircraft; development of Army airspace command and control doctrine and product improvement of flight operations center equipment; continued efforts to equip all Army Aviation units with heavy expanded mobility tactical trucks and the heavy expanded mobility ammunition trailers; continued acquisition of Havequick II, new high frequency radios, and other advanced communications equipment; continuation of the ammunition improvement program; continued acquisition of Stinger systems for various aircraft; and acquisition of 240 Volcano mine dispensing systems.

²Army Flier, 10 Jan 91.

Changes to the existing program included the following: the development of the requirement for a multistage improvement plan to upgrade the AH-64 with pilot workload reduction, operational effectiveness improvements, and operational and support cost reduction; a multistage improvement plan for the UH-60 to upgrade the engine, transmission, avionics, survivability, safety, endurance, and load capacity; and a decision on whether to initiate a service life extension program to approximately 1200 UH-1s or replace them with a nondevelopmental aircraft.

New initiatives and issues included a new system such as an advanced cargo aircraft to replace the CH-47D in approximately FY 2000 and the development of requirements for an advanced combined arms missile system with an initial operating capability, possibly in the late 1990s.

For the long term, the plan called for major milestone decisions with regard to materiel changes and multistage improvement plans for all utility, attack, and cargo aircraft; the development and acquisition of new nuclear/biological/chemical detection and decontamination systems; further reduction in weight and bulk of survival equipment; development and acquisition of laser protection against agile frequencies; development of systems for defeat of long range surface to air and airborne threat; increased flexibility and mobility of air traffic services with reduction of electronic emissions and integration of sensors utilized by other airspace users; continued development and procurement of advanced communication equipment; the installation of systems to provide semi-precision landing capability on most rotary wing aircraft and microwave landing for most fixed wing aircraft; and a standard integrated command post shelter with new radios and mission planning support equipment mounted on a new vehicle for aviation ground support.³

Research and Development

The USAAVNC DCD provided the FY 90 list of priorities for research and development to the Aviation Systems Command (AVSCOM), which managed Army Aviation

³ "TRADOC Long Range Plan," Chapter 3: Combat Developments," [January 1990], DCD; Addendum to historical report, DCD, CY 90.

technology base development. The DCD prioritization process relied heavily on the military judgment and experiences of the DCD action officers to determine which projects would have the most potential benefit for the future operational requirements for Army Aviation. AVSCOM used the DCD input in its resource allocation decision-making process. On the FY 90 list, top priorities were assigned to the following projects: advanced cargo aircraft; Apache Longbow; aviation combined arms tactical trainer, automated mission planning system; air-to-air Stinger for the AH-64; day/night adverse weather pilotage system; infrared expendables; the M-43 chemical/biological protective mask P31; and armed OH-58D.⁴

In 1990 the HQDA management philosophy for 6.2 and 6.3A research and development was to link that work to approved advanced technology transition demonstrations. In 1990, Army Aviation organizations developed a transition demonstration for a rotorcraft pilot's associate, proposed a transition demonstration for advanced platform technology, and also participated in a joint program with the Air Force and Navy to develop advanced turbine engine technology. DCD tracked these projects and provided operational inputs to maintain an orientation that aligned with the user's future requirements.

The rotorcraft pilot's associate transition demonstration was a 6.3A technology base effort divided into two discrete but related serial programs identified as "RPA ATTD" (FY 90-93) and "RPA II ATTD" FY 94-96). Key emerging technologies addressed by both programs included: advanced signal processing and computing; artificial intelligence; protection/lethality; and microelectronics, photonics, and acoustic devices. The objective of the programs was to improve the warfighting capability of current and future Army scout/attack rotorcraft through improvements in pilotage (aviate, navigate, communicate) and counter air (air-to-air) capabilities utilizing technologies beyond the LH. A revision of the plan dated 30 January 1990 was completed and signed on 6 November.⁵

⁴"R&D Prioritizations," 27 Apr 90, DCD; Historical report, DCD, CY 90.

⁵"Rotorcraft Pilot's Associate, Advanced Technology Transition Demonstration, Technology Development Plan," 6 Nov 90, DCD, Historical report, DCD, CY 90.

Aircraft Design and Testing

During 1990, the U.S. Army Aviation Technical Test Center (ATTC) continued with lead-the-fleet logistics evaluations for several Army aircraft. The lead-the-fleet AH-1 was flown 573.7 hours in this program during the year. The lead-the-fleet AH-64A was flown 900.2 hours in 1990. This was approximately four times the average rate per airframe of aircraft in the fleet. These tests provided users with valuable failure and fault trends of the aircraft. The lead-the-fleet logistics evaluation testing of the CH-47D provided information to support continuous evaluation of safety, reliability, and logistics aspects of the operation and maintenance of the aircraft. The CH-47D assigned to ATTC logged 384.1 test flight hours during CY 90. In conjunction with the lead-the-fleet program, ATTC tested improved horizontal hinge pin bearings, lag damper bolts/bushings/bearings, elastomeric pitch bearings, and the formsprag clutch on the CH-47D. The UH-1Hs assigned to ATTC accumulated 879.1 hours. In 1990 the UH-60s flew 1206.7 hours making a total of 5,332.5 hours had been flown for the lead-the-fleet logistics evaluation of the UH-60 since the testing began in November 1986.⁶

Light Helicopter (LH)

The LH was to be a small lightweight, advanced helicopter, capable of performing its missions on the AirLand Battle (ALB) and AirLand Battle-Future (ALB-F) battlefields. It was designed to perform armed reconnaissance and attack missions and provide an embedded air combat capability to support both missions. The goal was to make a 3402 kilogram aircraft with a fly-away cost of \$7.5 million per aircraft in FY 88 dollars. The Defense Acquisition Board approved the LH program as a component part of the Army Aviation Modernization Plan (AAMP) in June 1988. The Office of the Secretary of Defense (OSD) validated the AAMP and recognized the LH as the centerpiece of the plan.⁷

The demonstration/validation contract phase of the acquisition process lasted from October 1988 until

⁶Historical report, ATTC, CY 90.

⁷Memo, William H Taft IV for secretary of the Army, 17 Jun 88, sub: LHX milestone/acquisition decision memorandum, TSM-LH; Historical report, TSM-LH.

September 1990. Two contractor teams were competing for the aircraft contract, the First Team (Boeing Helicopter and Sikorsky Aircraft), and the Super Team (McDonnell-Douglas Helicopter Company and Bell Helicopter). This demonstration/validation phase refined the basic design information and provided feasibility demonstrations to support the mission equipment package development program and reduce risks during full scale development. Flight demonstrations of selected mission equipment packages and airframe components in surrogate aircraft were conducted by both teams. These flight demonstrations included new anti-torque techniques (no-tail-rotor and fan-tail), night vision pilotage, target acquisition systems, aided target recognition, helmet mounted displays and digital map technology. The advanced technologies incorporated in the mission equipment packages were designed to be integrated into other Army aircraft through a multistage improvement program.*

In early 1990, the secretary of Defense directed a major system review of the LH program focusing on the U.S. rotary wing capability requirements for the next fifteen years in light of the world projected political environment and the nation's defense strategy. The review was specifically to address how well those needs would be met by existing aircraft, the priorities of the needs not met, the alternatives to meeting these needs, and finally, how effectively would the LH program would satisfy the needs.* The study projected the existing threat to increase in lethality and density and also predicted new threats in the form of air-to-air helicopters and directed energy weapons. Maintaining the current fleet, developing the LH, and other alternatives were considered. The existing fleet was deemed to be substantially deficient in dealing with the projected threat and was considered unsatisfactory. While the LH was significantly more effective than other alternatives in its primary missions due to a fundamental advantage in survivability, there was an increase in monetary cost. In the area of acquisition strategy, the study showed that delaying LH full scale development for one year could reduce both projected risk and the six-year development program cost. More analysis and study were deemed necessary to fully assess LH survivability benefits and the relative cost effectiveness of specific

*Historical report, TSM-LH, CY 90; "TSM-LH 3d Quarter FY 90 Report," TSM-LH.

*Memo, Dick Cheney for dep sect of Defense, 12 Mar 90, sub: advanced rotary wing aircraft review, TSM-LH.

alternatives to the LH. These review results were presented to the secretary of Defense in a briefing on 20 June 1990.¹⁰

In August of 1990, the secretary of Defense again recommended the continuation of the LH program. In a letter to Congressman John P. Murtha, the chairman of the Subcommittee on Defense of the House Committee on Appropriations, Secretary Cheney stated:

"The collapse of the Warsaw Pact does not alter the need for the Light Helicopter (LH). The types of scenarios likely to be encountered in the future, such as Operation Just Cause and the current Mid-East crisis, require a versatile and more flexible force. Land combat forces need to respond quickly and decisively to unforeseen global requirements. Helicopters need to be lethal, yet survivable. They must be versatile, with the ability to self-deploy to hot spots. These are all attributes of the LH not found in the current helicopter fleet."

The secretary extended the demonstration/validation phase for two years to permit full prototype testing rather than relying on engineering analyses of contractor plans and subsystems tests. Secretary Cheney also notified Congressman Murtha that he believed that the total buy of LH aircraft could be reduced from the previously scheduled 2096, at 216 aircraft per year, to 1,292, at an annual rate of 120, or possibly up to 1681, depending on the final decision on the precise mix of heavy, mechanized, and light units within the revised force structure. The two-year extension of the demonstration/validation phase, the secretary predicted, would cost an additional \$.2 billion for research and development, but the reduction of the total buy of 2096 to lowest possible number of 1292 would decrease procurement cost by \$8 billion.¹¹

The milestone II decision to enter full scale development was scheduled to occur in July 1995, at the end of the demonstration/validation prototype phase.

¹⁰ "Advanced Rotary Wing Aircraft Review," Frank Kendal, acting deputy director of Tactical Warfare Programs (some parts of document classified SECRET); Historical report, TSM-LH, CY 90.

¹¹ Ltr, Dick Cheney for John P Murtha, 23 Aug 90, TSM-LH.

As part of the demonstration/validation contract, the two industry teams cooperated in the development of full mission simulation to permit government assessment of their designs. The assessments were conducted during the summer of 1990 using Army pilots from FORSCOM, TRADOC, and USAEUR. An evaluation team headed by the TEXCOM Aviation Board planned and executed the evaluation over a three month period. Final reports were delivered to the LH program manager for presentation to the LH Source Selection and Evaluation Board in October 1990.

The Aviation Technical Test Center assessed both contractor teams' LH cockpits in May of 1990 and also looked at demonstration/validation design cockpit mockups and simulator cockpits. The test center made assessments of demonstrations on handling qualities and systems through the use of surrogate aircraft, additional simulators, and hot benches. A separate report for each team was published in September. In October, the ATTC briefed the LH Source Selection Board on the results of ATTC's portion of the assessments, and, in November, ATTC personnel assisted the board in reviewing the LH proposals.¹²

The USAAVNC had a mandate to provide an updated cost and operational effectiveness analysis (COEA) by April 1990. An interim executive summary to the COEA was approved by the Combined Arms Center (CAC) commanding general on 28 March 1990 and forwarded to HQDA on 1 April 1990. The main report was approved and delivered on 5 November 1990.

In July 1990, the OSD provided supplemental study guidance requesting that additional analyses be conducted. The request included the following: a campaign analysis to assess the sustainability and effectiveness of the alternatives over time; additional attack excursions to assess the effectiveness of the LH when carrying varying armament loads; and night scenarios to validate previous gaming results when executed during the hours of darkness. The results of these follow-on studies indicated that the LH continued to provide the best combination of reconnaissance and lethality; survived best in all mission profiles; significantly enhanced overall combined arms lethality; remained on the battlefield longer; and provided a higher percentage mission capability even when

¹² Historical report, ATTC, CY 90.

projected LH maintenance man-hours per flight hour were increased by 50 percent. Additional findings indicated that the LH, with advanced night systems, yielded a significant increase in effectiveness. These conclusions were briefed to HQDA in December 1990.

In 1990 the USAAVNC DOTD produced and submitted to TRADOC a draft cost and training effectiveness analysis (CTEA) for the LH milestone II COEA. In order to estimate the effect of the LH training resource requirements on the training base, it was necessary to analyze resident training for other rotary wing aircraft. The preliminary findings of the study were that there were minimal differences in training costs for the LH and the armed OH-58D, but that the LH would significantly reduce the training base resource requirements. The AH-64 was clearly the most costly of all in both training base resource requirements and training costs.¹³

The overall results of the COEA demonstrated that modernization was required and that the LH was the most cost and operationally effective way to modernize, i.e., to replace the light helicopter fleet of OH-58s and AH-1s.¹⁴

The Scenarios and Simulations Branch of DCD developed a Latin American scenario for the LH in 1990. The branch collected information from the XVIII Airborne Corps and created a contingency scenario in Central America to support the LH study. The mission described in the scenario was for an armed reconnaissance squadron to execute a screening operation along a portion of a national border to provide early warning, monitor enemy activity, and

¹³ Karen S. Holley and Samuel R. Nantze, "Light Helicopter Milestone II COEA," 17 Aug 90, DOTD USAAVNC, DOTD; Historical report, DOTD, CY 90; Historical report, TSM-LH; Historical report, DCD, CY 90; Fact sheets ATZQ-CDC-LX, Maj Bruce Simpson, 5 Jan, 25 Apr, 11 Sept, & 10 Oct 90, sub: SH milestone II COEA, DCD.

¹⁴ Memo ATZL-CG, Lt Gen Leonard P Wishart III for Maj Gen William H Forster, 8 Mar 91, sub: LH milestone II COEA. A copy of the classified executive summary of the COEA is in the History Office Safe.

provide security along the border.¹⁵ The branch also revised Middle Eastern and European mission profile scenarios for the LH milestone II COEA.¹⁶

The full scale development request for proposal was released to industry on 1 May 1990 and responses were received on 30 and 31 August. The USAAVNC conducted an analysis between the required operational capability versus the LH system specification to ensure completeness. The required operational capability was approved by TRADOC on 24 December 1990 and forwarded to HQDA.

The Source Selection Evaluation Board began work on 4 September 1990. As a result of the change in acquisition strategy directed by the secretary of Defense, the final decision was extended until March 1991. In response to the revised strategy, the contractors prepared amended proposals detailing their statements of work and commitments during both the demonstration/validation prototype and full scale development. These proposals were submitted in November 1990. The board was scheduled to award a contract to one of the competing teams early in 1991.¹⁷

A contract for the T-800 engine for the LH was awarded to the Light Helicopter Turbine Engine Company in November 1988.¹⁸ During 1990, portions of the program of instruction for enlisted maintainers and the required technical manuals were reviewed by government personnel. A successful combat maintenance battle damage assessment and repair demonstration was conducted in August. Also in August, a joint contractor and government task site selection board

¹⁵ Historical report, DCD, CY 90; "Mission Profile--LHX: Armed Reconnaissance--Latin America," DCD.

¹⁶ See, e.g., "Panther SA 365 Alternative: Mission Profiles and Operational Mode Summaries," and "Agusta Al29 Alternative: Mission Profiles and Operational Mode Summaries," USAAVNC DCD, 8 May 90, DCD.

¹⁷ Memo AMSAV-PSLS, Maj Gen Donald R Williamson to prospective offerors, 1 May 90, sub: executive summary--request for proposal Light Helicopter, TSM-LH; "Full Scale Development Request for Proposal," DAAJ09-90-A001, AVSCOM, 1 May 90, TSM-LH; Historical report, TSM-LH, CY 90; Historical report, DOTD, CY 90.

¹⁸ Kitchens, AHR 1988, p. 54.

convened to select the first critical task list along with the training site location for enlisted maintainer training for the T-800.¹⁹

AH-64 Apache and Apache Longbow

The AH-64 was a single main rotor, twin engine, tandem-seated attack helicopter armed with Hellfire missiles, Hydra-70 rockets and a 30 mm cannon. The mission of the AH-64 was to defeat enemy armor and mechanized forces. As of April 1990, the Army had accepted 547 AH-64s. The total procurement was for 807 aircraft. There were seventeen fielded battalions of a planned forty battalion force. A system improvement plan for 580 Apaches which would not be retrofitted with the Longbow system was scheduled. The system improvement plan consisted of the following prioritized materiel changes: air-to-air Stinger; airborne target handover system; optical improvement program; laser protective visor; global positioning system; electromagnetic vulnerability; flight date recorder; secure lighting; laser warning receiver; and radar frequency interferometer.²⁰

During 1990, seven Apache Action Team and two General Officer Steering Committee meetings were conducted to resolve Apache issues. By the end of the year, 114 of the 180 issues first raised approximately two years earlier had been resolved. Also, the number of top priority issues had been reduced from thirteen to seven. At the end of 1990, the remaining top priority issues were as follows: tail rotor swashplate; shaft driven compressor; main rotor strap pack; main rotor blade debonding; VHF radio communications; area weapons system; and laser transceiver unit. Of these seven issues, three of them had in fact been resolved, but since replacement was being made through attrition, the user was not able to see the benefits. These three problems already resolved but not yet fixed were the main rotor strap packs, the main rotor blade debonding, and the tail rotor swash plates. The top priority issues that had been resolved and closed consisted of the following: tail rotor elastomeric bearing debonding; dummy

¹⁹ Historical report, TSM-LH, CY 90; Historical report, USAALS-DOTD, CY 90.

²⁰ Aviation White Paper--Draft, 2 May 90, USAAVNC DCD, DCD.

ammunition; ESR steel parts availability; canopy removal system; and tail boom oil contamination (down graded to normal priority). Of the 180 Apache Action Team issues, seven top priority, twenty-nine priority, and thirty normal priority issues remained open, and the team had closed 114 of the issues addressed. The team continued to work the TOE problem with the Apache attack battalion and the 2.75 rocket accuracy. In the opinion of the team leader, the number one problem with the Apache was the TOE. The Apache battalion remained undermanned by 102 personnel; because of funding constraints, it had not been possible even to implement the thirty-five person increase authorized in 1989.²¹

USAALS-DOTD personnel were involved in several functions and meetings regarding various aspects of AH-64 logistics. These included a review of task analyses for changes to AH-64 repair procedures, three manual verification/validations, the AH-64 break out box form fit and function test, a joint working group on the airborne target handoff system and avionics integration, and an action team on the heat reflective cover form fit and function test.²²

The Longbow was an adverse weather weapon system consisting of a fire control radar, fire and forget Hellfire missile, and those modifications necessary to integrate Longbow on the Apache along with the ten improvements listed above as comprising the system improvement plan for the AH-64. The Longbow weapon system was planned to be retrofitted to 227 of the 807 Apaches to be procured. An early user's test and experimentation was conducted using proof of principal aircraft during March and April 1990.

The Longbow program was an Army major target acquisition and weapon systems integration designed to engage a variety of threat targets. It would use a mast-mounted fire and control radar system to classify and prioritize targets and, in coordination with the

²¹ Memo ATZQ-TSM-W (70-11), Col David F Sale for AC, 4 Jan 91, sub: Apache Action Team and GAO visit, TPO-Apache; [Briefing papers], "Apache Action Team, Status 90," 18 Dec 90, TPO-Apache. For commercial press descriptions of continuing problems with the Apache during the early part of 1990, see, e.g., Washington Post, 1 and 20 Apr 90; Defense Week, 5 Mar 90; Montgomery Advertiser, 22 Apr 90; and Chicago Sun-Times, 23 Apr 90.

²² Historical report, USAALS-DOTD, CY 90.

aircraft weapons processor, develop a fire control solution for transfer to a Longbow seeker on the Hellfire missile. Other improvements included in the Longbow program consisted of improved electrical power and processing, the addition of a more capable fire control computer, a larger avionics display in the cockpit, and more cooling power. The Longbow Apache would provide benefits in several areas. In addition to a fire and forget missile, this improved aircraft would have improved air-to-air attack capability, and effective operation in poor visibility. In the area of survivability, it would feature reduced target engagement time lines, better situational awareness, more accurate navigation, and reduced crew workload. Reliability improvements included fewer line replaceable units, more effective cooling, and better on-board diagnostics. The Army plan was to begin sending the Longbow Apaches to the field in 1996. The Longbow system was scheduled to be integrated into the AH-64 Apache, which would become known as the AH-64C (Longbow Apache), and into the Light Helicopter.²³

The proof of principle (POP) phase, including the technical test and the early user test and experimentation, for Longbow ended in April 1990. The primary objective of the POP program was to develop a functionally operational brassboard targeting sensor and weapon system to demonstrate key issues of effectiveness, performance, missile bus integration, aircraft integration, and hardware development. The highly successful POP system was integrated into two Apache helicopters. These demonstrator aircraft served as engineering development and operational weapons systems for the Army technical test and the early user test and experimentation. The operational and technical flight testing clearly proved the design principles from which the system was developed. The tests demonstrated the ability of the system to rapidly detect, classify, and prioritize ground targets; to rapidly acquire, track, and accurately shoot the selected target with a fire-and-forget missile; to increase the Apache's effectiveness and ability to detect, engage, and kill enemy armor; to increase the

²³ "Aviation White Paper--Draft," 2 May 90, USAAVNC DCD, DCD; Draft [report] ATZQ-CDC-LH, 7 Jan 91, sub: organizational distribution of AH-64 Longbow aircraft study, DCD; "Tactics, Techniques, and Procedures: Longbow Apache," by CW03 Larry Niver, 14 Jan 91, USAAVNC TPO-Apache, TPO-Apache, Historical report, TSM-ATAWS, CY 90.

Apache's probability of survival by significantly reducing its exposure and exposure time; and to enable the Apache to detect and engage targets in obscured battlefield and adverse weather conditions. No major or insurmountable technical obstacles were identified during flight testing, but several areas were identified that needed additional development and testing.²⁴

A milestone II acquisition review council for the Longbow program convened on 19 July 1990, co-chaired by the Army acquisition executive and the VCSA. Subjects discussed included air transportability, the unanimous agreement at the Office of the Secretary of Defense that the addition of Longbow to an aircraft would greatly increase effectiveness, the optimum mix of Longbow Apaches and AH-64As in a battalion, the performance requirements in the required operational capability document, and several funding issues. The council decided that the program was ready to go forward to the Office of Secretary of Defense with the recommendation for entry into full scale development.²⁵

The preliminary design review for Longbow was held from 24 to 27 July at Mesa, Arizona. This was the first time the Longbow Apache was laid out in its entirety for government agencies and contractors. As a result of the interchange of views at this review, the user was asked to assist in modifying the Longbow Apache to reduce the cost per aircraft by \$385,000. Likely items to be eliminated included the fly-by-wire provisions, the second inertia navigation unit, and the laser warning receiver. Cost reducing modifications

²⁴ "Longbow Proof of Principle Final Report" Westinghouse Electric Corporation and Martin Marietta Corporation, Oct 90 (classified SECRET, but only unclassified parts used), TSM-ATAWS; Historical report, TSM-ATAWS, CY 90.

²⁵ Memo for record SARD-ZBA, Ramona L Luch, 25 Jul 90, sub: Longbow MSII ASARC minutes, TSM-ATAWS; Memo, Stephen K Conner for Aviation Program executive officer, 16 Aug 90, sub: Longbow acquisition decision memorandum, TSM-ATAWS.

were anticipated in the Hellfire launcher, the computer system, and the multifunction displays.²⁶

On 5 December 1990, the Defense Acquisition Board met to consider the Army's request to proceed with full scale development of the Longbow Apache. The Joint Requirements Oversight Council confirmed the Army's requirement, and the Conventional Systems Committee recommended proceeding with full scale development. The under secretary of Defense consequently approved full scale development pending determination of the affordability of the program. At the same time the under secretary directed the Army to execute a dedicated data collection and algorithm maturation effort to demonstrate at least the threshold performance called for in the program baseline document. He also directed the Army to execute an accelerated reliability growth program as briefed to the Defense Acquisition Board.²⁷

During 1990, the DCD at Fort Rucker prepared the brief for the Longbow Apache milestone II review decision. The Army System Acquisition Review Council made the decision to continue with the development of the system into full-scale development. The DCD also conducted the cost and operational effectiveness analysis of the Longbow. This involved analyses of mission needs, deficiencies, opportunities, threat, operational environment, constraints, performance, and characteristics, writing the final report and the executive summary, and writing a white paper on how to fight with the Longbow.²⁸

The Army Aviation Technical Test Center conducted tests during 1990 involving approximately 190 flight hours on the Longbow Apache to evaluate the Hellfire missile seeker performance. The Longbow technology proved to be successful, but some fire control radar

²⁶ [Draft report] ATZQ-TSM-W, "TRADOC System Manager for Airborne Target Acquisition and Weapons System," TPO-Apache.

²⁷ Memo, under secretary of Defense for secretary of the Army, 7 Dec 90, sub: acquisition decision memorandum for Longbow/Apache programs, TAM-ATAWS.

²⁸ Historical report, DCD, CY 90; White paper "Tactics, Techniques, and Procedures for How to Fight AH-64 (Longbow)," by Capt Pete Vozzo, 30 May 90, DCD.

and radio frequency seeker performance issues remained unresolved.²⁰

The DOTD at Fort Rucker completed and published the CTEA for Longbow. The CTEA addressed the training required to teach soldiers to perform the tasks and duties required of operators, maintainers, and other support personnel associated with current and proposed models of the AH-64 and estimated resource requirements and costs for each training program. The study, a subanalysis of the Longbow milestone II COEA, was completed in August.³⁰

UH-60 Black Hawk

In 1990 the DCD developed a plan for a utility aircraft requirement study to identify the near-term (FY 95) implementation requirement for utility helicopters and to determine the helicopter(s) best suited to fulfill the near-term requirement. The need for this study resulted from the reduction in the number of UH-60s scheduled to be acquired from 2253 to 1417. Consequently, the Army would be forced to continue using large numbers of UH-1Hs and OH-58A/Cs, which it would have to continue upgrading until they could be replaced. The study was to be performed by the USAAVNC with contractor, Logistics Center, and TRADOC support. Aircraft alternatives were to be limited to helicopters, no aircraft requiring a totally new developmental effort would be considered, and all alternatives were to be considered in the context of the planned acquisition of 1,143 UH-60 aircraft. A contract was awarded to L B & M Associates, Inc., to assist in conducting the study. The final study was scheduled for TRADOC approval in August 1991.³¹

²⁰ Historical report, ATTC, CY 90.

³⁰ Nancy J Leatherwood and Samuel R Nance, "Longbow Cost & Operational Effectiveness Analysis (U): Vol XI-- Cost and Training Effectiveness Analysis (U)," DA Final Report, Aug 90, DOTD.

³¹ Memo ATZQ-CDC-CO (5-5d), for distr, 22 Oct 90, sub: plan for the utility aircraft requirement study, DCD; Contract no. DABT60-90-D-0009, 30 Aug 90, issued by TRADOC Contracting Activity, awarded to L B & M Associates Inc, DCD.

As a result of assessments of the conflicts in Grenada and Panama and of the developing situation in Southwest Asia, the USAAVNC identified a deficiency in the armament on UH-60 assault aircraft. The general concept to correct the deficiency was to upgrade the more capable UH-60Ls with M134 miniguns and then redistribute the aircraft to the first-to-fight assault battalions, e.g., 82nd Airborne Division, 101st Air Assault Division, 7th Infantry Division (Light), and the XVIII Airborne Corps. The modification was to be considered along with other materiel changes at the next review.³²

OH-58C and OH-58D

The OH-58C was a modified OH-58A scout aircraft. The OH-58C contained a larger engine, which provided 420 shaft horsepower. The maximum gross weight of the aircraft was increased 200 pounds to 3200 pounds. The plan in 1990 was to equip 202 OH-58Cs with air-to-air Stinger missiles. The Aviation Training Brigade at Fort Rucker received the first four aircraft with these missiles in January 1990. The 2nd of the 229th Aviation Regiment at Fort Rucker received six of these aircraft in February. The process for providing other field units with OH-58Cs equipped with air-to-air Stingers was scheduled to be complete by March 1992.³³

The Aviation Technical Test Center conducted an OH-58C basic/reprogrammable microprocessor Stinger integration test in 1990 to assess air-to-air target acquisition from the OH-58C while engaging targets in background clutter conditions. High success rates were obtained on all target engagements.³⁴

The OH-58D was a high technology scout and attack helicopter equipped with a fully integrated cockpit and a mast mounted sight and armed with air-to-air Stinger missiles, Hydra 70 rockets, .50 calibre machine gun, and Hellfire missiles. The mast mounted sight included a laser rangefinder/disignator, a thermal imaging

³² Memo ATZQ-CDM-C (70-11), Maj Gen Rudolph Ostovich III for AVSCOM, 18 Dec 90, sub: UH-60 doorgun, SGS file.

³³ "Aviation White Paper" (draft), USAAVNC DCD, 2 May 90, DCD.

³⁴ Historical report, ATTC, CY 90.

system, and a television system.³⁵ Fifteen OH-58Ds were modified to armed configuration and successfully conducted operations in a hostile environment during Operation Prime Chance, in the Persian Gulf, starting in March 1988 and continuing through 1990.³⁶ This operation, known as Task Force 118, was secret until its existence was unveiled during an awards ceremony at Fort Bragg, North Carolina, in May 1990. The armed version of the OH-58D was developed in less than four months when the Navy asked for help escorting tankers in the Persian Gulf. The Navy's shipboard helicopters did not have comparable nightfighting equipment.³⁷

In December 1989, the secretary of the Army reviewed the armed OH-58D and multipurpose light helicopter (MPLH) program, and on 8 January 1990, he announced the decisions to retrofit and fully arm all 243 OH-58Ds and to transfer the aircraft from Field Artillery observation role to the Air Cavalry role. At the same time, the secretary selected the name 'Kiowa Warrior' as the new popular name for the armed OH-58D and approved modifying up to eighty-one aircraft to the MPLH configuration. Also, pursuant to proper Congressional notification and response, the secretary approved an accelerated schedule for configuring up to six aircraft with MPLH capability for contingency operations with the XVII Airborne Corps.³⁸ The OH-58D MPLH capability consisted of hard points on the airframe with capability for the following: rapid deployment (kneeling skids, folding stabilizer, folding vertical fin, etc.); external load capability (2000 lb.

³⁵ "Aviation White Paper" (draft), USAAVNC DCD, 2 May 90, DCD.

³⁶ "OH-58D Armed Kiowa Warrior: Crew Requirement Briefing," 16 Nov 90, DCD.

³⁷ Washington Times, 23 May 90.

³⁸ Memo, M P W Stone for Aviation Program executive officer, 8 Jan 90, sub: OH-58D and multipurpose light helicopter, TSM-OH-58D. Congress did not approve the recommendation to accelerate the six MPLHs into the XVIII Airborne Corps (E-Mail note, Col Ted D Cordrey to Col Theodore Sendak, 15 Jun 90, sub: MPLH, TSM-OH-58D.

cargo hook); medical evacuation (four litters); and troop transport (up to six soldiers).³⁰

The required operational capability for the Kiowa Warrior was approved on 18 April by the DA Office of the Deputy Chief of Staff for Operations and Plans. The required operational capability supported entry into full scale development (milestone II) and described the minimum essential operational, technical, and cost information required of the new aircraft.⁴⁰

During early 1990, the Army planned to configure the eighty-one OH-58Ds scheduled for the XVIII Corps as MPLHs. On 30 May, however, the VCSA approved the recommendation to configure all OH-58Ds as MPLHs. The versatility of the OH-58-D MPLH was deemed to be needed in all units so as to give them greater flexibility.⁴¹

Historically, the Army has employed the OH-58 Kiowa helicopter in the unarmed aerial observation role with a crew consisting of one rated pilot (right seat) accompanied by a non-rated officer or enlisted aerial observer (left seat). With the development of the armed OH-58D and its use as a multimission aircraft at night, over water, and in desert terrain, the possible need for a second rated pilot to enhance flight safety has been raised. The armed OH-58Ds employed during Operation Prime Chance operated at night, and over water, with a crew mix consisting of two pilots. Operation Just Cause was also deemed to have validated the need for two pilots--especially for flying at night. The Aviation Systems Program Review considered the issue in July and approved the concept of two pilots for the OH-58D. The position of the USAAVNC was that two pilots would be necessary for the Kiowa

³⁰ Memo DAMO-FDZ, Maj Gen Jerome H Granrud for VCSA, 30 May 90, sub: multipurpose light helicopter--action memorandum, TSM-OH-58D.

⁴⁰ Memo DAMO-FDR, Maj Gen Jerome H Granrud for cdr TRADOC, 18 Apr 90, sub: proposed changes to required operational capability..., TSM-OH-58D; Historical report, TSM-OH-58D.

⁴¹ Memo DAMO-FDZ, Maj Gen Jerome H Granrud for VCSA, 30 May 90, sub: MPLH--action memorandum, TSM-OH-58D; Memo DAMO-FDV (70-11), Col Joe D Carothers for SFAE-AV-ASH, 6 Jul 90, sub: MPLH, TSM-OH-58D.

Warrior to operate at an acceptable level of safety and effectiveness in the performance of its missions.⁴²

During the August-December 1990 time period, the U.S. Army Research Institute Aviation Development and Development Activity conducted a limited investigation into the requirements for a second rated pilot in response to a request from the TSM-OH-58D. The investigations included analyses of OH-58D accident files, reviews of training documents associated with the enlisted aerial observer training courses, interviews with pilots, and cognitive and psychomotor testing of enlisted aerial observers. The basic research finding was that a dual-pilot crew was superior to a pilot-observer crew; the study also found that improvements were needed in the training of OH-58D pilots--especially with regard to nap-of-the-earth navigation.⁴³

During the month of September, the OH-58D's capabilities were demonstrated to General Russ and an accompanying team from the Tactical Air Command. The Air Force officers were impressed with the technical sophistication and tactical utility of the Warrior. The aircraft was being touted as an aerial platform for Air Force forward air controllers, as it provided everything needed by a helicopter-borne forward air controller. It could see the battlefield day or night, communicate with ground and air assets, designate targets for Air Force fighters, and it was highly mobile and survivable.⁴⁴

The USAAVNC DOTD completed the armed OH-58D CTEA in September and forwarded it to TRADOC Analysis Command for cost review prior to certification. The purpose of

⁴²Msg 1931600Z Jul 90, Maj Gen Rudolph Ostovich III to distr, sub: Aviation Systems Program Review, TSM-OH-58D; "OH-58D Aircrew Requirements Study: Draft Executive Summary," [U.S. Army Research Institute], 11 Jan 91, TSM-OH-58D; "OH-58D Armed Kiowa Warrior: Crew Requirement Briefing," 16 Nov 90, DCD.

⁴³"OH-58D Aircrew Requirements Study: Draft Executive Summary," [U.S. Army Research Institute], 11 Jan 91, TMS-OH-58D; Historical report, ARIARDA, 1990.

⁴⁴Historical report, TSM-OH-58D, CY 90; E-Mail note, Col Ted Cordrey to Maj Gen Ostovich, 14 Sep 90, sub: OH-58D demo, TSM-OH-58D.

the study was to determine the training requirements for simulators, ammunition, and training devices.⁴⁵

USAALS-DOTD personnel attended an OH-58D integrated logistics support management meeting in St. Louis, Missouri, and three OH-58D in progress reviews at the Bell Helicopter Textron Training Academy in Arlington, Texas, during 1990.⁴⁶

CH-47

The TEXCOM Aviation Board conducted a customer test and a follow-on evaluation in 1989 and 1990 to determine whether the extended range fuel system developed for self-deployment of the CH-47 aircraft would meet the combat developer's criteria. Operational effectiveness, safety, maintainability, and human factors were assessed. The test was conducted at Hunter Army Airfield, Savannah, Georgia, in 1989. Major findings included the following: (1) flights with four tanks met the distance and endurance criteria for self-deployment; (2) the redundant fuel feed criteria was not met; (3) the installation/removal time criteria was met, but several problems affecting utility of the system were noted; (4) safety criteria were not met; (5) preserving/depreserving criteria were met; and (6) the operator's manual for the system needed additional work to meet Army requirements. A follow-on evaluation was conducted in 1990. Of the thirty-three deficiencies reevaluated, seventeen had been corrected and fifteen had not been corrected. The conclusion was that several problems should be resolved before the system was sent to the field.⁴⁷

Special Operations Aircraft (SOA)

The USAAVNC DOTD participated in a study conducted at Fort Campbell, Kentucky, in October of 1990 to

⁴⁵ Historical report, DOTD, CY 90; Dr James W Dees and Capt Dennis D Stahl, "Armed OH-58D CTEA," DOTD, Sep 90, DOTD.

⁴⁶ Historical report, USAALS-DOTD, CY 90.

⁴⁷ "Customer Test of the Extended Range Fuel System," TEXCOM Aviation Board, 23 May 1990, OPTEC; "Limited Follow-On Evaluation of the Extended Range Fuel System," TEXCOM Aviation Board, 23 May 1990, OPTEC.

determine how the program manager-SOA could best acquire a mission rehearsal capability for Army Special Operations Forces Aviation. Mission rehearsal requirements for the MH-60K and MH-47E were delineated in their respective aircraft training device required operational characteristics. The USAAVNC representatives to the study were tasked by PM-TRADE to provide a copy of documentation supporting the distribution of the SOA mission simulator devices used at Fort Campbell, and to provide copies of studies on the AIRNET project being conducted by DOTD and ARI. Parts of the SOA required operational characteristics required networking; however, the requested documents were being provided with the stipulation that they were in draft form and could not be used for reference.^{4*}

Special Electronic Mission Aircraft (SEMA)

During 1990, the USAAVNC DCD, in cooperation with the U.S. Army Intelligence Center and School, developed a draft study plan outlining requirements for advanced SEMA. The procedure was to develop lists of SEMA missions, of capabilities of SEMA systems in the field, and of requirements for SEMA in the 2005 timeframe. Analyses of the lists would serve as a basis for identifying deficiencies and for establishing alternatives for future SEMA platforms and capabilities. One of the questions to be addressed was whether a manned or unmanned platform would be more cost effective in terms of mission and performance. However, requirement documents for advanced SEMA would be necessary regardless of whether it was to be manned or unmanned. The existing SEMA fleet was comprised of dissimilar airframes and equipment, was aging, and would be obsolete within the next fifteen years. The objectives of the study were to ascertain the requirements for SEMA, identify the SEMA systems expected to be in the field in 2005, identify the deficiencies of these systems in the context of the future battlefield, and identify shortfalls in the intelligence and electronic warfare capabilities that would result from the retirement of certain aircraft. The draft plan was submitted to TRADOC for review and

^{4*} Memo ATZQ-TDS-SM (70-17d), Capt Timothy M Boswell for dir DOTD, 30 Oct 90, sub: trip report--visit 160th SOA Regiment...., DOTD.

comment in June.⁴⁰ A Fixed Wing/SEMA Systems Program Review was scheduled to meet at Fort Rucker in early January 1991 to address these and other matters.⁵⁰

Weapons Systems

The Operational Requirements and Concepts Analysis Branch of DCD began a study in 1990 to determine and document the performance of current armament systems (gun/cannon, rockets, air-to-air & air-to-ground missiles) of U.S. Army attack and reconnaissance aircraft in relation to the current and future threats. The 'current' armament systems referred to those in production or scheduled for production by FY 92. The study also aimed at determining and documenting the performance of future armament systems in relation to current and future threats. The previous developmental emphasis for Army attack aircraft armament had centered around systems designed to defeat the Soviet armor threat in a European environment, and the armament for reconnaissance aircraft had been developed around the need for self-protection from threat aircraft. The underlying assumptions of this study were that Army attack and reconnaissance aircraft required armament systems to accomplish missions across the operational continuum, regardless of the level of conflict; operate both day and night; and operate in all environmental conditions and any geographical areas. The study plan was scheduled for approval by the USAAVNC on 8 February 1991.⁵¹

Avionics

The TEXCOM Aviation Board conducted a concept evaluation program in 1990 to evaluate the capability and operational effectiveness of improved airborne high frequency radio technology to satisfy user non-line of

⁴⁰ Memo ATZQ-CDC-CO (5-5d), Col Theodore T Sendak for cdr TRADOC, 21 Jun 90, sub: requirements for advanced SEMA draft plan, DCD; Memo ATZQ-CDC-CO (5-5d), for distr 14 Jun 90, sub: combat development draft study plan: requirements for advanced SEMA, DCD.

⁵⁰ 'Fixed Wing/SEMA Systems Program Review--Read Ahead Packet,' USAAVNC, 24 Dec 90, DCD.

⁵¹ 'Study Plan for Attack/Reconnaissance Aircraft Armament Study,' USAAVNC DCD, 8 Feb 90, DCD.

sight and nap-of-the-earth communication requirements. The key technical areas evaluated were automatic link establishment and signal processing enhancements, short-term anti-jam frequency hopping capabilities, and low-speed data transfer techniques. Both radios tested met the 90 percent communications probability for voice and data transmissions. The message intelligibility criteria of 90 percent was met by both radios except that one of them was not fully satisfactory at long distances. Both radios also met the criteria for short-term anti-jam, human factors, and night vision goggle compatibility. Three suggestions were made for improvements.⁵²

On 17 May 1990, the Aviation Training Brigade conducted a flight training test of the Single Channel Ground and Airborne Radio System (SINGARS). As a prelude to the SINGARS radio test, the brigade performed a functional test in typical USAAVNC training environments--day, night unaided, and night aided. The SINGARS performed flawlessly during the daytime test; however, some problems were noted during both night phase tests. During the unaided phase, the SINGARS in the FM #1 position was unlighted. A lighting modification recommended by the Center for Night Vision and Electro-optics solved this problem. During the night aided phase, minor reflection problems were noted with the AN/PVS-5A NVGs. A significant problem was identified in an aircraft in which the signal distribution panels, transponder, and caution light panel were red-lighted. The red-lighted panels caused an unacceptable reflection on the aircraft windows, requiring the crew to turn the center pedestal lights off. In the lights-off configuration, however, the SINGARS was virtually unusable because of the difficulty encountered in discerning the frequency. As a solution to this problem, the Aviation Training Brigade recommended that for safe NVG flight operations, SINGARS not be operated unlighted, but that all center console panels be blue-green to avoid problematic reflections.⁵³

⁵² Concept Evaluation Program of the Improved Airborne High Frequency Radio--Final Letter Report, TEXCOM Aviation Board, OPTEC.

⁵³ Memo ATZQ-ATB-NS, Col J C Hardister for dir DPTMSEC, 22 May 90, sub: SINGARS flight evaluation, ATB; Historical report, ATB, CY 90.

Aircraft Survivability Equipment (ASE) and ASE Trainer (ASET)

During 1990, the Aircraft Survivability Training Management Branch of DOTD participated in the development of a training test support package for the AN/AVR-2 laser detector. The AN/AVR-2 provided visual, directional, and audio warnings of threat laser engagement through a radar signal warning set indicator and the aircraft intercommunications system. Some equipment problems were encountered during the training, and DOTD recommended AVSCOM's cooperation in solving them.⁸⁴

The final evaluation for special electronic mission aircraft ASET II conducted at Fort Rucker in September 1990. The courseware was designed to teach aviators ASE operations and capabilities, threat, and countermeasures. Evaluators from FORSCOM and the USNG participated in the evaluation.⁸⁵

In April of 1990, the commander of the National Training Center requested the assistance of the USAAVNC in ensuring that Army Aviation's ASET IV program was fully integrated with the Air Force's air combat maneuver instrumentation and with National Training Center requirements. The questionable features of the ASET IV program included the threat generators, tracking pods, instrumentation software, signal generators, and laser beam transmitters. The USAAVNC concurred with the need for full integration and worked toward that end.⁸⁶

During 1990, the DOTD began research on the feasibility of developing ASET III. The primary proposed mission of ASET III was to aid in the

⁸⁴ Memo AMCPM-ASE-PA&T, Col James R Holder for cdr USAAVNC, 23 Jan 90, sub: preparation of a training test support package..., DOTD; Memo ATZQ-TDS-AS (600d), Scott M Adam for dir DOTD, 3 May 90, sub: trip report to Hughes Danbury Optical Systems..., DOTD.

⁸⁵ Historical report, DOTD, CY 90; Msg 01 271530Z Aug 90, Elizabeth L Plumb to distr, sub: ASET II courseware evaluation, DOTD.

⁸⁶ Msg P 0322007 Apr 90, cdr NTC to cdr Fort Rucker, sub: ASET IV/ACMI integration, DOTD; Msg 01 02 151530Z May 90, cdr USAAVNC for cdr NTC, sub: ASET IV/ACMI, DOTD.

'teaching of proper switchology, audio/symbology interpretation, and employment of ASE, tactics, and threat understanding.' The DOTD prepared a USAAVNC position paper on ASET III in May of 1990.⁸⁷

Simulation Equipment

The USAAVNC began a one-year study of Air Network (AIRNET)-D (the aviation component of Simulated Network) in mid-1989.⁸⁸ During 1990, the USAAVNC analysts undertook the task of assessing AIRNET-D's capability as an analytical tool for the combat development process. A battle scenario was developed that would demonstrate both the warfighting contributions of Army Aviation and the capabilities of the AIRNET-D system to simulate, capture, and reproduce details of the resultant battle. The analysts found AIRNET-D capable of performing a battle, capturing the events, and producing accurate data. The underlying concern for combat developers was whether the battle closely replicated real systems and whether it was close enough to be credible. Within the five pillars of the combat development process (doctrine, training, leader development, organization, and materiel acquisition), deficiencies and efficiencies of many types were examined for solutions and/or exploitations. For some of these, particularly in the areas of doctrine, training, and organization, AIRNET-D was considered a suitable test environment in its current status. In the materiel acquisition area, current systems were lacking. The results of the study were well received by the analytic and the aviation communities. The study was selected to be presented at the 29th annual Army Operations Research Symposium conducted by the AMC. A more rigorous analytical comparison between AIRNET-D and Janus simulation model followed and was ongoing at the end of 1990.⁸⁹

The independent evaluation report on the Multiple Integrated Laser Engagement System (MILES) Air-to-Ground Engagement System (AGES) II from the user

⁸⁷ Position paper ATZQ-TDS-AS, 14 May 90, sub: ASET III requirements, DOTD; Historical report, DOTD, CY 90.

⁸⁸ See, e.g., Kitchens, 1989 AHR, pp. 73-74.

⁸⁹ Historical report, DCD, CY 90; 'Capability Assessment of AIRNET-D for Combat Developments, USAAVNC DCD, Apr 90.

testing conducted in late 1989 was completed and published in final form in April 1990. The report recommended further development and testing before any future purchases.⁶⁰ In June the Aviation Systems Training Research Branch of DOTD, acting as the independent evaluator of MILES AGES II, completed an assessment of the system during National Training Center rotation 90-10. The assessment was used by the General Officer Steering Committee to make decisions on procurement and further testing.⁶¹

The USAAVNC DOTD completed a flight weapons simulator upgrade training development study for the AH-1 in April. The purpose of the study was to evaluate training alternatives for the resolution of training deficiencies associated with the AH-1 flight weapons simulator. Of the alternatives considered, the study recommended the upgrade of all AH-1 flight weapons simulators to combat mission simulators. Although not the least costly option, it was deemed the most cost effective when training benefits were considered.⁶²

In November the DOTD completed the UH-1 flight simulator requirements study update. The purpose of the study was to review previous UH-1 flight simulator distribution recommendations, evaluate each for validity, and ultimately to recommend feasible flight simulator distribution, relocation, and/or upgrade. The study concluded that the UH-1 flight simulator requirement justified flight simulator redistribution.⁶³

⁶⁰ Memo ATZQ-TDO (71-17a), Col Floyd E Edwards for distr, 16 Apr 90, sub: AGES II independent evaluation report; Historical report, DOTD, CY 90; see also, Kitchens, 1989 AHR, pp. 72-73.

⁶¹ Historical report, DOTD, CY 90; Capt Clayton A Ching, "Assessment and Observation Report on the ... MILES/AGES II," DOTD, 19 Jul 90, DOTD.

⁶² "Ah-1 Flight Weapons Simulator Upgrade Training Development Study," DOTD, Apr 90, DOTD; Historical report, DOTD, CY 90.

⁶³ Historical report, DOTD, CY 90; Capt Dennis D Stahl, "UH-1 Flight Simulator Requirements Study Update," DOTD, Nov 90, DOTD.

The U.S. Army Research Institute Aviation Research and Development Activity (ARIARDA) conducted research during 1990 on the transfer of contact maneuvers training in a visual and response modified UH-1 flight simulator, to initial flight training in the initial entry rotary wing course. The study indicated the cost effectiveness of the training. The institute also reviewed and analyzed helicopter simulator sickness with regard to the status of the problem, its potential causes, and remedial approaches. The ARIARDA also continued the development of a simulator complexity testbed under a joint cost-sharing agreement between the U.S. and Canada. During 1990, hardware and software development progress was substantial, and a highly effective research system design was expected to be delivered early in 1992.⁸⁴

A combat mission simulator requirements study was completed in December. The purpose of the study was to determine the quantity and optimum location of AH-64 combat mission simulators worldwide to meet the training requirements through FY 95. It reviewed worldwide simulator utilization percentages for the projected five-year period and reviewed the utility of existing simulators basis of issue based on simulator site selection, projected aviator densities, and training requirements for the five-year period. The utilization analysis called for the acquisition of eleven simulators to meet training requirements through FY 95. The application of military judgement indicated that one additional simulator should be procured to support AH-64 aviators in Korea.⁸⁵

The USAAVNC DOTD completed a flight weapons simulator upgrade training development study for the AH-1 in April. The purpose of the study was to evaluate training alternatives for the resolution of training deficiencies associated with the AH-1 flight weapons simulator. Of the alternatives considered, the study recommended the upgrade of all AH-1 flight weapons simulators to combat mission simulators. Although not the least costly option, it was deemed the

⁸⁴ Historical report, ARIARDA, CY 90.

⁸⁵ Mr Paul Watts, 'AH-64 Combat Mission Simulator Requirements Study,' DOTD, Dec 90, DOTD; Historical report, DOTD, CY 90.

most cost effective when training benefits were considered.**

In response to a tasking from the Executive Steering Group, the USAAVNC looked into some problems involving the AGES II and their impact on training at the National Training Center. Specifically, the USAAVNC analyzed the effects of the non-button-up policy followed at the training center and its impact on the perception that aviation performed poorly in the training center exercises. The USAAVNC recommended that representatives from the Aviation Center, National Training Center, Combined Arms Training Activity, Armor Branch, and Infantry Branch should meet to work out a solution to the problem that would be acceptable to all.*7

In 1990 the Aircraft Survivability Training Management Branch of DOTD investigated concerns about the use of M-18 smoke grenades when an aircraft was killed by MILES/AGES. The smoke could be ingested into the environmental control units, engines, and cockpits of Army aircraft, possibly causing loss of visual acuity and/or safety and maintenance problems. The USAAVNC accordingly adopted the policy that smoke grenades would not be used to identify kills on any MILES or AGES II system installed on Army aircraft.**

In April of 1990, the USAAVNC DOTD monitored tests of AGES II on the AH-64 conducted by the 1-227th Aviation Regiment at Fort Hood, Texas. The purpose of the verification test was to confirm the results of tests done at Mesa, Arizona, in November and December 1989, which had been designed to demonstrate that the AGES II was capable of killing tanks on the battlefield

** 'Ah-1 Flight Weapons Simulator Upgrade Training Development Study,' DOTD, Apr 90, DOTD; Historical report, DOTD, CY 90.

*7 Memo ATZQ-TDS-AS (70-17a), Brig Gen Robert S Frix, for Brig Gen (P) William H Forster, sub: National Training Center button up policy, DOTD; Memo ATZQ-TDS-AS (70-17a), Col Floyd E Edwards for distr, 21 Feb 90, sub: National Training Center button up policy--action memo, DOTD.

** Memo ATZQ-TDS-AS (70-17a), Col Floyd E Edwards for assistant commandant, 20 Mar 90, sub: Position of USAAVNC on use of M-18 smoke grenades..., DOTD; Msg 01 02292125Z Mar 90, Brig Gen Robert S Frix for distr, DOTD.

in a combat situation. The results of the first tests conducted by the 1-227th were generally unfavorable--largely because of the lack of training and confidence of the crews. Tests conducted a week later were much more favorable, and all persons involved were impressed with the overall success of AGES II on the 'battlefield.'**

Aviation Logistics

During 1990 the USAALS made considerable progress on the developmental phases of advanced boresight equipment (ABE). The ABE was to be a system for alignment of aircraft weapons, sensors, sighting devices, and measurement reference lines and was to be applicable to all aircraft types through the use of aircraft common unit and weapon system specific adapters. The system manpower integration management plan was developed early in 1990 and circulated in late March. Predecessor systems were deemed to be resource intensive, obsolete, and costly to procure and maintain. The ABE was to permit boresight verification on any aircraft within one hour or less, to be capable of being carried and operated by one person, and to meet boresight accuracy requirements on every occasion adjustments were needed.^{7*}

The operational and organizational plan for the ABE was promulgated in late April. The operational aspect provided that the ABE would be employed to boresight aircraft sighting/weapons systems wherever and whenever AVUM and AVIM functions were being performed; that it would be employed on all areas of the battlefield and in support of rear and close operations; and that it would require less time and skill in operation and maintenance than current boresighting devices. The organizational plan was that the ABE was to be employed by AVIM and AVUM TOE units supporting armed aircraft. The manpower integration assessment was that the ABE would not require new units nor would it affect the number of personnel authorized or required in the existing force. The ABE was to be operated and

** Memo ATZQ-TDS-AS (600d), CWO4 Robert G Smithson for dir DOTD, 17 Apr 90, sub: trip report--Fort Hood, Texas, 2-12 Apr 90.

^{7*} Memo ATSQ-LCD-M (70-1f), Maj Gen Rudolph Ostovich III for distr, 20 Mar 90, sub: approval of system MANPRINT management plan for ABE, USAALS-DCD.

maintained by MOS 68J & 68JX1 personnel; it was not to generate any new MOS nor was it to increase or decrease the quality requirement of the existing MOS.⁷¹

The Army's shifting emphasis to contingency operations caused increased interest in the development of the Arapaho Program. Arapaho, a modular shipborne AVIM facility adaptable to land-based use, was reactivated in 1989.⁷² Although FY 90 funding was not programmed for Arapaho, the USAALS reached the final stages of required operational capability; approval was anticipated for CY 91. Completion of a required operational capability was expected to provide a viable beginning point for reinstating the program, should funds be allocated for Arapaho in the future.⁷³

In April of 1990, a study advisory group chaired by the USAALS deputy assistant commandant issued the final report of the Army aircraft recovery study. The purpose of the study was to examine the current methods of aircraft recovery in low, mid, and high intensity levels of combat in order to determine to what extent they should be changed. The study quantified potential recovery workloads and revealed shortcomings in doctrine, equipment, and training, which reduced the effectiveness of the current system. The analysts and subject matter experts agreed, however, that the current system did not require a drastic redevelopment effort and recommended certain incremental enhancements instead. The study was approved by the Combined Arms Support Command in June for Armywide release.⁷⁴

Other equipment related activities of USAALS-DCD during 1990 involved the initiation of work on the development of a portable engine test set, the automation of Army Aviation support capabilities, the completion of the first draft of a study on the effect of aircraft downtime on operational availability, the evaluation of tactical wheeled vehicles assets of AVIM

⁷¹ Memo ATCD-B (70-1f), S D Serafini for distr, 26 Apr 90, sub: operational and organizational plan for ABE, USAALS-DCD.

⁷² Kitchens, 1989 AHR, p. 77.

⁷³ Historical report, USAALS-DCD, CY 90.

⁷⁴ USAALS, "Army Aircraft Recovery Study, Final Report," April 1990, USAALS; Historical report, USAALS-DCD, CY 90.

units, and an analysis of the use of the palletized loading system as an AVIM mobility platform.⁷⁵

The TEXCOM Aviation Board conducted a concept evaluation program in 1990 to appraise three commercially available towing tractors in terms of their capability to tow and position U.S. Army aircraft and auxiliary ground support equipment. The tractors were operated on paved airfields and improved (unpaved) terrain during day and night conditions. Systems A and B were unable to complete all assigned tasks due to loss of traction. The lighting of system B was insufficient for safe night towing and positioning operations. Safety problems were also identified in systems A and B. All systems failed a noise survey and would require hearing protection. The Aviation Board suggested the improvements that each system should have in order to fill the needs of Army Aviation.⁷⁶

Other Equipment and Materiel

In March of 1990, the DA acquisition executive, Mr. M.P.W. Stone, sent interim guidance to the USAAVNC establishing an Armywide policy, delineating responsibilities, and implementing procedures for the Army electromagnetic environmental effects program. The program was to incorporate all aspects of development, operations, and sustainment to include: requirements definition, frequency management, test and evaluation, configuration control, training, maintenance, and feedback.⁷⁷ The initial meeting of the electromagnetic environmental effects working group was held at Fort Rucker on 23 July. Following coordination between AVSCOM Engineering, the AH-64 program manager, and the USAAVNC DCD, the parameters of the test were determined and an AH-64A was selected to be tested. The test data was to be evaluated by AVSCOM to determine whether the aircraft could perform all of its required functions in its intended environment or whether modifications would be required. Preparations

⁷⁵ Historical report, USAALS-DCD, CY 90.

⁷⁶ "Concept Evaluation Program of the Standard Aircraft Towing Tractor System," TEXCOM Aviation Board, 23 Nov 90; OPTEC.

⁷⁷ Memo, M P W Stone for distr, 5 Mar 90, sub: Army electromagnetic environmental effects, DCD.

for the testing were ongoing at the end of the year.^{7e}

The aircrew battle dress uniform was a two-piece woodland camouflaged Nomex flight suit and duty uniform for Army aircrew members. It was designed to replace the tri-service, one-piece, sage green flight suit that did not provide the required field utility in a tactical environment and was not fully compatible with developmental aviation life support equipment. Technical and operational testing of the uniform occurred in 1988 for a scheduled 1989 acceptance and production decision. The tests revealed safety hazards which delayed the scheduled milestone decisions until the design was modified and tested again. The design was modified to correct the identified problems in 1989, and tests were conducted at Fort Rucker by the U.S. Army Aviation Development Test Activity (USAAVNDTA) and the TEXCOM Aviation Board between November 1989 and January 1990. The overall evaluation was that all safety related deficiencies had been corrected and that the uniform was ready for type classification and advancement into the production phase of the program. The one caveat was that the uniform should not be used in OV-1 units until additional data was available to verify that the uniform did not increase potential for injury during OV-1 ejections. Also the Incorporation of the Aviation Board's suggested improvements would enhance the utility of the uniform.^{7e}

The Aviation Technical Test Center conducted tests and evaluations during 1990 involving the aircrew battle dress uniform, the aircrew integrated helmet system, and the M-43 aircrewmember protective mask. Seven test participants completed 280.5 wear-hours with the integrated helmet system. No problems were noted, and the system was deemed to be compatible with night vision goggles. The tests on the battle dress uniform were conducted to verify the correction of significant problems identified during previous testing. Test participants completed 3,315 hours of combined wear and carry time in testing the M-43E1 mask. The tests of

^{7e} "Electromagnetic Effects Plan," signed by Lt Col E E Whitehead, Mr James A Ray, and Lt Col John G O'Hara, 2 Oct 90, DCD; Historical report, DCD, CY 90.

^{7e} "Supplemental Independent Evaluation Report on the Aircrew Battle Dress Uniform," USAAVNC DCD, Feb 90, DCD; "Customer Test of the Aircrew Battle Dress Uniform," TEXCOM Aviation Board, OPTEC.

the mask were conducted for preplanned product improvement. During 1990, the ATTC engaged in over 120 tests. These tests were conducted at Fort Rucker and at various other locations throughout the country. Over 8,500 flight-hours were logged in the accomplishment of ATTC's test mission.**

The TEXCOM Aviation Board conducted an initial operational test and evaluation of the M-43 aircrew member protective mask in 1990 to evaluate its mission effectiveness and compatibility with rotary wing aircraft and aircraft subsystems (except the AH-64). The test was conducted in two phases from January to May. The test demonstrated that aircrew members wearing the mask could perform air and ground mission to required standards. Donning and decontamination of the mask were also satisfactorily accomplished, and reliability, availability, and maintainability requirements were met. However, the operator and maintenance manuals, logistics support, locations of primary blower motor brackets, system weight, and ground communications (without electronics) were unsatisfactory.*1

The U.S. Army Aeromedical Research Laboratory (USAARL) conducted studies during 1990 involving the M-43 protective mask. One of these studies was to assure that ametropic aviators would have adequate vision during chemical warfare operations. This work involved the detailing of the frontserts for the mask and evaluating the visual correction of the mask. With this work, researchers would be able to determine the compatibility of the mask with frontsert visual correction with the SPH-4 aviator helmet visor and with helmet mounted night vision goggles.*2

The Aviation Technical Test Center also tested the M-43 gas mask in 1990. The purpose of the ATTC tests was to check the reliability and compatibility of the M-43 with aircraft and aircraft subsystems; to ensure satisfactory vision and compatibility with night vision devices; and to assess survivability, accessibility, storage, and the ability to drink fluid while wearing

** Historical report, AATC, CY 90.

*1 'Initial Operational Test and Evaluation of the M43 Aircrew Member Protective Mask,' TEXCOM Aviation Board, 27 Aug 90, OPTEC.

*2 Historical report, USAARL, CY 1990.

the mask. Upon completion of all Army testing, the M-43 mask was expected to replace the M-24 aviator's mask.⁸³

A concept evaluation program to assess the operational effectiveness and suitability of three ultra-lightweight camouflage net systems was conducted by the TEXCOM Aviation Board in 1990. The evaluation was conducted in a tactical environment in the Federal Republic of Germany. The 4th Battalion, 229th Aviation, served as the test player unit and performed all test events. None of the three camouflage net systems assessed were considered adequate as a camouflage system for the AH-64. Two of the nets evaluated were effective in preventing the aircraft from being visually recognized. None of the three met the erection or removal criterion as stated in the test issues. The storage and transportability criteria were not assessed because of the size of the three systems and the limited storage space on board the AH-64. The board suggested improvements that would make each system acceptable.⁸⁴

The TEXCOM Aviation Board also conducted a customer test of the Army vibration analyzer in 1990. The purpose of this test was to provide data for operational effectiveness and suitability of two commercially available helicopter vibration analyzers. The data from the test were to be used in the decision to procure nondevelopmental item vibration analyzers. The test, conducted at Fort Eustis, Virginia, in April and May, was to determine the capability of each system to isolate standardized induced rotor vibrations on three different aircraft (UH-1, AH-64, and UH-60). Both systems met two of the three criteria for operational effectiveness issue and partially met the third. The Aviation Board made recommendations that would resolve the deficiencies of each system.⁸⁵

Researchers from USAARL conducted detailed assessments of the crashworthy seats in the UH-60 and AH-64 during 1990 to collect data for future aircraft

⁸³ Army Flier, 15 Feb 90.

⁸⁴ "Concept Evaluation Program of the Ultra-Lightweight Camouflage Net System," TEXCOM Aviation Board, 10 Apr 90, OPTEC.

⁸⁵ "Customer Test of the Army Vibration Analyzer," TEXCOM Aviation Board, 15 Aug 90, OPTEC.

design considerations. USAARL researchers were also tasked to participate in the seat design for the LH. Other USAARL research projects in 1990 included the effects of sleep deprivation on pilots and crew, the effects of the thermal stress resulting from wearing chemical protective clothing, possible solutions to the incapacitating effects of the rear surface cone produced on chest armor by a .50 caliber round, pilot injury resulting from seat belt failure, new flight helmet designs, and the development of an automated system to provide a quick analysis of vibration signals.**

Between October 1989 and February 1990, the Aviation Technical Test Center conducted a series of tests on the aircrew integrated helmet system, which was expected to replace the SPH-4 helmet upon the completion of all Army testing. The purpose of the ATTC tests was to check the new helmet for cockpit compatibility, weapon systems compatibility, helmet integration, communication, comfort, longevity, and reliability. The helmet system was a modularized basic flight helmet which would serve as a platform for modularized add-ons, including dual or single protective visors, weapon sighting systems, helmet mounted displays, NBC protection, and laser protection.**

C. Force Design

During 1990 the Operational Requirements and Concepts Analysis Branch of DCD initiated a study to determine the most effective combination of scout and attack helicopters in the attack helicopter companies of the heavy division/corps attack helicopter battalions for the period from 1996 on into the next century. The problem was that the currently employed tactical mix of three scout and five attack aircraft might not be the best tactical solution after downsizing, technical improvements, or consideration of availability rates. The study plan was to examine alternative scout/attack mixes involving AH-64s, AH-64 Longbows, OH-58Ds, LHs, and LH Longbows. The analyses were to be conducted within the framework of selected regional threat areas and were to reflect the AirLand Battle--Future concept. The study plan received DCD

** Historical report, USAARL, CY 90.

** Army Flier, 1 Mar 90.

approval in November 1990 and was forwarded to TRADOC Analysis Command for review and approval.**

The USAAVNC DCD also began a force design-related study to document the value of reconnaissance as conducted by Army Aviation units. The majority of studies conducted in support of Army Aviation major programs have relied on computer simulations to quantify effectiveness. The lack of fidelity of these models in capturing the impact of good reconnaissance tended to impact negatively on programs such as the LH and organizations such as air cavalry units whose primary purpose was performing reconnaissance. Also, no concerted effort had been undertaken to determine whether the value of Army Aviation reconnaissance could be determined from existing information. The objective of the study was to determine, through a comprehensive literature search and analysis of existing data, the value of reconnaissance by Army Aviation units. The study plan was scheduled for USAAVNC approval on 31 December 1991.**

The DCD initiated a study in 1990 to determine the most cost and operationally effective fielding plan for attack helicopter organizations with the AH-64 aircraft. At the AH-64 Army Systems Acquisition Review Council conducted during the summer of 1990, the analyses and deployment plan presented for Longbow were not satisfactory to the VCSA. Consequently, the commanding general of the USAAVNC directed the DCD to determine the most cost and operationally effective deployment plan for the AH-64C. The essential question was how to properly distribute the 227 AH-64Cs to integrate them with the AH-64s in the force structure in order to realize the fullest advantage of the AH-64's increased capabilities and lethality and, at the same time, to minimize the impact on the force in terms of logistics, manpower, training, and cost. For the purposes of the study, it was assumed that the total Apache helicopter fleet would be 580 AH-64s and 227 AH-64Cs. The schedule called for the draft final report

** Report ATZQ-CDC-LH, 16 Nov 90, sub: scout and attack helicopter mix study plan, DCD.

** "Study Plan: Value of Army Aviation Reconnaissance," USAAVNC DCD, 2 Jan 91 (Draft), DCD.

to be completed and submitted to TRADOC by September 1991.⁹⁰

In August 1990, a requirement developed for an all new light cavalry regiment. In response, the USAAVNC began designing a deployable, versatile, and lethal combined arms force structure.⁹¹

The plan to organize E companies to augment AH-64 battalions was agreed on and approved as a concept during the Aviation Systems Program Review in July of 1990.⁹² The plan was ultimately to align a 128 man company of reserve component troops with each heavy attack battalion. On 20 September a Council of Colonels met at Fort Rucker and further refined the plan. At the end of 1990, the USAAVNC was working with other Army agencies to organize two test E companies during FY 91 (one at Fort Hood, Texas, and the other at Fort Bragg, North Carolina) with evaluation to begin during the first quarter of FY 92. Each E company would consist of 9 officers, 21 warrant officers, and 98 enlisted men for a total of 128 spaces. The additional company would bolster the attack battalion's fighting strength from 299 to 427.⁹³

The Organization/Force Development Division of DCD developed a new living TOE for OH-59D for the Air Reconnaissance Squadron of the 101st Air Assault Division TOE. The division also developed new OH-58D TOE variations for the Attack Helicopter Battalion and the Air Reconnaissance Squadron for the 82nd Airborne Division and an OH-58D variation of the corps reconnaissance squadron.⁹⁴

During 1990 the USAAVNC DCD developed twelve new air traffic services (ATS) TOEs. The effect would be to modernize the ATS force structure documentation.

⁹⁰ Draft [report] ATZQ-CDC-LHX, 7 Jan 91, sub: organizational distribution of AH-64 LB aircraft study, DCD.

⁹¹ Historical report, DCD, CY 90.

⁹² See Chapter IV, above.

⁹³ Fact sheet ATZQ-CDO, Bud Gamble, 17 Oct 90, sub: E company augmentation for the AH-64 attack battalion, DCD; Historical report, DCD, CY 90.

⁹⁴ Historical report, DCD, CY 90.

The new designs primarily called for one ATS company to support each division and three to support each corps. This DCD presented the new TOEs to the TRADOC TOE Review Board in February 1990. After DA review, TRADOC was to include the TOE in the Army's consolidated TOE update in April 1991.**

The Aviation maintenance TOE development schedule was preempted by an unprogrammed workload in 1990. Consequently, the proponent TOEs were not completed in accordance with the Army TOE development plan. The bulk of this unprogrammed workload resulted from the repeated revision of aviation maintenance designs built to support base-case development for AirLand Battle-Future (Chapter IV). Also, much of the workload related to requirements to develop special contingency design support for Operation Desert Shield (Chapter VII).

During 1990 the Threat Support Office wrote a systems threat assessment report for the LH and updated the existing report for the AH-64. The office also worked on or completed threat test support packages for the Longbow Apache force development test and experimentation, the Army Aviation tactics and doctrine and aircraft survivability equipment, the AN/APR-39A (XE-2) radar signal detecting set, the AN/AVR-2 laser detection system, and the air-to-air Stinger.**

Aviation Requirements for the Combat Structure of the Army

One of the most important accomplishments of the Aviation Systems Program Review in July of 1990 was to call and plan for a study called "Aviation Requirements for the Combat Structure of the Army (ARCSA) V. The purpose of this study, which the USAAVNC began in September 1990, was to recommend force structure changes in Army Aviation for the 1995-2004 time period, in light of the results of the Aviation Systems Program Review, and in order to implement the AirLand Battle-Future concept involving the non-linear battlefield. The study was to consist of two phases and was scheduled to last for one year. It was to be conducted by a special study group assembled at the Combined Arms Center during the first phase and at the USAAVNC during

** Historical report, DCD, CY 90.

** Historical report, DCD, CY 90.

the second phase. The focus would be on warfighting at corps level and below, but consideration would also be given to those forces above corps level as submitted by functional proponents. The study was to deal primarily with the design of TOE building-block units and integration of aviation assets into ALB-F force structure. The first phase was scheduled to be completed by 12 February 1991, and the second phase was scheduled to run from April through August 1991.⁹⁷

In 1990 Army Aviation personnel constituted approximately 6 percent of the total Army. An underlying assumption of the ARCSA V study was that Army Aviation's percentage of the Army's force strength would increase as the total Army force was downsized. It was expected that the downsizing would be proportional to the battlefield contributions of the various branches. Because of the rapidly changing world situation; the increasing emphasis on deployability, versatility, and lethality in combat; and Army Aviation's rapidly increasing contribution to the Army's total warfighting effort, Aviation would not be downsized as much as most other branches.⁹⁸

The USAALS-DCD was also involved in the ARCSA V study. The USAALS-DCD was tasked with developing aviation maintenance organizational designs and resultant force structure as part of the total aviation requirement. The USAALS-DCD served as the lead action office for the preparation and presentation of logistics issues in the special Aviation Systems Program Review. This was a significant event that established high level visibility for a number of critical logistics issues and resulted in strong support for their resolution.⁹⁹

Aviation Forward Support Battalion

In September 1989, TRADOC, along with other MACOMs and the DA, reached a consensus on the deployment of provisional aviation forward support battalions. The

⁹⁷ Memo ATZL-AVN-SG, for distr 21 Dec 90, sub: plan for the ARCSA V study, DCD; Historical report, DCD, CY 90.

⁹⁸ Transcript of ASPR, 12 Jul 90, DCD; Army Flier, 3 Jan 91.

⁹⁹ Historical report, USAALS-DCD, CY 90.

Aviation Systems Program Review gave further support to the concept. Two of these battalions were deployed in Europe in August 1990. They were the 9th Battalion (Support) of the 1st Aviation Regiment, 1st Armored Division, located in Katterbach, Germany, and the 9th Battalion (Support) of the 227th Aviation Regiment, 3rd Armored Division, located in Hanau, Germany. The unit identification codes provided by the Center of Military History for the aviation support battalions used the existing codes and lineage of the AVIM companies in each division. These two battalions began deploying, with their respective divisions, to Southwest Asia in December 1990.¹⁰⁰

¹⁰⁰ Memo DAMO-FDV, Brig Gen Robert B Rosendranz for USAREUR, 9 Aug 90, DCD; Historical report, DCD, CY 90; '1990 Aviation Systems Program Review,' DCD.

CHAPTER VI

MISSION SUPPORT

A. Resource Management

The USAAVNC received the FY 90 final funding contract guidance from TRADOC in January 1990. The final funding levels were reduced by \$9.6 million from the September 1989 draft budget contract guidance. Total USAAVNC Operations and Maintenance, Army (OMA), funding for FY 90 was \$280.2 million (\$252.2 million direct funds, \$27.6 million automatic reimbursement funds, and \$.4 million reimbursement funds). The FY 90 requirement was \$309.4 million, which left an unfinanced requirement of \$29.2 million. The loss of funds resulted in a 2 percent civilian work-year and dollar reduction and a 15 percent travel reduction installation-wide. TRADOC guidance limited unfinanced requirements submissions to six--the installations's top five priorities plus environmental issues. Consequently, only \$10.6 million was officially submitted as unfinanced requirements. Major General Ostovich signed the FY 90 installation contract on 12 March 1990, and General Foss signed it on 2 April. The total FY 90 USAAVNC expenditure of OMA funds was \$295.5 million. Of this total, \$262.9 million were direct funds, \$32 million were automatic reimbursement funds, and \$.6 million was funded reimbursement. For comparison, the USAAVNC's FY 89 TRADOC actual obligations were \$291.2 million.¹

The USAAVNC FY 91 command operating budget, compiled in response to TRADOC guidance, totaled \$276.0 million. Of this total, \$248.7 million were direct dollars, \$26.8 million were automatic reimbursable dollars, and \$.5 million was funded reimbursement dollars. Requirements totaled \$308.0 million, leaving an unfinanced requirement of \$32.0 million.² The USAAVNC received guidance for the FY 91 TRADOC budget update in August 1990. Fort Rucker's overall OMA funding for FY 91 decreased 4

¹ Memo ATRM-BF (715k), Maj Gen Henry M Hagwood Jr for distr, 26 Dec 89, sub: FY 90 final contract funding, DRM; "Installation Priority Listing Schedule 50 Unfinanced Requirements," 18 Oct 89, DRM; "FY 90 Contract," Gen John W Foss and Maj Gen Rudolph Ostovich III, 2 Apr 90, DRM; Historical report, DRM, CY 90.

² Memo ATRM-BF (37), Col Edward B English for distr, 1 Jun 90, sub: FY 91 command operating budget, DRM; Commander's statement, Maj Gen Rudolph Ostovich III, 24 May 90, sub: FY 91 command operating budget, DRM.

percent (7 percent constant dollars) as compared to FY 90 actual expenditures. According to the budget update guidance, the total OMA was to be \$280.8 million. Of this, \$253.4 million were direct funds, \$26.9 million were automatic reimbursement funds, and \$.5 million was funded reimbursement funds. Requirements totaled \$328.1 million, leaving an unfinanced requirement of \$47.3 million. The FY 91 TRADOC budget update was submitted to TRADOC on 20 November 1990. TRADOC did not allow for the traditional unfinanced requirements submission. Instead, the command could submit projects which could not be accomplished without additional funding. The projects thus submitted were limited to those that had a cost of \$100,000 or more.³

TRADOC provided guidance for the preparation of the FY 91 final budget update in December of 1990. The guidance included a 2 percent reduction in civilian pay, a 2 percent reduction in contracts, a 25 percent reduction in travel, an increase for the civilian pay raise, and other miscellaneous adjustments. Total dollars for the fiscal year were \$280.3 million, of which \$252.6 million were direct funds, \$26.9 million were automatic reimbursement funds, and \$.8 million was funded reimbursement.⁴

The USAAVNC Directorate of Resource Management (DRM) assumed program director responsibilities on 1 October 1990 for several groups whose budgets had theretofore been handled by other organizations. The DRM also continued the test of the Standard Installation Accounting Office on a provisional basis during 1990. The restructured organization encompassed a framework assuring more professionalism in accounting support to installation activities. The DRM operated an office at Camp Shelby, Mississippi, from April to August 1990 to provide payroll support for annual training of 25,000 USAR and ARNG personnel. Payments were made by checks,

³Msg R 231640Z Oct 90, cdr TRADOC to AIG, sub: FY 91 budget schedule, DRM; Msg R 122135Z Oct 90, cdr TRADOC to AIG sub: budget schedules, DRM; Msg R 121730Z Sep 90, sub: FY 91 budget schedule, DRM; Msg R 311715Z Aug 90, cdr TRADOC to AIG, sub: FY 91 TRADOC budget schedule, DRM; Msg R 311715Z Aug 90, cdr TRADOC to AIG, DRM; Msg R 211821Z Aug 90, cdr TRADOC to AIG, sub: FY 91 TRADOC budget schedule, DRM; Historical report, DRM CY 90.

⁴Memo ATRM-BF (1-1b), 21 Dec 90, Maj Gen Henry M Hagwood Jr for distr, 21 Dec 90, sub: FY 91 appropriation budget and manpower guidance.

and required staffing was one military and two civilian personnel.⁶

TRADOC issued the USAAVNC a Project SPIRIT (Systematic Productivity Improvement Review in TRADOC) savings goal of \$19.6 million for FY 90. Unlike in previous years, only hard-budget savings were reportable. In response, the USAAVNC effected and reported hard-budget savings of \$40.8 million. Also, the USAAVNC received notification of funding for five capital investment projects which had a total economic life savings of \$13.3 million.⁶

The budget reductions experienced during CY 90 caused manpower reductions and prompted the commanding general to direct the review of all operating procedures and organizational structures. All commanders and directors were charged to identify and develop innovative ways to streamline management procedures and improve efficiency. The merging of the Department of Combined Arms Tactics and the Department of Gunnery and Flight Systems into the Department of Tactics and Simulation in June of 1990 was a major aspect of this effort. Another aspect was the centralization in DOTS of responsibility for publishing all doctrinal literature. By initiating these actions, the USAAVNC was able to absorb a portion of the manpower reductions without reducing the quality of its programs.⁷

During FY 90, the Resources Division of the USAATCA served as major program director for the USAATCA, the 1st Battalion of the 11th Aviation Regiment, and the 256th Signal Support Company. The FY 90 operating budget for these activities was approximately \$9.35 million. The Resources Division also managed, controlled, and allocated aircraft procurement, Army, funds to other agencies to accomplish worldwide air traffic control

⁶Historical report, DRM, CY 90; Memo ATZQ-RPB (37), Col Richard N Roy for CofS, 16 Apr 90, sub: program director responsibilities..., DRM.

⁶Memo ATRM-EP (5-4B), S D Serafini for distr, 2 Feb 90, sub: SPIRIT action plan, (also encl), DRM; Memo ATZQ-RCA (5-4), Lt Col John A Whitson for cdr TRADOC, sub: FY 90 Project SPIRIT end of year report, DRM; Historical report, DRM CY 90.

⁷See Chapter I for the creation of the Department of Tactics and Simulation and Chapter IV for consolidation of doctrinal literature responsibility.

(ATC) projects and programs. Aircraft procurement, Army, funds to support the worldwide ATC mission exceeded \$15 million.⁹

The Resource Management Division of the DPTMSEC managed the resources of DOTS, DOET, NCOA, 1st Brigade, ATB, Aviation Proponency, and DPTMSEC. The total amount of obligated funds programmed, managed, and executed by the division in FY 90 was \$65.9 million. Of this total, \$59.6 million were TRADOC funds and \$6.3 million were FORSCOM funds.⁹

During 1990 the USAAVNC Internal Review and Audit Compliance (IRAC) Office conducted sixteen audits, sixteen follow-up audits, and sixteen audit-related administrative projects. The IRAC Office also provided audit liaison for sixteen external audit agency visits and contacts. Some of the audits and follow-ups were included in the 1990 Internal Review Plan, and some were unscheduled audits conducted at the request of command or staff officials.¹⁰

The USAALS annual funding program and obligation total for FY 90 was slightly over \$9 million. This was approximately \$1.3 million less than for FY 89. Of the total obligations for FY 90, \$7.9 million was for civilian pay, \$60,000 for incentive awards, \$126,700 for automation purchases, and \$793,900 for class IX supplies. Also 805 TDY orders were funded.

The Project SPIRIT goal for USAALS in FY 90 was \$894,700. The reported actual performance was over \$15 million, including approximately \$7 million to upgrade training aircraft and make depot level repairs. During FY 90, USAALS participated in a study involving equipment utilization at Fort Eustis. The study identified excess and underutilized equipment, which permitted USAALS to return to the field some \$5.1 million worth of equipment.¹¹

⁹Historical report, USAATCA, CY 90.

⁹Historical report, DPTMSEC, CY 90.

¹⁰Historical report, IRAC, CY 90.

¹¹Historical report, USAALS-PMO, CY 90; Memo ATSQ-LAC-PP, Capt Richard K Eissler for DAHT et al, 5 Apr 90, sub: update of training department...equipment usage program, USAALS-PMO; 'USAALS FY 90 Project SPIRIT' chart, USAALS-PMO.

B. Personnel Management

In July of 1990, HQ TRADOC notified the USAAVNC of the results of its latest effort to reduce documented officer overstrength by adjusting grades in the TDA to equal the personnel inventory. This was in response to an initiative from HQDA announced in 1989. The July 1990 action downgraded a total of forty-nine officer positions at the USAAVNC and was implemented in August 1990 for the FY 92 TDA. After discussion and consideration of objections, TRADOC restored ten positions to their original grades and also upgraded the director of engineering and housing from lieutenant colonel to colonel. The final action resulted in the following downgrades: one colonel to lieutenant colonel; twelve lieutenant colonels to majors, twenty-five majors to captains; and one captain to 1st lieutenant.¹²

The downgrading of senior enlisted positions in the TDA was also directed by HQDA and implemented by TRADOC in July 1990. This action was implemented by TRADOC through changes in AR 611-201 and grading rules developed by HQDA and TRADOC. At the USAAVNC, a total of forty-four enlisted positions were downgraded, and one was upgraded. This action was implemented in August 1990 for the FY 92 TDA.¹³

In September of 1990, the USAAVNC conducted a review of the authorized aviation officer positions to determine which positions required flying as part of the officers' assigned duties. Based on this review, approval was requested and obtained from HQDA to convert seventeen nonoperational flying positions to operational flying positions. Following this change, 442 of the 452 aviation officer positions authorized for the USAAVNC for FY 91 were designated as operational flying.¹⁴

¹² Memo ATRM-FD (310-49), Gary L Hess for distr, 19 Jul 90, sub: officer distribution plan elimination..., DRM; Historical report, DRM, CY 90.

¹³ Memo ATRM-FD (310-49), Gary L Hess for distr, 16 Jul 90, sub: downgrading of MSG/1SG and SGM/CSM authorizations, DRM; Historical report, DRM.

¹⁴ ATZQ-IRO (11-7), Woodrow J Farrington for CofS, 20 Sep 90, sub: IRAC office review of officer flying positions, DRM; Memo ATZQ-RFM (570-4g), Lt Col John A Whitson for HQDA, 15 Oct 90, sub: request for operational

During 1990, the Aviation Proponency Office (APO) reviewed and analyzed several aspects of the management of Aviation Branch military personnel. The office revised the test draft of AR 600-3, "The Army Personnel Proponent System," which was developed by the USAAVNC in 1988 and staffed with the MACOMs for testing. The 1990 revisions were aimed at making branch proponents integral parts of the personnel management system of the Army.

The test draft of AR 600-3 was designed to include government employed civilians, and possibly also nonappropriated fund civilians. The DA funded a training and development assignment space for one year (beginning in December 1989) for a civilian personnel specialist to develop a test plan to integrate civilians into the personnel proponency system. The project tested the validity of trying to structure the DA civilian employee work force on the same eight life cycle proponent framework used for military personnel.¹⁵

The initial success of the project caused the APO to decide in 1990 to civilianize a military position in order to enable the civilian personnel specialist to continue assisting the chief of the APO in the further development of the integration process.¹⁶

As a result of the approval of the Army Acquisition Corps by the chief of staff of the Army, the APO devoted considerable effort during 1990 to ensuring the availability of positions and advancement possibilities for Aviation Branch personnel as they became involved in the business of acquisition. As of the end of 1990, the

flying positions, DRM; 1st end DAPE-MBI-CO, 6 Nov 90, to Memo ATZQ-RFM, 15 Oct 90, sub: request for operational flying positions, DRM; Historical report, DRM, CY 90.

¹⁵ Memo ATNC-PP (600-3), Thomas N Kuhn for distr, 12 Dec 88, sub; draft AR 600-3, The Army Personnel Proponent System, APO; Memo TAPC-CPP-D, Joseph E. Galbraith for distr, 31 Jul 89, sub: proponent responsibilities during civilian personnel proponent pilot, APO; Historical report, APO, CY 90.

¹⁶ Memo ATZQ-AP (690), Lt Col Michael C Pascoe, for garrison commander, 14 Nov 90, sub: proposed aviation proponency position, APO; Historical report, APO, CY 90.

branch was allotted seventeen positions per year group beginning with the eighth year of service.¹⁷

The APO was tasked with maintaining the "Battlebook," a complete listing of all battalion and brigade Aviation commanders in the Army. The book was updated quarterly and maintained in the Aviation Personnel Propensity office.¹⁸

Two propensity issues developed from the Aviation NCO Symposium, held at Fort Rucker in June of 1990. The first was the identification of a need for the 93P military occupational specialty (MOS) to be given a background investigation and receive a secret security clearance before entering basic training. This need was in response to field recommendations that 93P flight operations specialists needed to have the clearance before being assigned to a unit and beginning to work in a tactical operations center. The second issue concerned the assignment of a career management field (CMF) 93 series noncommissioned officer (NCO) as the first sergeant of a headquarters and headquarters company in preference to a CMF 67 series NCO. The rationale for this was to prepare more 93 series NCOs for promotion to command sergeant major. As of 1990, there were only five first sergeant positions for the CMF 93 personnel. Advocates of this initiative maintained that headquarters first sergeant positions were staff positions, and NCOs with an operations background could serve the unit better than those with a mechanical background. Both of these issues were under review by the APO at the end of 1990.¹⁹

The USAAVNC APO published a revised edition of the "U.S. Army Warrant Officer Flight Training Program," in January of 1990. The major change concerned prerequisites for applicants to the program. The booklet is widely distributed throughout the Army and to recruiting offices.²⁰

¹⁷ Historical report, APO, CY 90.

¹⁸ "U.S. Army Aviation Battlebook," 19 Oct 90, APO, Historical report, CY 90.

¹⁹ Historical report, APO, CY 90.

²⁰ Ibid.; "U.S. Army Warrant Officer Flight Training Program," USAAVNC, Fort Rucker, Alabama, January 1990, APO; Historical report, APO, CY 90.

Another publication updated by the APO in 1990 was the "Army Aviation Personnel Plan." Two of the major changes incorporated in the 1990 edition consisted of a redefinition of branch qualification standards for commissioned officers and desired prerequisites for warrant officer candidates.²¹

The 1990 Defense Authorization Act affected Army aviators in four major respects. First, it provided for increases in monthly flight pay rates, effective 29 November 1989. Secondly, it increased the active duty service obligation for initial entry rotary wing flight training; as of 30 September 1990, soldiers who completed or voluntarily terminated their initial entry rotor wing flight training were to incur a six-year active duty service obligation. Thirdly, the act increased the numbers of months of operational flying duty required to qualify for continuous aviation career incentive pay. Under the new rules, aviators must accumulate at least seventy-two months of flying duty credit by the twelfth year after their aviation service entry date to continue receiving flight incentive pay. The numbers of flying duty credit hours for subsequent "gates" or anniversaries were also increased for aviators to continue receiving flight incentive pay for the ensuing time period. Fourthly, effective 1 October 1991, the provisions for waiver of operational flying duty requirements were to become more strict.²²

Early in 1990, the USAAVNC instituted a board of officers to select eligible captains and majors to serve as commanders. Under the old system, brigade commanders selected whomever they wanted for command, and that person was made available. The new system was deemed to be more equitable in that it permitted captains and majors to compete by year group and thereby gave everyone in that year group a chance to compete for commands. The board was made up of three current or former brigade commanders and seven current or former battalion commanders. Each candidate was to be rated by each member of the board, and those with the highest total scores were to be given commands. The updated USAAVNC

²¹ "Army Aviation Personnel Plan," USAAVNC: Fort Rucker, Alabama, December 1990, APO; Historical report, APO, CY 90.

²² Msg R 0513587 Feb 90, cdr PERSCOM to AIG, sub: new changes in the Aviation Career Improvement Act of 1989, APO; Army Flier, 15 Mar 90.

Regulation 600-8, "Officer Management," incorporated these changes.²³

The issue of whether to permit women to fly in combat resurfaced with considerable momentum following Operation Just Cause. Two women aviators, flying a UH-60 Black Hawk on a supposedly noncombat mission of transporting paratroopers, encountered heavy fire for which they were recommended to receive the Air Medal with a "V" for valor. This incident, along with others during the course of the Panama invasion, provided evidence that the distinction between combat and noncombat roles was far from clear in modern warfare; it therefore gave support to demands for legislation directing the Army to move toward permitting women to serve in all military jobs, including combat.²⁴

During 1990, the U.S. Army Research Institute Aviation Research and Development Activity (ARIARDA) completed the development of an improved aviator selection test battery, the new flight aptitude selection test. Validation testing was conducted to complete definition of two alternate, equivalent, versions of the test, and an administration manual and scoring keys were developed to complete requirements for Armywide adoption. The ARIARDA also performed a validation of the multitrack algorithm for aircraft assignment of IERW students. Components used in the algorithm included scores from a computerized set of ability tests, flight aptitude selection test scores, early IERW grades, instructor pilot opinions, and trainee preferences.²⁵

Col. Michael H. Abbott, the garrison commander of Fort Rucker represented the Aviation Branch at the annual ROTC Accessions Board in December 1990. As in past years, Aviation continued to be a popular choice and remained the only branch to take nothing but first choice selections. A total of 216 of the 273 first choice applicants were branched Aviation; these included eleven of the top fifty cadets on the order of merit list, 190 distinguished military graduates, 45 number one cadets, 145 from among the top five cadets, and 192 from among the top ten cadets. By almost all means of comparison, the quality of cadets accessed into Aviation continued to

²³ Army Flier, 1 Feb 90; Historical report, DPCA, CY 90.

²⁴ Los Angeles Times, 9 Feb 90.

²⁵ Historical report, ARIARDA, CY 90.

improve over previous years. Of the 216 cadets branched Aviation, 71 were to become Regular Army, 23 were female, and 16 were black. While numbers of females and blacks accessed into Aviation remained disproportionately low, this resulted from the low numbers of these cadets requesting the branch.²⁶

During 1990, the new Military Personnel Division (MPD) of the DPCA assumed responsibility for the military personnel and retiree functions formerly exercised by both the adjutant general and Personnel Service Center.²⁷ In 1990, the Retention Branch of the MPD exceeded all reenlistment goals for FY 90. The Retirement Services Branch held the annual retiree open house on 13 and 14 September, and over 220 retirees and guests attended.

During 1990 Fort Rucker experienced a growing permanent change of station outbound rate for commissioned and warrant officers, while the number of incoming personnel dropped off considerably. Consequently, the projections for June of 1991 were that the post would be sixty-two commissioned officers and ninety-seven warrant officers short of the officer distribution plan, which was already lower than the post's authorizations. During 1990, the authorizations for commissioned officers were decreased and those for warrant officers were increased. The number of officers allotted by the officer distribution plan also decreased.

Officer promotions for Fort Rucker in 1990 were as follows: 4 lieutenant colonels out of 25 considered were selected for colonel; 4 majors out of 45 considered were selected for lieutenant colonel; 53 captains out of 87 considered were selected for major; 40 lieutenants out of 44 considered were selected for captain; 12 CWO3s out of 19 considered were selected for CWO4; 64 CWO2s out of 73 considered were selected for CWO4; and 8 master warrant officers were designated.

In 1990, seven MOS medical retention boards were convened, and 50 soldiers' cases were considered with the following results: 41 were retained, 5 were reclassified, 2 were referred to medical evaluation boards, and 2 were placed on probation.

²⁶ Memo ATZQ-GC (340d), Col Michael H Abbott for CG, 20 Dec 90, sub: after action report, school year 1991-92 ROTC Accessions Board, Chapter VI file.

²⁷ See Appendix I, DPCA.

Senior enlisted promotions for Fort Rucker in 1990 were as follows: 5 out of 39 considered were promoted to sergeant major; 34 out of 159 considered were promoted to master sergeant; and 101 were promoted to sergeant first class out of 495 considered.²⁰

On 11 January 1990, the secretary of Defense signed an order implementing a freeze on the hiring of civilians within the Department of Defense. This order was conveyed through TRADOC to the USAAVNC chief of staff the following day. The order was effective immediately, but exceptions to the prohibition consisted of the honoring of prior commitments, some high-level career service and excepted service positions, some non-career senior executive service positions, essential medical safety, and security positions, and defense management report and national drug strategy positions.²⁰

Shortly after the announcement of the freeze, Fort Rucker budget officials estimated that the freeze would eliminate approximately 100 USAAVNC jobs by the end of the fiscal year. When the freeze went into effect, Fort Rucker's civilian work force was at about 96 percent of its authorized strength; about 240 requests were on hand to fill vacancies. The Directorate of Civilian Personnel (DCP) carefully reviewed the instructions regarding exceptions. The directorate curtailed publishing job announcements but continued accepting applications for continuous announcements. The director challenged managers throughout the installation to accomplish their missions with the people who remained on the work force until the freeze was lifted.²⁰

On 1 February, The USAAVNC received notification from TRADOC that nonappropriated fund employees were excluded from the freeze on hiring. At the end of February, authority was granted to continue employment of temporary personnel whose appointments were expiring and to reappoint temporary personnel whose appointments had expired and who had been hired to staff high priority

²⁰ Historical report, DPCA, CY 90.

²⁰ E-Mail msg, Maj Gen van Loben Sels to distr, 12 Jan 90, sub: prohibition on hiring civilian personnel during FY 90, DCP; Msg P 241245Z Jan 90, DA to AIG, sub: prohibition on hiring civilian personnel during FY 90, DCP.

³⁰ Army Flier, 15 Feb 90.

programs.³¹ In April, the Department of Defense (DOD) relaxed the hiring freeze to permit hiring from within the DOD to fill authorized vacancies, but all selections from other DOD installations required the approval of the garrison commander before a commitment could be made to a prospective employee.³²

According to budget manpower guidance received from TRADOC in March 1990, the USAAVNC lost 142 civilian authorizations, and an additional eleven officer and sixteen enlisted positions were civilianized. This guidance also directed that fifteen more officer and forty-nine more enlisted positions be civilianized in FY 92. These actions were implemented in August 1990 for FY 91 and 92 tables of distribution and allowance.³³

By July the DA, although faced with the need to reduce the total Army civilian work force by about 80,000 persons, had received almost 11,000 requests for hire freeze exceptions. To help alleviate this problem the TRADOC Civilian Personnel Directorate issued instructions to Fort Rucker and other TRADOC installations that each civilian personnel office describe its efforts to identify and locate qualified persons locally and within the DOD before requesting an exception to the hire freeze.³⁴

On 18 June, Fort Rucker presented a reduction-in-force (RIF) proposal to the DA to eliminate up to 190 civilian positions from the work force.³⁵ According to a staffing specialist in DCP, eighty-two positions were originally scheduled to be abolished, but thirty-three employees immediately found reassignments in vacant

³¹ E-Mail msg, Charles French for distr, 1 Feb 90, sub: hire freeze--flash, DCP; Msg P 282030Z Feb 90, Cdr USAHSC to AIG, sub: hire freeze instructions, DCP.

³² Memo ATZQ-DCP-TS, George M Brawley for command historian, 26 Mar 91, DCP. According to this memorandum, no local policy was issued in writing for the selection of personnel from within DOD.

³³ Historical report, DRM, CY 90.

³⁴ E-Mail note, Charles French to TRADOC CPOs, 10 Jul 90, sub: hire freeze-new guidance, DCP.

³⁵ Army Flier, 12 Jul 90.

positions, leaving only forty-nine people to place.³⁶ The purpose of the RIF was to reduce cost by aligning organization with authorized and funded budget and manpower limits. On 7 September, employees affected by abolishment of forty civilian positions were notified of their rights and options through letters from the command.³⁷

During 1990, 20,367 applications were filed with the DCP for the 541 positions filled as exceptions to the hire freeze. Of these 541 positions, nineteen were filled through the Spouse Preference program. In 1990, thirty-two employees were hired under the Upward Mobility program, bringing the total enrolled in the program to fifty-two.

The average monthly civilian employee strength during 1990 was 3188; the monthly strength fluctuated from a high of 3234 in January to a low of 3139 in December. The decrease resulted from the Armywide freeze on hiring. In 1990, forty-eight civilian employees retired due to disability, and fifty-five elected voluntary retirement. There were fourteen civilian deaths during the year. On-the-job injuries resulted in ninety-one workers compensation claims for the year.³⁸

In October of 1990, Fort Rucker completed the first year test phase of the Army program entitled Managing the Civilian Work Force to Budget (MCB). At that time some revisions were made in the program for Armywide implementation. The MCB program provided for the delegation of authority, responsibility, and accountability for position classification and for execution of the approved budget for civilian personnel resources to the lowest practical level of management. The purpose was to eliminate many of the administrative cost control mechanisms which were burdening the system and which otherwise were compromising the supervisor's flexibility to manage, motivate, and reward civilian

³⁶ Army Flier, 11 Oct 90.

³⁷ Army Flier, 4 Oct 90. No further information on this matter was available to the historian.

³⁸ Historical report, DCP, CY 90.

employees.³⁹ The MCB test program at Fort Rucker was restructured in January 1990. The work center managers were reduced from seventy-four to seventeen, most of whom were program directors. This change not only provided greater flexibility in the management of civilian pay funds, but also it was necessary due to funding reductions.⁴⁰

The MCB was one aspect of the Civilian Personnel Modernization Project, which entailed simplification and improvement in several areas of civilian personnel administration. The USAAVNC DCP implemented another aspect of this project in 1990 by adopting the new Army Civilian Personnel System, a new data base system adapted from the Air Force data base system. In comparison to the system previously used, the new system would store much more personnel data and allow for future expansion into all phases of personnel operations. Thirty three DCP employees received on site training prior to the adoption of the new system. The new system replaced the Standard Civilian Personnel Management Information System.⁴¹

During 1990, the USAAVNC DCP assisted in processing twenty-three reprimands, fifteen suspensions, twenty-four removals, three withholding of step increases, and one change-to-lower grade. A total of 67 grievances were filed during the year. Sixteen employees were granted all or part of the relief sought.⁴² The Labor Law Section of the Office of the Staff Judge Advocate (OSJA) processed these actions. The OSJA also defended the Army in sixteen fact finding conferences of the United States Army Civilian Review Agency, four Equal Employment

³⁹ Memo DAPE-CPM, Raymond J Sumser (director of civilian personnel) et al for distr, 15 Oct 90, sub: revised instructions for Armywide implementation of MCB, DCP; Historical report, DCP, CY 90.

⁴⁰ Historical report, DRM, CY 90; Memo ATZQ-RPB (37), Col Richard N Roy, for CofS, 5 Mar 90, sub: position classification and budget authority..., DRM; Memo ATZQ-RPB (37), Col Ernest F Estes for distr, 7 Mar 90, sub: withdrawal of position classification and budget authority..., DRM.

⁴¹ Historical report, DCP, CY 90; Msg R 091700Z Feb 90, PEOSTAMIS Ft Belvoir VA to distr, sub: ACPERS deployment for May-Jul 90, DCP.

⁴² Historical report, DCP, CY 90.

Opportunity Commission hearings, fourteen investigations of unfair labor practice charges conducted by the Federal Labor Relations Authority, nine Merit Systems Protection Board appeals, seven arbitrations, and six federal court cases. While serving as chief negotiator for Fort Rucker, the OSJA labor counselor completed seventeen negotiations, including one before the Federal Mediation and Conciliation Service and one before the Federal Labor Relations Authority.⁴³

Performance awards were earned by 443 employees from the USAAVNC, and 140 from tenant activities. There were 154 quality step increases for the USAAVNC employees and 32 for the tenant employees; 241 special act or service awards for USAAVNC employees and 42 for tenant employees; 85 on-the-spot cash awards for USAAVNC employees and 23 for tenant employees; and 32 honorary awards for USAAVNC employees and 24 for tenant employees.

During 1990, the USAAVNC and tenant agencies continued to recognize the American Federation of Government Employees as the exclusive bargaining representative of general schedule employees under a contract dated 2 May 1988. The exclusive bargaining agency for wage grade employees of the USAAVNC and of several tenant agencies was the Wiregrass Metal Trades Council under a contract dated 12 September 1987.⁴⁴

In accordance with guidance received by the USAAVNC in April 1990, the DCP implemented a new child care-giving personnel pay program. Fifty-one Fort Rucker child care-giving nonappropriated fund employees converted to the new program, which provided pay bands identical to the hourly pay rates of GS-02 through GS-05.⁴⁵

Mr. Oben B. Johnson, from the TRADOC Equal Employment Opportunity (EEO) Office, conducted a staff assistance visit to the USAAVNC in June 1990 and rated the USAAVNC program as satisfactory. He observed that command support continued to be evident throughout the

⁴³ Historical report, OSJA, CY 90.

⁴⁴ Historical report, DCP, CY 90. Copies of both union agreements are on file in the Aviation Branch History Office, in the DCP section of 1990 files.

⁴⁵ Memo DACS-ZD, Lt Gen Ellis D Parker for distr, 19 Mar 90, sub: care-giving personnel pay program implementation, DCP; Historical report, DCP, CY 90.

program and that one of its most impressive aspects of was the establishment of a procedure for subordinate commanders and directors to personally report EEO progress or lack of it to the commanding general.

The report of the staff assistant visit noted that the USAAVNC Federal Women's Program continued to be one of the best in TRADOC. It was also noted that the USAAVNC maintained an excellent in-house affirmative action working plan and the EEO was adequately staffed and had an excellent facility. According to the report, a problem identified earlier regarding friction between the DCP and the EEO office appeared to have subsided. Also, a concern noted previously regarding the number of adverse/disciplinary actions issued to blacks was studied and determined not to be racially motivated.

The USAAVNC was commended for having established annual goals for establishing or converting positions for part-time career employment and for its DCP-EEO Steering Committee, which reviewed all vacancies for application of upward mobility and/or development principals. It was noted that the percentage of Hispanics, Asians, and American Indians in the work force exceeded their representation in the civilian labor force. Women employees were within 0.1 percent of this goal.

The Black Employment Program was judged to operate in an outstanding manner, but concern was expressed that black representation in the work force had dropped to the lowest point (17 percent versus 21 percent in the civilian labor force) since the consent decree was issued. This condition, the report observed, was further threatened by the impending budget cuts and reductions in force. Other concerns expressed in the staff assistance visit report included the vacancy (at the time of the visit) in the management of the Hispanic Employment Program, the low level employment of severely handicapped persons and of disabled veterans, and the recurring problem of the white male dominance of flight instructor positions.^{4*}

In FY 90, the number of complaints of discrimination was fifty-five--five fewer than in FY 89. However, the manner in which complaints were recorded was changed due to the revision of AR 690-600. According to the new method of counting complaints, the EEO office resolved

^{4*} Memo ATPL-E (690-700), Maj Gen James W van Loben Sels for cmd USAAVNC, 25 Jul 90, sub: EEO staff assistance visit, 19-21 June 1990, EEO Office.

forty of the fifty-five complaints for a 73 percent resolution rate. In June 1990, the commanding general issued a policy memo calling for the resolution of at least 90 percent of complaints of discrimination in the informal stage. During 1990, the commanding general delegated complaint resolution authority for the installation to the garrison commander. This change was made in order to expedite the filing and processing of complaints.⁴⁷

Fort Rucker had a backlog of employees who had not received training for prevention of sexual harassment. During 1990, volunteer instructors held twenty-three training sessions, training 429 employees and eliminating the backlog. After the backlog was eliminated, prevention of sexual harassment training was routinely scheduled on a monthly basis.⁴⁸

During 1990 the Equal Opportunity Office worked with brigade equal opportunity advisors to administer the Training Diagnosis and Assessment System survey to Fort Rucker soldiers. Preliminary results from the survey and comments from soldiers indicated a healthy equal opportunity climate at Fort Rucker. Equal Opportunity Office personnel participated in the Equal Opportunity Committee and in various ethnic events at the USAAVNC during the year. These included the celebration of Dr. Martin Luther King's birthday, Black History Month, Women's History Month, Asian-Pacific American Heritage Month, Women's Equality Day, Hispanic Heritage Month, and American Indian Week. The Equal Opportunity Office and brigade equal opportunity advisors trained fifty equal opportunity representatives during the calendar year.⁴⁹

During CY 1990, the Office of the Inspector General (IG) provided the commanding general with a continuing assessment of the operational and administrative effectiveness of directorates, commands, and activities at Fort Rucker. On 8 January, USAAVNC Regulation 1-3 was published establishing new guidelines for Office of the IG operations. A significant change inaugurated by this regulation was that the IG would no longer conduct regularly scheduled general inspections of organizations

⁴⁷ Historical report, EEO Office, CY 90; Memo ATZQ-EEO (690-600), Maj Gen Rudolph Ostovich III for distr, 19 Jun 90, EEO Office.

⁴⁸ Historical report, EEO Office, CY 90.

⁴⁹ Historical report, DPCA, CY 90.

except for the Army and Air Force Exchange Service (AAFES) and TEXCOM. Instead, special systemic inspections would be scheduled and conducted, based on analysis of senior leaders' concerns and on the results of local and other Army inspections. Conducting these inspections would lead inspectors through many organizations; therefore, an installation-wide announcement would be made that all organizations would be subject to be visited during the inspection. In 1990 the IG conducted a general inspection of the AAFES at Fort Rucker. The IG also conducted systemic inspections of in and out processing, internal controls, the organizational inspection program, and mobilization. Also in 1990, thirteen informal inquiries were completed, and over four hundred IG action requests were processed.⁵⁰

Manpower resources at the USAALS decreased during 1990 as a result of a drop in student load and of several program planning directives from higher headquarters. At the beginning of CY 90, the actual strength of USAALS consisted of 29 officers, 67 warrant officers, 670 enlisted, and 240 civilians for a total of 1006. At the end of the year the actual strength figures were 26 officers, 65 warrant officers, 629 enlisted, and 222 civilians for a total of 942.⁵¹

During 1989, the USAALS at Fort Eustis, after examining force design and training strategies, proposed an AIT training period of ten weeks for all CMF 67 students except those in avionics and armament. These MOS 67A10 apprentice mechanics would be assigned to aviation intermediate maintenance (AVIM) units, where skill level twenty certification would be awarded after they had completed an exportable training package. The basic noncommissioned officer course (BNCOC) would then produce MOS qualified technicians. A prototype of this training program was scheduled to begin in January 1991.⁵² In February 1990, the Office of Deputy Chief of Staff for Personnel (ODCSPER) approved a proposed change

⁵⁰ Memo ATZQ-IG (20-1a), Lt Col Michael S Byington for distr, 2 Mar 90, sub: IG information bulletin, IG; Historical report, IG, CY 90.

⁵¹ "Manpower Utilization Management System Report, 16 Nov 90, USAALS-PMO; "USAALS Strength Report for Feb 90 and Dec 90," USAALS-PMO; Historical report, USAALS-PMO, CY 90.

⁵² Kitchens, 1989 AHR, p. 31.

to the part of AR 611-201 pertaining to MOS 67A. The change provided for the establishment of MOS 67A (general aircraft repairer) within CMF 67 for the purpose of conducting a prototype evaluation of a new concept in the training of aircraft mechanics. The new training start date authorized by this change was 1 October 1990. At the end of 1990 the concept was under study for possible expansion into other career management fields.⁵³

Another change in AR 611-201 requested by the USAALS was approved by ODCSPER in November. This change deleted ASI Q2 (aviation life support equipment) and ASI W6 (aircraft survivability equipment) from association with MOS 67Z. This revision did not require a change in training strategy.⁵⁴

C. Information Management

In November of 1990, the Standard Computer Output Microform (STACOM) system was installed at the U.S. Army Information System Command (USAISC)-Fort Rucker data processing installation. A fully integrated, intelligent on-line/off-line switchable computer output microform system, STACOM would accept data from either the mainframe central processing unit via direct connection to the front end processor (on-line mode) or from the STACOM's 1600/6250 tape device (off-line mode). After acceptance of input data, STACOM would record the data on thermally-processed, 105mm, dry, silver film. After processing, the STACOM recorder/processor would automatically cut the film and pass the processed microfiche to the duplicator. During the recording process, a bar code would be placed on each fiche. The bar code contained duplication and collation information that was used by the duplicator and collator to produce the required distribution of the finished microfiche. Duplicate microfiche were produced using dry process

⁵³ Memo ATNC-MOS-C (611-1a), Darrel A Worstine for cmdt USAALS, 7 Feb 90, sub: approved change to AR 611-201..., USAALS-LD/PPO; Memo ATNC-MOS-C (611-1a), Darrel A Worstine for distr, 20 Feb 90, sub: approved change to AR 611-201..., USAALS-LD/PPO; Historical report, USAALS-LD/PPO; Historical report, APO, CY 90.

⁵⁴ Memo ATNC-MOS-C (611-1a), Darrel A. Worstine for distr, 13 Nov 90, sub: approved change to AR 611-201..., USAALS-LD/PPO; Memo ATNC-MOS-C (611-1a), Darrel A. Worstine for cmdt USAALS, 20 Nov 90, sub: approved change to AR 611-201..., USAALS-LD/PPO.

vesicular technology. The STACOM system would vastly improve computer output microform services provided by USAISC-Fort Rucker.⁸⁸

In the area of software, version 3 of the Automated Flight Records System was finalized and made available for distribution to active duty Army, USAR, and ANG aviation units worldwide during 1990. Also, the Executive Management System (EMS) was implemented as a component of the Aviation Center Decision Support System (ACDSS). The EMS replaced the significant activities reports, a manual or hard-copy reporting system. EMS data was to be entered directly into the installation host computer for storage, search, and presentation. Also the review and analysis component of ACDSS was upgraded, allowing direct entry of data into the installation host computer.

During 1990, the DOIM began implementation of the plan for improved data communications on the Aviation Local Area Network (A/LAN). The first major aspect of this plan was the relocation of the Local Area Network (LAN) head-end equipment. The LAN head-end communication equipment and associated automated data processing equipment were relocated to the Dial Central Office building, which centralized the location of the equipment in relation to the geographic location of the network's backbone coaxial cable, thus shortening the data path between the remote terminals and the network head-end equipment. The relocation of the network head-end equipment greatly improved the reliability of the LAN to users throughout the installation. The other major aspect of the plan for improved data communications was subnetting, which was devised to relieve the saturation of the A/LAN micronet channels. Subnetting removed personal computers from the A/LAN and incorporated them into smaller, more manageable networks. This not only relieved the saturation, but also provided a means to greatly extend data communications support to additional users. During 1990, subnetting was completed for DPTMSEC, USAATCA, Hanchey Army Airfield, and the DOIM Information Center.⁸⁹

In order to meet information mission area cost reduction targets and in compliance with instructions

⁸⁸ Memo AZQBI-ISS (25-1), Howard N Greenhalgh for distr, 24 Oct 89, sub: STACOM, DOIM; Historical report, DOIM, CY 90.

⁸⁹ Historical report, DOIM, CY 90.

from USAISC-TRADOC headquarters, the Fort Rucker Telecommunications Center operating hours changed from a twenty-four hour day to a sixteen hour day operation. This change has caused up to a three to four day delay for incoming routine precedence traffic and the loss of two civilian personnel with no decrease in the workload. Also, the telephone switchboard hours were changed from a twenty-four hour seven day schedule to a sixteen-hour five day schedule with the staff duty officer responsible for directory assistance during off duty hours. On the other hand, in February 1990, the Data Processing Installation began operating on Saturday and Sunday, as well as Monday through Friday in order to provide reliable network services to users during the weekend hours.⁸⁷

In 1990, the DOIM wrote and published the "Fort Rucker Information Mission Area Modernization Plan." The plan was developed to profile the information mission area environment and to provide input of modernization needs into the planning, programming, budget, and execution system and the program objective memorandum cycles at the MACOM level.⁸⁸

An important aspect of information management at the USAAVNC and throughout the Aviation Branch was the U.S. Army Aviation Digest: Professional Bulletin. Formerly a Department of the Army periodical, the Aviation Digest became a professional bulletin in 1987. In 1988 the bulletin adopted the theme concept with a different theme each month. In 1989 it changed from a monthly to a bimonthly publication, effective with the July/August issue. At that time, the number of pages per issue increased from forty-eight to sixty-four.⁸⁹ In 1990 the bulletin continued as a bimonthly professional bulletin with the mission of providing essential information to the Army Aviation community and supporting the command mission at all levels. It also continued to emphasize a different theme in each issue. The six 1990

⁸⁷ Msg R 091350Z Jan 90, cdr TRADOC to AIG 7432, sub: reduction of TCC services, DOIM; Msg P R 1810057 Jan 90, cdr USAISC-TRADOC to USAISC Ft Rucker et al, sub: reduction of TCC operating hours, DOIM; Msg P 0215357 Mar 90, cdr USAISC to distr, sub: execution of budget cuts..., DOIM; Historical report, DOIM, CY 90.

⁸⁸ Historical report, DOIM, CY 90.

⁸⁹ Kitchens, 1988 AHR, pp. 87-88; Kitchens, 1989 AHR, p. 98.

themes were aeromedical hazards, the role of Army Aviation in the combined arms team, the grand opening of the U.S. Army Aviation Museum, aviation safety, training, and the Longbow Apache and the armed OH-58D Warrior.⁶⁰

During 1990, the Public Affairs Office (PAO) was involved in several aspects of information management at the USAAVNC. The Public Information section responded to inquiries from the media and from the public and also coordinated relations with the media. One of the more interesting events relating to the media in 1990 involved CBS News and "60 Minutes." A "60 Minute" program on the AH-64 Apache, being produced by Marlee Klaus, was perceived by the PAO and the USAAVNC command as being negative and biased. Upon her request, however, she was granted an interview with General Ostovich, but representatives of the local media were also invited. Although she had not requested an exclusive interview, she refused to conduct it upon learning that other media representatives were to be present.

The internal dissemination of information on Fort Rucker was the responsibility of the Command Information section of the Public Affairs Office (PAO). During 1990, the section accomplished that mission primarily through the publication of fifty-two issues of the post newspaper, the Army Flier. In addition to its other public relations activities, the Community Relations section assisted in the dissemination of information to the local community through the production of twelve monthly newsletters for area mayors.⁶¹

During 1990, the USAALS-DOTD began developing the USAALS Electronic Information Delivery System training strategy for the next five years. The strategy was being designed to effectively integrate the automation hardware and software to support the aviation apprentice mechanic program and the reserve component.⁶²

D. Air Traffic Control

The USAATCA conducted inspection and assistance visits to more than forty Army air traffic control (ATC)

⁶⁰ Historical report, APO, CY 90.

⁶¹ Historical report, PAO, CY 90.

⁶² Historical report, USAALS-DOTD, CY 90.

and navigation facilities during 1990. Also, flight inspection teams and flight crews certified by the Federal Aviation Administration (FAA) performed ATC evaluations of forty-four ATC facilities and navigational aids. During 1990, the priority of ATC evaluations, conducted in conjunction with the Directorate of Evaluation and Standardization, was on tactical ATC equipment at those locations where TOE units were stationed. Other significant actions in which flight inspection crews participated included the evaluation of TSW-7 tower modifications at Tobyhanna Depot, preliminary evaluation of newly installed ground control approach radar at Fort Drum, New York, and acceptance checks for the FPN area surveillance radar at Fort Bragg, North Carolina.

Another major USAATCA function in 1990 was the general officer briefing on air traffic services in a tactical environment. This briefing followed the collection of input from other USAAVNC directorates, MACOMs, the U.S. Air Force, and the U.S. Marine Corps on ATC problems and interservice cooperation.⁶³

During 1990, the USAATCA assisted the U.S. Army South (USARSO) in the reorganization of its air traffic services mission. The USAATCA developed an action plan to upgrade the U.S. military and Panama's air traffic services and expand the U.S. Army's ATC services in the USARSO's area of operation. The action plan consisted of recommendations for air traffic services expansion and improvement, made specifically for the U.S. military in Panama, the country of Panama, and the country of Honduras. Actions underway at the end of 1990 included the installation of repeaters throughout Panama to improve communications capabilities for flight following in remote areas and the survey and installation of air traffic control equipment to provide instrument airfield operations and search and rescue assistance for Army flight operations in and around the Canal Zone.⁶⁴

⁶³ Historical report, USAATCA, CY 90; Memo ATZQ-ATC-MO (95), Paul E Taylor for director USAATCA, 6 Sep 90, sub: trip report, USAATCA.

⁶⁴ Memo ATZQ-ATC, Col Melvin J McLemore for chief of staff USARSO, 31 Mar 90, sub: recommendations for expanded air traffic control and services in USARSO, USAATCA; Information paper, Jim Jones, 30 Jul 90, sub: upgrade of USARSO ATC services, USAATCA; Historical report, USAATCA, CY 90; Memo ATZQ-ATC-MO (95), Col Melvin J McLemore for HQDA, 9 Apr 90, sub: ATS action plan for

In November of 1989 the commanding general of TRADOC initiated an action aimed at the realignment of some ATC-related functions, affecting the USAATCA, TRADOC, Army Materiel Command (AMC), and the U.S. Army Information Systems Command. In response to this initiative, the DA tasked TRADOC and AMC to develop a plan of action to transfer ATC planning programming, budgeting, and execution system functions from the USAATCA to the AMC. The significant advantage would be to place the responsibility for ATC materiel acquisition with the designated materiel developer. The plan of action for the transfer was signed on 5 December 1990, and the target date for the transfer to be completed was 15 March 1991, after which time all materiel development functions would reside with the Aviation Systems Command of the AMC.⁶⁵

In 1988 the Federal Aviation Administration (FAA) established a requirement for helicopters to be equipped with VOR/TACAN receivers in order to operate in a terminal control area. This requirement had adverse effects upon the Army, and the U.S. Army Aeronautical Services Office (USAASO), through continuous coordination, was successful in obtaining a rule change for the benefit of the Army. In June 1990, the FAA issued a final rule eliminating the requirement for VOR/TACAN receivers in visual flight rule helicopters. Also in response to a USAASO request, the FAA, on 21 September 1990, granted the Army a two-year extension in the implementation of the requirement for the use of automatic altitude reporting equipment.

The installation of the new airport surveillance radar services 9 (ASR-9) began in 1989, and, by January 1990, the radar tower platform and tower had been relocated and raised to a height of seventy-seven feet. In February, the Westinghouse and Raytheon companies completed their portions of the installation. After inspection by OSHA and the Aviation Branch Safety Office, the facility training officer began controller training on the ASR-9. In Mid-March, however, the FAA placed a moratorium on all further installation and optimization of ASR-9 radar facilities because of clystron and transmitter trigger failures. The moratorium was lifted in April, but optimization was delayed until December 1990 in order to permit the installation of the moving

USARSO, USAATCA.

*⁶⁵ Historical report, USAATCA, CY 90.

target indicator and beacon parrot reflectors and also to permit Westinghouse to complete the clystron and trigger modification. By the end of December, optimization had been rescheduled to mid-February 1991 due to FAA budget constraints.⁶⁶

In January 1990, the 1st Battalion, 11th Aviation, received validation of the facility request for an engineering study of a microwave relay communications system for the Fort Rucker Central Control Facility, Flight Following Operations Center. Although this request had been approved and validated by TRADOC and USAATCA, it was not funded. The USAAVNC submitted an unfinanced requirement to TRADOC for \$36,000 as a prelude to the Capital Investment program. This \$36,000 was transferred to the Corps of Engineers-Mobile to conduct an engineering study on the possible use of microwave on this upgrade. In October 1990, the Corps of Engineers submitted an engineering survey calling for fifteen new receiver/transmitter sites and three new microwave repeater sites at an estimated cost of \$13 million. At the end of 1990, the 1-11th was drafting a decision paper for the Command Group on the microwave relay. Two other options, a high frequency radio flight following and geographical stationary satellite leasing, were also being considered. A decision was expected in March 1991.⁶⁷

E. Library, Museum, and Training Support

The Aviation Technical Library supplied information and conducted research in support of the missions of the USAAVNC and tenant agencies at Fort Rucker. The resources of the library included a journal collection of over 350 titles, a book collection with in-depth coverage of subjects related to Army Aviation, a large collection of technical reports, and access to over 300 data bases. The library also maintained an extensive network of military and civilian contacts throughout the country.

In 1990, the Technical Library received Productivity Enhancing Capital Improvement Program funding to purchase the hardware and software to provide an integrated library system at Fort Rucker. The system was to link the Technical Library, the Center Library, and the Aviation Museum. The main advantage to the patron would be direct on-line access to the library's collection of

⁶⁶ Ibid.

⁶⁷ Historical report, ATB, CY 90.

100,000 technical reports. All other library functions would also be automated. Also during 1990, the library continued indexing the Army Flier and Army Times, and began indexing the U.S. Army Aviation Digest.

The Aviation Learning Center provided remedial and supplemental instruction in support of training programs and for personal enjoyment and edification. During 1990, the center installed the Electronic Information Display System for aeroscout observers and acquired six new personal computers and printers for use by students and staff. The Aircraft Survivability Equipment Trainer (ASET) I was sent to Fort Hood, Texas, in preparation for the acquisition of the more sophisticated ASET II. The ASET II hardware was received in mid-October, and the software was scheduled to arrive in January 1991. The Aviation Learning Center continued supporting the Smart Troop program for enlisted soldiers during 1990. In December the center initiated a new Smart Troop program concerning correspondence. During 1990 there were a total of 54,146 student visits to the Aviation Learning Center.

The Staff and Faculty Development Division of DOTD developed and published a new regulation in 1990 to provide policy guidance for the USAAVNC staff and faculty in the application of the principles, processes, and procedures of the Systems Approach to Training. The regulation applied to all USAAVNC departments, training brigades, and organizations that provided resident and nonresident training for which the USAAVNC was the proponent. The division also evaluated 451 classes, of which 58 were considered outstanding.**

During 1990 the U.S. Army Aviation Museum completed the relocation into Building 6000, Dickinson Hall, a newly constructed \$5 million dollar facility designed to house the primary public exhibit of aircraft in the museum collection. From the 15th of January until the grand opening day on the 26th of May, over 9,500 man-hours were expended in restoring and preparing aircraft for exhibit, movement of the aircraft from the existing museum facility, preparation of interpretive exhibits, and the suspension of four fixed wing and four rotary-wing aircraft from the ceiling.

In September the Museum finalized its first educational outreach program approved by the Alabama

** Historical report, DOTD, CY 90; USAAVNC Reg 350-6, "Systems Approach to Training," 5 Sep 90, DOTD.

State Board of Education. The program covered the principles of flight and aerodynamics and was packaged for use either in the school or as a work/study visit at the museum. Separate student workbooks and teacher guides were created for grade levels K-3, 4-7, and 8-12.

The Museum hosted a three-day static exhibit of the Boeing-Sikorsky light helicopter mock-up in conjunction with the fan-tail demonstration flight at the Aviation Center.

During 1990 the Museum acquired a J-3, light observation craft of the type used in the Louisiana Maneuvers of 1941, a prototype version of the UH-60 Black Hawk, and the test-bed McDonnell-Douglas no-tail-rotor helicopter. It also initiated paperwork to acquire a CH-54A model "Skycrane."⁶⁶

The USAAVNC Night Vision Device Training Facility enhanced night vision goggle training by using films of desert environments, providing simulated flight conditions of particular value for Operation Desert Shield, during the latter part of 1990. The ARIARDA supported night vision device training by participation in the collection of imagery tapes and recommendations for improved training in the USAAVNC image projection facility. Imagery and related data collection from Saudi Arabia and the Yuma area supported desert environment night vision goggle error analysis and the development of an improved mission guide for the use of night vision devices.⁷⁰

The Department of Training and Simulation (DOTS) prepared subject matter expert briefings for TRADOC's support of Yama Sakura/Keen Edge 91. The briefs covered missions, combat power, capabilities, and employment of aviation brigades. The DOTS also provided the Canadian Forces Command and Staff School with information on the capabilities and employment of tactical helicopters. Instructors from DOTS were sent to the Command and General Staff College at Fort Leavenworth to provide branch-specific training to the students.⁷¹

⁶⁶ Historical report, DPCA, CY 90.

⁷⁰ Historical report, DOTS, CY 90; Historical report, ARIARDA, CY 90.

⁷¹ Historical report, DOTS, CY 90.

During 1990, the DOTS software center developed and standardized software for sixty software devices worldwide at twenty different sites. New UH-60 simulator devices came into operation at Fort Riley, Kansas, in June and Fort Carson, Colorado, in September. At Fort Carson, a block update, consisting of software modifications to upgrade the flight simulator to current aircraft configuration, was implemented in November. Software for a Southwest Asia instrument training area was developed and incorporated in all UH-60 flight simulators. Also in 1990, DOTS completed the preliminary design of the global positioning system, scheduled for installation on the UH-60 simulators during FY 92.⁷²

A block update configuration, consisting of hardware and software modifications to update the AH-64 combat mission simulator to the aircraft, was completed and installed at all field sites in 1990. Arrangements were made to train Fort Rucker students at Fort Campbell, Kentucky, during the upgrade. DOTS also declassified and implemented a foreign military training load to accommodate the training of all foreign students. The department also completed the preliminary design review for a second generation block configuration hardware and software upgrade to the combat mission simulator. Excess computer equipment was acquired from the upgrade at Fort Campbell for use as software development equipment at Fort Rucker.⁷³

Other significant 1990 developments relating to simulators consisted of the updating of all thirty-one navigational instrument training areas for all UH-1 flight simulator field sites. Also, six software modifications representing new training baselines were distributed and incorporated at the CH-47 flight simulator field sites; and seven software baselines were

⁷² Memo ATZQ-DOT-SC (18), Gerald Lacross for dir DOTS, 18 Oct 90, sub: trip report, DOTS; Memo ATZQ-DOT-SC (18) Randall S Ramsey for UH-60A FS OICs, 2 Nov 90, sub: Saudi instrument training area, DOTS; Historical report, DOTS, CY 90.

⁷³ Memo for record, Randall S Ramsey, 1 Mar 90, sub: AH-64 AQC disk creation, DOTS; Memo ATZQ-GFS-FW (18), Thomas K Flohr for Link Training Services, 24 May 90, sub: AH-64 CMS load configurations, DOTS; Historical report, DOTS, CY 90.

distributed and incorporated at the AH-1 flight simulator field sites.⁷⁴

During 1990 the Army Education Center and Army Continuing Education System (ACES) provided educational opportunities to active duty and reserve component soldiers. The services and programs offered included professional educational guidance, on-duty and off-duty instructional programs, Army Apprenticeship Program, ACES Learning Center, Military Occupational Skills (MOS) Library, and Defense Activity for Non-Traditional Education Support Testing Program.

The Basic Skills Education Program continued to provide on-duty remedial instruction. In 1990 there were 269 graduates of the program. Of these graduates, 230 attended an Armed Services Vocational Battery review class. The average general technical score improvement of soldiers completing the class was 115. Tuition assistance for active duty soldiers for undergraduate and graduate college courses was cut back considerably in 1990 because of budget cuts.

The ACES guidance counselors provided educational guidance to individuals and to units. The ACES Learning Center provided computer assisted remedial and college-level courses. The MOS library was one of the repositories on post for Army regulations, circulars, pamphlets, technical tapes, field manuals, training manuals, and other printed training materials. During the year, there were 3,770 visits by soldiers and DA civilians to the MOS library.⁷⁵

The Aviation Division of DPTMSEC functioned as the primary aviation staff office for establishing and implementing aviation regulations, policies, waivers, and procedures for the USAAVNC. In July 1990, the division assumed the additional mission of conducting Centralized Army Aircraft Support Office operations. During 1990, the division continued to support the training mission by providing fixed and rotary wing support to the USAAVNC and by ensuring that the airfield, stagefield, and airspace of the center were being met. New or revised

⁷⁴ Historical report, DOTS, CY 90.

⁷⁵ Historical report, DPCA, CY 90.

USAAVNC regulations published by the division in 1990 included 95-1, 95-2, 95-3, and 350-5.⁷⁶

Although the USAAVNC added approximately 753 square miles to the flight training area in 1990, there was only one more noise/damage complaint than in 1989 (697 versus 696). The numbers of complaints received in both 1989 and 1990, however, were considerably higher than the 461 complaints of 1988. Interestingly, 296 of the 1990 complaints were attributed to eight persons. The USAAVNC conducted an active program to reduce noise problems as much as possible and to allay criticism through public addresses, newspaper articles, and through Fort Rucker's "Fly Neighborly" program. Efforts were also made to educate developers and home buyers with regard to the possible noise problems resulting from building homes in the vicinity of air training areas.⁷⁷

During 1990, the Resident Management Training Division of DPTMSEC developed the capability to download the master class schedules for Fort Rucker and make them available installation-wide on the A/LAN electronic mail system. This initiative improved accessibility and reduced man-hours as well as printing costs. Weekly student training schedules were also automated with the same cost-saving results. The division the scheduled the use of aircraft by all activities and agencies at Fort Rucker. In 1990, it scheduled more than 270,000 training flights for a total of approximately 397,000 flight hours. The division also administered approximately 2,000 skill qualifications tests to enlisted soldiers. The Nuclear, Biological, and Chemical (NBC) Branch of the division provided NBC equipment and training readiness assistance to FORSCOM, TRADOC, and reserve component units, participated as an evaluator during two emergency deployment readiness exercises, conducted garrison inspections for ten companies and provided training support for over 250 junior ROTC cadets. The division also continued to provide assistance in the transition of the OH-58D model aircraft to the "armed" OH-58D, to which the secretary of the Army gave the name, "Kiowa Warrior." The division designed an eleven-week course to provide aviators with the necessary skills and knowledge to achieve qualification in the

⁷⁶ Historical report, DPTMSEC, CY 90.

⁷⁷ Ltr, Col Ralph J W K Hiatt to Charles W Porter, 24 Aug 90, DPTMSEC; "Monthly Noise Complaints, CY 88/89/90," DPTMSEC; Historical report, DPTMSEC, CY 90.

armed version of the Kiowa Warrior. The course was scheduled to be implemented in FY 92.^{7*}

During 1990 the Plans, Operations, and Mobilization Division of the DPTMSEC conducted over 100 presentations of the Aviation Center's orientation brief, processed 722 taskings, evaluated three emergency rapid deployment exercises, coordinated eight mobile training teams (to Guatemala, Egypt, Thailand, Bolivia, Uruguay, Germany, and two to Korea), and planned the activities for Armed Forces Day, Memorial Day, 4th of July, Alabama Air Fair, and other events. This division also played a major role in the Southeast Alabama flood relief and in mobilization for Desert Shield.^{7*}

The Training Service Center of DPTMSEC provided a variety of audio-visual information products and training devices to the USAAVNC, tenant agencies, and ARNG and USAR units. The center also operated a self-help facility for customers to make their own slides, transparencies, etc.^{8*}

During 1990, the Multi Media Branch, Army National Guard (ARNG) Aviation Division, National Guard Bureau, produced fourteen major video tape presentations relating to ARNG-unique aviation training, aviation safety, and general safety programs. Through Government Printing Office contracts, the Multi Media Branch also designed, developed, and distributed over 960,000 graphic art products.^{8*}

Training support in the form of artillery fire for aviator training was provided by the 260th Field Artillery Detachment. The detachment underwent safety

^{7*} Historical report, DPTMSEC, CY 90; Memo, M P W Stone for program executive officer Aviation, 8 Jan 90, sub: OH-58D (armed) and multi-purpose light helicopter, DPTMSEC.

^{7*} Historical report, DPTMSEC, CY 90. See Chapter VII for flood relief and Desert Shield support.

^{8*} Historical report, DPTMSEC, CY 90.

^{8*} Audiovisual Annual Production and Library Report, Maj William W Shawn for National Guard Bureau, 13 Nov 90, Multi Media Branch; Historical report, Multi Media Branch, CY 90.

certification in February and then went on to fire countless rounds safely during the year.⁸²

F. Logistics Support

In 1990, the Aircraft Logistics Management Division of the Directorate of Logistics (DOL) and the Aviation Systems Command (AVSCOM) conducted an in-progress review of the USAAVNC's UH-1 300 hour phase/150-hour special inspection program. After reviewing the data, AVSCOM approved the continuation of the program. This inspection program was implemented in 1989 and significantly reduced the repair parts and man-hour costs of maintaining Fort Rucker's UH-1 fleet, while ensuring the safety of flight operations. An estimated cost savings generated by the program for FY 90 was over \$1.5 million.

An AH-1 300-hour phase/150-hour special program was implemented in 1990. The USAAVNC and AVSCOM began a one-year evaluation of the program on 4 June. After reviewing maintenance, supply, and aircraft mishap data, both DOL and AVSCOM expected this program to be as successful as the UH-1 program.

Also in 1990, the USAAVNC, working with AVSCOM created a 250-hour periodic maintenance service for the center's fleet of UH-60 aircraft. Since this service schedule corresponded to the major component replacement time, the DOL expected to be able to reduce aircraft downtime and to detect corrosion sooner.

During 1990, the DOL coordinated the transfer of fifty-five aircraft onto or away from Fort Rucker. These transfers included aircraft reassignments to other units and activities, depots, and installations, and the retirement of aircraft to the Defense Reutilization and Marketing Office. Transfers also included aircraft gained from depots, manufacturers, and other installations.

A working group was formed in 1990, and Fort Rucker was designated the test site for a project called "Objective Supply System with Single Stock Fund." Fort Rucker was selected as the test site because the presence of the aircraft maintenance contract made feasible the testing of the concept quickly and without major modifications to the standard Army systems.

⁸² Historical report, 1st Brigade, CY 90.

A capital investment project to convert the fuels dispensing facility of the transportation motor pool from contractor to automated facility was approved and funded, in the amount of \$24,500, in 1990. When completed, the automated facility would allow twenty-four hours per day, seven days per week operation. Installation began in 1990, but the project was put on hold prior to completion because of possible environmental problems.

In May of 1990, the Plans and Operations Division of DOL coordinated logistics support for Team Spirit 90 redeployment at the port of Mobile. The directorate provided mechanics, administrative vehicle support, ground handling equipment, and other services and items.

In accordance with a recommendation from the Defense Regional Interservice Study, the Supply and Services Division of DOL negotiated a contract to provide laundry services for Fort Rucker and Fort Benning, Georgia. The laundry facility capability was expanded considerably by acquiring additional heavy duty equipment. A new steam plant was constructed and went into operation in November.

As of 10 December 1990, the Central Issue Facility became automated, providing customers with print-outs of all transactions.⁶³

G. Evaluation and Standardization

Department of the Army evaluation and standardization support for the USAAVNC and worldwide aviation units was provided by the Directorate of Evaluation and Standardization (DES) stationed at Fort Rucker, Alabama, and by the USAALS Directorate of Evaluation and Standardization (DOES) stationed at Fort Eustis, Virginia, and the Army Air Traffic Control Activity (USAATCA) at Fort Rucker. The chief of the Army Aviation Branch charged these three organizations with responsibility for providing assistance and training to

⁶³ Historical report, DOL, CY 90; Memo ATZQ-RCA (5-4b), Col Richard N Roy for DOL, 14 Feb 90, sub: fund cite for quick return on investment program project PA9H.

units in the field and for conducting evaluations of aviation organizations and facilities.⁸⁴

In his guidance to these organizations for FY 90, the Aviation Branch chief instructed DES at Fort Rucker to continue to conduct aviation standardization and training seminars as funds were available and when requested by individual organizations. The evaluations of aviation units were to continue to focus on the commander's aircrew training program and individual aviator proficiency. Aircrew proficiency evaluations were to concentrate on the aircrewmember's ability to perform missions in support of the unit's mission essential task list. In the flight simulator evaluations, emphasis was to be placed on weapons employment, use of aircraft survivability equipment, emergency procedures, and aviator use of mission oriented protective posture equipment.

The USAALS DOES at Fort Eustis was to evaluate the maintenance test pilot and maintenance test flight evaluation programs, placing emphasis on program management and the level of contribution by key players.

The Systems Evaluation Division of the USAATCA was to conduct air traffic control systems evaluations to determine the system capability to provide mission support to Army Aviation in a safe and professional manner. Air traffic control operations, training, maintenance, and airspace management were to be evaluated to ensure compliance with AR 95-2 and TC 95-93. The effectiveness of component or facility support to the overall U.S. Army Aviation mission was to be of prime concern.⁸⁵

In January 1990, the Army Aviation Annual Written Evaluation (AAWE) mission responsibility was transferred from the Directorate of Training and Doctrine (DOTD) to the DES at Fort Rucker. In accordance with its 1990

⁸⁴ Memo ATZQ-ESF (95), Maj Gen Rudolph Ostovich III for distr, 11 Sep 90, sub: DA aviation standardization program and areas of interest for FY 91, DES.

⁸⁵ Memo ATZQ-ESF (95), Maj Gen Rudolph Ostovich III for distr, 15 Nov 89, sub: DA aviation standardization program and areas of interest for FY 90, DES 1989 file.

AAAWE mission, the DES reduced the total number of exams from thirty-six to two.⁶⁶

During 1990, the Evaluation Division of DES at Fort Rucker conducted eight course studies, eight follow-up studies, and twelve test item analyses. The division also conducted 156 classroom evaluations in support of the DOTD. Because of budget constraints, the division conducted no branch liaison team or aviation standardization training seminars. Input from the field was limited to what could be gathered from eighteen ongoing graduate surveys. The division also evaluated five affiliated and five non-affiliated reserve forces training programs. Recommendations made from data gathered during these evaluations enhanced training standardization between the active and reserve components.

The Flight Standardization Division of DES at Fort Rucker continued to perform its aviation standardization mission with little impact from reduced funding. The division conducted 95 worldwide Department of the Army flight standardization evaluation/assistance visits and 1465 flight evaluations in support of USAAVNC plans of instruction.

During 1990, the Operation and Administration Division of the DES at Fort Rucker completed a study of AH-64 crew composition policy and a five-year study of the performance, safety, and logistical impact of the touchdown emergency procedure training moratorium. The division also completed distribution of version 3.0 of the automated flight records software and provided the Aviation Systems Command with a study plan for the aircraft utilization spectrum.⁶⁷

The USAALS-DOES at Fort Eustis supported thirty-two standardization visits in conjunction with aviation resource management surveys in CY 90. During these visits, 229 evaluations were conducted with maintenance pilots and maintenance evaluators. The directorate completed fifty end-of-course flight evaluations, three internal course evaluations, and approximately 250 no-notice evaluations.

⁶⁶ Memo ATZQ-RFM (570-2a), Howell L Flowers for DES et al, 24 Jan 90, sub: realignment of the Army Aviation Annual Written Examination, DES; Historical report, DES, CY 90.

⁶⁷ Historical report, DES, CY 90.

In 1990, USAALS-DOES personnel retired their old Maintenance Test Flight Standardization patch and began wearing the Aviation Standardization Unit patch worn by DES personnel at Fort Rucker. Also in 1990, the USAALS-DOES began development of the TRADOC directed exportable Maintenance Evaluator Course, scheduled for completion in 1991, and began reviews of the design and development of the new resident Aviation Logistics Officer Advanced Course, scheduled for completion in 1992. The USAALS-DOES also contributed to the revision and/or publication of three USAALS regulations affecting evaluation and standardization. These were USAALS Reg 350-6, 350-15, and 350-16.**

In his guidance for FY 91 to the organizations responsible for standardization, the Aviation Branch chief observed that the Army Aviation Standardization Program had one key objective; that was "to develop and train combat-ready aircrews capable of executing their individual and collective tasks as integral members of the combined arms team fighting the AirLand Battle." Admitting that the management of dwindling training resources would challenge the aviation standardization and combat readiness efforts, he charged commanders at all levels to play an active role in both the design and execution of their unit aircrew training programs. Assistance in this endeavor would be provided by the revised commander's guide (TC 1-210), which was under final revision in late 1990. Finally, the branch chief charged the organizations responsible for standardization with the two major functions of providing assistance and training to units in the field and conducting evaluations of aviation organizations and facilities.**

H. Commercial Activities and Contracting

During 1990, the secretary of the Army gave the Commercial Activities program his full support and urged that each installation work toward a timely completion of ongoing and future comparison studies. At Fort Rucker, the Directorate of Logistics and the Training Service Center received U.S. Army Audit Agency certification

** Historical report, USAALS-DOES, CY 90.

** Memo ATZQ-ESF (95), Maj Gen Rudolph Ostovich III for distr, 11 Sep 90, sub: DA Army Aviation standardization program and areas of interest for FY 91, DES.

during 1990, and both studies were nearing final decision at the end of the year.⁸⁰

The Directorate of Engineering and Housing continued with the commercial activities review during 1990. The directorate had officially been under CA study for six years, but it was officially placed on hold during 1990 because of problems associated with the workload display in the contract. The most efficient organization, which DEH began to implement in FY 88, was officially implemented in 1990 through a reduction-in-force. Except for an excess number of vacancies, which resulted from the DOD hiring freeze, the organization which was to be used as the basis for the government's bid was in effect at the end of 1990.⁸¹

The total business dollars of the Directorate of Contracting (DOC) in FY 90 were \$172,037,774, compared to \$170,289,306 in FY 89. In 1990, 94 percent of the total was awarded competitively, versus 99 percent in FY 89.⁸²

In May of 1990, a contract in direct support of USAAVNC's flight training mission was awarded to Sikorsky Support Services, Inc. The contract, resulting from sealed bids, was to provide aircraft fueling services; this services included operation of bulk storage facilities, into-aircraft servicing, hot and cold refueling, and defueling of aviation fuel at Fort Rucker, Alabama. All refueling equipment used under this contract was to have the capability for bottom loading and was to employ vapor-free recovery systems. The amount of the award for the base year, beginning 1 October 1990, was \$3,554,232.00. The contract provided for two, one-year options.⁸³

During 1990, the USAAVNC exercised options to extend four major contracts for FY 91. Contract number DABT01-89-C-7003, with Burnside-Ott Aviation Training Center, Inc., for initial entry rotary wing training, dated 16

⁸⁰ Historical report, DRM, CY 90. This summary is based on procurement-sensitive documents held in DRM and unavailable to the author at this time.

⁸¹ Historical reports, DEH and DRM, CY 90.

⁸² Historical report, DOC, CY 90.

⁸³ Contract no. DABT01-90-C-0209, issued by DOC USAAVNC, award date 31 May 90, DOC; Historical report, DOL, CY 90.

December 1988, was extended for another fiscal year for the amount of \$27,163,872.00. Contract number DABT01-89-C-7001, with Flight Safety International, Inc., for C-12 initial qualification training, was extended for a full fiscal year with the contract amount increased from \$597,756.00 to \$1,874,502.00. Contract number DABT01-90-C-0003 with Bendix Field Engineering Corp., for operation and maintenance of the aerial gunnery range, dated 13 October 1989, was extended for a full year with the contract amount increased from \$356,254.25 to \$896,418.29. And contract number DABT01-88-C-3000 with DynCorp for aircraft maintenance, dated 27 September 1988, was extended for another fiscal year with the total estimated contract cost unchanged.⁸⁴

The contract for delivery of heating fuel to user tanks and the operation of government-provided fuel oil storage facilities at Fort Rucker was awarded to Ril's Services at a cost of \$21,800. The contract was for the peak heating period, 1 October 1990 through 31 March 1991.⁸⁵

On 1 October 1990, the United States Army Test and Evaluation Command, Aberdeen Proving Ground, Maryland, awarded the contract for data collection at Fort Rucker's U.S. Army Technical Test Center to Cincinnati Bell Information Systems Federal, Inc., of Fairfax, Virginia. The one-year contract, valued at approximately \$3.5 million, with options for four renewals, replaced the contract held by the Cobro Corporation of Earth City, Missouri, for the previous ten years. The Army Technical Test Center, formerly the U.S. Army Aviation Development Test Activity, conducted aviation testing to determine how well aviation equipment met the Army's requirements. The contract was for data collection on tests dealing with the reliability, maintainability, and availability of aircraft materiel. The only factor involved in Cincinnati Bell rather than Cobro being awarded the contract was cost. The former underbid the latter by about \$155,000 for the base year contract. Of the thirty-six employees of Cobro, twenty-five were expected to be employed by Cincinnati Bell.⁸⁶

⁸⁴ Modifications of contracts, dated respectively 19 Sep 90, 28 Sep 90, 22 Aug 90, and 30 Sep 90, DOC.

⁸⁵ Historical report, DOL, CY 90.

⁸⁶ Army Flier, 18 Oct 90.

On 1 October, Fort Rucker awarded a one year contract to Kime Plus, Inc., of Junction City, Kansas, for providing food services in two dining halls and dining attendant services in another. A contract for providing dining attendant services in all the dining facilities had been awarded to Southfork Systems of Palm City, Florida two years earlier. The contracting for food services was in accordance with an Armywide trend to rely on civilian contractors for food services when that would achieve economies and enhance productivity. One dining facility, that of the 46th Engineer's was to continue using military staff, but its dining attendant services were also contracted. In December, Kime Plus, Inc., failed to meet its contract requirements, and the remaining ten-month, eleven-day contract was awarded to Southfork Systems for \$994,000.⁹⁷

In 1990 Fort Rucker awarded a two-year contract for custodial services to Pro-Mark Associates, Inc., of Augusta, Georgia, for \$920,443. Before the end of one month, however, the contract was terminated for default, and another contract was awarded to J&L Services, Inc., of Enterprise, Alabama. The contract to J&L was for \$578,597, for eleven months and eighteen days, but it contained an option for an additional year for \$592,897. The total cost of the new contract for two years of services would be \$1,171,495.⁹⁸

During 1990, the Contract Law Section of the OSJA reviewed and processed 280 contract actions involving approximately \$131 million. The section also reviewed fifteen final decision letters, cure notices, and other administrative actions. Research was performed and briefs written to defend government action in numerous protests filed with the General Accounting Office, in suits filed in federal court, and in cases heard by the Armed Services Board of Contract Appeals.⁹⁹

The 1-145th Dining Facility became a contract operation on 1 October 1990. The renovated building was opened the day the contractor assumed operations.¹⁰⁰

⁹⁷ Army Flier, 13 Dec 90; USAAVNC Weekly Bulletin, no. 38, 21 Sep 90.

⁹⁸ Army Flier, 18 Oct 90.

⁹⁹ Historical report, OSJA, CY 90.

¹⁰⁰ Historical report, 1st Brigade, CY 90.

I. Construction and Physical Plant Improvements

At the end of 1990, The Army Corps of Engineers estimated the construction of Fort Rucker's \$6 million service members support complex to be 40 percent complete. After the original contractor defaulted on the project in mid-June, construction was suspended until a second contract was awarded to Fred Burgos Construction Company, Inc., of Montgomery, Alabama. This firm began work on the complex in October 1990. Upon completion, the complex was to consist of a chapel, a family life center, and a child development center. The project was scheduled to be completed by August of 1991.¹⁰¹

Other major construction projects begun and/or completed in 1990, with their respective total costs, included the following: completion of aerial gunnery range--\$18,133,295; resurfacing of Highbluff and Cairns stagefields--\$1,032,715; construction of youth center--\$1,495,044; installation of energy monitoring and control system in Lyster Hospital--\$251,030; repaving of Hanchey Stagefield road--\$528,017; miscellaneous repairs on buildings 5910 and 5911--\$514,188; replacement of boiler plant in building 1013--\$628,655; installation of airfield security--\$245,149; and construction of driveway at building 22210--\$177,000.¹⁰²

The U.S. Army Corps of Engineers accepted construction of the west portion of the aerial gunnery range from Couch, Inc., the prime contractor, on 16 May 1990 and turned it over to Fort Rucker. The Army Munition and Chemical Command had the range targets and devices installed by Unisys Corporation under a separate contract, accepted the complete range complex for the government on 15 December, and turned it over to Fort Rucker on the same date. A ceremony was conducted on 7 December 1990, dedicating the range and naming it the Molinelli Aerial Gunnery Range Complex.¹⁰³

¹⁰¹ Army Flier, 10 Jan 91; Historical report, DEH, CY 90.

¹⁰² Historical report, DEH, CY 90; Contract reports for these contracts are in the 1990 History Office files, DEH.

¹⁰³ Historical report, DPTMSEC, CY 90; 1st End ATZQ-DPT-P (ATZQ-MH/2 May 91), Col J W K Hiatt for Aviation Branch Historian, 9 May 91, sub: staffing of 1990 Annual Historical Review, DPT.

In July of 1990 the 46th Engineer Battalion began work on a 760 square foot class A vault for the storage of special access programs. The facility was to include secure computers, secure data transmission, and secure telephone communications. Work on the project was temporarily interrupted when the 46th Engineers were deployed to Saudi Arabia, but a civilian contract for completion was awarded and work recommenced in December. The facility was scheduled for completion in February 1991.¹⁰⁴

In June of 1990, the Job Order Contracting Branch was established within the Engineering Plans and Services Division of the Directorate of Engineering and Housing. The new branch used a single contractor as an expeditious means of procuring necessary work. The annual contract amount could range between \$200,000 and \$5,000,000 per year. The Engineer Resources Management Division was responsible for planning, programming, coordinating, estimating, budgeting, scheduling and evaluating resources for the accomplishment of work by DEH's in-house work force. This division completed a total of 463 individual job orders and 35,175 service orders in 1990.

The utilization rate for housing during FY 90 was as follows: family housing--96.98%; distinguished visitor quarters--62.5%; visiting officer/enlisted quarters--83.1%; guest house--94.7%.

For 1990, the actual obligations recorded by the Budget Branch of DEH were \$40,614,000 Operations and Maintenance, Army, and \$1,514,000 for Operations and Maintenance, Army Reserve.¹⁰⁵

FY 90 was another successful year for energy conservation at Fort Rucker with a final performance of 1.2% under target goal. The post met its energy goals during eight of the last nine years. The utility cost avoidance amounted to over \$65,000 in FY 90. For FY 89, the cost savings was over \$800,000.¹⁰⁶ During the first quarter of FY 90, TRADOC headquarters authorized TRADOC installations to install full-range temperature controls

¹⁰⁴ Historical report, DCD, CY 90.

¹⁰⁵ Historical report, DEH, CY 90.

¹⁰⁶ Facilities energy summary ATZQ-DEH-OM, 17 Oct 90, DEH, Historical report, DEH, CY 90; Ltr, Gen John W Foss to Maj Gen R Ostovich III, 3 Jan 90, DEH.

in all family housing quarters.¹⁰⁷ In CY 1990, Fort Rucker discontinued using weather-qualifying criteria for determining dates when air conditioning and heating could be used in family housing. In most post facilities, however, the process of changing from heating to air conditioning, and vice versa, required centralized advance planning and could not be controlled by the occupants of each building.¹⁰⁸

During 1990, the Office of the Garrison Commander, the DEH and the Office of the Staff Judge Advocate (OSJA) worked together in negotiating Fort Rucker's first federal facilities compliance agreement with the Environmental Protection Agency. The OSJA also provided legal opinions on a variety of environmental issues, including underground storage tanks, solid waste management, wetlands protection, and compliance with the National Environmental Policy Act.¹⁰⁹

J. Safety, Security, and Legal Services

In his letter outlining Fort Rucker's safety goals for FY 90, Major General Ostovich stated his hope to match or exceed the goals obtained in FY 89. The long-range goal was to reduce aviation accidents by 5 percent per year from the Safe Army 1990 base year of 1985. Specific objectives for 1990 were that there should be no more than one class A accident, zero class B accidents, no more than four class C accidents, and no more than eight class D accidents. With regard to non-aviation accidents, the goal was to reduce mishaps by 3 percent per year. The specific objectives for 1990 were to reduce Army motor vehicle mishaps from four to two, to reduce military disabling injuries from thirty-nine to thirty, and to reduce privately owned vehicle injuries from eight to six. According to the USAAVNC safety manager, one of the major targets for 1990 was the

¹⁰⁷ Memo ATEN-FE (420-49), for TRADOC installation cdrs, 6 Dec 89, sub: thermostat policy--family housing.

¹⁰⁸ Information paper (ATZQ-DEH-OM), William J DeJournett, 17 Oct 1990, sub: air conditioning and heating start-up.

¹⁰⁹ Historical report, OSJA, CY 90.

reduction of privately owned vehicle accidents, which accounted for 72 percent of the Army's losses.¹¹⁰

Although the goals for 1990 were not met in their entirety, Fort Rucker nevertheless experienced a remarkable year with regard to safety. For the second successive year, the USAAVNC received the award for the medium-size TRADOC installation with the lowest accident rates for all categories of accidents. With regard to aviation accidents, aviators of the USAAVNC flew more than 23 percent of the Army's total flying hours during FY 90 (394,106 of 1,696,052) while experiencing less than 10 percent of the Army's class A aviation accidents (3 of 31). Fort Rucker's three class A accidents in FY 90 were nevertheless the most suffered by the USAAVNC during the last six years.¹¹¹

During FY 90, the Aviation Training Brigade (ATB) at Fort Rucker flew 428,305 hours, compared to 384,783 hours during FY 89. Military personnel flew 230,505 hours of that total, and the civilian contractor, Burnside-Ott, flew 197,800. The class A accident rate of 0.47 per 100,000 flight hours was better than the FY 89 rate of 0.52 per 100,000 flight hours. In 1990, the 1st Battalion, 212 Aviation, ATB, flew 64,784 hours, of which 14,145 were flown at night with the AN/AVS 6V night vision goggles. By the end of FY 90, the 1-212th had completed a total of 356,866 consecutive hours without an accident while an instructor pilot was aboard. One class A accident occurred on 25 October 1989, during an unsupervised solo flight with a foreign national aboard.¹¹² On 24 September 1990, F Company, 1st Battalion, 14th Aviation, ATB, completed twenty years of flight training without a class A, B, or C accident. During that period, F Company, which provided all phases

¹¹⁰ Army Flier, 1 Feb 90. According to the Army's accident classification system, class D accidents resulted in damage costs of from \$2,000 to \$10,000; class C--\$10,000 to \$200,000; class B--\$200,000 to \$1 million; and class A--over \$1 million, a fatality, or a totaled aircraft.

¹¹¹ Historical report, ABSO, CY 90; Chart, "Class A Aircraft Accident Rates," based on FY 90 data as of 30 Sep 90, ABSO.

¹¹² Historical report, ATB, CY 90; Nomination for aviation safety award, cdr 1-212th to cdr TRADOC, ABSO, Historical report, ABSO, CY 90.

of training for CH-47D aircraft, had flown 167,713 hours and trained 4,797 students.¹¹³

During the six-year period from 1985 through 1990, the total number of class A accidents Armywide was reduced from forty-five to thirty-one per year, and during FY 90, the Army recorded the lowest total number of accidents in its history.¹¹⁴ To a significant degree, the almost constantly declining rate of aviation accidents during recent years resulted from the activities and programs of the United States Army Safety Center (USASC). During 1990, the Safety Center continued the development of Armywide aviation countermeasures and prevention programs; conducted studies to identify training, standards and policy deficiencies; trained almost 300 aviation safety officers and almost 500 NCOs; investigated most of the major aviation accidents Armywide; and played a major role in promoting the Army Flight Data Recorder Program.¹¹⁵

The Directorate of Logistics took an important step toward helping emergency crews locate aircraft in the event of an accident or forced landing. During 1990, DOL and maintenance contractor personnel installed emergency locator transmitters in 85 of the 87 UH-1 aircraft and in 37 of the 38 UH-60 aircraft that operate out of Fort Rucker's Cairns Army Airfield.¹¹⁶

In 1990, the USAAVNC also achieved remarkable reductions in Army motor vehicle accidents and in military disabling injuries. The Army motor vehicle accident rate during FY 90 was 74 percent below the rate for FY 89, and the military-disabling-injuries rate for FY 90 was 43 percent lower than the FY 89 rate.¹¹⁷

¹¹³ Nomination for aviation safety award, cdr 1-14th Aviation to cdr TRADOC, ABSO, Historical report, ABSO, CY 90.

¹¹⁴ Chart on class A aircraft accident rates (based on data collected as of 30 Sep 90), ABSO; Historical report, USASC, CY 90.

¹¹⁵ Historical report, USASC, CY 90.

¹¹⁶ Historical report, DOL, CY 90.

¹¹⁷ Historical report, ABSO, CY 90, Charts on Fort Rucker motor vehicle accidents for FY 89 and FY 90, ABSO.

Notwithstanding the Army's outstanding overall aviation safety record during 1990, several accidents occurred in Panama during and shortly after Operation Just Cause. One of these occurred on the Caribbean coast of Panama during the night of 21 February and consisted of two aircraft--an OH-58 and a UH-1--crashing in dense jungle during a heavy rainstorm and killing eleven soldiers. The Army initially reported that the accident occurred during a training mission, but subsequently disclosed that the aircraft were supporting an assault by soldiers of the 7th Light Infantry Division who were searching for supporters of the deposed Panamanian leader, Manuel Noriega. The investigation of the crash determined that the pilots were not adequately trained for that mission. During Operation Just Cause, aviation units had been so overloaded with missions that normal training schedules had slipped. This lack of adequate supervised training of inexperienced aviators was determined to have been the primary cause of the two crashes. In response to the investigation, the Army took a series of corrective actions in April. These included stepping up training for bad-weather flying, improved supervision of pilots, and a decree that no aircraft would be flown at night with fewer than two pilots.¹¹⁸

The ARIARDA began the development of improved aircrew coordination training for Army helicopter crews during 1990 by conducting a historical analysis of aviation accident data. Conducted jointly with the U.S. Army Safety Center, the analysis identified a number of recurring types of crew coordination errors, which fell in the broad categories of cockpit communication, workload management, cross-monitoring, and team relationships. The research institute then developed a supplemental handbook for the Army Safety Center. The handbook provided a detailed taxonomy of crew coordination errors in aviation accident investigations. The ARIARDA also developed a tactical evaluation scenario for the UH-60 flight simulator at Fort Campbell, Kentucky, to determine relationships between crew coordination behaviors in the cockpit and mission performance. Lack of adequate mission planning and rehearsal were found to be two significant contributors to crew errors during these simulated missions.¹¹⁹

¹¹⁸ Philadelphia Inquirer, 13 July 90; Montgomery Advertiser, 2 Dec 90; "Early Bird," "Wire News Highlights" (Reuter), 14 May 90.

¹¹⁹ Historical report, ARIARDA, CY 90.

The U.S. Army Safety Center identified improper scanning by aviators in helicopters as a factor in Army aircraft accidents in which night vision goggles were in use. Responding to this problem, researchers of the U.S. Army Aeromedical Research Laboratory (USAARL) evaluated various methods of scanning the flight path and cockpit instruments when aviators were wearing night vision goggles. They assessed the methods used to ascertain if there was a preferred one. The hypothesis was that, with proper scanning, the safety of night vision goggle aviation operations would increase.¹²⁰

During 1990 the Fire Protection Division of the Directorate of Engineering and Housing provided fire protection support for student flight training at twenty-five different sites with an average of forty-one crews daily. The organization responded to 3,621 aircraft emergencies, 30 fires, 20 mutual aids, and 393 prehospital care runs during 1990. All of these figures except the prehospital care runs were lower than in 1989. The division also developed a mobile model of a typical two-story house to use as a trainer for young children to be taught how to react to home fires.¹²¹

The Security Division of the DPTMSEC processed 168 requests for personnel security investigations; conducted 2,389 local records; validated or issued 4,085 security clearances; denied, revoked, or suspended 26 security clearances; conducted 42 security inspections; cleared 11 classified and unclassified documents for release to industrial firms; prepared 73 replies to foreign visit requests in clearing 311 foreign nationals to visit Fort Rucker; presented threat/OPSEC briefings to 4,823 personnel; provided OPSEC reviews on a variety of documents and reports; and prepared accreditation on 117 automated systems for processing under provisions of AR 389-19.¹²²

Security guard services at Fort Rucker were provided by Liberty Protective Services until 20 April, when Fort Rucker terminated the contract for nonfulfillment of terms. A few days later, a five-month security guard contract was awarded to Remtech, Inc., of Daleville,

¹²⁰ Historical report, USAARL, CY 90.

¹²¹ Historical report, DEH, CY 90; PROFS note, Donald G Waling to DEH, 17 Dec 90, sub: fire reaction training for little people, DEH.

¹²² Historical report, DPTMSEC, CY 90.

Alabama. During the interim the provost marshal and the Military Police Activity (MPA) used soldiers detailed from all over post to provide security and also completed an independent government estimate of security requirements. The Directorate of Contracting reviewed the estimates and requested proposals from civilian companies. Remtech had an active security clearance, had already held several government contracts, and could quickly meet the Fort Rucker security guard contract requirements.¹²³

During 1990, the MPA processed and returned to military control thirty-four personnel who were absent without leave and dropped sixty personnel from the rolls. The MPA investigated 503 cases of non-felonious crimes at Fort Rucker; 480 cases were closed during the year.

In September 1990, the MPA inaugurated a community policing program whereby the same military police personnel were assigned on foot and as mobile patrols in housing areas so that the residents and the police could get to know each other; this promoted trust, communication, and cooperation and also helped to make the neighborhood watch program more effective. Later in the year, the same system was expanded to include parking lots and barracks areas.¹²⁴

The emphasis of the Fort Rucker Resident Agency (FRRA) of the Criminal Investigation Command during 1990 was in the areas of proactive detection of fraud, waste, and abuse; drug suppression operations; and improving relations between installation command elements on the one hand and civilian law enforcement agencies on the other.¹²⁵

A fraud involved in supplying parts for Apache helicopters that had been ongoing since 1983 was finally terminated and the guilty parties punished in 1990. Royce Aerospace Materials Corporation of Amityville, New York, violated contract specifications and supplied false certifications and documents to disguise the violation. Royce had the contract to supply McDonnell Douglas Helicopter Company with parts, two of which were required to be made of vacuum remelted steel. Royce substituted

¹²³ Army Flier, 3 May 90.

¹²⁴ Historical report, MPA, CY 90; Army Flier, 13 Sep 90.

¹²⁵ Historical report, FRRA, CY 90.

lower quality and cheaper vacuum degassed steel for the vacuum arc remelted steel. U.S. Army Criminal Investigation Command officers from the Phoenix, Arizona, office were credited for uncovering the contractor fraud. Royce pled guilty to a violation of Title 18, United States Code, Section 1001, and agreed to pay \$232,518 in fines and restitution.¹²⁶

Detachment 9, 5th Weather Squadron, a division of the DPTMSEC, provided twenty-four hour forecasting and observing support to the USAAVNC, tenant agencies, and several other agencies and locations in parts of Alabama, Mississippi, Georgia, and Florida. During 1990, the squadron upgraded its equipment so as to be able to provide improved services and began providing instrument flight rule climatology to the USSAVNC. The squadron also played important roles during the 1990 flood and during Desert Shield.¹²⁷

During 1990 the Administrative Law Division of the Office of the Staff Judge Advocate (OSJA), provided 389 written opinions regarding interpretation of laws and regulations affecting installation operations. The division continued to run a program barring undesirable individuals from post and streamlined the system to provide quicker responses to requests for bar orders. The division also operated a youth assistance program to deal with juvenile misconduct on post, and took steps to create more flexible community service projects designed to educate as well as punish juvenile offenders. Twenty-four youth cases were adjudicated during the year.

The Claims Division, OSJA, processed 1,413 personnel property claims amounting to \$720,436 and 107 tort claims amounting to \$31,351. Total recoveries amounted to \$508,810 (\$122,594 from household goods carriers and \$386,216 in third-party medical claims). This was the largest amount ever recovered by the division.

Not including all the soldiers processed for Operation Desert Shield, the Legal Assistance Division of the OSJA assisted approximately 12,247 clients in 1990 .

¹²⁶ Army Flier, 28 June 90.

¹²⁷ Historical report, DPTMSEC, CY 90; ATZQ-DPT-AD (95), Col Ralph J W K Hiatt for Military Airlift Command, 15 Nov 90, sub: U.S. Army requirement for direct weather service support, DPTMSEC. See Chapter VII for information on the flood and Desert Shield.

Routine legal assistance was provided in the areas of child custody, divorce, legal separation, annulment, paternity, support obligations, wills and estates, powers of attorney, taxes, landlord-tenant relations, consumer affairs, civil suits, adoptions, name changes, and naturalization/citizenship. The division continued its electronic tax filing program in 1990, filing 1,687 returns electronically. Based upon the average commercial fee, this program saved clients approximately \$97,846.

The Military Justice Division, OSJA, successfully tried nine courts-martial in 1990. The division also prosecuted traffic offenses and misdemeanors through the Federal Magistrate Court system. Personnel from the division served as recorders and advisors in administrative elimination boards and flying evaluation boards. They also assisted in the preparation of Commanding General Article 15 proceedings and memoranda of reprimand; they processed administrative eliminations and assisted in pretrial confinement procedures, congressional inquiries, and complaints under Article 138 of the Uniform Code of Military Justice.¹²⁸

K. Medical and Dental Support

In 1990, Fort Rucker's Lyster Army Community Hospital received accreditation by the Joint Commission Accreditation of Hospital Organizations, an independent organization that surveys both military and civilian hospitals. The survey team looked at three functional areas: nursing, administration, and clinical. A set of standards had to be met within each of these areas for accreditation. Lyster Hospital received a three-year accreditation, the maximum that a hospital can receive.¹²⁹

The U.S. Army Aeromedical Center (USAAMC) opened a pharmacy refill service in the main post exchange in March of 1990 to give patients more convenient access to pharmacy services and reduce the waiting time for refills. Also, the hospital pharmacy expanded its

¹²⁸ Historical report, OSJA, CY 90.

¹²⁹ Army Flier, 3 May 90.

facilities and made other changes in order to serve patients in a more efficient manner.¹³⁰

In mid-1990 Lyster Army Community Hospital was forced to begin limiting the number and amount of drugs available to outpatients because of budget constraints. Some expensive drugs became unavailable at the pharmacy, and, if less expensive drugs could not be substituted, patients were required to purchase the drugs at commercial pharmacies at their own expense or with assistance from CHAMPUS. Other cost saving measures were put into effect at Lyster to cope with the crisis created by the Health Services Command fund shortage.¹³¹

Fort Rucker was the only Army installation with a clinical hyperbaric mission and had the only hyperbaric medicine physicians in the Army. Physicians at Lyster U.S. Army Hospital were recertified on 24 August 1990 to begin performing hyperbaric treatments required by anyone in the area.¹³²

In its continued efforts to provide high quality dental care in an efficient manner, the Fort Rucker U.S. Army Dental Activity (DENTAC) maintained the annual dental exam compliance rate at 80 percent for 1990. During FY 90, the activity had over 39,000 patient visits and provided over 190,000 dental procedures.¹³³

The Alcohol and Drug Abuse Division of DPCA administered the Army's substance abuse program. During 1990, the division provided rehabilitative services for 271 military and civilian personnel. Almost 4,000 persons were provided preventive or remedial education concerning various aspects of alcohol/drug abuse. During the year, the division processed 14,291 urinalysis specimens as part of the substance abuse program. The testing effort represented a 1.91 per person penetration rate of available personnel to be tested. The positive rate on samples tested was .007 percent as compared to an Armywide rate of 2-3 percent. During 1990, the M-TDX field testing device marketed by Abbott Company was

¹³⁰ Historical report, USAAMC, CY 90.

¹³¹ Army Flier, 21 Jun, 9 Aug 90.

¹³² Historical report, USAAMC, CY 90.

¹³³ Historical report, DENTAC, CY 90.

utilized and was deemed to have performed well.¹³⁴ Of the more than 14,000 soldiers tested for drug abuse at Fort Rucker in 1990, only eleven tested positive--seven for marijuana and four for cocaine. In order to achieve maximum effectiveness, all tests conducted at Fort Rucker were unannounced.¹³⁵

L. Religion, Recreation, and Morale

The Chaplain Activities Office (CAO) personnel provided the same types of religious and counseling services described in the USAAVNC 1989 AHR. Also as in 1989, special religious events in 1990 included an Easter sunrise service, a national prayer breakfast, a Christmas drama, and a Good Friday drama. The speaker at the Easter sunrise service was the former Fort Rucker staff chaplain, Chaplain LeRoy Johnson. The 25th consecutive annual presentation of the Good Friday drama at Fort Rucker occurred in 1990.¹³⁶

The Office of the Assistant Director for Community and Family Activities, a part of the Directorate of Personnel and Community Activities (DPCA) exercised supervisory authority over the Community Operations, Community Recreation, Services, Family Support, Financial Management, and Alcohol/Drug Abuse divisions.

The Services Division provided logistical support for Community and Family Activities during 1990. The division expanded automation and implemented new guidelines to increase proficiency and implemented more consistent control over supplies and equipment during the year. Resource recovery and recycling, which began during the summer of 1989, continued performing the dual service of recovering recyclable materials and eliminating tonnage from the landfill.

The Family Support Division provided services to soldiers and their families in support of the Fort Rucker mission. The division provided assistance to deploying soldiers and their families during Operation Desert Shield, planned the first installation family Christmas party, supported the School-Age Latchkey and the Installation Volunteer programs, coordinated the post

¹³⁴ Historical report, DPCA, CY 90.

¹³⁵ Army Flier, 29 Nov 90.

¹³⁶ Historical report, CAO, CY 90.

mayoral activities and family issues, and implemented the Civilian Employee Fitness program. This program consisted of quarterly classes with a total of 290 participants.¹³⁷

In July of 1990, personnel at Fort Rucker celebrated the 25th anniversary of the Army Community Services.¹³⁸

In 1990, the Fort Rucker hunting, fishing, water safety and trapping permit fees were changed. The cost of the annual hunting and fishing permits were increased from \$10 to \$25 each, with a combination hunting/fishing permit available for \$31.50. These charges included a boating permit, however, which previously had to be purchased on a daily basis. The income from the fees was used to upgrade hunting and fishing facilities and to support the operations of the Fort Rucker Outdoor Recreation Services and Fish and Wildlife Department.¹³⁹

The Fort Rucker Youth Center opened in early August of 1990. Construction of the \$1.5 million facility began in April of 1989, and the facility became fully operational in August of 1990. The new center was located on the corner of Division Place and Seventh Avenue, building 2806.¹⁴⁰

¹³⁷ Historical report, DPCA, CY 90.

¹³⁸ Army Flier, 19 Jul 90.

¹³⁹ Army Flier, 9 Aug 90.

¹⁴⁰ Historical report, DPCA, CY 90.

CHAPTER VII
CONTINGENCY OPERATIONS

A. Operation Just Cause

The USAAVNC was not directly involved in Operation Just Cause, but Army Aviation units played a major role, and the Aviation Branch chief and USAAVNC personnel closely monitored their performance. Over 120 Army helicopters were involved in the night attack, air assault, and combat resupply during the operation. According to the USAAVNC assistant commandant, "Army Aviation was the key to mobility, flexibility, and the rapid collapse of the Panamanian Defense Force."¹

In the words of Maj. Gen. Rudolph Ostovich III: "Our performance during Operation Just Cause testified to the worth of our aviation standardization program. Our reliance on standard aviator tasks, use of standard publications, and maintenance of a disciplined aviator force proved their worth in projecting combat power, organizational flexibility, and preservation of our force."²

The USAAVNC sent the director of the Directorate of Training and Doctrine (DOTD) and Capt. William S. Ewell of the Department of Training and Simulation (DOTS) on a data collection mission for Operation Just Cause. They visited the Army Aviation units involved in the operation and various sites in the country of Panama. The Doctrine Division of DOTS was also involved in conducting after action reviews and collecting data for establishing and consolidating Army Aviation lessons learned from the operation.³

During Operation Just Cause, the need became especially evident for a moisture-free environment for

¹From notes for speech given by Brig Gen (P) Robert S. Frix, date and location not available at this time.

²Memo ATZQ-ESF (95), Maj Gen Rudolph Ostovich III for distr, 11 Sep 90, sub: DA Army Aviation standardization program and areas of interest for FY 91, DES.

³Historical report, DOTS, CY 90. The material collected has not yet been made available to the Aviation Branch History Office, but efforts are underway to obtain this and other data on Operation Just Cause.

some aircraft electronic components. Consequently, the U.S. Army Aviation Logistics School (USAALS) Directorate of Combat Developments (DCD) prepared an operational and organizational plan for an Army Aviation dehumidification system, which was to provide warm air dehumidification of crew, avionics, and electronic compartments. The plan was being staffed at the end of the year with approval anticipated in mid-1991.⁴

On 21 February 1990, during the last phase of Operation Just Cause, two Army helicopters, an OH-58 and a UH-1, crashed near the Caribbean coast of Panama, killing eleven soldiers. As a result of this accident, the total U.S. death toll from the invasion increased from the previously reported twenty-three to thirty-four. Although the Army initially stated that the helicopters were on a training mission, it later reported that the helicopters were supporting soldiers of the 7th Light Infantry Division, who were searching for Noriega loyalists. The Army also revealed that the pilots were inadequately trained for the mission and that the high demands made on aviation units during Operation Just Cause had forced a curtailment of required training and caused some commanders to assign rookie pilots to missions for which they were not qualified. In response to the investigation of this accident, the Army took a series of corrective actions with regard to aviation training and procedures.⁵

B. 1990 South Alabama Flood

Torrential rains on 15, 16, and 17 March, reportedly as much as sixteen inches during a twenty-four hour period in some areas, created serious flooding of low-lying areas of southeast Alabama and the adjacent parts of Georgia and Florida.⁶ Most of the damage in Southeast

⁴Historical report, USAALS-DCD, CY 90.

⁵Philadelphia Inquirer, 13 Jul 90; Montgomery Advertiser, 2 Dec 90. For more information about the Army's response to this investigation report, see "Safety, Security and Legal Services," in Chapter VI, above.

⁶Memo HSXY-DCA, Col John E Matt for Health Services Command, 4 Apr 90, sub: after action report for Wiregrass flood disaster, DPTMSEC; USA Today, 19 Mar 90. At the two nearest official weather reporting stations, between 5 and 6 inches fell at Cairns Army Airfield, and between

Alabama was caused by the flooding of two rivers, the Pea and the Choctawhatchee, and their tributaries. Older local residents compared the flood with the one of 1929--the only comparable one ever recorded for the region. According to the U.S. Geological Survey Office in Montgomery, Alabama, the Choctawhatchee peaked at 40.30 feet on 18 March at the town of Newton, Alabama. This was the highest ever officially recorded during the seventy-plus years that records have been kept. The next highest officially recorded peak was 31.26 feet, recorded on 27 January 1978, but some unofficial records indicate that the peak during the flood of 1929 (during which record-keeping had been temporarily suspended) was comparable to that of 1990. The U.S. Geological Survey Office has not systematically gathered data on the Pea River, but the estimate of that office was that the Pea River at Elba peaked at 43.28 feet on 17 or 18 March 1990--well over the peak on 20 February 1975 of 37 feet and comparable to unofficially estimated peak in March of 1929 of 43.50 feet.⁷

On 17 March a gaping hole appeared in the levee on the Pea River near the town of Elba. Shortly afterwards most of the town was flooded. The town of Geneva, south of Elba and also on the Pea River, was saved from the same fate by the extensive use of sandbags to stop leaks and shore up the levee. Thousands of people in the valleys of both rivers were forced to evacuate their homes, and the property damage was estimated to be in the billions of dollars.* The heavy rains also caused the earthen, emergency spillway of the dam of Lake Tholocco on Fort Rucker to erode away, and therefore the water drained from the 837 acre lake into a tributary of the Choctawhatchee River.

At 0500 on 17 March, the USAAVNC activated the post disaster control program and prepared to provide required services to the communities of the area. In accordance with the FORSCOM military assistance to civil authority plan and Public Law 93-228, the USAAVNC was tasked with providing assistance to the community. Fort Rucker was

9 and 10 inches at Troy, Alabama, approximately 40 miles to the north of Fort Rucker.

⁷Notes on telephone conversation between author and Mr Leroy Pearman of the U.S. Geological Survey Office in Montgomery, Alabama, 2 May, 1991, Chapter VII file.

*Enterprise Ledger, 19 Mar 90; Dothan Eagle, 19 Mar 90.

designated as the base support installation and was also assigned responsibility for conducting aerial missions for various purposes.⁹

Several organizations from Fort Rucker provided emergency assistance to the victims of the flood, both during the flood itself and during the cleanup period after the waters receded. One of the earliest and most dramatic forms of disaster relief provided by Fort Rucker was that provided by the Air Ambulance Division (Flat Iron) of the U.S. Army Aeromedical Center (USAAMC). Four helicopters and crews were ready and available for service within two hours after the alert was sounded. During the three-day period from 17 through 19 March, Flat Iron flew forty-two missions, transported forty-nine patients and fifty-five passengers, and rescued five persons by hoist extrication.¹⁰ Among its many other services, Flat Iron evacuated twenty people from an Elba, Alabama, trailer park before the park was inundated by flood waters.¹¹

Another Fort Rucker organization that began providing emergency support to area residents on the first day of the flood was the Fire Protection Division of the Directorate of Engineering and Housing (DEH). Firemen performed rescue operations, controlled fuel leaks, performed cleanup, and provided other emergency assistance. Several incidents required the special response team and vehicles for control of ruptured gas lines and for other hazardous situations. More than seventy-five firemen participated in the rescue work, in relocating victims of the flood, or in cleanup operations after the flood waters subsided.¹²

⁹E-Mail note, Cecil High to distr, 23 Mar 90, sub: disaster assistance, DOL; Memo HSXY-DCA, Col John E Matt for Health Services Command, 4 Apr 90, sub: after action report for Wiregrass flood disaster, DPTMSEC.

¹⁰Memo HSXY-DCA, Col John E Matt for Health Services Command, 4 Apr 90, sub: after action report for Wiregrass flood disaster, DPTMSEC.

¹¹Historical report, USAAMC, CY 90.

¹²Historical report, DEH, CY 90; The Dothan Eagle, 18 Mar 90; Memo ATZQ-DPT-P (500-5c), Donald Ford for GC, 29 Mar 90, sub: disaster assistance 16-28 March 1990, DPTMSEC.

On 20 March, eighty soldiers of the 13th Aviation Regiment of the 1st Brigade were sent to Geneva to assist in repairing the levee to prevent its collapse.¹³ Many other soldiers of the 1st Aviation Brigade provided assistance to the victims of the 1990 flood. This assistance included small boat and helicopter rescue, medical aid, salvage and clean-up operations, and personal donations of food, clothing, shelter, and money.¹⁴

The Fort Rucker troops who provided emergency assistance to the victims of the flood included ATB (Augmentation) USAR aviators, who flew over 150 flight hours in humanitarian support of the victims. The flying hours for two to three aircraft per day were funded by the USAR Advisor's Office.¹⁵ The 1st of the 223rd Aviation Battalion, Aviation Training Brigade (ATB), flew numerous missions for purposes of search and rescue, transport, passenger service, inspections, and other functions.¹⁶

The 46th Engineer Battalion sent troops and equipment to Daleville and Elba to remove debris during the week following the flood. Valuable assistance in the clean-up of debris in the town of Elba was also provided by 200 personnel from the Warrant Officer Candidate School. Assistance was also provided to area communities by the military police and by some other Fort Rucker organizations.¹⁷ For example, Detachment 9, 5th Weather Squadron, provided daily precipitation forecasts, overflight briefings for visiting dignitaries, and search and rescue briefs.¹⁸ Also, the Directorate of Logistics (DOL) submitted daily situation reports, assisted the Red

¹³ ATZQ-DPT-P (500-5c), Donald Ford for GC, 29 Mar 90, sub: disaster assistance 16-28 Mar 90, DPTMSEC.

¹⁴ Historical report, 1st Brigade, CY 90.

¹⁵ Historical report, USAR Advisor's Office, CY 90.

¹⁶ Memo ATZQ-DPT-P (500-5c), Donald Ford for GC, 29 Mar 90, sub: disaster assistance 16-28 Mar 90, DPTMSEC.

¹⁷ Ibid.; Msg 021900Z Apr 90, CINCFOR to DIRMILSPT, sub: Alabama disaster relief operations, DPTMSEC.

¹⁸ Historical report, DPTMSEC, CY 90.

Cross in storing supplies for flood victims, and provided additional aircraft maintenance.¹⁹

The total cost of Fort Rucker's disaster assistance during and following the flood was \$53,371.78. Of this total, civilian labor was \$5,072.45; DOL equipment and supplies cost \$1,068.17; the costs incurred by the 46th Engineers was \$13,856.35, the 223rd Aviation Battalion aircraft support amounted to \$18,462.26; and the cost for Flat Iron support was \$14,933.26. The total man-hours (not including Flat Iron man-hours) was 2,758.3. The total number of flight hours was 151.4. Approximately 950 military and 23 civilian personnel participated.²⁰

In addition to providing disaster relief during the aftermath of the flood, the 46th Engineer Battalion, working with the Corps of Engineers, Mobile District, repaired the damaged spillway and dam of Fort Rucker's Lake Tholocco. They also also repaired piers, built islands and points in the north end of the lake, and developed erosion control measures. This work lasted approximately eight months and was completed shortly before the battalion deployed to Saudi Arabia.²¹

C. Operation Desert Shield

Shortly after the Iraqi invasion of Kuwait on 2 August, the Aviation Center became involved in Operation Desert Shield mobilization activities. On 9 August, three FORSCOM units at Fort Rucker were alerted for possible deployment. These three were the 2nd Battalion of the 229th Aviation Regiment (an attack helicopter battalion), the 46th Engineer Battalion, and the 256th Signal Support Company. From August through December, twenty-six ARNG and USAR units, consisting of over 2600 personnel, were mobilized at Fort Rucker. Nineteen of these units deployed to Southwest Asia before the end of the year. Also, individual deployments consisted of 138 personnel from the USAAVNC at Fort Rucker and 65 from the

¹⁹ Historical report, DOL, CY 90.

²⁰ Memo ATZQ-DPT-P (310-1q), Maj Douglas M Taylor for director DPTMSEC, sub: disaster assistance roll-up--17 Mar 90 through 3 Apr 90; Memo ATZQ-DPT-P, Cecil A High for CG, 16 Apr 90, sub: disaster assistance roll-up--17 Mar 90 thru 3 Apr 90.

²¹ Historical report, 1st Brigade, CY 90; Army Flier, 16 Aug 90.

USAALS at Fort Eustis. A total of thirty-eight physicians and medical support personnel were deployed to Southwest Asia in support of the operation. Fort Rucker personnel additionally managed the mobilization of approximately 4200 personnel, consisting for the most part of the 155th Armor Brigade, at Camp Shelby, Mississippi.²²

The 2-229th was the first unit to deploy from Fort Rucker to Southwest Asia. In preparation for deployment, the 2-229th began filling personnel and equipment shortages immediately after the alert. There was no difficulty in identifying aviation personnel to fill spaces and in providing necessary equipment to the 2-229th. Augmentees were taken from the DOTS, the Directorate of Evaluation and Standardization (DES), and other organizations. A five-man pathfinder team and eighteen other soldiers from the 1st of the 10th Aviation Regiment deployed with the 2-229th. There was initially some confusion and duplication of orders in effecting the transfers but no major problems.²³

During the period from 9 August to 4 September the Aircraft Logistics Management Division of the DOL and DynCorp, the aircraft maintenance contractor, provided logistics support in preparing the 2-229th for deployment. DynCorp expended 11,200 man-hours to accomplish the following: complete four OH-58C and four AH-64 phase inspections; complete unscheduled maintenance and repair deficiencies on eighteen AH-64, 13 OH-58, and three UH-60 helicopters; send fifty-four maintenance personnel to Fort Benning, Georgia, disassemble and load the aircraft on C-5A transport aircraft; and accomplish other deployment requirements. DynCorp issued 5,317 repair parts to the unit at a cost of \$4,567,095. This effort and expense enabled the unit to deploy with 100

²² 'Desert Storm--USAAVNC's Mobilization Effort,' briefing papers prepared by DPTMSEC, Chapter VII file; Historical report, USAAMC, CY 90.

²³ Memo ATZQ-BDE (525a), Capt William J Marchbank for cdr 1st Bde, 29 Jan 91, sub: Operation Desert Shield lessons learned and after action review, 1st Brigade; Historical reports, 1st Brigade, DOTS, and DES, CY 90.

percent of its aircraft in a fully mission-capable status.²⁴

Desert uniform issue began on 15 August. Preparation for overseas movement began on 10 August and continued through 21 August. Soldiers joining the battalion after it was deployed to Saudi Arabia were processed by the rear detachment and various Fort Rucker agencies.

The 2-229th conducted ground and air deployment simultaneously, which caused problems in meeting both objectives at separate locations. Half of the battalion's basic load was transported by air and consisted of 144 Hellfire missiles, 432 HE 2.75" rockets, 10,000 rounds of 30mm HEDP, and small arms. Some vehicles and rolling stock departed by land for Jacksonville, Florida, to be transported by sea; others departed for Fort Benning, Georgia, to be transported by air. All vehicles and equipment were available for shipment at the port of Jacksonville by 16 August. This equipment was divided up and shipped in three separate vessels. The last of the battalion's property did not arrive at the port in Dhahran, Saudi Arabia, until 30 September. The battalion flew its aircraft from Fort Rucker to Lawson Army Airfield at Fort Benning on 15 August. The aircraft were disassembled and loaded on C-5A aircraft and arrived in Saudi Arabia on 24 August.²⁵

The second Fort Rucker FORSCOM unit to deploy was the 256th Signal Support Company. The lead party of the 256th departed Fort Rucker for Fort Bragg, North Carolina, on 17 August. After further training, fourteen company personnel deployed to Saudi Arabia, via a Northwest Airline 747, on 18 September. Four additional

²⁴ Memorandum for record AFFR-BAH-O, Lt Col William H Bryan, 17 May 91, sub: Operations Desert Shield and Desert Storm after action report for 2-229th, Desert Shield 2-229th file; Historical report, DOL, CY 90.

²⁵ Memorandum for record AFFR-BAH-O, Lt Col William H Bryan, 17 May 91, sub: Operations Desert Shield and Desert Storm after action report for 2-229th, Desert Shield 2-229th file; Army Flier, 16 Aug 90; Transcript of interview with Capt John Hodge by Dr Burton Wright III, 28 May 1991, oral history files.

company personnel left Fort Rucker four months later and joined the unit in Saudi Arabia on 12 December.²⁶

The third Fort Rucker FORSCOM unit to deploy, the 46th Engineer Battalion, encountered some problems in obtaining specific MOSs, equipment, and parts to prepare for deployment. Considerable quantities of new equipment were acquired, and with the assistance of DOL and government contractors, other equipment was brought up to 10/20 standards. The equipment of the 46th Engineers was divided into four convoys to avoid unnecessary traffic congestion. Each convoy left Fort Rucker on different days during the last week of September. Since the battalion had enough trucks to move only 60 percent of its equipment, between eighty and ninety tractor trailers were contracted to transport the other 40 percent to the port. The equipment was moved to the port of embarkation (Jacksonville, Florida) and stored to await shipment. The soldiers of the 46th returned to Fort Rucker to await deployment orders. After the equipment had been shipped and was en route to the Middle East, the soldiers departed Fort Rucker to travel by air to Saudi Arabia on 20 and 21 October. Since the 46th had a two-month period to prepare for its deployment, it was in good shape by its deployment date. The first equipment arrived around 3 November, and the rest of it came in later in the month.²⁷

Shortly after the beginning of Operation Desert Shield, the "Food and Forage Act" (41 U.S.C. 11) was invoked on 24 August. This authorized military departments to incur obligations in support of the operation in excess of appropriations available and also generated numerous reporting requirements for Fort Rucker's Directorate of Resource Management (DRM). Detailed reports were prepared and submitted beginning in August and continuing through the calendar year. In accordance with guidance received, the bulk of Desert

²⁶ "Desert Storm--USAAVNC's Mobilization Effort," briefing papers prepared by DPTMSEC, Chapter VII file; [Memo] AFFR-SSC, 5 Oct 90; sub: after action report, Operation Desert Shield, Desert Shield 256th Sig Co file; Army Flier, 17 Jan 91.

²⁷ Memo ATZQ-BDE (525a), Capt William J Marchbank for cdr 1st Bde, 29 Jan 91, sub: Operation Desert Shield lessons learned and after action review, 1st Brigade; Historical report, 1st Brigade, CY 90; Army Flier, 4 and 25 Oct 90; Transcript of oral interview with Capt David Berczk by Dr Burton Wright III, 30 May 91.

Storm expenditures were charged to the FORSCOM budget, but some costs were also charged to the TRADOC budget. The post's Desert Storm expenditures for FY 90 were \$642,000 for TRADOC and \$3,822,200 for FORSCOM. Expenditures for the first quarter of FY 91 were \$5,145,000 for TRADOC and \$10,147,000 for FORSCOM.²⁸

The Fort Rucker Emergency Operations Center (EOC) started operations on Operation Desert Shield on 9 August and held briefings daily, two or three times a week, or weekly, as the situation warranted for the remainder of the year. The briefings included analyses of the threat, authoritative descriptions of the deployment and strength of Iraqi and allied forces, and the status and disposition of mobilizing and deploying forces.²⁹ In addition to conducting briefings in the EOC on Iraqi deployments and posture from one to five times weekly, The Fort Rucker Threat Support Office published a classified bulletin on Iraqi helicopter and air defense threat to Army Aviation.³⁰

Following the Presidential order of 27 August to mobilize up to 200,000 reserve component soldiers, the level of activity of the EOC and of almost all Fort Rucker organizations increased considerably. Between 29 August and 30 December, twenty-six reserve units, comprising 2656 personnel, were mobilized at Fort Rucker. Twenty-one of these units were ARNG, and five were USAR. Most of the ARNG units were from Alabama, but four were from Mississippi. By the end of 1990, nineteen of these units had deployed to Southwest Asia, and the others were preparing for deployment.³¹

²⁸ Msg R 312200Z Aug 90, cdr FORSCOM to AIG, sub: financial management operations under RS. 3732 authority, DRM; Msg O 102145Z Aug 90, DA to distr, sub: financial impact of Desert Shield, DRM; E Mail note, Richard Cole, to distr, 26 Oct 90, sub: Desert Shield message #12, DRM; Historical report, DRM, CY 90; Addendum to historical report, DRM, CY 90.

²⁹ Based on author's personal involvement and notes on telephone conversation with Glenn Reeder (EOC), 27 Jun 90, Chapter VII file.

³⁰ Historical report, DCD, CY 90.

³¹ "Desert Storm--USAAVNC's Mobilization Effort," briefing papers prepared by DPTMSEC, Chapter VII file; Army Flier, 1 Nov 90.

Most Fort Rucker units were involved to some extent in the mobilization, training, or preparation for overseas movement of the activated reserve component troops or in general support of the mobilization effort. The following paragraphs describe some of the efforts of several organizations that submitted reports to the Aviation Branch History Office. More complete information will be available later.

The 1st Aviation Brigade played a major role in Operation Desert Shield. Not only were two of its units deployed (the 2-229th and the 46th Engineer Battalion), but the 1st Battalion of the 10th Aviation Regiment was especially heavily involved in the Desert Shield mobilization process at Fort Rucker. The brigade provided command and control for the training of twenty-five mobilized reserve component units with over 2500 personnel assigned. While the reserve component units were being processed for deployment, they were attached to the 1-10th for Uniform Code of Military Justice, rations, and administration. Likewise, rear detachments of the 2-229th and 46th Engineers, as well as non-deployable reserve component personnel, were attached to the 1-10th. These reserve component personnel, initially classified as non-deployable, eventually either joined their units or were sent home.³²

The USAAVNC Finance and Accounting Office assumed financial support of approximately 7500 USAR and ARNG personnel at Fort Rucker and at Camp Shelby. The very heavy workloads experienced by persons in that office were somewhat alleviated in December, when the work force was augmented at both Fort Rucker and Camp Shelby with reserve component personnel.³³

The DOL was intensely involved in several aspects of the mobilization effort. The Plans and Operations Division of the directorate activated a twenty-four-hour logistical operations center to coordinate logistical support for all mobilized units, gave briefings on logistics at the EOC, submitted daily situation reports to FORSCOM providing the status of equipment shortages and maintenance problems, and attended validation meetings to ensure unit readiness for deployment. Other support provided by the DOL included providing around-the-clock assistance to mobilized units preparing for deployment, inspecting and repairing equipment to 10/20

³² Historical report, 1st Brigade, CY 90.

³³ Historical report, DRM, CY 90.

standards, repairing and maintaining vehicles, and providing transportation for personnel from Fort Rucker to the ports of embarkation. The DOL provided assistance with palletizing cargo and scheduling line hauls to move the unit to either air or sea ports of embarkation. The DOL additionally requisitioned and obtained chemical protective equipment, desert camouflage uniforms and other items prior to a unit's departure. Due to the massive quantities of clothing and chemical defense equipment required, a separate warehouse was set up to accommodate the mobilization effort.

The Transportation Division of DOL made a total of 345 shipments for twenty-two units deploying for Southwest Asia. Forty-two of these were to the aerial port of embarkation at Fort Benning, Georgia, 257 were to the water port of embarkation at Jacksonville, Florida, 10 shipments were to the military air terminal at Dover Air Force Base, Delaware, 30 shipments were to New Cumberland Army Depot, Pennsylvania, 4 shipments were to the water port of embarkation at New Orleans, Louisiana, and 2 shipments were directly to Dhahran, Saudi Arabia. A total of 3680 persons from Fort Rucker (or who had been mobilized at Fort Rucker) were deployed through the aerial embarkation facilities at Fort Benning from August through December 1990.³⁴

Several branches of the Military Personnel Division of the DPCA (formerly Adjutant General) were involved in the personnel aspects of the mobilization effort. The division processed over 4000 soldiers, comprising two active duty units and twenty-five reserve component units at Fort Rucker for deployment to Saudi Arabia. This processing consisted of screening to ensure that all documents were current and that all soldiers had ID cards and tags. The division also checked and analyzed the strength of each unit.³⁵

As reserve component units were activated and prepared for deployment, the Directorate of Reserve Component Support provided billeting and administrative support for more than 850 soldiers.³⁶

The DEH supported the mobilization effort by preparing buildings to be used as quarters by reserve

³⁴ Historical report, DOL, CY 90.

³⁵ Historical report, DPCA, CY 90.

³⁶ Historical report, DRCS, CY 90.

component soldiers. The DEH also constructed over 900 crates for both air and sea shipment of equipment.³⁷

The USAAMC examined the mobilized soldiers to ensure that each soldier was physically qualified for deployment to the Persian Gulf region. Also, the USAAMC was designated as a secondary treatment site for casualties returning from the Middle East.³⁸

The U.S. Army Dental Activity (DENTAC) at Fort Rucker provided mobilization dental services to both active duty soldiers and to reserve component soldiers called to active duty in support of the operations. The normal complement of twelve dental officers was bolstered for this mission by an additional seven reserve dental officers and fourteen enlisted soldiers.³⁹

The Legal Assistance Division, Office of the Staff Judge Advocate (OSJA), played a key role in the processing of active duty and reserve component soldiers in support of Operation Desert Shield. From August through December 1990, the division processed approximately 1070 active duty soldiers (preparing 430 wills and 600 powers of attorney) and 2825 reserve component soldiers (preparing 184 wills and 229 powers of attorney). The OSJA also briefed deploying ARNG and USAR soldiers regarding the Soldiers' and Sailors' Civil Relief Act.⁴⁰

Not only were USAAVNC personnel responsible for mobilization activities at Fort Rucker, but they also had the mission of deploying to Camp Shelby, Mississippi, in December for the mobilization of the 155th Armored Brigade and one small additional unit of the Mississippi National Guard. Approximately 4200 soldiers were mobilized at Camp Shelby. During the mobilization of the 155th Brigade, five railroad trains moved 642 pieces of equipment (97 percent of which were tracked vehicles), three convoys moved 809 wheeled vehicles, and fifty-eight buses moved 2316 passengers. Camp Shelby was a remotely located, state-owned facility, with insufficient and antiquated facilities and where many of the support

³⁷ Historical report, DEH, CY 90.

³⁸ Historical report, USAAMC, CY 90.

³⁹ Historical report, DENTAC, CY 90.

⁴⁰ Historical report, OSJA, CY 90.

personnel continued on the state payroll. These conditions gave rise to numerous problems.⁴¹

The Transportation Division of DOL coordinated the movement by railroad of the armored brigade to Camp Shelby and then its transportation from Camp Shelby to Fort Hood, Texas, where the brigade underwent training in preparation for deployment.⁴²

The USAAVNC DENTAC was also involved in the deployment to Camp Shelby, Mississippi, for the mobilization of the 155th Armored Brigade troops there. This operation revealed serious command and control, logistics, communication, clinical support, patient care, and personnel problems. In the first place, the reserve component personnel mobilized by the Fort Rucker DENTAC were found to be in poor dental condition, and this further strained materiel and personnel resources. Secondly, the in-place equipment, facilities, and personnel were inadequate to support both the Fort Rucker community and Camp Shelby. The DENTAC was funded to buy \$80,000 worth of off-the-shelf dental equipment. The dental operation at Shelby was set up in a small run-down existing clinic, a seventy-two foot temper tent, and a large garage-like structure. The DENTAC operation at Camp Shelby ultimately had seventeen officers and thirty-four enlisted soldiers. Additional personnel from Forts Lee, Meade, Jackson, Gordon, and Benning, along with the area dental laboratory at Fort Gordon, were attached to the Fort Rucker DENTAC for duty at Camp Shelby. Since there was no standard automation process used by all agencies involved in the mobilization process, the DENTAC created a simple data base to handle all mobilized soldiers; this greatly reduced the processing time of soldiers and facilitated the flow of information.⁴³

⁴¹ "Desert Storm--USAAVNC's Mobilization Effort," briefing papers prepared by DPTMSEC, Chapter VII file; Historical report, DENTAC CY 90; Notes on telephone interview by author with Lt Col Coachys, 8 Apr 91, Chapter VII file.

⁴² Historical report, DOL, CY 90.

⁴³ Memo HSBZ-DA, Col Robert L Childress for HQ U S Army Health Services Command, 1 Apr 91, sub: Operation Desert Shield/Storm after action information (also encls), DENTAC; Historical report, DENTAC, CY 90.

The USAAVNC, Military Personnel Division, the DPTMSEC, and the USAAMC also supported the mobilization of the soldiers at Camp Shelby.⁴⁴

Following the partial mobilization order of 17 August, the Fort Rucker USAR Advisor's Office shifted its emphasis towards preparation for mobilization of reserve component personnel in support of Operation Desert Shield. By the end of November, the office had identified 233 retired military instructor pilots to be placed on hip-pocket mobilization orders to assist in the expanded Fort Rucker mobilization training if and when necessary. Upon determining that it would be difficult to find the 128 qualified civilian flight instructor positions slated to be filled by civilians, the USAR Advisor's Office submitted a request to the ARPERCEN Retiree Mobilization Branch to place additional retirees on hip-pocket orders to make up the anticipated shortage. None of these instructor pilots was mobilized prior to the end of 1990. The USAR Advisor's Office was also directly responsible for the coordination required to bring four aviators with critical MOSs (OH-58D and CH-47D) on active duty to deploy to Southwest Asia. Also, the office was instrumental in providing the Aviation School with three CH-47D and one OH-58D flight instructors during 1990.⁴⁵

The Aviation Technical Library devoted a considerable portion of its resources and staff time to the support of Desert Shield during the latter part of 1990. The library published or distributed over sixty different items, including maps, information packets, technical reports, bibliographies, and other special documents. These materials were supplied to Fort Rucker staff, students, permanent party personnel, and the reservists processed through Fort Rucker. The library distributed a total of approximately 30,000 items. The library staff also performed literature searches and scanned all incoming documents, periodicals, and other materials for useful information relating to Desert Shield.⁴⁶

During Operation Desert Shield, the Fort Rucker Public Affairs Office experienced a dramatic increase in

⁴⁴ Historical reports, USAAMC, DPTMSEC, and DPCA, CY 90.

⁴⁵ Historical report, USAR Advisor's Office, CY 90.

⁴⁶ Historical report, DOTD, CY 90.

inquiries from the media and the public. Approximately one-half of the increase consisted of requests about people that were not stationed or trained at Fort Rucker or equipment not stationed there.⁴⁷

The USAVVNC Directorate of Contracting provided priority contracting support for Operation Desert Shield mobilization efforts at both Fort Rucker and at Camp Shelby. A total of 1,218 high-priority purchase requests were processed through the directorate from August through December, resulting in purchases totaling \$3 million. Also, the directorate sent several persons on TDA assignments to Camp Shelby during the month of December to provide on-site support for contracting operations associated with mobilization.⁴⁸

The Chaplain Activities Office (CAO) conducted many activities related to the deployment of soldiers to Southwest Asia. A chaplain was present at the preparation for overseas movement site throughout the mobilization process, and planning and training sessions were held with local churches, ARNG and USAR chaplains, and various area agencies. Seven ARNG and USAR chaplains were deployed through Fort Rucker for duty in Southwest Asia. The CAO assisted in training, equipping, and supporting these chaplains.⁴⁹

During the latter part of January 1991, the 1st Aviation Brigade conducted an after action review (AAR) focusing on the brigade's conduct of Desert Shield mobilization up to that point. The 1st Brigade's organizational plan for Desert Shield mobilization was based on the Fort Rucker Mobilization Plan dated August 1990. The AAR addressed both reserve component issues and the deployment of active units. One of the problems identified was the absence of a single decision maker who could exercise authority over all organizations involved and who was also readily available to resolve any conflicts or problems that arose.

With regard to the deployment of active units, the AAR recommended that detailed plans for the plus-up of deploying units be placed in the Fort Rucker Mobilization

⁴⁷ Historical report, PAO, CY 90.

⁴⁸ A list of these request numbers with dates and amounts is in the History Office 1990 files, DOC; Historical report, DOC, CY 90.

⁴⁹ Historical report, CAO, CY 90.

Plan. Some TRADOC TDA soldiers were notified at the last moment that they would be deploying with the 2-229th. Some were not mentally prepared and some did not have their medical records, emergency data cards, and other documentation in proper order. The AAR recommended that all soldiers be reminded that they would be subject to attachment or assignment to deploying units at any time and that all units be required to maintain an EDRE file and conduct NBC and weapons training one time per year. Another AAR recommendation regarding deployment of active units was that the assumption should be made that any deployment was for an indefinite period and that formerly occupied quarters would be used by other units.⁸⁰

Some specific recommendations of the AAR relating to reserve component units included the following: involvement of the DPTMSEC in the scheduling of training so as to improve coordination; augmentation of staffing for mobilization from reserve components and other sources; continuation of daily report system devised during the operation; increased use of teleconferences, particularly prior to each increment of mobilization and demobilization; arrangement for the arrival of reserve component advance parties to arrive three to five working days before the main body of the unit; development of a policy concerning private vehicles and visitors on post; increased reserve component emphasis on dental health; earlier identification of non-deployable soldiers; development and publication of guidelines for replacement of non-deployables; better coordination of the use of firing ranges so as to give priority to units being mobilized; and better coordination with reserve component units prior to their departure from home station to ensure that they brought proper equipment.⁸¹

The Army Materiel Command Logistic Assistance Office (AMC LAO) furnished maintenance and/or supply assistance to almost all of the units that mobilized through and deployed from Fort Rucker. The office also collected lessons learned data on Operation Desert Shield, provided feedback to AMC headquarters and other interested commands. Representatives from the office also assisted

⁸⁰ Memo ATZQ-BDE (525a), Capt William J Marchbank for cdr 1st Bde, 29 Jan 91, sub: Operation Desert Shield lessons learned and after action review, 1st Brigade; Historical report, 1st Brigade, CY 90.

⁸¹ Memo ATZQ-BDE (525a), Capt William J Marchbank for cdr 1st Bde, 29 Jan 91, sub: Operation Desert Shield lessons learned and after action review, 1st Brigade.

new equipment training teams as new equipment was received by units preparing to deploy.⁵²

The Doctrine Division of DOTS collected data from various sources to publish "U.S. Army Aviation Desert Operations: Tactics, Techniques, and Procedures, Southwest Asia Focus" in November 1990. This publication was developed to provide desert-oriented tactics, techniques, and procedures to aviation soldiers deployed in Operation Desert Shield. It contained information gathered from numerous sources, including field manuals, training circulars, technical documents, studies, after action reports from Operation Bright Star, and lessons already learned from Operation Desert Shield. The document was reviewed by seasoned aviators and maintainers with recent experience in Saudi Arabia, Kuwait, and Iraq. The publication was not intended to be a sole-source document, but to be used in conjunction with existing doctrinal manuals and other materials to help aviation soldiers perform their missions. It described culture, climate, area military forces, desert air operations, ground operations, aviation maintenance, reconnaissance, chemical warfare, and other topics.⁵³

The Materiel, Logistics, and Systems Division of DCD supported the operations in the Middle East in a variety of ways. First, it obtained TRADOC approval of the required operational capability for the aircrew integrated helmet system and the laser eye protection for limited use in Operation Desert Shield. The division also identified portable global positioning system receivers as the interim solution to the navigation problems that aviation units encountered in Saudi Arabia. Also, in cooperation with AVSCOM, the division produced and regularly updated a matrix of the actions and status of all aircraft in the theater.⁵⁴

Operation Desert Shield exacerbated the already existing shortage of OH-58Ds and of OH-58D qualified aviators. In keeping with the plan to try to send the

⁵² Historical report, AMC LAO, CY 90; E-Mail notes, LAOOTRUC to AMCRE, 21 Aug, 15 Sep, 28 Sep, & 20 Nov 90, subs: LAO continuing support challenge during Desert Shield, assessment and analysis of deployment in support of Desert Shield, WSAR, & lessons learned Operation Desert Shield, all filed at TAB C, AMC LAO.

⁵³ USAAVNC, Nov 90.

⁵⁴ Historical report, DCD, CY 90.

Kiowa Warrior to the field with two pilots and to transfer OH-58Ds to air reconnaissance units, the USAAVNC requested that the Fort Sill training assets (four OH-58Ds and two instructor pilots) be transferred to Fort Rucker. The Fort Sill commander, the TRADOC commander, and HQDA approved the request. By the end of 1990, over half of the Army's OH-58D fleet was involved in Operation Desert Shield. The deployed force requested assistance from the USAAVNC to train qualified OH-58D pilots on left seat systems operations. Commanders would then be postured to employ two-pilot crews instead of a pilot and an observer. The USAAVNC TSM OH-58D played a key role in coordinating the required personnel and equipment to accomplish this training.⁶⁶

In response to the critical shortage of left-seat qualified OH-58D aviators, the USAAVNC DOTS sent a mobile training team to Saudi Arabia to conduct left-seat academic training during the months of September and October. The team trained fourteen aviators in mast-mounted sight operations, airborne target handover systems, and artillery missions with data link systems. The training was marginally adequate to qualify aviators in the left seat missions. Simulator training was not followed by hot cockpit training due to lack of airframes and other factors. Most units had to send the aviators to Bahrain for the cockpit training.⁶⁶ The USAAVNC DES deployed one OH-58 standardization pilot to Saudi Arabia to support the operation.⁶⁷

Army aviators found the Saudi Arabian desert to be a harsh flying environment. Several OH-58Ds were involved in mishaps during the first few weeks of the deployment. Lack of visual references was one of the greatest problems encountered by OH-58D aviators in the desert. Consequently, a decision was made to send aviator's night vision imaging system display symbology systems to be placed on the Desert Shield OH-58D fleet to assist crews, but the systems did not arrive in time. A software

⁶⁶ Historical report, TSM-OH-58D, CY 90; E-Mail note, Col Ralph Hiatt to Maj Gen Ostovich, 19 Nov 90, sub: termination of OH-58D AFSO training, TSM-OH-58D.

⁶⁶ Memo, ATZQ-DOT-AS, CWO4 Howard R Anderson for dir DOTS, 23 Oct 90, sub: trip report, Saudi Arabia left seat academic training, DOTS; Historical report, DOTS, CY 90. See "OH-58C and OH-58D" in Chapter V for more information on left-seat aviators for OH-58Ds.

⁶⁷ Historical report, DES, CY 90.

change was incorporated into the Warrior that, among other things, doubled the radar altimeter reading and presented a low altitude audio warning if the aircraft descended below a selected elevation.**

Beginning in September and continuing for the remainder of the year, the TPO-Apache and TSM-ATAWS offices at Fort Rucker compiled data and sent messages so as to keep all AH-64 units informed of the latest pertinent data, lessons learned, and guidance relating to various problems experienced or anticipated with the AH-64. These messages concerned the firing of Hellfire missiles, fittings on the M-43 protective mask, the TADS computer subsystem, the shaft driven compressor, sand contamination in the aft avionics bay, clogging and sticking of the environment control unit, sand contamination of the video recorder, the fuel boost pump, sticking of the intercommunications system, engine nose gearboxes, chemical decontamination, engine performance checks, engine particle separators, installation of the AN/ALQ 136 receiving antenna, maintenance of the Hellfire launcher, and several other matters. The purpose was to educate Apache crews to cope with the problems of operating the aircraft in a desert environment.**

In response to a tasking from FORSCOM, the USAALS DCD calculated aviation maintenance manpower requirements for the Desert Shield task force. The assigned task was to determine the differences in aviation maintenance MOS requirements between Desert Shield unit TOE authorizations prior to deployment, on the one hand, and what the authorizations should be for the task force configuration, on the other. The differences stemmed from a change in the mix of task force aircraft by type after deployment, a different baseline for determining MOS requirements, and the fact that the TOEs before deployment were understated. The calculations were sent to FORSCOM in September. They showed that there was little difference between pre-deployment and post-deployment overall numbers of maintenance personnel requirements, but that there were significant differences when looked at from the individual MOS perspective; i.e., some MOSs were overstaffed and others were understaffed.

** Historical report, TSM OH-58D.

** Msgs 050800Z Sep 90, 121300Z Sep 90, 020800Z Nov 90, 171400Z Dec 90, 281600Z Dec 90, cdr USAAVNC to AIG, sub: user flash (nos. 1-6)--lessons learned, TPO-Apache.

The USAALS DCD also provided subject matter expert assistance in coordinating the shipment of various items of aircraft ground support equipment to Saudi Arabia. The USAALS had originally developed requirements documents for these items, and an early need for them had been identified by Desert Shield units. The items included unit maintenance aerial recovery kits, battle damage assessment and repair kits, and aviation vibration analyzers.

The USAALS DCD successfully performed flight testing of the interim unit maintenance aerial recovery kit for the lifting of UH-60, AH-64, and OH-58D aircraft during 1990. Some of these kits were then shipped to the Middle East to support Desert Shield operations in Saudi Arabia.

Also in 1990, a vastly improved rotor track and balance system, the Army vibration analyzer, was first sent to the field. This system was expected to virtually eliminate corrective action guesswork and reduce aircraft downtime throughout the Army. The contractor completed initial key personnel training in August, and the system was shipped to Saudi Arabia in support of Desert Shield.⁶⁰

The U.S. Army Safety Center (USASC) supported Operation Desert Shield by developing countermeasures and prevention programs targeted at both aviation and non-aviation accident producers. In August of 1990, the Safety Center published a safety guide for Desert Shield leaders, and in December it revised the publication and included Desert Shield lessons learned. A task force under the USASC Directorate of Force Integration was created, reliable and rapid communication was established between the theater and the Safety Center, and more than 100 DA civilians volunteered for deployment and duty as safety personnel in Operation Desert Shield. An accident investigation team was kept in Saudi Arabia on a rotating basis during the period of Operation Desert Shield.⁶¹

In response to a message from U.S. Army Central Command (ARCENT) during the fall of 1990, the Department of the Army directed the U.S. Army Air Traffic Control Activity (USAATCA) to conduct an assessment of air traffic services in Southwest Asia and to provide assistance in correcting deficiencies. A team consisting of the commander of the USAATCA and of one representative each from the Third Army and the National Guard Bureau

⁶⁰ Historical report, USAALS DCD, CY 90.

⁶¹ Historical report, USASC, CY 90.

departed for Southwest Asia in mid-November to make the assessment. The team consulted with the ARCENT deputy commander, Brig. Gen. Robert S. Frix, and visited all of the tactical units deployed in Desert Shield at that time. One of the most obvious problems was the lack of echelon-above-corps personnel with the expertise to deal with Army air space matters. Another major problem was that the one deployed tactical air services battalion was equipped with antiquated non-securable equipment. The USAATCA produced a classified situation report in December 1990 for submission to Headquarters, ARCENT. The situation report described the problems and recommended the deployment of additional personnel and equipment for Desert Shield Army airspace command and control interfacing and air traffic services operations.⁶²

The Systems Integration Division of the USAATCA supported Desert Shield operations by expediting scheduled modifications to the AN/TSQ-71B, landing control central, and the AN/TSC-61B, flight operations central, to improve environmental control, electrical safety, and long-range communications capabilities. The division also expedited the distribution of additional AN/TSW-7A air traffic central systems to provide state-of-the-art communications and control tower facilities capable of high density operations.⁶³

With regard to the absence of echelon-above-corps staffing for Army air traffic services, the USAATCA report recommended the activation of the 29th ATC Group Headquarters. The Army concurred in the USAATCA recommendations, and the group headquarters was activated in early December; by Christmas, this unit had been deployed to Southwest Asia. The group headquarters then provided expert staffing and coordination for the 18th Corps ATC Battalion and for the 7th Corps ATC Battalion that was brought in from Europe. The ATC organizations in Southwest Asia were therefore prepared to receive and

⁶² Transcription of interview by Dr Burton Wright III with Col Melvin J McLemore, 27 Feb 91, oral history file; Historical report, USAATCA, CY 90.

⁶³ Historical report, USAATCA, CY 90.

use the new equipment that arrived and to provide excellent services to Army Aviation operations.⁶⁴

The U.S. Army Aeronautical Services Office provided charting and aeronautical information crisis support and advice for troops deploying to the Middle East and to Department of the Army planning staff. The office also conducted research and coordinated meetings and briefings to solve doppler navigation and weapons systems difficulties for units deployed in Saudi Arabia.⁶⁵

At the time of the completion of this historical review, the USAAVNC Lessons Learned Team, the Aviation Branch History Office, the commanding general and his staff, and all directorates, departments, and tenant agencies involved in Desert Shield and Desert Storm were conducting studies to identify successes and problems in the USAAVNC and Aviation Branch participation in these operations. Since only parts of the results of these studies were available at the time of this writing, the command historian decided to delay reporting on them until the publication of the 1991 historical review or until a special study on the operations is published.

⁶⁴ Transcription of interview by Dr Burton Wright III with Col Melvin J McLemore, 27 Feb 91, oral history files.

⁶⁵ Historical report, USAATCA, CY 90.

APPENDIX I

USAAVNC ORGANIZATIONS AT FORT RUCKER

A. Command Group

Some key command group positions and personnel not mentioned in Chapter I include the following: deputies to the chief of staff--Lt. Col. John C. Tallas, Lt. Col. Douglas B. Batson from 1 January to mid-February, and Maj. Kim A. Minkinow from mid-February through December; assistant garrison commander--Lt. Col. Paul D. Spangler from January through June; assistant chief of staff for garrison operations--Lt. Col. Michael S. Byington from July through December; executive officer for garrison operations--Capt. William D. Platz from 24 April through December; garrison command sergeant major--Sgt. Maj. John D. Rook from January through May, and M. Sgt. (P) Alvin J. Sargent from June through December; protocol officer--Capt. Barry E. Bazemore from January to mid-July, and Capt. Scott W. Hollingsworth for the remainder of the year; secretary general staff (SGS)--Maj. Kim A. Minkinow from January to mid-February, and Capt. Billy W. Antley for the remainder of the year; aide de camp to commanding general--Capt. Benjamin H. Williams III from January through September, and Capt. William M. Solms from October through December; aide de camp to assistant commandant--1st Lt. Chandler Sherrell from January to mid-August, 1st Lt. Michael Walpole for the following two months and 1st Lt. Michael Isbell for the remainder of the year. Dr. John W. Kitchens served as Aviation Branch command historian for the entire year. Dr. Burton Wright III began serving as deputy command historian on 3 December.¹

B. 1st Aviation Brigade (Air Assault) (1st Brigade)

The mission of the 1st Brigade remained the same as in 1989. The brigade commander in 1990 was Col. Brian P. Mullady, and the deputy commanders were Lt. Col. Gary G. Lynde from January to April, Capt. (P) Jerry M. Darnell from May to July, and Lt. Col. (P) Terry C. Gannon from August through December; and the brigade sergeant majors were Cmd. Sgt. Maj. Melvin P. Taylor from January to June and Cmd. Sgt. Maj. Marvin D. Bryan from June to December. The 1st Aviation Brigade consisted of three training battalions and two FORSCOM battalions. The training battalions and their commanders were as follows: 1st Battalion, 10th Aviation Regiment--Lt. Col. Bert L.

¹Historical report, SGS, CY 89.

Lennon; 1st Battalion, 13th Aviation Regiment--Lt. Col. Ronald P. Dale from January to June and Lt. Col. Paul B. Hay from June through December; and 1st Battalion, 145th Aviation Regiment--Lt. Col. James M. Diamond. The FORSCOM battalions and their commanders were as follows: 46th Engineer Battalion (Combat) (Heavy)--Lt. Col. David K. Phillips from January to June and Lt. Col. William F. Reyers from June through December; and the 2nd Battalion, 229th Attack Helicopter Battalion--Lt. Col. Michael C. Pascoe from January to July and Lt. Col. William M. Bryan from July through December. The five battalions consisted of twenty-six companies, two detachments, and the 98th Army Band. The permanent party personnel at the beginning of the year totaled 2,420, of which 55 were civilians, and of 2,400 at the end of the year, of which 55 were civilians. The total number of permanent party personnel, reserve components, and students attached to the 1st Brigade at the end of the year was 7,504.

The 2-229th Aviation Regiment completed Apache transition training in November of 1988, and, following its return to Fort Rucker, was assigned to the aviation brigade of the 101st Airborne Division (Air Assault), of the XVIII Corps. This realignment changed the relationship between the regiment and the Aviation Center and required the negotiations during 1989 of a memorandum of understanding between Fort Campbell and the USAAVNC concerning the support of the regiment.²

C. Aviation Training Brigade (ATB)

The missions of the ATB remained essentially the same as in 1989. The brigade commander during 1990 was Col. James C. Hardister, and the command sergeant major was Cmd. Sgt. Maj. Tony R. Faulkner. The four training battalions attached to the ATB in 1990 and their commanders were as follows: 1st Battalion, 11th Aviation Regiment--Lt. Col. Charles B. Jones from January through June and Lt. Col. Charles H. Dove from June through December; 1st Battalion, 14th Aviation Regiment--Lt. Col. Charles L. Gant; 1st Battalion, 212th Aviation Regiment--Lt. Col. Steven F. Rausch from January through July and Lt. Col. Harold S. Barrett for the remainder of the year; 1st Battalion, 223d Aviation Regiment--Lt. Col. Donovan R. Cumbie. The total strength of the brigade at the

²Historical Report, 1st Brigade, CY 90; Permanent orders 233-5, John T Planchon, 21 Dec 88; Memo AFZA-DCG, Maj Gen William A Roosma for cdr USAANVC, 19 Jul 89, sub: LOI for stationing of 2-229th.

beginning of 1990 was 1459, and at the end of the year, 1377. CWO2 William R. Manuel of ATB was awarded the Army Aviation Association of America Safety Officer of the Year award in December for outstanding accomplishments during FY 90.³

D. Directorate of Aviation Proponency (DAP)/Aviation Proponency Office (APO)

The evolving mission and functions of the DAP and of the APO are described under "Organizational Changes in 1990," in Chapter I. The director of DAP was Col. Joel H. Hinson, until the disestablishment of the directorate on 1 June. He continued with supervisory authority over the Aviation Digest and Aviation Proponency offices until his retirement in late June. In the meantime, the Aviation Planning Group was created as a branch of DAP, but under the operational control of the chief of staff in January.

When the DAP was disestablished, the former Aviation Proponency Office became the Aviation Personnel Proponency Office, with essentially the same functions as the predecessor organization. This office, along with the Aviation Digest Office and the Aviation Planning Group, was brought under the leadership of the chief of aviation proponency. Lt. Col. Michael C. Pascoe became the chief of the APO on 21 August. The editor of the Aviation Digest and chief of the Aviation Digest Office in 1990 was Ms. Patricia S. Kitchell. The head of the Aviation Proponency Office/Aviation Personnel Proponency Office was Maj. Stephen D. Mundt from January until June, Capt. Wayne A. Pollard from June until October, and Capt. Christopher G. Devens for the remainder of the year. The Aviation Planning Group was headed by Lt. Col. John Tallas, Maj. (P) Daniel Adee, and Maj. (P) Steven L. Remley respectively. Maj. Remley also exercised supervisory authority over the Aviation Digest and Aviation Proponency offices during parts of July and August, until the arrival of Lt. Col. Pascoe; he then served as deputy chief of APO for the remainder of the year.⁴

³Historical report, ATB, CY 90.

⁴Memo ATZQ-RFM (570-4g), Col Ernest F Estes for distr, 22 Jan 90, sub: establishment of Aviation Planning Group, Chapter I file; Historical report, APO, CY 90; notes on interviews with MWO Harry W Sweezey and Lt Col Steven L Remley, 19 Feb 91.

E. Directorate of Plans, Training, Mobilization, and Security (DPTMSEC)

The mission of the DPTMSEC remained the same as in 1989. The director of DPTMSEC in 1990 was Col. James B. Sauer during the months of January and February and Col. Ralph J.W.K. Hiatt from February through December. The deputy director was Mr. Clyde S. Tullos. The directorate was composed of nine divisions from January until July, at which time the Training and Training Support Division was abolished. The nine divisions with their respective heads in 1990 were as follows: Resource Management--Mr. Charles A. Welch; Aviation--Maj. Manuel Andino; Resident Training Management--Ms. Mary Brown; Training and Training Support--Capt. Gregory L. Henry from January until July; Plans, Operations, and Mobilization--Maj. Douglas M. Taylor; Range--Maj. Clint W. Hall; Security--Mr. Marion Hill from January to August and Mr. Rodney D. Logan from October through December; Training Service Center--Mr. Clarence N. O'Rear; and 9th Detachment, 5th Weather Squadron--Lt. Col. Douglas C. Pearson. With the reorganization of the directorate in July, the functions of the Training and Training Support Division were distributed among other divisions. This resulted in the expansion of the Aviation; Plans, Operations, and Mobilization; and Resident Training Management divisions. ^o

F. Directorate of Evaluation and Standardization (DES)

The mission of the DES did not change in 1990. The directors of DES in 1990 were Col. Michael H. Abbott until 3 September and Lt. Col. Immanuel C. Sieving III from 4 September through December. The deputy directors were Lt. Col. Immanuel C. Sieving III until 3 September and Lt. Col. Mario Meola from 4 September through December. The three divisions of DES and their respective heads were as follows: Operations and Administration Division--Maj. Deborah K. Ridout; Flight Standardization Division--Maj. David T. Henry until 11 March and Maj. Walton C. Carroll, Jr. from 12 March through December; and Evaluation Division--Capt. Walter C. Tappan III until 8 November and Maj. Stephen F. Koach from 9 November through December. The DES began the year with twenty-eight civilians and sixty-two military

^oHistorical report, DPTMSEC, CY 90.

personnel and ended the year with twenty-eight civilians and fifty-six soldiers.⁶

G. Directorate of Logistics (DOL)

The mission of the DOL remained the same as in 1989, but its workload was significantly increased during the latter part of the year by its support of Operation Desert Shield. The director of DOL in 1990 was Mr. G. J. Leavis and the deputy director was Mr. Perry S. Grantham. The NCOIC was M. Sgt. Jerry Summers from January through June and Cmd. Sgt. Maj. Gean Hendrix from August through December. The six divisions into which DOL was divided and the chief of each division in 1990 were as follows: Resource Management--Mr. Archie Fondren; Aircraft Logistics Management--Lt. Col. Wayne L. Dandridge; Plans and Operations--Capt. Kathy K. Reynolds; Maintenance--Mr. Carl Swanstrom; Supply and Services--Mr. Paul Treadaway; and Transportation--Mr. Benjamin C. Peoples (acting). The DOL began the year with 337 civilians and 59 military personnel and ended the year with 320 civilians and 54 soldiers.⁷

The DOL coordinated a TRADOC sponsored program on nutrition awareness during the month of March; both soldiers and civilians participated. A report of the program activities at Fort Rucker was forwarded to TRADOC on 30 April. Fort Rucker won the competition and received a plaque from TRADOC in September 1989. Also, the Central Issue Facility in the Supply and Services Division won the TRADOC Installation of Excellence Award in its size category.⁸

H. Directorate of Engineering and Housing (DEH)

The mission of the DEH remained the same as in 1989. During 1990, the director of DEH was Lt. Col. Bobby L. Holland during January and February and Lt. Col. William E. Norton from late May through December. Mr. Charles A. Spencer served as deputy director during January and February and Mr. Julian F. Botts from March through

⁶Historical report, DES, CY 90.

⁷Historical report, DOL, CY 89.

⁸Fact sheet ATZQ-DOL-PO, 10 Oct 89, sub: Community of Excellence National Nutrition Month, DOL; Historical report, DOL CY 89.

December. Mr. Spencer also served as acting director from 14 February through 21 May. The six divisions of the directorate and the respective division heads in 1990 were as follows: Engineering Plans and Services Division--Mr. Delmer O. Owens, Engineer Resources Management Division--Mrs. Miriam O. Ray from January until 21 May and Mr. Charles A. Spencer for the remainder of the year; Operations and Maintenance--Mr. Ronald E. Leatherwood; Fire Protection--Mr. Jerry B. Gramont; Housing--Miss Patricia Sales; and Supply and Storage--Mr. Paul C. Wheeler. The historical officer was Ms. Marlene J. Resecker. The chief of the energy branch, Mr. William DeJournett, was the recipient of a Federal Energy Efficiency Award in 1990 for his outstanding accomplishments during FY 89.*

I. Directorate of Training and Doctrine (DOTD)

The mission of DOTD remained essentially the same in 1990 as it had been in 1989. The directors during 1990 were Col. Floyd E. Edwards from January through May, Mr. Donald L. Teague (acting) from June through August, and Col. James W. Beauchamp for the remainder of the year. The deputy director was Mr. Donald L. Teague. The three major divisions of DOTD with their respective chiefs during 1990 were as follows: New Systems Training and Simulator Acquisition (name changed to Simulator Development, Management, and Research)--Lt. Col. Michael W. Cupples; Individual and Unit Training--Lt. Col. Lee A. Merchen from January to March and Maj. Ronnie L. Foxx for the remainder of the year; Staff and Faculty Development--Mr. Charles A. Thomley. The chief of the Aviation Technical Library, aligned under the Staff and Faculty Development Division, was Ms. Beverly Hall. At the beginning of the year, the DOTD had a total strength of 196 (84 military and 112 civilians) and at the end of the year, the total strength was 160 (79 military and 81 civilians).

Internal reorganizations in DOTD, effective 1 October 1990, consisted of moving the New Equipment Training Branch from the Training and Simulator Acquisition Division to the Individual and Unit Training Division; changing the mission of the New Systems Training and Simulator Acquisition Division and also changing its name

*Historical report, DEH, FY 89; Memo ATEN-FE (11-27a(9)), Maj Gen James W van Loben Sels for USAAVNC chief of staff, 20 Jul 90, sub: Federal Energy Efficiency Award, DEH.

to Simulator Development, Management, and Research Division; and combining the Unit Training Branch and the Officer Training Branch to form the Officer and Unit Training Branch. The Reserve Component Configured Courseware cell began the year as an activity under the control of both DOTD and DOET. During the early part of the year Sfc. Ronald W. Bedford and then Sfc. Patrick J. Hinmon served as chief. In September, the cell was realigned as a special cell within DOTD headquarters in order to provide better command structure. Maj. Tyrone L. Graham served as chief from 8 September until the end of the year. The mission of the cell was to modify active duty aviation courses to meet the training needs and requirements of the reserve component.

In 1990 the Staff and Faculty Development Division of DOTD coordinated and hosted the 1990 Aviation Trainers' Conference, which was attended by thirty Army Aviation trainers from throughout the world.¹⁰

J. Directorate of Personnel and Community Activities (DPCA)

The mission of the DPCA remained the same in 1990 as it had been in 1989. The directors of DPCA in 1990 were Col. Frederick I. Steiner from January to July and Col. Clarence L. Belinge for the remainder of the year. The NCOIC was M. Sgt. Alan F. Larson from January to March and Sgt. Maj. Ronnie K. Inman from September through December. The subordinate offices, divisions, and units in DPCA and their respective heads in 1990 were as follows: Equal Opportunity Office--Sfc. Perelez and Sfc. Sterling; Army Aviation Museum--Mr. R. S. Maxham; Office of Community and Family Activities--Mr. Evan E. Smith, Jr.; Community Recreation--Mr. J. Wade Henderson; Alcohol and Drug Control Office--Mr. Ronald R. Sorrells; Office of Adjutant General--Lt. Col. John T. Planchon; Financial Management--Ms. Janis I. Friend; Community Operations--Mr. Robert Duff; Services--Ms. Jane W. Andrews; Fort Rucker Dependent Schools--Dr. Linda C. Godsey; and Family Support--Maj. Paul Fundling from January to March and Ms. JoAnne Blanks (acting) for the remainder of the year. The strength figures for DPCA at the beginning of the year were 586 civilians (including nonappropriated fund

¹⁰ Historical report, DOTD, CY 90; Memo ATZQ-TDF (1-1m), Col Floyd E Edwards for asst cmdt, 30 Mar 90, sub: 1990 aviation trainers' conference after action report, DOTD.

employees) and 85 soldiers. At the end of the year, the strength figures were 563 civilians and 60 soldiers.

The chairman of the Combined Federal Campaign for 1990 was Col. Clarence Belinge, and the campaign headquarters moved to the office of the director of DPCA.

The Adjutant General/Military Personnel Division was reorganized in 1990 in accordance with AR 600-8, which eliminated the Personnel Service Center and aligned all the branches of the division under the functional supervision of the adjutant general. The new name for the division, in accordance with AR 600-8, was Military Personnel Division (MPD). The chief of the MPD was coded as a civilian GS-13 position on the new TDA document, but the position continued to be filled by a lieutenant colonel in 1990. The Retention Branch of the MPD won the FORSCOM Commanding General's Reenlistment Award for the sixth consecutive year.¹¹

K. Department of Tactics and Simulation (DOTS)

In June of 1990 the Departments of Combined Arms Tactics and Gunnery and Flight Systems were combined to form the new Department of Tactics and Simulation. This was a budget reduction measure and also was designed to provide a single focus and direction to the academic and simulation training of aviators. The mission of the new DOTS was to provide current and relevant functional and professional education and training; to assess the needs of combat commanders and develop realistic and dynamic doctrine; to provide revolutionary future vision to Aviation through the development of doctrinal concepts; and to support simulation doctrine, training, and development.

Before the merger, the director of the Department of Gunnery and Flight Systems was Col. Clarence L. Belinge, and the deputy director was Lt. Col. Harold G. Thomas. The director of the Department of Combined Arms Tactics was Col. Thomas A. Green, and the deputy director was Lt. Col. Raymond L. Schaefer. Following the merger, Colonel Green became director and Lt. Col. Thomas became deputy director of DOTS. The six divisions of DOTS following the merger were as follows: Operations; Attack/Scout; Combined Arms; Cargo/Utility; Doctrine; and Software Center for Aviation Training.

¹¹ Historical report, DPCA, CY 90.

The Department of Combined Arms Tactics began the year with an average assigned strength of 120, and the Department of Gunnery and Flight Systems began the year with a total strength of 223. At the end of the year, DOTS had a total authorized strength of 333 and a total assigned strength of 331. There were 198 military personnel and 133 civilians assigned.¹²

L. Department of Enlisted Training (DOET)

The mission of the DOET did not change in 1990. The department director in 1990 was Cmd. Sgt. Maj. Hartwell B. Wilson from January through August and Sgt. Maj. William F. Broder for the remainder of the year. The assistant directors were Sgt. Maj. Paul J. Sottile, M. Sgt. Scott F. Rockwell, and Sgt. Maj. William F. Broder. The operations chiefs were M. Sgt. Scott F. Rockwell from January to April and M. Sgt. Wayne D. Kemp for the remainder of the year. The chiefs of the Maintenance Training Division were Sgt. Maj. William F. Broder from January through May and M. Sgt. Scott F. Rockwell from June through December. The chief of Air Operations Training Division was M. Sgt. Judith A. Casey throughout the year.

A third training division, Combat Support Training Division, was created with a provisional TDA effective 1 October 1989, under the leadership of M. Sgt. Wayne D. Kemp. This division was disbanded in 1990 as a result of damages resulting from the flooding of the field training site used by this division and of the necessity to reduce expenses. The Air Operations Training Division reassumed responsibility for the training temporarily assigned to the third division.

At the beginning of the year, the strength figures of DOET were 174 military and 56 civilians. At the end of the year, there were 143 military and 53 civilians.¹³

M. Noncommissioned Officer Academy (NCOA)

¹² Historical report, DOTS, CY 90; Kitchens, 1989 Annual Historical Review, pp. 124-25.

¹³ Historical report, DOET, CY 90. For information on the flooding that occurred in and around Fort Rucker during the spring of 1990, see Chapter VII.

The mission of the NCOA remained the same in 1990 as in 1989. The commandant of the academy in 1990 was Cmd. Sgt. Maj. Don K. Corkran from January to April, 1st Sgt. William L. McGee from April to June, and Cmd. Sgt. Maj. Melvin P. Taylor for the remainder of the year. The assistant commandant/first sergeant was 1st Sgt. Gary R. Van Dusen from January through April and 1st Sgt. William L. McGee from June through December. The two training branches and their respective chiefs were as follows: ANCOC--M.Sgt. Johnny R. Lowry from January through March and Sfc. Josepy Kelly from April through December; BNCOC--Sfc. Walter D. Long from January to June and Sfc. Devin Burbank from June through December.

At the beginning of the year, there were 32 military personnel and 1 civilian on the staff of the NCOA. At the end of the year, there were 27 military personnel and 2 civilians.¹⁴

N. Directorate of Civilian Personnel (DCP)

The mission of the DCP remained the same in 1990 as it was in 1989. Mrs. Marjorie P. White continued as director. The divisions of the directorate and their respective chiefs during 1990 were as follows: NAF Personnel--Mr. John Arnold; Position Management and Classification--Mr. Wayne Griffin; Management Employee Relations--Mrs. Dorothy Parrish; Technical Services--Mr. George M. Brawley; Training and Development--Mr. Fred Smith; and Recruitment and Placement--Mrs. Gennie Weiss.¹⁵

O. Directorate of Reserve Component Support (DRCS)

The mission of the DRCS remained essentially the same as in 1989. The director of DRCS in 1990 was Col. Clifford L. Massengale, and the deputy director was Mr. Archie L. Roberts.¹⁶

P. Office of the Inspector General (IG)

¹⁴ Historical report, NCOA, CY 90.

¹⁵ Historical report, DCP, CY 90.

¹⁶ Historical report, DRCS, CY 90.

The mission of the Office of the IG did not change in 1990. Lt. Col. (P) Michael S. Byington served as the IG from January until June, and Lt. Col. Ronald P. Dale, for the remainder of the year. Maj. William F. Horn II was chief of the Inspections Branch from January until July, and Maj. Terry W. Teeter, from August through December. Capt. Irene G. Mauss was chief of the Assistance/Investigations Branch for the entire year. The strength figures for the Office of the IG at the beginning of the year were seven military and three civilians; at the end of the year, there were five military and three civilians.¹⁷

Q. Chaplain Activity Office (CAO)

The mission of the CAO remained the same as in 1989. The installation staff chaplain during 1990 was Chaplain (Col.) John M. Allen until replaced by Chaplain (Col.) Marvin K. Vickers, Jr., in July. Chaplain (Capt.) Richard D. Rominger served as pastoral coordinator until replaced by Chaplain (Lt. Col.) Ervin L. Shire, Jr., in September. Sister Mary Kavanaugh was the Catholic religious education director, Mr. Louie Reynolds was the Protestant religious education director, and Sfc. Terry Floyd was the NCOIC for the activity. There were twelve chaplains and thirteen chaplain assistants assigned during the year.¹⁸

R. Office of the Staff Judge Advocate (OSJA)

The mission of the OSJA remained the same as in 1989. The office was directed by Lt. Col. Everett M. Urech. The deputy director was Maj. Steven R. Scholz from January until July and Maj. Craig L. Reinold for the remainder of the year. The OSJA was organized in the following five divisions: Administrative, Military Justice, Legal Assistance, Claims, and Administrative Law. The office personnel strength was thirty-one at the beginning of the year and thirty at the end of the year. In May 1990, the Claims Division of the OSJA received a certificate of excellence from the US Army Claims Service

¹⁷ Historical report, Office of IG, CY 90.

¹⁸ Historical report, CAO CY 90.

for exceptional performance in affirmative claims processing in 1989.¹⁹

S. Public Affairs Office (PAO)

The mission of the PAO remained basically the same in 1990 as in 1989. The public affairs officer in 1990 was Lt. Col. G. Eric Jowers. The deputy public affairs officer was Mr. Ken L. Holder, and the NCOIC was M.Sgt. David L. Malone. In 1990, the PAO consisted of three sections; these sections, with their respective chiefs, were as follows: Public Information--Mr. William J. Hayes; Command Information--Mr. Christopher T. Greene from January to October and Ms. Cynthia Nason for the remainder of the year; and Community Relations--Ms. Sheryl W. Milum. The PAO began and ended the year with seven military and eight civilians. As evidenced by several DA and TRADOC awards, the Army Flier, the post newspaper published by the PAO, continued to be one of the best in TADOC. Sp1c. Murray Coleman was selected as the TRADOC feature writer of the year, and both Sp1c Shoun Hill and Sgt. Bob Mitchem received photography awards from HQDA during the Keith L. Ware competition.²⁰

T. Aviation Branch Safety Office (ABS0)

The mission of the Safety Office was the same in 1990 as it became in early 1989, when its name was changed to ABSO and it was given branch-wide functions. The safety manager in 1990 was Mr. John T. Persch, and Mr. Ronald Cox was president of the Aircraft Accident Investigation Board.²¹

U. Internal Review and Audit Compliance (IRAC) Office

The mission of the IRAC Office remained the same in 1990 as it had been in 1989. The internal review officer in 1990 was Mr. Woodrow J. Farington. Mr. Don W. Phillips served as chief of the Audit Compliance Branch, and Mr. Howard V. Haney served as chief of the Internal Review Branch. The IRAC Office was staffed with eleven

¹⁹ Historical report, OSJA, CY 90.

²⁰ Historical report, PAO, CY 90.

²¹ Historical report, ABSO, CY 90.

civilians at the beginning of the year and with ten civilians at the end of the year.²²

V. Equal Employment Opportunity (EEO) Office

The mission of the EEO Office did not change in 1990. The acting EEO officer throughout the year was Mr. James W. Harris. Other key EEO Office personnel included the following: Affirmative Employment Program manager--Mr. James W. Harris from January to July and Mr. Lawrence DeRamus from July through December; Federal Women's Program manager--Ms. Merle W. Wise from January through August and Ms. Nancy T. Patterson from November through December; Hispanic Employment Program manager (collateral duty)--Ms. Irma P. Finocchiaro from January to June and Ms. Miriam Ray from October through December; and the complaints manager--Mr. Lawrence DeRamus from January to July and Ms. Ruby J. Warren from July through December. There were five permanent civilian employees at the beginning of the year and five at the end of the year.²³

W. Directorate of Contracting (DOC)

The mission of the DOC remained the same as in 1989. The director in 1990 was Mr. Peter C. Polivka. The directorate was organized into four divisions, which, with their respective chiefs during 1990 were as follows: Contracting--Mrs. Gloria G. Wheeler; Contract Administration--Mr. Allen Wagstaff; Purchasing--Mrs. Nelda B. Livesay; and Support--Ms. Carol Wrinn. The DOC began and ended the year with a total personnel strength of forty-two.²⁴

X. Directorate of Resource Management (DRM)

As in previous years, the DRM was the commanding general's principal staff office for overall financial and manpower management, USAAVNC organization, and approved management programs. Col. Richard N. Roy was director of DRM from 1 January through 15 October and Lt. Col. John A. Whitson for the remainder of the year. Mr. Hugh Weeks and Mr. Howell L. Flowers each served as

²² Historical report, IRAC Office, CY 90.

²³ Historical report, EEO Office, CY 90.

²⁴ Historical report, DOC, CY 89.

deputy director for a four-month period prior to Mr. Weeks' permanent selection effective 7 October. During 1990 the DRM consisted of five divisions. These divisions, with their respective chiefs, were as follows: Finance and Accounting--Maj. George H. Frankl; Cost Analysis--Mr. James H. Woodard; Force Management--Mr. Howell Flowers; Management Analysis--Mrs. Hazel J. Odom; Program and Budget--Mr. Hugh M. Weeks from January to October, and Mr. Floyd Rogers during the month of December. The DRM began the year with 212 employees assigned and ended the year with 192, the lesser number attributable to vacancies. At a DA ceremony on 20 April, Mr. Howell L. Flowers was recognized as the winner of the 1989 Superior Performance Award in the secretary of the Army's competition for outstanding individual performance in the field of manpower management.²⁰

Y. Directorate of Combat Developments (DCD)

The mission of the DCD remained the same as in 1989. Col. Theodore T. Sendak served as director of DCD throughout 1990. Lt. Col. Harold J. Brecher was deputy director from January through May and Lt. Col. Neil R. Buthorne, for the remainder of the year. Maj. Christopher A. Acker served as executive officer from January until August and Capt. David W. Sullivan, from August through December. Mr. Richard S. Maccabe served as technical advisor.

The DCD reorganized in June to create a new division, Systems Integration and Priorities Division, and to integrate the Test and Evaluation Division into the Materiel and Logistics Systems Division. The five major divisions with their respective chiefs during 1990 were as follows: Materiel and Logistics Systems--Col. Palmer J. Penny from January until March and Col. Edwin E. Whithead for the remainder of the year; Concepts and Studies--Lt. Col. Edward J. Smith from January until July, Mr. Richard S. Maccabe (interim) during July and August, and Lt. Col. Homer W. Worrell from August through December; Organization and Force Development--Lt. Col. Neil R. Buthorne from January until June and Lt. Col. Charles J. Lowman for the remainder of the year; Systems Integration and Priorities--Mr. Albert E. Easterling from the time of its creation in June through December; and Program Management--Ms. Maxine S. Dowling for the entire

²⁰ Historical report, DRM, CY 90; Memo ATRM-F 690-590), Gen John W Foss for Mr Howell L Flowers, 9 Apr 90, sub: commendation, DRM.

year. Operational control of the Threat Support Office, under Lt. Col. Delma C. Hendricks, was returned to DCD in March.²⁶

Z. U.S. Army Air Traffic Control Activity (USAATCA)

Although the number of divisions of the USAATCA decreased in 1990, the overall mission of the activity did not change significantly. Col. Melvin J. McLemore continued as the director throughout the year, as did Mr. Francis N. Anderson as deputy director and Sgt. Maj. Terry Wilkins as the activity sergeant major. The USAATCA consisted of the following major divisions: Air Traffic Control Development, Air Traffic Control Management, Systems Evaluation and Maintenance, and Aeronautical Services. During 1990, the Programs Division was transferred to the U.S. Army Aviation Systems Command, and the Plans and Analysis Division was deactivated. The Systems Integration Division was tentatively organized on 1 September to perform some of the tasks formerly performed by Plans and Analysis. The strength figures for the USAATCA were forty soldiers and sixty-one civilians at the beginning of the year and forty-three soldiers and fifty-seven civilians at the end of the year.

In addition to the individuals mentioned in Chapter I as winning air traffic control awards in 1990, the following individuals were recognized for exceptional contributions to aviation safety through saving of life or property: Spc. Paula E. Vest, Mr. Paul P. Fournier, Spc. Kenneth Waits, Pfc. Andrew J. McGlinchey, Sgt. Tadwick W. Campbell, and Sgt. Charles F. Mathews.²⁷

AA. Directorate of Information Management (DOIM)

The mission of the DOIM remained the same as in 1989. The director of the DOIM in 1990 was Lt. Col. Alan R. Levy, and the deputy information systems manager was Mr. James E. Clements. The four divisions of DOIM and their respective chiefs during 1989 were as follows: Operations and Systems Integration--Mr. Louis E. Boothe; Resource Management & Plans--Mr. John G. Dyess; Information Center--Mr. Harold E. Helms from January to May and Mr. J. L. Weeks for the remainder of the year;

²⁶ Historical Report, DCD, CY 90.

²⁷ Historical report, USAATCA, CY 90.

Logistic Support--Mr. Wallace Lee from January to April and Mr. Donald Barnes for the month of December. The DOIM began the year with 24 military personnel, 145 authorized civilians, and 11 overhires. It ended the year with 21 soldiers, 133 authorized civilians, and 8 overhires.²⁸

BB. TRADOC Systems Manager (TSM), Light Helicopter (LH)

The TSM-LH conducted the total systems management for the LH and the T800 engine within TRADOC during 1990. Acting for the commanders of USAAVNC and TRADOC, the TSM-LH discharged the user's responsibilities in the development and testing of the LH. The TSM-LH in 1990 was Col. Stephen S. MacWillie. His assistants were Mr. Glenn Harrison, Lt. Col. James M. Delashaw, Maj. Steven L. Ochsner, Capt. Phillip Pedersen, Capt. Roy Schandorf, CWO4 Mark W. Ammon, CWO4 Wayne Waersch, and Sfc. William Doughty. Nine military personnel and two civilians served in the TSM-LH office during 1990.²⁹

CC. TSM, Airborne Target Acquisition and Weapon System (ATAWS)

The mission of the TSM-ATAWS was to conduct total system fielding management for the Longbow program (formerly Airborne Target Acquisition and Weapons Systems) and for the air-to-air Stinger and Hellfire missile systems. Lt. Col. Walter L. Hinman served as the TSM ATAWS from January to July, and Col David F. Sale, from July through December 1990. The TSM was assisted by Mr. Paul Revels, Maj. David J.L. Blinkinsop, Maj. Howard T. Bramblett, CWO Niver, and Capt. James P. Ludowese. The TSM-ATAWS also supervised and rated the head of the TPO-Apache.³⁰

DD. TSM OH-58D Helicopter

²⁸ Historical report, DOIM, CY 90.

²⁹ Historical report, TSM-LHX, CY 88.

³⁰ Historical report, TSM-ATAWS, CY 90; Memo ATCD-ET (70-1), Gen M R Thurman for cdr USAAVNC, 27 Feb 89, sub: TSM charter for Airborne Target Acquisition and Weapons Systems, TSM-ATAWS.

The mission of the TSM OH-58D remained the same in 1990 as it had been in 1989 except that the publication of TRADOC Regulation 71-12 in November of 1990 designated this and other TSMs as the combat developers for their respective systems. The TSM OH-58D in 1990 was Col. Ted D. Cordrey. The assistants for logistics were Lt. Col. Clarence T. Ebbinga from January through June and Capt. (P) Christopher C. Romig for the remainder of the year; the assistant for training was Maj. Versal Spalding III. CWO2 (P) Blaine D. Pendleton served as special assistant from July through December; Sfc. Scott E. Jones served as NCOIC from January until November, and S. Sgt. Thomas W. Tompkins served in that capacity for the remainder of the year.³¹

EE. TRADOC Project Office (TPO) Apache

Following the disestablishment of the TSM Apache in 1988, the TPO was established by the USAAVNC commander to continue to represent user interests and to manage the AH-64 program because of continuing significant problems encountered in the field with the Apache. Subsequently, this mission was expanded as a result of the Army's interest in the Longbow Apache. The TRADOC projects officer during 1990 was Lt. Col. Donald S. Burke until late December. His interim successor was Capt. Michael E. Hassel. The staffing of the TPO Apache was severely affected in 1990 by both the reduction-in-force and by Operation Desert Shield.³²

FF. Military Police Activity (MPA)

The mission of the A Company, MPA, remained essentially the same in 1990 as in 1989. The company was directly under the control of the provost marshal. The provost marshal in 1990 was Lt. Col. Paul E. Goldsmith, and the deputy provost marshal was Mr. Allison Hutcheson. Capt. James A. Hile served as commander of A Company, MPA, and the 1st sergeant was 1st Sgt. Dennis M. Harlan from January to September and Sfc. Lanice A. Bonds for the remainder of the year.³³

³¹ Historical Report, TSM OH-58D, CY 90.

³² Historical report, TPO Apache, CY 90.

³³ Historical report, MPA, CY 90.

GG. U.S. Army Reserve (USAR) Advisor's Office

The mission of the USAR Advisor's Office was to advise the commander on USAR affairs and to coordinate and conduct the Ready Reserve Aviator Sustainment Training program. The USAR advisor in 1990 was Col. James H. Fitzgerald. The office staff consisted of two military personnel and one civilian at the beginning of the year and of four military and one civilian at the end of the year. Colocated with the USAR Advisor was TRADOC's liaison NCO to the Aviation Center. Sgt. Maj. Leo F. Bovine served in this position with the mission of assisting USAR and ANG soldiers in dealing with personal and professional problems.³⁴

³⁴ Historical report, USAR Advisor's Office, CY 90.

APPENDIX II

USAAVNC ORGANIZATIONS AT FORT EUSTIS

A. U.S. Army Aviation Logistics School (USAALS)

During 1990, Col. Thomas M. Walker served as assistant commandant of the USAALS until 29 May, when he relinquished command to Col. William J. Blair. Mr Rodney Schulz served as deputy assistant commandant and Sgt. Maj. Jerry T. Pitman, as school sergeant major throughout the year. CW03 Eldon E. Ross was safety officer until August, and CW04 James R. Garrett, Jr., for the remainder of the year. Mrs. Judy DeLoach served as protocol assistant until June, and Mrs. Phyllis Schultz, the remainder of the year. Mrs. Linda Mitchell coordinated historical and public affairs assignments throughout the year.

During 1989, the USAALS consisted of three directorates, four training departments, and two support offices. In January 1990, the USAALS's authorized military and civilian strength was 1000, with 1006 assigned personnel. By December, the authorized strength had been cut to 859, and assigned personnel had been reduced to 942. As of 31 December, a total of twelve military personnel had been reassigned in support of Operation Desert Shield. Natural attrition accounted for the remainder of the losses at USAALS during 1990. Only two civilians retired from USAALS as a result of the Congressional act which suspended the lump sum payment alternative form of annuity for civilian employees.

The USAALS leadership reported that continued shortages in both manpower and dollar resources were having a critical impact on the ability of USAALS to maintain mission essential programs. It was predicted that hard decisions, combined with creative and innovative resourcing maneuvers, would be required during 1991 in order for the USAALS to continue its training and support mission.¹

B. Program Management Office (PMO)

The mission of the USAALS PMO remained essentially the same as it had been in 1989. Capt. (P) Richard K. Eissler served as chief of the office throughout the

¹Historical report, USAALS, CY 90.

year. The NCOIC was M. Sgt. William O. Buckner during January and M. Sgt. Chris H. Stainbrook for the remainder of the year. The chief of the Program Resource Management Division was Mrs. Billie L. Summerford, and the chief of the Support Services Division was Mrs. Linda A. Mitchell. The total strength of the office was 18 at the beginning of the year and 16 at the end of the year.²

C. Department of Aviation Trades Training (DATT)

The USAALS DATT's mission remained the same as in 1989. During 1990, Lt. Col. Bobby W. Williamson served as department director from January until February, when he was replaced by Lt. Col. Scott R. Wilcox. The department sergeant major was Sgt. Maj. Rufus Stills from January until April and Sgt. Maj. Jimmy Tatum for the remainder of the year. The four academic divisions and their respective chiefs during 1990 were as follows: Propulsion and Powertrain--Sgt. Maj. Jimmy Tatum from January until April and Sgt. Maj. James Carrol for the remainder of the year; Electrical and Electronics--M. Sgt. Thomas Sackett; Structural and Pneudraulics--Sfc. David Little during the month of January, Sfc. David Cole from January to November, Sfc. from November to December, and Sgt. Maj. Jimmy D. Kinzer for the remainder of December; and Aircraft Armament--CWO4 Graham Stevens. The assigned strength of USAALS DATT was 214 on 1 January and 243 on 31 December.³

D. Department of Advanced Aviation Logistics Training (DAALT)

The mission of the USAALS DAALT did not change in 1990. Sgt. Maj. Ray J. Taylor was chief of the DAALT from 1 January until 12 June, and Sgt. Maj. Edward A. Wall, for the remainder of the year. In the 1990 Combined Federal Campaign, 100 percent of the department personnel participated. The department also received a commendation for the outstanding appearance of its building in the Army of Excellence inspection.⁴

²Historical report, USAALS PMO, CY 90.

³Historical report, USAALS DATT, CY 90.

⁴Historical report, USAALS DAALT, CY 90.

E. Department of Attack Helicopter Training (DAHT)

The mission of the USAALS DAHT in 1990 was the same as it was in 1989. The acting department director from January through February 1990 was Maj. James A. Bogema; Maj. (P) Mark S. Jones served as director for the remainder of the year. The department sergeant major from January to June was Sgt. Maj. Edward Wall and, for the remainder of the year, Sgt. Maj. Gary Freeman. The training administrator was Mr. Tom Hall. The three training divisions of the department, with their respective chiefs, were as follows: Advanced Attack Helicopter (maintenance training for AH-64)--Maj. J. Bogema; Attack Helicopter (maintenance training for AH-1) Sgt. Maj. William B. Keys from January through August and M. Sgt. Jesse J. Thigpen for the remainder of the year; Scout Helicopter (maintenance training for OH-58)--M. Sgt. Leon Haynes from January through March, Sgt. Maj. Gary Freeman from March through July, and Sgt. Maj. Irwin Privott for the remainder of the year.⁶

F. Directorate of Evaluation and Standardization (DOES)

The mission of the USAALS DOES was essentially the same in 1990 as it had been in 1989. Lt. Col. Douglas A. Cahill, served as director for the entire year. The chief of the Evaluation Division was CWO4 George S. Hrichak, and the chief of the Maintenance Test Flight and Standardization Division was CWO4 Robert Cushman from January to July and Maj. James Fitzpatrick for the remainder of the year. The DOES strength was seventeen at the beginning of the year and twenty-three at the end of the year. During the year, two military personnel of the directorate received the Meritorious Service Medal, and one received the Army Achievement Medal. Five civilians received monetary performance awards.⁶

G. Leader Development/Personnel Proponency Office (LD/PPO)

The mission of the USAALS LD/PPO remained the same as in 1989 except that functions of the Project Manager-Aviation Apprentice Mechanic School Office were assumed by the USAALS-LD/PPO in 1990. Maj. Guy A. Wills served as chief of the office throughout the year. The sergeant

⁶Historical report, USAALS DATT, CY 90.

⁶Historical report, USAALS DOES, CY 90.

major was Sgt. Maj. Benjamin Morris until 1 March and Sgt. Maj. Rufus L. Stills for the remainder of the year.⁷

H. Department of Aviation Systems Training (DAST)

The mission of USAALS DAST did not change in 1990. Lt. Col. Dennis W. Healy, served as department director until the latter part of the year, when he was sent to Saudi Arabia. The department sergeant major was Sgt. Maj. Alan A. Gott. The department strength at the beginning of the year was 251, and at the end of the year, 265. The USAALS-DAST was the first place winner in the USAALS Project SPIRIT competition.*

I. Directorate of Training and Doctrine (DOTD)

The USAALS DOTD reorganized its three divisions and administrative office in 1990. The mission of the directorate was to manage the development of all resident and nonresident training products; to exercise overall management of training equipment and facilities requirements; and coordinate resident and nonresident training activities in support of the logistics doctrinal literature program. During 1990, the New Systems Training Division was reorganized as the Distributed Training Division with responsibility for all training technology and nonresident training. The Training Analysis Development Division was reorganized as the Training Analysis Division, with responsibility for all USAALS training strategies, USAALS-DOTD program management, training guidance, and other functions. The Resident Training Division was given additional responsibilities under the reorganization. It was responsible for managing and coordinating resident training courses, scheduling resource utilization, resource forecasting activities for USAALS courses of instruction, and other support.

Col. Robert Terry was the director of the USAALS-DOTD throughout 1990. Sgt. Maj. Thomas G. Graves served as sergeant major of the directorate from April through December. The chief of the Distributed Training Division was Mr. William H. Zinn, and the chief of the Training Analysis Division was Mr. David A. Lamb. The chief of

⁷Historical report, USAALS LD/PP), CY 90.

*Historical report, USAALS-DAST, CY 90.

the Resident Training Division was Mr. Walter V. Robbins, and the NCOIC from October through December was M. Sgt. Eric Johnson.⁹

J. Directorate of Combat Developments (DCD)

The mission of the USAALS DCD was the same in 1990 as in 1989, except that the directorate assumed administrative control over the Threat Office. Lt. Col. Thomas P. Cole served as director from January through May, and Col. Robert B. Kean, for the remainder of the year. The deputy director was Mr. Robert E. Howard. The subordinate divisions of the directorate, with their respective chiefs were as follows: Concepts and Studies--Maj. Glen Ellingsworth from January to July and Maj. Merle Converse for the remainder of the year; Materiel Logistics Systems--Maj. Craig McCurdy from January to July and Maj. John Tryon for the remainder of the year; and Organization and Personnel Systems--Maj. Merle Converse from January through July and Mr. Tom Reichert (acting chief) for the remainder of the year. The position of chief of the Test and Evaluation Division remained vacant on the TDA during the entire year, and responsibility for management of the division was tasked to the chief of the Materiel and Logistics Systems Division. The threat officer was Mr. Wolf Prow from January through July and Mr. Mike Walsh during the month of December. The position was vacant between July and December.¹⁰

⁹Historical report, USAALS DOTD, CY 90.

¹⁰Historical Report, USAALS DCD, CY 90.

APPENDIX III

TENANT ORGANIZATIONS

A. U.S. Army Aviation Technical Test Center (ATTC)

On 1 October the U.S. Army Aviation Development Test Activity (USAAVNDTA) consolidated with the U.S. Army Aviation Engineering Flight Activity to form the ATTC (see "Organizational Changes in 1990," in Chapter I). The mission of ATTC was very similar to that of the USAAVNDTA--to plan, conduct, analyze, and report on tests and other studies of Army Aviation systems and associated materiel/systems. Col. Troy E. Burrow commanded the USAAVNDTA from 1 January to 30 September and, the ATTC from 1 October to 31 December.¹

B. U.S. Army Research Institute Aviation Research and Development Activity (ARIARDA)

The mission of the ARIARDA remained the same in 1990 as it had been in 1989. The ARIARDA chief in 1990 was Mr. Charles A. Gainer. Other key personnel included Dr. Robert H. Wright, Mr. Gabriel P. Intano, Dr. David R. Hunter, Dr. Dennis K. Leedom, Dr. Dennis C. Wightman, Dr. John A. Dohme, and Capt. Dale S. Weiler.²

C. U.S. Army Aeromedical Center (USAAMC)

The mission of the USAAMC did not change in 1990 except as influenced by Operation Desert Shield. Col. N. Bruce Chase was the commander from January to July, and Col. Robert J. Kreutzmann, for the remainder of the year. The deputy commander for clinical services was Col. Roland J. Weisser, and the deputy commander for administration was Col. John E. Matt from January to July and Col. Otha G. Miles for the remainder of the year.³

D. U.S. Army School of Aviation Medicine (USASAM)

The mission of the USASAM did not change in 1990. The dean was Lt. Col. David Wehrly, and the assistant

¹Historical report, ATTC, CY 90; Charlie Block, "A Star is Born," Vertiflite (Jan-Feb 91), pp. 82-83.

²Historical report, ARIARDA, CY 89.

³Historical report, USAAMC, CY 90.

dean was Lt. Col. Chester Duncan until June and Lt. Col. James Burns for the remainder of the year. Lt. Col. Clarence R. Collins was chief of the Aeromedical Operations Division, Maj. Allie J. Richardson was chief of the Aeromedical Factors Division, and Maj. Winston Martin was chief of the Aeromedical Education Division from January to September and Lt. Col. Edwin Murdock, for the remainder of the year. Sfc. Dennis L. Holmes was NCOIC of USASAM from January through June and Sfc. Thomas Okey, for the remainder of the year. On 1 January 1990, the USASAM had a total strength of thirty-six persons, consisting of four civilians, fourteen NCOs and eighteen officers. At the end of the year the total strength was thirty-five persons, with a net gain of three NCOs and a net loss of four officers.⁴

E. 3588th Flying Training Squadron (FTS), Air Training Command

The mission of the 3588th FTS did not change in 1990. Effective 1 October, however, the unit was reassigned from Headquarters, Air Training Command, to the 14th Flying Training Wing, Columbus Air Force Base, Mississippi; Maxwell Air Force Base, Alabama, continued to provide personnel and finance support. The commander of the 3588th FTS in 1990 was Lt. Col. C. L. Rufus Hutchinson, and the squadron operations officer was Maj. Byron D. Huse. Authorized unit strength in 1990 was eleven military and one civilian, but sixteen military personnel were assigned to accommodate the larger classes trained by the unit in 1990. The unit's accident-free flying record as well as its perfect ground safety record remained unblemished in 1990.⁵

F. Test and Experimentation Command (TEXCOM) Aviation Board/Operational Test and Evaluation Agency (OPTEC)

The mission of the TEXCOM Aviation Board remained the same in 1990 as it had been in 1989, but a major reorganization occurred in November (see "Organizational Changes in 1990," in Chapter I). During 1990 the TEXCOM Aviation Board/OPTEC was commanded by Col. Tommie A. McFarlin, and Lt. Col. Lawrence A. Tesier served as

⁴Historical report, USASAM, CY 90.

⁵Historical report, 3588th FTS, CY 90; Ltr XP, Brig Gen Michael D McGinty to 14 FTW/CC, 12 Sep 90, sub: alignment of the 3588th FTS, Ft Rucker AL, 3588th FTS.

deputy commander. Sgt. Maj. Jack R. Scott was sergeant major until 1 May; he was succeeded by Sgt. Maj. George E. Lake. Capt. Michael J. Captain, Capt. Scott P. Vanderbroek, and Capt. Ricky S. Brown served successively as Headquarters Company commander. The major divisions of the Aviation Board and their respective chiefs were as follows: Support--Mr. Bobby L. Tindell; Technical Operations--Maj. Bradley D. Schlund; and Test--Lt. Col. Robert S. Tekell. Personnel strength at the beginning of the year consisted of forty military and forty-five civilians. At the end of the year, there were thirty-one military and thirty-one civilians.*

G. Fort Rucker Resident Agency (FRRA), Third Region, U.S. Army Criminal Investigation Command

The mission of the Fort Rucker Resident Agency did not change in 1990. The special agent in charge was Mr. Zell T. Armstrong; other key personnel included Mr. Robert R. Gravier and Mrs. Helen Frye. During 1990, the authorized personnel strength of the agency consisted of six special agents and two civilian support persons.⁷

H. U.S. Army Dental Activity (DENTAC)

The mission of DENTAC remained the same in 1990 as in 1989. The commander of the activity was Col. Robert L. Childress, and the deputy commander and chief of Dental Clinic Number Five was Col. Lawrence H. Shire. Lt. Col. Joseph R. Osmond was commander of Dental Clinic Number Two, and Lt. Col. Jay M. Walters was chief of Brown Dental Clinic from January until June and Lt. Col. James Woodson, for the remainder of the year. At the beginning of the year, there were twenty-eight military personnel and twenty-nine civilians. At the end of the year, there were thirty-four permanent party military personnel and twenty-nine civilians. An additional eighteen reserve military personnel had been assigned by the end of the year in response to Desert Shield.*

I. Multi Media Branch, Army Aviation Division, National Guard Bureau

*Historical report, OPTEC, CY 90.

⁷Historical report, FRRA, CY 90.

*Historical report, DENTAC, CY 90.

The mission of the Multi Media Branch was to provide dedicated visual information support for Army National Guard (ARNG)-unique aviation training, ARNG aviation safety, and ARNG general safety programs. The chief of the branch was Maj. William W. Shawn, and the assigned strength for 1990 was five ARNG military technicians and one competitive civil service employee.⁹

J. U.S. Army Aeromedical Research Laboratory (USAARL)

The mission of the USAARL was to conduct research and development on health hazards of Army Aviation, tactical combat vehicles, selected weapons systems, and airborne operations. It also assessed health hazards and stress and fatigue in personnel and assisted in a wide array of programs and activities relating to Army Aviation on the one hand and human health, safety, and physiology on the other. The commander of the USAARL in 1990 was Col. David H. Karney; the deputy commander for science was Col. J. D. LaMothe. Dr. Roger W. Wiley was the general health advisor, and Lt. Col. Edmond J. Enloe was the deputy commander for administration. The personnel strength of USAARL in 1990 consisted of sixty-eight military and seventy-two civilians.¹⁰

K. U.S. Army Safety Center (USASC)

The mission of the USASC in 1990, as in previous years, was to support the Army safety program in relation to the conservation of manpower and materiel resources. Brig. Gen. Lou Hennies served as commanding general of the USASC as well as director of Army safety throughout 1990. The deputy commander of the Safety Center was Col. James Pongonis, and the sergeant major was Sgt. Maj. Landon Chapman.

The major subordinate elements of the Safety Center with their respective directors were as follows: Directorate of Systems Management--Col. Herman S. Heath; Directorate of Media and Marketing--Lt. Col. Herbert Blanks from January through July and Mrs. Mary Windham for the remainder of the year; Directorate of Investigations--Col. William G. Stolarcek; and Directorate of Information Technology--Mr. Harold M.

⁹ Historical report, Multi-Media Branch, CY 90.

¹⁰ Historical report, USAARL, CY 91.

Myers. The name of this last named directorate was changed from Information Management to Information Technology in 1990 to more accurately reflect the functions performed.

In May of 1990, another major element of the USASC, the Directorate of Plans, Programs, and Professional Development, was reorganized into the Army Safety School. The mission of the Safety School was to develop, coordinate, recommend, disseminate, and oversee Army Safety Program proponentcy, doctrine, plans, policy, education, training, organization, and standardization during peacetime, contingency operations, and war. The commanding general of the Safety Center became the commandant of the Safety School, and Mr. James T. Lopez, the former director of Plans, Programs, and Professional Development, became the assistant commandant.¹¹

L. Army Materiel Command Logistic Assistance Office (AMC LAO)

The mission of the AMC LAO was to provide technical and supply assistance to users of equipment that had been sent to the field; to provide training and technical assistance to eliminate problems and improve materiel readiness; to expedite release of essential equipment and repair parts; and to provide other services to equipment users. The AMC LAO chief during 1990 was Mr. Bernard James.¹²

¹¹ Historical report, USASC, CY 90.

¹² Historical report, AMC LAO, CY 90.

APPENDIX IV
STAFF DIRECTORIES

A. U.S. Army Aviation Center

U.S. ARMY AVIATION CENTER
FORT RUCKER, ALABAMA 36362-5000

STAFF DIRECTORY

MAY 1990

Table listing various staff positions and their details, including titles, names, and contact information.

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B. U.S. Army Aviation Logistics School

APPENDIX V

LIST OF ACRONYMS

A/LAN	Army/Local Area Network
AAAA	Army Aviation Association of America
AAFES	Army and Air Force Exchange System
AAMP	Army Aviation Modernization Plan
AAMT	Aviation Armament Maintenance Technician
AAR	After Action Report
AAWWE	Army Aviation Annual Written Evaluation
ABSO	Aviation Branch Safety Office
ABE	Aviation Boresight Equipment
ACDSS	Aviation Center Direct Support System
ACES	Aviation Continuing Education System
ADA	Air Defense Artillery
AEC	Army Education System
AFB	Air Force Base
AG	Adjutant General
AGES	Air-to-Ground Engagement System
AIRNET	Air Network
AIT	Advanced Individual Training
ALB	Air Land Battle
ALB-F	Air Land Battle - Future
AMC	Army Materiel Command
AMC LAO	Army Materiel Command Logistics Assistance Office
ANCOC	Advanced Noncommissioned Officer Course
APO	Aviation Proponency Office
ARCENT	U.S. Army Central Command
ARCSA	Aviation Requirements for the Combat Structure of the Army
ARIARDA	Army Research Institute Aviation Research and Development Activity
ARNG	Army National Guard
ASE	Aircraft Survivability Equipment
ASET	Aircraft Survivability Equipment Training
ASI	Additional Skill Identifier
ASPR	Aviation Systems Program Review
ATA	Air-to-Air
ATAS	Air-to-Air Stinger
ATAWS	Airborne Target Acquisition and Weapons System
ATB	Aviation Training Brigade
ATB	Apache Training Brigade
ATC	Air Traffic Control
ATS	Air Traffic Service
ATTC	U.S. Army Technical Test Center
AVSCOM	Aviation Systems Command
AVIM	Aviation Intermediate Maintenance
AVOAC	Aviation Officer Advanced Course
AVOBC	Aviation Officer Basic Course
AVUM	Aviation Unit Maintenance

BNCOC	Battalion Noncommissioned Officer Course
C&GSC	Command and General Staff College
CAC	Combined Arms Center
CACDA	Combined Arms Center Development Activity
CASCOM	Combined Arms Support Command
CAO	Chaplain Activity Office
CMF	Career Management Field
COEA	Cost and Operational Effective Analysis
CTEA	Cost and Training Effectiveness Analysis
CWO	Chief Warrant Officer
CY	Calendar Year
DA	Department of the Army
DAC	Deputy Assistant Commandant
DAP	Directorate of Aviation Proponency
DCAT	Department of Combined Arms Tactics
DCD	Directorate of Combat Development
DCP	Directorate of Civilian Personnel
DEH	Directorate of Engineering and Housing
DENTAC	U.S. Army Dental Activity
DES	Directorate of Evaluation and Standardization
DEW	Directed Energy Warfare
DGFS	Department of Gunnery and Flight Systems
DOC	Directorate of Contracting
DOD	Department of Defense
DOET	Department of Enlisted Training
DOIM	Directorate of Information Management
DOL	Directorate of Logistics
DOTD	Directorate of Training and Doctrine
DOTS	Directorate of Tactics and Simulation
DPCA	Directorate of Personnel and Community Activity
DPT	Directorate of Plans and Training
DPTMSEC	Directorate of Plans, Training, Mobilization, and Security
DRCS	Directorate of Reserve Components Support
DRM	Directorate of Resource Management
EDRE	Emergency Deployment Readiness Exercise
EEO	Equal Employment Opportunity
EEOO	Equal Employment Opportunity Office
EMS	Executive Management System
EOC	Emergency Operations Center
FAA	Federal Aviation Administration
FORSCOM	U.S. Army Forces Command
FRRA	Fort Rucker Resident Agency
FTS	Flying Training Squadron
FTX	Field Training Exercise
FY	Fiscal Year
HQDA	Headquarters, Department of the Army
IERW	Initial Entry Rotary Wing
IG	Inspector General

IRAC	Initial Review and Audit Compliance Office
ITR	Interservice Training Review Organization
LD/PPO	Leader Development/Personnel Proponency Office
LH	Light Helicopter
LHX	Light Helicopter Experimental
MACOM	Major Army Command
MCB	Managing the Civilian Work Force to Budget
MILES	Multiple Integrated Laser Engagement System
MILES AGES	Multiple Integrated Laser Engagement System Air-to-Ground Engagement System
MOA	Memorandum of Agreement
MOS	Military Occupation Skill
MPA	Military Police Activity
MPD	Military Personnel Director
MPLH	Multi-Purpose Light Helicopter
MQS	Military Qualification Specialty
NATO	North Atlantic Treaty Organization
NBC	Nuclear, Biological, Chemical
NCO	Noncommissioned Officer
NCOA	Noncommissioned Officer Academy
ODCSPER	Office of the Deputy Chief of Staff for Personnel
OMA	Operation and Maintenance, Army
OPTEC	U.S. Army Operational Test and Evaluation Agency
OR	Operational Readiness Rate
OSD	Office of the Secretary of Defense
OSJA	Office of the Staff Judge Advocate General
PAO	Public Affairs Office
PLATO	Programmed Logic for Automated Teaching Operation
PMO	Project Management Office
POP	Proof of Principle
RC	Reserve Components
RIF	Reduction-in-Force
ROTC	Reserve Officers Training Corps
SDT	Self Development Tests
SEMA	Special Electronic Mission Aircraft
SINGARS	Single Channel Ground and Airborne Radio System
SJA	Staff Judge Advocate
SOA	Special Operations Aircraft
SOUTHCOM	U.S. Army Southern Command
SQT	Skill Qualification Test
STACOM	Standard Computer Output Microform
TADS	Tactical Air Defense System

TDA	Table of Distribution and Allowance
TEXCOM	U.S. Army Test and Experimentation Command
TOE	Table of Organization and Equipment
TPO	TRADOC Proponency Office
TRADOC	U.S. Army Training and Doctrine Command
TSM	TRADOC Systems Manager
TSO	Threat Support Office
USAADTA	U.S. Army Aviator Development Test Activity
USAAEFA	U.S. Army Aviation Engineering Flight Activity
USAALS	U.S. Army Aviation Logistics School
USAALS AHD	USAALS Attack Helicopter Division
USAALS AAHD	USAALS Advanced Attack Helicopter Division
USAALS DCD	USAALS Directorate of Combat Development
USAALS DOTD	USAALS Directorate of Training and Doctrine
USAALS DAHT	USAALS Department of Attack Helicopter Training
USAALS DAALT	USAALS Department of Advanced Aviation Logistics Training
USAALS DCD	USAALS Directorate of Combat Development
USAALS DOES	USAALS Directorate of Evaluation and Standardization
USAALS DATT	USAALS Department of Aviation Trades Training
USAALS DAST	USAALS Department of Aviation Systems Training
USAALS LD/PPO	USAALS Leader Development/Personnel Proponency Office
USAALS SHD	USAALS Scout Helicopter Division
USAAMC	U.S. Army Aeromedical Center
USAARL	U.S. Army Aviation Research Laboratory
USAASO	U.S. Army Aeromedical Services Office
USAATCA	U.S. Army Air Traffic Control Activity
USAAVNDTA	U.S. Army Aviation Development Test Activity
USAAVNC	U.S. Army Aviation Center
USAISC	U.S. Army Information Systems Command
USALOGC	U.S. Army Logistics Center
USAR	U.S. Army Reserve
USAREUR	U.S. Army Europe
USARSO	U.S. Army South
USASAM	U.S. Army School of Aviation Medicine
USASC	U.S. Army Safety Center
USATALS	U.S. Army Transportation and Aviation Logistics School
USATCFE	U.S. Army Transportation Center and Fort Eustis
VCSA	Vice Chief of Staff of the Army

VHF
WOC

Very High Frequency
Warrant Officer Candidate

APPENDIX VI

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