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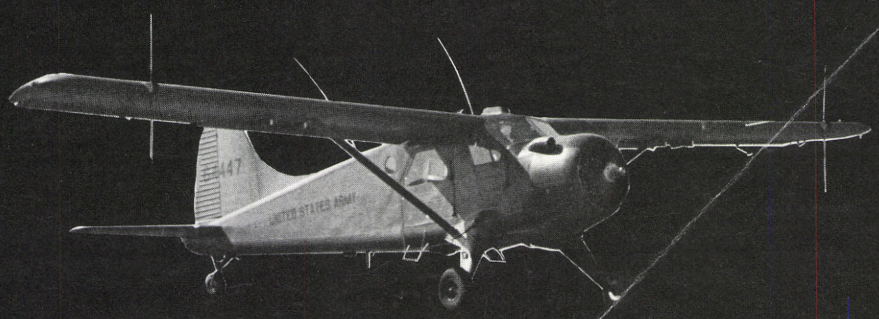
APRIL 1981

Intelligence & Army Aviation



APRIL 1981 • VOLUME 27 • NUMBER 4

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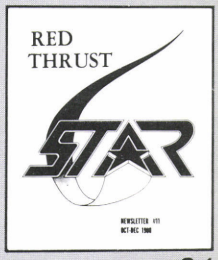
page 3

page 18

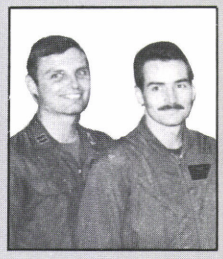
2 **Intelligence And Army Aviation,** BG James A. Teal Jr.
3 **Special Electronic Mission Aircraft,** CW3 Edward (Randy) Jones
10 **The Force Multiplier,** MAJ Ballard M. Barker and MAJ James C. Gorday
14 **Aviation Training In The 1980s—Another View,** MAJ James H. Kenton
16 **Aviation Personnel Notes: Aviation Career Incentive Pay,** LTC Joe D. Carothers
18 **PEARL'S**
20 **DES Report To The Field: Areas Of Interest Pertinent To CH-47 Aircraft**
21 **Threat: Threat Training,** CPT Bronislaw R. Maca and 1LT Mark Grablin
24 **Management Of Army Aviation,** BG Richard D. Kenyon
29 **Aviation Training,** LTC(P) Gene Grayson and LTC Tom Rountree
32 **Aviation Systems Division,** LTC Patrick O. Kelly
36 **Aviation Logistics Office,** Carolyn Chapman
38 **Aviation Personnel Policy,** LTC Robert D. Duffie
40 **Aviator Management,** LTC Joe D. Carothers
45 **AMEDD Aviation,** LTC Thomas C. Scofield
47 **Army Reserve Aviation,** LTC Bert Rice
48 **Reporting Final (Includes FORSCOM/TRADOC Helicopter Fly-Offs)**

Back Cover: **ATC Action Line: DOD Flight Information Publications**



page 21

page 24



page 48

Cover: **Illustrates a few of the Army aircraft used in the past as platforms for airborne intelligence collection systems. Find out about the close coordination between intelligence and aviation-page 2, a chronology of SEMA systems-page 3 and on page 10 the tremendous value of current and proposed collection systems to tactical ground force commanders**

Richard K. Tierney
Editor

The mission of the ***U.S. Army Aviation Digest (USPS 415-350)*** is to provide information of an operational, functional nature concerning safety and aircraft accident prevention, training, maintenance, operations, research and development, aviation medicine and other related data.

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An explanation of a "marriage of necessity" and an update on Army Aviation's top-level management team are highlights of this informative ***Aviation Digest.***

Brigadier General James A. Teal Jr., commander of the Army Intelligence Center and School, Ft. Huachuca, AZ, writes in the lead article that necessity has led to a "careful and deliberate interplay" between the intelligence and aviation communities. The result of that has been a "harmonious marriage" of the two, and he is very complimentary to the Army Aviation team—key partners in that union.

Means by which the intelligence/aviation relationship has been attained and is being broadened are described by members of General Teal's staff, Chief Warrant Officer, CW3, Edward (Randy) Jones, Major Ballard M. Barker and Major James C. Gorday.

In "Special Electronic Mission Aircraft" (SEMA), CW3 Jones traces the development of the intelligence gathering systems which have converted some Army aircraft—including the OV-1 Mohawk, U-21 Ute and UH-1 Huey—into SEMA platforms. I am sure you will enjoy reading this highly enlightening and entertaining article as much as I did. The author tells us about the systems that have emerged over the years, beginning with the first generation of SLAR (side looking airborne radar) in 1957, about how the various aircraft were configured to carry the new equipment, and about some of the trials encountered in the SEMAs' use.

"The Force Multiplier" by Majors Barker and Gorday is another welcome addition and contribution from the intelligence community. They identify today's military intelligence systems as such multipliers which "provide that edge in timely and accurate information that will allow friendly commanders to more effectively employ their forces," granting that those forces are going to be outnumbered in the air land battles of tomorrow. The authors report on the "intelligence-electronic warfare architecture" developed at the Intelligence Center to ensure the IEW needs of corps and divisions are met in an optimum manner. IEW systems are carried by helicopters at the division level and by fixed wing aircraft in the corps—and the article reports on the organizations in which those assets are employed today and the ones planned for the future.

In July 1979, the ***Aviation Digest*** published articles which depicted, both verbally and schematically, the elements in Headquarters, Department of the Army, that manage Army Aviation affairs. An update on that is presented in this issue; and if it becomes as hard to obtain as the July 1979 magazine did, you will want to put your copy in a place of safekeeping! Plans now are to begin an annual repetition of this information in October 1982.

This valuable DA section is introduced by Brigadier General Richard D. Kenyon, Army Aviation Officer, Office of the Deputy Chief of Staff for Operations and Plans, DA, in "Management of Army Aviation." He notes that the AAO position, with the "responsibility to monitor and influence aviation actions to ensure successful integration of aviation within the Army mission," is a boon that combat systems or branches do not enjoy on the Army Staff.

Functional elements of the staff which control and manage the aviation assets are covered in seven articles. The one element not included is the National Guard Bureau's aviation activities. A thorough coverage of the many contributions made to Army Aviation's strength by Guardsmen will be featured in November by the ***Aviation Digest,*** so it was deemed best to hold the National Guard's HQDA portion for that issue.

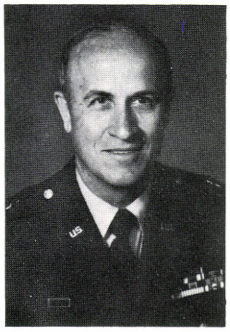
Regardless of the echelon at which we serve in Army Aviation, I'm sure that each of us shares the goal of being the best team member possible. The material before you in this issue will help to do just that. —So pleasant reading and let us hear your feedback.

Major General Carl H. McNair Jr.
Commander, U.S. Army Aviation Center
Fort Rucker, AL

Intelligence & Army Aviation

A Marriage of Necessity

General Teal



Brigadier General James A. Teal Jr.
Commander
United States Army Intelligence Center and School
Fort Huachuca, AZ

The UNITED STATES Army Intelligence Center and School, Ft. Huachuca, AZ, with its ancillary campus at Ft. Devens, MA, is charged with the responsibility to develop doctrine, articulate formal requirements documentation to satisfy user needs for materiel acquisition, test resultant systems and train required personnel to operate these systems.

Our effective use of these systems dictates a harmonious marriage with the Army Aviation community. We cannot simply stuff our intelligence collection equipment into, or hang it onto, any general purpose aircraft and expect satisfactory results. A careful and deliberate interplay between our two communities has resulted in the effective development of collection systems using three diverse Army aircraft: the venerable OV-1 Mohawk, the RU-21 Ute (a hard-working airplane in optical IR gray) and the ubiquitous UH-1 Huey.

Our purpose with the three articles in this issue, and the one next month, is to outline some aspects of the role played by Army Aviation in satisfying tactical commanders' battlefield information needs. The evolution of our capability to collect vital intelligence from an organic U.S. Army manned aerial platform is marked by painful trial and error, driven by a sometimes elusive and changing threat and rewarded by varying degrees of success. The development of our sophisticated systems of today was directly influenced by our participation in a relatively low intensity conflict in Southeast Asia, and our realization of the possibility of the need for employment of these systems in a high intensity conflict against a sophisticated enemy. Our measure of success in this endeavor is a direct reflection of the quality and dedication of those personnel, within and outside of the Army Aviation community, who have devoted much of their lives to the development, acquisition and employment of these systems.

Over the years, Army intelligence has developed several distinct intelligence disciplines, commonly identified as SIGINT or signal intelligence, IMINT or imagery intelligence, and HUMINT or human intelligence. Army Aviation has played a significant role in these disciplines. Some of our SIGINT sensors are employed using the RU-21 and RV-1D Mohawk aircraft. In the IMINT field we find the photo, infrared and moving target indicator (SLAR) capability aboard the OV-1 aircraft, and some of the HUMINT capability is represented by the human eyeball aboard the OV-1 in its direct aerial observation role. Jamming, communications intercept and direction finding capability can be found in the QUICK FIX system using the UH-1, and the valuable and very successful SOTAS system is found in the UH-1 also. Both of these systems are slated to be transitioned into the UH-60 Black Hawk later in this decade.

Recognizing of course that aircraft do not live forever (with possibly the notable exception of the C-47 "Gooney Bird"), there is a concerted effort underway at USAICS in conjunction with the U.S. Army Aviation Center, Ft. Rucker, AL, and the materiel developers to initiate the required actions to develop, test and eventually field the follow-on SEMA aircraft of the 1990s—the tentatively identified "SEMA-X." Currently, the final configuration of this platform is unknown. This is dependent upon definition of user needs, desired mission profiles and emerging state-of-the-art—not only aircraft technological advances, but developments in the mission gear, or sensors, to be carried aboard this aircraft. During calendar year 1981 the final design and performance requirements for the "SEMA-X" should be finalized and the long and arduous acquisition process should be underway.

We cannot afford to sit back and rest on our laurels. The train is moving and division and corps commanders' battlefield information needs must be met. Together, the Army Aviation and intelligence communities will develop and improve those systems required to satisfy a large measure of these information needs.

Glossary—page 12

Special Electronic Mission Aircraft

Intelligence from Above

CW3 Edward (Randy) Jones
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ARMY FIELD commanders always have strived for a clear perception of their enemy and the battlefield upon which they will meet. Early commanders depended on patrols and observation from the highest points available because the ability to look down at an enemy's position gave a chessmaster's view of the tactical situation.

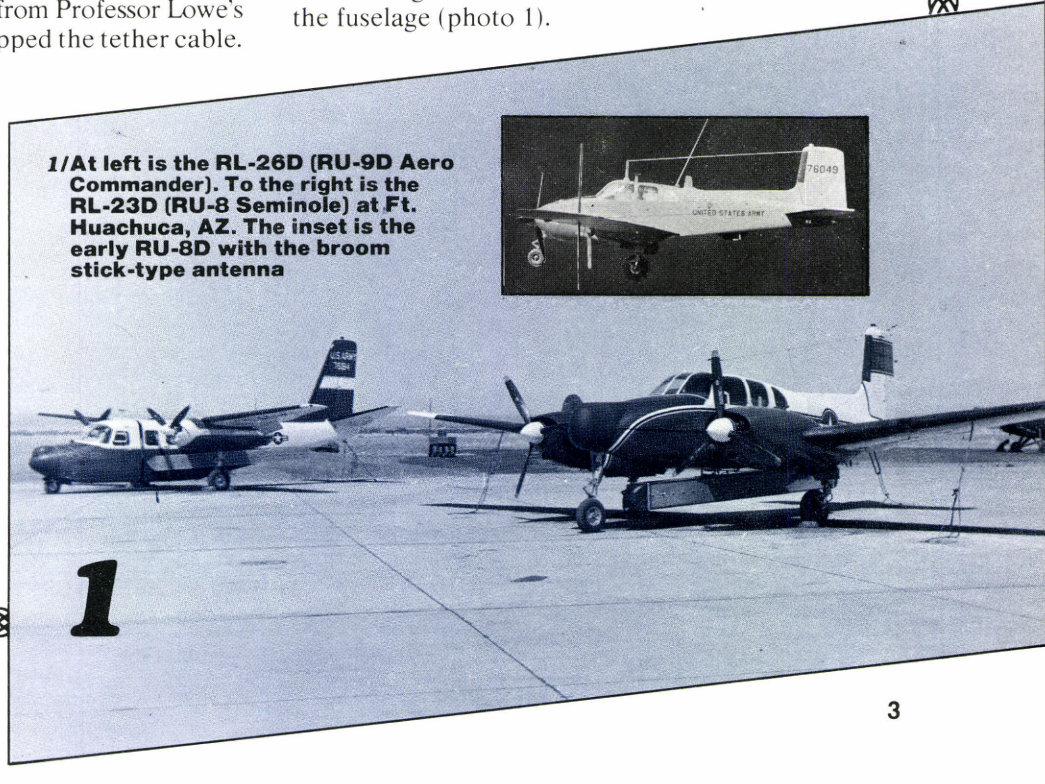
In 1861, Professor Thaddeus Lowe, a famous balloonist, convinced the U.S. Army of the tactical importance of aerial observations (see June 1962 *Aviation Digest*, page 2). The Army used Professor Lowe and his balloon to aid General George McClellan during his Virginia campaign.

In April 1862, an enthusiastic Brigadier General Fitz-John Porter, commander of the Union's V Corps, was observing the Confederates from Professor Lowe's balloon when a gust of wind snapped the tether cable. This resulted in the good general going on a wild ride over Confederate positions and making him a delightful target for the riflemen. Fortunately the winds blew him back to Union lines without physical harm, but the experience gave him the unparalleled distinction of being the first "Army Aviator" to fly a penetration mission behind enemy lines.

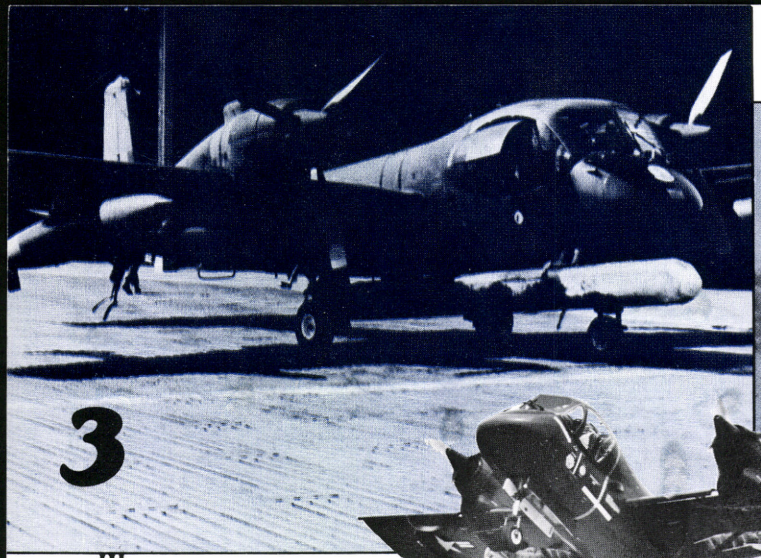
Professor Lowe's balloon gave General Porter and the tactical commanders the advantage of a higher viewing point. It did, however, have a few shortcomings as an airborne intelligence platform. The modern Army needs more than a tethered balloon to provide timely battlefield intelligence.

It was not until after the Korean War that significant advances were made in electronic technology. Application of this technology to Army aircraft for intelligence-gathering purposes began a fast-moving evolution that today has given us SOTAS, GUARD-RAIL, QUICK LOOK, the OV-1D Mohawk and other highly sophisticated systems. The acronym SEMA for special electronic mission aircraft is used to designate this unique family of aircraft. This article presents a brief history and description of some of the aircraft and their missions during this evolution.

SLAR. In 1957 the newly developed APS-85 SLAR was installed in the Aero Commander RL-26D (later redesignated RU-9D). Two of these aircraft were configured in this manner. Their most significant feature was the large antenna booms mounted on each side of the fuselage (photo 1).



1/At left is the RL-26D (RU-9D Aero Commander). To the right is the RL-23D (RU-8 Seminole) at Ft. Huachuca, AZ. The inset is the early RU-8D with the broom stick-type antenna



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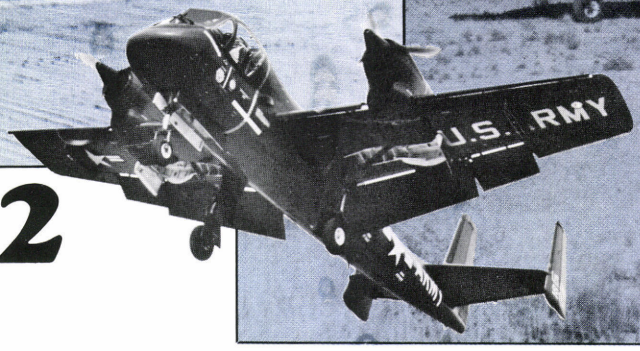

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During the same time period the APS-85 was installed in the RL-23 Seminole (later designated RU-8D) (photo 1). At least 31 of this version were built, and they spent time in both Germany and Korea.

SLAR proved an excellent intelligence-gathering system. Even early SLAR could detect moving targets at 60 kilometers. The uniqueness of SLAR is that it can detect the enemy on the move at night in a blackout condition even while maintaining strict radio silence.

The OV-1 Mohawk. Paralleling the development of the SLAR was the emergence of the Army's first twin turboprop fixed wing aircraft. The Grumman OV-1 Mohawk made its initial flight on 14 April 1959. To the aircraft artist the AO-1, as the Mohawk was designated in 1959, was decidedly ugly, but it soon was proving positive the old adage that handsome is as handsome does. At the 1961 Paris Air Show, the AO-1 proved how handsome it was with a dazzling display of shortfield performance and airborne maneuverability, with a 355-foot turning radius.

The OV-1 quickly proved its design concept as a near all-weather, round-the-clock surveillance airplane. With oversize control surfaces and a toughness characteristic of many Grumman (Ironworks) products, the OV-1 is an excellent front-line battlefield reconnaissance airplane.

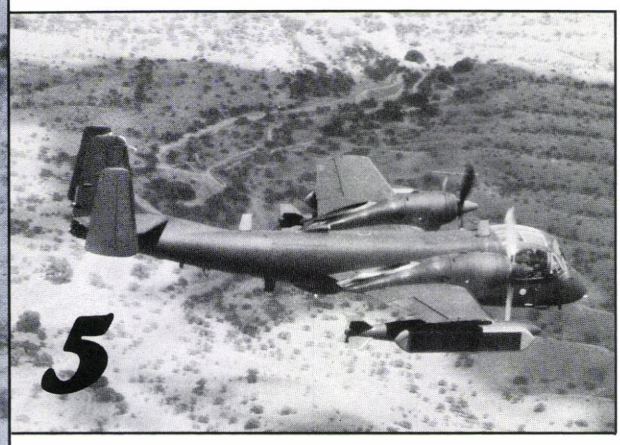
The Mohawk's versatility brought a new dimension to Army observation. This is exemplified by its ability to fly nearly as slow as the L-19 (O-1) Bird Dog yet dive in excess of 400 mph. Further, it has several spacious equipment compartments plus six standard wing racks that can carry as much as 3,000 pounds of equipment.

There were three versions (A, B and C) originally planned for the Mohawk, of which a total of 286 were delivered.

The first OV-1As were obtained by the Army on 16 September 1960 for use as visual and photo reconnaissance aircraft (photo 2). They were equipped with a large format vertical camera that could be electrically rotated from vertical to within 15 degrees of the horizon on either side of the aircraft. An additional forward-facing panoramic camera with a 180-degree field of view was mounted in the nose. The OV-1A immediately was deployed to Germany with the 7th Army.

The OV-1B (photo 3) was the first true SEMA version and was flown in 1960 with the new APS-94 SLAR. The forward camera was removed from the B model. This version was used throughout Europe and in Korea until the mid-1970s.

The OV-1C is physically the same aircraft as the OV-1A with most C's retaining both cameras. The C model added a high resolution infrared detection system and a data link over which the film data was sent in real time to the ground commander. Both B and C versions required removal of the right seat controls for the cockpit display systems. The first Mohawks deployed to Vietnam went to Nha Trang in mid-1962, with the 23d Special Warfare Aviation Detachment. Because of mission requirements, these were six OV-1Cs without the IR system. Instead, they were especially configured with rocket and gunnery systems and a Mark 20 gunsight.



2/OV-1B in flight
3/OV-1B with SLAR
4/OV-1D with SLAR
5/Preproduction OV-1D with QUICK LOOK pods installed for early test. RV-1 aircraft do not have small blister under belly at rear of wing or blister under cockpit

The 23d SWAD's mission was surveillance in support of the indigenous Army of the Republic of Vietnam forces with visual reconnaissance and photo support. The sole purpose of the armament was for fire suppression to allow the aircraft to get to and remain over the target area—often below 500 feet AGL to enhance identification of target type and structure.

There are some who think that Army observation and scout aircraft should not be armed; I am sure that if we could ask General Porter (of balloon fame) he would wholeheartedly disagree. True, some suicide-minded aviators may need professional counseling about the facts of life but the ability to make a surprised enemy automatic-weapons operator duck, if only for a moment, may save many scout aircraft and crews.

With the 23d SWAD being in a unique Army role, there were several Department of the Army and other special observers with the unit most of the time; one of these was LTC Robert M. Shoemaker, now general and commander of FORSCOM. Of the six original OV-1s, five were lost in the first year. The first through a landing accident; the second went down from unknown causes and wasn't found until a year later. The third lost an engine in mountainous terrain and the crew was forced to eject. The fourth was on a low level surveillance mission in the Delta of Vietnam and received automatic weapons fire that set the main fuel cell afire. The crew ejected but only the observer survived. Once on the ground the observer was pursued by the Viet Cong and, being unharmed and with every intention of staying that way, the Soldier ran for the coast and was picked up in the South China Sea, swimming for all he was worth toward the Philippines. The fifth aircraft received a hit from a large caliber weapon and returned to Soc Trang to attempt a no-hydraulics landing. The crew determined that the damaged right main gear could not be extended. After trying to land without flaps, brakes, inboard ailerons or steering, in addition to the gear problem, the crew decided the safest thing to do was to climb back to a safe altitude and eject over the compound.

The aircraft was trimmed for hands-off flight and on a heading in a safe direction. The crew ejected overhead as planned. Then the fun started! The aircraft, being suddenly 800 pounds lighter in the nose, began to put on a very fine aerobatic show of loops and dives for the camera enthusiasts of Soc Trang. Even the crew got to the ground in time to watch the show. Everything was fine until, as if by command, the spectators realized that no one was in charge of this show and the Mohawk was now directly overhead coming straight down toward them at more than 200 knots. Of course, the most sensible thing to do in this situation is to run like the devil from point A to B, that is, unless you are already at point B, then you must run elsewhere. After terrorizing the local population sufficiently, "Old Yeller" rolled over and properly went straight into the Soc Trang aircraft boneyard.

In 1968, the Army contracted for the OV-1D. It contains a major improvement in the Mohawk's capability. The D model has a third camera system installed that provides vertical panoramic photos. It incorporates provisions for both the improved TV-like AAS-24 IR set and the APS-94D SLAR (photo 4). Other added features are a radiological surveying

6/JUH-1 with SOTAS

system, an improved night photo flasher system that is pod mounted, and the Litton ASN 86 Inertial Navigation System.

In 1973, the QUICK LOOK I system was installed in two OV-1C aircraft and deployed to Germany for field evaluation. The QUICK LOOK system is an ELINT system designed to identify and locate noncommunication transmitters (photo 5). The large relatively flat pods mounted outboard of the 150-gallon drop tanks are a unique characteristic of these aircraft.

QUICK LOOK II was purchased in 1976, based on the excellent success of the QUICK LOOK I system. Two systems currently are fielded worldwide. Present plans call for fewer than 25 aircraft.

Other important OV-1 projects involved in the SEMA evolution were: SILVER Lance, an OV-1C that was converted to an early EW system similar to QUICK LOOK. It was deployed to Germany in 1963. SEAMORE was a Department of Defense project managed by the Army. It involved two OV-1C and two OV-1B aircraft. They were modified to test new equipment and concepts in quick-reaction targeting techniques. In early 1968 they were deployed to Vietnam. One of the most unique things about this project was that it was the first time the Army awarded a contract to a single contractor for a total airborne weapons system, to include spares and ground support equipment. Grumman received the contract and delivered the total package in 1 year. Many of the test concepts later were incorporated in the OV-1D.

SOTAS. The Standoff Target Acquisition System currently is the Army's only other operational airborne radar intelligence system. In 1968, Project ALARM was built using a modified APS-94 radar set. After successful concept testing the first SOTAS was funded in 1975 using two JUH-1 Huey helicopters. These were deployed for the REFORGER exercises in Germany for several years starting in 1975. By 1979, two units of two aircraft each were permanently assigned in Germany (photo 6). For comprehensive explanations of the SOTAS project, see the May 1980, October 1980 and February 1981 issues of the ***Aviation Digest*** (copies are available by writing Editor, ***Aviation Digest,*** P.O. Drawer P, Ft. Rucker, AL 36362).

The second major concept to become an airborne intelligence gathering system was the ground-based radio direction finding technique. Anyone who has watched many World War II movies knows that this system uses two or three trucks at different locations with rotatable loop antennas mounted on top. The fix is made when the signal lines from the trucks all cross over the same point and the pursuer, hero or villian, dashes off to the very room in which the transmitter is located. Well, it just doesn't work like that most of the time. You can consider yourself lucky if you get a fix that forms a small triangle indicating the transmitter is located somewhere inside it.

ARDF. Airborne Radio Direction Finding became an important intelligence mission in World War II, but it wasn't until 1961 that a system was successfully used in an aircraft. After experimenting with several different aircraft to include the UH-19 Chickasaw, L-19 (0-1) and various other standard Army aircraft, success was achieved with an L-20 (U-6) Beaver (photo 7). After some refinement, three systems were assembled and sent to Vietnam. In 1962, the three systems were used to convert three Beavers belonging to the Vietnam Flight Detachment to RU-6 aircraft. The airplanes were immediately pressed into service as SEMA platforms. Their success was dramatic—airborne communication intelligence development became a top priority in Army Aviation. The first purchase of production ARDF was in 1964 under the project name Seven Roses in which seven RU-6 airplanes were delivered. This first direction finding system was made up of two standard Collins receivers, a C-12 compass system which had a digital readout to a tenth of a degree and dipole antennas mounted at the outboard end of each wing.

The mission required the coordinated effort of a crew of Three. An intercept operator would manually monitor the frequency band. Once the operator identified an enemy signal it was switched into the pilot's intercom system. The pilot then made a wing-level flat turn with rudder until a signal null (absence of sound) was found. At the moment of the null the pilot

noted the heading on the C-12 compass and told the copilot to *mark* position. The copilot, using a hand-held map, would locate their position and transfer the coordinates to a 14- by 18-inch plotting sheet lying in his lap. As the pilot quickly turned 90 degrees and flew for distance to give angle separation between the shots, the copilot would draw an extended pencil line across the position of the first mark.

After a minute or so the pilot would start another flat turn searching for a null. This procedure would be repeated the minimum of three times needed to tighten the fix triangle in which the enemy transmitter was located. During the target DFing, the operator is looking for another target on the second set. The rapid uncoordinated turning with a little convective turbulence thrown in for good measure can have a very unsettling effect on the stomachs of the copilot and intercept operator. I have spent more than one mission in an RU-8 with pencil in one hand and sick-sack in the other, wondering if it was really worth it.

The Seven Roses airplanes were deployed to the Delta region of Vietnam in 1965. This area was chosen because it was easier for the pilots to accurately locate themselves with a map than it would be over dense jungle. There were eventually about 20 RU-6 aircraft built, with one combat loss in the Delta.

The second successful ARDF aircraft conversion was the U-8 in 1964. The first conversion was to two U-8Ds and one U-8F and proved very successful. There were several important improvements over the U-6. The most obvious was the safety of a multiengine aircraft. The basic DF system was the same as that in the U-6 with the addition of an ASN-64 Marconi Doppler Navigation Set and a bombsight-type device mounted in the rear for the operator to accurately guide the pilot over a known point to update the doppler. The doppler provided progressive Universal Transverse Mercator coordinates of the aircraft's position and eliminated the copilot's constant reference to a map. A later improvement called Windbottle changed the dipole antennas from a round broomstick-like affair to a flat blade.

The RU-8s were deployed to several areas in Vietnam in 1966. There were about 40 U-8Ds converted for the ARDF mission.

The year 1966 brought the U-21 Utes into the ARDF picture and they have remained the backbone of the program. The first project was named LAFFING EAGLE. It brought us out of the Stone Age with its many improvements. It was a radically different system with two operators, one being the intercept operator as before, and the second a DF operator. This second person removed the DF load from the cockpit. Now the DF was done using a small cathode ray tube scope and electronic magic to take the DF shots which could be taken without having to point the airplane directly into a signal null. DF operators simply spun the marvelous dials creating their own null, pushed a button and out came a printed slip of paper with the shot direction and aircraft position derived from the new, very accurate Inertial Navigation System. LAFFING EAGLE, of which there was a total of 17 systems built, was deployed to Vietnam in 1968 (photo 8).

The second project was LEFT JAB, started in 1966. It is a limited system using three RU-21 airplanes (photo 8). It is characterized by a large oval antenna that is extended in flight well below the bottom of the aircraft. LEFT JAB also has two operators, but has only an intercept and DF capability. The aircraft were deployed to Hue Phu Bai, Vietnam, in 1971, where a crew and aircraft were lost to a hostile surface-to-air missile. The remaining two aircraft are with the 138th Aviation Company (EW), U.S. Army Reserve in Orlando, FL.

7/RU-6 (L-20) Beaver
8/RU-21 (L-23) shows two LEFT JAB aircraft with antenna extended and one LAFFING EAGLE (center)

In 1972, the RU-21E LEFT FOOT project was developed as an improvement to LAFFING EAGLE. It incorporated a plotting computer that removed all plotting responsibility from the cockpit by providing automatic position fixing. There were about 16 aircraft in this configuration. They were never deployed outside of the continental United States and were dismantled so the airframes could be used in the GUARDRAIL project.

In 1973, CEFIRM Leader became the first coordinated multiaircraft mission system. This project configured nine RU-21s. It consisted of four DF RU-21A, two jammers RU-21C and three master control RU-21B aircraft. The system usually was flown with four aircraft, one jammer, two DF and one control. It was never permanently deployed outside of CONUS and now is also assigned to the 138th Aviation Company (EW).

The last RU-21 systems have been GUARDRAIL, starting in 1974 with GR I and progressing to today's GR V (photo 9). The most significant aspects of these systems have been total automation—eliminating the need for airborne operators. They can perform as a single aircraft or multiaircraft mission system, with the systems under control of a ground facility. GR V can do more in seconds than the RU-6 could do in a 4-hour mission. GUARDRAIL systems are deployed at key points around the world.

Other aircraft used in the ARDF program include:

The RU-1 Otter: Three were configured in the mid-1960s using the RU-6/RU-8 basic DF system with an additional operator position (photo 10). The extra operator was primarily to record selected traffic. One aircraft remained in CONUS as a DF pilot trainer and the others were sent to Vietnam in 1967. In late 1968 one of the two Otters was shot down and destroyed. The crew was somewhat luckier—they were detained by the Cambodian government for 60 days and released at the urging of very high U.S. Government officials.

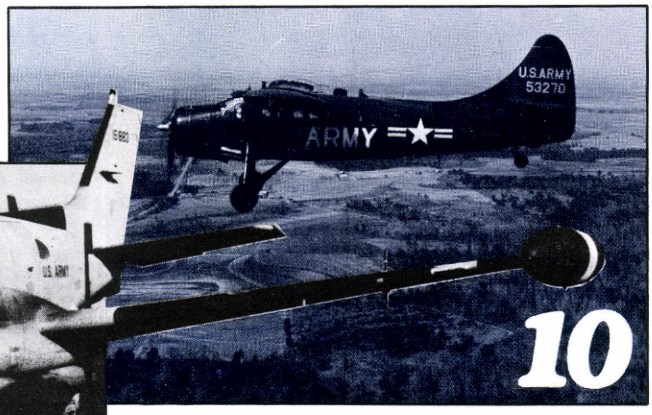
CV-2 Caribou: In late 1964 one CV-2 was configured with the basic DF system of the time, incorporating two operator positions (photo 11).

UH-1B: In 1967 five UH-1Bs with the project name LEFT BANK were the first helicopters to be successfully converted. They were deployed to Vietnam in 1968 and became the first ARDF aircraft to be used as a division asset. The LEFT BANK system was almost identical to the system in the Otter.

CEFLIEN LION/Crazy Cat: This project was started in 1966 with the acquisition of six Navy P-2V Neptunes. In the winter of 1966 the 1st Aviation Company was reactivated at Ft. Devens, MA, and began training for the airborne EW mission. In early 1967 the unit moved to Marana, AZ, to finish training, using the Neptunes for the first time. Five of the P-2V Crazy Cats were configured for the EW mission of intercept and jamming. The spacious aircraft had five EW, one target controller and one communications specialist operator positions. Extra airline-type seats provided for alternate operators and crewmembers. The galley and toilet were retained for crew comfort. The unit was deployed to Cam Ranh Bay, Vietnam, in mid-1967. Once operational, they flew 8-hour EW missions. The unit was deactivated in 1972.

QUICK FIX: This system began in 1971 with two UH-1 aircraft (photo 12). It used the TLQ-27 ground-based jammer modified for airborne use. This first QUICK FIX could intercept and DF signals. In 1976

9 /RU-21 GUARDRAIL V
10 /U-9 (L-26) with the same basic airframe as the RL-26
11 /CV-2 Caribou
12 /UH-1 with QUICK FIX
13 /YO-3A, the quiet one
14 /UH-1 with INFANT



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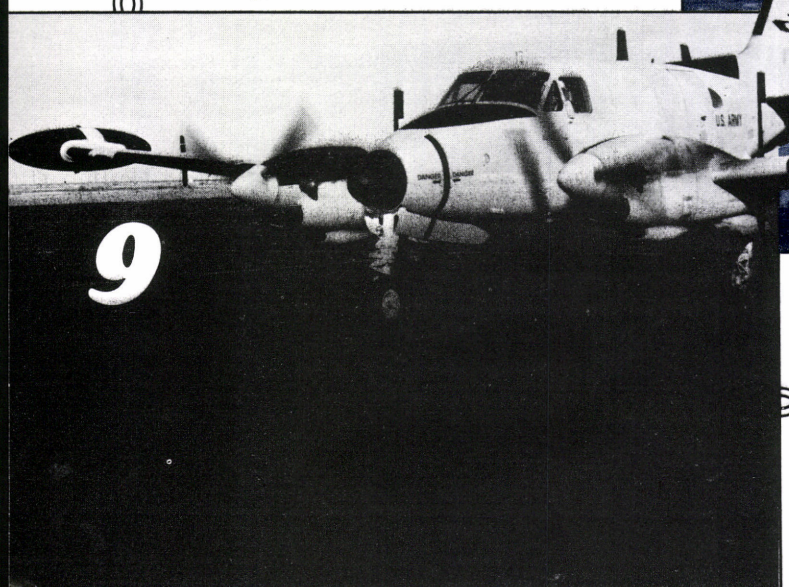

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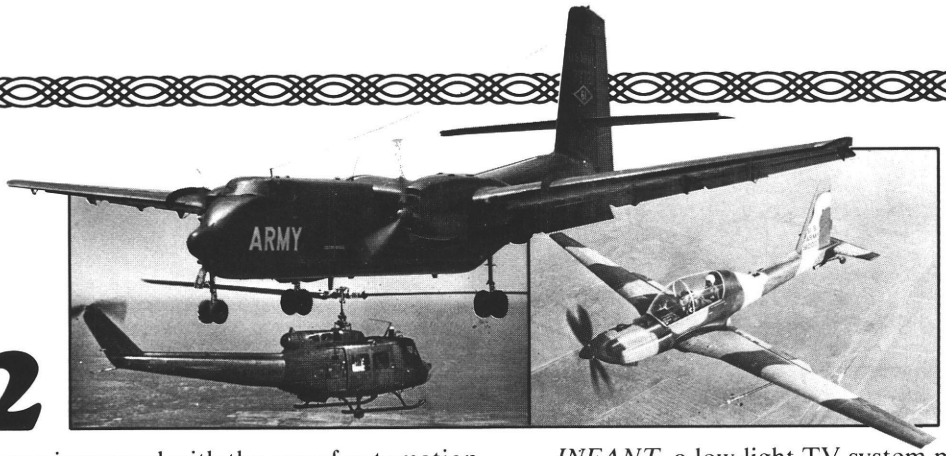

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this system was improved with the use of automation and a TT-580 printer for instantaneous mission results. There are two operator positions, one each for jamming and DF. Current QUICK FIX aircraft are EH-1Hs with equipment for intercept and jamming of signals. It continues using two operator positions and is in the final phases of testing.

MULTEWS: Started in 1977, this system began testing using two UH-1H aircraft. For all practical purposes, it is a fully automated ELINT noncommunications jammer in the infant stages of development. As configured there are no special operators but the copilot has some mission duties. This project was discontinued in 1979.

The last systems I will present are unique systems that helped gain knowledge during the continuing SEMA evolution.

QT-2/YO-3A Prize Crew projects began in 1967 as one of the most unique Army projects of the time. It was started to satisfy a requirement to expose Viet Cong night activity. The first aircraft was the QT-2, of which two were built and deployed to Vietnam in 1967. The aircraft was an adaptation of a Switzer glider with a Lycoming 0-290 engine mounted in the center fuselage area behind the tandem-seated crew of two. A long prop shaft passed overhead the cockpit to the forward-mounted six-bladed, handmade wooden prop.

The YO-3A (photo 13) was a slightly larger aircraft using a Continental IO-360 engine mounted in the conventional forward location. These aircraft were designed for extremely silent operation in order to perform overhead, low level observations without being noticed. Their special equipment consisted of a wide-angle low-light periscope, a laser target designator and an IR illuminator. Their primary mission was night artillery target acquisition and fire direction. They also were designed for night target designation for strike aircraft.

FLIR (forward looking infrared) was installed on UH-1M aircraft in 1968 and they were deployed to Vietnam. Their mission was target acquisition for a hunter/killer concept with UH-1M gunships.

INFANT, a low-light TV system mounted in UH-1 aircraft, was deployed to Vietnam around 1968. The system had an operator in the cargo compartment. The left side of the cockpit had a small viewer (photo 14).

The various SEMA platforms and systems I have presented are not the only ones that have been used for gathering tactical intelligence for Army commanders. They do represent the largest portion of the systems used for some type of intelligence gathering. I have some data on other rather bizarre airborne systems, such as the use of live bedbugs and other minute creatures to detect humans, but not enough to provide the reader with constructive information.

Most of the information provided for this article was gathered from interviews with people involved with the various projects. Most were relying on their memories for descriptions of the systems. I do wish to thank all who took time to search the cobwebbed corners of their brains for the information.

If any readers feel they can provide me more information for a follow-up article on the history of SEMA systems, I will compile it and share the information with the rest of Army Aviation in future issues of the ***Aviation Digest.*** Please send your contributions—or comments—to USAICS, ATSI-DOS-MAD, ATTN: CW3 Jones, Ft. Huachuca, AZ 85613.

14

Military Intelligence Aviation

the Force Multiplier

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and
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The THREAT FACING U.S. forces worldwide is widely recognized as massive, responsive and technologically sophisticated. Warsaw Pact forces have an overwhelming numerical advantage in nearly every category of tactical weapons and troops. In order to meet and defeat a threat of that magnitude using current and projected U.S. force levels, it is imperative that the U.S. Army achieve the qualitative superiority which will compensate for numerical inferiority. One key way in which that qualitative superiority is attained is through the use of "force multipliers."

Modern military intelligence systems are being designed to be such force multipliers for today's commanders. These systems are designed to provide that edge in timely and accurate information that will allow friendly commanders to more effectively employ their forces. In concise terms, one of the principal objectives of tactical intelligence systems is to detect, identify, track and project future movements of hostile forces. Detecting the development of the potential adversary's order of battle structure remains the key to accurate assessment of hostile capabilities. Knowledge of the enemy's strengths, weaknesses and probable courses of action is vital to win. The vast improvement in near-real time information provided by modern intelligence systems has substantially increased the potential value of tactical intelligence. Information that previously only would have had historical interest can now be provided swiftly to commanders, enabling them to concentrate their forces at particularly vital locations, in sufficient strength to win the battle.

In order to ensure a logical, integrated approach to the Army's intelligence needs, the U.S. Army Intelligence Center and School at Ft. Huachuca, AZ, developed an intelligence-electronic warfare architecture designed to guarantee that commanders at each echelon will have their IEW needs met by the optimal system. The IEW architecture articulates the division and corps commanders' needs to "see" movers, shooters, sitters and emitters throughout an area of influence extending 70 kilometers beyond the forward line of troops for division commanders, and 150 kilometers beyond the FLOT for corps commanders. Since no single system has the capability to see or detect all of those target categories, and perform all of the identification, tracking and projecting functions, a number of different imagery intelligence, electronic intelligence and communications intelligence systems must be employed. The depth of collection required for both the division and corps commanders dictates that a significant portion of all IEW systems be mounted in aerial platforms, because the higher you go the farther you can see. The aerial platforms include both helicopters and fixed wing aircraft, depending upon the tactical level supported.

At the division level, IEW systems are mounted in helicopters. This enables division systems to exist and operate in the same environment as the division they support and gives division commanders complete positive control of their assets. In Division 86, the division's aerial IEW assets will be assigned to the Combat Electronic Warfare Intelligence Aviation Company of the Air Cavalry Attack Brigade (see "ACAB," July 1980 *Aviation Digest**). The CEWI Aviation Company will consist of a surveillance platoon containing SOTAS aircraft and a collection and DF platoon containing QUICK FIX aircraft (figure 1). Each platoon will contain six helicopters.

The Standoff Target Acquisition System (see November 1979 Reporting Final, and articles in May 1980, October 1980 and February 1981

***Copies of these articles can be obtained by writing to *Aviation Digest*, P.O. Drawer P, Ft. Rucker, AL 36362.**

Glossary—page 12

issues of the *Aviation Digest**) is a helicopter-mounted scanning radar which will detect moving targets in the division's area of influence. The location, speed, direction of movement and projected location will then be computed and displayed in map format on a large cathode ray tube in mobile ground stations organic to each brigade size maneuver unit, divarty, the division tactical command post and the division main command post. A total of six ground stations will be organic to the division.

SOTAS received its first taste of field duty along the Korean demilitarized zone in May 1976. The limited developmental system was then moved to Europe for REFORGER 76 and, at the request of tactical commanders, has remained there doing yeoman service while awaiting the fielding of the final production version. The SOTAS has demonstrated its ability to serve as a force multiplier in a number of exercises and has been widely and enthusiastically welcomed by commanders.

As mentioned earlier, SOTAS will be assigned to the CEWI Aviation Company in Division 86. In the interim, SOTAS will be organic to the Combat Surveillance Company and will consist of only four airborne platforms as opposed to the eventual six. Currently housed in the EH-1, SOTAS will ultimately reside in the EH-60C Black Hawk. SOTAS will provide the users within the division with a 24-hour "look" at the enemy by employing one of the aerial units assigned on a continual basis behind the division forward line of troops. The airborne radar platform will process the radar data and simultaneously transmit it to each of the six ground stations for intelligence analysis and battle management.

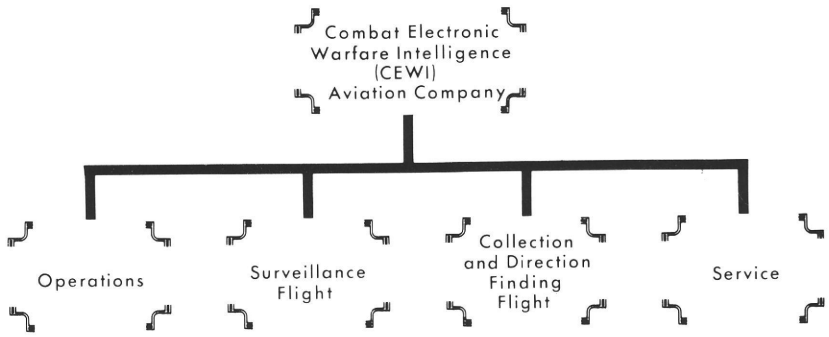
QUICK FIX is the other IEW system within the Division 86 CEWI Aviation Company and it also supplements the division commander's airborne IEW force multiplier need. QUICK FIX is a heliborne system which gives the division the capability to intercept, direction find and jam enemy communications (see Reporting Final, March 1979 *Aviation Digest**). The division can use the QUICK FIX capabilities to develop intelligence or disrupt enemy communications. When combined with other intelligence products, QUICK FIX's target locations can be used for artillery targeting or providing electronic warfare support measures. Each helicopter system can operate independently, with other QUICK FIX helicopters, or in varying combinations interfaced with the track-mounted TRAILBLAZER system which can provide additional fix information. TRAILBLAZER is a ground-based communications collection and direction finding system assigned to division. In the optimum mission profile, division would deploy two or three QUICK FIX helicopters interfaced with TRAILBLAZER.

The advanced development models, mounted in EH-1H helicopters, are in operation at Ft. Hood, TX, and Ft. Bragg, NC. They have taken part in several REFORGER exercises in Europe and electronic warfare exercises at Ft. Irwin, CA. The improved versions have been type classified standard and are scheduled for "follow-on evaluation" and further operational testing in FY 1982. The final version is scheduled for operation in the EH-60A Black Hawk. Prior to Division 86, three QUICK FIX systems will be assigned to the Headquarters, Headquarters and Operations Company, CEWI Battalion (Division) and to the CEWI Company in armored cavalry regiments/separate brigades. Division 86 will contain six QUICK FIX systems.

The corps commander has several aerial systems which complement the need for force multipliers. Unlike the division commander's assets, the corps aerial systems are mounted in fixed wing aircraft. This enables the corps' systems to operate at higher altitudes to accommodate the need to see out farther past the FLOT, and provides for longer onstation times for the systems. The corps' IEW aerial assets currently are assigned to the Aerial Exploitation Battalion of the CEWI group organic to corps and are the last fixed wing aircraft in the Army with a tactical mission.

The AEB is organized into three

FIGURE 1:



GLOSSARY

ACAB	air cavalry attack brigade
ACAS	aviation company aerial surveillance
ACEW	aviation company electronic warfare
AEB	aerial exploitation battalion
AGL	above ground level
ARDF	airborne radio direction finding
CEWI	combat electronic warfare intelligence
COMINT	communications intelligence
DF	direction finding
divarty	division artillery
DMZ	demilitarized zone
ELINT	electronic intelligence
FLOT	forward line of troops
FLIR	forward looking infrared
FORSCOM	U.S. Army Forces Command
FY	fiscal year
GR	GUARDRAIL
GUARDRAIL	COMINT collection and DF system
HUMINT	human intelligence
IEW	intelligence-electronic warfare
IMINT	imagery intelligence
IR	infrared
mph	miles per hour
OPSEC	operations security
QUICK FIX	IEW system to intercept, DF and jam enemy communications
QUICK LOOK	collection and DF noncommunications systems (ELINT)
REFORGER	Return of Forces to Germany
SEMA	special electronic mission aircraft
SIGINT	signal intelligence
SLAR	side looking airborne radar
SOTAS	Standoff Target Acquisition System
SWAD	special warfare aviation detachment
TRAILBLAZER	ground band communication collection and DF system
USAICS	U.S. Army Intelligence Center and School

companies (figure 2) of which two contain aerial assets. The Aviation Company (Aerial Surveillance) contains the Army's OV-1D Mohawk aircraft. Through the use of these unique aircraft and their surveillance systems, the ACAS provides continuous, near all-weather surveillance of the entire corps front as well as reconnaissance of specific high priority targets, operational security support and rear area security missions. To accomplish these missions, the ACAS uses 14 OV-1Ds.

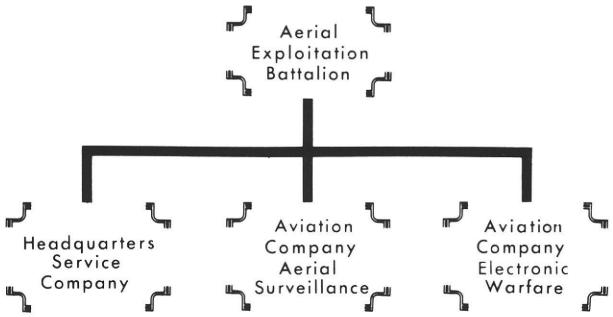
Side looking airborne radar is the primary aerial surveillance system at corps. The distinctive SLAR boom, mounted on the right side of the OV-1D fuselage, contains the SLAR system which provides near all-weather, day-nigh surveillance across the corps' front. The system detects and locates moving targets on the ground and simultaneously transmits the information via data link to eight ground terminals located at corps and division. This gives both the division and corps commanders a continuous near-real time look at the battlefield and allows them to monitor the flow of hostile traffic throughout the battle area. Information obtained from SLAR provides indications and warning of enemy intentions and assists the commander in managing the battle. Ten of the 14 assigned OV-1Ds in the ACAS are configured with SLAR.

Another surveillance system employed on the Mohawk is an infrared detecting system. This system is used to detect minute changes in thermal differences in terrain or other objects. The IR set is primarily used for camouflage detection, but also can be used for OPSEC and rear area security missions. If the mission is critical enough, a penetration mission across the FLOT may be flown. The IR system is mounted on four of the 14 OV-1Ds in the ACAS.

The same four aircraft also mount a photographic system comprised of two different cameras. The KA-76, a framing camera, can be mounted to take either vertical or oblique photos. The KA-60C is a panoramic camera which can be mounted to image either forward of the aircraft or beneath the aircraft. Photos taken with these cameras are used for target verification and identification.

The IR and photo systems also have been employed in support of other agencies. These peacetime missions have included photographic support to the Defense Mapping Agency and IR support to the Department of Energy. Recently,

FIGURE 2:



SLAR, photo and IR were employed quite extensively by the 1042d Military Intelligence Company, Oregon National Guard, at the request of the Oregon Department of Geology and Mineral Industries at Mount St. Helens before, during and after the 18 May 1980 disaster (see page 34, September 1980 *Aviation Digest**).

The ACEW is the other company of the AEB which contains aerial assets. The mission of this company is to provide signal intelligence support to the corps, which it does through the employment of its assets —GUARDRAIL and QUICK LOOK.

GUARDRAIL is a COMINT collection and direction finding system. This system, the airborne portion of which currently is mounted in six RU-21H aircraft, is designed to locate enemy voice communications nets which are the heart of tactical command and control communications. Information collected by the airborne sensors is relayed to the ground processing facility in near-real time, thus providing the corps commander the edge needed to counter the enemy's move. The current inventory fielded version, GUARDRAIL V, will be updated by conversion to RC-12D aircraft.

QUICK LOOK complements GUARDRAIL by collecting and direction finding against noncommunications systems. Classified as an ELINT system, QUICK LOOK is mounted in the RV-1D Mohawk. Six RV-1Ds are contained in the QUICK LOOK platoon. This system provides near-real time location and identification information on noncommunications emitters to the commander. The commander may then use this information for targeting or intelligence purposes, depending on the situation.

A recurrent theme within military intelligence aviation has been the proliferation of different airframes. Fielded now or in the near future will be IEW systems mounted in EH-1 Huey, EH-60 Black Hawk, RU-21 Ute, RC-12 Huron and OV/RV-1 Mohawk aircraft. This myriad of airframes presents both logistical and operational problems. How do CEWI units support more than one type airframe? How do CEWI units successfully employ aerial IEW systems in a tactical environment in basically nontactical aircraft? These and other questions have led USAICS to propose a single tactical aircraft type in which all aerial IEW systems may be mounted. This would result in replacing the existing and projected plethora of special electronic mission aircraft with a single type aerial platform capable of tactical employment and operation. This aerial platform, called SEMA-X, is currently in the conceptual stage. What it will ultimately look like—helicopter, fixed or manipulative wing, or hybrid, is as yet undetermined.

What is determined is that as long as armies face one another on the ground, aerial platforms will be used to enable one side to "see" what the other side is doing. The future of Army Aviation and intelligence is closely interwoven. Together, they provide the commander that force multiplier necessary to achieve an advantage and win the battle.

OV-1 Mohawks may employ SLAR, its distinctive boom shown here, IR and photo systems or QUICK LOOK equipment

MONTHLY WRITING AWARD

Aviation Training in the 1980s—Another View

Major James H. Kenton
Directorate for Aviation Systems Management
U.S. Army Safety Center

HAVING JUST read Colonel Grayson's excellent article "Aviation Training in the 1980s" (January 1981 AVIATION DIGEST), I was struck not only by its validity but by its relevance to those of us in the safety profession. For years there has been a perception that safety officers are "bad news" guys who are best suited for surveying hangar safety, checking for FOD, giving safety tips, or conducting required safety meetings. They are usually ignored during mission planning because their advice often entails things we don't want to hear. For instance, commanders don't want to hear a flat statement that they can't do something because it's "unsafe." They need to know how to do it with the least risk. Safety officers who use this approach can be an effective part of the mission planning sequence.

Let's look at what safety really is. The word itself may mean different things to different people, but it all boils down to **conserving resources**. We conserve resources by avoiding unnecessary mistakes and by reducing operating risks to the greatest extent possible. Helping the commander conserve resources is the safety officer's real job. He does this best by helping the commander identify risks inherent to a mission and providing recommendations for dealing with those risks. Commanders must weigh risks against the overall training value to be gained from an operation to determine the proper course of action to take. A go no-go decision for a hazardous mission should be based on a determination of whether or not the mission could reasonably be expected to go under normal circumstances in combat. If so, the unit obviously needs the training and the safety officer can best help by identifying means to deal with the risks inherent to the mission.

Good, realistic training is our goal; however, we must recognize that in a training scenario there are certain risks inherent to actual combat that are unacceptable in simulated combat. For example, we can't logically accept the risk associated with firing live ammunition at live soldiers during an infantry assault on an aggressor position or real bombs in an air strike on an opposing division command post. Likewise, in Army aviation, we sacrifice a minimal degree of realism by spending an extra 3 or 4 seconds in a pickup zone to get passengers strapped in. The extra time has no effect on our aviation crew proficiency or on the passengers' training, and the risk of a possible, though unlikely, forced landing injuring or killing an unrestrained passenger is unacceptable. There are probably other examples of training realism that must be sacrificed because of unacceptable risks, but, generally speaking, good realistic training missions should be oriented to conditions that will exist in combat. Our aircrews must become proficient in all the things they will be expected to do in the combat environment and we must train them to this end at every opportunity.

Not only should our training be as realistic as possible, but it must be relevant to the threat we face. As safety officers, we must not limit our concern to human, environmental, and materiel factors that cause mishaps, but we must be vitally concerned with the threat. The threat often dictates those risks that must be accepted to perform the mission. Terrain flight is a good example of accepting certain risks to reduce the risk caused by the threat. Terrain flight to avoid enemy detection and air defense weapons involves flying close to the ground, where the obstacles are. It also requires flight in the red (avoid) area of the chart in the operators manual entitled "Minimum Height for Safe Landing After Engine Failure." (Remember when the dash 10 referred to this area of the chart as the "dead man's zone"?) We accept terrain flight risks because we know they are minimal compared to flight at higher altitude against threat air defenses.

Knowing that we must use terrain flight to survive, we as safety officers must try to reduce the inherent risks. How? Well, one way is to fly slower as we get closer to the ground. This gives us time to react to unforeseen obstacles. Another way is to carefully plan each flight—to know, or at least suspect, where the obstacles (wires, towers, etc.) are. There are obviously other ways to reduce terrain flight risks, but the point is we can't quit flying low just because it's more hazardous.

Realistic combat training involves terrain flight, and proficiency in doing it as safely as possible must be developed. I should add, however, that proficiency in terrain flight involves more than just being able to navigate and avoid detection by the enemy. It also involves conserving resources. There's a lot of terrain flight training being conducted, but there's also a lot of aviators who haven't become proficient at it even though they can navigate and avoid detection. The Army is currently averaging about two tree strikes a week and one wire strike every 15 days. Proficient aviators don't hit trees and wires.

A statement from a recent speech given by the commander of the Safety Center, Colonel Edward E. Waldron II, is very applicable to the needless terrain flight mishaps: "The assets lost or destroyed on the way to the battle cannot influence its outcome." Even though damage may be limited to rotor blades, the aircraft will be out of action for a while, and, if the damage is severe enough, the aircraft may have to be abandoned. In either case, it cannot influence the battle in a positive way. Colonel Grayson, in his article, is certainly correct when he says that NOE flying is one area aviators must learn to perfect, and units must maximize every opportunity to realistically train in the NOE environment.

Colonel Grayson also stresses the need for more intensive night training, particularly Night Hawk and night vision goggle training. As a safety officer, I couldn't agree more. Sure, there are more risks in flying at night, particularly in the terrain flight mode. Again, however, we must consider the threat, and when we do we see that we must be proficient in Night Hawk

and NVG flying before we get to the war zone. The current generation of night vision goggles has many obvious drawbacks which can only be overcome with training and experience. The future generation goggles (ANVIS) are much better, but if a conflict starts tomorrow, we'll use what we currently have. Now is when we need to get our cockpits modified and our training underway. Experience will not only help us overcome some of the shortcomings of the goggles, but it will help us learn their real capabilities and limitations. If we don't get on with intensive night training, our night combat capability will be degraded by needless mishaps due to trial and error that could have been prevented through prior training, knowledge, and proficiency.

Colonel Grayson is also enthusiastic about tactical instrument training. Although I have a few reservations about its tactical application with our current equipment, I do agree that we need the instrument training. Tactical instrument training requires extensive planning, but the key to any instrument flight is not to turn the aircraft upside down in the clouds. All of us are instrument rated, but where do we do our instrument training? Most of it is accomplished in the UH-1 flight simulator. We haven't had anyone injured in the UH-1FS lately, but we have had OH-58s come out of the clouds with the wrong end up. Practicing ILS approaches in the UH-1FS didn't help these aviators much. Realistic tactical instrument training should be well planned, integrated into the tactical training scenario, done in a simulated combat environment, and, most importantly, done in the mission aircraft the aviator flies. This type training will result in resource conservation.

Airspace management is another area addressed by Colonel Grayson. This is also an area that receives a lot of "lip service" by aviation units and too little emphasis. This is probably because we don't use live ammunition, so our airspace problems during our "realistic" training are minimal. Joint readiness exercises allow us some opportunity to brush up on airspace management procedures, although this usually involves only the joint use of airspace by aircraft of the different services, without including air defense, field artillery, naval gunfire, etc. Even on these type exercises we hear units say they can't use the flight following and advisory service provided by ATC units because "it's too complicated" or "we don't have the time" or "it interferes with our mission" or (probably most common) "there's too much chatter on the radio." Excuses such as these don't help make the system work.

If anyone has a better system for managing airspace, he needs to make it known. Until we get something better we have to learn to work with what we have so that when we get to actual combat we don't lose resources to our own gunfire or to midair collisions with fast movers. I would add that some of our better units have made the system work and after some initial reluctance, they came to rely on the system and generally agree that the procedures are good.

Realistic training in the 1980s will be safe training because safety is an integral part of all professional operations. We can't throw safety out the window when we go into combat. We should have learned that lesson in Vietnam.

Deviations from standard procedures must be reserved for combat emergencies only, when life or death is at stake. Our realistic training must be oriented toward realistic combat, not combat emergencies. It is not unusual for commanders to become so involved in the tactical scenario that they forget the purpose of realistic training is to produce combat-ready crews and equipment. As aviators and commanders, we must insure that supported units are constantly aware of both aircrew and aircraft capabilities and limitations. Tactical exercises should not be used as an excuse to disregard flight regulations and sound aviation management principles. Rather, they should be used to verify that regulations, restrictions, and SOPs are valid. If it is determined they are not, then action should be taken to have them changed to make them realistic.

For instance, many commanders, especially ground commanders, don't understand the requirement for crew rest, so they disregard it in the field. Not only are duty day and flying hour restrictions thrown out the window, but efforts are made to make the aviators' living conditions as uncomfortable as possible. All this is supposedly "realistic" training. It's a fact that fatigued crews damage aircraft. They did it in Vietnam when our flying was generally less complicated because we didn't fly NOE and we had less complicated equipment. They are still doing it today.

Fatigue has been a factor in many mishaps that we have investigated. Almost any aviator in the field can tell you that it has also been a factor in many of the tree strikes, hard landings, and other relatively minor mishaps which didn't cause enough damage to require a formal investigation. If we want realistic training, we need to develop realistic crew rest policies and make them work. Rested crews as well as aircraft availability should be considered in mission planning. This will enhance the units' ability to sustain combat operations and conserve its resources. An aircraft that remains idle because the crew is resting is of far greater value than one that is lost to the battle because it was damaged or destroyed by a fatigued crew. We should also recognize that it is not really necessary to enforce misery to simulate actual combat conditions. Aviators have a way to naturally make themselves comfortable in the field, if given a chance.

As long as we are talking about problems emanating from an overzealous quest for realism, let's look at training in marginal weather conditions. There's a point in marginal weather flying where training value ceases and crew proficiency essentially turns into crew luck. Someone has determined this point is a condition of one-half mile visibility, so this is written into the regulation (AR 95-1). However, we know that in the absence of current weather observations or known distance markers, estimating distance, particularly under conditions of poor visibility, is essentially a matter of pilot judgment.

Should we urge pilots to fly in conditions of questionable visibility? Maybe in a combat emergency, but what do we gain in training? In utility and cargo helicopters we are jeopardizing the aircraft and everyone on

continued on page 20

AVIATION CAREER INCENTIVE PAY

Lieutenant Colonel Joe D. Carothers
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Officer Personnel Management Directorate
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THE FEBRUARY, May, June and September 1980 issues of the ***Aviation Digest*** featured articles intended to assist aviators in sorting through regulations, the DOD Military Pay and Allowances Entitlements Manual (DODPM) and management tools like the Officer Record Brief (ORB) and leave and earnings statement (LES) to determine personal eligibility for aviation career incentive pay (ACIP).

Another case of ACIP overpayment to a misinformed aviator, together with the recent implementation of the aviation service policy, reinforces the need for another reminder or additional information concerning entitlement to ACIP. A working knowledge of the entitlement regulations is the responsibility of each aviator. This article will provide the basis for developing that knowledge.

A case in point. During a recent Department of the Army (DA) directed reclassification of pilot status code (PSC), an aviator called to get an explanation of the newly established PSC 4. This officer no longer had an aviation specialty. It was explained that PSC 4 means, "Aviator—Not in aviation service (indefinitely suspended)." The officer said he understood the definition, but wondered if changing from PSC 1 to PSC 4 would affect his entitlement to ACIP. The conversation went something like this:

MAJ Misinformed: "Is this action going to stop my flight pay?"

MAJ Action: "Unless you have recently been assigned to an operational flying position you should not be receiving ACIP, because you missed your 12-year gate."

MAJ Misinformed: "I'm not in an operational flying position and I've been drawing flight pay since I started flight school!"

MAJ Action: "Are you the same Misinformed that walked out to the flight line for the first time in July 1967 (your ASED) and have accumulated 45 months of Total Operational Flying Duty Credit?"

MAJ Misinformed: "With flowing white scarf and circular air cushion!"

MAJ Action: "Based on the criteria to remain eligible for *continuous* ACIP you did not meet your 12-year gate, and in July 1979 your ACIP should have been terminated. In order to have met your 12-year gate, you must have 72 months of *TOFDC* within 12 years of *aviation* service."

MAJ Misinformed (long pause): "No, back in 1974 when that DA board met to evaluate months of operational flying duty, the gate started then."

MAJ Action: "I'm sorry, but that's not correct. The purpose of the 1974 Board was to validate the ASED, months of aviation service and months of operational flying credit you had achieved as of 30 June 1974. An audit of your records reflects that your incentive pay terminated July 1979. I am required to notify the Finance and Accounting Office to terminate your ACIP effective July 1979. By law, they will initiate action to collect overpayment."

How to keep this horror story from happening to you is found in the following paragraphs.

The first step in determining your status is to define the following terms:

Qualified for Aviation: As used in current directives, the DODPM and regulations under revision,

"qualified" replaces the term "on flying status." To be qualified for aviation service, an officer must have an aviation specialty (15, 71 or 67J) or military occupational specialty (MOS) (100B-R) and a PSC 1 on the ORB.

Aviation Service Entry Date (ASED): The date an officer is first "qualified," that is, entered into aviation service. For commissioned officers, ASED is the date of beginning flight training, and for warrant officers, the date of appointment as a warrant officer.

Aviation "Gates": The two points (12th and 18th year computed from the ASED) in an officer's *aviation* service used to determine whether further entitlement to ACIP will be continuous or monthly.

Total Operational Flying Duty Credit (TOFDC): The cumulative number of months an aviator is assigned to an operational position. It does not include proficiency or nonoperational flying duty positions (requirements for operational positions are contained in AR 570-1). An aviator with 72 months TOFDC by the 12th year of *aviation* service is entitled to continuous ACIP until the 18th year of *aviation* service. Those with 108 months TOFDC by the 18th year of *aviation* service have continuous entitlement to 22 years of *officer* (not *aviation*) service. Those with 132 months by the 18th year of *aviation* service are entitled to continuous ACIP until 25 years of *officer* service.

"It Ain't Flight Pay!": All aviators, commissioned and warrant, receive continous aviation career incentive pay, whether or not assigned to an operational flying duty position, as long as they:

- Are in aviation service (see March 1981 ***Aviation Digest)***
- Have a current flight physical examination (class 2, within 12 months)
- Either have not yet arrived at a gate, or "made the gate."

A commissioned aviator with 25 years of *officer* service, assigned to an operational assignment, receives no ACIP even if he or she flies every day. At 25 years, the commissioned ACIP rate goes to 0, regardless of the circumstances. Continuous entitlement is based on pursuit of an aviation career, not on hours flown.

Aviators who have missed a gate are entitled to MONTHLY ACIP, rather than continuous ACIP. These individuals receive ACIP *only* while assigned to operational positions. They must also fly 4 hours per month as required by DODPM.

Many aviators have stated their belief that "warrant officers don't have gates." Although most warrant officers make their gates because of repetitive operational assignments, the requirement to remain in aviation service and meet gates applies to all aviators.

As required by DOD directives, the ASED is not normally adjusted, therefore many commissioned and warrant officers recalled to active duty after a break in service find their gates have come and gone! These officers, unless they accumulated sufficient TOFDC (remember—months of flying duty credit) in active duty or Reserve Component operational flying duty positions, will receive only monthly pay until meeting the next gate.

Pilot Status Codes: The September 1980 ***Aviation Digest*** announced the realignment of pilot status codes. These codes are used to identify aviators on the automated Officer Master File (OMF) and ORB. Only aviators with PSC 1 and an aviation specialty may receive ACIP. A recent DA directive (mentioned above) added PSC 4 to identify officers removed from aviation service. Current pilot status codes, to be included in changes to AR 680-29, are as follows:

PSC 1—Aviator, qualified for aviation service (formerly called "on flying status")
PSC 2—Aviator, disqualified (medical) (formerly called medically indefinitely suspended)
PSC 3—Aviator, disqualified (nonmedical) (formerly called indefinitely suspended)
PSC 4—Aviator, not in aviation service (no previous category; used for specialty alignment to meet needs of the service)

The provisions of the Aviation Career Incentive Act and the DODPM are difficult to reduce to generalities that apply in all cases. Perhaps these definitions will help. Army aviators currently in aviation service are listed annually in a DA circular. The most recent, DA circular 600-80-2, 15 October 1980, contains definitions and procedures plus the ASED, total federal officer service and TOFDC of each aviator as reflected on the June 1980 OMF. Recommend you check the circular and cross check your ORB and LES for consistency to determine your entitlement to ACIP.

If you are still unsure of your entitlement or have questions, the local Military Personnel Office and Finance and Accounting Office provide good starting points to seek assistance. Further information can be obtained from Aviation Plans/Programs Branch, MILPERCEN at AUTOVON 221-8156/8157.

Editor's Note: As indicated in the March issue of ***Aviation Digest***, this article is a follow-on to the Aviation, Service Policy. The purpose of these articles is to renew the awareness of aviators of the requirements which must be met for entitlement to aviation career incentive pay.

NEXT MONTH: How the Aviation Warrant Officer Branch, MILPERCEN, was reorganized in February to provide you better service/more personalized career management—complete with names and phone numbers to answer your questions.

PEARL'S

Personal Equipment And Rescue/survival Lowdown

Nettie Garth photo by Tom Greene

Nylon Flight Equipment

Over the past 10 years there has been a concerted effort to get nylon off the crewmember. The Nomex flight suits and jackets are just part of the effort. The reason for the effort is that nylon tends to support combustion (burn) and to melt into a hot sticky mass. Although there is little documentation of aircrew injury due to nylon watchbands, it does not appear that they are an item to be worn by the aircrew. It is realized that normally the watch is covered with Nomex gloves and this provides some protection, but all too often the glove is rolled down in order to view the watch and thus the band is left exposed. The potential for a severe burn and possible degradation of the use of the hand in an egress situation is there. (Reprinted from *Life Sciences,* January 1981, published by the U.S. Air Force.)

AN/PRC-90 Turn-In Forms

Questions still arise regarding the proper procedure for turn-in of nonoperational AN/PRC-90 survival radios. We have given detailed instructions in past articles (see PEARL, March 1980, "Turn-in of AN/PRC-90 Survival Radio"), but there remains some confusion, especially as to what forms to use at the unit level. The U.S. Army Communications and Electronics Materiel Readiness Command verifies that unserviceable radios should simply be turned in using DA Form 2765-1, Request for Issue or Turn-in, and/or DA Form 3161, Request for Issue or Turn-in, in accordance with AR 710-2. Then, once the turned-in items are removed from your property book, you must, of course, requisition new replacement radios, again in accordance with AR 710-2.

Vacuum Gauge

In order to properly perform functional and periodic inspections of life rafts and life preservers in accordance with TM 5-4220-202-14/TO 14S-1-102 (USAF Flotation Equipment), you must have, among other things, some sort of gauge with which to measure the internal pressure of your flotation equipment. A mercury manometer serves this purpose very well, but does have one minor drawback: it has a price tag in the neighborhood of $800.00. A much more affordable piece of equipment serving the same purpose is a simple vacuum gauge. This item works quite well for testing one-person rafts and all life preservers. The hole in the gauge fits the oral inflation valves of the rafts and life preservers without the need of modification. The biggest benefit of the gauge, however, is its cost: less than $80.00. In addition, this item is class 9 (repair parts) and is listed in the Army Master Data File (AMDF). The gauge, vacuum, dial indicating, can be ordered under national stock number (NSN) 6620-00-451-6188 from B17 at a cost of $78.33 each. (Thanks to CW3 Dave Klindt, U.S. Army Safety and Standardization Board, U.S. Army, Europe, for this information.)

If you have a question about personal equipment or rescue/survival gear, write PEARL, DARCOM, ATTN: DRCPO-ALSE, 4300 Goodfellow Blvd., St. Louis, MO 63120 or call AUTOVON 693-3307 or Commercial 314-263-3307

New Fishing Kit

Reports from the field indicate that problems are being encountered obtaining the fishing tackle kit, NSN 7810-00-558-2685, a component of the overwater survival kit and listed in SC 1680-99-CL-A04. It seems that requisitions for this item are being rejected and returned to requisitioners on the basis that the item is to be locally procured. The General Services Administration (source of supply code GO) confirms this to be the case. There is, however, another fishing kit available, although not yet listed in the AMDF. The kit, fishing, emergency, can be ordered "off-line" from S9C under NSN 4220-00-244-0764 at a cost of $17.05 each. The item manager for this item at the Defense Construction Supply Center (DCSC) confirms that the new kit is manufactured to the exact specification (MIL-F-6218) as the one listed in the SC for the overwater kit, and consequently suitable for use in that kit.

TC 1-62 Errors

Several errors in Training Circular 1-62, "Aviation Life Support Equipment (ALSE)," are creating problems for personnel in the field. Among the errors most frequently cited are those involving NSNs for certain ALSE items. The following is a list of some of the corrections which should be made to the NSNs given in TC 1-62.

Page	Item	NSN Reads	NSN Should Read
23	AN/PRC-90 Radio	5820-00-782-5308LS	5820-00-782-5308
24	AN/PRC-90 Antenna	5820-00-371-5060	5820-00-371-6806LS
24	TS-2530A/UR Test Set	6625-00-238-0223LS	6625-00-238-0223
24	AN/PRM-32A Test Set	6625-00-803-399	6625-01-013-9900

Please note that this list is by no means all-inclusive. Corrections to TC 1-62 will continue to be published on an as-needed basis as they are noted.

Questions and Answers

We are in need of copies of the operator's manual for the SRU-21/P survival vest, but, for some unknown reason, are unable to obtain them. Every time we submit a requisition for this publication, we get it back unfilled with a reason code of "NR." Is there some particular reason why we can't get this publication? (Doug Meyers, AASF, FLARNG, Jacksonville, FL)

This is not the first time that this problem has been brought to our attention, but we honestly thought that the situation had been rectified a long time ago. When we originally became aware that personnel in the field were having difficulty obtaining TM 55-8465-215-10, "Operator's Manual, Vest, Survival, SRU-21/P, Hot Climate," we queried the Adjutant General (AG) Publications Center and were informed that requisitions were not being filled because the manual was out of print pending revision. We naturally assumed that once the revised training manual was available, the problem of obtaining it would no longer exist. Your call prompted us to check further with the AG Publications Center and then with the Technical Publications Division within the TSARCOM Directorate for Maintenance, the proponent for this manual.

It seems that somewhere along the way someone informed the AG Publications people that TM 55-8465-215-10 was no longer necessary and not to be further printed or stocked once supplies on hand had been depleted. Thus, when a requisition for this manual was received, it was automatically rejected with the "NR" code. Now all parties involved are aware that personnel in the field still require this TM, and measures have been taken to reprint and restock this publication. Please be patient, however, as it will take a little time before new copies can be printed and your requisitions filled.

Our unit recently ordered replacement food packets, NSN 8970-00-082-5665, for our survival kits in accordance with SC 1680-99-CL-A03. We received instead a supposed substitute item labeled as "food packet, survival, aircraft, liferaft, individual," NSN 8970-01-028-9406. This food packet consists of little more than lifesavers and chicklets. Can this really be an authorized substitution? (CW3 Alvin Kyle, 243d Avn Co, Ft. Lewis, WA)

Absolutely not! The food packet you received was meant for inclusion with multiplace liferafts and *not* for use in Army aircraft survival kits. We suggest you immediately submit a Report Of Item Discrepancy (ROID) on the substitute items you received, and then reorder the correct food packets, being sure to use advice code "2B" (do not substitute/interchange) on your requisition.

We have been trying to order the TS-23 test set for the SDU-5/E strobe light, as listed in your December 1980 PEARL column. Our supply personnel claim that since this piece of equipment is not listed on the AMDF and not on our TDA, then it is not authorized. Consequently, they refuse to process our requisition for the item. Can you suggest some way for us to justify our need for this test set? (Ed Walters, AASF, MTARNG, Helena, MT)

As you stated, the TS-23 test set is not yet on the AMDF or authorized on any Army TOE/TDA, hence the necessity for ordering the item off-line. The only thing that we can suggest is referencing the fact that inspection of the SDU-5/E strobe light is required by TM 55-1680-317-23&P, "Army Aircraft Survival Kits" and by TC 1-62, "Aviation Life Support Equipment (ALSE)." You may also use USAF TO 14S10-2-2, "Technical Manual for the Distress Marker Light SDU-5/E," which gives much more explicit inspection and testing requirements. Incidentally, the TS-23 will be listed in a forthcoming change to that latter publication.

AREAS OF INTEREST PERTINENT TO CH-47 AIRCRAFT

THE FOLLOWING information is provided to highlight special areas of interest for CH-47 users. It is intended to provide clarification for interpretation of the ATM:

AR 95-1, effective 15 December 1980: Page 2-1, paragraph 2-1b. This paragraph requires that, when transition training has been completed, a flight evaluation must be given by a standardization instructor pilot. It also requires an instrument flight evaluation.

TC 1-139, 10 October 1980: Many units have received their copies of the new TC 1-139. The following items need clarification:

Page 5-5, Emergency Tasks. Tasks 4030, 4031—the 4/2 in the night column was meant to be under the FS/Acft column.

Page 6-16, Task 2002, Perform Hover (Power) Check. The CONDITIONS for this task indicate the before-hover check will be completed prior to performing the hover check. For those models (CH-47A, CH-47B) which do not have a before-hover check in the checklist, a before-takeoff check must be completed prior to performing a takeoff to a hover.

Page 6-27, Task 2502, Perform Simulated Maximum Performance Takeoff, DESCRIPTION, Line 3. The second sentence, "increasing thrust until torque is 10 percent or 100 pounds ABOVE hover power," should read, "increasing thrust until torque is 10 percent or 100 pounds BELOW hover power."

Page 6-37, Task 3006, Perform Fuel Management Procedures, DESCRIPTION, paragraph 5, Perform Crossfeed Operation. The proper methods of performing crossfeed operation will be in accordance with:

- Paragraph 2-89, page 2-32, TM 55-1520-227-10-2
- Paragraphs 2-85 and 2-86, page 2-30, TM 55-1520-227-10-1
- Paragraphs 2-90 and 2-91, page 2-33, TM 55-1520-209-10

Page 52, paragraph 5-3, g-1 states: "Up to 10 hours of UH-1 SFTS flight time may be applied toward instrument semiannual FAC 1 or FAC 2 continuation training requirements." However, under the CONDITION paragraph for each of the following tasks, the task must be performed in the CH-47 aircraft or CH-47FS:

- Page 6-84, Task #4510, Perform Vertical Helicopter IFR Recovery Procedures.
- Page 6-86, Task #4512, Perform Tactical Instrument Takeoff.
- Page 6-88, Task #4513, Perform Tactical Instrument Approach.

DES welcomes your inquiries and requests to focus attention on an area of major importance. Write to us at: Commander, U.S. Army Aviation Center, ATTN: ATZQ-ES, Ft. Rucker, AL 36362; or call us at AUTOVON 558-3504 or commercial 205-255-3504. After duty hours call Ft. Rucker Hot Line, AUTOVON 558-6487 or 205-255-6487 and leave a message

continued from page 15

board. With visibility so low, attack helicopters would probably be too close to their targets to survive and pilots of observation helicopters must be able to see to perform their mission. Marginal VMC is a limitation our ground units need to understand and know how to cope with, or plan around. If we press it beyond the limits, we must be prepared to lose assets to the real or simulated battle. In this instance we are not conserving resources.

In essence, realistic training requires realistic employment of aviation assets and that requires realistic recognition of aircraft and aircrew capabilities and limitations. An awareness of those capabilities and limitations by every single individual involved in the employment of Army aviation assets is needed so that unreasonable tasks won't be asked of aviation units or accepted by weak commanders more concerned with the (unreasonable) mission than conserving his resources for the battle.

Our training in the 1980s needs to be intensive, realistic, and oriented toward those weaknesses that Colonel Grayson's article addressed. It must be oriented toward actual combat with prime emphasis on conserving resources while still accomplishing our mission. A further statement from Colonel Waldron's speech to the 1980 Aviation Training Symposium attendees sums this all up: "The commander who has all his assets available at the critical time will be a safety-conscious commander all of the time."

THREAT

Captain Bronislaw R. Maca
and
First Lieutenant Mark Grablin
Threat Branch
Directorate of Combat Developments
U.S. Army Aviation Center
Fort Rucker, AL

THREAT TRAINING

HOW MANY TIMES have you walked into a new unit and (very predictably) you were greeted by a bunch of smiling old-timers? The reason they were smiling (you soon found out) was that here walked in an opportunity to get rid of their additional duties.

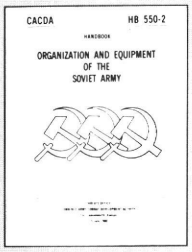
So now you are the unit threat officer. Of course, the challenge of this new additional duty excites you and you look forward to becoming an expert on threat. Having talked with your commander, you have a pretty good idea of what you need to accomplish. The "how" part intentionally has been left to you.

Threat, generally speaking, is something everyone talks about but not everyone knows. Yet, we all realize that knowing the enemy is absolutely essential to the mission accomplishment. Threat instruction must not be a boring, endless show of TV tapes and 16 mm films, but rather an innovative learning process that is carefully tailored to the type unit, its mission and area of operation.

As a threat officer, you must aggressively pursue the commander's objectives. As you set out to become the threat expert, you soon find that your unit does not have much in the way of documents, publications, slides or any other training materials. So you determine that one of the first things you need to do is establish a good threat library and/or sources. The intent of this article is to assist you in doing just that.

Your first step should be at your battalion/squadron/brigade S2 shop. S2 officers should be experts on threat and should take care of all your needs. They monitor threat training and disseminate threat information. Pick their brains. You should habitually visit them once a week to read the latest threat material

Recommended Publications

PUBLICATION	REMARKS
AR 380-5	See DA Pam 310-1
FM 1-2 FM 1-88	See AR 310-2 and DA Pam 310-3. Get with publications clerk and ensure you have an established DA Form 12 account and it reflects your needs
TB 381-5 Series (FOMCAT)	See DA Pam 310-4 (Some volumes are classified)
HB 550-1: The Leavenworth assessment of the Warsaw Pact Threat in Central Europe HB 550-2: Organization and equipment of the Soviet Army HB 550-3: Soviet Logistics IAG-13-U-78: Soviet Army Operations	Send request to: HQ, USACACDA ATTN: ATCA-DLT Ft. Leavenworth, KS 66027 AUTOVON 552-4472 

and digest it in their shop where your questions can be answered.

Ensure you know the procedures for handling classified material and do not hesitate to use them. You are not going to find a better source of information. The extra effort in disseminating it through threat training is well worth it.

The division G2 is your next scheduled stop. There you will find the promised land. Ask someone to show you the material available so that you can plan your training program accordingly. Please, do not let them turn you away. Remember, it is a matter of life or death! The G2 should be disseminating threat information to the units through the S2s. Your being there is going to help them do it better, more effectively. Get to know the people working there and plan on visiting them regularly.

Now you should feel that your mission is accomplished. Not so!

You need to establish a good unclassified reference library at your own unit. Do not belittle the unclassified publications! People that do usually have not read them.

The list appearing in this article is a recommended list and it will start you off on the right foot. Compile a list of needed publications and request them without delay.

There are other places you should visit or at least become familiar with the services they offer. Libraries are an excellent source of valuable information, especially their technical periodicals such as *Aviation Week and Space Technology, International Defense Review* and *Interavia.* The U.S. Army Aviation Training Library at Ft. Rucker, AL, publishes a special bibliography on threat that can be had for the asking. They will send you the requested material free of charge. Try them!

OPFOR Training Detachment at Ft. Hood, TX, puts out a RED THRUST STAR newsletter that contains a wealth of information. They have developed notebooks which include scripts and slides on various subjects which are listed in their #10 newsletter. Did you know they will loan you these sets for a period of up to 30 days? Get a RED THRUST STAR newsletter and find out what is available.

Your local training and audiovisual support center can be of great assistance in your program. Find out what is available by listings in their catalog and by visiting them. Look up TVT 46-117 and TVT 46-118 or have you seen them? If you cannot recognize the SA-8 on APR-39, you are dead!

Recommended Publications

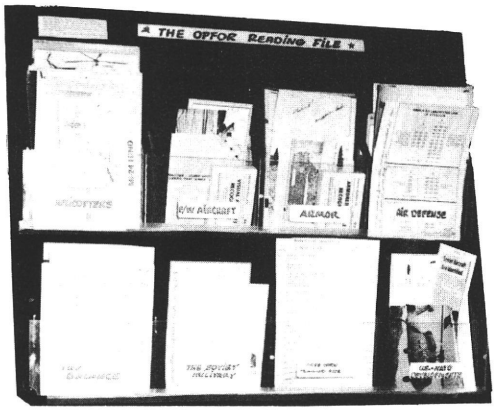
PUBLICATION	REMARKS
Operator Manuals: **AK-47** **BTR-152** **BTR-50** **OT-62** **BMP** **T-62** **Technical Intell Bulletins**	**Write:** **CDR, USAITAC** **ATTN: IAX-I-T** **Arlington Hall Station** **Arlington, VA 22212**
Defense Intelligence Agency: **DDI-1100-77-76** **DDI-1100-128-76** **DDI-1100-143-76** **DDI-1120-129-76** **DDI-2680-32-76** **DDI-1100-155-77** **DDI-1100-159-77** **DDI-1150-13-77** **DDI-2200-33-77** **DDB-1100-164-78** **DDB-1100-197-78** **DDB-1100-200-78** **DDB-1300-128-78** **DDB-2680-40-78** **DDB-2680-48-78** **DDB-1100-161-78** **DDB-1120-12-79** **DDB-1150-18-79** **DDB-1300-147-79** **DDB-1110-1-79** **DDB-1300-153-79** **DDB-1100-241-80** **DDB-2680-62-79** **DDB-1200-146-80** **DDB-1140-6-80** **DDB-1600-5-80** **DDB-1100-255-80** **DDB-1120-10-80** **RSGF 1-77** **RSGF 2-77** **RSGF 1-78** **RSGF 1-79** **RSGF 1-80** **RSGF 2-80** **RSGF 3-80** **RSGF 4-80**	**In order to save space only document numbers are provided. To obtain a list of unclassified DIA pubs write:** **CDR, USAITAC** **ATTN: IAX-M-D** **Arlington Hall Station** **Arlington, VA 22212** **AUTOVON 222-6740** **These publications are available from:** **AG Publications Center** **Baltimore, MD 21220** **See DA Pam 310-10-2 on procedures to fill out DA Form 4569**

Do not forget to visit other units and see how their program is working and exchange ideas and resources. Guest speakers such as air defense artillery operators, tank gunners and air traffic controllers are a welcomed variety and will give you a better understanding of the mechanics of like threat systems.

The November 1980 ***Aviation Digest*** has an excellent article by MAJ R. W. P. Patterson on OPFOR training programs. He presents some very good and effective ideas that you might want to consider. (Copies of this and other threat articles can be obtained by writing to Editor, ***Aviation Digest***, P.O. Drawer P, Ft. Rucker, AL 36362.)

A good threat training program requires effort and dedication on your part. It requires steady *command emphasis* and attention. Your persistence in achieving that goal will be the greatest contribution you will make toward the individual aviators and the unit as a fighting team.

So, after all, your additional duty turned out to be nothing more than knowing the enemy and sharing it with others. In the event of hostilities, you will be a much-sought-after commodity.



Recommended Publications

PUBLICATION	REMARKS
Foreign Science and Technology Center: **Briefing Catalog**	**FSTC briefing catalog and most of the briefings should be at the G2 shop. If need assistance write:** **Commander** **USA Foreign Science and Tech Center** **Charlottesville, VA 22901** **AUTOVON 274-7676/ 2747**
Commander **USA FORSCOM** **OPFOR TNG DET** **P.O. Box 5068** **Ft. Hood, TX 56544** **AUTOVON 737-3014/ 3316**	**Puts out RED THRUST STAR newsletter. Provides information, advice and assistance on OPFOR**
USA Aviation Training Library **P.O. Drawer O** **Ft. Rucker, AL 36362** **AUTOVON 558-5014/ 4591**	**Offers outstanding service and specializes in Army Aviation, publishes threat bibliography and will support requests directly or thru interlibrary system. Send for the guide to its services and threat bibliography**
U.S. Army Aviation Digest **(monthly threat section)** THREAT	**Official distribution is available by submitting DA Form 12-5 in accordance with instructions on that form. Or, annual subscriptions are available by sending a remittance of $20.00 ($25.00 for overseas) to Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402**

Management of Army Aviation

Headquarters
Department of the Army
(HQDA)

Brigadier General Richard D. Kenyon
Deputy Director of Requirements and
Army Aviation Officer
Headquarters, Department of the Army

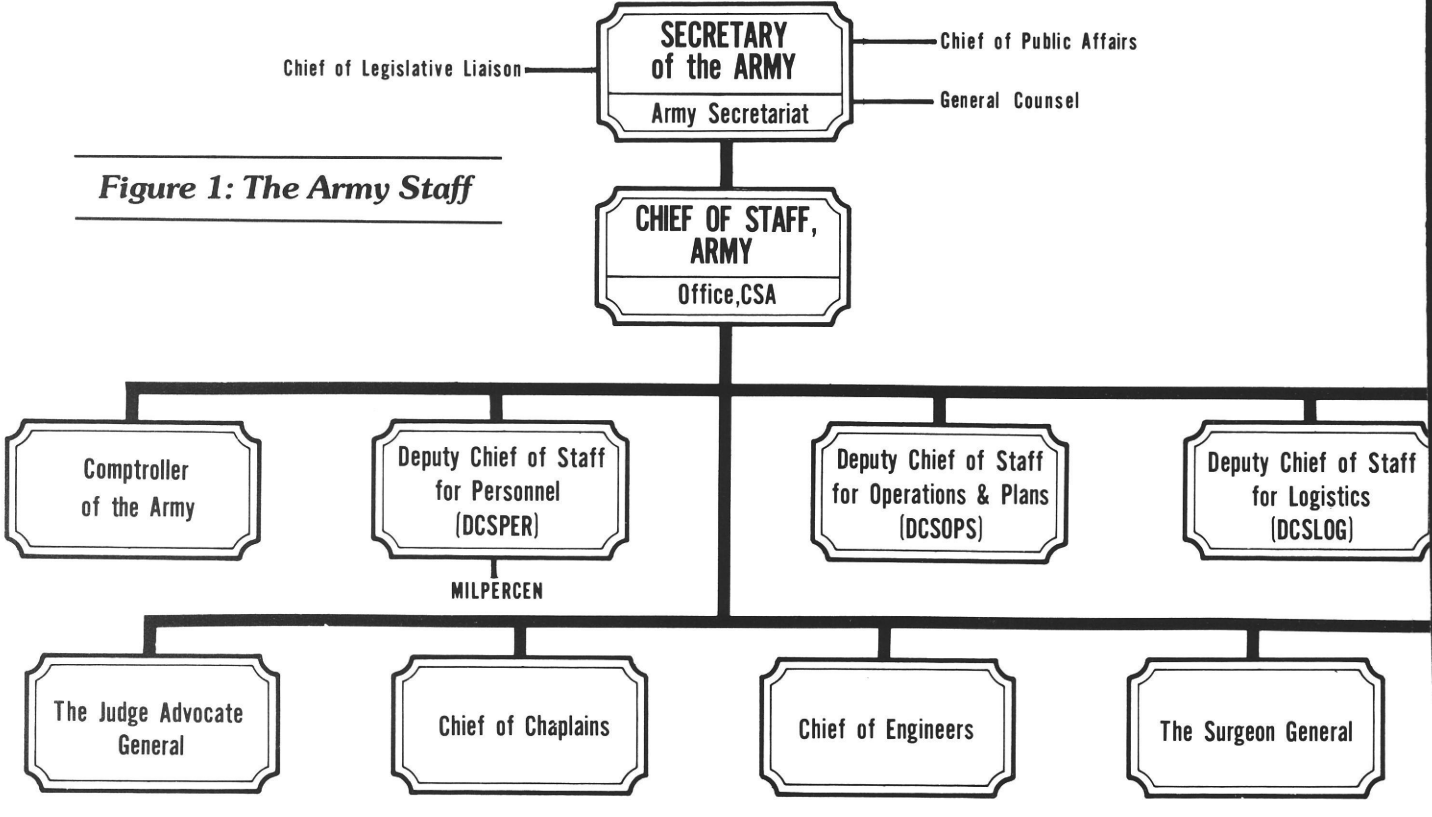


Figure 1: The Army Staff

FOR YOUR INFORMATION and use, this issue of the ***Army Aviation Digest*** features an update of the articles that appeared in the July 1979 issue on management of Army Aviation at Headquarters, Department of the Army (HQDA).

From my perspective as the Army Aviation Officer, Office of the Deputy Chief of Staff for Operations and Plans (ODCSOPS), HQDA, I will describe the various HQDA elements that provide centralized management for Army Aviation. Principal emphasis will be on the ODCSOPS aviation functional responsibilities and the personnel who accomplish them.

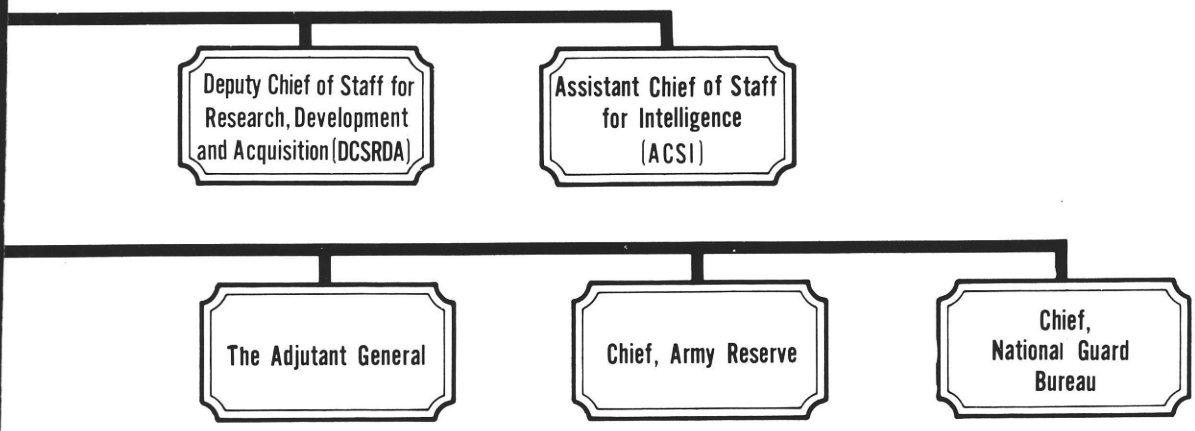
The process by which Army Aviation is included in staff planning at the top Army level and the interrelationships between the Army elements involved in aviation management are not unique. However, one factor that is unique on the Army Staff is the designation of a general officer as the Army Aviation Officer with the responsibility to monitor and influence aviation actions to ensure successful integration of aviation within the Army mission. This is a position on the Army Staff that is not enjoyed by combat systems or branches. As was stated in the July 1979 issue, "The position of Army Aviation Officer has been consolidated with that of the Deputy Director of Requirements in the ODCSOPS directorate where all Army requirements come together. The office carries no unusual tasking or veto authority over other agencies responsible for aviation management, but the Army Aviation Officer does serve as the principal advisor to the Deputy Chief of Staff for Operations and Plans and to the Chief of Staff, United States Army on aviation operational matters. In turn, the Army Aviation Officer is the focal point for coordination of all actions involving Army Aviation operations and is the Army's primary spokesperson to Congress on aviation-unique matters."

To facilitate the required centralized control and management of critical aviation assets (personnel and equipment) at HQDA, the following functional elements of the Army Staff have been established:

Aviation Requirements. The Aviation Team, Combat Division, Requirements Directorate (ODCSOPS) serves as the coordination office and monitoring agency for the majority of the Army's aviation equipment requirements, standardization, policy, doctrine and combat development actions. Similar functions within ODCSOPS also are conducted by the Special Electronic Mission Aircraft (SEMA) Team located within the Intelligence, Surveillance, Target Acquisition and Electronic Warfare Division.

Aviation Research Development and Acquisition. The Aviation Systems Division, Weapons Systems Directorate (ODCSRDA) serves as the focal point on the Army Staff for aviation research, development and acquisition. At the Army Secretariat level, there is a Deputy for Aviation assigned to the Office of the Assistant Secretary of the Army with responsibility for focus on aviation hardware programs within the Office of the Secretary of the Army.

Aviation Logistics. The Special Assistant to the Deputy Chief of Staff for Logistics (ODCSLOG) and Chief, Aviation Logistics Office serves as the principal advisor to the DCSLOG on all aviation logistics and related matters. The Aviation Logistics Office serves as the single coordination and monitor-



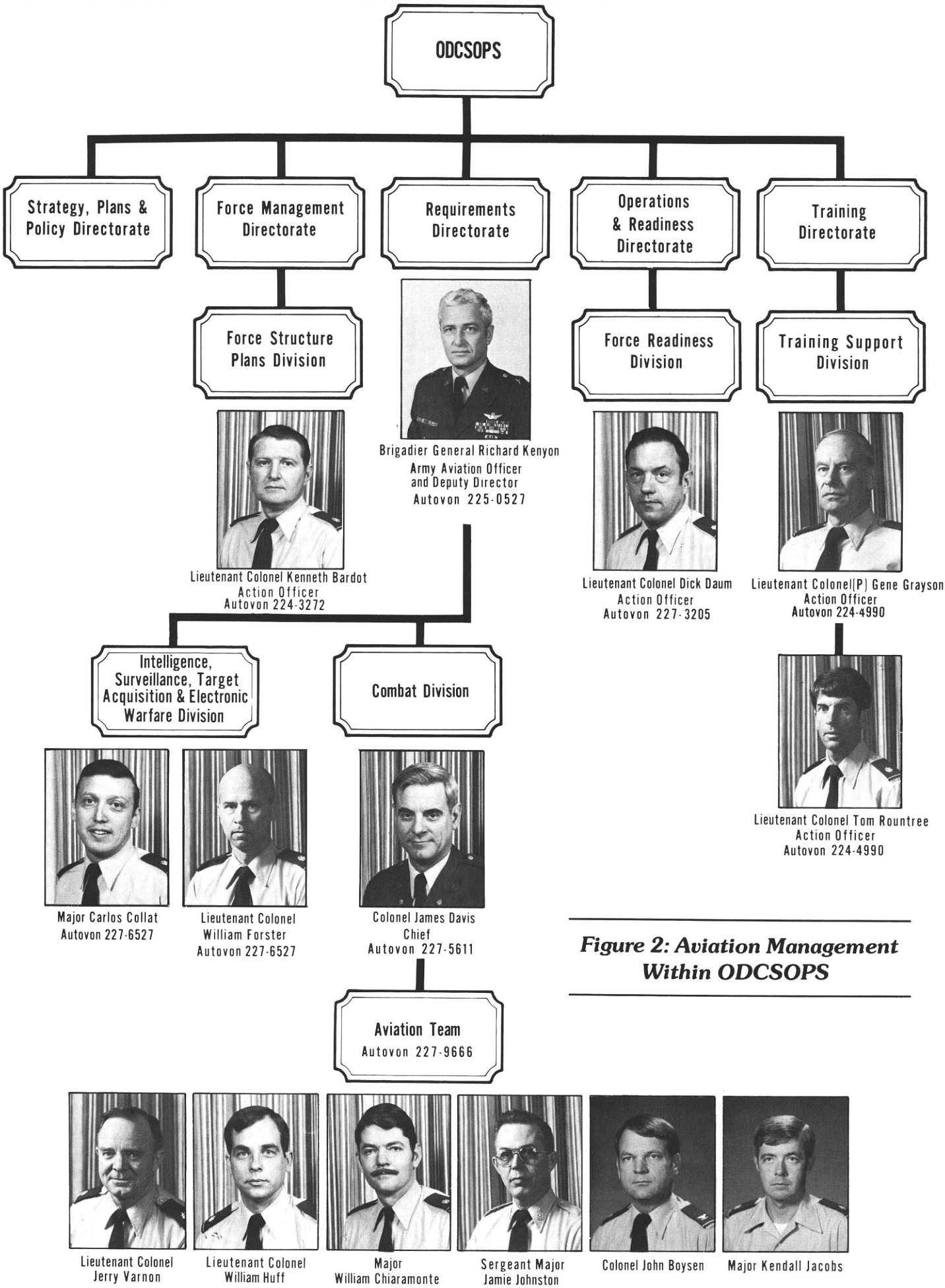


Figure 2: Aviation Management Within ODCSOPS

ing agency within HQDA for actions pertaining to logistical concepts, policies, practices and techniques unique to Army Aviation.

Aviation Force Development. An action officer within the Force Structure Plans Division, Force Management Directorate (ODCSOPS) serves as the focal point for aviation force development management.

Aviation Training. The agency responsible for aviation training is the Training Directorate of ODCSOPS. Various action officers assigned within the directorate serve as focal points pertaining to the many facets of Army Aviation training for both officers and enlisted personnel.

Aviation Readiness. An action officer within the Force Readiness Division, Operations and Readiness Directorate (ODCSOPS) is responsible for monitoring the readiness posture of Army Aviation units and the development of aviation unit readiness standards.

Aviation Safety. Matters pertaining to aviation safety are the responsibility of the Army Safety Center, located at Ft. Rucker, AL, which is responsible for general safety as well as aviation safety. At the Army Staff level, the Office of the Director of Army Safety (ODCSPER) handles aviation matters. The Army Safety Center responds to the DCSPER as a field operating agency.

Aviation Personnel. Army Aviation is the only specialty which has aviator utilization rates directed by law and requires their utilization rates to be reported annually to Congress (Aviation Career Incentive Act of 1974). This legislation recognizes aviators to be a valuable resource who require extensive training time and significant costs. Aviation personnel policy management is an Army Staff responsibility of the Office of the Deputy Chief of Staff for Personnel (ODCSPER). The U.S. Army Military Personnel Center (MILPERCEN), in concert with ODCSPER, plays a major role in executing the plans, programs and personnel policies that affect Army aviators.

Reserve Components. Both the Office of the Chief of Army Reserve and the Army National Guard Directorate of the National Guard Bureau have agencies that serve as the focal point for coordination of aviation actions.

Aviation Standardization. The Army Aviation Flight Standardization Program is the responsibility of the Deputy Chief of Staff for Operations and Plans (DCSOPS), HQDA. For standardization purposes, the standardization teams provided by the U.S. Army Aviation Center at Ft. Rucker, AL, serve as an extension of ODCSOPS and submit their reports directly to the Army Aviation Officer who is the executive chairperson of the Army Aviation Policy Committee. This committee recommends flight standardization policies and procedures to the DCSOPS and the Chief of Staff, United States Army.

Aeromedical. All Army Aviation medical and medical related actions of the Army Staff are the responsibility of the Aviation Staff Officer, Plans and Operations Division, Directorate of Health Care Operations, Office of The Surgeon General. This officer functions as the aviation consultant within the Office of The Surgeon General and represents The Surgeon General for all aviation planning and staffing of issues impacting on the mission of Army aeromedical evacuation. Aviation personnel management—to include assignment recommendations, aviation school selections and flight gate monitoring—are additional responsibilities of the Aviation Staff Officer.

Staff Coordination. Although many of the individual Army Staff elements are identified in this article, Army Aviation is totally integrated within the Army Staff; and, though many staff officers are not identified as "aviation," they have a role in the management of Army Aviation. See figure 1 for a graphic description of the Army Staff.

These staff officers at HQDA staff aviation matters within the Army Staff and with the myriad of other agencies that have an interest in matters that affect Army Aviation.

The preceding should lend an insight to the structure and working of the Army Staff as it pertains to Army Aviation. The remainder of the article will be devoted to describing the aviation team that works within the ODCSOPS Requirements Directorate (figure 2).

The Combat Division, Requirements Directorate is comprised of the Aviation, Armor and Infantry Teams which are responsible for matters pertaining to combat developments, materiel and concepts test and evaluation, materiel acquisition management and monitorship in their respective areas of interest. The Aviation Team serves as the focal point for coordination of designated existing and future operational aviation programs while monitoring a multitude of other aviation related actions.

Within the Intelligence, Surveillance, Target Acquisition and Electronic Warfare Division, the SEMA Team is responsible for matters dealing with specially designed and/or modified Army aircraft in support of unique mission requirements. The members of both these aviation teams, Force Integration Staff Officers (FISOs), are responsible for specific aviation systems, subsystems and/or items of special interest. Rather than define the extent of responsibilities, I will give a broad overview of their many tasks.

The aviation FISOs within ODCSOPS interact with their counterparts in Headquarters, Training

and Doctrine Command on actions concerning requirements and combat developments. Principal actions in this area are analyzing threat versus current and projected capability data to determine those areas that require improvement and/or new equipment.

FISOs are responsible for one or more aviation systems that are in varying stages of development, test, procurement and fielding. Examples within the Combat Division include the advanced attack helicopter, the advanced scout helicopter, the CH-47 Chinook, UH-60 Black Hawk, flight simulators, aircraft survivability equipment, etc. SEMA FISOs are responsible for similar type aviation actions except that additional knowledge is required in the electronics field to handle the varied and complex electronic aircraft systems. SEMA aircraft and systems include the RC-12D/RU-21H (GUARDRAIL), RV-1D (QUICK LOOK), EH-1H, EH-1X, EH-60 (QUICK FIX), and the EH-1, EH-60 (SOTAS).

Another area where the FISOs are actively engaged is the initiation and monitoring of actions and/or studies that pertain to aviation doctrine; organizations, their structure and capabilities; and, the interface between man/machine. Included in this area is the preparation and review of numerous documents that are used in the development of aviation systems, subsystems, and/or components. Examples of these documents are: Basis Of Issue Plan, Required Operational Capabilities, Cost and Operational Effectiveness Analysis, Initial Issue Quantity and many more.

The Aviation Team also serves as the Army Staff proponent for aviation facilities, 12 civilian aviation related awards and certain AR 95 series Army regulations. Further, it represents HQDA on interagency and international working parties and committees, coordinates the Army flight standardization program, monitors airspace management and air traffic control, monitors aviation assets in TDA (tables of distribution and allowances) organizations and promotes interservice helicopter commonality.

Army Aviation management is vitally important at all levels of the Army and is accomplished as a true team effort. Collectively and individually, the FISO on the Army Staff shoulders a giant responsibility to successfully integrate his respective discipline within the total force structure. As you can see from this article, the FISO is a very busy individual, and I am proud to be a member of the total effort of all elements that makes up the aviation management team at HQDA. Hopefully, this article and the other related articles in this issue will give you an insight and better understanding of the functions of the Army Staff in Headquarters, Department of the Army.

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HQDA

Aviation Training

Management, Equipment, Resources, Personnel

LTC(P) Gene Grayson and LTC Tom Rountree
Training Directorate, ODCSOPS
Headquarters, Department of the Army

TRAINING ARMY aviators is the most expensive training program in the Army today. Added to the escalating resource costs, aviation training is also one of the lengthiest training courses. Finally, the instructor-student ratio is at a 3:1 level which further exacerbates the careful management required at Department of the Army (DA) level. As a result of several key factors relative to aviation training; training management; equipment and its relationship to training; resources, which drive the train in all areas—and, when adding each of these to the significant role Army Aviation will play on tomorrow's battlefield—careful management at the DA level of aviator training, aviation training and aviation related equipment training is essential.

It is no surprise that the potential enemy on a European or Middle East battlefield will start the war with a vast numerical superiority of Soldiers and fighting equipment such as tanks, artillery and mechanized vehicles. We also can assume that at least today this enemy has developed a technical parity in most areas which closely matches equipment used by U.S. Soldiers. The key is that to overcome numerical superiority and a technical parity, our Soldiers must be better trained, more technically and tactically qualified, and motivated to a higher degree than their adversaries. Just as the Army is training Soldiers in other specialties in order to fully exploit their weapons and equipment, Army aviators must be and are being trained to tactically employ the aircraft and aerial weapons which will play a significant role on the battlefield. In "plain talk," we are talking about **quality training**—ensuring that Army aviators are the most technically and tactically proficient flyers in the world.

The Aviation Training Branch in the Training Directorate is a relatively new organization. Prior to the directorate organizing under its first director, Major General James C. Smith (see "Last Liaison Pilot Retires," February 1981 *Aviation Digest)*, aviation training was in Deputy Chief of Staff for Personnel (DCSPER) as part of the Individual Training Division. Most aviation actions were managed by the Requirements Directorate; Combat Division. With the organization of the Training Directorate, including the Individual Training, Unit Training and Training Support Divisions, aviation training became a full branch. Simultaneously, and of particular significance particularly within the training arena, DA management of P8 training and P2 mission funds was placed under one DA level directorate.

In order to bring all aviation training actions under one directorate, in November 1979, nine functions were transferred from Requirements Directorate to the Training Directorate. These included: individual aviator training; unit aviation training; aviation standardization; SFTS (synthetic flight training systems) use; the Army Flying Hour Program; aircrew training manuals (ATMs); flight records; aviator training waivers; and the DA Specialty 15 monitor. The Aviation Training Branch at DA level assists in the management, development and presentation of high quality training by primarily ensuring DA training strategy is initiated, and ensuring adequate resources are programed and are available to conduct that training. The Army Chief of Staff, during personal addresses to battalion and brigade precommand courses states: "Commanders must know that of all the balls they have in the air at any time, only two are glass—training and maintenance!!" The DA Office of the Deputy Chief of Staff for Operations and Plans (ODCSOPS), during the Fiscal Year (FY) 1980 Aviation Policy Board, further challenged the aviation community by stating that training must be oriented toward providing the ground commander aviation support 24 hours-a-day, 7 days-a-week, to include during adverse weather. The first DA Director of Training reinforced this challenge during the FY 1981 Aviation Training Symposium, and provided additional guidance on the combat oriented training course we must vigorously pursue during the 1980s.

Following this brief introduction, it is necessary to provide an update on just what the Aviation Training Branch is chartered to accomplish within the Army Staff (ARSTAF), the major commands (MACOMs) and the entire aviation community, and how the process works. Probably the most carefully managed and closely scrutinized program in the Army today is the Flying Hour Program. The Aviation Training Branch is the DA manager, developer and proponent of this program which, as many of you will recall, has been totally revitalized during the past 4 years. The radical cuts by Congress in the past as a result of flying hours not being tied to readiness have been eliminated, and today the Army Flying Hour Program is combat oriented and 100 percent tied to individual/unit readiness. The primary reason for the Office of Management and Budget (OMB), Office of the Secretary of Defense

(OSD) and Congressional turnaround can be tied directly to the aircrew training manuals. The ATMs, for which the service schools within the TRADOC community have proponency, define tasks and iterations which, when accomplished, are tied directly to individual aviator and unit training readiness. Beginning at the lowest levels, the Flying Hour Program and ATMs are the nucleus for developing the program. Subsequent command echelons refine/add/revise, etc., required flying hours until final consolidation at MACOM levels. MACOM flying hours requirements are submitted to DA in the Command Operating Budget. Programs are consolidated by the Aviation Training Branch, further revised as required, and vigorously defended through the ARSTAF, OMB, OSD until inclusion in the annual President's Budget.

To illustrate why this program draws so much attention, the FY 1981 program, for example, has leveled at 1.6 million hours at a cost of more than $324 million. As a result of the ATM, it appears that from FY 1982 through the outyears, the program will stabilize around 1.7 million hours. Because of the close ties between the ATMs and the Flying Hour Program, the Aviation Training Branch is also the DA proponent for the aircrew training manuals. Particular emphasis is given to continually updating the ATMs through revision to ensure tasks and iterations are oriented toward combat mission accomplishment.

As indicated, the primary role is to ensure that DA guidance and directives which develop the Army Aviation training strategy are implemented. During the 1980s this training strategy is oriented toward increased combined arms, nap-of-the-earth, night hawk/night vision goggle, air assault, aerial gunnery and tactical instrument training. Additionally, within budget constraints (people and dollars), programs of instruction at the U.S. Army Aviation Center (USAAVNC), Ft. Rucker, AL, in both undergraduate helicopter pilot training and instructor pilot courses will reflect increased tactical training. Vigorous action is presently ongoing to fund during FY 1983 to 1987 numerous programs at Ft. Rucker in this area.

The capability of individual aviators and units to successfully accomplish combat mission requirements is evaluated through various MACOM aviation resource management survey inspections and by a vital extension of the DA DCSOPS—the Directorate of Evaluation and Standardization (DES) at the Aviation Center. All DES evaluations are forwarded through channels until ultimately reaching the DA Training Directorate. From this report, areas requiring further emphasis are analyzed and on occasion result in DA directions to the field in order to assure command interest is oriented toward a particular training area.

Shortly after the formation of the Training Directorate in 1978, three chapters of AR 95-1, "Army Aviation: General Provisions and Flight Regulations," were transferred from Requirements Directorate to the Training Directorate. As such, the Aviation Training Branch is now the DA proponent for Chapter 2: Training Qualification, and Proponency and Readiness Annual Requirements; Chapter 6: U.S. Army Flight Standardization; and Chapter 7: Individual Flight Records Folder and Individual Flight Records. In each of these areas, there is a close and near daily coordination with USAAVNC-DES, and other directorates, in the management of and responding to issues from the field.

Another key responsibility of the Aviation Training Managers at DA is through coordination with Military Personnel Center (MILPERCEN), Army National Guard and U.S. Army Reserve, to develop the aviation training rates necessary to man force structure requirements. Closely aligned with aviation training rates is the follow-on mission to ensure the aviation training base is sufficiently resourced in people, equipment and dollars to support defined training requirements. Now, how does this system work? The aviator requirements are developed by MILPERCEN and DCSPER through a process which compares the current force with requirements in future years. Obviously close coordination is required with Deputy Chief of Staff for Logistics (DCSLOG) and DCSOPS as a result of the overlap with new equipment and new units. So, although the requirements are developed within the MILPERCEN/DCSPER arena, changes in the aviation unit structures and the addition or reduction of the number of units are the basic factors which drive the Army Aviation training rates and add dollars. In all cases, the first question posed by the analysts is, "How much does it cost?"

Prior to any training rate increase, there are hard questions which must be answered. What is the cost? Can the load be accommodated at the Aviation Center? How many new military and instructor pilots will be required? What construction requirements are necessary (e.g., classrooms, barracks, stagefield, etc.)? Are there sufficient basefields? Is the airspace sufficient? Can the simulators handle the increased load? What about the maintenance contract? How many additional aircraft, etc.? The commanding general of the Aviation Center and his staff develop the answers.

Costs, leadtimes, personnel requirements, numbers of aircraft and simulators are computed and forwarded through TRADOC to the DA Aviation Training Manager. The numbers are verified or adjusted as necessary by the personnel, logistics and budget staffers. A total cost to support the required training rate is developed. Plans to shift personnel and aircraft are formulated. Military construction is examined for cost

and feasibility and a total resource package is put together by the Aviation Training Manager. This procedure is completed by the Army staff each February.

Earlier, as a result of many factors, principally a recognized shortfall in warrant officer aviators, it was determined that, beginning in FY 1983, the Army needs to annually train more warrant officer aviators. Previous warrant and commissioned officer increases were developed and programed for FY 1981 to 1986, resulting in a dramatic training rate increase at Ft. Rucker. The Directorate of Resource Management at the Aviation Center, with guidance from DA and TRADOC and in coordination with the other directorates at the Aviation Center, prepared documents to answer all questions relating to the cost associated with that training rate. The resource requirements were "staffed" at TRADOC and DA. Decisionmakers at the DA compared the costs with the cost of other training and procurement and concluded that the cost was justified. Thus, if the increase can be successfully defended, the Army program objective memo will contain a requirement to train at the increased rate and the displays and costs associated with these rates.

The Army's training rate must be approved at DOD level. If it is, the necessary funds will be included in the President's Budget annually. When approved, MILPERCEN will identify and order the added personnel needed to conduct the training at the Aviation Center. The Training Manager "tracks" and coordinates this action throughout. Just as in the Flying Hour Program, he must be able to justify the expenditure of every dollar and be able to explain why the money, people and hours are needed. Decisionmakers normally are interested in the consequences of not funding a program. The Training Manager explains them.

The quality and quantity of aviation training are the Training Manager's principal areas of staff responsibility. Interspersed within those major areas of concern are such diverse things as coordination of Individual Ready Reserve aviation training; planning and programing for UH-60 Black Hawk transitions; ensuring the entire aviation community is aware of training milestones such as the recent tactical instrument program developed and successfully executed in U.S. Army, Europe; representing the Director of Training at major annual standardization/training conferences; primary staff action for coordinating all actions which have resulted from the Department of Defense decision to consolidate helicopter pilot training for all the services at Ft. Rucker; and the airspace management arena, in order to ensure training will enable successful operation within controlled airspace. Because of the high cost of aviation courses at Ft. Rucker, plus the fact that students include U.S. Army, U.S. Air Force and foreign military, the DA Aviation Training Managers closely monitor and often personally manage the undergraduate and graduate programs of instruction in the Army Program of Individual Training, or the ARPRINT. This is accomplished through direct coordination with the Aviation Center's Directorate of Training and Doctrine, TRADOC, MILPERCEN, the DA DCSOPS Security Assistance Division, Headquarters, U.S. Air Force, and on occasion, the State Department. In addition to aviator training, the Aviation Training Branch remains in close contact with MILPERCEN and TRADOC reference aviation MOS (military occupational specialty) producing schools such as recent requirements within the 67T field. As various basis of issue plans change, Soldiers programed into the 67T courses change, and every change requires resources, either personnel or dollars.

A recent DA initiative resulted in the first worldwide Aviation Training Symposium held at Ft. Rucker which preceded the annual DA Policy Board Meeting. This symposium was an unqualified success, and it offered all participants an opportunity to present key training issues, problems, etc., and exchange training highlights. Of particular value, the Aviation Center presented training updates and each directorate was represented in order to assist and respond to questions from the field. As a result of the success of the symposium, the commander of the Aviation Center and DA director of training agreed that it should be held annually and precede the Policy Board.

The Aviation Training Managers have a hefty workload and an exciting challenge. In almost every Army Aviation action, training fits into the issue. As such, constant coordination and staff actions are conducted with Aviation Requirements and Aviation Systems Division, ODCSRDA (Office of the Deputy Chief of Staff for Research, Development and Acquisition); Aviation Logistics Office, ODCSLOG; Aviation Force Development, ODCSOPS; the Aviation Readiness Office within the Force Readiness Division, ODCSOPS; the U.S. Army Safety Center; MILPERCEN and ODCSPER; the Army National Guard and Army Reserve; and of course each MACOM aviation officer and staff. Army Aviation now is fully integrated into the combined arms team, and this vital asset must be trained in order to provide the firepower and mobility required on tomorrow's battlefield. Army training developers have, through meticulous research and thorough development, devised new methods in which to employ aircraft in the high threat environment. These methods are published Armywide, clearly pointing out that through proper training, Army aviators can not only survive on the high threat battlefield, but can and will provide that extra ingredient which may mean the difference between victory and defeat.

HQDA

Aviation Systems Division

Lieutenant Colonel Patrick O. Kelly
Aviation Systems Division
ODCSRDA
Headquarters, Department of the Army

THE AVIATION SYSTEMS Division, Weapons Systems Directorate, of the Office of the Deputy Chief of Staff for Research, Development and Acquisition (ODCSRDA), provides the Headquarters, Department of the Army (HQDA) staff with supervision, management and direction of Army Aviation research, development and acquisition (RDA). The major function of the division, as described in the appropriate Chief of Staff Regulation 10-24, is budget formulation of the Aircraft Procurement Army (APA) and Research, Development, Test and Evaluation (RDTE), Army appropriations for aviation systems. These include aircraft programs, aeronautical technology, armament, avionics, safety, survivability and life support equipment, airdrop equipment, aircraft electronic warfare self-protection equipment, cargo handling equipment, ground support equipment, flight simulators and production base support including manufacturing methods and technology. If this sounds like quite a shopping list, it is!

In the budget formulation process, the Aviation Systems Division works closely with the Combat Division of the Requirements Directorate Office of the Deputy Chief of Staff for Operations and Plans (ODCSOPS), the Aviation Logistics Office of Deputy Chief of Staff for Logistics, and responds to the priorities determined by U.S. Army Training and Doctrine Command (TRADOC). This close coordination is also inherent in the Army Aviation Product Improvement Program (PIP). In both the PIP and budget formulation processes representatives from DA, Army Materiel Development and Readiness Command (DARCOM), TRADOC, Aviation Research and Development Command (AVRADCOM) and Troop Support and Aviation Materiel Readiness Command meet with unit commanders from U.S. Army Europe, Korea and Alaska as well as the continental United States. Ultimately, the results of such users conferences both formal and informal are translated into TRADOC and ODCSOPS priorities by which the weapons system or PIP competes for dollars within a highly constrained total Army authorization.

The Aviation Systems Division works closely with the other HQDA staff agencies discussed in separate articles in this month's ***Aviation Digest***. Daily contact occurs with DARCOM, AVRADCOM and TRADOC headquarters and other subordinate commands. This keeps both formal and informal channels of information open and contributes to the coordination required to ensure a close-knit program.

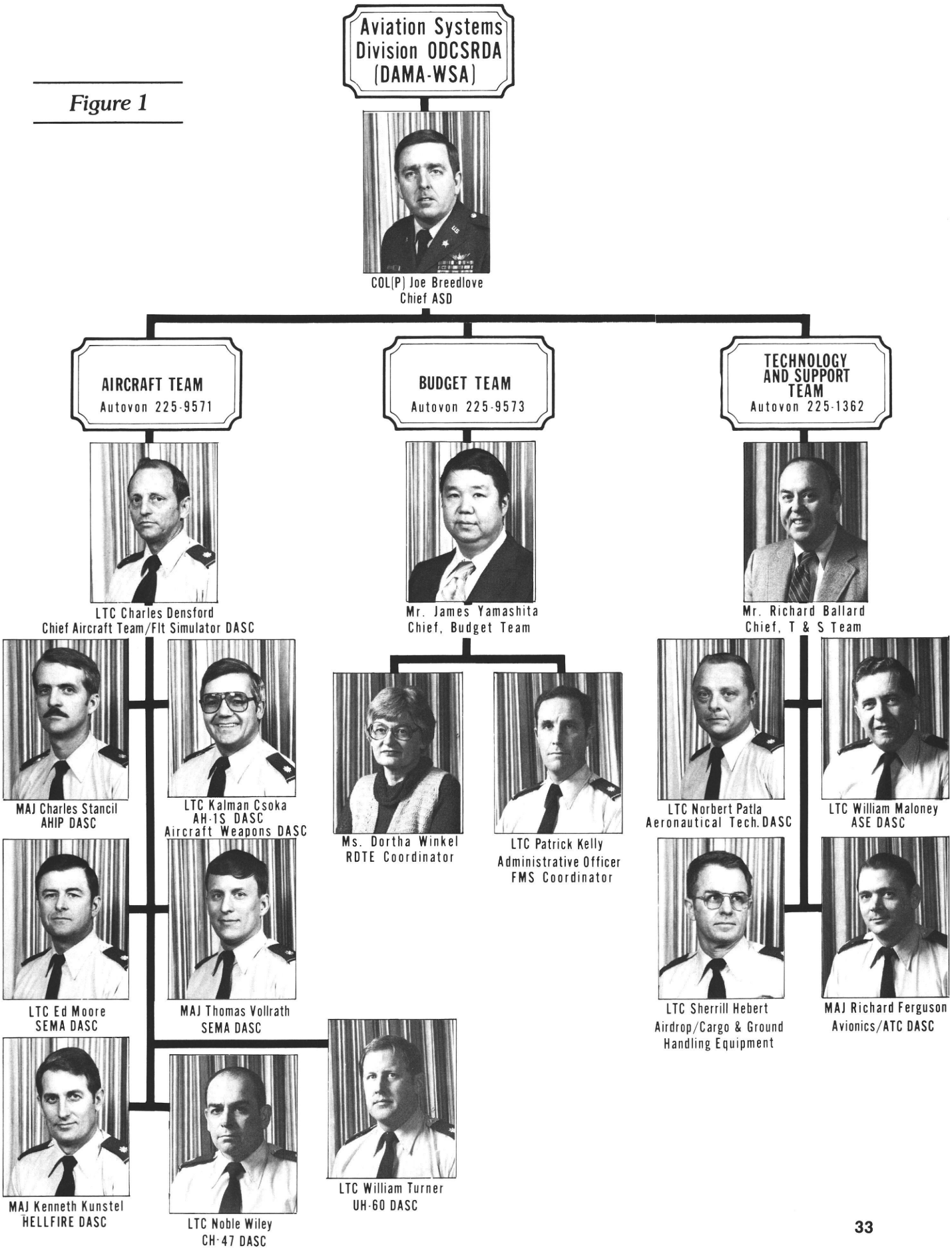
The Aviation Systems Division is organized into three teams: the Aircraft Team, the Technology and Support Team and the Budget Team. The chief of the Aviation Systems Division is COL (P) Joe J. Breedlove (see figure 1).

There have been numerous personnel changes since the last report in the July 1979 ***Aviation Digest***. The division's administrative element includes Mrs. Georgeanna DiSalvo, the chief clerk; Mrs. Merylee Norton, Mrs. Phyllis Newlon, Mrs. Mary Rink and Ms. Joanie Feggins, the secretaries. Their administrative and clerical support contributes immeasurably to the division's mission accomplishment.

In addition to these full-time members of the division, the following U.S. Army Reserve mobilization designees serve 2-week stints each year, contributing to Army Aviation now, while preparing for mobilization service: LTC Robert Kaplan, LTC Aadu Karemaa, LTC James Bynum, MAJ Garret Roosma and MAJ Edward Schmidt, LTC James Mengenhauser, LTC Joel Terry, MAJ John Queen, CPT Andrew Bogus and CPT George Singley.

The Aircraft Team and Technology and Support Team action officers are formally known as Department of the Army Systems Coordinators (DASCs). The DASC is the individual designated by the DCSRDA to function as the HQDA point of contact for all aspects of system development and acquisition. He further coordinates the status of all events in the life cycle system management model for a major system or other system selec-

Figure 1


Aviation Systems Division ODCSRDA (DAMA-WSA)
COL(P) Joe Breedlove
Chief ASD
AIRCRAFT TEAM
Autovon 225-9571
BUDGET TEAM
Autovon 225-9573
TECHNOLOGY AND SUPPORT TEAM
Autovon 225-1362
LTC Charles Densford
Chief Aircraft Team/Flt Simulator DASC
Mr. James Yamashita
Chief, Budget Team
Mr. Richard Ballard
Chief, T & S Team
MAJ Charles Stancil
AHIP DASC
LTC Kalman Csoka
AH-1S DASC
Aircraft Weapons DASC
Ms. Dortha Winkel
RDTE Coordinator
LTC Patrick Kelly
Administrative Officer
FMS Coordinator
LTC Norbert Patla
Aeronautical Tech. DASC
LTC William Maloney
ASE DASC
LTC Ed Moore
SEMA DASC
MAJ Thomas Vollrath
SEMA DASC
LTC Sherrill Hebert
Airdrop/Cargo & Ground Handling Equipment
MAJ Richard Ferguson
Avionics/ATC DASC
MAJ Kenneth Kunstel
HELLFIRE DASC
LTC Noble Wiley
CH-47 DASC
LTC William Turner
UH-60 DASC

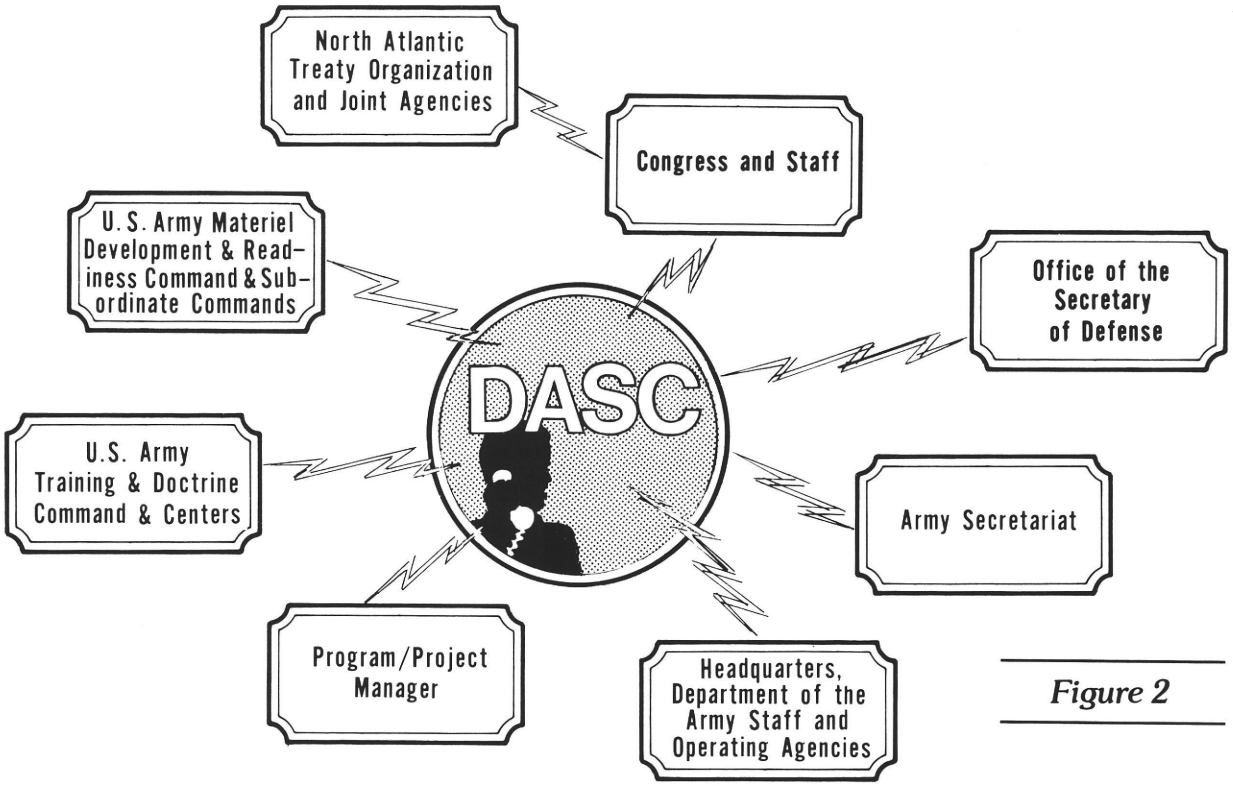


Figure 2

ted for DASC management. The functions of a DASC are spelled out in two pages of Army Regulation 10-16.

Figure 2 depicts the contacts made as a typical DASC coordinates, describes, defends, articulates and justifies the system at the Army staff level, the Department of Defense and the Congress. They are the DA proponents for the Army Aviation RDA programs and in the words of the DCSRDA are "the real heart" of the system.

A short update on the programs overseen by these DASCs is in order, keeping in mind that the "train is moving" and most of the topics to be mentioned are worthy of complete articles in themselves.

The advanced attack helicopter (AAH) is nearing completion of a very successful research development, test and evaluation (RDTE) program with operational test II in a field environment planned for June to August 1981. The Army is now preparing for a production decision in December 1981 and deliveries of the AAH to the Army should begin in December 1983.

The primary antiarmor weapon for the AAH, the HELLFIRE Modular Missile System, completed a successful operational test in July 1980 and is nearing completion of its developmental testing. Initial production of HELLFIRE with semi-active laser seeker is planned to begin in December 1981.

The UH-60A Black Hawk achieved initial operational capability (IOC) in October 1979 in the 101st Airborne Division (Air Assault). The Army has contracted for 257 Black Hawks through fiscal year (FY) 1980, of which 113 have been delivered as of 31 January 1981. The FY 1981 contract is being negotiated for the fifth year of production toward achievement of the Army acquisition objective of 1,107 aircraft. Since initial fielding, the Black Hawk has been used in numerous training operations and deployment exercises under extremely demanding conditions. Its field performance has been highly praised by both troops and commanders. The 82d Airborne Division is the next unit to receive the UH-60 with delivery scheduled to have commenced in January 1981.

Since the Army deferred development of the advanced scout helicopter, efforts for development of a near term scout are focused in a program known as AHIP (Army Helicopter Improvement Program). AHIP is a program that will modify either an OH-58 or OH-6 with a mast mounted sight, improved nap-of-the-earth communication and a doppler navigation system. The Army is projecting full scale engineering development of the AHIP system to commence in late FY 1981. As a result of Congressional review of the FY 1981 AHIP program, RDTE funding was increased by $20 million. With continued support from the Congress and Office of the Secretary of Defense, the Army is projecting IOC for the

AHIP system in early 1986.

The CH-47D completed a highly successful development testing/operational test II in the spring of 1980 which led to approval for modernization of 436 aircraft. As of February 1980, six of the first nine CH-47As had been inducted into the Boeing Vertol plant and began the remanufacturing process. First delivery is scheduled for May 1982.

Special electronic mission aircraft (SEMA) consists of both fixed and rotary wing aircraft used in the areas of SIGINT/EW (signal intelligence/electronic warfare), ELINT (electronic intelligence), RADINT (radar intelligence) and IMINT (imagery intelligence). SEMA systems currently fielded are GUARDRAIL V (RU-21H), QUICK LOOK (RV-1D), QUICK FIX 1B (EH-1H) APS-9F/side looking airborne radar (OV-1D) and Interim SOTAS (UH-1H). Future improvements and fieldings will result from upgrading the GUARDRAIL System with RC-12D, QUICK FIX II in the EH-60A Black Hawk, SOTAS in the EH-60B Black Hawk and QUICK LOOK II improvements to the existing fielded system.

Today we are more than halfway through the AH-1S modernization effort having fielded new production aircraft with the 20 mm cannon and universal turret and now fielding fully modernized Cobras with a new fire control system. In an effort to provide a limited night capability to the AH-1S, the Army will begin a full scale engineering development effort to incorporate forward looking infrared (FLIR) in the M65 TOW (tube-launched, optically-tracked, wire-guided) missile system. The FLIR will provide the copilot/gunner with an improved capability to acquire and engage targets during periods of poor visibility and at night.

That completes the major aircraft systems; however, Aviation Division DASCs also have responsibilities for other aviation related areas.

A number of flight training simulators are under development or procurement to meet the needs of Army Aviation institutional training at Ft. Rucker, AL, and continuation of proficiency training throughout the active Army and Reserve Components. These flight training systems are complex, advanced technology, full simulation systems with 6-degree freedom-of-motion platforms, computer driven motion and imagery systems, and camera model board or laser scan visual imagery systems which reproduce the challenges and sensations of flight from simple procedures to combat mission simulations with enemy interactions and aerial weapons engagements. The UH-1 flight simulators have all been procured and are in use. Simulators for the AH-1, CH-47C/D, UH-60 and AH-64 are all in various stages of development and procurement with the goal of maintaining Army aviators as the best in the world while reducing training costs.

The field of avionics covers four areas: communications, navigation, air traffic control and mission electronics. Communications developments include new nap-of-the-earth radios, an automatic target handoff system, a new aviator survival radio and the airborne SINCGARS (VHF/FM single channel tactical radio communications system). Navigational programs include the airborne PLRS (position location reporting system) and NAVSTAR (navigation by satellite) equipment, high accuracy inertial navigation units, low cost doppler navigators and automatic cockpit map displays. Air traffic control equipment runs from present GCA (ground controlled approach) radars and nondirectional beacons to the coming international civil-military microwave landing system. Finally, mission electronics covers newly developed night vision goggles, multipurpose cockpit displays and controls plus integrated laser target designation-obstacle warning devices.

Many aircraft survivability equipment R&D programs have come to fruition with the initial fielding in Europe of the RDF and of state-of-the-art infrared/radar jammers and missile detectors. As the threat evolves into new frequency bands using such advanced technologies as monopulse or frequency agility, these systems will be upgraded as a result of the broad-based continuing R&D effort to neutralize such threats.

In the aeronautical technology base arena major programs are essentially directed to specific aircraft component areas. In power plants, such programs as the advanced technology demonstrator engine (ATDE) and modern technology engine (MTE) will provide reduced fuel consumption, vulnerability and costs. In the airframe area, the Advanced Composite Airframe Program (ACAP) will provide an improved survivability and mission effectiveness in addition to demonstrating the application of advance composites to major airframe development. In the area of flight controls and rotors, the Advanced Digital/Optical Control System (ADOCS) program coupled with the Integrated Technology Rotor Program (ITRP) will provide improvements in mission and flight safety reliability as well as reduced costs and improved performance.

Last but not least, the budget team assembles the Army Aviation research, development and acquisition portions of the Army budget. The fiscal year 1981 aviation funds authorized and appropriated by the Congress totaled $377.4 million for RDTE and $1076.4 million for APA. The fiscal year 1982 President's budget request to Congress is $370.2 million for RDTE and $1361.7 million for APA.

The entire Army Aviation community has contributed to and takes pride in the modernization programs discussed above. The Aviation Systems Division, ODCSRDA, through its day-to-day actions in its role as advocate for Army Aviation research, development and acquisition on the Army staff is a major player in this modernization thrust.

HQDA

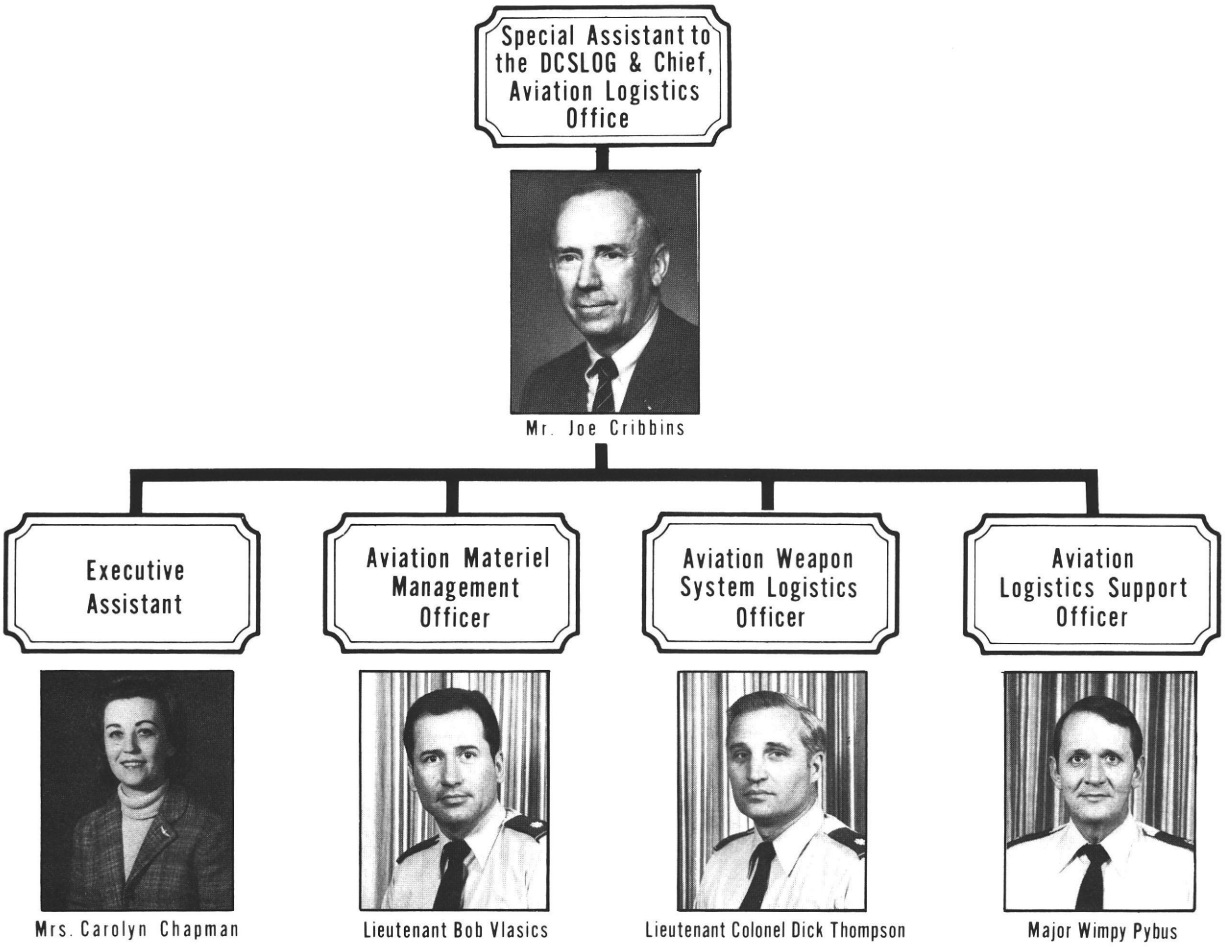
Aviation Logistics Office

Carolyn Chapman
Executive Assistant to Aviation Logistics Officer
Headquarters, Department of the Army

THE AVIATION Logistics Office, Office of the Deputy Chief of Staff for Logistics (ODCSLOG), Headquarters, Department of the Army is the management agency for the Army's Aviation Logistics Program for aircraft systems during the complete life cycle process—from the cradle to the grave. As a single coordinating and management agency within ODCSLOG, this office is responsible for providing the DCSLOG and the Army Staff with the technical expertise needed to maintain visibility and control of the entire Aviation Logistics Program as a weapons system, to include: interface with research and development; materiel acquisition; training; personnel; operations; logistic support of aeronautical materiel for all U.S. and foreign armed forces; and the capability for initiating and implementing logistic concepts, policies, practices and techniques unique to Army Aviation.

The office originated as the Special Assistant for Tactical Air Mobility in 1963. Over the years there have been several name changes such as Special Assistant for Logistical Support of Army Aviation, Aviation Logistics Management Office, Directorate for Aviation Logistics, Aviation Office, and finally the Aviation Logistics Office. The office is presently staffed as follows:

- Mr. Joseph P. Cribbins serves in a dual capacity as Special Assistant to the Deputy Chief of Staff for Logistics and Chief of the Aviation Logistics Office. As Chief of the Aviation Logistics Office he is the principal advisor to the DCSLOG for aviation logistics and aviation weapons systems management and many other logistical functional areas. As the Department of the Army's leading expert and foremost authority in these areas of aviation, Mr. Cribbins devises basic concepts, formulates policy and establishes practices and procedures for a sustained high level of operational readiness of aeronautical materiel and equipment at best value to the Army and improvement of the overall Army logistic support system. As the DCSLOG's Special Assistant, Mr. Cribbins contributes significantly to staff level decisions in the broad area of logistics.
- Lieutenant Colonel "Dick" Thompson serves as the principal assistant to Mr. Cribbins. His area of responsibility is primarily in new development programs. He analyzes an aircraft as a total weapons system encompassing airframe and engine, avionics, armament, ground support equipment, integrated logistics concepts and procedures and materiel acquisition. He also makes recommendations on major product improvement programs for current aviation systems and development of new aviation systems to assure that logistic support requirements are considered throughout design, development and production.



• Lieutenant Colonel "Bob" Vlasics is the ODCSLOG general staff officer for aviation logistics programs as they pertain to supply, maintenance, transportation, program budget guidance and program objective memorandum. He supervises the following programs: three level maintenance; phased maintenance; reliability centered maintenance; intensive management of selected aviation materiel; aircraft distribution; loans and bailment; interservice support agreements. LTC Vlasics departs in June for assignment as commander, 194th Maintenance Battalion in Korea. His replacement will be LTC "Larry" Holcomb who joined the Aviation Logistics Office in March after a tour with the U.S. Army Military Personnel Center.

• Major "Wimpy" Pybus is responsible for coordination of all aviation matters involving training, operations, safety, personnel requirements and aircraft readiness. He participates in and/or coordinates special study group efforts related to Army Aviation including ARCSA (Aviation Requirements for the Combat Structure of the Army), flying positions, grade structure for CMF 67 and Army Science Board.

• Mrs. "Carolyn" Chapman is Mr. Cribbins' executive assistant and personal representative on all aviation logistic matters. With 17 years in the office, Mrs. Chapman has become its greatest source of knowledge and memory. She works with the Army Staff, major commands and commercial industry. She is solely responsible for administrative management functions.

• Mrs. "Clara" Taylor joined the office in December 1980. Prior to joining the office, Mrs. Taylor was employed by the U.S. Army in Germany.

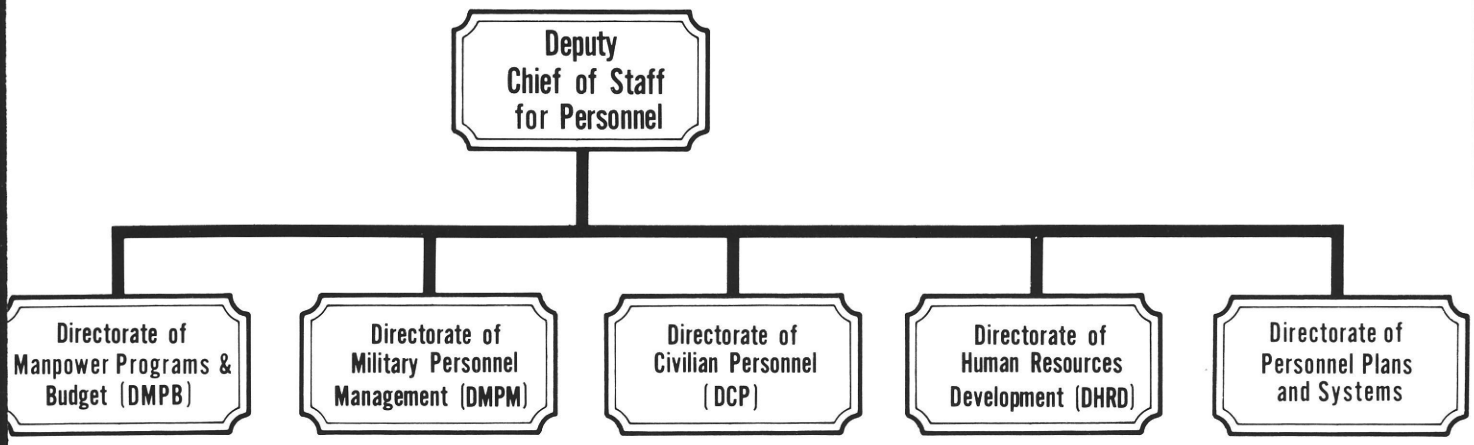
Aviation Personnel Policy

Lieutenant Colonel Robert D. Duffie
Personnel Staff Officer
Career Development Branch, Officers Division
Office, Deputy Chief of Staff for Personnel
Headquarters, Department of the Army

THE DEPARTMENT of the Army General Staff responsibility for Army Aviation plans, policies and programs relating to manpower authorization, management of Active and Reserve Component aviation policies and the Army safety program belongs to the Deputy Chief of Staff for Personnel (DCSPER).

The DCSPER is the functional chief for research and development programs which integrate manpower requirements and human factors connected with weapons systems, and ODCSPER further centrally manages the life cycle of initial clothing allowance items. Staff responsibility for Army Aviation personnel issues is diversified throughout the directorates and selected field operating agencies of ODCSPER (figure 1). These include formulation of training rates, clothing and equipment and personnel readiness and management policies.

Aviation functions centralized within the Human Resources Development Directorate include policy formulation for incentive pay and staff supervision of the Army Safety Center at Ft. Rucker, AL. The Compensation and Entitlements Division within this Directorate has Army Staff responsibility for establishing policy and proposing legislation concerning compensation and entitlements. The Aviation Career Incentive Act (ACIA) of 1974 and ongoing quadservice groups established to develop new initiatives in compensation and entitlements are part of that division's responsibility. Lieutenant Colonel Fred Sullivan serves as the Army representative and point of contact (POC) regarding flight incentive pay and is the Army representative on quadservice study groups. He also is the POC for all issues concerning flight pay determination. As the ACIA POC, he responds to inquiries from



Field Operating Agencies

- U.S. Army Military Personnel Center
- U.S. Army Reserve Components Personnel and Administration Center
- U.S. Army Recruiting Command
- U.S. Army Military Enlistment Processing Command
- U.S. Military Academy
- U.S. Army Research Institute for Behavioral and Social Science
- U.S. Army Safety Center

governmental "watch dog" agencies (i.e., the General Accounting Office and the Army Audit Agency) regarding implementation of the Act.

In the Manpower Programs and Budget Directorate, the Allocation and Documentation Division evaluates all requests for permanent changes to operational and nonoperational aviation positions for proper grade, specialty and additional skill identifier. Moreover, this division is responsible for coordination with the Manpower Policy, Standards and Survey Division on each request concerning the establishment of commissioned officer aviation positions and for enacting permanent changes to operational and nonoperational aviation positions. The Manpower Policy, Standards and Survey Division is the proponent for AR 570-1, "Commissioned Officer Aviation Position Criteria," and is responsible for ensuring that all commissioned officer changes are in accordance with that regulation. This division is also responsible for ruling on requests for temporary operational flying duties, monitoring records of personnel performing limited cockpit duties and auditing TAADS (The Army Authorization Documents System) to ensure strict compliance with AR 570-1.

In the Military Personnel Management Directorate, the Officer Division and the Enlisted Division establish Army policy for the procurement and management of active component officers and enlisted personnel, and also exercise staff supervision over the Officer Personnel Management System and the Enlisted Personnel Management System, respectively. The commanding general, U.S. Army Military Personnel Center, implements the personnel management system as explained in the succeeding related articles.

Aviator Management

Aviation Career Program

LTC Joe D. Carothers
Chief, Aviation Plans/Programs Branch
Officer Personnel Management Directorate
U.S. Army Military Personnel Center

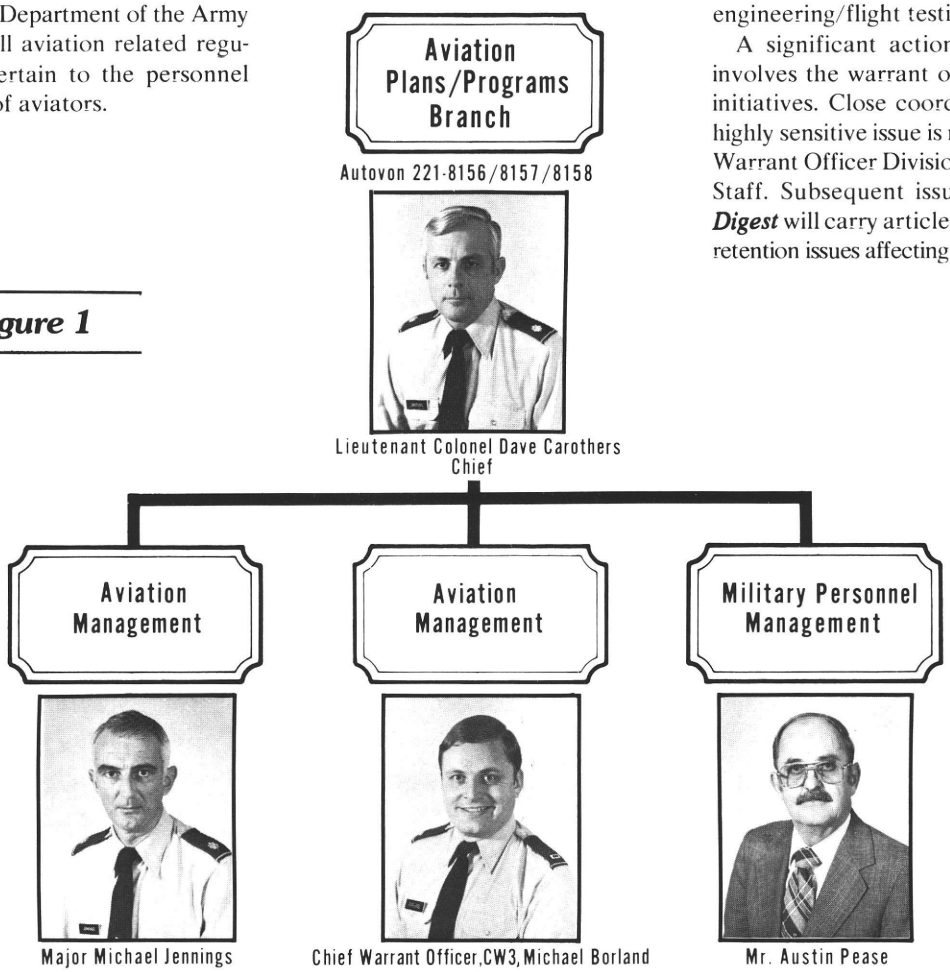
IN ORDER TO implement the Aviation Career Program, a solid foundation must be established for the management of all aviators. The building blocks of this foundation are the Army regulations, circulars and pamphlets and the Public Law. Aviation Plans/Programs Branch is the coordinating office in Headquarters, Department of the Army (HQDA) for all aviation related regulations that pertain to the personnel management of aviators.

Specific functions within the branch are:

- Specialty monitorship of Specialty Code (SC) 15 (Aviation), SC 71 (Aviation Materiel Management) and the 100 series military occupational specialty for aviation warrant officers.
- Management of the Aviation Career Incentive Act of 1974 (Public Law 93-294). The function includes monitorship of Total Officer Flying Duty Credit (TOFDC) to include annual publication of a DA circular to provide update of TOFDC.
- HQDA approving authority for all Flying Evaluation Boards.
- HQDA approval authority for all waivers of medically disqualifying defects for aviators.
- Proponent for AR 600-105, "Aviation Service for Rated Officers." Soon to be published, this regulation will supersede parts I, II, III and portions of AR 600-106, 107 and 108.
- Proponent for AR 611-85, "Aviation Warrant Officer Training," and AR 611-110, "Selection and Training of Army Aviation Officers."
- Management of DA aviation training quotas.
- Coordination of the Army Aviation engineering/flight testing program.

A significant action in this office involves the warrant officer retention initiatives. Close coordination on this highly sensitive issue is maintained with Warrant Officer Division and the Army Staff. Subsequent issues of ***Aviation Digest*** will carry articles addressing the retention issues affecting warrant officers.

Figure 1



Specialty Code 71, Aviation Materiel Management

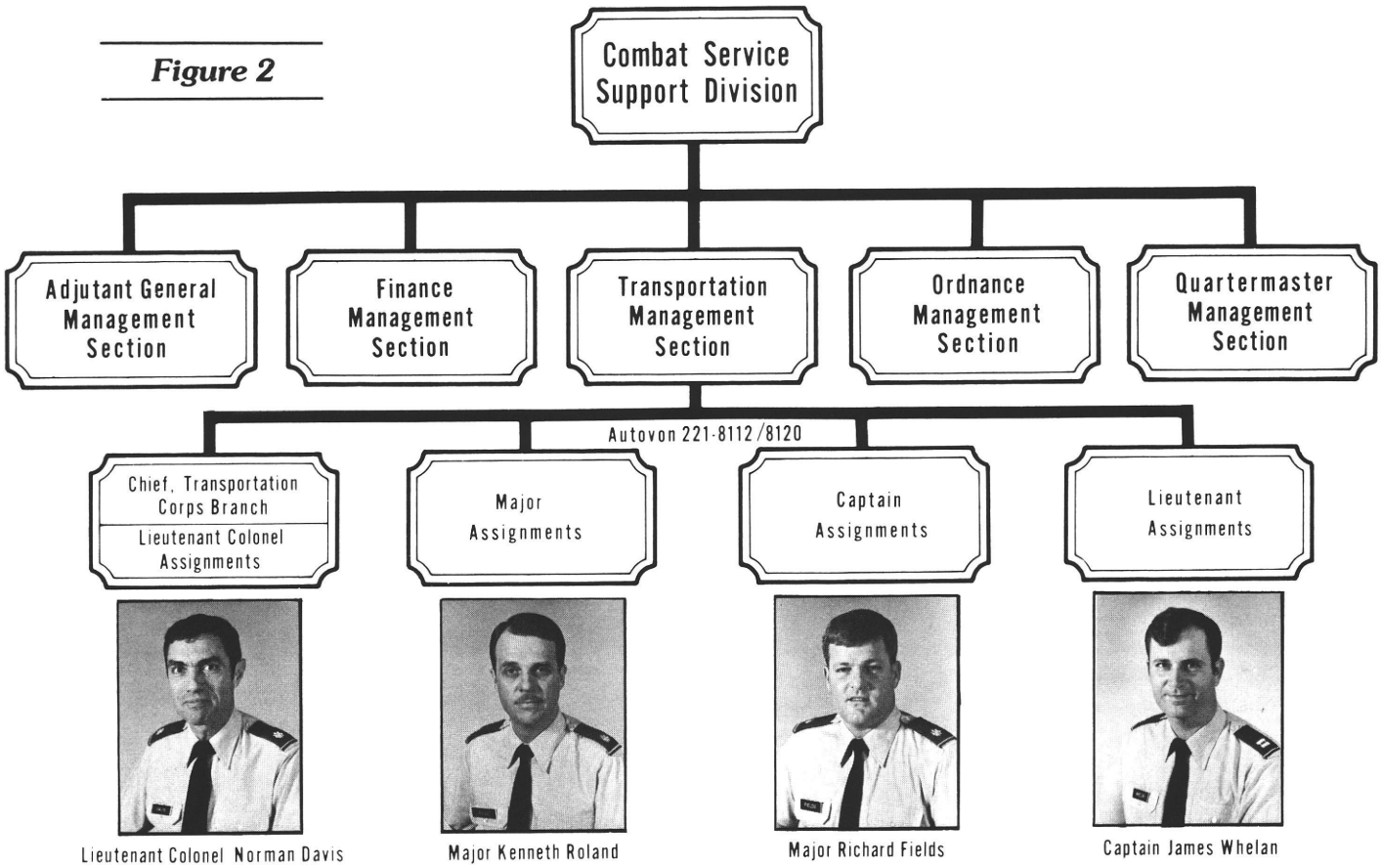
LTC(P) Paul J. Wenzel
Chief, Aviation Management Branch
U.S. Army Military Personnel Center

OPMS SPECIALTY Code 71 is the basic entry combat service support aviation specialty for commissioned officers. Newly commissioned officers assigned to the Transportation Corps who are designated SC 71 will attend Army flight training following completion of the Transportation Officer Basic Course at Ft. Eustis, VA. Upon successful completion of flight training at Ft. Rucker, AL, SC 71 officers return to Ft. Eustis for 14 weeks of training in the Aircraft Maintenance Officer and Repair Technician Course (AMORTC) Phase I. There they are provided the technical knowledge which serves as the foundation for their career in aviation logistics/maintenance.

Selected students will continue through 3 to 4 weeks of Phase II training where they will receive instruction in maintenance test pilot procedures. Selection for Phase II training will be based upon projected requirements. Those SC 71 aviators not attending Phase II initially will receive maintenance test pilot training at some future date after their initial assignment.

Flight training and AMORTC represent the basic educational qualifications for combat service support aviators. Officers designated SC 71 can anticipate involvement in all phases of the life cycle management of aviation materiel. This involvement includes production control; inventory control; storage, distribution, maintenance and supply of Army aircraft and related component

Figure 2



systems. Requirements for combat service support aviators are found in all aviation units and accordingly change 9, AR 611-101 has provided guidance for the proper specialty coding of these positions, i.e., service platoon commander and aviation battalion, brigade or group S4s. The role of the combat service support aviator has resulted in the change of the specialty title from Aviation Materiel Management to Aviation Logistics to be effective 30 September 1981.

Duties for an officer with specialty code 71 include: service platoon commander; command and staff positions in units engaged in aviation unit maintenance or aviation intermediate maintenance; aviation maintenance officer; aviation supply officer; and aviation battalion, brigade or group S4 positions.

SC 71 officers are managed by the assignment officers of the Transportation Management Section, Combat Service Support Division (figure 3).

The Transportation Management Section currently manages about 514 company grade and 581 field grade aviators (SC 71). Officers can contact the assignment section by calling AUTOVON 221-8112/8120.

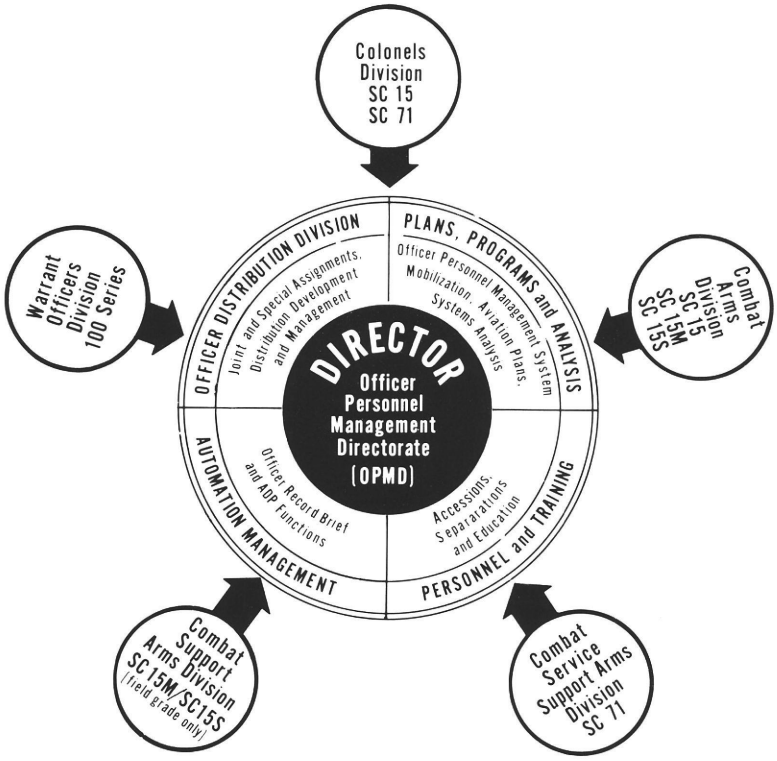


Figure 3

Specialty Code 15, Management In The Aviation Management Branch

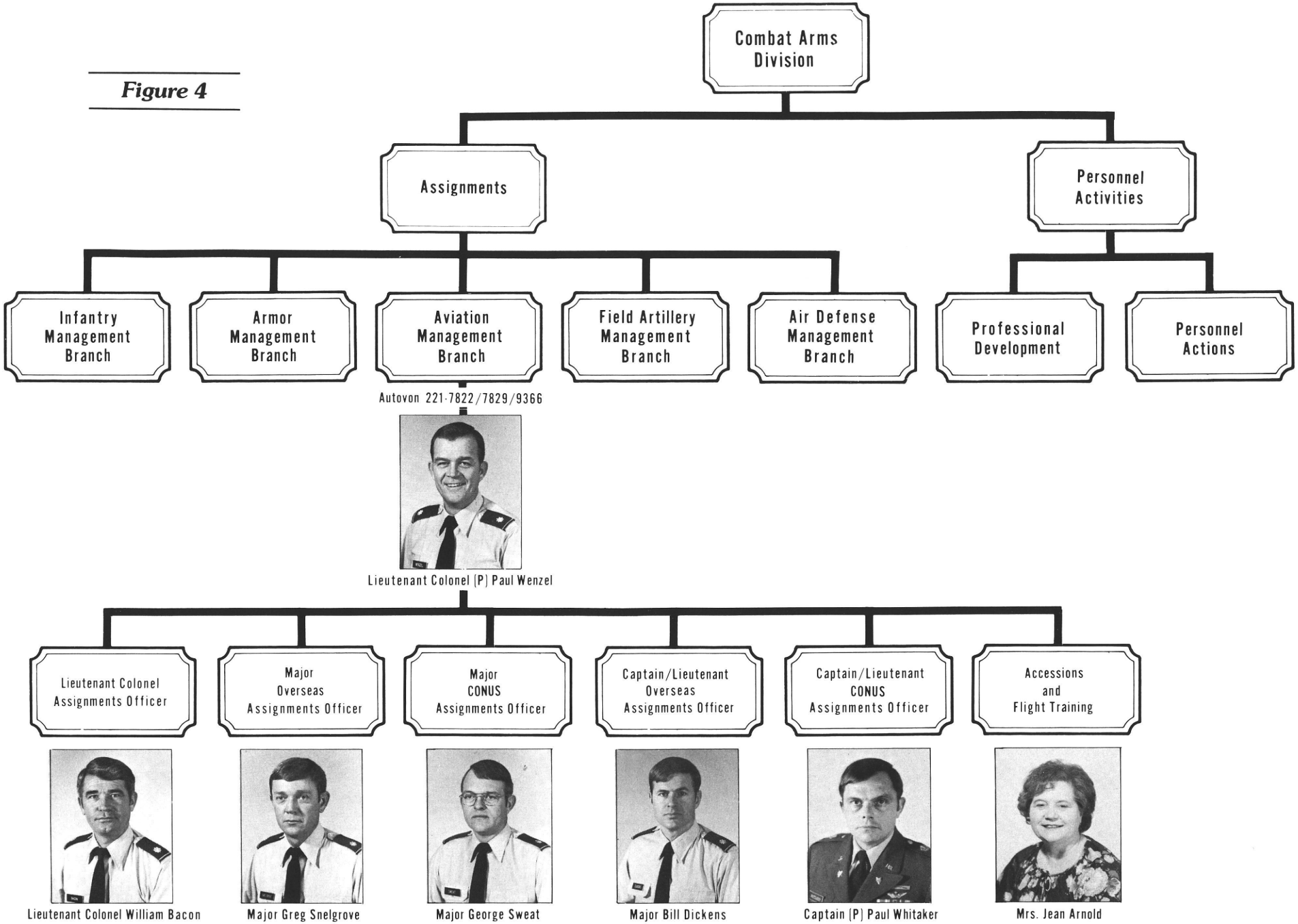
MAJ Michael K. Jennings
Aviation Plans/Programs Branch
Officer Personnel Management Directorate
U.S. Army Military Personnel Center

After nearly 2 years of implementation, it has become obvious that the aviaton career pattern decision has given the Army, for the first time in 35 years, a foundation on which to build a viable aviation career program. Key points are that Specialty Code 15 aviators are now full members of the combat arms and their management is centralized. Realizing the decision was not meant to be a panacea nor a short range, quick fix, this article will point out the complexities involved in this new era of aviator management and outline the intensive management procedures which must be pursued over the next several years. These 2 long years of implementation have shown us the career pattern decision is an embryo that enables the Army to develop future aerial platform experts who will enable us to fight better and win all the battles.

Although Specialty Code 15 is officially designated a member of the combat arms equal to Infantry, Armor, Field Artillery or Air Defense, requirements for commissioned aviators extend across the spectrum. SC 15s will serve in Army flight detachments, perform as instructors at many, and perhaps all of the Army's training centers, and be assigned to other positions which are not directly or indirectly related to combat duty. In combat service support we will find SC 15s in assault support helicopters, air traffic control centers and in command aviation organizations. The combat support role will be manned by SC 15s flying electronic warfare platforms, more assault support helicopters and duty at forward air traffic control sites. In the combat arena, SC 15s will be flying scout, attack and assault helicopters in their mission of finding, fixing and destroying the enemy. It is in this arena where the SC 15 aviator will execute the role of commanding, directing and controlling aviation elements in conjunction with land and air forces as a full member of the combined arms team.

While many SC 15s will transit the entire aviation spectrum, some will be limited to serving in the combat support and combat service support roles by

Figure 4


Combat Arms Division
Assignments
Personnel Activities
Infantry Management Branch
Armor Management Branch
Aviation Management Branch
Field Artillery Management Branch
Air Defense Management Branch
Professional Development
Personnel Actions
Autovon 221-7822/7829/9366
Lieutenant Colonel (P) Paul Wenzel
Lieutenant Colonel Assignments Officer
Major Overseas Assignments Officer
Major CONUS Assignments Officer
Captain/Lieutenant Overseas Assignments Officer
Captain/Lieutenant CONUS Assignments Officer
Accessions and Flight Training
Lieutenant Colonel William Bacon
Major Greg Snelgrove
Major George Sweat
Major Bill Dickens
Captain (P) Paul Whitaker
Mrs. Jean Arnold

virtue of their specialized training as electronic warfare experts, air traffic control personnel and assault support helicopter aviators, or because of the combat exclusion policy which applies to female aviators.

Further complicating the management of SC 15 aviators during these early years following the career pattern decision are the three distinct population groups within the current aviator personnel inventory. Nearly all aviators commissioned prior to 1970 have had considerable hands-on training in another combat arms specialty. Many of them have maintained qualification both in SC 15 and the other combat specialty. Those commissioned between 1970 and 1979 include some who have served and attained qualification in another combat specialty while many have served but attained qualification in SC 15 only. The third group are those SC 15s commissioned in 1979 and later who will not accomplish traditional combat arms qualification in the 11, 12, 13 and 14 specialties. Therefore, aviators in the second group who did not qualify in another combat arms specialty and those commissioned subsequent to 1979 must realize combat arms qualification through tough assignments in table of organization and equipment (TOE) aviation units.

Another factor impacting on the centralized management of SC 15s is the excess of major and lieutenant colonel aviators over current aviation force structure requirements. For this reason, those field grade aviators who are now considered to be qualified in two combat arms specialties are being managed by the other than SC 15 Combat Arms Management Branch, e.g., 12/15s by Armor, 11/15s by Infantry, etc.

SC 15 aviators with military intelligence or signal skills will wear appropriate branch insignias and may expect assignments against 15M or 15S requirements.

The "carrier branch" concept applies to SC 15s who are not nor will be qualified in two combat arms specialties. It is used to (1) provide commissioned aviators insignia identifying them as members of the combat arms and (2) allow for combat arms education prior to and after attending flight school.

Following qualification as an SC 15, the commissioned aviator will be schooled based primarily on his aircraft qualification and initial utilization tour. For example, an aviator "carrier branched" Field Artillery will attend the Field Artillery Officer Basic Course. If, following completion of flight training, he is accepted for and trained as a scout or attack pilot and assigned to an attack or air cavalry unit, he probably will be selected to attend the Armor Advanced Course. Aviation Management will select SC 15s to attend all of the combat arms advanced courses to ensure cross fertilization within the combined arms team.

Like other members of the combat arms, aviators will be required to develop and serve in those skills for which the Army has documented requirements. Additional specialties for aviators are not limited to aviation related skills and include engineer, foreign area, atomic energy, logistical, personnel management, and operations and research specialties. The projected shortage of company grade aviators through 1986 will require superintensive management procedures to allow our most ambitious aviators to pursue these specialties while "manning the force."

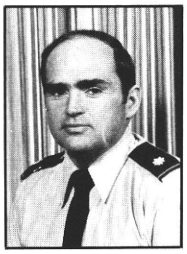
Another key point of the career pattern decision is the source and accession rates for SC 15s. Beginning in fiscal year 1982, 85 percent of the commissioned aviator accessions will come directly into the aviation program from Reserve Officers Training Corps, United States Military Academy and Officer Candidate School. The remaining 15 percent will come from inservice applicants who will have less than 48 months of active commissioned service upon entry into flight training. Current SC 15 annual training rates require that 80 inservice applicants be selected each year. Nearly 400 applicants will apply for these quotas and if their applications meet the strict and demanding requirements for flight training, they will be forwarded to a selection board which will rank order applicants for class assignments.

As the SC 15s progress through their career to lieutenant colonel, they will receive advanced course schooling, be eligible for TOE command either at the captain or major level or both, and receive additional specialty designation and development. In addition to other military and advanced civil schooling education, they will be subject for selection to attend many and varied aviation transition, qualification and refresher courses as they rotate between assignments in SC 15 and their additional specialty.

Management of SC 15s is no easy task nor will it become easier. As the new aviators complete their initial flight training they are subject to assignments worldwide. We cannot arbitrarily select 20 SC 15 lieutenants to fill 20 SC 15 requisitions. Each requirement will be different—some might specify the SC 15 be attack qualified while others could entail a basic UH-1 qualification. There is a good chance that one will need the safety course while another may need fixed wing, OV-1D Mohawk and an electronic warfare officer course en route to an initial aviation assignment. Figure 1 depicts the management process by which the Officer Personnel Management Directorate programs accession, training, development, distribution and control over the officer corps. Assignment decisions interface with management divisions to control, coordinate and effect the equitable distribution of officer assets worldwide. Figure 2 details the SC 15 managers in the Aviation Management Branch of the OPMD scheme. All career managers in Aviation Management can be contacted at AUTOVON 221-7822/7829/9366.

As stated earlier, combat arms qualification for the new SC 15s will come through tough TOE aviation assignments. The traditional combat arms qualification by ground assignments was a luxury that we no longer can afford. This evolutionary process coupled with complexities of a totally revised career pattern creates obstacles that must be overcome by intensive management procedures. I believe we are making headway and along with the wind, we see light at the end of the tunnel.

AMEDD Aviation



Lieutenant Colonel Thomas C. Scofield
Office of The Surgeon General
Headquarters, Department of the Army

HELICOPTER EVACUATION of casualties evolved during the American involvement in the Republic of Korea in the early 1950s and was later refined during the conflict in the Republic of Vietnam during the 1960s. Aeromedical evacuation of casualties saved countless lives and decreased suffering and pain in thousands of cases. This contribution to lowering mortality rates by rapid evacuation of combat casualties by helicopter and dedicated Army Medical Department (AMEDD) personnel cannot be overestimated.

During World War I, World War II and the Korean conflict, 8.1 percent, 4.5 percent and 2.8 percent, respectively, of the wounded admitted to the hospitals died of wounds. This reduction from 1918 to 1953 was the result of improvements in medical and surgical skills, availability of antibiotics and whole blood, increase in overall medical technology, and the ability of the Medical Corps to apply this knowledge to the battlefield situation. During the Vietnam conflict, 2.1 percent of the wounded admitted to the hospital died.

	Survived Battle	Dead	DOW	Lag Time
WWI, 1914-1918			8.1%	12.5 hours
WWII, 1941-1945	70%	30%	4.5%	12.5 hours
Korea, 1950-1953	73%	27%	2.8%	9.8 hours
Vietnam, 1967-1973	82.5%	17.5%	2.1%	2.7 hours

Of greater significance is the overall reduction of the mortality rate during the Vietnam conflict. The overall mortality rate from the battle injuries decreased from 30 percent and 27 percent, respectively in World War II and Korea, to 17.5 percent during Vietnam.

This is a 9.5 percent decrease in mortality with a 9.5 percent increase in patient survivability. The reason for this dramatic reduction in mortality is the decrease in time between wounding and definitive treatment (lag time) provided by the rapid evacuation of patients by dedicated medical evacuation helicopters and aircrews. More wounded patients were brought to the hospital alive where essential definitive care could be administered early, thereby increasing the percentage of individuals surviving battle. Thus, the helicopter came of age during the Vietnam conflict as the primary means of medical evacuation for patients and became the most significant factor in helping to reduce the mortality rates of wounded Soldiers.

The first seven Medical Service Corps (MSC) aviators were graduated from flight school 28 February 1953. Their class began 6 October 1952 and had 28 members. Today, about 30 MSC officers graduate from flight school per year. Although none of the original seven MSC aviators remain on active duty, there are presently 320 MSC aviators in the AMEDD, many having flown numerous medical evacuation missions in combat during the Republic of Vietnam conflict.

Upon graduation from flight school, the MSC aviator is awarded the primary specialty skill identifier of

67J, aeromedical evacuation officer. After graduation, the 67J aeromedical evacuation officer will attend the Essential Medical Training for AMEDD Aviators Course at Ft. Sam Houston, TX. This course is designed to provide AMEDD aviators with a general knowledge of medical problems encountered in aeromedical evacuation and a working knowledge of techniques used in emergency medical care of the sick and wounded. The training provided in this course will enable the 67J aeromedical evacuation officer to provide, in the absence of medical officers, the best possible care to patients during aeromedical evacuation situations.

The chief of the Medical Service Corps and The Surgeon General continually stress the importance of professional development. Each MSC aviator has an excellent opportunity for professional and civilian/military educational growth. In developing career goals and objectives, professional experience is given equal consideration along with aspirations for civilian schooling, professional affiliation and level of assignment.

The aviation consultant to The Surgeon General monitors the 67J aeromedical evacuation officer career field. It is the responsibility of the aviation consultant to provide advice and make recommendations concerning policies, programs and issues relevant to professional development of the officers within the MOS 67J career field.

The opportunity to fly in the AMEDD aviation program is excellent. Air ambulance units are stationed worldwide to include continental United States (CONUS), Alaska, Hawaii, Germany, Korea and Panama. Other active flying positions include Japan and various Reserve and National Guard advisor positions, as well as several TDA (tables of distribution and allowance) positions in CONUS. All units provide 24-hour, 7-days-per-week standby aeromedical evacuation coverage.

In the United States, active duty medical evacuation units at 18 different installations participate in the Military Assistance to Safety and Traffic (MAST) Program. This program augments existing local civilian emergency medical service programs by providing military aeromedical evacuation helicopters and medical corpsmen to support civilian medical emergencies. These military units do not compete for emergency medical evacuation missions in areas where comparable support can be provided by civilian operators. Assistance may be provided only to the extent that it does not interfere with the performance of the military mission. The MAST concept has been widely accepted by local civilian communities and is extremely beneficial to the communities in need of emergency aeromedical evacuation. The MAST mission also provides an excellent training vehicle for air ambulance personnel and assists in maintaining the units' emergency aeromedical evacuation skills. Since activation of the MAST concept, more than 20,757 missions have been flown, 22,379 patients evacuated and 46,777 hours flown in all types of weather, day and night.

More than half of the Army's aeromedical evacuation resources are located in the National Guard and Reserves. These units are highly trained, efficient and exhibit a high degree of professionalism. They participate in the MAST program on a weekend basis and are performing in an exemplary manner.

The overall goal of the AMEDD Aviation Program is to provide the best possible aeromedical evacuation care to the Soldier in the field, thereby providing the Soldier with the best chance of survival. To accomplish this, The Surgeon General continually strives to upgrade the training and equipment of the air ambulance units. The Army's new UH-60A Black Hawk helicopter will replace the present UH-1 helicopter as the primary aeromedical evacuation vehicle in active Army units. The UH-60A Black Hawk is a twin engine helicopter with a top speed of 165 knots plus, and an adverse weather capability programed to include deicing. Speed is important in any emergency situation, but more important, speed must be accompanied by good flight characteristics, experienced medical personnel trained in emergency intensive care techniques, proper medical equipment compatible with the helicopter and reduced vibration. The patient must be provided with preflight emergency medical care and stabilization at the scene, inflight medical care and monitoring en route, and rapid placement with the physician best qualified to treat the patient's particular injuries. The combination of the UH-60A Black Hawk, skilled aeromedical evacuation teams and the proper medical equipment accomplishes this and provides the ultimate in totally responsive aeromedical evacuation transport.

The Army has recently completed fielding of the new high performance hoist, which released the AMEDDs of the life and death restriction which existed on the old hoist. Fielding of the new hoist to all active duty units was completed in January 1981.

With the new UH-60A Black Hawk, new high performance hoist, and highly trained MSC/warrant officer aviators and aircrews, the Army Medical Department will continue to provide the most effective, advanced means of combat medical evacuation available in the world today.

Army Reserve Aviation

Lieutenant Colonel Bert Rice
U.S. Army Reserve
Headquarters, Department of the Army

THE OFFICE OF the Chief, Army Reserve (OCAR) has an aviation staff officer in each of two divisions—Operations and Training (DAAR-OT) and Logistics (DAAR-LO). The mission of these two officers is twofold: first, to assure that the aviation interests of the U.S. Army Reserve (USAR) are completely interwoven into the total Army in all functional areas; and second, to integrate and coordinate all aviation actions and requirements of the U.S. Army Reserve with all other USAR activities within OCAR. To accomplish these tasks, the two OCAR aviation staff officers maintain continuous contact with all other Department of the Army (DA) staff officers, agencies and major commands as well as other governmental and civil agencies. In brief, these two officers serve as principal aviation advisors to the Chief, Army Reserve and as Headquarters DA points of contact for all USAR aviation related matters.

Some of the actions performed by the aviation staff officer in the Operations and Training Division include program objectives memorandum (POM) and budgetary preparation for the flying hour program; aviation manpower projections; aviation training requirements; aviation related force structure actions; MAST (Military Assistance to Safety and Traffic) participation; aviator training and standardization; aircraft accident prevention; and, airspace management actions.

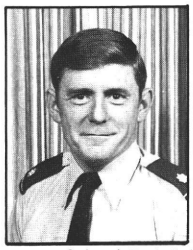
The more significant responsibilities of the Logistics Division aviation staff officer include budgetary formulation to support annual and POM cycle aircraft maintenance requirements; aircraft transfer transactions; and, all operational functions which apply to maintenance related activities. Both OCAR aviation staff officers attend the annual Worldwide Aviation Logistics Conference and the DA Policy Committee Meeting serving as the Chief, Army Reserve representatives at these and other important recurring meetings.

All requests for information relating to the USAR aviation program that arrive at DA are answered by OCAR. These include White House and Congressional inquiries; Defense Audit Agency inquiries, personal letters; and, of course, DA Inspector General and Army Audit Agency reports. Further, all DA and Department of Defense regulatory documents with aviation application are forwarded to OCAR for review to assess USAR implications.

An enjoyable and rewarding experience for the OCAR aviation staff officers is the opportunity to visit and observe USAR aviation units and solicit the views and opinions of officers, enlisted personnel and the civilian technicians. These views and opinions provide a basis for rationale supporting the discussion and ultimate decisions by OCAR aviation representatives at the various boards, committees and conferences.

Many detailed functions have not been mentioned here. However, if there is any doubt whether or not the OCAR staff can help you with a particular problem, let us be the judge. At least, perhaps we can refer you to the proper agency to answer your questions satisfactorily.

Lieutenant Colonel Bert Rice
Plans and Training Officer


Lieutenant Colonel Red Calkin
Logistics Officer

REPORTING FINAL

Late News From Army Aviation Activities

FROM WASHINGTON

Personnel Changes. Brigadier General Richard D. Kenyon will become the deputy commanding general of the Army Aviation Center, Ft. Rucker, AL, in July. His present position as Army Aviation Officer, Office of the Deputy Chief of Staff for Operations and Plans, Department of the Army, is scheduled to be filled by Colonel (P) Don Parker who is now commander of the 17th Aviation Group in Korea.

Aviation Standardization. The DA DCSOPS is responsible for aviation standardization and training as per AR 95-1, chapter 6. He fulfills this responsibility through aviation standardization policy boards at all levels from Department of Army to battalion/squadron. The various level boards meet frequently to address various subjects that require discussion or change. Each level raises those salient points and determines what subjects should be raised at the annual Department of Army Standardization Policy Committee Training Conference. Members of the Department of Army committee include representatives from each major command (MACOM), U.S. Army Aviation Center and DA staff agency. The results of the Department of Army Committee are presented to the DCSOPS and Army Chief of Staff for appropriate taskings to resolve significant issues. A Department of Army representative attends the continental United States Army and MACOM conferences as an observer to assist in clarifying Department of Army policy, to address key problem areas, and to keep the DA Army Aviation Officer, the Director of Training and DCSOPS advised of problem areas.

The commanding general, USAAVNC, Ft. Rucker, using his Director of Evaluation and Standardization, serves as an extension of the DCSOPS. In this capacity he conducts evaluation and assistance visits to Active and Reserve Component units/worldwide. These visits include evaluating all aspects of aviation training and standardization. Guidance is provided by the DCSOPS training directorate prior to unit evaluations in reference to specific areas to be evaluated. HQDA, ATTN: DAMO-TRS-AVN (LTC(P) E. H. Grayson/LTC T. E. Rountree) AUTOVON 224-4990.

(DEPARTMENT OF THE ARMY)

FROM KOREA

Night Vision Goggle First. Warrant Officer, WO1, Angel Delacruz, Company A, 2d Aviation Battalion, 2d Infantry Division is the first pilot to qualify with night vision goggles while assigned in Korea.

Mr. Delacruz, a July graduate of the Aviation Center's Initial Entry Rotary Wing Course at Ft. Rucker, AL, said, "Each student going through the course receives orientation training in the use of the night vision goggles. I became a night vision buff and when I was assigned to Company A, I wanted to continue the training. It helps build confidence in being able to fly at night." Chief Warrant Officer, CW3, Steve Frye instructed Mr. Delacruz and qualified him. Mr. Frye has 5 years experience as an instructor pilot at the U.S. Army Aviation Center, Ft. Rucker, AL, and was one of the first to train students in the use of the goggles when the orientation training began in 1977.

(2D INF DIV PAO — SP5 ROBIN PROCTOR)

FROM FORT RUCKER

New Warrant Officer Class Underway. The Army's first Warrant Officer Orientation Class, 2 weeks long and composed of 10 students, was opened on 2 March at the Aviation Center. It joins the Aviation Warrant Officer Advanced Course and the Warrant Officer Senior Course as the curriculum for the Warrant Officer Career College at the post.

The orientation course, which has been geared to the newly appointed nonaviation warrant officer,will orient the new warrants on profes-

sional development, customs, traditions, courtesies, techniques of management, leadership, ethics and other areas.

(USAAVNC PAO—AL ENDICOTT)

U.S. Helicopter Team. Fourteen of the Army's best helicopter pilots were named in the FORSCOM/TRADOC fly-offs March 8 to 12. Together with a civilian two-man crew from Bell Helicopter Textron, they will form the seven two-man crews who will compete as the U.S. Helicopter Team in the 4th World Championships to be held during August in Poland. The Helicopter Club of America, Washington, DC, is the team's sponsor.

The military crews, their units and the aircraft used in the fly-offs are: **No. 1**—CPT Stephen G. Kee and CW2 George D. Chrest, D Troop, 1/9 Cav, 1st Cavalry Div, Ft. Hood, OH-58; **No. 2**—CW3 Irvin B. Starrak and CW3 Robert L. Miller, Department of Flight Training (DOFT), Ft. Rucker, UH-1; **No. 3**—CW3 Norman Thompson and CW3 Ronald Rivera, DOFT, Ft. Rucker, UH-1; **No. 4**—CW3 John T. Bailey and WO1 Jim C. Corbitt, B Troop, 7th Sqdn, 17th Cav, 6th Cav Bde (AC), Ft. Hood, OH-58; **No. 5**—CW3 John E. Jewkes and CW3 Robert A. Stolworthy, DOFT, Ft. Rucker, UH-1; **No. 6**—CW3 Roger A. Bodwell and CW3 John J. Durkin, DOFT, Ft. Rucker, OH-58; **No. 7**—CW2 Scott E. Berrier and WO1 Robert E. McConnell, HHC, 2d Bde, 101st Airborne Div (AA), Ft. Campbell, OH-58. The eighth place team, CW2 Robbie D. Robinette and CW2 Ronald C. Whetstone, D Co, 502d CAB, 2d Armored Div, Ft. Hood, OH-58, will serve as an alternate crew.

Aviators from Ft. Stewart, GA, Ft. Bragg, NC, and Panama also were in the fly-offs, making a total of 15 two-man crews who competed for the privilege of representing the United States against teams from Russia, Poland, Hungary, Germany and Great Britain in the World Championships.

Competitive events at Ft. Rucker included timed arrival and rescue, precision flying, navigation exercise and helicopter slalom.

WE DID IT (right) CPT Stephen G. Kee, left, and CW2 George D. Chrest of D Troop, 1/9 Cavalry, 1st Cavalry Div, Ft. Hood, TX, are justifiably proud of their accomplishment of placing first in a field of 15 two-man crews in the FORSCOM/TRADOC helicopter fly-offs held recently at Ft. Rucker, AL. (See outside back cover, March 1981 *Aviation Digest*)

ON U.S. TEAM (below) Army aviators who will be on the U.S. Helicopter Team that will participate in the 4th World Championships in Poland are, from left, CPT Stephen G. Kee, CW2 George D. Chrest, CW3s Robert L. Miller, Irvin B. Starrak, Norman Thompson, Ronald Rivera and John T. Bailey; WO1 Jim C. Corbitt; CW3s John E. Jewkes, Robert A. Stolworthy, Roger A. Bodwell and John J. Durkin; CW2 Scott E. Berrier and WO1 Robert E. McConnell

U.S. Army Communications Command
ATC ACTION LINE

DOD Flight Information Publications

WHAT EFFORTS ARE being made to improve the Department of Defense (DOD) Flight Information Publications (FLIP)?

A new publication will be off the press on 1 July 1981. It's called the Flight Information Handbook and is designed to be a companion product to the FLIP En Route Supplements. The handbook will be the same size as the FLIP terminal books, side bound and designed for worldwide use. Initial issue of the handbook is expected to contain about 50 pages. After operational experience is gained with the new product, requirements to revise criteria or to relocate data to the handbook from other publications may result in an increase in the number of pages.

What information will go in the handbook? It will contain a selection of pilot procedures and aeronautical information which are required in flight, but not subject to frequent change; plus a selection of emergency procedures, conversion tables and other data which have broad application. Information in the handbook generally will apply to an area greater than that covered by a single en route supplement. In addition, data must fall into one or more of the following categories of applicability: (1) worldwide flight operations; (2) ICAO (International Civil Aviation Organization) region or wider application; (3) all Federal Aviation Administration (FAA) jurisdictions; or (4) all DOD operations.

Arrangements and contents:

- **Outside Front Cover:** Title, effective date and table of contents.
- **Inside Front Cover:** Special notices.
- **General Information:** Design and content, publication cycle and amendments, procurement and corrections.
- **Index of Subjects:** Consolidated list of all subjects published in the handbook, arranged alphabetically.
- **Section A:** Emergency Procedures (present section E of DOD FLIP En Route Supplements).
- **Section B:** National and International Flight Data and Procedures (present section D of the En Route Supplements).
- **Section C:** Conversion Tables (present chapter 9 of DOD FLIP General Planning and tables published in the En Route Supplements).
- **Section D:** Standard Time Signals (present chapter 7 of General Planning).
- **Section E:** Approach Lighting Systems Legend (only systems not now published in the Low Altitude Terminal Books).
- **Section F:** Meteorological Information (section C of the En Route Supplements).
- **Inside Back Cover:** Textual notes to accompany standard ICAO interception signals. (National deviations from standard ICAO signals will remain in appropriate En Route Supplements).
- **Back Cover:** Standard ICAO interception signals.

The Flight Information Handbook will be published semiannually on 1 January and 1 July. Amendments between issues will be by special notice published in the En Route Supplement.

Coming soon in ATC Action Line: New Look En Route Supplements.

Readers are encouraged to address matters concerning air traffic control to:
Director, USAATCA Aeronautical Services Office, Cameron Station, Alexandria, VA 22314