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ARMY AVIATION

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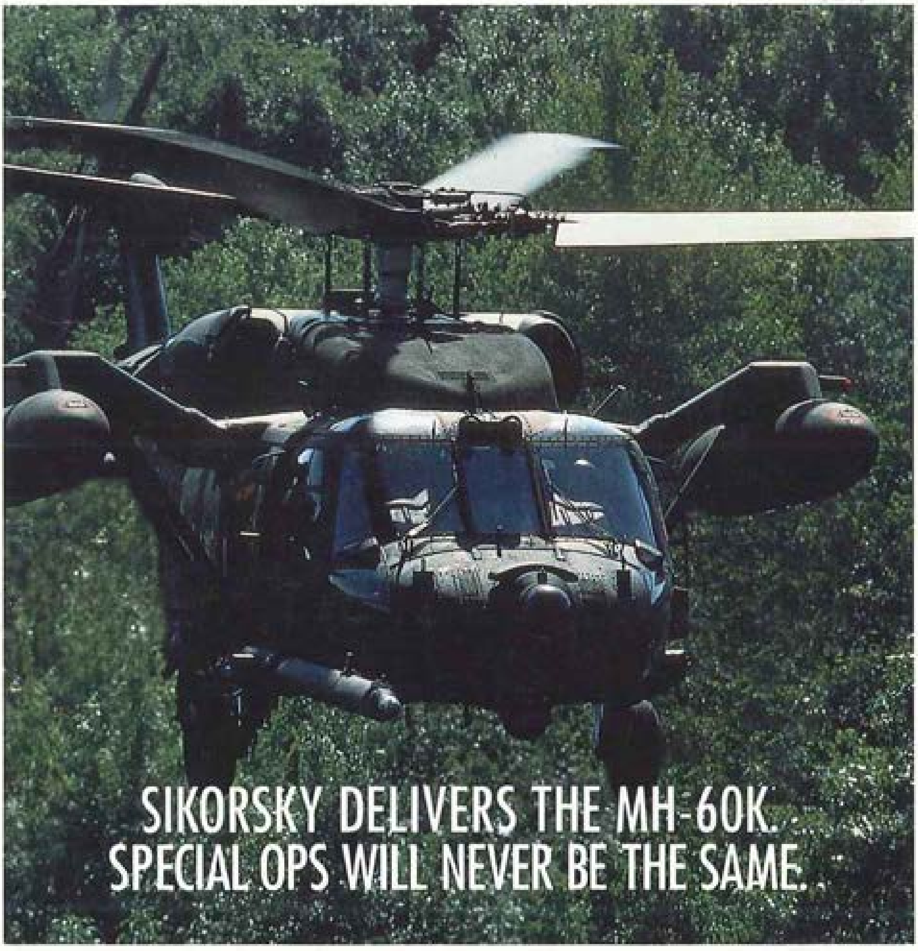

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FRONT COVER
Paid advertisement: Sikorsky Aircraft will deliver the first of 22 production MH-60K Special Operations Aircraft to the 160th Special Operations Aviation Regiment (Airborne). The MH-60K will expand the Special Operations mission spectrum by, performing clandestine, deep penetration airlift missions in adverse weather conditions and high threat environments.

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VOLUME 41 NUMBER 7

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Army Aviation: A Vital Asset

by Sergeant Major of the Army Richard A. Kidd

Earlier this year, I had the privilege of speaking to aviators, aviation soldiers, family members, and civilian industry base representatives attending the annual convention of the Army Aviation Association of America (AAAA), in Atlanta, GA.

I was privileged to participate in the awards presentations and recognition of SSG Everett Franklin Smith III, "Aviation Soldier of the Year"; "Army Aviator of the Year", CW3 James C. Kalahan; "DAC of the Year", James R. Ray; and CW4 Stephen V. Rauch, "James H. McClellan Safety Award" winner.

Our Total Army is blessed with many dedicated professionals like these, who stand shoulder-to-shoulder, continually striving to improve Army Aviation and to be all they can be.

For them, established Army standards are not a goal they seek, but a springboard to greater achievements. That is part of what makes our Army great and Army Aviation what it is today. It is that professionalism and dedication to service that will help us make it through the drawdown and the turbulent years ahead.

SMA Kidd is Sergeant Major of the United States Army, Washington, D.C.

Being among this special breed of professionals caused me to reflect on my experiences with aviation and serving as the command sergeant major of an aviation battalion. I realized how much aviation had touched me during my military career. I thought about my initial entry into the Army in 1962 and my first assignment with an airborne unit in Europe. I remember feeling special when I got my first chopper blast. I thought, "You have to know somebody or really luck out to jump for a helicopter." So, early on, I associated good things with Army Aviation.

In Vietnam, I really learned the value of aviation. From my first hours on Vietnamese soil, I was picked up and flown forward by helicopter. I was inserted and extracted from landing and pick up zones—some a little hotter than others—by helicopter. I got my chow

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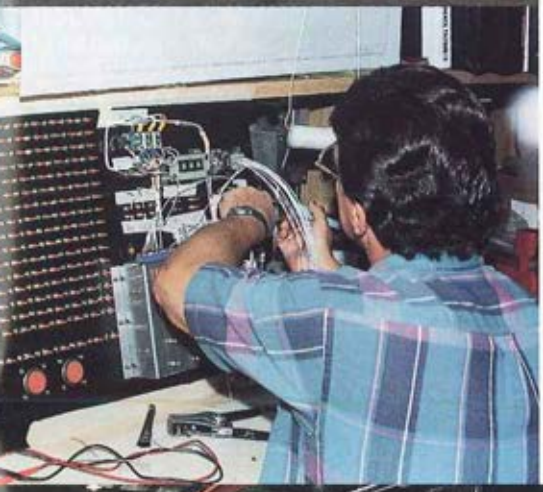

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by helicopter. My mail came by helicopter; and, I left the bush enroute to the "freedom bird" by helicopter.

In the United States, I participated in a number of jumping and rappelling demonstrations, all from helicopters. During those years, I developed a greater confidence in the capabilities of our aviation personnel; so much so I became the Command Sergeant Major of an aviation battalion.

Today's aviation noncommissioned officers strike a fine balance between technical and tactical competence. Our successes during Operations JUST CAUSE, DESERT SHIELD and DESERT STORM speak highly of their professionalism.

- Aviation NCOs proved their technical competence daily by maintaining the Vietnam-era UH-1 to the modern $14-million Apache helicopter;
- Aviation NCOs proved themselves tactically proficient by constructing fighting positions, and insuring soldiers' personal equipment, weapons and weapons systems were combat ready during the Gulf War;
- Aviation NCOs were load planners for company and battalion movement;
- Aviation NCOs quickly integrated advanced individual training fillers coming from the States into units and trained them for combat in the desert;
- Aviation NCOs, with no formal training, field-tested and put into operation new equipment—like the Unit-Level Maintenance Aerial Recovery Kit (U-Mark) used in recovering downed aircraft;
- Aviation NCOs led recovery teams for battle-damaged aircraft recoveries and participated in search and rescue missions deep into enemy territory.

All these notable accomplishments in combat were guaranteed because of tough, realistic training at such places as California's renowned National Training Center (NTC) and Arkansas' demanding Joint Readiness Training Center (JRTC). But the real fruit of all the long hours of training was the decisive victory in a 100-hour war which claimed relatively few American lives.

For one aviation noncommissioned officer, the fruits of his training and professional development were captured in a videotaped testimonial seen by aviation personnel Armywide. The video features the personal combat accounts of SSG Daniel Stamaris. Stamaris was assigned to the 2nd Battalion, 229th Aviation Battalion, Fort Rucker, AL, attached to the 101st Airborne Division during Operation DESERT STORM. Six hours before the cease fire on 27 FEB 1991, while on a search and rescue mission to recover a downed F-16 pilot, SSG Stamaris' Black Hawk was shot down in Iraq. He and two other soldiers survived the crash and were subsequently taken prisoners by the Republican Guard.

While he went into considerable detail about his ordeal and the pain he endured during several days in the hands of Iraqi soldiers, Stamaris attributed his survival to two things: First, he credited his survival of the crash to his God, the professionalism of the pilots who never panicked as the helicopter was going down, and his good physical condition; second, in responding to questions about how he engaged the enemy, he replied, "When you're trained, you don't think about it, you just react!"

Like millions of Americans, I too remember seeing him on CNN being carried out of the aircraft on a stretcher, wearing his XVIII Airborne Corps beret and snapping a sharp salute to an officer welcoming him back after his release.

Our victory in the Gulf generated a lot of pride and feeling of patriotism throughout America. Soldiers and civilians serving in our armed forces were proud members of a winning team. And the mobilization of the Guard and Reserves helped bring that same feeling into millions of households across the United States.

Today, that same pride in serving continues. But the echoes of the cheering crowds, the marching bands, and parades are getting faint as we face a mandate to reduce the size of our Army by 25% by Fiscal Year 1995. Already, thousands of soldiers have elected one of several early release monetary incentives offered by the Army and have voluntarily left our family. Other retirement-eligible soldiers are leaving as a result of the changes to the Retention Control

(Vital Asset — continued on page 28)

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How Much of the Night Do We Own?

by Major General John D. Robinson

Throughout history, primitive cultures have given almost supernatural qualities to animals that hunt and kill at night. Until recently, most armies of the world have not possessed the technological capability to effectively see, shoot, or move at night.

To our enemies in World War II, Korea, and Vietnam, however, the night was a sanctuary—a respite from the destructive effects of daytime air superiority and massed artillery. Our control of the skies forced our enemies to move during the night, hide in its vastness, and in many cases learn to conduct effective large-scale attacks and slip away before first light. The German *Wehrmacht* learned to resupply, move, task organize, and prepare for combat in the dark of night—in order to attack at dawn. Our enemies in both Korea and Vietnam were partial to night attacks that tended to offset American superiority in artillery and heavy weapons. In all three cases, our enemies gained advantages by training extensively at night and crafting effective night doctrine through hard experience.

Times have changed. The proliferation of military hardware and technology to nations around the world has led to a very uneasy world situation. Third world nations, and other politically unstable countries seeking self-determination, are learning that almost any weapons systems are for sale if they possess hard currency. As a result of "flooding" the arms market with high technology weapons, including night vision devices, many experts believe that the night has been opened up to whoever can "buy" into it. Whoever owns night vision equipment, these experts say, owns a portion of the night as well. Well, perhaps there is another side to the issue.

DESERT STORM, for example, pitted coalition forces against an enemy that possessed a wide variety of night vision devices purchased from different sources around the world. From what can be pieced together in After Action Reports, there is a strong indication that the Iraqis had neither the doctrine nor the training to put these devices to good use. The ability to fight at night, therefore, is more than just the number of night vision devices available to an army. It is the sum of an army's ability to develop concepts for employment, establish doctrine, and train an organization into a coherent whole. So then, questions like "Who owns the night?" may have a surprising answer.

What does our doctrine say about night operations? Clearly, our doctrine shows that we will continue to fight at night. Every armed conflict involving the United States since the Vietnam War has been initiated by a night operation. Night operations favor the attacker and can substantially reduce losses to enemy fire. As technology permits increased battle tempo, we will find fewer

MG Robinson is Chief, Aviation Branch, Commanding General, U.S. Army Aviation Center and Ft. Rucker, AL and Commandant, U.S. Army Aviation Logistics School.

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opportunities for the operational or tactical "pause" that the night has traditionally brought to mid-intensity battlefields. Operations are likely to be conducted around the clock. One might conclude then that the force that fails to use the night will fall behind in the time-sensitive competition for relational advantage.

While doctrine outlines what we should do, training largely determines what we can do. When asked to define the mission of a peacetime army, Clausewitz stated: "The whole of military activity must relate directly or indirectly to the engagement. The end ... is simply that he should fight at the right place and at the right time." As physical resources become increasingly constrained, conventional forces in both the active and reserve components must develop and implement creative programs to fully use available night training opportunities to enhance their mission essential night training programs.

Many units have adopted the "crawl, walk, run" philosophy in their training. A unit's ability to train at night is often impacted by budget, current mission, and available training resources. The world's best night fighters, our Special Operations Aviation, train almost exclusively at night. Their Fully Mission Qualified (FMQ) aircrews are at the "run" stage every night. Clearly, it would take a tremendous increase in resources to bring aviation units across the Army up to the same standards as those of the Special Operations communities. The truth is that it is not necessary for all of our forces to be trained to that level. Therefore, we must decide what level our aircrews across the board will be trained to in night operations. Since future operations will continue to call for us to have a 24 hour-a-day capability, only a portion of our aviation force can be dedicated to night operations.

Currently, our aviation organizations have a wide variety of night capabilities. These capabilities range from the Forward Looking Infra-Red (FLIR) technology of our most advanced aircraft to Night Vision Goggles (NVGs) in the more mature systems. In fact, over half of our aircrews will still be using NVGs as their only means of operating at night for the next ten to fifteen years. Until we are able to retire our older systems (UH-1, OH-58A/C), we will continue to have a technology mismatch in our organizations. As leaders, we must look at our units and assign missions based on the inherent capabilities of that unit. An extreme example of not assigning missions based on capabilities would be to assign an AH-64-equipped attack battalion to a daylight operation and assign an AH-1 unit to a night attack.

Aviation in and of itself is inherently dangerous. During the hours of darkness, the decrease in our visual acuity, coupled with the design limitations of our current night vision equipment, significantly increases associated risk. However, units that effectively use the crawl, walk, run philosophy and train to specific tasks, conditions, and standards can minimize the hazards of night operations. Today, for the most part, we rely on a mix of second and third generation image intensifiers and antiquated navigational systems to maneuver our aircraft around the battlefield at night. In the near future, we will be using the latest in FLIR technology on most of our modern systems. The FLIR system, coupled with the Global Positioning System (GPS), will dramatically improve our pilotage capabilities in the future and help to further reduce the hazards associated with night operations.

Our current night systems have operational limitations during certain environmental and meteorological conditions. The Army has identified these shortcomings and our industrial base is addressing solutions to these problems. Our partners in industry have produced, or are developing, advanced night systems that will provide us the capability to turn night into day. The problem that arises, however, is at what cost do we "buy" these nights? We simply cannot afford to buy all of the systems that are required in order to turn our warfighting machines into a pure "night only" force. There are two extremes to this situation. On the far left, we can stop spending money on future developments in the area of night systems and accept the fact that we have limited capabilities on some nights. On the far right, we can outfit every Army aircraft

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in the inventory with the latest in FLIR technology and other high technology night vision systems. We know that neither of these two extremes are reasonable.

However, the question that remains is, "What is the proper mix of technology for Army Aviation today and in the future?" Clearly, it would be fiscally irresponsible of us to pour money into our 30-year-old airframes to upgrade them with the latest in night systems. Rather we have placed our emphasis on developing and funding the improvements to the night capabilities of our five most modern and capable rotary wing systems. Our future Aviation force, which will include the RAH-66 Comanche, OH-58D Kiowa Warrior, AH-64A/B/C Apache, AH-64D Longbow Apache, UH-60A/L Black Hawk, and CH-47D Chinook, will once and for all answer the question of who owns the night. Today we may not own every night, but future developments are underway that will keep us the world's premier night fighting force. Systems such as the Longbow will further enhance our ability to fight at night and in adverse weather.

We have the doctrine, training, materiel, organization, and leadership which allows us the best "lease with an option to buy" on night operations. Our success on the world's future battlefields will stem directly from our ability to mature our doctrine and training methods while at the same time pressing on to retain the technological advantage we currently hold. The bottom line as to whether we own the night or not is: "No, we do not currently have sole possession of the night." Using an Air Force term, we have "air supremacy" on most nights; however, there are some nights that currently do not belong to anyone. We are working on that. We have come a long way since the nights of Nighthawk operations, but only through continuing efforts to harness the right mix of technology, while sharpening our training programs and risk management, we will ultimately own the night. Without question, our military forces will be pressed into service again before the end of this decade. It is up to all of us to be prepared for any operation we may be called upon to perform. Our nation has come to expect decisive victory, and we will give it to them day, night, or in adverse weather.

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Night Vision in Army Aviation

by Randy L. Buckner

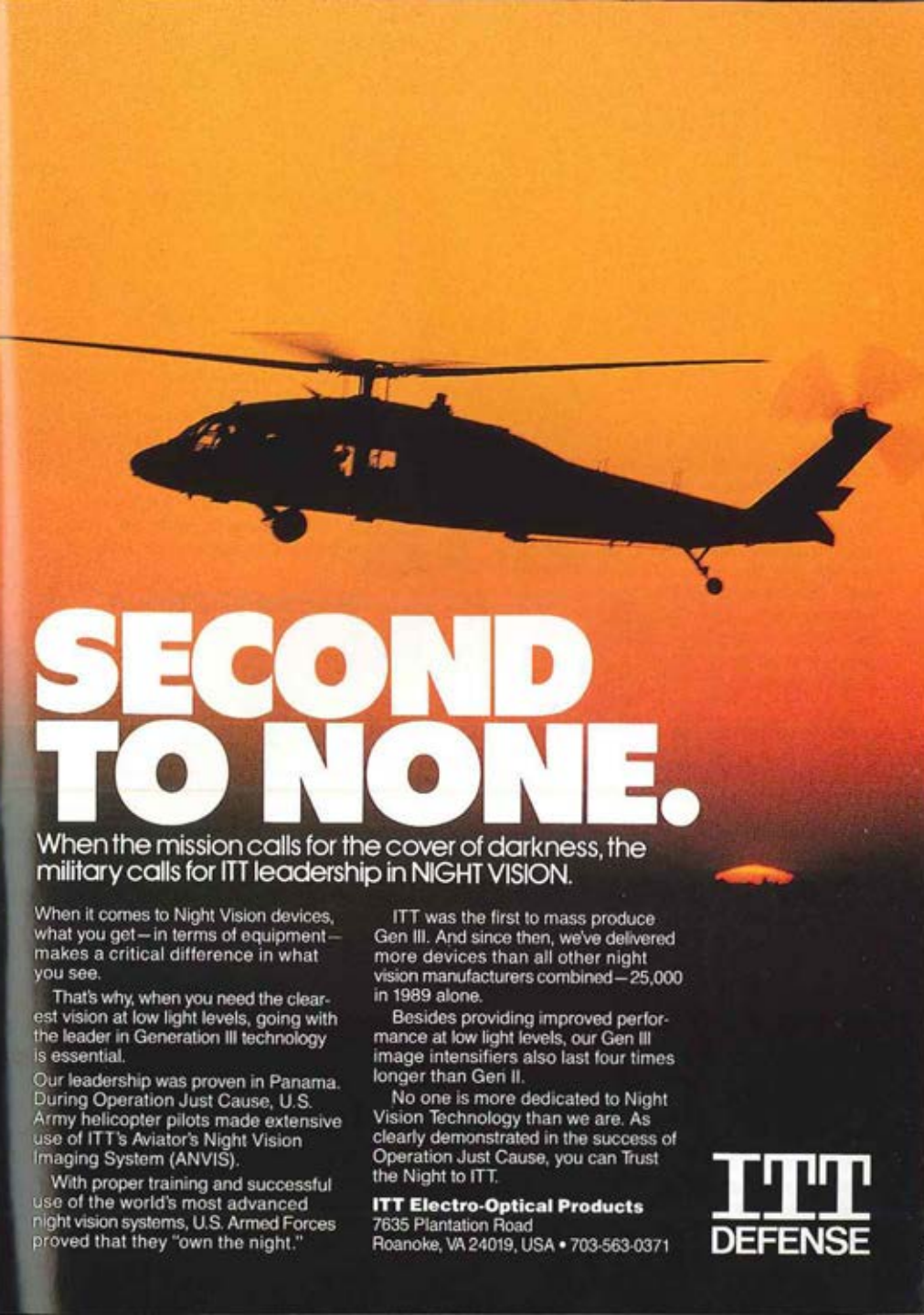
Operations DESERT SHIELD and DESERT STORM have demonstrated the United States Military's capability to "Own the Night". This capability will soon be greatly improved with the addition of a Heads Up Display (HUD) for each pilot, integrated into his/her ANVIS goggles. The U.S. Army and Marine Corps pilots will no longer need to peek under their ANVIS goggles into the cockpit to see critical flight information; instead, this flight symbology will be presented through one side of their ANVIS goggles. This new system is called the Aviation Night Vision Imaging System/Heads Up Display (ANVIS/HUD). The U.S. Army awarded a contract to Cross Systems Division of the American Electronics Laboratories (AEL) Defense Corporation to produce the ANVIS/HUD systems for Army and Marine Corps helicopter systems. There are a total of eight different aircraft types involved in the current procurement strategy. The six Army aircraft are the UH-60A/L Black Hawk, CH-47D Chinook, OH-58A and OH-58C Kiowa, UH-1H/V Iroquois, and the AH-1F Cobra. The two Marine Corps aircraft are the UH-1N TwinHuey and the CH-46E Sea Knight.

Mr. Buckner is an Aerospace Engineer, Research, Development, & Engineering Center, AVSCOM, St. Louis, MO.

The first Army aircraft to receive the new ANVIS/HUD system will be the UH-60A/L Black Hawk. The initial production deliveries for the UH-60A/L is currently scheduled to begin in July, 1993. The CH-47D Chinook is the next aircraft scheduled to receive the ANVIS/HUD system (late 1993 or early 1994). The other aircraft systems will be added to the contract as options over the next four years.

Hardware and Function

The AEL system design consists of an "A-Kit" and a "B-Kit". The A-Kit is aircraft-dependent and consists of the brackets, wiring, connectors, and any required additional sensors/transducers. The B-Kit is aircraft independent and will be the same for each of the U.S. Army and Marine Corps aircraft. The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primary purpose of the A-Kit is to fully integrate the standard B-Kit into each of the eight different helicopter systems. Some aircraft currently have many of the sensors and transducers required for the flight symbology but additional sensors, such as pressure transducers for airspeed and altitude, are needed to provide the electrical signals for the system. The aircraft integration requirements are being developed by Cross Systems Division with assistance from each of the prime helicopter manufacturers.

The B-Kit consists of three major subassemblies: the Electronic Unit, the Operator Control Unit, and two Helmet Display Units. The Electronic Unit serves as the symbol generator and processor unit of the ANVIS/HUD system. This unit collects flight information currently available on the aircraft or from dedicated sensors as required and generates all the necessary symbology for display on the Helmet Display Unit. The Operator Control Unit enables the pilot and copilot to operate and control the ANVIS/HUD during night operations. It provides the means necessary to independently select any of four symbology sets, control symbology light intensity and position, and selection of a "declutter" mode if necessary. Individual flight parameters can be selected or deselected based on individual pilot preference, but there is a minimum symbology set which will always be available via the de-clutter mode to the crew.

There will be alternate sets of controls available on the collective control head assemblies for the pilot and copilot. These controls will provide for mode selection and symbology brightness by the pilot/copilot so they do not have to reach for the Operators Control Unit while they are "at the controls".

The Helmet Display Unit is comprised of an advanced electro-optics unit with a half inch Cathode Ray Tube (CRT) which is installed on the side of the ANVIS goggle (left or right, as determined by pilot preference). The generated symbology is injected into the goggle objective lens (front) through combiner glass which allows the outside night scene to enter with minimal degradation. The aviator is then presented flight symbology superimposed over the outside scene on one of the ANVIS goggle tubes. The other ANVIS goggle tube is not utilized by the HUD system.

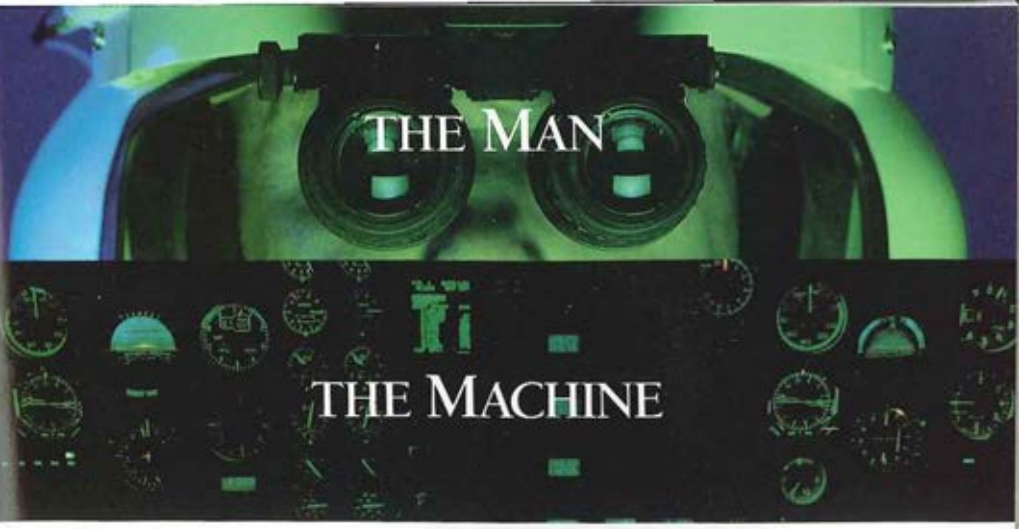
Program Management

The ANVIS/HUD program is somewhat unique in that the overall program management is being conducted by the Project Manager for Night Vision and Electro-Optics located at Ft. Belvoir, VA with full support and participation of the Project Manager for Avionics at St. Louis, MO. Each aircraft Project Manager is also required to coordinate the integration issues with their perspective prime airframe manufacturer to insure that hardware, software, and electronic interfaces are designed in accordance with current aircraft capabilities. The full coordination and support of the U.S. Army Communications-Electronics Command (CECOM) and the U.S. Army Aviation Systems Command (AVSCOM) is also required so that the technical and logistical integration requirements for each helicopter system is provided in a timely and efficient manner.

Maintenance Concept

The maintenance concept for the ANVIS/HUD system uses the established Aviation Unit Maintenance (AVUM), Aviation Intermediate Maintenance (AVIM), and Depot structure. The AVUM level will be responsible for the replacement of faulty Line Replaceable Units (LRUs). Identification of faulty LRUs will be accomplished by the Built In Test (BIT) capability provided in the system. The AVIM level will be capable of repairing the Operators Control Unit and forwarding the faulty LRUs to the Depot for repair.

Contractor Depot Support (CDS) is being provided for the first two years under the existing contract with three one year options. This will provide initial Depot support and provide the information necessary to develop the organic integrated logistic support for the out years. During the CDS period, faulty LRUs will be forwarded to the Contractor for repair by the Depot and, when returned, be placed back into the Army supply system for use as spares. The ANVIS/HUD systems come with a two year full warranty from the time they are shipped from the contractor's plant.



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Army Special Operations Forces Aviation: Part of the Team

by Colonel Joseph A. Fucci

The Army Special Operations Aviation (ARSOA) units are an integral part of the AirLand Operations and Army Aviation team. Personnel, equipment, R&D, and logistical support is provided from U.S. Army assets. From the "U.S. Army" painted on the side of Special Operations Forces (SOF) aircraft to the detailed involvement of SOF in the Joint Reserve Training Center (JRTC), the 160th Special Operations Aviation Regiment (Airborne) is deeply integrated with conventional forces on the battlefield. During Operations URGENT FURY, DESERT SHIELD, and DESERT STORM, SOF aviation flew with deployed conventional forces.

Standards are high in SOF aviation. However, we are not alone in our endeavors to meet the challenging SOF aviation mission. The chain of command at the highest levels have resourced SOF aviation with the personnel, equipment, and funding priorities necessary to meet our requirements. In the succeeding articles, the authors will document results of the Army's senior leadership support to SOF aviation. This includes SOF aviation's history, its role in support of conventional forces, involvement in JRTC, cockpit modernization, and cockpit management by SOF pilots.

COL Fucci is Commander, 160th Special Operations Aviation Regiment (A), Ft. Campbell, KY.

As SOF aviation continues to mature from its creation in 1981 as a Task Force to the formation of a Regiment in 1990, the Night Stalker spirit and standards remain high, in part, because the soldiers of the 160th Special Operations Aviation Regiment (Airborne) have made our motto, *Night Stalkers Don't Quit*, a way of life. IIIII

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Cockpit Modernization

by Major George V. Dimitrov

The 160th Special Operations Aviation Regiment (Airborne), through its Systems Integration and Maintenance Management Office, (SIMO) has researched, developed, and invested in numerous cockpit modernization programs. The increase in the number and types of avionics, both communication (COM) and navigation (NAV), weapons systems, and Aircraft Survivability Equipment (ASE) present a significant task to the flight crew in cockpit management. This situation becomes increasingly more difficult when pilots are required to maintain their concentration out of the cockpit during low-level night operations using night vision devices such as Night Vision Goggles (NVGs) or Forward Looking Infrared (FLIR) Systems.

The goals of the 160th SOAR (A) cockpit modernization programs are:

- Reduced pilot workload.
- Increased navigation accuracy.
- Reconfiguration mission equipment packages (MEP).

MAJ Dimitrov is with the Simulation & Maintenace Mgt Office, 160th SOAR(A), Ft. Campbell, KY.

- Redundant COM and NAV systems.
- Integrated weapons armament systems and ASE.
- MIL-STD-1553 Data Bus architecture.

The 160th SOAR (A) has completed the MH-47D Chinook Adverse Weather Cockpit (AWC) and is nearing completion of its MH-60A/L Black Hawk Cockpit Management Systems (CMS-80) aircraft modification programs. Both systems were developed by Rockwell International's Collins Avionics Division and are similar to a desk top computer which has been modified with sophisticated NAV and COM hardware and software systems and then packaged for installation in aircraft. The CMS-80 and AWC systems are comprised of component systems and mission computers. These systems reduce pilot workload and ensure mission success through the integration of COM and NAV systems, allowing for programming of essential frequencies and

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navigation reporting points prior to takeoff. Integration also has had a significant effect on aircraft position accuracy. NAV sensors such as Attitude and Heading Reference System (AHRS), Doppler, TACAN, Omega/VLF or Global Positioning System (GPS) that are integrated can be used to update each other automatically without increasing pilot workload. Mission computers continually monitor position information from these NAV sensors and calculate time enroute and time to target. Space and weight savings are realized through the elimination of separate control heads and displays which were replaced by two Control Display Units (CDUs), one for each pilot. Both the AWC and CMS-80 cockpits offer dual redundancy in their 1553 bus architecture thus reducing mission abort probability and ensuring crew safety. Future system growth will be allowed through the MIL-STD-1553B bus architecture. Avionics upgrades can be accomplished by simply adding 1553-compatibile avionics or interface modules.

Further Modernization

Further cockpit modernization is continuing with the fielding of the MH-60K and MH-47E Special Operations Aircraft (SOA). These aircraft are being developed and fielded to the 160th SOAR (A) by the Program Manager's Office-SOA. Both aircraft have a common Integrated Avionics System (IAS) which is being developed and manufactured by IBM Federal Systems, who is a sub-contractor to both prime contractors (Sikorsky Aircraft Company and Boeing Helicopter Company) in this program. The IAS and the MEP it controls represent further development in cockpit modernization and integration. Along with COM and NAV, the ASE suite, Multi-Mode Radar (MMR), Digital Map Display (DIG-MAP), and FLIR sensor are managed and used by the crew through the IAS architecture and software. The following systems make up key IAS portions of the MEP: Mission Management System (MMS), Mission Planning System (MPS), Data Transfer System (DTS), and the ANVIS Display System.

The MMS will be capable of controlling and displaying all subsystems. The four display surfaces, two monochromatic Cathode Ray Tubes (CRTs) and two color CRTs, will provide the pilots with a means to monitor all critical aircraft components and perform all mission functions. All displays will be NVG compatible and either pilot will be capable of controlling all functions. The MPS will automate pre-flight loading of mission, terrain, communications, routing, weather, and aircraft performance data. Along with the MPS, the DTS will be used for pre-flight loading and post-flight retrieval of aircraft data. The ANVIS Display System will be used in conjunction with NVGs. Flight display symbology will be presented to the pilots relieving the requirement of continuously looking back into the cockpit for key flight displays and information.

Key Benefits

These aircraft represent the most sophisticated cockpit modernization programs in Army Aviation today. The addition of new systems, such as MMR and DIG-MAP, that were previously not available in Army aircraft and the upgraded ASE suites, make these aircraft more survivable. For the first time in Army Aviation, the benefits of true zero ceiling, zero visibility, low-level flying capability in either day or night conditions will be achieved.

The 160th SOAR (A) is initiating future cockpit modernization programs in its A/MH-6 Little Bird fleet. Past successes and lessons learned in cockpit modernization will help in the development of a MIL-STD-1553 compatible MEP which will continue to carry this highly effective and unique aircraft into the next century.

In the past, cockpit management systems were found only in the largest and most sophisticated military or commercial aircraft. As technology in both hardware and software has advanced, these systems have become increasingly user friendly and lightweight. Because of its key role in Special Operations, the 160th Special Operations Aviation Regiment (Airborne) will continue to invest in cockpit modernization programs to insure mission success. IIIII

Cockpit Resource Management Training

by Captain Mark A. Lowry, Ph.D.

In a flight environment where the word complexity describes both the mission profile and the aircraft technology, the aircrews of the 160th Special Operations Aviation Regiment (Airborne) must work as an integrated team. Individual talents must be effectively combined to perform flight duties to the exacting standards that have become the trademark of the Night Stalkers.

Effective flight in the 160th must be accomplished under the most demanding conditions. Meeting time on target is only one of the obstacles which must be overcome to ensure mission success. Long-range, single-ship insertions or extractions that push both man and machine to the limits are encountered on a routine basis. Perhaps most important is that all of these obstacles must be accomplished under NVG conditions.

Cockpit Resource Management (CRM) is required training for all incoming aviators in the 160th. Learning to effectively use all available resources in the aircraft is every bit as important as flight planning, mastery of aircraft systems, and NVG navigation. CRM skills will become even more critical to the Night Stalkers as they field the most technologically advanced helicopters in the DoD, the Sikorsky MH-60K and the Boeing MH-47E.

CPT Lowry is the Regimental Psychologist, 160th SOAR(A), Ft. Campbell, KY.

CRM Model

CRM has been known by several different names such as Cockpit Coordination and Aircrew Coordination Training. The roots of CRM are in the commercial airline industry. Following a rash of accidents in the late 1970s attributed to human error, training programs were developed to teach aircrews how to effectively manage all available resources. Many of the concepts and training techniques included in these programs were the products of a workshop held in 1979 at the NASA Ames Research Center.

The CRM Model and format utilized in

the 160th fits the training objectives and time constraints determined by the Special Operations Aviation Training Center (SOATC) Commander. The 160th CRM Model is illustrated in Figure 1. The objective of safe and effective mission accomplishment is a product of six basic CRM factors. Three of these factors are specific to each individual aircrew member and are taken into the aircraft each time that crewmember flies. These are labelled external factors because they are, for the most part, independent of interactions and events occurring within the aircraft. The three internal factors are oriented towards group interactions inside the cockpit.

The training program in the 160th is presented in a five hour block of instruction in the Green Platoon academic phase. A brief overview of the history of CRM is followed by coverage of each of the six basic factors. Along with a lecture orientation to each factor, common problems are illustrated using video reenactment of aircraft accidents along with National Transportation Safety Board (NTSB) and military accident summaries. The students are encouraged to identify key concepts and brainstorm possible solutions to the common problems. Successful CRM training is dependent on the active participation of each student. The main training objective is to provide each student with concrete skills and real-life solutions to the most common problems of CRM.

External Factors

Each aviator possesses unique characteristics which distinguish his/her approach to every aspect of aviation. These characteristics enter the aircraft every time the aviator does, and have a profound impact on the management of the cockpit. Personality, leadership style, and attitudes are the individual characteristics critical to CRM.

The discussion of personality focuses on the aspect of coping capacity and stress resistance. In the common parlance of today's society, stress is a dirty word. It represents a very negative and potentially destructive set of circumstances, behaviors, and feelings most people, especially pilots, try to avoid. The focus of this portion of CRM training is on recognizing the symptoms of stress overload. Students are introduced to the physical, emotional, and behavioral signs most often associated with negative stress levels. There is also an extensive discussion of the coping styles most often employed by aviators. The objective is to go beyond the term "compartmentalization" in describing the pilot's characteristic method of handling stress. Various methods of enhancing coping capacity are discussed. These include techniques to strengthen both body and mind. Particular emphasis is placed upon proper rest, diet, and exercise.

An aviator's leadership style is another factor affecting most cockpit interactions. Although leadership style, like personality, tends to be quite ingrained and resistant to change, evidence suggests that good leaders tend to alter their expressed style based on the demands of the situation. The training objective is exposure to a variety of leadership styles and techniques with an understanding of choosing the best approach for a given situation.

Of all of the external factors involved in CRM, aviator attitudes are the least resistant to change. Years of experience with aviators of all ability levels has yielded a number of common attitudes that are hazardous to both safety and mission effectiveness. These hazardous attitudes are discussed and illustrated with accident summaries. Concrete antidotes for each hazardous attitude are provided to the students.

Internal Factors

Armed with excellent coping resources, flexible and appropriate approaches to leadership, and safety-oriented attitudes, the aviator must now climb into the cockpit and deal with factors involved in interacting as a team member. Communication within the cockpit is perhaps the most important of all the CRM factors. Effective communication is the foundation of teamwork and has a profound impact on workload management and decision-making. CRM students are

Figure 1

introduced to a model of communication that emphasizes the role of feedback and active listening. Common barriers to effective communication are discussed. Specific rules and responsibilities for both the message sender and receiver are illustrated through practical exercises. Foremost in the role of the sender is assertiveness. Aircraft Pilots in Command (PICs) are taught how to create a permissive communication atmosphere, and all crewmembers learn how to construct assertive statements.

The complexities of the Special Operations mission create unprecedented workload levels. CRM training focuses on the implications of high workload levels. Pilots are taught how to manage the individual elements of the workload and the distractions within the aircraft. The symptoms of crewmember incapacitation and loss of situational awareness are also learned. The emphasis is on maintaining control of both the situation and the aircraft.

Special Operations missions inevitably present numerous changes to the aircrew; therefore, decision-making capabilities must be well-developed. A structured decision-making process is presented and illustrated with a practical exercise. The emphasis is placed on utilizing the abilities of all crewmembers and capitalizing on the synergy inherent in group decision-making.

Summary

The demands of the Special Operations mission profile and the complexity of the aircraft make the coordinated effort of all crewmembers a critical prerequisite to safe and effective flight. The 160TH CRM Training Model has become an essential element in the training of all SOA pilots. IIIII

Night Stalking: ARSOA in AirLand Operations

by Lieutenant Colonel John T. Moore

Zero illumination. The coal black special operations helicopter launches to a secret forward staging area. After a successful long-range infiltration and penetrating into enemy air defense, a Special Forces "A" Team is inserted deep behind enemy lines. The detachment executes its mission before returning to the landing zone for split-second extraction. The mission on this occasion was to reconnoiter a target requiring positive identification before destruction by allied Air Force strategic bombers. The insertion and extraction must be surgically precise. The aviators and equipment of Army Special Operations Aviation (ARSOA) have met this challenge of perfect execution time and time again.

The role of ARSOA is expanding. ARSOA has evolved into an integrated part of any AirLand operations. The primary mission of ARSOA is to support special operations across the operational continuum anywhere in the world. ARSOA is a major component of the Special Operations Force that supports a CinC during all stages of AirLand Operations.

LTC Moore is the S-3, 160th Special Operations Aviation Regiment (ABN), Ft. Campbell, KY.

ARSOA forces are commanded and task organized to conduct joint operations. Extensive joint exercises and involvement in the joint planning and execution system ensures ARSOA is capable of conducting real world joint operations missions.

ARSOA operates under varied command and control arrangements. The exact arrangement is determined by the requirements of the mission. Special operations require an abbreviated and unambiguous command structure. Operational layers above regiment are almost always joint, and direct coordination with other agencies and units is frequently necessary.

Special operations missions may range from relatively small actions such as protecting or evacuating U.S. citizens to full scale armed conflict. Agility and initiative

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exemplify ARSOA while directly reflecting the tenants of AirLand Operations. Missions frequently take place in a situation short of war where the ability to influence rather than dominate the operational environment is more significant. In many cases ARSOA will operate in theater well before conventional aviation assets arrive and begin their activities. ARSOA is best used when the target country is landlocked by hostile nations and penetration of non-permissive airspace is required. ARSOA can provide forward air control for U.S. and allied Close Air Support (CAS), indirect fires, and terminal guidance for precision munitions in support of special operations forces.

As with other aviation assets, ARSOA has the inherent responsibility and capability to accomplish personnel recovery missions. There may be situations when the specialized capabilities of ARSOA are required to recover isolated personnel whose recovery is beyond the capabilities of conventional combat rescue forces. Though not chartered with combat search and rescue mission responsibility, ARSOA forces have conducted successful combat search and rescue missions in the past.

Operating independently or in conjunction with others, ARSOA compliments and reinforces general purpose forces to achieve an objective that may have been otherwise unattainable. ARSOA is not a substitute for strong general purpose forces in the AirLand Mission, but a necessary adjunct to existing conventional capabilities.

IIIII

Vital Asset

(continued from page 6)

Points or after being identified by the Selection Early Retirement Board or SERB. And still, understandably, there is a lot of anxiety and concern throughout our Army.

Soldiers I talk with in my travels ask, "How deep will the cuts be? What guarantees of a career does the future hold for me? How is the drawdown going to affect me and my family?" They are all valid questions that are difficult at best to answer.

With the end of the Cold War, our national defense strategy is also restructuring to a more CONUS-based force causing historically rich units overseas to case their colors, and redeploy soldiers and their families back to the United States.

But make no mistake. Yes, there is a lot of turmoil throughout the Army. But as the Chairman of the Joint Chiefs of Staff said in an Army Times interview, "We are not going out of business. It will be a force you will be proud to be serving in. It will be a force that will be competent, that will have sufficient funding so that you are confident of your ability to go and fight successfully. The smaller force will not have room for everybody," he said.

"But those of you who are committed professionals dedicated to serving your nation, and want to be in a force that is going to be as good or better than the one we have today," he said, "there's a place for you in the Armed Forces of the United States."

As we drawdown, the Army leadership is committed to keeping its promise of taking care of soldiers and their families. Those volunteering to leave are being given assistance in a variety of ways through programs like the Army Career and Alumni Program (ACAP) and other transition assistance programs.

Soldiers continuing to serve can count on quality training from their noncommissioned officers, and a progressive professional development program that will help to maintain the fighting edge and guarantee a strong and ready Army tomorrow. As GEN Bruce C. Clark wrote, "There never has been a good Army without a good Noncommissioned Officer Corps."

Today, I can assure you the Army and the Aviation Branch have the best officers, soldiers, and noncommissioned officers this Nation has ever fielded. I can further assure you that our noncommissioned officer corps is totally committed and will do their part to ensure tomorrow's soldiers remain trained and ready. That is our charge. That is our lane. IIIII

ARSOA Participation in Joint Reserve Training Center Exercises

by Major Russell D. Carmody

Special Operations Forces (SOF) support conventional operations or they may prosecute independent missions when the use of conventional forces is either inappropriate or not feasible. While training together at the US Army's Joint Readiness Training Center (JRTC); 2nd and 3rd Battalions of the 160th Special Operations Aviation Regiment (Airborne); 1-245th Aviation Battalion (Special Operations) (Oklahoma Army National Guard); and Army Special Forces Groups (SFGs) have been synchronizing their missions with conventional force operations.

JRTC exercises provide advanced training for Army Special Operations Forces (air and ground) and Light Infantry Divisions in a Low Intensity Conflict environment. These two to three week exercises are conducted in a fast paced, high stress environment that simulates combat conditions. Scenarios provide realistic threats with an actual Opposing Force (OPFOR). All personnel and equipment are equipped with Multiple Integrated Laser Engagement Systems (MILES). Threats to aviation range from small arms to SA-8 and SA-16 Air Defense Artillery (ADA) systems.

MAJ Carmody is S-3, 2nd Battalion, 160th SOAR (ABN), Ft. Campbell, KY.

Normally, SOF units stage from Ft. Sill, OK, and conduct aerial infiltration, resupply, and exfiltration operations to Ft. Chaffee and Camp Robinson, AR. Until recently, missions were also conducted at Camp Shelby, MS. Distances from Ft. Sill to target areas range from 205 to 510 nm. As JRTC moves to Ft. Polk, LA, similar distant off-site locations will be used to simulate long range insertion of SOF teams.

The JRTC scenario is realistic in its employment of SOF forces. As the scenario unfolds, Special Forces and ARSOA are the first U.S. forces to arrive in country. Early on, ARSOA MH-47 and MH-60 helicopters clandestinely infiltrate, resupply, and extract Special Forces teams conducting Special Reconnaissance (SR) and Direct Action (DA)

missions against guerrilla units infiltrating from across the border. Specifically, SF teams identify enemy avenues of approach, locate enemy units and supply depots, and destroy key enemy facilities and transportation nodes. As the intensity of the conflict increases, SOF provides U.S. conventional forces vital intelligence while synchronizing specified missions with friendly units.

While providing air support to SF units, ARSOA units are evaluated by JRTC Observer/Controllers (O/C). O/C personnel accompany flight crews during all phases of a mission: from receipt of a mission tasking, through the planning process, execution of the mission and aircrew debriefings. After Action Reviews (AARs) are conducted twice during the exercise. These are group discussions attended by all aircrews, staff members, and the O/Cs. During these reviews, O/Cs analyze previous missions, point out deficiencies uncovered during individual operations, and stimulate a group discussion to recommend mission improvements. AARs are not graded evaluations but are detailed discussions on problem solving with the intent to learn from mistakes and improve operations.

Training received during JRTC is intense and all inclusive. Staff sections and aviation companies all participate in mission development and execution. ARSOA mission planners and pilots must use the principles of METT-T when planning long range missions into denied airspace. In addition, planners must develop downed aircrew recovery plans, interface with Special Forces during mission planning to develop contingency plans, and coordinate the use of joint and combined arms assets.

Techniques

All missions are flown at night using low level penetration techniques. The goal is to infiltrate, resupply, and exfiltrate Special Forces Operational Detachment-Alpha (SFOD-A) teams undetected. ARSOA aircrew members perform a variety of techniques such as:

- Fast Rope insertion.
- Helocast or direct water entry and exit operations of SF Zodiac Assault boats and personnel.
- External and internal aerial transport of SF Desert Mobility Vehicles (DMVs). These are Army HMMWV's modified for SO missions.
- SO recovery missions of designated personnel, downed aircrew members, and SF teams conducting escape and evasion.

Other mission tasks that support ARSOA operations are:

- Forward Area Refueling and Rearming Point (FARRP) operations.
- Conduct limited aerial fire support for SF during DA operations.

The quality of JRTC exercises will continue to increase in the future. New simulators of sophisticated threat ADA systems and the introduction of special operations aviation tasks, such as aerial gunnery, a combined SF and ARSOA live fire exercise at night, and air-to-air refueling of new MH-47E and MH-60K helicopters, will improve training of ARSOA aircrews and provide SOF better aviation support.

Advanced Training

JRTC provides ARSOA units the opportunity to conduct advance training in a simulated combat environment while supporting United States Special Operations Forces. ARSOA provides SF the agility and initiative to conduct deep operations in denied areas and synchronize special operations activities with conventional force efforts. JRTC is a proving ground where ARSOA and SF can demonstrate their ability to contribute to conventional forces conducting combat during low to mid intensity conflicts.

JRTC also is used as a laboratory by developing new techniques, validating current procedures, and discovering operational deficiencies. Observer/Controllers' thorough positive critiques enable ARSOA leadership to analyze present doctrine, training, force structure, and aviation equipment. Valuable lessons have been learned at JRTC which will improve the combat readiness of all active and reserve component ARSOA units. The close working relationship gained between ARSOA and SF have molded Army Special Operations Forces into a combined arms special operations team ready to support conventional forces or conduct unilateral operations. IIIII


DEATH WAITS IN THE DARK
NIGHT STALKERS
NIGHTSTALKERS

Back to Basics: Shoot, Move, and Communicate

by

Colonel Robert J. H. Anderson and Major Brad Rounding

The Materiel and Logistics Systems Division (MLSD), Directorate of Combat Developments (DCD), is responsible for writing requirement documents to support all Army Aviation user needs. Recently, we provided our Industry-Army partners a look at the needs of Army Aviation during the Fort Rucker Industry Day 92. We stressed move, shoot, and communicate as our principal means to improve fleet synergy.

In the MLSD, we must first understand what it is the "user", the Aviation Soldier, really needs. Then we write requirement documents and focus an acquisition strategy that will give the user what he needs. The Industry-Army Team will make it happen together.

Remember Vietnam, when we put up a "high bird" to provide radio relay and we used binoculars and a map to navigate and find the enemy? Well, since then we haven't made a quantum leap in basic communications, navigation, and command and control for Army Aviation. As in DESERT STORM, we still rely on a relay bird to relay information to the scout to tell us what was happening at the point of the sword. Commanders at all levels are still trying to find out where we are and what we are doing on a single voice communications net and the aircrew is still manually navigating on a map that is cluttered with graphics. Many of you are still visually identifying targets one at a time with direct view optics.

As you can see, we still have problems in moving to shoot and communicate after some 20 years of developing systems for Army Aviation. We must return to basics and improve fleet synergy by improving the ability to

COL Anderson was Chief, MLSD, DCD, Ft. Rucker, AL when this article was written.

MAJ Rounding is Deputy Chief, Materiel and Logistics Systems Division, DCD, Ft. Rucker, AL.

move, shoot, and communicate together as an attack, scout, and lift team.

"The boot is to the tank as the tank is to the helicopter." General Otis made this bold statement to all 2nd Armored Cavalry Regiment officers several years ago to the chagrin of all the Armor officers in the audience. The helicopter is, after all, another method for transporting a weapon and a fighter to battle. The foot soldier and the tank provide a natural progression to aerial maneuver. We must capitalize on our speed and agility to aid the corps and division commander in his fight.

Move

Even though we are downsizing, we must leverage aviation's contribution to the fight to improve fleet synergy by improving navigation and positional awareness. We must eliminate the binoculars, eliminate the map, and be able to fly at night and in adverse weather because that is when the ground commander needs our aerial fighting force. It is a difficult task to move 10,000 pounds of rotating parts from point A to point B at speeds of 40 to 100 knots flying five feet above the ground. Doing it at night is many times more difficult. With a thousand things going on inside the cockpit, trying to avoid putting two objects—the aircraft and the trees—together at the same point is challenging. We need help knowing where we are, where the enemy is, and where the friendlies are. Ninety-eight percent of the war stories that most aviators talk about are "There I was, out of airspeed, ideas, and altitude," and, "Oh, by the way, I was slightly unsure of my position." Read that as, "I was lost." So if we can eliminate the map, that large 3' by 3' piece of paper with grease pencil graphics, we will do our pilots and crew a great service. We must minimize manual navigation with inexpensive multiple imbedded navigation devices that do not require continuous manual updates.

As if the job we do during the day isn't difficult enough, we must be able to do it at night and in adverse weather to support the ground commander's needs. Too many times, we must leave the field of battle as the sun sets because we are not able to continue the fight. At this time, we really do not own the night, we only rent part with an option to buy. We must *own* the night. Onboard aircraft sensors must be fused so that the pilot can select which is best for his eyeballs and conditions. We must start looking to take things off the pilot's helmet because of the weight and fatigue problems and include heads-up panoramic displays. We must have a get-home, tactical instrument approach capability with an onboard navigation system that allows the pilot to punch in home station coordinates to go home, refuel, and rearm to return to the fight. Aviation must own the night and be able to maneuver during adverse weather.

Shoot

We must be able to detect targets at long range, prioritize those targets automatically and pass that intelligence digitally back to our higher commander when we can't service all the targets during our attacks. Weapon systems must be able to track targets on their own to eliminate the manual track operations as a pilot concern. To service more targets, a rapid rearm and refuel capability is a must to allow for quick turnaround time at the Forward Area Refueling Point (FARP). At the present we are slaves to heavy and difficult systems that do not allow us rapid turnaround. Industry must help us to look at creative methods to upgrade our fighting capability. Time wasted in the FARP is time not supporting the ground commander. We must improve fleet synergy and not look only at individual airframe system superstars. To shoot and shoot effectively requires that the whole team contributes to the win, not just individual systems.

Communicate

We must eliminate the high bird radio relay method of communication. And we must get rid of manual tune single communications voice networks. We must get into long-range secure Nap-Of-Earth (NOE) multi-channel communications to amplify our ability to communicate in the joint operations arena between aviation Tactical Operation Centers (TOCs). Communications interoperability at long range NOE is critical. The performance of high technology long-range weapons systems on the battlefield

"The Industry-Army Team must return to basics. In the 1990s, we need industry's help working on the basics of shoot, move, and communicate."

places a challenge on our command and control structure. The communications system on the future battlefield must automatically establish secure, jam-proof, data burst communication links. Ideally, frequency selection should be transparent to the pilot. Command and control support systems must be able to provide accurate and timely data to our higher command structure. Effective communication enables our higher commanders to mass forces at the decisive place and time, thus multiplying combat power and enhancing joint operations effectiveness.

Who should we talk to? Army Aviation should be able to talk to everyone. Aviation offers the corps, division commander and theater commander, a unique capability. In order to do that we must have very fast, bulk information transfer capability to take the load off the pilot. We must pass target data and intelligence updates quickly. We cannot afford to pass single target information via voice in Size, Activity, Location, Unit, Time, Equipment (SALUTE) spot report format; there are too many targets to service and too much intelligence to pass. Additionally, the Air Force needs rapid, accurate target data for Close Air Support (CAS) missions to aid in first round hits and to efficiently use scarce sorties while preventing fratricide.

We also need some type of automated mission planning system. A system that will allow the pilot on the ground, in a tent, at a field site, to load his mission planning data by computer and plug his data cartridge into any aircraft that he or his unit is flying and be ready to go fight, thus eliminating manual entry of mission execution planning data. Automated mission planning systems can help in situational awareness by updating mission changes from the commander automatically, as no plan ever survives initial contact. Mission management, load configuration, weapon load desires, fuel load versus weapon load trade-offs will be done quickly and by computer. Best route selection, navigation planning, and communications net pre-loading will be performed well ahead of mission execution. This automated mission planning system improves fleet synergy and efficiency as all crews can plan and discuss the mission from the same mission order.

We must be able to deploy to the fight fast to support the ground commander without eating up scarce Air Force transport assets. Increased self-deployability and transportability are key, whether it be with auxiliary fuel tanks or increased aircraft engine performance to give us better fuel efficiency. We must reduce the crew workload. The cockpit already has a thousand things going on when flying at ground level or in the trees. We must allow aviators to navigate, fly, fight at night, tune radios, pass targets, and communicate with everyone at the same time. We need to have some type of decision-making assistance capability in the cockpit that takes some mental workload off of our crews. Our crews are smart and innovative, but they can run out of fingers, toes, ears, and eyeballs before they pull the trigger for the first time.

The Industry-Army team must return to basics. In the 1990's, we need industry's help working on the basics of shoot, move, and communicate. Industry must not say give us the money and we will fix the problem. Rather we, as an Industry-Army team, must work together to solve our fleetwide compatibility problems so all future aircraft can fight as a team. The bottom line is that we must improve our fleet synergy to become the "linchpin" for joint and combined operations.

As we look to the future, we must always remember: "We Are Promised Liberty, We Are Not Promised Peace." The battles we have had in the past will surely be rejoined in the future if we are not prepared. So let us work together, to shoot, move, and communicate while improving our fleet synergy so that we are ready to fight in the future. ||||

4-17th CAV: Mission Accomplished

by Lieutenant Colonel Bruce Simpson, Captain Paul Spencer and Captain Robert Cumbie

The giant C-5A Galaxy transport finally rolled to a stop on Green Ramp at Pope Air Force Base, NC on a dark and cloudy night. The soldiers and family members of the 4th Squadron, 17th Cavalry Regiment (AIR)(RECON) appeared nervous. Some soldiers' faces showed looks of disbelief. Few believed the Squadron could really be returning home. As the last soldier departed the plane, everyone knew it was true. At last, the Squadron was home from the Persian Gulf after four long, arduous, and proud years. How very appropriate that it should end the same way it began, under the cover of darkness.

The Joint Chiefs of Staff tasked the four services to identify a unit that could operate from U.S. Navy vessels, combat small boat attacks, and hamper enemy mining operations of merchant shipping traffic in the Persian Gulf. This mission created Task Force 118 in the summer of 1987, and in February of 1988, the unit deployed to the Persian Gulf flying the Armed OH-58D (Warrior) to conduct Operations PRIME CHANCE and EARNEST WILL. Over the next two years, members of the unit patrolled the entire Persian Gulf, protecting shipping and providing timely intelligence information. In July 1988, members of the unit responded to a distress call from a Panamanian tanker under attack and engaged Iranian small boats. The Warrior crews quickly destroyed one of the small boats and disabled the other. After this incident, the harassment of oil tankers in international waters soon ceased.

As the Army's most unique Cavalry Squadron maintained a presence in the Persian Gulf, Iraq invaded Kuwait on 2 August 1990. In the preceding months, the 4-17 Cavalry, operating from U.S. Navy warships, maintained a constant surveillance of all military and merchant shipping

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in the Persian Gulf. Using joint Army/Navy tactics developed and refined during operations in the Gulf, teams of Armed OH-58Ds conducted covert night surveillance of all shipping, enforcing the United Nations embargo of Iraq. The Armed OH-58D crews provided both detailed reconnaissance of ships prior to their interdiction and armed cover for the boarding parties. This effort greatly assisted the Coalition Naval Forces in stopping and boarding numerous ships.

As the 15 January deadline rapidly approached, the Joint Chiefs of Staff tasked the Squadron with an additional mission. To accomplish both missions, Bravo Troop continued with maritime interdiction missions while Alpha Troop redeployed to Ft. Bragg, NC and prepared for the new mission. Armed OH-58D crews, three Kuwaiti patrol boats, and U.S. Navy Sea/Air/Land (SEAL) teams participated in special training in the Persian Gulf oil fields. On 16 January 1991, during a night surveillance of the Dorrah Oil Field off the coast of Kuwait, one Iraqi soldier made the mistake of walking outside to take a smoke break. His white-hot body showed up brilliantly on the Thermal Imaging System (TIS) of the OH-58D, and it appeared that he came from a bunker on the second level of the platform. Close scrutiny of the recorded video tapes revealed four of the eight platforms contained bunkers and shelters. Assessed as hostile anti-aircraft and coastal early warning positions, the platforms became an important target for attack.

On the night of 18 January, a coordinated attack commenced with Armed OH-58Ds, a U.S. Navy SH-60B LAMPS Mark III Sea Hawk, a U.S. Navy frigate, and Kuwaiti patrol boats. Hellfire missiles and 2.75" rockets devastated the Iraqi positions. The USS Nicholas attacked and destroyed additional platforms with Naval gunfire directed by Armed OH-58Ds. With the oil field secure, 4-17 Cavalry performed armed reconnaissance of three Kuwaiti coastal

islands and other Naval threats. On the morning of 24 January, Warrior aircraft detected enemy activity on the Island of Qaruh and engaged their defenses. As a result, the enemy surrendered and the 4-17 Cavalry reclaimed the first Kuwaiti territory. On the night of 2 February, a Warrior patrol identified four armed Iraqi patrol boats outfitted with quad machine guns departing a channel near the Kuwaiti coast. The standoff capability of the OH-58D's Mast Mounted Sight (MMS) allowed observation without detection beyond the range of the enemy's weapons. After receiving orders to attack, the flight engaged the enemy boats with Hellfire missiles. The Warrior crews closed to within 1,000 meters to continue the attack with 2.75" rockets and .50 Caliber machine guns. The attack destroyed two enemy boats and seriously damaged the others. As the coalition naval forces continued north to conduct the amphibious assault feint, two Iraqi Silkworm missile batteries were detected on Faylaka Island, posing a serious threat to the amphibious task force. Warrior aircraft, given the mission to destroy the missiles, fired two Hellfire missiles scoring direct hits under the cover of darkness. For the duration of the conflict, Bravo Troop continued armed reconnaissance and security operations in support of naval coalition forces.

By this time, the rest of the Squadron had deployed to Saudi Arabia to support Special Operations Command Central (SOCCENT) in and around Kuwait City. After quickly getting familiarized with the 3rd Special Forces Group and the differences between operating over land instead of water, the Squadron moved north into Kuwait with SOCCENT Forces. The ground war moved faster than expected, and all plans had to be pushed up. The Night Vision Goggle (NVG) flight into Kuwait proved very challenging. Upon entering Kuwait, the flight entered the burning oil fields just south of the first objective, Kuwait International Airport. The thick smoke from the burning oil fields and enemy vehicles eliminated virtually all ambient light and made flying with NVG's almost impossible. After regrouping on the ground, the flight continued North by hovering and utilizing NVG search lights. When the conditions proved impossible to continue, the flight linked up with a U.S. Marine defensive position and spent the remainder of the night in foxholes. The motto "Soldier First" entered into everyone's mind.

When conditions improved, the flight departed for the objective. The first mission was the liberation of the American and British embassies inside Kuwait City. The Warrior aircraft conducted the initial reconnaissance of the embassies and provided security for the ground forces. Other special operations helicopters from the U.S. and Britain, carrying Special Forces sniper and assault teams, air assaulted their forces into the embassies. With the embassies secure, the Warrior aircraft went on standby for contingency operations in Kuwait City. The Warrior crews performed numerous other missions, including an area reconnaissance of Bubiyan Island and armed escort missions inside the city for the CENTCOM Commander. The Squadron redeployed to Saudi Arabia on 11 April 1991, when Central Forces Command declared Kuwait City secure.

With the SOCCENT mission successfully completed, the NAVCENT mission required new support. The members of Alpha Troop deployed across the causeway to Bahrain and continued with the NAVCENT mission until October of last year.

The 4th Squadron, 17th Cavalry Regiment (AIR)(RECON) successfully completed its land and sea missions with outstanding results from the Armed OH-58D. Looking toward the future, the Squadron is transitioning into the OH-58D Kiowa Warrior Multi-Purpose Light Helicopter (MPLH). The new Kiowa Warrior will greatly enhance the Squadron's capabilities to perform as the XVIII Airborne Corps' contingency Cavalry Squadron.

A lot of tough challenges lie ahead for the 4th Squadron, 17th Cavalry Regiment (AIR)(RECON), but after flying 6,500 hours in the Persian Gulf and spending over 1,300 "Arabian Nights", the Squadron is extremely proud to say:

Mission Accomplished! IIIII

Contingency Operations: The Future of Army Aviation Brigades

by Captain Michael D. Lundy

As the "New World Order" takes shape over the next few years, the major military powers will face many new challenges. Downsized forces and the ever-growing instability throughout the Third World will require Western Governments to pool their military and economic resources to meet future operational requirements. Joint Contingency Operations will become the rule rather than the exception. Operation PROVIDE COMFORT can serve as a model for these operations.

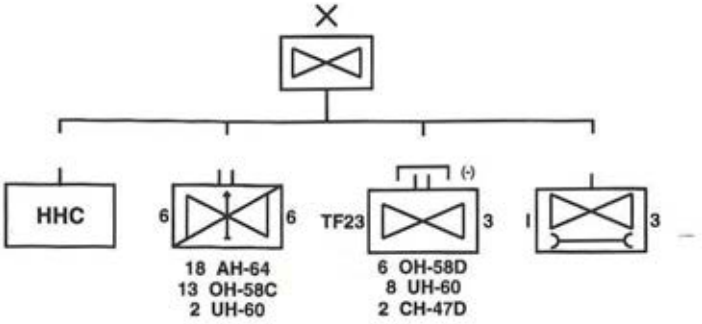
With the successful destruction of Iraqi Forces in the Kuwaiti Theater of Operations, Northern Iraq was thrown into a state of chaos. The Kurdish population, who for many years sought an independent Kurdistan, rose up in rebellion against the oppressive government of Saddam Hussein. Initially, the Pesh Merge (Kurdish guerrillas) were highly successful in their offensive, but time and resources were on the side of the Baath Government. With his Northern Army largely intact, Saddam quickly crushed the uprising. This began a violent onslaught, which resulted in the mass exodus of over 750,000 Kurds into the mountainous regions of Northern Iraq, Southern Turkey, and Western Iran.

CPT Lundy was the CBTF Executive Officer during Operation PROVIDE COMFORT.

On 5 April 1991, President Bush initiated the largest humanitarian relief effort in history, designated Operation PROVIDE COMFORT. Upon notification, the Supreme Allied Commander Europe (SACEUR) formed Combined Task Force PROVIDE COMFORT. The Combined Task Force (CTF) was organized to provide immediate humanitarian and life-saving aid to refugees in the mountain camps, with a follow-on mission of relocating them to their former homes.

On 16 April 1991, 4th Brigade, 3rd Infantry Division (Wings of the Marne) was alerted for deployment to Northern Iraq. We were to become the Army Aviation component for Joint Task Force Bravo (JTF-B). JTF-B was

PROVIDE COMFORT I
4TH BRIGADE ORGANIZATION



BDE CDR-COLONEL E.E. WHITEHEAD

Figure 1

one of two Joint Forces subordinate to the CTF and was tasked with establishing a security zone in Northern Iraq. This security zone would facilitate the expedient return of the refugees back to their homes.

Deployment

On 17 April 1991 we began a three-phase deployment which would span 25 days and would cover over 3,000 miles. This would be the first deployment out of country for the Brigade and would prove to be a great challenge.

Phase one began with two self-deployments. Initially, six UH-60s deployed from Giebelstadt, Germany to Diyarbikir, Turkey. Upon arrival, they immediately began flying relief supplies to the mountain camps. On 24 April, the Brigade's Apache Squadron conducted the farthest self-deployment for an AH-64 Battalion in history. 3,000 miles and four days later, after transiting five countries, the Squadron arrived in Zahko, Iraq. The deployment was an outstanding success, with only one aircraft delayed due to a maintenance problem.

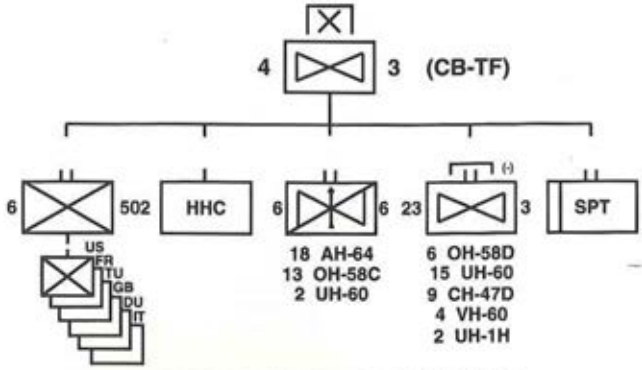
As phase one was completed, the remainder of the Brigade was progressing well with its movement. The Brigade Headquarters Company, the AVIM Company, and the General Aviation Support Battalion were airlifted from Rhein Main to Incirlik Air Base, Turkey. The movement of these elements would be entirely by Military Airlift Command (MAC) assets. Thirty-five C-5 Galaxys and six C-141 Starlifters were utilized to move the remainder of the Brigade's personnel and equipment. Phase two of the deployment was completed by 15 May 1991.

The final phase of the deployment began with a 650 mile road march and line haul of all the Brigade's rolling stock and MILVANS. In addition, the remainder of the aircraft were flown from Incirlik to Zahko, Iraq. The final phase was completed on 17 May.

Operations

Immediately upon arrival into Iraq, the Apache Squadron began conducting Armed Reconnaissance missions in support of Joint Task Force Bravo. The Joint Task Force, which was over 12,000 strong, was made up of coalition and interservice Infantry, Aviation, Engineer, Military Police, and Medical units. JTF-B was tasked to create a security zone in Northern Iraq, to facilitate the resettlement of the Kurdish refugees out of the mountains to their former homes. The AH-64 Squadron played a major role in displacing

PROVIDE COMFORT II
4TH BRIGADE ORGANIZATION



CB-TF CDR-COLONEL E.E. WHITEHEAD

Figure 2

Iraqi Infantry and Mechanized Forces, which were occupying the proposed zone. With the Apaches' well-earned reputation from DESERT STORM, they were often the deciding factor in breaking the Iraqi resolve to hold ground.

The Armed Reconnaissance missions were conducted with the "Package Concept." Typically, an Attack Helicopter Troop composed of five AH-64s and three OH-58Cs would be the basis for the "package". To provide long range surveillance, target designation, and Joint Air Attack Team (JAAT) command and control, we would attach two OH-58Ds to the troop. In addition, three UH-60s would round out the compliment of aircraft. Two of the UH-60s would provide command and control and one would transport the Downed Aircraft Recovery Team (DART).

Command and Control was the most critical aspect of the operations. Due to the ruggedness of the terrain, it became essential to have two command and control aircraft. One UH-60 would provide low coverage within the package, while the other would remain high and to the rear of the operations area. This allowed positive control from the base camp to the aircraft along the routes and in their battle positions. U.S. Air Force AWACS would also provide positive radar control and flight following of the package aircraft. In the event of a forced landing, the DART Team would land and secure the area around the downed aircraft. Command and Control was maintained with Tactical Surveillance Radios, which were on the DART aircraft and at the Base Camp.

In addition to Armed Reconnaissance, we were tasked to perform a myriad of other missions, such as air insertions, air assaults, airlift, VIP support, command and control, CAS/JAAT, and attack operations. Alongside these typical missions, we were tasked to be the Task Force Quick Reaction Force and to conduct Combat Search and Rescue. Both of these missions would be a great challenge and an excellent learning experience.

As the Quick Reaction Force, the Brigade received, on a rotation basis, a coalition or interservice infantry platoon, mortar section, and TOW section. The brigade would provide one Attack Helicopter Troop, six UH-60s, and two CH-47Ds. The mission of the QRF was to provide any ground commander within the Tactical Area of Responsibility (TAOR) a quick response with combat power to any unanticipated enemy situation.

Combat Search and Rescue (CSAR) proved to be one of the more interesting

PROVIDE COMFORT I & II
AREA OF OPERATIONS

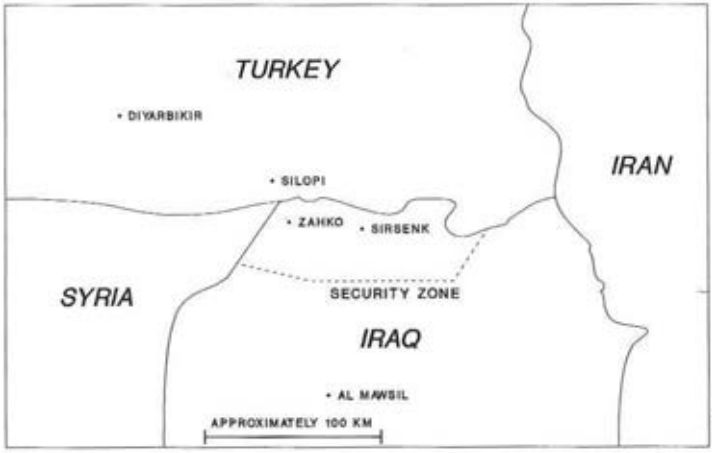


Figure 3

and challenging training exercises conducted. The Marine Expeditionary Unit which was assigned to JTF-B had an organic U.S. Navy Sea, Air, Land (SEAL) Special Operations Detachment. The SEALs were utilized to secure the downed aircraft site and to perform the actual ground extraction of the downed aviators. We conducted numerous day and night insertions and extractions, simulating downed aircraft situations. In additions to the SEALs, U.S. Air Force E-3 AWACS and U.S. Navy E-2 Hawkeyes would vector our aircraft to the simulated crash sites. This proved to be very beneficial training, and demonstrated the strengths and weaknesses of both systems. Finally, Navy and Air Force fixed wing aircraft would provide Combat Air Patrol (CAP) and Close Air Support (CAS) around the crash sites. After conducting numerous mini-exercises with each component of the CSAR team, we conducted a full-scale night extraction. The many hours of training resulted in a highly successful interservice exercise.

Operation PROVIDE COMFORT II

By the beginning of July 1991, most of the refugees had been successfully relocated to their former homes. Joint Task Force Bravo had completed its mission and was disbanded on 15 July. The situation in Northern Iraq, however, still remained unstable.

As the coalition governments began to withdraw the bulk of their forces, it was decided that a follow-on force would be necessary to maintain peace and to continue the humanitarian effort. The Combined Task Force Commander chose the 4th Brigade to be the basis for this new organization, which was designated the Combined Brigade Task Force (CB-TF).

The new force would be composed of the 4th Brigade, 3d Infantry Division, the Allied Ground Combat Force, and a Logistics Support Battalion. The mission basically remained the same—provide security and render assistance to the Kurdish people of Northern Iraq. The CB-TF was relocated from Zahko, Iraq to Silopi, Turkey, approximately six miles from the Iraqi border.

Joint Staffs

As a result of the addition of the numerous allied and interservice forces to the Brigade, it was imperative that we form a Joint Staff. In addition to the typical S-1 through S-4, two new staff sections were formed. The J-5 became the Civil Affairs Directorate and the J-6 was formed to

Figure 4

manage the increasing amount of communications equipment assigned to the CB-TF. Each staff section was augmented with coalition and interservice personnel, which would ensure that the staff could effectively support and manage the diverse organization.

J-1 Personnel Directorate: The J-1 was formed to ensure that all of the CB-TF's personnel and administrative actions could be handled accordingly. The J-1 was responsible for the Awards Program, the Officer and NCO evaluation program, Uniform Code of Military Justice (UCMJ) actions, personnel actions and records, unit strength reporting and distribution. In addition, the Unit Ministry Team and Judge Advocate General were assigned to the J-1 staff. The J-1 maintained two twelve hour shifts which ensured that all actions were completed quickly and efficiently.

J-2 Intelligence Directorate: The J-2 provided intelligence support to the CBTF headquarters and assigned units. In addition to the normal Brigade S-2 staff, the J-2 was augmented with an Air Force Weather Detachment and Intelligence officers from Italy, France, and Turkey. The J-2 had access to all forms of intelligence assets:

- Rotary Wing Armed Reconnaissance (AH-64/OH-58D)
- Fixed Wing Reconnaissance (F-16/A-10/ Mirage F-1/Jaguar/F-14)
- Satellite Imagery
- Air Force Office of Special Investigations Team (HUMINT)
- Military Coordination Center (HUMINT)
- French Counter Intelligence Team (HUMINT)
- Tactical Intelligence Broadcast System (RJ-135 Rivet Joint) (COMINT/ELINT)

With these vast assets available, the J-2 was highly effective in providing early and accurate intelligence to the CBTF, which proved crucial to successful mission accomplishment.

J-3 Operations Directorate: Probably the most critical and diverse section was the Operations Directorate. The J-3 was composed of the Brigade S-3, an engineer officer, fire support officer, chemical officer, a flight operations section, coalition operations officers from France and Italy, and several Tactical Satellite Teams from the Joint Communications Support Element. In addition, the Marine ANGLICO Detachment was OPCON to the J-3. The J-3 was responsible for developing and implementing all contingency plans, developing and supervising

training, flight operations and taskings, along with the Brigade Operations Center. In addition, the J-3 developed and conducted rehearsals for numerous contingency plans which supported the unit mission. The greatest achievement, however, was the effective operational integration and training of the five Allied Infantry Companies and the numerous interservice organizations in the CBTF.

J-4 Logistics Directorate: As with the other staff sections, the J-4 was a conglomeration of interservice and coalition personnel. The J-4 was subdivided into several specialized sections, which was instrumental in providing adequate maintenance and supply management for the diverse organization. The two key management sections were the ground vehicle and equipment section and the aircraft maintenance section.

The ground maintenance section was responsible for managing a vehicle and equipment maintenance program for over 650 coalition and interservice vehicles, in addition to over 60 generators. Although the CBTF had over 65 types of vehicles from six countries, we maintained over a 92% mission readiness rate.

The aircraft maintenance management section by far had the toughest challenge. Initially, numerous factors dramatically impacted the readiness of the Brigade's aircraft. During 160 days of operations, we flew in excess of 12,300 hours on 68 aircraft. This is over two times the normal OPTEMPO, which resulted in a high consumption of available spares. Within 30 days, most of the Prescribed Load List (PLL) and Authorized Stockage List (ASL) stocks were depleted. With no supply automation in country, parts replenishment was very much hit and miss, with miss being the norm. If we were fortunate enough to get a requisition through, the transportation was extremely slow.

After briefing CINCUSAREUR, SACEUR, and the AVSCOM Commander, we received the critically-needed support necessary to correct many of the deficiencies in the supply system. Utilizing Corps-level Tactical Satellite Communications, we established an automatic Standard Army Retail Supply System (SARSS) link with the 9th Material Management Center, which reduced the requisition processing time from six days to one day. The aircraft on ground parts requisition process was also streamlined by establishing a direct E-Mail link to AVSCOM. We also worked with the Air Force in developing a more efficient in-country transportation system. In addition, CINCUSAREUR approved placement of nine in-country float aircraft. All of these measures dramatically increased the mission capable rates. As the end of the exercise neared, we had a highly efficient Class IX air supply requisition and transportation system.

J-5 Civil Affairs Directorate: The J-5 was the most atypical of all the Joint Staff Sections. It was manned by Army Reserve personnel, along with several coalition officers. The J-5 was established to interact with the Turkish civilians and governmental officials, Non-Governmental Organizations (NGOs), the United Nations High Commission for Refugees (UNHCR), and the Military Coordination Center (MCC).

The J-5 was the staff section most involved with the Humanitarian Relief effort. With Non-Combatant Evacuation as one of the missions of the CBTF, it was imperative that we maintained an effective liaison with the relief agencies.

This became one of the main missions of the J-5. They maintained accurate locations and dispositions on over 30 NGOs. In addition to maintaining their locations, the J-5 assisted the NGOs with the Humanitarian Relief effort. The J-5 tracked and distributed any excess food and building items to each of the NGOs. In addition, the J-5 kept the CBTF commander apprised of any aircraft support needs.

The Civil Affairs Directorate became an integral and vital part of the CBTF operations. The humanitarian nature of the mission, the international composition of the force, and the wide array of civilian agencies involved made it necessary to develop a staff section with specialized training and background. This decision was validated by the vast numbers of issues Civil Affairs was able to turn from distractions in CBTF accomplishments.

J-6 Communications Directorate: Effective, long-range communications were the key ingredient to the success of the CBTF. The J-6 Communications Directorate was responsible for managing a vast array of Tactical, Theater, and Strategic Communications systems. Based on the isolated location of the CBTF and the lack of a good host nation communications infrastructure, the CBTF was assigned numerous Echelons-Above-Corps (EAC) communications assets. These included:

- UHF Single Channel Tactical Satellite (TACSAT)
- LST 8000 (AUTOVON/AUTODIN/FAX)
- Tactical Automated Switching System (AUTOVON/AUTODIN/ETS/UTAACS/WEATHER/E-MAIL/SECURE FAX)

These communication assets were essential in maintaining contact with the "outside world". It allowed us to greatly improve the supply and requisition process with the addition of the SARSS and E-Mail capability. Tactical control of the Allied Forces, along with downed aircraft communications, were possible only with the Tactical Satellite Teams. Even morale calls for the soldiers were possible with the ETS/AUTOVON circuits. This proved to be a great morale booster for both the soldiers and their families. As with all tactical operations, reliable communications were essential. The J-6 Directorate met the challenge and excelled.

Allied Ground Combat Force

The Joint Staff was formed to manage and support the combat and combat support assets assigned to the CBTF. The two main combat assets in the Task Force were the 4th Aviation Brigade, which has already been discussed in detail and the Allied Ground Combat Force.

For the first time in history, ground forces from other nations were placed under the command of an Army Aviation Brigade. The 1,200 man AGCF was based on an Infantry Battalion Headquarters and line company from the Berlin Brigade, along with five coalition Infantry Companies from Great Britain, The Netherlands, France, Italy, and Turkey. This formidable ground force was tasked with the contingency mission to perform a forced entry into Northern Iraq and secure key terrain. This would facilitate the entry of allied follow-on forces to stop any Iraqi incursion into the security zone.

The Allied Ground Combat Force became a highly trained and cohesive unit. Many hours of cross-training at the individual, platoon, and company level resulted in a viable combat force which was ready to accomplish any contingency mission. The formation and training of the AGCF gave each of the coalition forces a chance to learn new ways of doing things and did much to improve coalition interoperability.

Logistics Support Unit

Another new dimension for an Army Aviation Brigade was the formation of the Logistics Support Unit. Aviation Brigades do not typically have their own Forward Support Battalion. Not only did we form an Aviation Forward Support Battalion, but we also developed a highly effective unit capable of supporting a large ground combat force.

The LSU was a Joint Battalion composed of Army and Air Force logistics units. These units provided numerous services and maintenance activities such as: AVIM Maintenance, Supply Support activity, Food Services, Billeting, Morale Welfare and Recreation, Ground Direct Support Maintenance, Finance, Class III and V support, along with Fire Protection.

The LSU proved highly capable and was what all aviation commanders have longed for—an efficient and fully functioning Forward Support Battalion.

Operation PROVIDE COMFORT was a complex and well orchestrated operation. Much of the success of the operation could be attributed to Army Aviation. Speed, flexibility, and firepower were the key ingredients to mission success, all attributes of the Army Aviation Brigade. Operation PROVIDE COMFORT proved to the world that the U.S. and her allies can succeed in Joint Operations, and that the Army Aviation Brigade is the best suited for the mission. As General Galvin stated, "The ground work has been laid here for how we are going to do this kind of operation in the future."

Tales of an International Ferry Flight

by Captain Mark J. Cincotta

"Army 14256, flight of two, cleared for takeoff, contact departure." Those were the words clearing two RV-1D Mohawks for the last scheduled International Ferry Flight. The journey was scheduled to cover 30 days, four continents, and 18 countries. Fellow aviators looked at me, CW3 Ross Schoneboom (the pilot of the other RV-1D), and our crew-chiefs, SGT Juan Rodriguez and SPC Todd McKay, with envy. They thought we were on a paid vacation. In actuality an international ferry flight is nothing less than an excellent training exercise for aviators of all experience levels.

Flying the aircraft from Stuart, FL to Camp Humphreys, Korea was a real learning experience. Unfortunately, most Army aviators accumulate thousands of flying hours flying from the airfield to the range, depriving them of the experience and knowledge an international flight has to offer. This was an opportunity to read and understand publications that most of us don't use on a daily basis.

The foreign clearance guide proved to be a useful tool. It's broken down by individual countries and is key in assisting with the entire flight planning process. The foreign clearance guide gave us preferred routing for particular altitudes. It also gave us windows of validity for diplomatic clearances. That was very important since maintenance and weather delays often caused us to miss our actual arrival dates and times. Without the assistance of the foreign clearance guide, we might have attempted unauthorized entries in several instances.

Though we never caused an international incident, there was one time the foreign clearance guide failed us. We received our diplomatic clearance into Singapore from Thailand but not our clearance to transit Malaysian airspace enroute. I made the decision to hold on the ground in Thailand until we could confirm clearance through Malaysian airspace. We were delayed two

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and a half hours. I pulled out the foreign clearance guide and looked up Singapore. The wording was not specific, but Ross and I interpreted it the same. Our clearance was good for 24 hours—*"If unable to comply with time 'window', new ETA should be adjusted in increments of 24 hours from initial clearance time."* No problem, we figured, we'll only be two and a half hours late. As a courtesy, we asked the Thai Air Force to pass a message to all facilities along our route to insure everyone was aware of our delay. They kindly accommodated our request.

Our arrival in Singapore wasn't quite as gracious. I was met at the aircraft by a U.S. Embassy representative requesting I call the U.S. Embassy immediately. Apparently, what the foreign clearance guide meant to say was, *"You will not arrive one second late!"* Oh well, live and learn. Actually, it wasn't that bad. The Singapore government was just trying to stress the importance of meeting scheduled arrival times. In the past, they had a problem with U.S. aircraft showing up whenever they pleased. Their point was well taken, and their assistance was most accommodating. The learning point here: go above and beyond the books. Check and double-check everything. Though not always possible, make every attempt to speak directly with the person issuing the clearance. Anyone who has been on an international flight knows and anyone who gets the opportunity will find out just how difficult a task that is at times. Though the total is not tallied, I spent approximately $1,200 on phone calls. The end result, however, was a smooth transition from country to country.

Many considerations played a role in determining how far to move the aircraft each day. For general planning purposes, we could figure an endurance of six hours and fifteen minutes. To meet fuel reserve requirements, we normally had to look for a suitable stopover point within one thousand miles of our departure point. Another major consideration was the availability of fuel. Let's face facts, there are not a lot of places in India to refuel a U.S. Army aircraft. Complicating matters were our orders to use contract fuel. In most cases this was possible; sometimes it wasn't.

We'd planned one leg of the flight from Keflavik, Iceland to Prestwick, Scotland. Two days before our scheduled arrival, we were informed by our headquarters that Prestwick had lost the fuel contract. We were instructed to find another airfield. After reading through the supplement with Ross, we determined we could comply with the request and fly to Mildenhall, England. It would be a long flight, about five and a half hours, but we could make it and still meet all our requirements. We contacted all the necessary Embassies and coordinated our schedule changes to ensure a hassle-free arrival.

Our flight plan was now filed and a good Navy weather briefing was in hand. We were ready to head to England. Just prior to strapping in, I decided to call Mildenhall one last time to confirm our arrival, fuel, and accommodations. Fortunately, I did. During our conversation, Mildenhall Air Traffic Controllers passed a message to us. They told us to plan on a 45 minutes air traffic control delay. This is the point where a Pilot-In-Command (PIC) makes his money. Here's the situation: first, we were instructed not to land in Prestwick due to the lost fuel contract. Second, painstaking measures were taken to ensure the airspace was cleared for arrival in England. Now we would have to go through the same hassles to change it again. Third, a 45 minute delay would be pushing our endurance. (But do we ever get those delays?)

My advice to every pilot flying today: never put yourself in the position to find out. In our case, we had no suitable airfields to land at in case of emergency. As PICs, we must look at every situation and weigh the consequences. Remember that our ultimate goal is to accomplish the mission as safely as possible. That particular day in Iceland, I decided to accept the hassle of coordinating our arrival back to Prestwick. Based on the situation, I felt it was more appropriate to pay a little more for no-contract fuel than to have two aircraft run out of fuel flying a holding pattern somewhere over England.

Everything worked out fine. We refiled to

Prestwick, got another weather briefing, and made what seemed like the millionth phone call to coordinate the change. It was an uneventful flight. Maybe we had enough fuel to get to Mildenhall. Perhaps we would have never received that ATC delay. The bottom line, though, we were on the ground safely and we were still going to Germany the next day. Don't let outside pressures lead you to making a hasty decision. Examine the situation, review the option, acknowledge the consequences, and make a sound decision. No one can ever hold that against you. By the way, for those who follow, Prestwick is renegotiating the fuel contract and things look good. That's good news, because Scotland is almost as beautiful as the two girls working at the Military Airlift Command (MAC) terminal. MAC provided outstanding support, making our arrival and departure hassle-free.

Availability of support upon arrival and departure is another key factor in determining where to stop. Is there a U.S. military installation there? Is there U.S. Embassy support available? Will I have to do this all by myself? These are questions to ask before choosing a stopover location. Without proper planning, arriving in a foreign country would be near impossible.

Where possible we stayed at U.S. military installations. Most of our stops were at U.S. Air Force or Navy bases. Needless to say, they are in the business of handling transient aircrews. At most places we were greeted with a fuel truck, hotel reservations, and transportation. Since the days were very long it was comforting to know that our time spent on the arrival ramp would be kept to a minimum. Host country military bases were equally accommodating. We never encountered any problems from a foreign military service. In some cases, they were even more accommodating than our own services.

Next best were stops where U.S. Embassy officials were present to expedite us through customs and immigration. Probably the best assistance came in Cairo, Egypt. We taxied two miles around Cairo International Airport and parked in front of the main terminal. We were greeted by an expediter from the U.S. Embassy. He had a fuel truck waiting, and as we refueled and performed maintenance, he did the leg

work enabling us to process customs without a hitch. When we finished refueling, the embassy official had completed his journey and met us at the aircraft. He walked us to the front of what seemed to be mile long lines where customs officials met us with a smile and asked us to kindly proceed. Within minutes, we were through the huge airport and in a taxi enroute to Air France's five star hotel, Le Meridian. The embassy official, an Egyptian official, stayed at the hotel with us to offer assistance whenever needed.

Though we were leaving early in the morning, he arranged a vehicle and driver to take us on a tour of the city. Within two hours of landing, we found ourselves ten feet in the air on camels in front of the ancient Egyptian pyramids of Giza. It was times like this that made the months of planning and the headaches of the trip worthwhile. A special thanks to our friends in Egypt.

Though we never arrived anywhere without support, there were a few times where support was minimal. I am qualified to say don't ever land in a foreign country unexpected. The simple things like parking your aircraft and getting from the aircraft to a hotel seem impossible.

An example was our arrival in Kota Kinabalu, Malaysia. The embassy was notified of our arrival time, but when we got there, no one knew who we were. Ground control parked us on the old apron, which is one and a half miles from the main terminal. We had fuel on request and shut down. After thirty minutes and no fuel, Ross called the tower and asked for taxi clearance to the new apron. That was denied, as fuel was on its way. When fuel never showed up, we strapped in, cranked up, and got clearance to taxi. We found our fuel at the main terminal after wasting an hour.

The next hour was spent walking around looking for a place to file the next day's flight plan. When that was complete, we linked back up with the crewchiefs and made a plan to clear customs and find a hotel. Customs pushed us right through without even looking at our passports. We spent another half hour learning how to use Malaysian pay phones so I could call the U.S. Embassy. I finally got through and was informed we had hotel reservations at the Kota Kinabalu Hyatt. From that point, everything went smoothly, but I'm here to say that without support you are truly in the dark. You can't ask for help. The 18 pocket translation dictionaries weren't included in a standard ferry flight publications issue.

Now we have an itinerary. We've looked at our route of flight, we know where our support is and determined where to stop. Passports and visas are in hand and the diplomatic clearance requests have been submitted. What next? Now it's time to learn what being a pilot is all about. Now it's time to strap into that single pilot aircraft and take off into a non-radar environment. It's also time to find out the weather briefing was wrong and your aircraft doesn't fly very well with two tons of clear ice on it. Yes, it's also time to find out that your Inertial Navigation System (INS) does not work, the next Non-Directional Beacon (NDB) is 600 miles away, and you left the instructions for your E6B at home. It's time to learn to expect the unexpected. It's time to earn your flight pay.

The months of prior planning are now complete. We are at the Grumman plant in Stuart, FL ready to set out on a unique flight only a few Army aviators ever experience. Our plan was to file as a flight of two whenever possible, enabling us to assist each other with navigation, radio calls, etc. What we didn't plan on was the 30 hours of solid cloud time we'd soon log.

The first two legs went like clock work. Mostly Visual Flight Rules (VFR) in formation and in radar contact. That ended when we departed the 2nd Aviation Flight Detachment in Newburgh, NY. We filed as a flight of two to Goosebay, Labrador. Soon after departure we were in the clouds and would be for the next four hours. Prior to departure we had discussed an Instrument Meteorological Condition (IMC) break up for separation. Everything was going fine, then my INS locked up. That still didn't pose a problem as there were plenty of Navigational Aids (NAVAIDS) available to

keep me on the airways. What it did was make us think ahead. We were now more aware of what to anticipate and plan for. The next few days would take us across the North Atlantic, where the only NAVAIDS are NDBs which are several hundred miles apart. We would also be in uncontrolled airspace where position reports are required by high frequency radio. Do ours work? It turned out one did and one did not. How do we make the reports? How do I navigate if we are in the clouds? These are questions we discussed and thought out completely.

Though we were PICs of different aircraft, I considered our conversations as effective aircrew coordination. In fact, effective aircrew coordination is what got us from Goosebay to Weisbaden, Germany. In the clouds the whole way to Germany, I had no INS, no Tactical Air Navigation (TACAN), there were no VORs and NDBs were scarce. Halfway across the Atlantic, Ross lost his INS. How did we make it? Communication! We were constantly talking back and forth, giving headings and altitude along with prop, power, and airspeed settings. We discussed what we thought the winds were doing. We used our E6B! Remember those? If anyone has forgotten, please remember! It turned out to be the most useful piece of equipment on the trip. It was very gratifying to see that after four hours in the clouds we could see each other when we broke out. Effective communications, good dead reckoning skills, and a little luck kept us on course with adequate separation.

Effective aircrew coordination is essential. It doesn't matter if the other person is a pilot or not. It doesn't even matter if he is in your aircraft. As pilots we sometimes let our egos get the best of us. Sometimes we're afraid to admit a mistake or question an unsafe decision. If this ferry flight taught me one thing, it taught me to question anything that didn't seem right. Discuss what you're doing and be open to constructive criticism. You will be a safer, more proficient, and knowledgeable pilot if you do.

We tend to get lazy always flying in the same area. We know what ATC is going to say before they say it. My advice is don't let ATC give you a false sense of security. Be aware of what's going on around you at all times.

The flight from Bombay, India to Bangkok was extremely long. We refueled in Calcutta and after a two hour immigration delay we were on our way to Thailand. This was another long, overwater flight at night and in clouds. Ross and I were both tired. He was the lead aircraft. Again, neither of us had any navigation equipment. His VHF had limited range so when we got into the Bangkok Flight Information Region (FIR), I made the radio calls. About 50 miles out of Bangkok, we were in radar contact and outside of the clouds. We decided separate approach clearances were in order since a night formation instrument approach and landing was unsafe.

I contacted Bangkok Approach and passed our intentions. My call sign was Army 256, while Ross was Army 269. Approach acknowledged our request and I informed them Army 269 was the lead aircraft. Approach then contacted Army 269 and gave him a descent to 4,000. They also gave him a squawk, which was the same as mine. Ross had Approach confirm the squawk and again reminded them that we wanted separate clearances. Approach acknowledged. I was still at 7,000, my last assigned altitude. It just didn't seem right, two airplanes 3,000 feet apart with the same transponder code. I soon started thinking that approach thought we were both at 4,000 shooting a formation approach. That became apparent when I heard Approach give a heavy Air Bus a heading of 140° and a descent clearance from 10,000 to 5,000. This clearance would take the Air Bus through my flight path. I called Approach to confirm separate clearances and remind them I was at 7,000. Everything was quickly cleared up and we received a separate landing clearance. The point is, question what doesn't seem right. If it still doesn't seem right, question it again. It's better to face a little embarrassment on the radio than be the first one at the scene of your accident. We all make

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Maneuver Warfare: A New Set Of Rules For An Old Game

by Captain Richard D. Hooker, Jr., Ph.D.

External events are stimulating our Army to think creatively about its future. In response, the following article is dedicated to subject of maneuver in war, and more specifically on a body of thought which some choose to call "Maneuver Warfare". I want to begin with a set of assumptions which form the basis for my argument. I am aware that the label itself evokes, in many military professionals, a certain measure of hostility which is a product of the contentious debates of a decade ago, as the so-called "Military Reform" movement took on the military establishment and asked it to re-look at what was widely perceived to be a uniquely American 'style' of war. In the views of its critics and many historians, this American approach to war focused on a few simple themes: mass, fires, an overwhelming logistics effort and a centralized and relatively methodical approach to battle. In my opinion, Russell Weigley's *American Way of War* and Colonel Robert Doughty's *Evolution of U.S. Army Tactical Doctrine 1946-1976* best document this point of view.

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Some call this "American Style of War" attrition warfare, and my first assumption is that there is at least some measure of truth to this critique. This is not to say that American forces have everywhere and at all times sought victory through massed fires and overwhelming force. We have had our share of Waynes, Forrests, MacKenzies and Pattons. But these outstanding American military figures are remarkable, it seems to me, precisely because they departed from the military norms of the day. If one looks closely, it is possible to see in them and in others the outlines of a different way of war. What we call it is not so important. What is important is that we recognize that there is another way.

My second assumption is that, AirLand Battle Doctrine notwithstanding, the emphasis

on massed fires and linearity still retains a powerful hold on the institutional consciousness of the American military. This psychological imprint may well lie below the level of the intellect, but I perceive it to be alive and well in the tactics and decision-making processes of many American commanders. I base this view not only on the basis of limited personal experience and a review of the historical record, but also on an aggregated review of our performance at the National Training Center (NTC), on a first look at the written material coming out of the Gulf, and on interviews, personal conversations and written correspondence with a large number of Army and Marine Corps officers from the grades of captain to lieutenant general. Your own views on this question will undoubtedly be colored at least in part by your own personal experiences and normative predispositions. I have at least attempted to balance the normative with the empirical in concluding that occupying terrain and the physical destruction of the enemy by massed fire systems is central to our view of war, and still retains a powerful hold on our institutional consciousness.

My third assumption is that, contrary to the widely held views of many prominent figures both in and out of uniform, the American military is capable of evolutionary and even revolutionary change in its approach to war. We are not necessarily wedded to techniques, doctrines, and routines which descend, as Carl Builder has argued in *Masks of War*, from our defining experiences in Northwest Europe in 1944, or the amphibious campaigns in the Pacific, or the strategic bombing campaigns over Germany and Japan.

All armies change over time. When we look at the other side of the fiscal hill we see nemesis in the form of much smaller forces, declining operating budgets and a very unsettled strategic environment. The fact of the matter is that we may have no choice but to change, to reach out for new concepts which offer hope of maximizing the capabilities of what all agree will be a much smaller military establishment. The generation now leading the army will be the agents of change, the visionaries and the commanders of a new and different and hopefully better American way of war. My generation will be the users, the implementers and consumers, if you will, of those changes. We may confidently expect that business as usual will not be enough; none of us should be content to rest on our laurels.

So I repeat that change is necessary and normal and natural. But what kind of change will it be? We have already begun to look at this question and attempt to formulate some answers. Prior to his retirement, General John Foss at Training and Doctrine Command (TRADOC) published a series of papers which described a different kind of battlefield. He foresaw a future battlefield characterized by smaller forces, greater lethality, more mobility and increasing complexity. He called it the non-linear or fluid battlefield.

I believe that General Foss has it right. Against credible opponents, an ordered or methodical view of the battlefield probably will not reflect reality—if it ever did. As Clausewitz argued so eloquently a century and a half ago, the battlefield is a place of friction, of chaos and uncertainty, of error and bad weather and missed opportunities. Those who believe otherwise, and there are many these days who see perfect transparency and perfect target acquisition just over the horizon, are in my view doing nothing but engaging in an old, familiar game. They see, in the next technological advance, or perhaps the next doctrine, a way to bring about what we all desperately want: an ordered, knowable, regulated, understandable tactical and operational universe. They want a linear battlefield. There may be times when the battlefield assumes a linear character. We certainly had one in the Gulf War.

But intuitively, many of us sense that it will be a mistake to base our future and the future security of this nation on the certainty that the next challenge will afford us the advantages of the last one. In an age of amazing technological change, we can be confident that the human dimension of battle will retain its characteristic unpredict-

ability and dangerous nature. No serious professional will bet the farm that the way to victory lies through a better microchip.

If I am right, if the world is fated to remain a dangerous place and if the battlefields of the future will continue to be dominated by friction and a relative absence of order, how can a smaller, less abundantly resourced force prevail? I believe that maneuver warfare provides a promising answer. In its emphasis on the fluid nature of modern war, its recognition of friction, and its potential for rapid victory without the high casualties and enormous consumption of wealth which can attend modern war, maneuver warfare offers an answer to an increasingly compelling dilemma. At the least, it deserves a hearing free from the hostility and emotion which so often accompanies this debate. Maneuver warfare is not about personalities or politics. It is about a better way to fight.

A detailed discussion of the fundamentals of maneuver warfare was provided in my article in the December 1992 issue, so I will not plunge into one here. I will note in passing, however, that in the past few years I have encountered quite a few critics who, on closer examination, turn out not to have read the literature. Their knowledge of maneuver warfare is often based, not on an analysis of the merits of maneuver warfare as a body of thought or set of concepts, but instead on a casual reading of a few critical articles. So what I propose to do now is take on a few myths about maneuver warfare and attempt a critique of the critiquers. My goal is to present maneuver warfare, not as a radical exercise in academic theory, but instead as a practical approach to warfighting grounded in practical experience and sound military history.

- **Myth Number 1: Maneuver warfare is nothing more than a set of simple prescriptions.** It is difficult to see how one can talk about anything without introducing a set of organizing concepts. For maneuver warfare, these include: emphasis on how to think, not what to do; targeting the opponent's will to resist, not just his physical resources; operating inside his decision/action cycle; speed and tempo; commander's intent and mission orders; and focus of effort.

However, it is difficult to find another school of thought which argues so strongly against the application of rules as a guide to battlefield behavior, except for one rule which is near absolute: "No Rules". This does not mean that the principles of war or AirLand Battle imperatives, for example, should be ignored. It does mean that rules, principles, concepts or whatever we may choose to call them are meaningless except in the context of the present operation. In making this point I am saying nothing new; much the same debate is carried on in the works of Jomini and Clausewitz. War is a continuum, a spectrum which can only be understood within a framework of present circumstances.

Maneuver warfare eschews absolute rules absolutely. At Chancellorsville, Lee divided his force and divided it again, trusting to speed, deception and a certain moral ascendancy over Hooker to retrieve his exceedingly dangerous situation. At Tannenberg, the Hindenburg/Ludendorff/Hoffman team left a single cavalry division to oppose the Russian First Army while redeploying three full corps southward to envelop and crush Samsonov. They took the principles of concentration on the one hand and economy of force on the other to new heights. They did not think along methodical, tidy lines as Montgomery might have done, but instead gambled that the intangibles would fall their way. At Tannenberg the situation, not the rules of the game, was supreme.

- **Myth Number 2: Maneuver Warfare Exalts Maneuver and Ignores Firepower.** Understanding the relationship of fire to maneuver is central to understanding war. Fundamentally, this relationship is not a function of the quantity of one versus the other, but is instead one of the purposes each is put to. Despite direct quotes from the literature which state unequivocally that "the importance of firepower in maneuver warfare cannot be overemphasized', critics persist in the belief that maneuverists ignore the role of fires.

It is time to put this charge to rest. Armies fight with fires. Period. But some armies

maneuver to mass fires with a view towards occupying terrain and physically destroying opposing forces. Other armies use fires to permit decisive maneuver against weak points, in order to cause the collapse and disintegration of enemy forces. Admittedly, some armies seem to do a little of both, whether by accident or not. But generally speaking, armies fight in the spirit of the one—as France did in 1914 and again in 1940, and as we did in Korea and Vietnam—or the other—as reflected in the operating styles of the *Wermacht*, the Israeli Defense Forces and the NVA.

In Maneuver Warfare, fires are most often used to fix or suppress the enemy, to probe for gaps or weak points, to concentrate combat power at the decisive point and to contribute to deception plans. Where and how fires are used is generally considered more important than net totals of sorties, systems, or rounds fired. And to the extent that this kind of thinking does not necessarily require massive quantities of firepower (as for example, in the Gulf where an artillery division accompanied each maneuver division), it is true that maneuver warfare does not call for fire superiority in the theater as a precondition for victory in war. But to say that quantity is less important than how fires are used is very different from saying that fires are ignored or neglected. This is an important distinction which I want to emphasize.

● **Myth Number 3: Maneuver Warfare is inconsistent with American Military Culture.** This is a favorite bromide with many critics, like Samuel Huntington, who argue that America is a big, lumbering, affluent, not-particularly-military culture whose preference for 'industrial' warfare is a cultural imperative. This critique can be summarized by saying that the American military won't change because it can't. "One should not be swept off one's feet," Huntington declaims, "by the illusion that Americans can be taught to fight wars the way Germans, Israelis or even British do. American strategy must be appropriate to our history and institutions, both political and military. Bigness, not brains, is our advantages, and we should exploit it."

I hope you will join me in dismissing this view. I see no reason to conclude that other armies and other soldiers have somehow cornered the market on such qualities as boldness, initiative, decisiveness or strategic and operational vision, leaving none for the plodding Americans. Nor do I join with those who dismiss the achievements of other armies with a flippant "we beat them, didn't we?" or, alternatively, "Well, they were only fighting Arabs" or "Poles" or whomever. Nothing is to be learned by such parochial and amateurish critiques of military history.

The wonderful thing about past battles and campaigns is that they provide the closest thing we can get to the one thing we never really have enough of—battle experience. We have proven ourselves capable of absorbing the lessons of the past and applying them to the present, though I would not say that our attempts to do so have been uniformly successful. So I see no reason why a military as professional as ours, with the kind of intellectual resources we dispose and the caliber of soldiers and leaders we can boast, should conclude that we must remain wedded necessarily to the practices of the past. If we as a profession see a path to a better way, our reach need not exceed our grasp.

● **Myth Number 4: Maneuver Warfare is too broad to be meaningful.** This is another way of saying that maneuver warfare is fine in theory but unworkable in practice, that it is "all things to all people". If we think of it as a thought process, as a mental framework which tries to pit strength against weakness to break the enemy's will, we are heading in the right direction.

To be honest, most of us want to be told what to do. We desperately want a toolbox of tactical techniques we can use to respond to a particular situation. Maneuver warfare makes many of us uncomfortable because it promises no such thing. It does not preach "find a flank", because that flank might be shielded, as the Germans discovered to their chagrin at Kursk. Instead, it preaches a relentless obsession with speed and tempo, focused on the identification of enemy weakness (whether

physical or moral) and its decisive exploitation. That is its formula for victory. It suggests techniques to help achieve this object, like commander's intent, mission orders, focus of effort and the theory of surfaces and gaps.

But ultimately, the leader must pit his intuition, skill and determination against the mind of his adversary and break it. Success in this game lies largely in the realm of art; some will master it but many will not. Maneuver warfare provides a system, a mental approach to help talented leaders make the most of their gifts. But it cannot replace intelligence and an intuitive grasp of the battlefield—what some call "Coup D'Oueil".

I suspect that some of those who insist that there is really no substance to maneuver warfare at heart yearn for the order and simplicity of the methodical, linear battlefield. Many of you know that battle offers no such thing. If combat is the realm of uncertainty, confusion and friction—if, to borrow a phrase from St. Paul, we can only see reality "through a glass darkly"—then it is in our interest to become comfortable with friction, to accept it and make a friend of it and work to control it. That is the essence of maneuver warfare.

- **Myth Number 5: Maneuver is based on a faulty premise, namely, that there is no such thing as attrition warfare.** Often one hears that the existence of a maneuverist school "implies" the existence of an attrition school or theory, that no such school exists and that maneuver warfare throws its intellectual punch at empty air. A corollary is that maneuver warfare ignores the fact that combat in reality exists on a sliding scale of violence, with maneuver the indicated response at some times and massed fires at others—with a judicious combination of the two being by far the norm.

Certainly there are very few advocates of attritional warfare. But as we discussed above, a mass of historical data exists to support an American predilliction for, to paraphrase Colonel Doughty, a progressive emphasis on firepower and attrition at the expense of maneuver. Only in the past decade has published doctrine explicitly addressed this imbalance, and we cannot yet know how well we have absorbed the philosophy of AirLand Battle. While its outlines seem clearly visible in Operation DESERT STORM at the operational level of war, at the tactical level combat very much resembled traditional smash-mouth warfare, with huge quantities of firepower being poured on enemy formations. One can only speculate at the result if a future enemy were to match the sophistication of our tanks, or field the means to effectively deliver counter-battery fires, or dispute our command of the air.

Of course battle is a deadly dance combining both fires and maneuver. As Edward Luttwak has argued, a particular operation may have a higher or lower relational maneuver content based on circumstances, many of which may be beyond one's ability to influence. However, both theoretically and practically speaking, maneuver warfare remains conceptually distinct and identifiably present when we consider the following: are we hitting the enemy to wear him down and destroy his forces, or do we target his will to resist and ability to command? Do we proceed methodically from phase to phase or try to grasp the initiative at all costs, knowing that we can think and act faster? Are we attempting to fight the enemy where he stands, or fight through and around him to strike at the really worthwhile targets, the artillery and support areas and C3 nodes? Do we take counsel of our fears and proceed only when fires, unit boundaries, airspace and redundant fuel and ammunition stocks have all been readied, or do we press on, confident that our security lies in speed, momentum, surprise and the initiative?

- **Myth Number 6: Maneuver warfare is nothing more than "Fighting Smart".** There is nothing new or even particularly original about maneuver warfare. What is new is the attempt to organize successful concepts from the past around a unifying theme and then articulate it so that it can be understood and applied more readily.

Ardant Du Picq warned us that technology changes but human nature, and its influence in battle, does not. And while there is more than a grain of truth to Myth Number 6, it misses the mark by a wide margin. Here's why.

Most officers have been schooled to solve battlefield problems through the application of techniques and a standard suite of tactical solutions. These solutions presuppose near-perfect control. The miserable platoon leader who cannot be reached immediately on the radio, the hapless company commander who just does not know exactly where all his people are, the feeble battalion commander who never can figure out how to get all his weapons into the fight at the NTC—these are the situations which fill us with something akin to horror.

These feelings are nothing more than a natural desire to impose order on disorder. When we lunge for a flank we are trying to do the same thing. We have been taught that flanks are vulnerable places and we should go for them. The problem is that often they are not. The ability to discern strength from weakness is not a programmed response. It is an art form developed by years of practice, training and thinking about such things. It is in fact an intellectual discipline, practically derived. In battle, very many leaders will do one thing or the other. They will bring very heavy fires to bear and attack frontally, or they will suppress and maneuver to a flank. Both options are conditioned responses. They reflect patterned behavior. When and if they succeed, we call it "Fighting Smart".

But neither response is based upon a thought process. When I ask officers "what thought process do you use to solve tactical problems" I often get a blank stare, or perhaps they will say 'METT-T" or, even better, "the Commander's estimate—don't you?" And while these are useful and necessary mental checklists, they are at best a planning process—a way to organize one's time and ensure the completion of necessary planning tasks -- but not a true thought process. They do not provide a mental framework for the analysis and solution of battlefield problems. They do not represent a philosophy of warfighting, unless we consider the reduction of warfare to target lists, phase lines and time tables a philosophy.

At a crude level, this thought process sounds something like: identify a weakness, find or make a gap, ruthlessly exploit it and continue to do so until the enemy collapses. The means we use to do this—fires, maneuver, reconnaissance and intelligence, the will and vision of the commander, the courage and initiative of the subordinate—are means to this end. They are not ends in themselves. If we behave this way, and call it fighting smart, that's all anyone can ask. The labels are not important. The mechanical processes are not important. What is important is the thought process we employ and the results we achieve.

I would like to say a word about character. When asked what he considered most important about the German system of war, General Herman Balck replied "character". In the context of maneuver warfare, character is all-important. But when I say "character" I mean something more precise and definitive than the general usage of the word. In maneuver warfare, "character" means more than integrity or morality or an innate ability to motivate one's subordinates. It must also incorporate a highly developed capacity to decide and act. This sounds simple, but in fact it is perhaps not as universal as we would like.

To move consistently inside an opponent's decision cycle, a commander must process information rapidly and act decisively, piercing the fog of war to impose his will on the enemy—and this takes character. He must articulate his intent clearly, specifically and without equivocation so there can be no misunderstanding, and this too requires character. He must shoulder the responsibility for the success of the mission even as he encourages initiative and independence of thought and action in subordinates, and this above all takes character.

It is hard for character to grow in a zero-defects environment, where commanders

demand conformance and risk-aversion and practice centralized leadership. We place great pressures on commanders at all levels to perform to standard in major training events, and there aren't many incentives to depart from the plan and take a chance on something new and different. We don't see many reverse slope defenses. We don't often see commanders deliberately allow penetrations in order to encircle and destroy the advancing OPFOR. And we certainly don't see juniors participating in pre-mission planning and offering suggestions and input to the colonel, although this is commonplace in some other armies.

It is easy to talk about commander's intent, mission orders and decentralization as a method of command, but under the extreme pressures found in the unit environment it can be awfully difficult to do. Giving someone the freedom to fail sounds great up until the time they actually do and it is a near certainty that, sooner or later, someone will. That's why I believe maneuver warfare requires tremendous strength of character.

Some people confuse character with being tough and demanding. Too often these are code words for "harsh and temperamental". Juniors deserve respect and support in their honest attempts to learn their profession, not harassment and impatience from their superiors. In units which operate this way, innovation and initiative which represents an attempt to further the commander's intent is considered praiseworthy, whether successful or not. That's exactly what training is for—to learn from our mistakes so that in combat we can get it right. Criticism is reserved for those who cannot or will not make a decision in a timely manner and act on it.

In this decade, budget realities and a vastly different strategic environment will place extreme pressures on the services. As Colonel William Darryl Henderson argues in a recent book, we might not be able to squeeze much more performance out of the force without changing some of the rules. The time is right to take a hard look at ways to improve—significantly improve—the capabilities of those forces which will survive the deep cuts which now appear inevitable. Maneuver warfare is one such possibility. I hope it will receive our serious consideration and reflection as we look at the defining challenges, and opportunities, which await us in the coming century. IIIII

Ferry Flight

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mistakes, but what's important is that we all learn from them.

These tales have been shared not to receive any pats on the back or brag about what great pilots we are. The purpose is to present a few situations we found ourselves in so all aviators can apply them to situations they may one day face. No one is perfect. Those who pretend they are usually are the first to discover they are not. Additionally, I hope anyone with an opportunity such as ours now has some insight as to what goes into conducting an international flight. Don't misinterpret what I am saying. Though plagued with hassles, this

journey was an experience of a lifetime. Through gale force winds in Canada to Miss Iceland in Keflavik through two tons of ice in Greenland to the exotic beaches in Crete; through the heat and hassles of the Middle East, to the decadence of Thailand, we did find time to relax and enjoy.

Now the journey is over! We are back at A Co, 3d MI Bn (AE) Korea. The ferry flight is already a blur for Ross and I as the unit wasted no time getting us back on those middle-of-the-night flights in support of the Peacetime Aerial Reconnaissance Program (PARPRO). Mohawk pilots are a rare but proud breed. I'm thankful to be part of such a unique family. IIIII

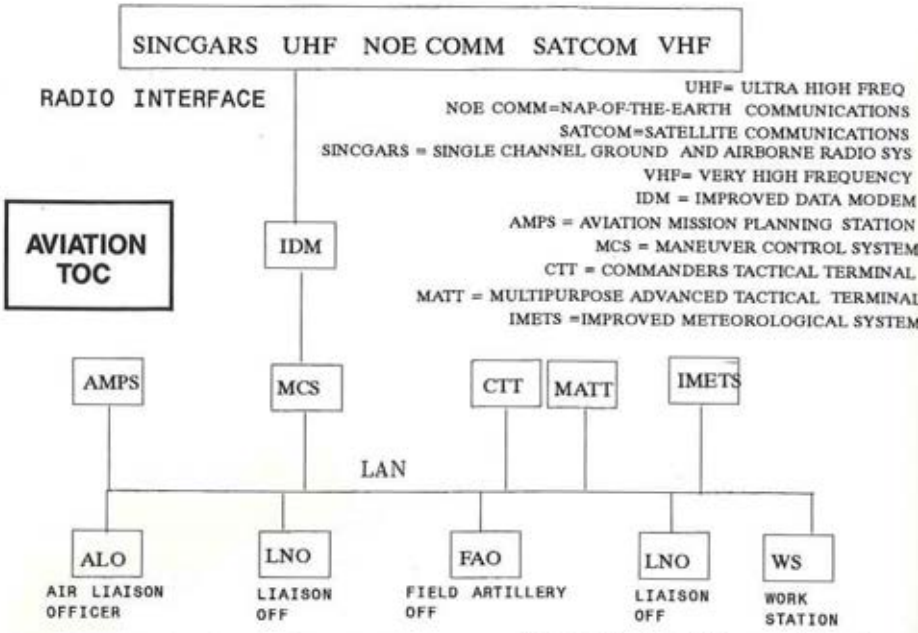
Aviation Information Processing Facility

by Major Peter M. Bartosch, Ret.

LTC Rodgers, commander of the 52d Attack Battalion (ATK BN), has just finished his pre-mission briefing. He has chosen CPT Brown, one of his company commanders, to repeat the same briefing he has just given, thereby confirming communications has taken place. In a few hours, the 52d ATK BN will conduct a daring extended range operation deep into the 4th Combined Arms Army (CAA) rear to destroy a 433d Motorized Rifle Division (MRD) in its assembly area. The 4th CAA is a Soviet equipped and trained Islamic Pact force. The Islamic nations have formed a coalition of forces to defend their homelands and reclaim the holy lands from Israel.

CPT Brown's briefback is complete, and LTC Rodgers has made the necessary corrections. He has placed emphasis on timing and hitting the turning points precisely. Using an electronic three dimensional map, he has chosen the routes carefully to take full advantage of the terrain masking and avoid air defense systems. The high density ADA umbrella the Islamic Pact has arrayed cannot be avoided completely. One ZSU-23-4B lies along the route. The time exposure of the flight will allow a well-trained crew to attrit several aircraft. LTC Rodgers has decided to take the ZSU out with the lead aircraft at the risk of prematurely exposing the operation. LTC Rodgers will zigzag the remainder of the route to confuse the enemy as to the intentions of the force. Hopefully, the enemy will not be able to determine the size or composition of LTC Rodger's force: an attack helicopter battalion with reconnaissance, command and control, and Medical Evacuation aircraft. If exposed, the enemy will have time to formulate a hasty defense, orient their weapons, or worse, disperse the assemblage of their forces. Because of these risks, it is important that the lead aircraft completely destroy the ADA site. This will

MAJ Bartosch is working for Vitronics, Inc., under contract to AVRADA, Ft. Monmouth, NJ.



prevent personnel on the site from sending a report of engagement thereby alerting other forces in the area.

The flight will go in under radio listening silence. French forces to the west will conduct an electronic and artillery barrage simulating a penetration along the battle line. This should capture the enemy's attention.

It will take one hour to fly to the attack positions. They rehearsed the mission on the mission planning computer at double speed to check the exposure of the flight to the reported ADA sights. Because of the radio silence, LTC Rodgers will not respond to messages sent to him by his battalion operations center via a nap-of-the-earth communications radio until he reaches the release point. Once there, he will make a short digital burst transmission back to the brigade's Information Processing Facility (IPF), acknowledging all messages and advising of his status. This message is formulated by his onboard computer and will take just a few keystrokes to revise before transmission.

If something should change during the course of the flight, such as movement of the target, loss of more than 50% of his force, mission abort, shifting Anti-Aircraft Artillery (AAA) or Air Defense Artillery (ADA) concentrations, or other complications that will force LTC Rodgers to change to an alternate route or target, he will acknowledge the message and transmit the change to his fighting forces. The battalion uses code words extensively to keep the time of transmission to an absolute minimum. Spread spectrum techniques and secure transmissions will attenuate the enemy's ability to acquire the flight electronically. The Islamic Pact has a large number and a wide variety of electronic listening and jamming devices. A lesson learned from DESERT STORM.

The brigade has planned for every conceivable contingency. The potential of losing the entire attack battalion is high, but the target's value is worth the risk. The loss of the armor and fighting vehicles of an entire motorized rifle division would break the

back of the Islamic Pact, forcing them to withdraw and possibly capitulate.

It will take 15 minutes to service the target once the aircraft are in their fighting positions. The commander has taken great pains to ensure that the crews know their sectors of fire. Commanders and platoon leaders make arrangements for target handover, remote designation contingencies, laser code exchange, and radar target list exchange.

There will be just enough fuel remaining to egress back to the refuel point. The battalion operations section has chosen several routes. The enemy is alerted now, but radio listening silence will prevent radio location. Again, critical information on AAA, ADA, and other traps that the flight may encounter are relayed to LTC Rodgers so that he can make decisions to bypass, overfly, or eliminate them. The route of egress will be to the West, into the French sector. With the enemy oriented to the French penetration, they will not notice the attack helicopter force to their rear trying to conduct a passage of lines.

Passage of Lines is perhaps the most difficult phase of this operation. A scout aircraft will fly forward to make the initial contact and verify/count the aircraft as they come across. The French have been in a fire fight as a feint to allow the crossing. Effectiveness of the passage is predicated on the enemy's focus being towards the front. The command selected the passage point carefully to provide maximum masking of the operation and to stay away from the open areas where the major exchange of fire is occurring. Again, communications must be brief, spread spectrum, and secure to affect the necessary coordination and timing so critical to such an operation.

This is a fictional setting, and LTC Rodgers and CPT Brown are only characters fashioned by the author; yet the scenario resembles present Army Aviation doctrine. Despite the radio listening silence, communications is critical to the conduct of the operation. The hinge pin technology which will make this mission possible is a Non Line of Sight (NLOS) radio system which offers security, low probability of intercept, and requires little crewmember interface. The Aviation Center has named this technology Nap of the Earth Communication (NOE COMM). Until recently, techniques such as Guardrail relay, satellite communications, or command and control aircraft flying in a relay position were the only available technology. All these techniques have problems. Guardrail, or any high flying asset, must fly far behind the battle area because of its vulnerability to ADA. Guardrail radio assets are limited and usually dedicated to its primary mission of intelligence data relay.

Satellite channels are very limited, vulnerable to jamming, and are reserved for high priority units. Army aircraft other than command and control assets do not have satellite antennas nor half duplex radios to use satellite channels. Because of the dynamics of helicopter flight and main rotor masking, satellite antenna location of helicopters is a difficult proposition.

Command and control aircraft need to stay up with attacking forces in order for the commander to see and make spot decisions on the course of the battle. When flying in relay position the commander's decision-making ability is hindered. He might just as well be on the ground.

Recent technology, demonstrated by a number of manufacturers, has confirmed that high frequency radios with data modems, automatic link establishment, and other techniques have made this frequency spectrum usable 90% of the time, both day and night for voice or data. At the same time, this new technology has eliminated most of the pilot workload and acoustic anomalies normally associated with HF.

NOE COMM is the critical path for achieving the necessary communications for a combat arm which, by its speed and range, is always out of communications range with its information processing source: the Tactical Operations Center (TOC). The aviation TOC is not unlike the intelligence Information Processing Facilities (IPF) of other command and control systems. The Airborne Warning and Control System, the Forward Area Air Defense's Ground Based Sensor, and Guardrail have integral IPF components. Even the armor community saw fit to build a command track (M-577) which is integral to armor

and mechanized operations. With the capabilities, expense, and technological developments of Comanche and the Rotorcraft Pilots Associate (RPA), aviation must rethink its responsibilities towards the ground component of its systems.

The Army has recognized the need for a standardized TOC and has taken measures to produce basic models. There are four models of the Standard Integrated Command Post Shelter (SICPS):

- a High Mobility Multipurpose Wheeled Vehicle (HMMWV) with a rigid wall shelter and accessory tent;
- a tracked vehicle (M577);
- a 5 ton expansible van;
- a Tent Command Post.

They contain the core needs of a TOC regardless of branch of echelon—map boards, intercoms, work tables, etc. The shelterized units contain generators, environmental units, and the MCS computer. Users will add their own equipment to make it a TOC to fit their needs: radios, mission planning stations, data modems, local area networks, and antennas.

The TOC, whether airborne or ground, is the work area for the staff which does the following functions: information collection, current plans/operational execution, flight following, future plans, information dissemination, and after action review.

Staff personnel perform *information collection* using the MCS computer and oral reports from subordinate units. All these reports follow the United States Message Traffic Format (USMTF). This information includes operations orders, fire registration, barrier plans, close air support sorties, task organization, etc.

Once collected, the TOC then does *future battle planning*. They devise their order of battle based on the division operations order and commander's intent. The TOC used a process which evaluates: Mission, Enemy, Terrain, Troops - Time (METT-T) and logistics available. TOC personnel use two maps for this process. The operations officer (S-3) maintains a friendly unit situation map with operations overlay. The intelligence section (S-2) maintains an enemy disposition map. The MCS contains the core data bases for everyone in the division. Operations personnel use the Aviation Mission Planner to plan and rehearse aviation missions in three dimensions. The operations section distributes mission plans via data cartridges to units which do not have an MCS tie-in. Aviation companies, for example, would receive operations overlays, orders, and flight information via data cartridge from their battalion.

Once the commander and operations officer begin executing the plan, the TOC performs two functions:

- *acquiring updated information* for dissemination to the commander;
- *flight following* to track the progress of the battle and to account for aircraft.

The TOC personnel will request or direct MEDEVAC and downed aircrew missions. Flight following is accomplished by using the aviation brigade's Tactical Airspace Integration System (TAIS), a semi-automated facility with the NOE COMM communications system for unattended (no pilot action required) aircraft position reporting. TAIS operators receive information directly from MCS passing battlefield information to aircraft as needed. Information such as contaminated areas, free fire zones, weapons free or weapons tight control, new enemy ADA sights, etc.

The TOC formulates the aircraft, crew, personnel, special equipment status, closing, and sensitive items reports to higher headquarters. This is done electronically through MCS via Single Channel Ground and Airborne Radio System (SINCGARS) or Mobile Subscriber Equipment (MSE). The TOC also collects, edits, and publishes the after action report or lessons learned. Standing operating procedures can be upgraded and new personnel can learn from previous mistakes.

The Army Aviation Center is preparing the necessary requirements documentation to man and equip the SICPS to make it an Aviation IPF. The Avionics Research and Development Activity is gearing up to provide the mockups to evaluate these concepts. Longbow, Comanche, and RPA will require semiautomated TOCs to efficiently utilize available information and become the force multiplier the Army designed them to be.

Recognizing the CSMs

By Colonel Burt S. Tackaberry and Captain Robert Douthit

Unit changes of command are a significant and regular event in the life of a unit. These ceremonies are steeped in tradition. Equally significant in the life of a unit is its change of command sergeant major. Yet, there is no ceremony to note the passing of such important authority. The NCOs are the backbone of the American Army and the command sergeant major is the highest ranking NCO in the unit. Why then, is there no ceremony to welcome and farewell command sergeants major? To show respect and officially recognize the changing of responsibility and authority within the unit, the 24th Infantry Division (Mechanized) conducts a change of custodianship when command sergeant major changes occur.

The command sergeant major is the "Custodian" of the unit. In his appointment to command sergeant major, signed by the Chief of Staff of the Army, he is charged with *advising the commander on all enlisted affairs, and providing counsel and guidance to NCOs and other enlisted personnel.* Additionally, he is given a special charge to *uphold military customs and traditions within the unit.* As a professional NCO, he is responsible for ensuring that the NCO chain is setting the standard in all areas. His tremendous authority is recognized by officer and enlisted. The respect he receives is immeasurable.

The U.S. Army conducts change of command ceremonies with great pomp and circumstance. Unit changes of command recognize the achievements of the unit under the outgoing commander, provide him the opportunity to address the unit, introduce the unit to the new commander, observe the passing of the unit's colors to the incoming commander, and signify the official passing of authority. The entire unit marches and significantly, it is the unit command sergeant major that passes the colors between the commanders. He is the custodian entrusted with the unit's colors.

Based upon the important position held by the command sergeant major, a ceremony to honor the change of custodianship would signify the importance of the transition: The passing of great authority and responsibility. The ceremonies in the 24th Infantry Division (Mechanized) are in keeping with the same traditions as unit change of command ceremonies. All enlisted members of the unit participate. The next highest ranking NCO in the unit should be the Commander of Troops and assume the honors at the change of custodianship. The only major difference is that there are no officers participating in the ceremony. In honor of our outstanding NCO corps, all changes of command sergeants major in the 24th Infantry Division (Mechanized) are conducted as changes of custodianship. This might be a tradition worth institutionalizing. IIIII

COL Tackaberry is Commander, Aviation Brigade, 24th ID(M), Hunter Army Airfield, GA.

CPT Douthit is Commander, A Company, 1-24th Aviation Regiment, Hunter Army Airfield, GA.

NCO Academy Update

by Command Sergeant Major Melvin P. Taylor

The mission of the U.S. Army Aviation Center Noncommissioned Officer Academy (USAAVNCNCOA) is to assist Aviation Branch NCOs in becoming better leaders and trainers of soldiers, to instill increased self-confidence and a sense of responsibility, and to prepare them for leadership duties in all environments. Students enrolled in the Advanced Noncommissioned Officer Course (ANCOC) includes CMF 93 and MOS 68P. The Basic Noncommissioned Officer Course (BNCOC) includes CMF 93 and MOSs 68L, N, Q, and R. Prerequisites for attendance is in Chapter 5, AR 351-1.

The NCO Academy has established stressful, leadership intensive, performance-oriented training that requires all NCOs to demonstrate their leader, trainer, technical, and tactical skills. Students attending the NCO Academy are placed in a 24-hour a day live-in learning environment. The principal reason for the live-in environment is for students to reinforce professional standards through total immersion in a military environment. Leadership principles and professional skills are reinforced as part of the student's daily routine.

CSM Taylor is Commandant, USAAVNC NCO Academy, Ft. Rucker, AL.

Training does not start and end with the first and last academic class of the day. Students placed in leadership positions are required to plan, supervise, and perform activities as they would in their units. In addition, student leaders will plan and conduct inspections, physical training, and remedial/additional training for fellow students under cadre supervision.

The Training and Doctrine Command (TRADOC) NCO Academy accreditation program is designed to ensure standardization, quality, and adequate resources for training. It is conducted every 18 to 24 months. The USAAVNCNCOA recently underwent an accreditation evaluation with no shortcomings noted.

The cadre of the USAAVNCNCOA is

made up of a group of dedicated, hard-working, professional NCOs, some of the very best the Aviation Branch has to offer. These NCOs will go to any length to ensure students receive the very best training available.

Small Group Instruction (SGI) is the primary method of instruction. The goal of the NCO Academy is to develop creative, logical, quick-thinking leaders who can apply Army training and fighting doctrine in their units. SGI fosters that goal by increasing student involvement and responsibilities in the learning process. To maximize the learning opportunities inherent in small groups, SGI:

- Improves the learning environment through increased student interaction.
- Shifts the teaching methodology from "what to think" to "how to think".
- Places the learning responsibility on the student through group participation and student assignments as discussion leaders.
- Facilitates role modeling, counseling, coaching, and team building.
- Fosters sharing of experiences.
- Fosters long-term professional relationships.
- Improves the student's communicative skills.
- Concentrates on training to standard—not to a specific time limit.

Training in the NCO Academy is battle-focused as outlined in FM 25-101. The goal is to produce battle-competent NCO leaders and trainers, who are capable of performing their training responsibilities. The training provides the "how to" skills necessary for NCOs to plan, conduct, supervise, and evaluate individual and collective training.

The shared Field Training Exercise (FTX) provides the cadre the opportunity to evaluate the ANCOC or BNCOC student's ability to lead and train soldiers and accomplish assigned missions. Shared training requires NCO students to demonstrate technical, tactical, and leader skills in a scenario-driven FTX with Advance Individual Training (AIT) students as squad and platoon members. By creating a unit environment, true demands on leadership ability are created which can not be replicated in the classroom.

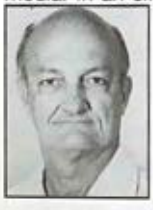
NCOs attending the NCO Academy are required to maintain high standards. The standards are realistic and those expected in the unit environment. Demerit systems, harassment, or similar techniques are not used. Standards will not be decreased to allow a substandard NCO to graduate. The USAAVNCNCOA continues to graduate only those NCOs that meet or exceed the standards. IIIII

Data Automated Tower Simulator and the Enlisted Training Battalion

by Don Funkhouser

The current Enlisted Training Battalion (ETB) control tower manual simulators have been in use since the air traffic control (ATC) school was activated in December 1969. Aircraft movement and responses are simulated by instructors moving magnetic models on a chalkboard. Because there is no "real time" movement of those models, it is difficult for students to attain skills at solving separation, spacing, and sequencing problems. Also, the equipment in the tower simulator does not allow task loading to enable students to achieve the total learning objectives.

The training provided is limited to phraseology and procedural tasks. Real time aircraft movements and the development and avoidance of imminent situations can only be provided by a more dynamic media. In an effort to upgrade control tower training, the ATC school was tasked to initiate a project to replace the current control tower simulators with a "state-of-the-art" data automated system. In 1984, the need was identified for a more realistic VFR simulation presentation media in the ATC tower labs at Ft. Rucker, AL. The proposed data automated simulator would allow students to apply control rules and procedures, develop sound judgement practices, and exercise timely responses to airport traffic situations in a "real time" environment. ETB submitted a Training Device Need Statement (TDNS) to the Directorate of Training and Doctrine (DOTD) in February 1984. The TDNS was forwarded to the project manager of Training Devices, Naval Training Center, Orlando, FL in April 1984 requesting development efforts to satisfy the Training Device Need Statement. In March 1990, the Data Automated Tower Simulator (DATS) program was given the funding go-ahead by PM TRADE. MG John D. Robinson, Aviation Branch Chief and Commandant, USAAVNC, awarded the



Mr. Funkhouser is an Education Specialist, Enlisted Training Battalion, Ft. Rucker, AL.

contract to Dr. Jerry Lamb, Vice President and General Manager of Contraves, Inc., in a formal awards ceremony at Ft. Rucker, AL in July 1991. The first DATS unit is to be installed at Ft. Rucker in January 1993. Training will start after validation and acceptance.

The new DATS system will provide a means for realistic ATC tower simulation not currently provided by the current system. The DATS will simulate ATC ground and air operations with targets responding in real time. The trainer will be used on a daily basis and will reduce the length of On the Job Training (OJT) required by each field site receiving apprentice tower controllers. DATS simulates an ATC tower of standard U.S. Army configuration which accommodates three student and two instructor positions. DATS is equipped to simulate all communications, radio and interphone equipment, brite radar, and all other tower controls in addition to a realistic panoramic view of the airport layout. Dynamic computer images of aircraft and vehicles are depicted. The system shall be capable of introducing day/dusk/night and adverse weather conditions into the training scenario.

The training environment will be comprised of hands-on training of simulated ATC operational equipment used by Army ATC controllers in the tower cab environment. General operations scenarios will begin with simple missions and expand to complex air missions. The tower operators will be responsible for all aircraft operating within the tower control area. The mission will expand into three areas: local control, ground control, and flight data.

Local control maintains a continuous visual surveillance of the airport traffic area and other movement areas. Primary duties are: formulate and issue clearances and control instructions to separate aircraft and vehicles; coordinate operator positions; provide flight assistance to aircraft; operate airport lighting and lighting systems; and notification and dispatch of emergency personnel and equipment.

Ground control exercises surveillance of the airport movement area. Primary duties are: formulate and issue ground movement clearances to aircraft and vehicles; and transmit current weather and field conditions.

Flight data receives, posts, and relays flight data clearances and messages, and assists in the operation of the facility as directed. Primary duties are: operate interphones/telephones and communications; posting, relaying, and coordinating aircraft movement data; monitoring navigational air alarm systems; and posting and relaying ATC clearances and advisories.

As the downsizing of the Army continues, the DATS system will train the operators in the duties listed above in a realistic tower simulation of ground and air operations. This system will produce a better trained soldier requiring less additional training time in the unit. IIIII

AVIATION SOLDIERS

The Backbone of Army Aviation

Directory Sample

LAST NAME, First Name, M.I., (Rank) (Initial Membership Year) (Nickname) Residence Address. Dy: Duty Phone. Res: Residence Phone. S: Spouse's Name. B: Date of Birth. Dy: Duty Assignment. MOS. AAAA Offices Held.

* A professional-personal roster of Enlisted AAAA members. Data sheets were sent to all AAAA enlisted members, requesting information for the following directory. Only those members who responded by 15 May are listed.

A The 1992 Aviation Soldier

Adrales, Loreto R., (SGT) (M89) (Lito) F Troop, 4/17th Cavalry, 18th Aviation Brigade, Fort Bragg, NC 28307-5000. Dy: (919) 396-4114. Res: (919) 396-5950. Dy: 68JX-1 Acft Armament Rep. MOS: 68J.

Arquitt, Frank J., (1SG) (M92) HHC, 4-501st Aviation Bn., Unit 15008, APO AP 96208-0476. S: Lila. Dy: HHC 4th Bn, 501st Avn Regt. MOS: 67Z.

Babcock, Brian W., (SGT) (M91) D Co., 4/159th Avn. Regt., Box 706, APO AE 09274. S: Bettina. Dy: Crew Chief. MOS: 67S.

Babcock, Donald J., (SPC) (M91) (Vitamin) 181st Signal Company, Unit 29228, Box 463, APO AE 09102. Res: (802) 685-3068. Dy: Single Channel Radio Operator. MOS: 31C.

Baca, Guillermo A, (SFC) (M91) (Willie) 1856 Ferrell Drive, Williamsburg, VA 23185. Dy: (804) 878-3610. Res: (804) 868-2729. S: Lynne. Dy: 3rd Staff & Faculty. MOS: 68K.

Baker, William E., (SGM) (M89) (Bill) P.O. Box 26, Marshall, VA 22115. Dy: (703) 806-7067. Res: (703) 364-2362. Dy: Operational Support Airlift. MOS: 93P.

Balbas, Daniel J., (1SG) (M89) C Co., 1-2 Avn. Bn., APO AP 96257-0456. S: Patricia.

Barber, Leon, (CSM) (M92) HST 4th Squadron, 6th Cavalry Brigade, Fort Hood, TX 76544. Dy: (817) 288-3285. Res: (817) 634-3935. S: Linda. Dy: HST, 4th Sqdrn, 6th Cav Bde.

Barfield, Timothy A., (SPC) (M91) (Tim) D Troop, 3-1 Cavalry, Fort Polk, LA 71459. Dy: (318) 531-4425. Res: (318) 531-7955. Dy: 67V OH-58 Scout Helicopter Repair.

Batelaan, David R., (SGT) (M92) B Co., 4-501st Aviation, Unit 15006, APO AP 96208-0474. S: Gabriele. MOS: 67Y.

Batten, Richard J., (SFC) (M90) (Grandpa) A Co. 3 Bn 1st. Avn Regt., Box 3204, APO AE 09250. Dy: First Sergeant. MOS: 67R.

Bausman, Thomas, (SFC) (M91) D Company, 4-25th Aviation, Schofield Barracks, HI 96857. S: Yon Suk. Dy: Aviation Maintenance Plt Sgt, D Co, 4-25th Avn Regt. MOS: 67T.

Beck, John, (CSM) (M88) 1136 Chaffee Street, Fort Knox, KY 40121-2295. Dy: (502) 624-8629. Res: (502) 942-3327. S: Sally. Dy: Command Sergeant Major, 194th Armored Bde (SEP). MOS: 00Z. Past Vp, Hanau Chapter.

Berger, Victor E., (MSG) (M89) (Vic) 1601 Summercourt Drive, Jonesboro, GA 30236. Dy: (404) 362-7862. Res: (404) 473-7331. S: Tallas. Dy: Maint Inspector. MOS: 67Z.

Best, Robert R., (SFC) (M89) (Bubba) D Co., 4/501st Aviation, Unit 15010, Box 196, APO AP 96208-0503. Dy: CRS Plt Sgt, 4/501st Avn. MOS: 68B.

Bethea, Dwayne, (SFC) (M82) (B) 178 Old Bridge Road, Newport News, VA 23602. Dy: (804) 878-2605. Res: (804) 888-6516. S: Marisa. Dy: MMD/MTFB/Maint Test Flt Instructor, Ft Eustis. MOS: 67T.

Blyden, Alphonso V., Jr. (SFC) (M90) (Al) P.O. Box 7738, Fort Gordon, GA 30905. Dy: (404) 791-4341. Dy: Avionics Supvr, Instructor/Writer, HQ & A Co, 366th Sig Bn, 15th Sig. MOS: 68P.

Bodily, Cecil L., (SGM) (M85) HHC 11th Aviation Brigade, CMR 416, Box 1009, APO AE 09140. Dy: S-3, 11th Avn Bde. MOS: 67Z.

Boles, Timothy F., (SFC) (M90) (Tim) 304 Dale Terrace, Clarksville, TN 37042. Dy: (502) 798-7923. Res: (615) 552-4471. S: Hilde. Dy: PSNCO, HHC 101st Avn. Bde.,. MOS: 75Z.

Bock, Marty H., (SPC) (M92) HHC 1-24 AHB, Box 7183, Hunter Army Airfield, GA 31409. Dy: (717) 527-4083. MOS: 67T.

Bounds, Michael B., Jr. (SPC) (M92) (Mike) PSC 13, Box 1206, APO AE 09187. S: Kristina. Dy: 67N10 UH-1H Crewchief. MOS: 67N.

Bowling, Arthur A., (SSG) (M89) (Art) 306 Virginia Avenue, Garner, NC 27529. Dy: (919) 396-2739. Res: (919) 772-8430. S: Pamela. Dy: Hcptr Tech Insp/Plt Sgt, E Co, 1/159th Avn Regt, Ft. Bragg, NC. MOS: 67V.

Boyer, Kimberly L., (SGT) (M92) 142 Walz Circle, Savannah, GA 31404. Dy: (912) 353-2453. Res: (912) 354-2181. Dy: HHC 1/24th Avn Regt, HAAF. MOS: 67T.

Bradey, Christopher, (SPC) (M92) 2655 Union Hall Road, Apt. E-15, Clarksville, TN 37040-5829. Dy: (615) 798-3906. Res: (615) 647-7085. S: Tracy. Dy: Aeroscout Observer, C/2-101. MOS: 93B.

Brown, Robin R., (SPC) (M92) HHC, 17th Aviation Bde., Unit 15270, APO AP 96205-0043. S: Sung Huo. MOS: 710.

Brumbaugh, James G., (SPC) (M92) (Jim) B Co., 1-501st Aviation, Unit 15211, APO AP 96271-0142. S: Elizabeth. Dy: B Co, 1/501st Avn, Camp Humphries, Korea. MOS: 67T.

Bumbar, Michael P., (SSG) (M84) (Merc) Route 1, Box 1078, Teal Circle, Gloucester, VA 23061. Dy: (804) 878-1644. Res: (804) 693-7525. S: Vicki. Dy: Apache Weapons Instructor, 3rd Staff & Faculty Co. MOS: 68X.

Burbank, Devin C., (SFC) (M89) (Finbo) 253 Glennora Way, Buellton, CA 93427-9621. Res: (805) 688-6679. S: Wol Suk. Dy: B Co., 4-58th Avn Regt, APO AP. MOS: 93C.

Calvery, Donnie D., (1SG) (M90) (Don) 604 Cleveland Drive, Clarksville, TN 37042. Dy: (502) 798-5446. Res: (615) 552-0089. S: Barbara. Dy: HSC 160th SOAR(A). MOS: 67Z.

Calvey, John M., (SFC) (M91) HHC 7th MEDCOM, Box 225, APO AE 09102. S: Connie. Dy: Operations NCO, HQ. MOS: 91B.

Campbell, William K., (1SG) (M89) (Ken) Route 1, Box 357-A, Buhl, AL 35446. Res: (205) 339-5217. S: Judy. MOS: 11H.

Chambers, Matthew S., (SPC) (M92) (Matt) T Troop, 4/11 ACR, Unit 20804, Box 68, APO AE 09146. S: Brenda. Dy: 68D-Hcptr Powertrain Repairer. MOS: 68D.

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Cheseldine, Everett A., (SPC) (M88) (Chez) C Co., 9/227th ASB, Unit 20198, Box 240, APO AE 09165. Dy: Attack Helicopter Repairer. MOS: 67Y.

Ciboth, Johann, (CSM) (M87) (John) Aloha Chapter VP Enl Aff., 111 Charleston Street, Wahiawa, HI 96856. Dy: (808) 656-2742. Res: (808) 624-1741. S: Linda. Dy: Avn Bde, 25th ID (L). MOS: 00Z. Past

Clark, Jon T., (SSG) (M86) 11108 Loma Roja, El Paso, TX 79934. Dy: (915) 568-9298. Res: (915) 821-1542. S: Cyndie. Dy: Airframe Repair Supervisor, T Trp, 4/3 ACR, Ft. Bliss, TX. MOS: 68G.

Clifford, Harold E., (SSG) (M87) (Cliff) B Co., 7/159 Avn. Regt., Unit 26405, Box 23, APO AE 09182. S: Helga. Dy: Acrft Struct Repair. MOS: 68G.

Cohill, Larry, (1SG) (M86) HHC CAB 3ID, CMR 454, Box 2489, APO AE 09250. S: Annetta. MOS: 67Z.

Cole, Walter, (SGM) (M87) (Walt) 4128 Point Hollow Lane, Fairfax, VA 22033. Dy: (703) 325-8324. S: Sandra. Dy: Aviation/Transportation Br., PERSCOM. MOS: 67Z.

Collins, John C., (MSG) (M90) (JC) K-16 Seoul Airbase, P.O. Box 10, APO AP 96205-0011. S: Suki. Dy: Installation SGM, Seoul Airbase Installation Support Activity. MOS: 67Z.

Combs, Donald C., (SSG) (M86) 9102-B James Madison Ct., Schofield Barracks, HI 96786. Dy: (808) 656-2795. Res: (808) 624-4918. S: Susan. Dy: Quality Control, E Co, 214th Avn Regt. MOS: 67T.

Cook, Christopher, (SGT) (M92) (Chris) B Co., 2-501st Aviation, Unit 15212, APO AP 96271-0148. S: Peggy Lynn. Dy: B Co, Innkeepers, 2/501st Avn Regt, 2ND Fit Plt. MOS: 67U.

Cooper, Rickey L., (SSG) (M89) 61 Diamond Avenue, Fort Rucker, AL 36362. Dy: (205) 255-2470. Res: (205) 598-5522. S: Mary. Dy: ETB. MOS: 67T.

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W The 1992 Aviation Soldier

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TRAINING:

TRAINING WITH THE GUARD & RESERVE

BY COLONEL CHRISTOPHER D. CALHOON

FORT WAINWRIGHT, AK — The Aviation Brigade, 6th Infantry Division (Light), headquartered at Ft. Wainwright, AK, has just completed a very successful winter of intense field training activity that stretched from Kobuk, on the western periphery of Alaska, to Ft. Chaffee, AR. The close relationships this Brigade maintains with its roundout attack helicopter battalion, and with the Alaska Army and Air National Guard, are the key ingredients making this training possible in a time of sparsely available Military Airlift Command (MAC) support.

A March rotation to the Joint Readiness Training Center (JRTC) at Ft. Chaffee was our centerpiece exercise this winter. Due to a shortage of MAC airlift, a full aviation package could not be sent from Alaska. For the second consecutive year, the 2nd Battalion, 123rd Aviation Regiment (Attack Helicopter), our roundout unit located in St. Paul, MN, loaned us AH-1S, OH-58, and UH-1 aircraft for the JRTC rotation. To balance this loan, the 2nd Battalion, under the command of LTC Dan McGraw, simultaneously deployed to Alaska on annual training and borrowed the 4th Squadron, 9th Cavalry's aircraft and equipment for a major exercise. This exchange of aircraft and equipment allowed the conduct of two simultaneous exercises at minimal cost.

Task Force 4/123 (4th Battalion, 123rd Aviation Regiment, from Ft. Wainwright), under the leadership of LTC John Moorman, picked up the 2/123rd's AH-1S and OH-58 aircraft in St. Paul, MN and ferried them to JRTC. Twelve UH-1s and the task force rolling stock from Alaska arrived by C-5A. This rotation was further augmented with CH-47 Chinook helicopters from the 2nd Battalion, 159th Aviation Regiment from Ft. Bragg, NC, and EH-60s from the 3rd Battalion, 5th Aviation Regiment (Provisional), Ft. Polk, LA.

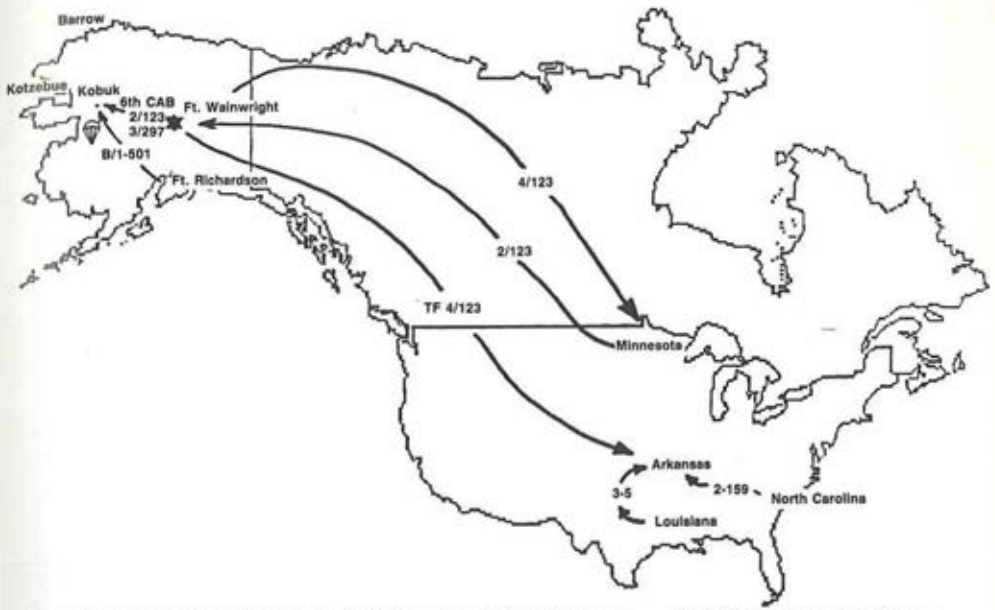
Alaskan CH-47 and EH-60 aircrews shared cockpits with those from Ft. Bragg and Ft. Polk to participate in the operation. Task Force 4/123 had an exceptional rotation and served as a maneuver headquarters in one of the most successful air assault raids ever conducted at the JRTC. In addition, the C Troop, 4th Squadron, 9th Cavalry element, led by CPT Kirk Hansen, excelled during the defensive phase. The outstanding execution by scout/attack teams resulted in seven enemy vehicles being destroyed. Coupled with F-16s to form Joint Air Attack Teams (JAATs), they accounted for the destruction of nearly fifty percent of the enemy armor force. This proved to be the best executed aviation defensive operation to date at the JRTC.

COL Calhoon is Commander, Aviation Brigade, 6th Infantry Division (Light), Ft. Wainwright, AK.

Another noteworthy task force achievement was the full employment of CH-47s. It was the first time the CH-47 aircraft conducted all operations from inside the "Box". The aircrews flew countless missions, day and night, with no losses. The aircraft's survivability rate proved to be better than any other type of aircraft on the rotation.

Meanwhile, an Aviation Brigade task force consisting of those units not deployed to JRTC and the 2nd Battalion elements from St. Paul conducted Operation ARCTIC REACH, a 42-day deployment to a bare base gravel strip near Kobuk, AK, some 265 miles northwest of Ft. Wainwright.

The Aviation Brigade task force served as a maneuver and exercise control headquarters for the 3rd Battalion (Scout), 297th Infantry, an Eskimo Scout unit commanded by LTC Jack Hopstad, undergoing their annual training. Aviation Brigade provided exercise control and evaluation, staff operations instruction, and air assault support. The task force also included Company B, 1st Battalion (Airborne), 501st Infantry Regiment, a 6th ID(L) airborne company



from Ft. Richardson, AK, that assisted in training the Scouts. Some 120 paratroopers jumped during the training in temperatures down to -42 degrees Fahrenheit, and participated in numerous air assault operations.

More than 1,000 flight hours were flown ranging from Barrow to Kotzebue in tough winter conditions with low visibilities and temperatures to 57 degrees below zero. The entire operation would not have been possible without the outstanding rapport that exists between the 6th ID(L) and the Alaska Army and Air National Guard. Significantly, the Air National Guard provided gratis the airlift to deploy this task force to Kobuk.

In addition to their one week participation in ARCTIC REACH; the 4th Squadron, 9th Cavalry, under LTC Bill Vogel, assisted the Minnesota aviators in a week of JAAT training with the 343rd Tactical Fighter Wing at their home base, Eielson AFB. The JAAT Affiliation program that has been ongoing between the 4th Squadron and the 343rd was described by General Merrill A. McPeak, Chief of Staff of the U.S. Air Force, as the premier JAAT team in the United States military and the model for future division-fighter wing affiliations.

The Aviation Brigade's participation in the 3rd Battalion (Scout)'s annual training allowed the Alaska ARNG's 1st Battalion, 207th Aviation Regiment, which normally must conduct annual training in piecemeal fashion, to conduct a very successful regimental annual training period supporting the Guard's 207th Group at Ft. Richardson with active Army Aviation Brigade evaluators.

If all this interface, interchange, and cooperation sounds complex, it is. However, it has all been possible because, here in Alaska, the Army chains of command—Active, Reserve, and National Guard—work together as one Army to provide the best training possible for our soldiers.

The support we receive here in the 6th Infantry Division (Light) from the Alaska Army National Guard under COL Tom Carroll, the Air National Guard under Col. Ken Taylor, and from the 343rd Tactical Fighter Wing under Col. Walter Van Horn, is second to none. We have a good thing going in Alaska, and it involves all components—a total Army/Air Force team. I think we have a model here that could be emulated elsewhere to further our military's efforts towards a Total Force. IIIII

OPERATIONS:

CRASH RESCUE: FLATIRON

BY CAPTAIN RANDAL A. SCHWALLIE

FT. RUCKER, AL — The Crash Rescue mission at Ft. Rucker, AL has been documented starting in 1957 as Crash 19. The original Crash 19 belonged to the Army Board of Aviation and in 1960 gave the mission to a newly-formed unit assigned to Lyster Army Hospital. FLATIRON formed in 1960 to augment the medical coverage provided by Lyster Army Hospital at all airfields at Ft. Rucker.

Medical support for the Army School of Aviation has always been present at Ft. Rucker on every airfield. Originally, there were ground ambulances at every airfield, but the fact that a helicopter could be used to provide medical coverage for many airfields at once relieved the need for the great number of medical personnel required. The original FLATIRON was formed under the direction of the hospital. All FLATIRON personnel, field medics, and ambulances were in the same unit.

A single H-34 was designated from the Army as the first FLATIRON aircraft. The original FLATIRON aircraft was painted green with a small red cross on a field of white on either side of the aircraft. As far back as Crash 19 days, it was suggested that the aircraft be painted a different color so as to distinguish the crash rescue aircraft from the school aircraft. After a great deal of debate, the first commander of FLATIRON, Raymond P. Bosworth, had the first H-34 painted with the permission of the Chief of Transportation of the Army, but without permission of the post commander. He then flew it over the post as the only white helicopter in the Army. He obviously attracted a great deal of attention, but the unit never had to change back to the Army combat color scheme.

The origin of the FLATIRON name has been the subject of controversy for many years. Many people claimed that the original unit went by the call sign of "Jim Dandy", from the old saying of "Jim Dandy to the rescue." Then, in the 1970s, one of the post commanders demanded that the MEDEVAC aircraft be in the air during the entire time that the school was flying. In other words, when one aircraft had to land for fuel, another aircraft was launched. It was thought that the commander made reference to the requirement as being similar to the flat iron that was used to iron clothes—one being used, while the other was in the fire.

Mr. Bosworth, however, stated that the FLATIRON name grew out of the fact that the H-34 was designed to have approximately three to four minutes to warm up before engaging the rotor system. He instructed his pilots to leave everything engaged so that the aircraft would be ready to fly in less than one minute. In Mr. Bosworth's own words, they were "always hot". The old "Jim Dandy" call sign could have possibly been from the original MEDEVAC-aircraft that belonged to the Aviation Board before FLATIRON was developed.

The original unit was stationed at Cairns Army Airfield in an old hangar that was later destroyed. The unit then reported to work in the snack bar with the aircraft parked in front of the tower. The original unit worked from 0600 hours to 2000 hours every work day. A few years later, the unit was moved into the building that it presently occupies. The building was transformed over the years from a storage hangar to a fully manned and functional 24 hour station, 365 days a year.

The role of Crash Rescue was the original purpose for creating the ambulance unit. FLATIRON was only a part of the ambulance unit that belonged to Lyster Army Hospital, and soon began moving patients from Ft. Rucker to Martin Army Hospital in Ft. Benning, GA, for more definitive care. These evacuations were done primarily at night and sometimes on weekends, since that was when the school did not fly.

In the late 1960s, FLATIRON received its first UH-1. The added power and reliability of the turbine engine increased the capability of the unit. The unit mission grew as it provided

CPT Schwallie was the Maintenance Officer for the FLATIRON Crash Rescue organization when this article was written.

"The FLATIRON mission also grew in 1974, when support of the civilian community became a new responsibility for the unit through its new Military Assistance to Safety and Traffic (MAST) charter."

Above: FLATIRON personnel and one of their Crash Rescue ships.

support for the inflated School of Aviation during the Vietnam War. OH-58s were added to FLATIRON for a short while to provide flight training for the Army Flight Surgeon's Course. Unfortunately, the OH-58s were turned back in during 1980 when the School of Aviation offered to give the Flight Surgeons flight training. Flight training was later cut from the program in 1988, due to a change in the primary aircraft from the TH-55 to the UH-1, and also due to major cutbacks that the Army was forced to heed.

The FLATIRON mission also grew in 1974 when support of the civilian community became a new responsibility for the unit through its new Military Assistance to Safety and Traffic (MAST) charter. The new program allowed military support of the civilian emergency medical system, especially in rural areas like southeast AL, where existing emergency services were not adequate. The charter was designed to help assist local communities, but is restricted against competition that would conflict with existing civilian services.

FLATIRON added a patch to the uniform of its personnel in the early 1970s. In 1974, the patch was changed to include the word MAST on the existing patch. The patch has remained unchanged since that time.IIIII

OPERATIONS:

EAGLE FLIGHT: TIP OF THE SPEAR

BY COL GREGORY T. JOHNSON & MAJ MICHAEL J. CAPTAIN

ILLESHIEM, GERMANY — The 11th Aviation Brigade from Illesheim, Germany has proven the United States Army Aviation is an extremely lethal asset on the modern battlefield. During Operations DESERT SHIELD, DESERT STORM, and PROVIDE COMFORT, the unit's three AH-64 Battalions demonstrated to the world what American technical and tactical expertise is all about. In October 1991, the Brigade's last remaining Apache Battalion in the Southwest Asian Theater of Operation under the control of 4th Aviation Brigade, 3rd Infantry Division concluded their role in Operation PROVIDE COMFORT. This ended both the largest concentration of U.S. Army Aviation assets in Northern Iraq and the armed escort of UH-60 humanitarian relief efforts for the Kurdish population of the region. Yet one small group of 11th Aviation Brigade personnel remained in the area.

Eagle Flight

Eagle Flight Detachment assumed the mission of providing UH-60 aircraft support to the Military Coordination Center (MCC) of the Combined Task Force (CTF) for Operation PROVIDE COMFORT on 29 September 1991. Composed of twenty-six soldiers, along with a six man contract maintenance team, the detachment maintains a fleet of six UH-60 helicopters equipped with the External Stores Support System (ESSS) which fly daily missions into Northern Iraq. The composition of the detachment allows it to have both unit and intermediate aircraft maintenance capability which has proven its importance on numerous occasions.

The Spear of Operation PROVIDE COMFORT comes from the Coalition air power located at Incirlik Air Base, near the city of Adana, in southern Turkey. The various types of reconnaissance and attack aircraft located here provide the only communications relay Eagle Flight has with CTF Headquarters at Incirlik when it is conducting operations in the Tactical Area of Responsibility (TAOR), i.e. Northern Iraq.

Eagle Flight bases its operation from three different locations in South Eastern Turkey. A three man liaison team located at Incirlik Air Base provides technical expertise to the CTF Commander on mission related issues. Eagle Flight personnel are billeted at Pirinclik Air Station, a USAF Radar Site approximately 230 nm east of Incirlik Air Base. From here a flight operations section with a full range of communications equipment provides flight following and coordination for all missions flown into the TAOR. The six ESSS UH-60 aircraft are maintained from a Clamshell Hangar at Diyarbakir Air Base, a Turkish Air Force installation 18 miles further East from Pirinclik. On a daily basis aircraft from the Detachment begin their mission by first flying the additional 130 nm leg east to Zakho Iraq, the Military Coordination Center (MCC) Headquarters for Operation PROVIDE COMFORT. After picking up MCC personnel, the mission then begins into Northern Iraq. Operating in areas in excess of 400 nm from the nearest coalition assets, Eagle Flight has become the most forward deployed aviation element in Operation PROVIDE COMFORT and has thus become the Tip of the Spear.

The MCC mission into Northern Iraq has been to both coordinate humanitarian relief efforts and to provide a means of checks and balances with the Iraqi military to ensure the future safety of the Kurds in the region. Eagle Flight provides the MCC Commander, Colonel Richard Naab, aerial transportation assets to watch over Northern Iraq. His area of responsibility covers over 2,500 square miles. Being the only Cowboys in Indian Territory on a daily basis gives you a new meaning to the term situational

COL Johnson is Commander, 11th Aviation Brigade, Illesheim, Germany.

MAJ Captain is with the HHC, 11th Aviation Brigade, Illeshiem, Germany.

Above, left to right: CW2 John Bassilli, interpreter; COL Richard Naab, Commander, MCC; Kurdish Leader; and co-author MAJ Michael Captain. Photo was taken at Kurdish Headquarters, located at Shaqwala, Iraq.

awareness. The missions are always changing and are never routine.

The ESSS configuration provides the detachment aircraft approximately five hours of fuel for daily missions. No forward refueling assets are currently in operation so the internal fuel carried is a precious commodity. This extended flight duration capability played an extremely important role in numerous life and death situations during this past winter.

The winter of 1992 was the worst in forty years for Southern Turkey and Northern Iraq. Snowfall accumulated to depths between three and four feet in regions that were barely existing with no new natural obstacles to deal with. Along with the snow came two avalanches. Eagle Flight was there to assist both the Turkish government and the Kurds of Northern Iraq during this period. In addition to providing transportation for Turkish search and rescue teams in the mountainous areas affected by the avalanches, the detachment also provided medical evacuation capability which directly contributed to the saving of numerous lives. For the remote Iraqi Kurdish villages cut off from any means of resupply, Eagle Flight delivered more than 115 tons of food and clothing to many people who were otherwise destined for starvation. All this was accomplished in treacherous mountain flying conditions and in many cases during heavy snowstorms.

The key to the success of Eagle Flight has been the ability of the detachment's soldiers to get the job done efficiently and safely. Maintenance personnel of this organization have consistently met the challenge. In some cases this required the launching of three to four Fully Mission Capable (FMC) UH-60s for missions of five hours in duration for two consecutive weeks at a time.

Operational readiness rates have consistently been over 85% with flight hours totalling more than 220 monthly. Although it would be nice to take all the credit for these statistics, other key groups which play an equally important role are the outstanding logistic teams of both CTF and USAREUR. This collective maintenance effort has made Eagle Flight successful and has saved lives in the process.

The men and women of Eagle Flight and the 11th Aviation Brigade remain ready for any contingency. We make the difference! IIIII

HARDWARE:

NORTH TO ALASKA

BY MAJOR MICHAEL N. RILEY

FORT RUCKER, AL — The world's finest attack helicopter has chalked up another first. The AH-64A Apache recently completed a month of extreme cold weather testing at Fort Greely, AK. The test was a culmination of nearly a year's worth of work by virtually every organization participating in the test. Three U.S. Army Test and Evaluation Command (TECOM) agencies conducted the test.

The U.S. Army Aviation Technical Test Center (ATTC), headquartered at Cairns Army Airfield (AAF), Fort Rucker, AL, was responsible for flying the test and conducting several key systems evaluations. Yuma Proving Ground (YPG), AZ, was responsible for overseeing weapons accuracy evaluations. Last, and certainly not least, the Cold Regions Test Center (CRTC), Fort Greely, AK, hosted the test. CRTC was responsible for providing life support, ranges for testing, and various administrative support.

Several other organizations joined TECOM during the test. McDonnell Douglas Helicopter Company (MDHC) provided the aircraft maintenance team. Their team maintained the aircraft, armament, avionics, and instrumentation systems. They also provided the fourth test pilot to supplement the three from ATTC, which filled out the second aircrew. Also present at Ft. Greely were representatives from the Apache Program Manager's (PM) office, and the Army Materiel Systems Analysis Agency (AMSAA), headquartered at Aberdeen Proving Ground, MD. Martin-Marietta, who produces the Target Acquisition and Designation System/Pilot Night Vision System (TADS/PNVS) provided maintenance support for their product.

The world saw the Apache's performance in extreme heat during Operation DESERT STORM. The purpose of the Ft. Greely test was to verify that the Apache could, in fact, perform its mission at the "other end" of the adverse environment ladder: extreme cold. The Apache has never been fully evaluated in extreme cold weather. Limited testing was conducted on the Apache prototype in a climatic chamber, and ATTC (previously the U.S. Army Aviation Development Test Activity [ADTA]) conducted a limited evaluation at Fort Drum, NY, in 1988.

MAJ Riley is Chief, Flight Test Branch 1, Aviation Technical Test Center (ATTC), Ft. Rucker, AL.

This current test addressed some of the issues raised by both previous tests as well as providing data on engine start capabilities, weapons and laser accuracies, and navigation accuracies in the temperature range of +5° to -25° Fahrenheit (F). That's right, -25°F! For nearly three weeks, the aircraft and the test team experienced temperatures in that range and lower.

The test aircraft was as representative of the current operational fleet as possible. The aircraft had less than 175 hours when it was taken from the flight line of the Apache Training Brigade and delivered to MDHC for installation of the necessary test instrumentation. The aircraft was equipped with T700-GE-701C engines with the currently fielded Mod III Digital Electronic Control Units (DECU). It also had an operational Back-Up Control System (BUCS) installed. As the ATTC project officer, I speak for the entire crew when I say that the test in Alaska was an "experience" none of us will soon forget. We traveled to Alaska commercially which we originally thought would be a Godsend, but after the 24-hour "flight-from-Hell" we were not so sure. When the team left Alabama, it was a balmy 60 degrees, and when we arrived in Fairbanks, AK, at 2300 hours, it was -20 degrees. Talk about shock to the system!

Serious thought was given to self-deployment, but the current restriction on the use of external fuel tanks with GE 701C engines ended that plan. The aircraft was instead transported from Mesa, AZ by C-5 to Eielson AFB, AK, which is adjacent to Fairbanks.

The aircraft was reassembled, test flown and then ferried to Fort Greely.

The test team was treated like royalty by all at Ft. Greely. The flight detachment at Allen AAF (although not a part of CRTC), commanded by MAJ Fred Macias, provided us with office space and a maintenance area. Their hospitality exceeded all expectations and was greatly appreciated. They also provided the test pilots with local area orientation and snow currency flights prior to the arrival of the test aircraft.

The CRTC staff made sure we were housed and properly attired in all of the latest "winter fashions". Without their help we would have been very uncomfortable. They also ran a first class range support operation without which there wouldn't have been a test.

Despite everything that LTC Dean R. Ertwine, the commander of CRTC, told us, the test team is convinced that "Northern Exposure" was filmed at Ft. Greely. It's easy to understand why. There are as many free-roaming moose at Ft. Greely as there are people.

The project test pilots flew a total 34 hours during the test. We averaged two flight periods per day which coincided with morning and afternoon range periods. The two crews flew a variety of tests: a Doppler navigation accuracy test, a laser rangefinder/designator accuracy and boresight retention test, target recognition tests, and tests that included firing all the aircraft weapons systems. With the possible exception of the Mark 66-equipped 2.75-inch Folding Fin Aerial Rocket (FFAR), none of the Apache weapons systems had ever been fired in Alaska.

There were actually several "firsts" for the Apache during this test. The first was the arrival of the aircraft on 30 January 1992. This date marked the arrival of the first Apache north of the contiguous 48 states. The next day was the actual first flight of the Apache in Alaska. This test also saw the firing of the first Hellfire missiles from an Apache in extreme cold weather. All of the firings were successful, and the data derived promises to be extremely beneficial, particularly in terms of Tactics, Techniques, and Procedures (TTP) for cold environments. Initial results indicate that the Apache can do its mission "as advertised" in an extremely cold environment. More data analysis is being conducted every day with the ultimate goal of providing the field the best aircraft possible. IIIII

1957

Army Aviation's Fifteenth

June 6, 1957 marked the 15th Anniversary of Army Aviation. At Fort Rucker, AL, some 250 officials of industry joined with other guests and the personnel and dependents of the Army Aviation Center in celebrating this milestone.

Keynoting the celebration were an "open" Air Show in which crack military and civilian pilots paraded some 30 different aircraft before the assemblage, and the formal presentation of the first Master Army Aviator Badge to BG W. W. Ford, Ret.

Although extensive, the scope of the formal celebration did not overshadow the separate celebration of a small hard core of "Old Timers" who gathered at Ft. Rucker from near and far to compare hair lines and swap pleasant memories of another day.

A good part of their conversation concerned their personal participation in the brand new Army Aviation Association of America (AAAA) that had been organized two months earlier. More than 150 separate enthusiasts had volunteered to man the organization's 13 CONUS and two APO Regions.

Still another highlight of the 15th Anniversary Year was the initiation of the aerial delivery of Army aircraft to overseas destinations in USAREUR with the completion of a flight of two L-23D Seminoles.

The transoceanic flight started at Davison AAF, VA, at noon on June 8 and the last leg was flown from Prestwick, Scotland to Heidelberg with a landing at USAREUR HQs at 1015Z on June 15.

from the files of
AAAA Archivist — Art Kesten

While inspecting the Bell XH-40, Under Secretary of the Army, Charles C. Finucane, is briefed by Bell's Hans Weichsel (center) and Col. Robert R. Williams, the host at the Air Show and static displays.

Brig. Gen. W. W. Ford (Ret.) receives the first Master Army Aviator Badge from General W. G. Wyman, (r.) Commanding General, CONARC, Ft. Monroe, VA.

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BRIEFINGS

COL John O. Benson assumed the duties of Commander/Director of the Aviation Applied Technology Directorate (AATD), Ft. Eustis, VA, on 24 February 1992. He succeeded **COL David E. Sullivan**, who has been appointed Director, Aviation Maintainability Strategy Study Group at Ft. Eustis for the Technical Director, U.S. Army Aviation Systems Command (AVSCOM), St. Louis, MO. Benson, a dual-rated Master Aviator with approximately 2,500 hours, has held command and staff positions in Vietnam, Hawaii, various CONUS locations, and Washington D.C.

Daniel J. Rubery, Logistics Director, U.S. Army Aviation Systems Command (AVSCOM), is the recipient of the 1991 Senior Executive Association Professional Development League's Executive Excellence Award. Rubery's award is based on his outstanding management at AVSCOM and as the architect of the Theater Aviation Support Program-Southwest Asia. His recognition marks the first time since 1985 the prestigious award has gone to the Army. The presentation ceremony was held 28 January in Washington, D.C.

The **Southeast Region** of the American Helicopter Society (AHS) and the **Colonial Virginia Chapter** of AAAA will host a National Specialists' Meeting on Helicopter Military Operations Technology (HELMOT V) 17-19 November 1992 in Williamsburg, PA.

CW2 Michael D. Henson and **CW2 Thomas J. Norton**, both of Troop C, 1st Squadron, 17th Cavalry, Ft. Bragg, NC died in a helicopter crash at Fort A.P. Hill on 16 March 1992. Henson was promoted to Chief Warrant Officer 2 posthumously. He joined the Army in January 1989, and was assigned to Ft. Bragg in August 1991. He had been a member of AAAA since 1989. Norton entered the Army in November 1984, and was assigned to Ft. Bragg in June 1990. He had been a member of AAAA since 1988.

The **U.S. Army Materiel Command** announced the establishment of a new command to be headquartered in the Central Florida Research Park, adjacent to the University of Central Florida. The **U.S. Army Simulation, Training, and Instrumentation Command (STRICOM)** is a significant expansion of the Army's role in simulation and will add two new Project Managers to the area in addition to Project Manager for Training Devices (PM TRADE), which has been in the Orlando area since 1976. The Army's Project Manager Instrumentation, Targets, and Threat Simulators will relocate from Aberdeen Proving Ground, MD, and the Project Manager Combined Arms Tactical Trainer will be formed from the current PM TRADE staff.

McDonnell Douglas Helicopter Company has named **Charles Hughes**, 45, as Director of Engineering for Military Programs. Hughes formerly was director of product definition for the MD Explorer program and, more recently, the AH-64A Apache program.

The Boeing Sikorsky RAH-66 Comanche Team has successfully demonstrated an improved laser training system that may enhance the U.S. Army's ability to conduct realistic training exercises without using live ammunition. Known as Multipurpose Improved Conventional MILES

(MPICM), it offers improvement over the currently fielded Multiple Integrated Laser Engagement System (MILES). MPICM will provide more realistic training and accurate scoring in combined arms maneuvers at the National Training Center at Ft. Irwin, CA.

BG Robert A. Goodbary, Assistant Commandant of the Army Aviation School and Deputy Commanding General of U.S. Army Aviation Center since 21 October 1991, has been nominated by the President of the United States for promotion to the rank of Major General. Neither his date of promotion nor next assignment have been determined.

In its bid to secure the contract for an off-the-shelf replacement for the U.S. Army's aging UH-1H light utility helicopter, the Aircraft Division of **LTV Aerospace and Defense** has joined forces with **American Eurocopter** (formerly **Aerospatiale**), **LHTEC**, and **IBM** to produce the Panther 800, a variant of the AS-565 airframe equipped with two T800 engines and an improved, state-of-the-art cockpit. The Panther 800 is a sister ship to the U.S. Coast Guard's HH-65 Dolphin, which has more than 200,000 hours fleet service.

CPT Janet A. Hubbert has been named the recipient of the Whirly-Girls' **Marie T. Rossi Flight Scholarship**, awarded in memory of MAJ Marie T. Rossi-Cayton, who was killed while flying an Army CH-47D Chinook during Operation DESERT STORM. CPT Hubbert is an Army Aviator from El Paso, TX.

The 1st Battalion, 149th Aviation Regiment is presently involved with fielding of the AH-64A Apache advanced attack helicopter. This fielding program offers a unique opportunity for progressive non-prior service individuals who are seeking to develop new job skills. The unit is also accepting soldiers with Apache-peculiar MOS qualifications who are leaving active duty and want to continue their career in the Army National Guard. Please call (C) (713) 929-2765, or write to: Commander, 1st Battalion, 149th Aviation Regiment, ATTN: S-1, Bldg 1182, Ellington ANGB, Houston, TX 77034-5596.

IBM Federal Systems Company, Owego, NY, and **ITT Aerospace/Communications Division**, Ft. Wayne, IN, are working together to develop a solution for enhanced battlefield combat identification and situational awareness. The IBM/ITT approach focuses on a total system solution using operationally fielded equipment which is applicable to a wide range of platforms.

The Second World Wide Gathering of L-Birds to be hosted again by the **International Liaison Pilot and Aircraft Association (ILPA)**, will be held in Keokuk, IA, 27-29 July 1992. Contact Irv Linder, Route 1, Keokuk, IA 52632. Telephone: (319) 524-6203.

Company C, 1st Battalion, 223rd Aviation Regiment, Aviation Training Brigade, Ft. Rucker, AL, has been awarded the Army Aviation Center Bronze Plaque Award for 100,000 accident free flying hours. This award is usually presented to brigade-sized units, as they fly enough aircraft to achieve such a high level standard. Company C is solely responsible for all of Ft. Rucker's Black Hawk training.

Errata: The June 1992 issue contained three errors. On page 30, author **Robert Leutwyler** is Chief, C^2 Integrated Systems Branch, Tactical Information Systems Division, AVRADA/EID, and co-author **Dr. Stanley Sokolowski** is Project Leader, Tactical Data Acquisition Correlation Program, AVRADA/EID. In addition, on page 72, **LTC Virgil L. Packett, II** is the Commander, of 6/6 Cavalry.

BRIEFINGS

Edwin J. "Duke" Ducayet, the first president of Bell Helicopter Corp., died of a stroke 8 May 1992 at All Saints Hospital in Ft. Worth, TX. As president of Bell Helicopter for more than a decade, he guided the company to its foremost position in the rotary wing industry. Mr. Ducayet attributed part of the company's success to its employee relations. "Our big asset is people," he said. "We have a good organization. We have good people. We try to make this a good place to work, and I think we have." Mr. Ducayet became the company's first president on 2 July 1960. He retired in 1972.

UNC Incorporated, the Annapolis-based aviation company, announced that its UNC Aviation Services will continue to provide initial entry helicopter pilot training for all U.S. Army and Air Force aviation candidates. The Division will continue to provide advance helicopter and fixed-wing training to U.S. Army pilots.

Underage Veterans Sought: The Veterans of Underage Military Service is trying to contact all veterans who served in the U.S. Military for any length of time under the age of 17. A reunion will be held in Las Vegas in October, and interested parties should contact Allan C. Stover, 3444 Walker Drive, Ellicott City, MD 21042.

The **Aviation Applied Technology Directorate (AATD)**, Ft. Eustis, VA has awarded a 24-month, $478,004 Phase II Small Business Innovative Research (SBIR) contract to **Simula, Inc.**, Phoenix, AZ to conduct design and testing for the purpose of developing a helicopter air bag crash protection system. "Secondary cockpit strikes of the head and upper torso account for two out of three major and fatal injuries in potentially survivable Army helicopter crash impacts," said Kent Smith, Project Engineer, AATD.

MAILBOX

Share your opinion on matters of interest to the Army Aviation Community. The Publisher reserves the right to edit letters for style, accuracy, or space limitations. All letters must be signed and authors identified. The Publisher will withhold the author's name upon request. The opinions expressed are those of the authors, and do not reflect the opinion of ARMY AVIATION Magazine. Send letters to: AAAA MAILBOX, 49 Richmondville Avenue, Westport, CT 06880-2000

To the Editor: I read with interest your 50 Years of Army Aviation on page 68 of the February 1992 issue, but I believe the allegation that CPT Ford Allcorn was shot down by the U.S. Navy is incorrect. Ford Allcorn was the Army's coordinator for Instrument Flight Training at Spartan School of Aeronautics in Tulsa, OK in November 1951. I was one of the students in the instrument training program. We were told by MAJ Allcorn that he was shot down by an American lieutenant firing a .30 caliber machine gun from a tank or armored vehicle—after having been subjected to quite intense gunfire from said U.S. Navy from the time he took off from the USS *Ranger* all the way to the shore.

I do not know if Ford Allcorn is alive or not, but maybe Art Kesten (AAAA Archivist) could so determine and get Allcorn's version of the event. We should have an accurate account for the Army Aviation history files, and thus not blame the U.S. Navy for what they did not do—though they tried like hell.

Sincerely,

LTC Guy R. Claybourn, Jr., Ret.

— We have checked with Art. Unfortunately, Ford Allcorn died some years ago. However, your account sounds good to us, so the record stands corrected. — Editor.

AWARDS AND HONORS

The following information is provided by the U.S. Army Aviation Center at Ft. Rucker, AL:

Initial Courses:

Class 91-19 UH-60 Track (10/4/92): WO Robert L. Brown, Dist. Grad.; WO William W. Miller, Honor Grad.

Class 91-18 AH-1 Track (10/4/92): WO Gregory L. Guy, Dist. Grad.; WO Michael E. Rohde, Honor Grad.

Class 91-22 UH-1 Track (8/5/92): 2LT Ronald L. Jackson, Dist. Grad.; 1LT Darren P. Elisar, Honor Grads.

Class 91-22 UH-1 Track (8/5/92): WO Douglas S. Bradford, Dist. Grad.; WO Thomas E. Keany, Honor Grad.

Class 91-22 OH-58 Track (8/5/92): WO Jeffrey A. Edwards, Dist. Grad.; WO Kelly L. Tincknell, Honor Grad.

Class 91-21 UH-60 Track (8/5/92): 1LT David J. Parramore, Dist. Grad.

Class 91-21 UH-60 Track (8/5/92): WO Vernon W. Smith, Jr., Dist. Grad.

Class 91-20 AH-1 Track (8/5/92): 2LT Joseph S. Curtis, Dist. Grad.

Class 91-20 AH-1 Track (8/5/92): WO Richard S. O'Bryan, Dist. Grad

Class 91-23 UH-1 Track (22/5/92): 2LT Jamie J. Dailey, Dist. Grad.; 2LT Jeffrey C. Gorres, Honor Grad.

Class 91-23 OH-58 Track (22/5/92): 2LT Michael S. Sluski, Dist. Grad.; 2LTs Joseph M. Duncan, Jerome P. Brock, Honor Grads.

Class 91-22 UH-60 Track (22/5/92): CPT Clay E. Autery, Jr., Dist. Grad.

Class 91-22 UH-60 Track (22/5/92): WO Wade R. Ayala, Dist. Grad.

Class 91-21 AH-1 Track (22/5/92): WO Michael S. Lundergan, Dist. Grad.

Class 91-24 UH-1 Track (10/6/92): WO Colin D. Ward, Dist. Grad.

Class 91-24 OH-58 Track (10/6/92): 2LT Robert G. Spignesi, Jr., Dist. Grad.; 2LT Richard K. Crawford, Honor Grad.

Class 91-24 OH-58 Track (10/6/92): WO John D. Sullivan, Dist. Grad.

Class 91-23 UH-60 Track (10/6/92): 2LT Robert W. Brinson, Jr., Dist. Grad.

Class 91-23 UH-60 Track (10/6/92): WO Quinn R. Albert, Dist. Grad.

Class 91-22 AH-1 Track (10/6/92): 2LT Douglas C. Van Weelden, III, Dist. Grad.

Class 91-25 UH-1 Track (24/6/92): WO Guillermo Soto, Jr., Dist. Grad.; WO Kenneth D. Holmes, Honor Grad.

Class 91-25 OH-58 Track (24/6/92): 2LT William L. Erwin, Dist. Grad.

Class 91-25 OH-58 Track (24/6/92): WO Patrick J. Quinton, Dist. Grad.; WOs Rusty A. Norris and Timothy J. Ong, Honor Grads.

Class 91-24 UH-60 Track (24/6/92): 2LT Sharon E. DeCrane, Dist. Grad.

Class 91-23 AH-1 Track (24/6/92): 2LT Daniel W. Latvala, Dist. Grad.

Class 92-2 Aviation Officer Advanced Course (28/5/92): CPT Brian P. Shoop, Dist. Grad.; CPTs Brian P. Newton, Bennett E. Singer, John E. Novalis, II, Mark Bakum, Christopher J. Beaudoin, Kathleen A. Boehm, Alan K. Bolton, Daniel D. Davidchik, Christopher P. Davis, David A. Dykes, Jeffrey L. Edwards, Kevin J. Greenwood, William B. Grimes, Steven W. Kihara, John F. Laganelli, John M. Magness, Anthony W. Potts, Lynn K. Pratt, Paul K. Reist, Steven K. Satterlee, David E. Schoolcraft, Alan Seise, Christopher R. Shotts, Michael F. Sobieski, Mark D. Switzer, Douglas K. Ziemer, 1LTs Joseph M. Lyles, Kenneth B. Markshall-Lang, Kyle M. Riedel and Michael K. Slowinski, Honor Grads.

Class 92-1 Aviation Senior Warrant Officer Training Course (5/2/92): CW3 William S. Wood, Dist. Grad.; CW3 Kenneth W. Blankenship, CW2s Benjamin M. Smith, III, Terry R. Knight, Honor Grads.

Class 92-2 Aviation Senior Warrant Officer Training Course (18/3/9): CW2 David L. Molinaro, Dist. Grad.; CW3 Donald R. Menig, CW2s Dennis M. Cordova, Charles S. Waddell and Laura L. Dore, Honor Grads.

Class 92-3 Aviation Senior Warrant Officer Training Course (29/4/92): CW3 Michael R. Smith, Dist. Grad.; CW3 Darryle R. Mongeon, CW2s Dale J. Voitus, David R. Miles, CW4 Robert E. Gordon, Honor Grad.

Class 92-4 Aviation Senior Warrant Officer Training Course (12/6/92): CW3 Jeffery G. Fagan, Dist. Grad.; CW4s Jack H. Dotterer, Peter R. Kalogris, CW3s James L., Couch, II, and Philip W. Houston, Honor Grads.

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APO AE 09063

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Miller, Peter A.
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Cooney, James T.
209 Manning Drive
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APO AA 34003

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Exelby, Holly E.
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McLean, VA 22101
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AIR ASSAULT CHAPTER
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CW2 John B. McDonald
CW2 Jeffrey A. Ritchie
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CPT Richard T. Smiley
CPT Dan E. Williams
MSG Dale D. Willis

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CPT Anthony P. Cornett
1LT Carl W. Cowen
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WOC Michael J. Linn
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WOC Randy S. Matthews
WOC Daniel R. Mays
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WOC Stormy L. McLemore
2LT Gregory S. McReynolds
WOC Joseph D. Mercurio
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WOC Princeton K. Soh
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WOC Jason D. Swiger
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WOC Jay B. Veronko
WOC Reginald W. Warner
WOC Mark S. Weatherly

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2LT Christopher J. Yuskaitis

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ORLANDO, FL

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PFC David R. Wilson

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LTC John L. Caldwell
Mr. Mathew S. Maney
MAJ Stephen S. Slyfield
MG Kenneth R. Wykle

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SGT Lenwood A. Rogers
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Mr. Bruce T. Stanley
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ATLANTA, GA

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INDIANTOWN GAP, PA

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CW2 K. Cook
WO1 Edward C. DeGuisto, III
CW2 Kevin J. Devery
SSG E. Hernandez
CW3 T. Kanas
SGT S. Lawrence
SGT G. Mason
SSG T. McDonald
CW4 T. McGurn
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SFC R. Santos
CW3 P. Schineller
SFC D. Sorbie
SGT W. Sturges
CW2 L. Timolat
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CW2 K. Wocel

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1LT Darin W. Hargreaves
MAJ Hope M. Jones-Alger
CW2 Dale A. Suggs

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HUNTER AAF, GA

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CW3 Randy L. Bolding
CW3 Gregory D. Dalzell
SPC Maurice D. Dampier, Jr.
CW4 David B. Dufault
CW3 Clifford J. Evans
CW2 Daniel A. Milberg
CPT John H. Robbins
1LT Susan E. Taylor
CW2 Henry V. Wiggins

SOUTHERN CALIFORNIA
LOS ANGELES, CA

CPT Daniel J. Powers

TAUNUS CHAPTER
WIESBADEN, GERMANY

MAJ Daniel F. McCormack
CPT Stephen M. Wells, III

TENNESSEE VALLEY
HUNTSVILLE, AL

LTC Gary N. Williamson, Ret.

WASHINGTON DC CHAPTER
WASHINGTON, DC

Lt.Col Americo J. Henriques
SFC Robert G. MaGee, Ret.
Mr. C. David Massey
SSG Raymond McDuffy

WRIGHT BROTHERS
COLUMBUS, OHIO

Mr. Daniel D. Powlette

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Mr. Ralph C. Fenn
CW4 J. Freeman
CPT Kenneth T. Gareau
2LT Jonathan O. Gass
CSM William L. Hickey
2LT Robert M. MacLeod
MAJ Kevin R. McBride
CPT Philip S. McGrath
CW3 Pedro L. Munoz
WOC Julie North
Mr. George Parker
SPC Maria M. Perez
1LT Brian C. Trapani
Mr. Rex Weigand
Mr. Robert Wilson

The 1992 AAAA Award for the top West Point Cadet who has branched Aviation went to CDT Michael D. McKay. Pictured above are: Terrence M. Coakley, Executive Director, AAAA (left), CDT Michael D. McKay (center), and MG Charles F. Drenz, Ret., AAAA President (right), who pose in West Point's Thayer Award Room after the presentation.

Below: GEN William G. T. Tuttle, Jr., Ret. (left), Past Commanding General, U.S. Army Materiel Command, receives a Certificate of Appreciation plaque on the occasion of his retirement from MG Carl H. McNair, Ret. (right), one of the AAAA's National Vice Presidents. GEN Tuttle was recognized for his many contributions to AAAA and Army Aviation.

New AAAA Chapter Officers

Air Assault:
MAJ Billy W. Antley (Treas)

Arizona:
LTC Thomas D. Rains, Ret. (President); Mr. Arnie B. Williams, Jr. (VP, Publicity); MW4 Nathan B. Van Keuren (VP, Military Affairs); LTC Philip A. Mooney, Ret. & LTC Bruce Bodine (Members At Large)

Armadillo:
CPT Anthony A. Baker (Treasurer)

Army Aviation Center:
LTC William J. Sanders, Jr. (Treasurer)

Colonial Virginia:
Ms. Donna M. Ciolkosz (Treasurer); MAJ James W. Roberts (VP, Memb. Enroll); MAJ Frank J. Stashak (VP, Pub); LTC John L. Caldwell (VP, Reserve Affairs)

Hanau:
COL Richard L. Noel (Pres); LTC Daniel E. Fleming (SrVP); LTC Kevin T. Colcord (Secy); CPT Michael C. Williams (Treas); LTC Jerel E. Pawley (VP, Memb. Renew); LTC Patrick J. Sheahan (VP, Prog); LTC Byron R. Lester (VP, Corp. Memb); CPT Bartlett F. Sauter (CG Aff); LTC Martin J. Ayers (VP P.A./Pub); CW2 Erich R. Hardy (WO Aff); CSM Roger J. Ehrke (Enlisted Affairs)

High Desert:
CPT Gary B. Brown (SrVP); CW4 Thomas P. Gadomski (Treasurer)

Isthmian:
CPT Christopher Trouve (Secy); 1LT Daryl A. Doberstein (VP, Membership)

New AAAA Chapter Officers (contined)

Lindbergh:
LTC Michael F. McClellan, Ret. (VP, Memb. Renew); COL John N. Bertelkamp, Ret. (VP, Scholarship); Mike Ritchie (VP, Reserve Aff); Delbert E. Pemberton (Special Assistant)

North Texas:
Mr. George Coutoumanos (Pres); Mr. Drew Casani (SrVP); CSM John T. Pate, Ret. (VP, Memb. Enroll); COL James E. Hyers, Ret. (VP, Prog); Mr. Tony J. Geishauser (VP, Publicity)

Old Tucson:
SSG Julie D. Stoneroad (Treasurer)

Savannah:
CPT Bruce V. Sones (VP, Membership); LTC Stephen J. Ferrell (Senior VP)

Talon:
CPT Chandler C. Sherrell (VP, Membership)

Taunus:
LTC Robert C. Claflin (Pres); LTC Bruce K. Ladeira (SrVP); MAJ Barry P. Taylor (Treas); MAJ Stephen A. Darden (VP, Memb. Enroll); MAJ Karen L. Habitzreuther (VP, Programs)

Wings of the Marne:
COL Patrick J. Bennett (Pres); LTC Robin C. Walker (SrVP); CPT George M. Bilafer (Secy); CPT Steven R. Busch (Treas); CPT Roderick A. Bellows (VP Memb); CPT Keith W. Robinson (VP, Prog); CW3 Philip G. Munden (VP, Publicity)

Above: COL Burt S. Tackaberry (left), President of the Savannah Chapter, presents MG George S. Beatty, Jr., Ret. (right), AAAA Past National President, with a plaque for his presentation at the chapter's winter meeting. MG Beatty's presentation was entitled, "A History of Army Aviation."

At the same event, below, BG Robert W. Roper, Jr. (left), Assistant Division Commander (Support) of the 24th Infantry Division, receives an AAAA Honorary Membership from Savannah Chapter President COL Tackaberry.

Above: Vincent Nitido (left), former Connecticut Chapter President, presents MG Donald R. Williamson (right), Commanding General, AVSCOM, with a model of Sikorsky's VS-300 helicopter at the Connecticut Chapter winter meeting last March. A record crowd of 125 gathered to hear MG Williamson's DESERT SHIELD/STORM Logistics presentation.

At the same meeting, below, left to right: Terry Coakley, AAAA Executive Director, Vincent Nitido, former Connecticut Chapter President, Dotty Kesten, VP, AAAA Scholarship Foundation, Tony Patti, Chapter VP Membership Renewals, and BG Rodney Wolfe, Ret., new Chapter President, gather as Mr. Nitido passes a donation to the AAAA Scholarship Foundation to Mrs. Kesten. The funds were generated through a door prize raffle.

New AAAA Sustaining Members

Clean Time Cleaners
Corpus Christi, TX

AAAA Aviation Soldiers of the Month

A Chapter Program to Recognize Outstanding Aviation Soldiers on a Monthly Basis

Air Assault Chapter:
SPC Brian C. Jones
(May 1992)

SPC John R. Sponsler
(June 1992)

Savannah Chapter:
SPC Maurice D. Dampier, Jr.
(June 1992)

AAAA Aviation Soldiers of the Quarter

A Chapter Program to Recognize Outstanding Aviation Soldiers on a Quarterly Basis

Air Assault Chapter:
SPC Charles W. Schutter
April-June 1992

Aviation Center Chapter:
SPC Richard H. Pfeiffer, Jr.
July-September 1992

AAAA Aviation NCO of the Quarter

A Chapter Program to Recognize Outstanding Aviation NCOs on a Quarterly Basis

Aviation Center Chapter:
SSG Mary B. Pena
July-September 1992

Aces

The following members have been declared Aces in recognition of their signing up five new members each.

MAJ Bryan E. Campbell
Ms. Lois Contreras
MAJ Michael A. DiGennaro
CW3 L.C. LeBlanc
MAJ Robert M. Maiberger
CW2 Fred Pieper
CW2 Michael C. Tuten
CW2 Dale A. Williams

Obituaries

COL James Oliver Townsend, Ret.

COL James O. Townsend, Ret., 72, died at his home Tuesday, 5 May 1992 in Ozark, AL. He was a member of AAAA since 1959. COL Townsend retired from the Army in 1968. He activated and served as the first Commandant of the European Army Aviation Training Center, and was a Master Army Aviator whose awards and decorations included the Legion of Merit, the Silver Star, and the Army Commendation Medal with Oak Leaf Cluster. He is survived by three daughters, Judy McGaha, Pamela Townsend, and Diane Murphy; and one son, James Michael (Chip) Townsend.

Above: MG Dewitt T. Irby, Jr. (left), Program Executive Officer, Aviation, is presented a commemorative plaque by COL Michael Boyd (right), President, Tennessee Valley Chapter following MG Irby's presentation, "PEO Aviation Initiatives for FY92". MG Irby spoke at the Chapter's winter meeting in January.

Below: While celebrating the Aviation Branch Birthday Ball on 25 April 1992, MG John D. Robinson (left), Aviation Branch Chief and Commanding General, U.S. Army Aviation Center and Ft. Rucker, AL, presented COL William J. Blair (right), Assistant Commandant of the U.S. Army Aviation Logistics School, Ft. Eustis, VA, with the Order of St. Michael Bronze Award.

Above, SGT Marvin A. Meeks (center), A Co, 3/160th SOAR(A) receives the Savannah Chapter's December 1991 Soldier of the Month Award from CSM J.C. Hart (left), Senior VP for Enlisted Affairs. Looking on is Savannah Chapter President COL Burt S. Tackaberry (right).

Below: Chesapeake Bay Chapter's Bonnie M. Thane, CPT A. Christopher St. Jean, VP Programs, Ann Marie Thomas, VP Membership, 2LT Tim T. Lawry, Senior VP, Deborah L. Horne, Chapter President, and MAJ Craig A. Bond, VP Programs, strike a pose at the Mid-Atlantic Reception during the 1992 Annual Convention in Atlanta, GA. The Reception was a raging success due to the cooperative efforts of members of the Chesapeake Bay, Washington D.C., and Colonial Virginia Chapters.

Monmouth Chapter AAAA Biennial Symposium October 27-29 1992 Gibbs Hall (Officer's Club) Ft. Monmouth, NJ Contact: Dom Pondaco (908) 532-0101 Theme: "Trends in Army Aviation Electronics"

See You in Fort Worth! AAAA Annual Convention March 31 Through April 4 1993

AAAA CALENDAR

A listing of recent AAAA Chapter Events and upcoming National dates.

July, 1992

✓ **July 10.** Savannah Chapter Business-Social General Membership Meeting. Guest Speaker: COL Burt S. Tackaberry, outgoing Chapter President.

✓ **July 10.** AAAA Scholarship Board of Governors Executive Committee Meeting. Best Western Hotel, Arlington, VA.

✓ **July 11.** AAAA National Scholarship Selection Committee Meeting to select CY92 scholarship recipients. Best Western Hotel, Arlington, VA.

August, 1992

✓ **Aug. 1.** Armadillo Chapter Professional Business Meeting. ASF Houston, Room #153 Classroom. Speaker: CW3 Stephen J. Ingley, Chapter Treasurer.

October, 1992

✓ **Oct. 12.** AAAA National Executive Board Meeting, Sheraton Hotel, Washington, D.C.

✓ **Oct. 12.** AAAA Scholarship Board of Governors Executive Committee Meeting, Sheraton Washington Hotel, Washington, D.C.

November, 1992

✓ **Nov. 4-6.** 10th AAAA Aircraft Survivability Equipment Symposium, hosted by Lockheed Aeronautical Systems Company, Marietta, GA.

✓ **Nov. 5.** AAAA ASE Award Presentation, Atlanta Marriot Northwest, Marietta, GA.

February, 1993

✓ **Feb. 3-5.** 19th Annual Joseph P. Cribbins Product Support Symposium, Stouffer Concourse Hotel, St. Louis, MO.

✓ **Feb. 5.** AAAA Outstanding Aviation Logistics Support Unit of the Year Award Presentation and AAAA Industry Award Presentations, Stouffer Concourse Hotel, St. Louis, MO.

March-April, 1993

✓ **Mar. 31-Apr. 4.** AAAA Annual Convention, Tarrant County Convention Center, Ft. Worth, TX.

AAAA ASE Symposium Set

The Tenth Annual Aircraft Survivability Equipment (ASE) Symposium will be held in Marietta, GA, 4-6 November 1992. Hosted by Lockheed Aeronautical Systems Company, this year's theme is *"Maintaining the Survivability Edge Through Technology, Training, and Maintenance of ASE"*. Lockheed Sanders, Inc. is the AAAA Industry Member Coordinator for this year's Symposium.

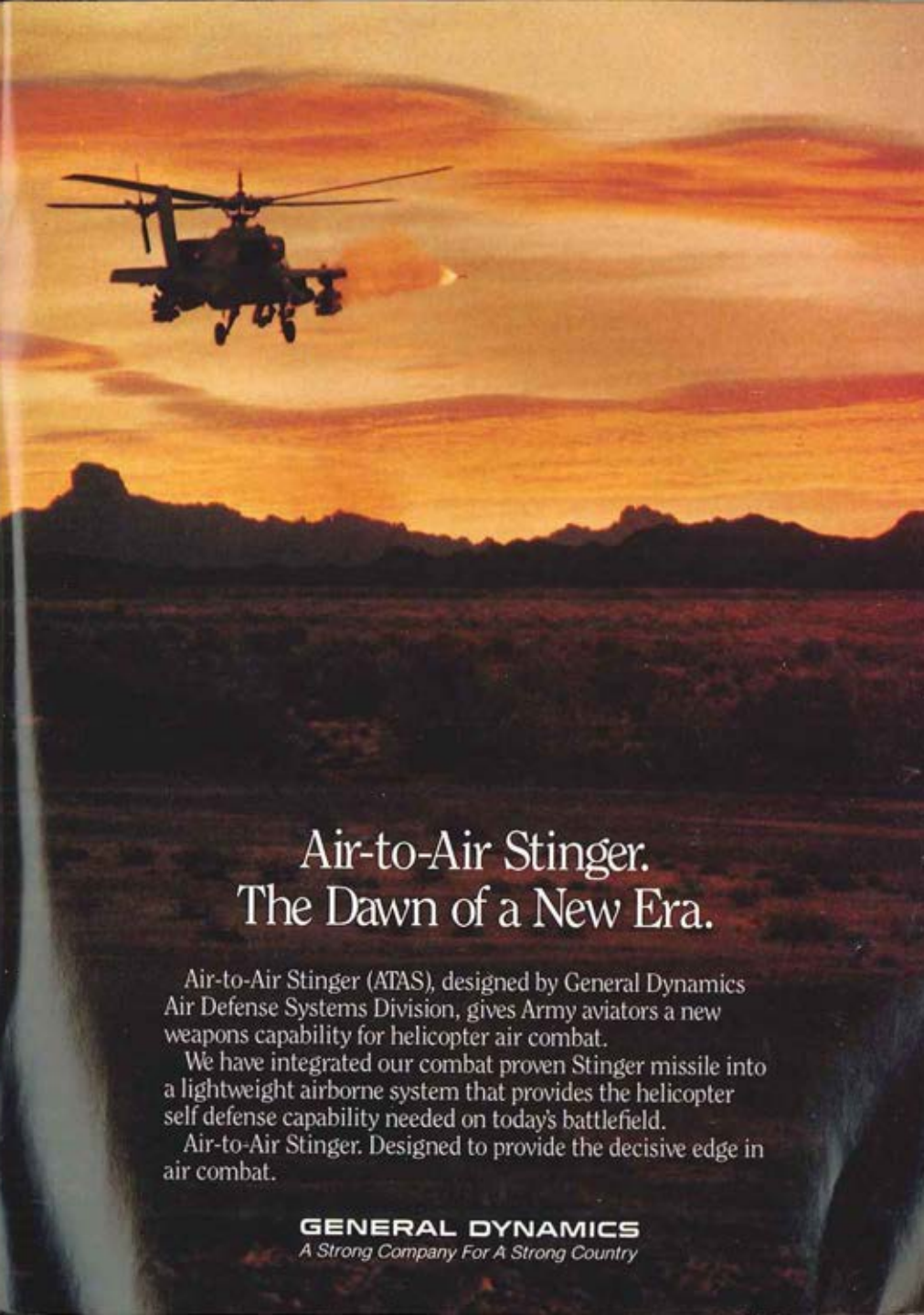
The 1992 Symposium is open to all interested AAAA members who possess a minimum SECRET level clearance. Contact the AAAA National Office at (203) 226-8184 for Registration and Housing forms.

1992 Aircraft Survivability Equipment (ASE) Award Call for Nominations

Sponsored by Loral Electronics Systems, the AAAA ASE Award will be presented at the 1992 Symposium to "the person who has made an outstanding individual contribution to Army Aviation in the area of Aircraft Survivability Equipment during the awards period encompassing the previous calendar year."

Eligibility: A candidate for this award may be military or civilian and must be actively involved in the field of Aircraft Survivability Equipment. Membership in the AAAA is not a requirement for consideration.

Suspense Date: All nominations must be made on the official ASE Awards Nomination Form, obtainable from the AAAA National Office at (203) 226-8184. Nominations must be returned to the AAAA National Office by **1 September 1992**.



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The Boeing MH-47E Chinook is capable of flying anywhere, any time, under the toughest flying conditions.

Designed specifically for deep penetration, clandestine missions, the MH-47E can carry Special Operations Forces wherever they're needed. And bring them back safely.

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