Special Focus: Force XXI

SPECIAL FOCUS:
FORGING AHEAD TO FORCE XXI

ARMY AVIATION

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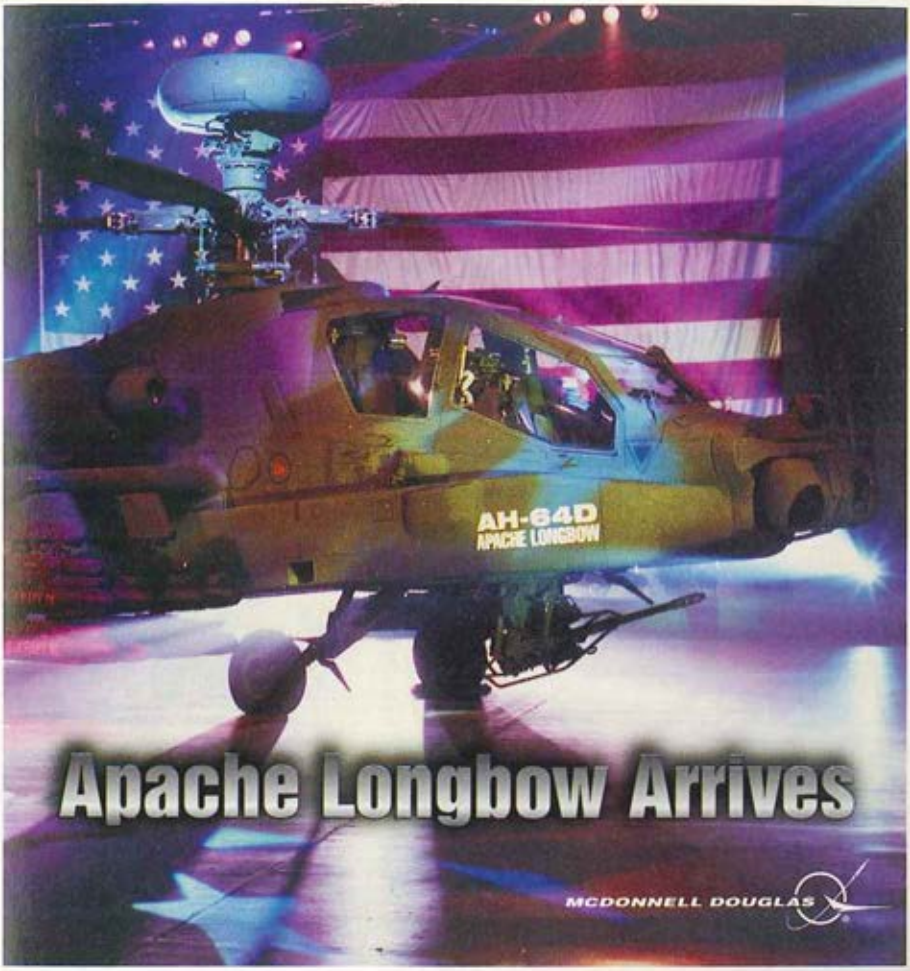

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FORTHCOMING ISSUES

June 1997 — Special Operations Aviation

July 1997 — Simulation and Training.

Briefings

Vietnam Helicopter Pilots Association (VHPA) will hold its 14th Annual National Reunion in Orlando, FL from July 1 through July 5th, 1997. For details and membership information call: **Don Joyce**, "Shrimpboat W4", 407-870-5367.

Attention All AH-64 qualified aviators no longer on active duty!!! If civilian life is not quite as fulfilling as you expected it to be, and you would once again like to fly Apache, **read on!** A DSCPER message, DTG 181524Z APR 97, announced implementation instructions for a **call to active duty appointments**, as warrant officers, for qualified AH-64 pilots. Eligibility requirements include the following:

- USAR, NG, or former officers in the grades of W1, W2, W3, 01, 02, or 03, who are AH-64 qualified pilots.
- W3 or 03 must have less than 3 years time in grade.
- Commissioned officer (01, 02, and 03) must agree to be appointed as a reserve warrant officer prior to being called to active duty. This action vacates the commission. These officers will be appointed in the grade of W1. Upon entry onto active duty, officers may apply for final grade determination.

To request information on application procedures, the POC is **Ms. Smith** at DSN 892-3634 or commercial 1-800-325-4898. For information on the accession process, the POC is **Ms. Tharps** at DSN 221-4471 or commercial 1-800-654-7298. Applications will be accepted until 1 September 1997.

Command Sergeant Major Horne, USAAVNC and Fort Rucker CSM, proudly announces the selection of the U.S. Army Aviation Center and Fort Rucker's **Noncommissioned Officer and Soldier of the 2nd Qtr. 1997**, they are as follows:

NCO of the 2nd Qtr is: SGT Ramin H. Panahi. He is an Air Traffic Controller assigned to A Co, 1-11th Avn Regt, Aviation Training Brigade.

The Soldier of the 2nd Qtr is: SPC Cody L. McFarland. He is a trombone player for the 98th Army Band, 1-210th Avn Regt, 1st Aviation Brigade.

The U.S. Office of Personnel Management (OPM) has important news about the **Federal Employment Information System** to share with you. They have created an excellent multi-tiered, self-service system for obtaining employment information. You may obtain daily updates of job openings ***(with full-text vacancy announcements for most Federal jobs)***, plus summary listings for some state, local and even private sector opportunities. You can access the system 24 hours a day, seven days a week. Visit OPM's USAJOBS world wide web site (http://www.usajobs.opm.gov). Call OPM's Federal Job Opportunities Board via modem on (912) 757-3100; or use Internet to access it. The addresses are FJOB.OPM.GOV for Telnet and FTP.FJOB.OPM.GOV for File Transfer Protocol. Call the Career America Connection on (912) 757-3000, or TDD (912) 744-2299, a telephone based employment information component of the system. Using a touch-tone phone, you may request vacancy announcements by fax or mail while you listen to the job listings.

VOLUME 46 **ARMY AVIATION** NUMBER 5

FEATURE ARTICLES

FORGING AHEAD TO FORCE XXI

DEPARTMENTS

FRONT COVER

Paid Advertisement: McDonnell Douglas Helicopter Systems. McDonnell Douglas Helicopter Systems delivered its first AH-64D Apache Longbow multi-mission combat helicopter to the U.S. Army on March 31, only 10 days after the first AH-64D was rolled out in Mesa, AZ. The U.S. Army plans to remanufacture its entire AH-64A Apache fleet through the first decade of the 21st century. Photo by Robert W. Ferguson. Caption provided by the advertiser.

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MEETING THE CHALLENGE

In March 1987, Donnie Lee was a WO1 Apache pilot right out of flight school from Fort Rucker, newly assigned to the first activating Apache squadron in the Army: 4-6 Cavalry, Fort Hood, Texas. The squadron commander soon saw something in one of his newest aviators. WO1 Lee was a quiet, competent, professional aviator who seemed to have far more experience than his years in service would indicate.

"What GEN Howze imagined 40 years ago, you have made come to life."

The squadron commander took advantage of that potential by giving WO1 Lee additional responsibility at the squadron level. All the while, WO1 Lee continued to gain the experience required to fight and win on the battlefield of the late 1980s. Donnie Lee quickly earned the respect of superiors and peers alike.

At a time when Aviation Branch was looking for young, talented warrant officers to step up to the commissioned ranks, WO1 Donnie Lee was being groomed by his entire chain of command to accept the challenge. He was recommended for a commission, and he got it.

Ten years later, on April 24, 1997, the chain of command's confidence in WO1 Donnie Lee was validated when I presented now-CPT Donnie Lee the 1996 Aviator of the Year Award at the AAAA Convention in Louisville, KY, for his superior achievement as the leader of the Apache Longbow platoon that integrated important new aviation technology into Task Force XXI and made it a reality during the Army Warfighting Experiment at the National Training Center last month.

CPT Lee's example tells us that the system we have in place to grow new leaders, to recognize their potential and reap the rewards made possible by their achievements, is working. And in the same fashion, it speaks volumes about the potential of Army Aviation, which is making such an enormous contribution to the future of our Army, continuing a legacy that began when the first Army aviators began training nearly 55 years ago. Moreover, it reflects the dedication of every member of the Army Aviation Association -- a group of leaders from government, the military, and industry united together to promote the interests and spirit of the Army Aviation community. You perform an important public service -- perhaps the ultimate public service--for your fellow Americans: ensuring the continuing security of our nation for generations to come.

Make no mistake: Army Aviation is a vital technology and a vital component of the

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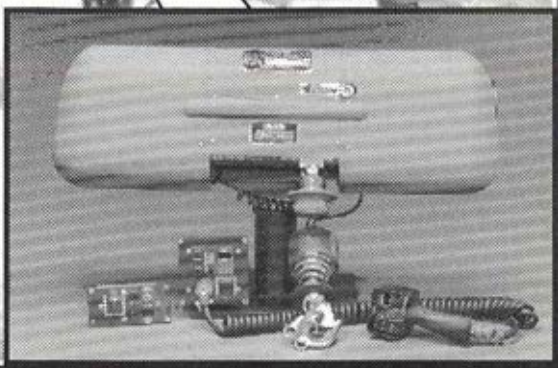

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battlefield of the future. Wherever the Army deploys, Army Aviation will be the tip of the spear. U.S. Army Aviation provides a package of versatility and lethality unmatched by any other army in the world --an achievement of which every member of the Army Aviation Association can be proud.

We have long acknowledged the vital link that Army Aviation provides, ever since operations during World War II demonstrated the advantages of linking the commander on the ground with operations conducted from the air: artillery fire control, reconnaissance, aerial photography, and medical evacuation, to name a few. Subsequent years saw the rise of rotary-wing technology, with a concurrent development in the tactics and doctrine that the Army Aviation community has made state-of-the-art today.

What did those new tactics and doctrine hope to do? One aviation visionary, GEN Hamilton H. Howze, described their effects and his efforts to promote aviation in the Pentagon in the late 1950s in his recent memoirs, "*A Cavalryman's Story*". He described two commanders: one with the advantage of only two or three standard types of aircraft, and the other without that combat multiplier. After studying the outcome of fictional battles between these two forces, he concluded that the commander with aviation assets would "*have far better information of the enemy. . . could move parts of his force more quickly - with surprise - across a lake, swamp, river, or cliff. . .could put down artillery fire much more accurately. . .could achieve surprise in the direction, timing, and location of his attack. . .could move vitally needed supplies much better. . . could evacuate casualties much more readily . . . could pursue a retreating enemy better, and sometimes even ambush his retiring forces.*" In short, two or three types of light aircraft available to the joint task force commander "*would have a decisive effect on operations.*"

What GEN Howze only imagined 40 years ago, you have made come to life. Army Aviation units were a part of every major contingency in the last ten years, and Army Aviation's unique combination of versatility, deployability, and lethality makes it an indispensable ingredient of almost any type of contingency operation anywhere in the world. From the sandy beaches and towns of Haiti to the snows and flooded rivers of Bosnia, from its beginning in 1942 right up until today, Army Aviation has been instrumental in ensuring the United States Army was and is the best ground combat force in the world.

The 21st Century will see our Army at the emerging edge of knowledge-based warfare, and we must be ready to harness that knowledge and put it to our advantage. Before, the joint commander had to overcome the stress of not knowing. In the next century, that commander will have a new challenge: the pressure of knowing and having to choose. Army Aviation will remain vital to the Joint Task Force commander's ability to see and respond to the future battlefield and set the conditions for success.

Across our Army, the challenges for commanders have increased dramatically. In the 40 years prior to the end of the Cold War, the Army deployed ten times. But in the last seven years alone, the Army has deployed 25 times, and many of those deployments have come on very short notice. Right now, more than 31,000 soldiers are deployed away from home to over 86 countries around the world, making significant contributions in hot spots around the globe.

Army Aviation knows about increased OPTEMPO. During Provide Comfort in northern Iraq, Restore Hope in Somalia, Uphold Democracy in Haiti, and Joint En-

deavor in Bosnia, you were there. Such peace enforcement operations are not new, but they have become increasingly more frequent on the military landscape - and Army Aviation has always been a key part of our Army's success in such deployments.

In Bosnia, Army Aviation units continue to serve as a powerful deterrent, giving the ground commander a "sudden overwhelming presence" and extended flexibility to conduct operations. Our ability to employ aviation forces at the right place and time keeps the attention and respect of the former warring factions there. And it is that kind of instant, overwhelming capability that makes Army Aviation an indispensable ingredient for contingency operations anywhere in the world.

Last month, I traveled to the National Training Center, Fort Irwin, CA, to observe Operation Ivy Focus, more commonly referred to as the Army Warfighting Experiment. In that exercise, the 1st Brigade of the 4th Infantry Division at Fort Hood was equipped with the latest in information warfare equipment -- much of it driven by digital technology -- and tested just how that technology can sustain our Army as the world's best for the next five, ten, and twenty-five years. As GEN William Hartzog, the TRADOC Commander, told me, "The hypothesis of Force XXI is that by integrating digitized technologies, finding new ways to pass information across the force, we increase the lethality, survivability, and versatility across the force."

I saw at the NTC the clearly superior performance of Army Aviation. In fact, Aviation forces set the tone for success during the very first battle at the NTC when they conducted a raid far behind enemy lines; those Hellfire-armed Apache Longbows made short work of the enemy. The results were dramatic: the target set was completely destroyed.

That first battle was just the first step of the experiment, but my point is that it was a bold step, it was a decisive step, and it was a step that brought together a proven technology -- the Apache -- with an improvement to the system -- the Apache Longbow with improved Hellfire missiles -- to keep our Aviation community far ahead of the bow wave in terms of the future.

Because of that success, we are already gaining tremendous insights in developing future tactics, techniques, and procedures for many of the Aviation initiatives that were embedded in Task Force XXI: the Apache Longbows, the digitized Kiowa Warrior, the Army Airborne Command and Control System, the Aviation TOC, and the Aviation Mission Planning System. These digitized systems will have a marked impact on how Aviation contributes to the combined arms fight in the next century.

Comanche, too, will be part of that future. Comanche will enhance our ability to conduct armed reconnaissance in all battlefield environments, especially in adverse weather, day or night. It can better protect the force on the ground, and it will be more survivable--fly longer, faster, and with greater stealth--for the two soldiers who will fly it. Simply put, it will take our sons and daughters safely into the future, it will do the mission better than anything they fly today, and it will bring them back to their families. That will be the legacy of Comanche.

Together, the Aviation community - military, civilian, and industry -- will continue to hone tactics, techniques and procedures, refine organizational design, train to exploit these new capabilities, and develop and refine both the objective and prototype systems for today and the future. Change is never easy—but it is necessary if we are to keep our competitivef edge. As a Branch and as part of the combined arms team, the Aviation community has staked its claim to

decisive leadership on the battlefield for years to come.

Today United States Army Aviation is the envy of friends and foes around the world. We are first in terms of capability. We are first in terms of new technology. We are first in terms of doctrine and tactics. We are first - far superior - in terms of the teamwork between those who build our aircraft, those who buy it, and those who bring it to bear on the battlefield. And because of that long list of achievements - the achievements of soldiers, civilians, and industry leaders, the backbone of the Army Aviation Association - America's friends and her potential enemies know that we will get off the first shot of the next war, and it will hit the target.

The nation has conferred upon you its ultimate trust: the great responsibility to make and man the combat equipment that stands at the heart of our national defense. For 50 years, Army Aviators have met that challenge and earned an impeccable reputation as the best military aviation organization in the world. I know that every member of the Army Aviation Association stands ready to continue that remarkable record of service into the bright future of the 21st Century, as part of the greatest ground combat force in the world: the United States Army.

★ ★

The Honorable Togo D. West, Jr., is the Secretary of the Army, The Pentagon, Washington, D.C.

PREPARING OUR AVIATION FORCE FOR THE FUTURE

During the early part of the twenty-first century, the Army will be at the emerging edge of knowledge-based land warfare. The future Army - Army XXI - will remain the world's preeminent joint land fighting force and will be fully prepared to meet the challenges of the era (2010) and beyond. The future battlefield will embrace an information rich environment, one which replaces the stress of not knowing, with the pressure of knowing and having to choose. Army Aviation will remain vital to the Joint Task Force (JTF) commander's ability to see and respond in the future battlefield and set the conditions for success.

Joint Venture is the Army's centerpiece effort to redesign the Tactical Army.

Army Aviation Next: The Army's vision beyond Army XXI is called the Army After Next (AAN), which explores the uncertain world of the future from 2015 and beyond. It uses a systematic approach to forecast future Army requirements integrated with other services, as well as those of the Joint Staff and the Office of the Secretary of Defense. The AAN project is currently focused toward national security strategy, growth of major competition, deterrence and conflict prevention, warfighting, and conflict termination.

Force XXI: Force XXI is the process which drives our Army to Army XXI - it assesses where we are and where we need to go by:

- Redesigning the Tactical Army
- Integrating Information Age technologies
- Redesigning the Institutional Army

Joint Venture is the Army's effort to redesign the Tactical Army and is the centerpiece effort. Synchronized activity among these three efforts will take us to Army XXI. In May 1992, battle labs were formed as a means for TRADOC to develop and focus concepts and requirements for new doctrine, training, leader development, organizations, materiel, and soldier systems (DTLOMS) -- and integrate them throughout the Army.

Advanced Warfighting Experiments (AWE) are designed to test hypotheses on the capabilities of the force and provide useful lessons and insights into the future using constructive, virtual and live simulations. On 15 March 1995, the Army reorganized the 4th Infantry Division (Mechanized) as an experimental force (EXFOR). Its purpose is to experiment with

new information age technologies and guide our Army into the 21st century, primarily focusing on investigating new organizational designs and battle command concepts. Two top Army experiments are the recently conducted Task Force XXI AWE and the upcoming Division XXI AWE.

The Commanding General, TRADOC, recognized the importance of aviation systems to Army XXI and established a battle lab for the Aviation Branch. The recently established Air Maneuver Battle Lab (AMBL) at Fort Rucker, in concert with our TRADOC partners and the EXFOR, is performing extensive work to define future operating conditions and concepts for Force XXI and the AAN. Its purpose is to discover early, accurate solutions to Force XXI and AAN warfighting capabilities. COL Gary Coleman, AMBL director, and his team describe their battle lab contributions toward this effort in a series of articles immediately following this one.

"I am confident we are on the right course to meet our future challenges"

The first step in the Force XXI process was the recent brigade sized advanced warfighting experiment (TF XXI AWE) conducted this past March at the NTC. You didn't have to be out there but one day to realize that only a great country could take such a bold step into the future. Aviation initiatives we embedded in TF XXI had tremendous potential -- Aviation Tactical Operations Center (AVTOC), the Aviation Mission Planning System (AMPS), the AH-64D Apache Longbow, the Enhanced OH-58D Kiowa Warrior, and the Army Airborne Command and Control System (A2C2S) Black Hawk. Aviation's piece of the AWE took the total effort of the TF XXI aviation team - AMBL, DCD, DOTDS, PEO- Aviation, and our supporting contractors. The results of the evaluation will be published as part of the TF XXI AWE Final Report. Additionally, COL Coleman's battle lab team will publish aviation emerging insights from this experiment in a future article.

In preparation for this AWE, we conducted a Digital Training Exercise (DTX) at Fort Rucker in February with the 4th Brigade, 4th Infantry Division. The exercise provided a virtual Combined-Arms battlefield to train the Aviation Task Force (ATF) battlestaff using simulation at the Aviation Test Bed, replicating all the digital systems of Force XXI. Directorate of Training, Doctrine, and Simulation (DOTDS), COL Bill Powell's team is continuing to develop tactics, techni-ques, and procedures (TTP) to shape our future aviation force and capitalize on new technologies. This also allows Bill to get the new TTP into our Advanced Course quickly.

The second AWE will be a division-level experiment (Division XXI) in November of 1997. It will be similar to a BCTP-like exercise employing digitized division and brigade tactical operations centers (TOC) in the field. Aviation initiatives submitted for participation in the AWE include the A2C2S, AVTOC, simulated Apache Longbow battalion, Tactical Airspace Integration System, and Comanche. Fort Rucker will again be the site for the 4th Aviation Brigade's battlestaff train-up (DTX) later this summer.

The next several decades will be exciting for our Army. The best trained, led, and equipped Army in our history will take a

(PREPARING — cont. on page 19)

BY COL GARY S. COLEMAN
and MAJ JIMMY MEACHAM

THE AIR MANEUVER BATTLE LAB

In the last several years, the rapidly increasing pace of change in both global politics and technological advancement have prompted the Army to not only change itself, but to change the way it changes. As a result, the Army Training and Doctrine Command (TRADOC) established the Battle Lab Program in 1992 in order to streamline its ability to identify key concepts and requirements for new doctrine, training, leader development, organizations, materiel, and soldier systems (DTLOMS).

The mission of the battle labs is experimentation, but particularly experimentation conducted from a warfighter perspective. The purpose of this experimentation is to discover early, accurate solutions to shortfalls in desired warfighting capability, not to pursue technologies for their own sake. Warfighting experiments and technology demonstrations serve as a risk reduction strategy by isolating high payoff solutions prior to funding programs, initiating organizational changes, or initiating materiel acquisitions. This experimentation provides the Army an unsurpassed means to understand the requirements imposed by the uncertain battlefield of the future. Understanding both the costs and benefits associated with change better enables us to enhance the combat capabilities of our forces and to conserve resources at the same time. One key means of accomplishing this is the Battle Lab Program.

Initially, six Battle Labs were established by TRADOC, each designed to address a particular Battlefield Dynamic:

- Dismounted Battlespace Battle Lab, Ft. Benning, GA.
- Mounted Battlespace Battle Lab, Ft. Knox, KY.
- Depth and Simultaneous Attack Battle Lab, Ft. Sill, OK.
- Early Entry, Lethality and Survivability Battle Lab, Ft. Monroe, VA.
- Combat Service Support Battle Lab, Ft. Lee, VA.
- Battle Command Battle Lab, Ft. Leavenworth, KS, Ft. Gordon, GA, and Ft. Huachuca, AZ.

An Aviation Battle Lab Support Team

(ABLST) was established at Fort Rucker, AL, to address aviation-related issues under investigation by the "full up" battle labs. The name of the organization clearly captured its function--support. The ABLST had to rely on obtaining sponsorship from other battle labs in order to examine aviation initiatives and programs. Although highly successful in a number of areas, the inescapable fact was that aviation experiments were an "add on" or excursion to critical experiments being conducted by resource- constrained battle labs. The lack of an "Aviation Battle Lab" impaired the branch's ability to participate directly in the Science and Technology (S&T) Program, to develop TRADOC approved battlefield dynamic concepts, to validate future operational capabilities, and to be proactive in the proposal of warfighting experiments and technology demonstrations.

As the Army progressed along in its Force XXI experimentation process, concern over the need to focus efforts on the third dimension of the combined arms battlespace continued to grow. On 1 October 1996, the Aviation Battle Lab Support Team officially inactivated and its personnel formed the core of the Air Maneuver Battle Lab (Provisional). The Lab is provisional because the full authorization of 20 personnel will not be effective until 1 October 1997. Nevertheless, the Air Maneuver Battle Lab (AMBL) will provide Aviation Branch direct, rather than mediated, participation in the TRADOC Battle Lab process, giving it both a voice and a vote in the Force XXI and Army After Next efforts.

The mission of the AMBL is:

"to fully integrate air maneuver into Force XXI combined arms operations through the planning, execution, and analysis of warfighting experiments and technology demonstrations in order to examine advanced concepts and technology which enhance the commander's capability to project the force, protect the force, gain information dominance, shape the battlespace, conduct decisive operations, and sustain the force."

In order to accomplish this mission, certain essential tasks must be carried out.

- Plan, coordinate, monitor, and evaluate Aviation participation in AWEs.
- Plan, coordinate, monitor, and evaluate Aviation participation in ATD, ACTD, ACT and other Battle Lab War Fighting Experiments.
- Establish and maintain close liaison with nine TRADOC BLs and TRADOC BLIT-CD to keep our promises and commitments made by the ABLST and to
- Participate in the TRADOC Battle Lab process to set up for future success as an independent battle lab.

As a provisional organization for its first year, the Battle Lab will rely heavily on other organizations at the Aviation Center, especially the Directorate of Combat Developments, the Directorate of Training, Doctrine, and Simulations, and the TRADOC Systems Managers for AH64D Longbow Apache and the RAH-66 Comanche. Even when fully resourced to the organization shown in Figure 1, the AMBL will require extensive matrix support from other members of the Aviation community, reflected in Figure 2. Fortunately, this type of coordinated effort is not new to Fort Rucker or to the other members of the Army Aviation team. This close, combined effort insures that the Air Maneuver Battle Lab will continue to serve the Army well by examining all aspects of Aviation's unique contribution to the Force XXI Combined Arms Team.

Although the AMBL's primary role will be to conduct experiments in support of the training and combat developers, it is imperative that a strong, complementary relationship with the Program Executive Office Aviation and the ATCOM-Aviation Research, Development, and Engineering Center be maintained. As a result of ongoing efforts within the Aviation community

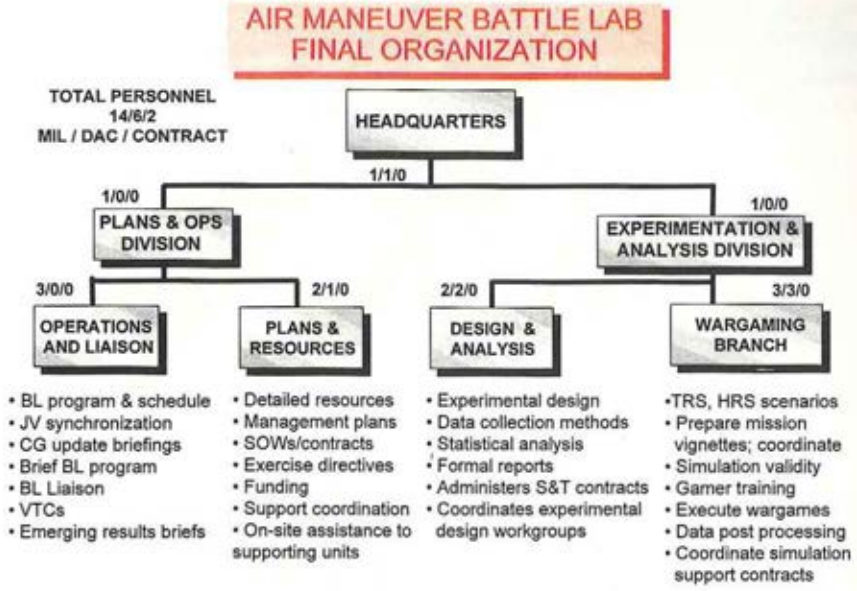

Figure 1

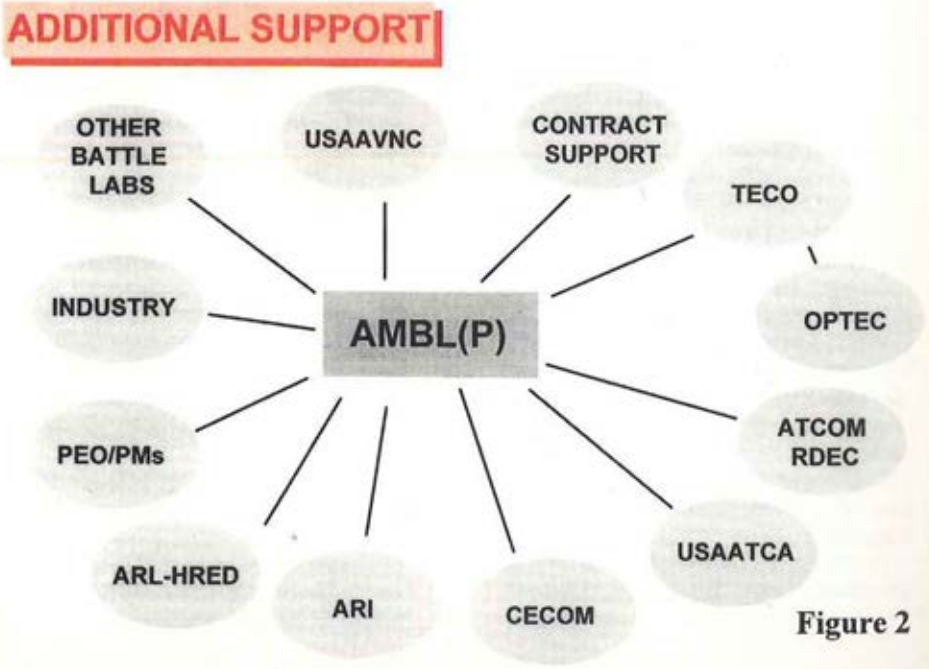

Figure 2

Figure 3

to chart a clear, common course for the Branch, and in conjunction with TRADOC's Force XXI experimentation plan, the AMBL has established some broad areas of interest, which are reflected in Figure 3.

In general, the focus of the AMBL will be on operations in the third dimension of the joint/combined arms battlespace. This area has been addressed in past experiments by other battle labs, but not with the amount of attention necessary to fully examine the doctrine, training, leader development, organizations, materiel, and soldier systems (DTLOMS) which maximize the potential benefits available. Emerging concepts and technologies of air maneuver will have a clearer opportunity for in depth evaluation in combined arms experiments designed for that purpose.

In closing, consider the motto shown on the AMBL Logo, "Battlespace Mobility." The key contribution of air maneuver to combined arms operations centers on the inherent mobility of air systems. Whether moving sensors, weapons, soldiers or supplies, commanders or communications, across the battlespace, it is the mobility advantage afforded by air maneuver that that makes it such an extremely critical combat multiplier. How to best employ that advantage in combined arms operations on the future battlefield is the question that AMBL, in conjunction with the other members of the Army Aviation team, seeks to answer.

Share your ideas with us by contacting gary_coleman@rucker-emh4.army. mil and view our homepage at http://www-rucker. army.mil/ambl/ambl.htm.

★ ★

COL Coleman is Deputy Director, Air Maneuver Battle Lab and MAJ Meacham is the Executive Officer, 1st BA, 13th AVN Reg., both at Ft. Rucker, AL.

BY MAJ MAUREEN CANTWELL
and CPT DAVID PARSONS

DIVISION XXI ADVANCED WARFIGHTING EXPERIMENT

The Division XXI Advanced Warfighting Experiment (DAWE 97) is intended as the vehicle to validate the Force XXI Division Design, the Force XXI CSS concept, information age Tactics, Techniques, and Procedures (TTPs), and enhanced Battle Command capabilities. Additionally, it will provide insights on echelon above division (EAD/Joint) digitized operations.

The vehicle to validate Force XXI.

PRAIRIE WARRIOR '97. The Prairie Warrior 1997 (PW 97) warfighting simulation exercise scheduled for May 12-20, 1997 will serve as a ramp-up exercise to the DAWE 97. PW97 will start the data collection build for the DAWE 97 and affords the evaluation team the opportunity to train, refine, and utilize the Center for Army Lessons Learned Collection Plan and Observation Management System (CALLCOMS). PW 97 focuses on the warfighting phase of a Major Regional Conflict in Lantica, a fictional island continent based on European terrain in the 1999 time frame. This will be the capstone exercise for the Command and General Staff College (CGSC) students.

The Aviation Center submitted six experiment nominations for use in the Army's Mobile Strike Force (MSF) for PW. Those approved are the Army Airborne Command and Control System (A2C2S), Aviation Tactical Operations Center (AVTOC), Tactical Airspace Integration System (TAIS), and future Aviation platforms including the AH-64D Longbow Apache and the RAH-66 Comanche. The nomination for a separate evaluation of the Army Tactical Command and Control System (ATCCS) was not approved, but the systems are being used by the Aviation players and will be evaluated on a non- interference basis.

PW 97 will focus on Battle Command issues and initiatives for the proposed heavy division redesign organizations. The PW 96 after action reports identified management of the third dimension of battlespace as an area in need of attention. Prairie Warrior 97 will address this shortcoming with the experimentation of TAIS. TAIS is the Army's first airspace integration system which graphically depicts joint service airspace coordination measures in the area of operations. The A2C2S static mock-up at Fort Leavenworth does not fully represent the current A2C2S platform but will provide the MSF comman-

DIVISION XXI AWE OBJECTIVES **Figure 1**

Decisions

- ✓ **Validate Force XXI Division Organizational Structures**
- ✓ **Validate the Force XXI CSS Concept**
- ✓ **Validate the Force XXI Division Operational Concept**
- ✓ **Validate the Force XXI Battle Command & Information Operations Requirements**

Products

- ✓ **ATCCS Integration Plan**
- ✓ **Seamless Integration between Tactical Internet and ATCCS**
- ✓ **Revised Force XXI Information Age Doctrine / TTP/ Training**

Insights

- ✓ **EAD/Joint Requirement across DTLOMS**
- ✓ **Training Program Framework Transitioning Army from AOE to Force XXI**

der with an alternate method of controlling the battle.

DIVISION XXI AWE. The Division XXI AWE will culminate in November 1997 with a Battle Command Training Program (BCTP)-like constructive exercise with digitized Division and Brigade Tactical Operations Centers (TOCs) in the field. The exercise is designed to enable commanders and staffs to experiment with information from a digitized battlefield and tactically employ the division under the interim Force XXI division design (IDD), to include the new centralized combat, combat support, and combat service support (CSS) concept.

The Aviation Brigade TOC will be in the field, possibly collocated with the Division TOC, during the experiment. Subordinate units will be operating from workstations within the simulation center, interacting with the Corps Battlefield Simulation Model and the Combat Service Support Tactical Simulation Systems, while communicating with the Brigade via digital Army Battlefield Command System components.

The Division XXI AWE hypothesis is ... *If information-age battle command capabilities/connectivity exists across all BOS/functions within and to a division then ... enhancements in lethality, survivability and TEMPO will be achieved.*

The key to obtaining the proper focus is the establishment of attainable objectives. The TRADOC Commander divided the AWE objectives into three categories as listed in Figure 1.

In support of the TRADOC defined objectives of the DAWE 97, the United States Army Aviation Center (USAAVNC) submitted initiatives for participation in the AWE.

- Army Airborne Command and Control System will use A2C2S made for TF XXI.
- Simulated Longbow Apache Battalion - Refinement of Longbow portrayal developed for PW96.
- Tactical Airspace Integration System (TAIS) Prototype - No automated army capability exists today.
- Simulated Comanche.

These are emerging materiel systems, with potential for fielding around the turn of the

century, which may impact on the outcome of the experiment and influence attainment of the stated objectives.

One additional initiative was submitted and subsequently accepted as a sub-issue to another proponent's initiative. The Aviation Tactical Operations Center (AVTOC) was accepted as a sub-issue under the umbrella of a new DTOC structure initiative, submitted by the TRADOC Program Integration Office-Army Battle Command System (TPIO-ABCS). The AVTOC will participate, though its contributions will be evaluated as part of the overall effectiveness of the new Division TOC structure.

Listed below are the issues (questions to be answered during the experi ment) submitted which correspond to the initiatives:

- How effectively do the onboard capabilities of the Army Airborne Command and Control System (A2C2S) allow division and brigade battlestaffs to maintain situational awareness, maneuver forces, and control the tempo of operations?
- Does the interim force design for the Longbow Apache Battalion in the heavy division Aviation brigade allow the situational awareness, lethality, and survivability capabilities of the aircraft to be effectively employed on the battlefield to influence the commander's scheme of maneuver and fire?
- How well does the Tactical Airspace Integration Systems (TAIS) allow for timely deconfliction and utilization of airspace thus permitting the commander the option of high tempo maneuver and fires?
- How best can the capabilities of the Air Cav Troop be employed on the battlefield to contribute to the commander's situational awareness and influence his scheme of maneuver?

As with the initiatives, an additional issue was rolled up under another proponent. An issue addressing the ability of the new CSS concept to effectively support sustained Aviation operations was subordinated under a CSS Battle Lab issue addressing the entire CSS concept. The issue will be looked at during an evaluation of entire CSS concept.

For information, contact the Air Maneuver Battle Lab at DSN 558-3022/2493 or commercial (334) 255-3022/2493. E-mail maureen cantwell @rucker-emh4 .army.mil.

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Preparing Aviation

(Continued from Page 12)

quantum leap in capability. Our future army will continue to recognize the soldier as its greatest capability and build future operational concepts around quality soldiers and strong leaders.

We have an outstanding team comprised of the AMBL, DCD, DOTDS, and PEO-Aviation who understand the importance of aviation's contribution to the future fight. We still have much work to do to further hone TTP, refine organizational design and train to exploit these new capabilities. I am confident we are on the right course to meet our future challenges, because our success today is setting tomorrow's conditions. The result of these efforts is a more potent and versatile aviation force for our twenty-first century Army -- fully prepared to meet the challenges of the future.

★ ★

MG Petrosky is Aviation Branch Chief and CG, U.S. Army Aviation Center (USAAVNC) and Ft. Rucker, AL, and Commandant, U.S. Army Aviation Logistics School (USAALS), Ft. Eustis, VA.

RAPID FORCE PROJECTION INITIATIVE (RFPI)

An Advanced Concept Demonstration of a System-of-Systems.

The Rapid Force Projection Initiative (RFPI) is an Advanced Concept Technology Demonstration (ACTD) program that seeks to demonstrate; through a series of constructive, virtual and live simulations; a system-of-systems of forward employed hunters and standoff killers linked by a digital command and control system. RFPI is managed jointly by the Dismounted Battle Space Battle Lab (DBBL) and the U.S. Army Missile Command Research Development and Engineering Center (MICOM RDEC).

RFPI is designed to address the vulnerability of early entry forces to indirect fires and armored overrun during the early days of a deployment and before follow-on forces can be brought into the area of operations. Specifically, the RFPI ACTD seeks to increase early entry force lethality, survivability, and control battle tempo. The RFPI is for rapidly deployed first to fight light forces that are both lethal and highly survivable against armor. The intent is to provide an extension of the close battle space through manned and unmanned advanced sensors, non-line of sight smart standoff weapons, increased effectiveness against high payoff targets, and integration of digital battle command, fire support, and intelligence systems.

FORSCOM is considering the 101st Airborne Division (Air Assault) as the experimental force for RFPI. The current baseline force structure is built around the XVIII Airborne Corps' Division Ready Brigade Task Force in accordance with the Division RSOP. The RFPI program currently is scheduled to run through the year 2001. The primary focus for FY 97 will be the Light Digital TOC (LDTOC) Battle Lab Warfighting Experiment (BLWE) in the 2nd quarter and the Virtual Rehearsal for the ACTD Field Experiment in the 4th quarter. The live simulation portion of the RFPI ACTD is in the 4th quarter of FY 98. Initial candidate aviation systems include the Aviation Digital TOC (AVTOC), Army Airborne Command and Control System (A2C2S), AH-64D Longbow and the RAH-66 Comanche.

- **Light Digitized TOC Battle Lab Warfighting Experiment (LDTOC BLWE) 1-16 May 1997**
- **Virtual Rehearsal 25 AUG - 15 SEP 1997**
- **Record Runs 2D Quarter FY 98**
- **Field Experiment 23 JUL - 13 AUG 1998**

Figure 1

Additional systems may be included as the demonstration matures.

The RFPI is:

- Advanced Concept Technology Demonstration (ACTD)
- Managed jointly by the Dismounted Battle Space Battle Lab and U.S. Army Missile Command RDEC.
- Emphasis is on Early Entry Forces; ACTD is supported by the 101st ABN DIV (AASLT)
- Focused on the Hunter Standoff Killer (H/SOK) Operational Concept.

Keys to Army Aviation's participation are the digital linkages between MICOM RDEC's Distributed Interactive Simulation (DIS) facility and Ft. Benning's Land Warrior Test Bed with the Aviation Test Bed at Ft. Rucker. These pose a significant challenge due to funding limitations and constructive modeling limitations. Verification, validation, and accreditation (VV&A) of the AVTOC simulator and A2C2S simulator are the centerpiece of Army Aviation's role in this ACTD.

In conclusion, the RFPI ACTD has the potential for assessing and providing input into the complex operations of early entry forces. The insight gained from this initial look into future Army operations will provide a solid stepping stone for follow -on experiments and demonstrations.

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BY MR. JOSEPH BOWEN
CPT J. G. BYRUM
MAJ JEFF MOCKENSTURM

THE ARMY ADVANCED CONCEPTS AND TECHNOLOGY II PROGRAM

From Concept to Contract to Consumer in 12 Months

Today, the Army recognizes more than ever the imperative to retain technological superiority as it continues to restructure into a smaller, Force Projection Army for the 21st Century.

The establishment of the Battle Laboratories was a critical step toward acieving this goal. To gether with the Army Research Development and Acquisition community, the Battle Labs are streamlining materiel acquisition and providing warfighters with overmatch capabilities.

The Army's Advanced Concepts and Technology II (ACT II) Program provides access for industry participation in this important endeavor. ACT II facilitates Battle Lab experimentation by competitively funding demonstrations of industry's most advanced technologies, prototypes, and non-develop-mental items with the greatest potential to fulfill warfighting capability requirements. The ACT II Program provides the battle labs with a means of experimenting with targeted, enabling technologies for near-term exploitation.

The ACT II program was established in fiscal year 1994, and is funded annually through the Army and DoD budget process. The ACT II Program represents a unique partnership between Army organizations whose purpose is to push mature technologies out of the laboratory and onto the battlefield. This team is comprised of the U.S. Army Training and Doc-trine Command (TRADOC) Battle Labs and the Army's research, development, and acquisition community. Together, they're helping define the technologies that will shape and support Force XXI - the smaller, Force Projection Army of the 21st century

The ACT II program encourages application of commercial technologies which are mature or nearing maturity, to address immediate Army concerns. The program provides funding to demonstrate the technical feasibility of technologies that, if successful, can either become part of the regular funded Army research and development (R&D) program, be selected for entry into the Army Warfighting Rapid Acquisition Program (WRAP), or transition directly to an end item. ACT II seeks unconventional approaches to addressing Army needs; it does not fund established technology base programs. This access to the commercial market is intended to

shorten the acquisition cycle and reduce the development cost which, under the conventional acquisition process, often requires long lead times for a research idea to reach the soldier. Because of the small size of ACT II projects - a maximum of $1.5 million and up to 12 months duration - ACT II generally supports highly-leveraged efforts which appear likely to have an important impact on the Army. Cost-sharing between the ACT II program and the proposer and/or interested Army R&D organizations is encouraged but not required.

The ACT II process exploits the substantial resource of industry's independent research and development by funding demonstrations of commercial-off-the-shelf (COTS), near-COTS, and non-development items for rapid insertion into the battle labs. Military evaluators in the battle labs select the concepts for funding and conduct operational tests and simulations to determine the value of this technology for potential transition to the Army as well as for shaping requirements, refining doctrine, defining future capabilities, and improving existing systems. As such, ACT II is unique in DOD by providing funding and a common forum for user/developer interaction. This enables Battle labs to rapidly access targeted technologies and demonstrate meaningful solutions for our soldiers.

ACT II is jointly executed by the U.S. Army Training and Doctrine Command (TRADOC) and the U.S. Army Materiel Command (AMC). ARO facilitates ACT II by developing an annual broad agency announcement (BAA), managing ACT II funding, and coordinating the selection process through technical and military evaluations. TRADOC Battle Labs develop the technology topics for the BAA and provide the operational environment for assessment of the deliverable products. AMC's research, development, and engineering centers (RDECs) in conjunction with the Army's Space and Strategic Defense Command, Medical Research and Materiel Command, Army Research Institute, and the Corps of Engineers, provide technical evaluation, financial management, and contract management.

ACT II depends on direct private sector involvement in the technology push process. Each year, a highly-competitive Broad Agency Announcement (BAA) is released containing topics of interest to the Army. A BAA pre-release was be made in February 1997 in order to allow industry and academia comments to be reviewed and incorporated into the formal BAA. An ACT II Pre-Proposal Conference was held 15 April 1997 to provide information about the Battle Labs, Army requirements, and the ACT II process. The FY 98 ACT II BAA was released in May 1997. As in past announcements, two-page concept papers will be sought against a group of specific topics which are generated by the TRADOC Battle Labs. Topics from the following Battle Labs have been incorporated in the BAA:

- Air Maneuver
- Battle Command
- Combat Service Support
- Dismounted Maneuver
- Mounted Maneuver
- Depth and Simultaneous Attack
- Maneuver Support

The Battle Labs submitted approximately ninety draft topics for the May 1997 BAA. The Draft BAA listing all the FY 98 ACT II topics on the ARO Homepage: www.aro.ncren.net/aro/rt/actii.htm. The three Aviation FY 98 ACT II Topics are:

***Topic Number**: 98-AMBL-01*

***Topic Title**: Aviation Tactical Nap-of*

the-Earth (NOE) Non-Line-of Sight (NLS) Communications
Topic Objective: *To examine new concepts and new technologies that may enhance Army Aviation Tactical Nap-of the-Earth (NOE) Non-Line-of Sight (NLS) Communications capabilities.*

TOPIC Number *98-AMBL-02*
Topic Title: *Manned and Unmanned Teaming Control*
Topic Objective: *To demonstrate new concepts and technologies to enhance Army aviation cooperative team operation of manned and unmanned systems. The focus of this effort will be on man-in-the-loop control theories and mechanisms by which man-in-the-loop can control a variety of unmanned platforms. The effort will evaluate potential contributions of concepts and technologies to support and develop potential doctrinal and materiel solutions for Future Operational Capabilities.*

Topic Number: *98-AMBL-03*
Topic Title: *Airborne Nonlethal Weapons*
Topic Objective: *Evaluate aviation applications of innovative, less- than-lethal, devices for military and commercial use. The goal is to increase mission effectiveness of helicopters in operations that require the application of nonlethal effects upon personnel and/or equipment.*

In response to the BAA, interested offerors prepare two-page concept papers that describe the essence of their proposed project. A joint military and warfighting technical evaluation is conducted by the battle labs and the Army technical labs to select a limited number of concepts from which to invite full proposals.

The full proposals will also be evaluated and prioritized prior to selection for negotiation and award. Upon receipt, the full proposals (limited to 25 pages) are then reviewed by the same technical and military evaluators who evaluated the concept papers. The ACT II selection cycle culminates in a three-day joint technical evaluation board (TEB) held at ARO. During the TEB, the battle labs develop individual order-of-merit listings (OMLs) of their most highly-rated, technically acceptable proposals. Ultimately, a single, integrated OML is developed, from which projects will be selected for funding.

This final, integrated OML is presented for approval to the Army's Science and Technology Executive and the Assistant Deputy for Force Development, Office of the Deputy Chief of Staff for Operations. A final evaluation results in the selection of proposals to fund. The entire process, from concept to award, takes approximately five months beginning in June and ending in October.

To date, the program has funded a total of 102 projects, many of which have excellent prospects for transition. In 1996 a total of 101 proposals were invited from an initial receipt of 639 concept papers. Anticipated funding for FY98 ACT II programs is approximately $11 million.

ACT II projects demonstrate technology as part of ongoing battle lab experiments which may encompass the full range of Doctrine, Training, Leadership, Organization, Materiel and Soldiers (DTLOMS), using soldiers and leaders in realistic, live, tactically competitive training environments. When possible, the projects are demonstrated in conjunction with an Advanced Warfighting Experiment (AWE) where they can be conducted and evaluated using real soldiers trained in the particular DTLOMS change. Ultimately, the experiments may provide the basis for

a material requirement. Those that demonstrate significant added value to warfighting capabilities may be nominated for consideration by the Army leadership for rapid acquisition.

Ultimately, ACT II success stories are measured by the user: the impact of ACT II on solving problems and assessing materiel solutions for the field. The findings of the FY96 Battle Lab Board of Director's (BOD) meeting was consistent with this analysis in its review of the 1995 ACT II projects. The BOD recommended that 22 of 35 projects be explored further by the Battle labs, while six projects have transitioned outside the battle labs for further development. Of the 63 projects completed in 1994 and 1995, approximately one fourth could be categorized as already transitioned (as a material benefit for the Army) or ready for transition.

ACT II solidifies the partnership between TRADOC and as they build jointly toward more focused, streamlined requirements and acquisition processes. With a 12-month cycle and low entry cost, ACT II provides for rapid demonstration of enabling technologies by soldiers in the battle labs. In just three years ACT II has clearly demonstrated success in providing relevant and mature technologies for the rapid solution of our soldier's problems. ACT II provides the flexibility to keep pace with rapid technology turnover--from concept to contract to consumer in 12 months.

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BY JOSEPH A. VAN LOO, Ph.D

THE TRADOC CONCEPT EXPERIMENTATION PROGRAM

A Risk Reduction Strategy for Building Tomorrow's Army.

In 1996, with the publication of the new Requirements Determination Handbook, the Chief of Staff of the Army directed TRADOC to chart the course for the Army to follow into the 21st century. TRADOC's management process for achieving this mission can be expressed in two phrases: the Force XXI concepts, and iterative experiment.

The overarching Force XXI concept describes doctrinally desired warfighting efficiency, and experimentation assesses high probability solutions to shortfalls in capabilities needed to embody the concept. Within the array of analytic tools provided by TRADOC, there is a provision for a type of experiment to explore and assess the relevance of various possible solutions to capability shortfalls (doctrine, training, leader development, organization, material, or soldier support (DTLOMS). This is the concept experimentation program or CEP. CEPs can also be used to compare and contrast alternative approaches within a single DTLOMS category. The idea behind the CEP and other experimental formats is to isolate high payoff solutions before initiating organizational changes, modifying doctrine, or pursuing material acquisitions. Experiments are a risk reduction strategy.

This article focuses on details of the CEP program as a means for quick-reaction, low cost screening of solutions to capability needs. TRADOC's program concept, administrative procedures, and directions on the mechanics of participation are explained. To provide a clearer differentiation of the CEP experimental format from other investigative tools, a brief overview of other demonstrations is provided. The CEP can be a stepping stone to other experiments which more fully explore the value of the concept emerging from the screening evaluation. Figure 1 provides an overview of the Army's experimentation program. The majority of experiments (ATDs, ACTDs) are viewed as developmental opportunities to mature solutions. In these two types of experiments, merits of a particular solution are not comprehensively understood but are under exploration. ATDS and ACTDS are

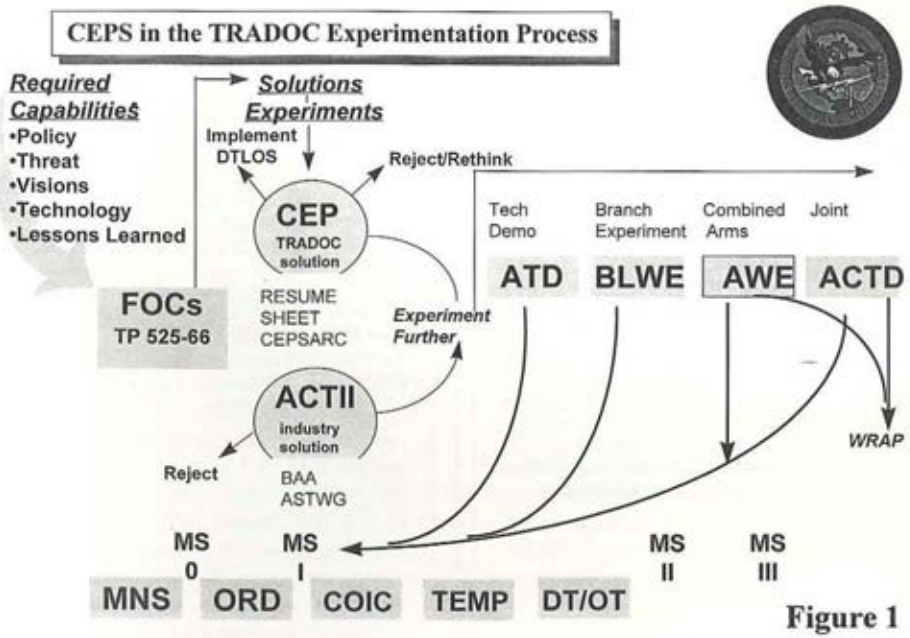

Figure 1

used for refinement and definition of operational effectiveness and suitability. CEPs and ACTIIs focus on the merits of more clearly defined, in- hand concepts or mature technologies. Proof of either a concept or system through ACTII or CEP can lead to additional participation in an AWE to further validate the suitability of the solution found in the screening experiment. Since both the CEP and ACT II programs screen promising solutions, one might ask what is the difference between the two? The difference is that ACTII is exclusively material whereas CEPs are not. Secondly, ACTII seeks solutions from industry not covered in other government programs, whereas CEPs generally pursue proponent defined solutions. ACTII actively solicits from industry, near term technologies, systems developed for other applications by broad area announcements in the Commerce Business Daily. In the CEP, the solutions explored come from within the proponent system.

The CEP program is from the HQ TRADOC perspective is a separately funded mechanism providing the ability to capitalize on emerging technology, new material initiatives, and emerging operational concepts through experimentation conducted under battle lab auspices to determine military utility or potential to satisfy army doctrine, training, leader development, organization, or material and soldier needs. The program is managed through a schedule and review committee know as the CEPSARC. The CEPSARC is a TRADOC operated and chaired council that reviews and prioritizes CEP projects for Deputy Chief of Staff of Combat Developments approval twice a

AVIATION FUTURE OPERATIONAL CAPABILITIES

AV-97-001	Communications
AV-97-002	Pilotage and Navigation
AV-97-003	Mission Planning and Rehearsal
AV-97-004	Cognitive Decision Aids
AV-97-005	Aided Target Acquisition and Identification
AV-97-006	Weapons Suite
AV-97-007	Survivability
AV-97-008	Aircraft Inter and Intra Theater Capability
AV-97-009	Improved Aircraft Performance
AV-97-010	Aviation Availability and Logistics Support
AV-97-011	Battle Command
AV-97-012	Airspace Management
AV-97-013	Systematic Upgrade of Constructive Models
AV-97-014	TADSS
AV-97-015	Embedded Training
AV-97-016	Virtual Reality
AV-97-017	Live, Virtual, Constr. Training Technology
AV-97-018	Synthetic Environments

Figure 2

year. Meetings are ordinarily held in September and February. The September meeting approves in-cycle CEPS or next fiscal year projects to begin October 1; the February meeting assigns uncommitted residual funds to out-of-cycle CEPs. An action officer working group (video teleconference) is held bimonthly to monitor the progress of individual programs.

An individual CEP is normally a small scale, low resolution experiment. CEPs do not need to be focused on material solutions to capability shortfalls but should be thought of as supporting the more generic concept formulation process. Historically, the majority of CEPs have been material oriented but with the onset of digitization and greater reliance on simulation, both as an investigate and training tool, DTLOS investigations have increased. The solution proposed affects funding. If material is involved, the CEP is RDTE funded; but if it falls within the non-material realm of DTLOS, OMA funds are awarded. A listing of recently funded RDTE and OMA projects follow:

- Light Digital TOC (RDTE)
- Detection Signal Applications Technology (RDTE)
- Crusader Operations on the Battlefield (OMA)
- Armor/Mech Brigade, Battalion TOC Restructure (OMA).

The CEP program is open to nominations from multiple sources to include combat developers, training developers, and material proponents. Imperatives are that the potential CEP have TRADOC proponent sponsorship, be coordinated through battle lab, and support future operational capabilities. Aviation's future

operational capabilities are at Table 1. There are other constraints. In general, the CEP should be executable within a year; cost should not exceed $250,000, and the proposal not duplicate another existing program. Constraints are geared to the concept that CEPs are a quick reaction, screening test.

The Air Maneuver Battle Lab is developing a memorandum of instruction to assist interested agencies with the administrative steps necessary to nominate and submit aviation related CEP proposals to TRADOC. Air Maneuver Battle Lab will screen submitted proposals from nominating agencies and let that agency know if the idea conforms to the constraints TRADOC imposes on CEPs or suggest modifications necessary to restate the idea in CEP format.

The most common problem with the CEP program in the past has not been the quality of the ideas submitted, but the fact that other experimentation formats were more suitable. Given acceptance of the idea, the proposer will be asked to assist in the formulation of a resume sheet. The resume sheet explains to TRADOC what you want to do, how you will do it, and the associated cost structure. Instructions for resume sheets and the aforementioned nomination form will be provided by the Air Maneuver Battle Lab upon request.

Resume sheets are detailed documents. Very often completion of the resume sheet involves face to face meetings between the nominator of the experiment, the Air Maneuver Battle Lab, and the Test and Evaluation Coordination Office at Ft. Rucker. All aviation CEP nominations are next forwarded to an USAAVNC Council of Colonels for review, approval, and the assignment of a rank order value as to its total importance to aviation .

Air Maneuver Battle Lab submits completed resume sheets to TRADOC for review. The submission and review process is in two stages. The first submission is considered by HQ as a submission of draft documentation. TRADOC reviews the drafts from an administrative perspective and typically suggests modifications or corrections. Missing information elements on the resume sheet have been one of the major deficiencies noted during the first review.

For example, a common complaint is that an obligation plan for requested funds is missing. Another frequent error is that issues and criteria for experiment were submitted without the required supporting scope and rationale statements. Feedback to the nominating proponent is provided by TRADOC through the battle lab. Corrected resume sheets are then resubmitted.

The next review is for content and this review is more intensive. A warfighting lens like analysis is conducted in which the user's priority for the CEP is contrasted with TRADOC and Department of Army priorities. The overall administrative and content reviews take 3 months. For in- cycle CEPS, awards are announced around the first of September and funds transferred on October 1. The CEP is then executed and a report forwarded to TRADOC upon completion of the experiment. The actual CEP can be con-ducted by a variety of agencies or as a collective effort. Executors include TEXCOM, the combat developer, the training develop-er, the Air Maneuver Battle Lab, material proponents, with and without contract support.

As implied, CEPs can be labor intensive despite their small size. The decision to be faced is do the effort and payoff coincide? This requires an agency decision, but to provide some assistance with this decision, we recommend you consider the payoff matrix below.

- CEPs meet DTLOMS analytic requirements required by DOD prior to proposing new material .

- CEP data can be used for immediate implementation of non-material alternatives or a request for action on non-material solutions to an appropriate element of chain-of-command.

- CEPs can justify and support Mi ssion Need Statements.

- CEPs can be used to evaluate the potential of new technology and support further RDT&E.

- CEPs can be used as a screening device to eliminate alternatives.

- CEPS can be a gateway for a system or concept to become an initiative in an Advanced Warfighting Experiment.

- Exploratory CEPs, involving modeling and simulation, can support ACTII.

If you would like more details about the CEP program, e.g., a copy of a TRADOC level briefing on the subject, instructions for nomination forms, step-by-step procedures for filling in a resume sheet, or the CEP-cycle calendar contact the Air Maneuver Battle Lab.

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ADVANCED CONCEPT EXPLORATION

Joint Combined Arms Reconnaissance (JCAR) is a proposed initiative designed to investigate the contributions of Tactical Reconnaissance to the Commander's Critical Information Requirements (CCIR). In this initiative, Tactical Reconnaissance will be considered an integral part of the Intelligence, Surveillance and Reconnaissance (ISR) domain.

The capability to conduct effective and efficient tactical reconnaissance must be preserved.

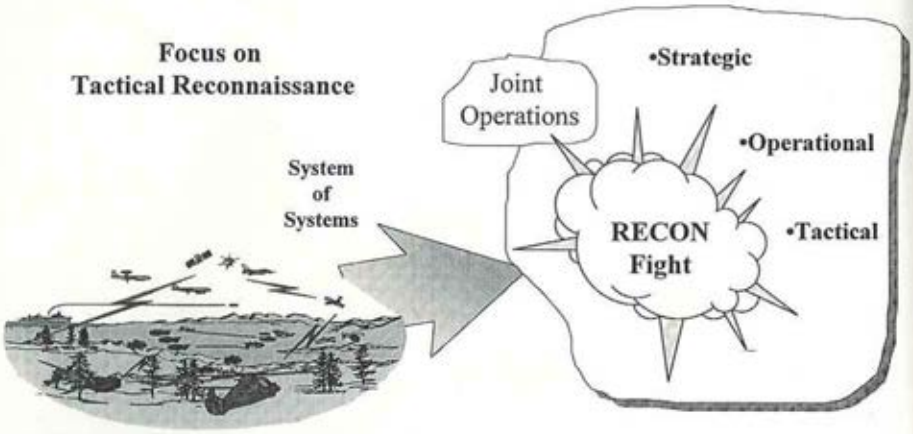
Tactical Reconnaissance has been and will always be a critical element of Full Spectrum Dominance from Stability and Support Operations (SASO) to Major Regional Conflicts (MRC). As the Army continues to restructure and downsize, the capability to conduct effective and efficient tactical reconnaissance must be preserved.

Concept Objective: Integrate manned, unmanned, ground, air and space platforms into a Joint Combined Arms Reconnaissance and target acquisition system of systems to provide enhanced battlefield visualization to Joint Task Force commanders, so commanders can gain information dominance, shape battlespace and conduct decisive operations.

Examine and Explore: Force Mix, Supporting Architecture, Commander's Visualization and Battlespace Shaping.

The operational capabilities and enhancements provided by efficient and effective Tactical Reconnaissance will continually change and adjust as the Army is reshaped over the next thirty years. By Army XXI it will be well defined and already undergoing revisions as a result of applying the tenants of Army Vision 2010. In 2020-2025 Army Vision 2010 will have been reshaped and organized under the principle of Army After Next (AAN). The ever-changing world demands that our nation's fighting organizations continue to evolve to meet the challenges of the future.

Commander's Critical Information Requirements (CCIR) must be accurate and provide near real time confirmed battlefield information necessary to assist the commander in shaping the battlespace for decisive operations. Setting the conditions for battle requires a commander to have accurate and relevant near real-time tactical battlefield information. This information must be of such reliability that the commander can confidently make the decision to commit his soldiers to the fight. Usually this particular type of information is provided by a unit or units which focus on Tactical Reconnaissance and are assigned directly to the



Provide tactical ground commanders at all levels, a rapid and accurate response to their Commander's Critical Information Requirements (CCIR).

Figure 1

ground force commander. For example, in a Division the unit would be the Cavalry Squadron and in a Corps the unit would be the Armored Cavalry Regiment. Cavalry Squadrons and Armored Cavalry Regiments provide information critical to success of the the final planning and execution phase.

An organization, with fully integrated digitized tactical reconnaissance systems, consisting of the Future Scout Cavalry System (FSCS), Unmanned Ground Vehicle (UGV), RAH-66 Comanche and Unmanned Aerial Vehicle (UAV) will provide the ground commander an overmatch tactical reconnaissance, counter-reconnaissance capability. The tactics, techniques and procedures developed in simulation prior to system fielding will ensure the soldier receives the maximum possible capability. The interoperability and integration of these systems will determine how great an overmatch and information dominance capability advanced technology will provide the 21st Century soldier. The Cavalry Squadrons supporting Army XXI, Army Vision 2010, Army After Next will evolve into organizations that operate significantly different and provide full dimensional information dominance at the tactical level.

A seamless operational and technical architecture must be defined to facilitate digital and voice transfer (push and pull) of accurate and relevant information between the tactical, operational and strategic levels. Advanced information age technology is being fielded to assist the commander in the complex task of setting the conditions for battle. Future tactical reconnaissance concepts, in order to effectively use these advanced technologies, will require the full integration of aerial manned and unmanned systems, ground manned and unmanned systems, and air and ground systems.

TRADOC has an approved operational

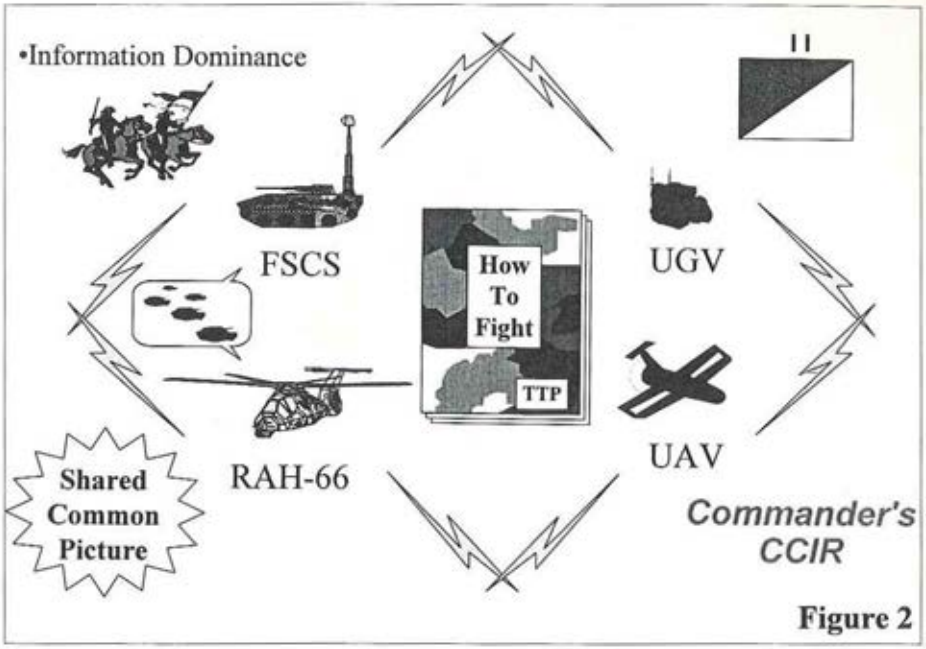


Figure 2

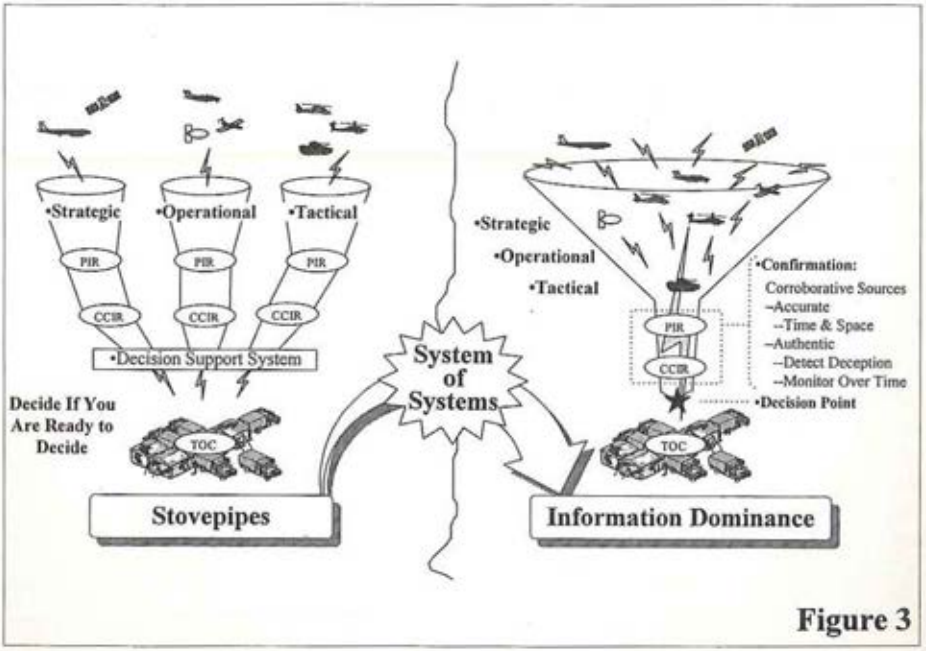


Figure 3

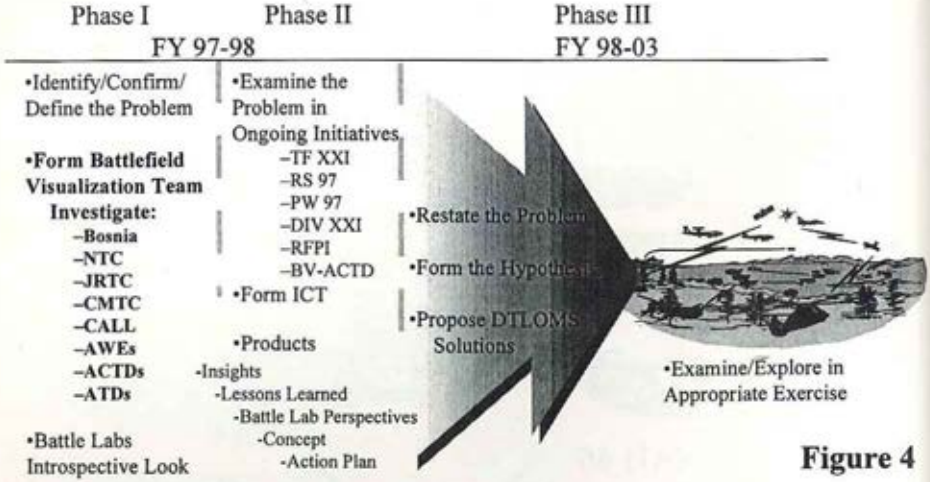


Figure 4

requirement for an air reconnaissance system (RAH-66 Comanche) and is now defining the requirement for the Future Scout Cavalry System. The JCAR initiative will examine and explore ways to create a System of Systems to achieve Information Dominance using the emerging information age technologies. The first phase of analysis will be conducted in the Concept Experimentation Program (CEP) "Manned and Unmanned Aerial Platform Operations on the Digitized Battlefield". This is an out of cycle CEP approved 1 April 1997 for implementation.

The Tactical Reconnaissance Team will investigate the most efficient way to address this issue. It is not clear whether an Advanced Concept Technology Demonstration (ACTD), Advanced Technical Demonstration (ATD) or Army Warfighting Experiment (AWE) should be used to examine Tactical Reconnaissance. The initial objective will be to identify, confirm and define the problem within ongoing initiatives. The next step will be to form an Integrated Concept Team (ICT). Finally, the ICT will shape the problem statement, develop the hypothesis and propose DTLOMS solutions to be examined in an appropriate exercise.

Current status: The JCAR initiative was briefed to the Battle Lab Deputy Directors, the Commanders of Armor, Infantry, Aviation and the Deputy Commanding General TRADOC. The feedback was positive and the team was encouraged to continue efforts to identify, confirm and define the problem. Most of those who were briefed agreed JCAR was really part of the overall Battlefield Visualization domain. There are several ACTDs, ADTs and AWEs which are ongoing that could contribute data and operational information to Phase 1 of JCAR. The team continues to explore and leverage off other activities while developing a plan to transition from Phase 1 onto Phase II and finally into Phase III. On 1 April 1997 CEP 0101 "Manned and Unmanned Aerial Platform Operations on the Digitized Battlefield" was approved. This CEP will explore the effect of helicopters and UAVs operating together performing Tactical Reconnaissance missions.

★ ★

Mr. MacWillie is Liasion Officer, PEO Aviation/ATCOM, Air Maneuver Battle Lab, Ft. Rucker, AL.

BY LTC DOUGLAS R. ELLER
and CPT TERRY BOYD

ATTACK HELICOPTER OPERATIONS IN FORCE XXI - THE FUTURE IS NOW!

The terms EGI, AMPS, and Apache Longbow conjure images of some staff officer putting together a briefing about a future aviation unit. Yet, each of these items is more than a topic in a briefing; each is fielded and in use with soldiers today in 1-4 Aviation (Atk) at Fort Hood, TX.

Many of you will be fielded with advanced systems soon.

The battalion is not a hand-picked group of soldiers who are fielded and supported with 100% plus TO&E strength and a big budget. Rather, we are just like any other Apache battalion in the Army...only we have been given a chance to work with some exciting new technology. Many of you will be fielded with this equipment soon.

Embedded Global Positioning System Inertial (EGI). Have you ever been a front seat "flight lead" navigator on a deep attack mission when it is dark, the visibility is terrible, and your doppler is on another continent? Definitely not a comfortable feeling! Have you ever looked at the 136 Doppler control head and wondered what all those buttons were for?

The Embedded Global Positioning System Inertial (EGI) provides what many gun pilots have been waiting for - a reliable, current satellite navigation capability combined with an automated mission critical data upload/ download feature, all contained in an integrated (not a strap-on) system.

The Computer Display Unit (CDU) now takes the place of the Data Entry Keyboard (DEK) with the advent of EGI. The system powers up when aircraft power is applied. No more need for the front seater to confirm "present position in," the EGI usually "finds itself" within 30-60 seconds! The CDU also provides the interface to the 40 navigation points, 40 targeting points, the Fault Detection and Locating System (FDLS) data, as well as other standard DEK pages such as laser codes, range, and the Alphanumeric Display (AND). The CDU also offers access to several "hidden" functions such as the ability to automatically synchronize Havequick radios to GPS time. No "Mickey" is required!

The Data Transfer Unit (DTU), located immediately behind the front seater's VHF/FM, provides the ability to upload and download mission data from the AMPS and aircraft respectively. The Data Transfer

Cartridge (DTC) plugs into the DTU and uploads selected or all mission data from the Aviation Mission Planning System (AMPS). How many times have you "fat fingered" a grid or laser code into the DEK? Now, everyone on your battledrill has the same routing, targeting and mission data! After the mission, current waypoints, targets, laser codes and present position (PPOS) are downloaded to the DTC for subsequent analysis in AMPS.

The EGI package implements several other enhancements that improve cockpit efficiency. As mentioned, input of the PPOS is virtually automatic as soon as the generators are turned on. While not eliminating the requirement for a Heading Attitude Reference System (HARS) normal alignment, engine start and run-up is now a completely independent operation. Copilot-gunner (CPG) high action display (HAD) messaging has changed to give a two second address confirmation of a commanded target store (e.g. T71 for a target location stored in the target page address number 71). In addition the CPG can access a target report function that causes Zulu time, datum, and grid location of a selected target to appear across the HAD. This allows target information to be taped and can facilitate accurate SPOT reporting. Finally, the Pilot HAD now depicts the distance to the current fly-to in the sight status field and, with no weapons actioned, the time-to-go in the weapons status field.

Another use we have found for the EGI is in sending more accurately calls-for-fire to the Field Artillery. With the targeting precision that EGI provides, we now shoot all field artillery missions as fire-for-effect. While these fires are still conducted via voice (slow), they are much more accurate when delivered.

The EGI system is not a Task Force XXI only initiative. It is currently being installed in all AH64A's. Additionally, the AH-64D will have dual EGI's installed. As you begin to use this system, you will wonder how you managed to get along without it!

Aviation Mission Planning System (AMPS). The Aviation Mission Planning System is a new generation menu-driven computer system that allows the user to input navigation data, targeting data and mission data onto a data transfer cartridge (DTC). This cartridge is then uploaded into the aircraft through the EGI Data Transfer Unit (DTU).

Features of the AMPS include:

- Automated upload of navigation waypoints
- Automated upload of target locations
- Automated upload of mission data
- Automated download of post mission data
- Terrain profile and intervisibility analysis
- Digital transmission of orders, overlays, threat, etc.
- Threat weapon system range analysis
- Exportable kneeboard cards: TDH card, strip map, target/waypoint summary.

What does all of this mean to the user? Unit level mission planners can now plan the mission totally on the AMPS, and execute using only AMPS based products. No more map boards, string, markers, and "stovepipe" PC based products.

Our use of AMPS has only scratched the surface of its capabilities. Within the Battalion, companies receive a 3.5" floppy disk containing all pertinent mission graphics and overlays. The S-2 includes initial intelligence on enemy locations and unit types. Companies then take this disk, modify the files as necessary to include more information and delete clutter as necessary.

The result is a shell of all possible ACPs, PPs, FAPs, EAs, TIRs, ABFs, pre-planned targets, etc. that the company can load onto a DTC using the available 80 ad-

dresses. We have found that the summary sheet of the DTC is a great tool to give each crew along with a loaded DTC. This summary sheet lists the coordinates loaded in each address plus the five character description assigned to that address. Armed with these two products, crews are ready for execution of their primary mission and they have the means to execute mission changes with great efficiency. With access to 80 critical graphic control measures, commanders have a tremendous amount of flexibility at the touch of a single variable action button (VAB).

One problem we have encountered is a DTC failure caused by the 3 AAA batteries inside each cartridge losing their charge. Woe unto the CPG who must manually input all of those points! Current solutions to combat this issue are to give each crew two DTCs per mission (each EGI modified aircraft receives 2 DTCs) or to take a DTC from a sister ship and load that information into the DTU.

AH-64D Longbow Apache. Much has been written and said about the Apache Longbow. The Longbow's performance during the Force Development Testing and Experimentation (FDT&E) and the Initial Operational Test and Evaluation (IOT&E) is legendary. However, many of you know what sometimes works in a testing environment, does not work out in the "field" no matter how hard we try.

Fortunately, this can not be said about the Apache Longbow. If anything can be said about this system, it is that it works as advertised. Our battalion has two Longbow Apaches (prototypes two and three) assigned, to participate in the Advanced Warfighting Experiment (AWE) trainup and execution. We deployed the Longbow platoon to the field four times during training exercises at Ft. Hood, enroute to the AWE at the National Training Center (NTC).

The Longbows worked in spectacular fashion during these training exercises. They were used in a variety of roles/missions - hasty attack, deliberate attack, movement to contact, and screening operations. Their mast mounted radar provided pinpoint targeting information to other AH-64Ds, to our assigned AH-64As, and to the ground commander through the Common Ground Station - Prototype (CGS-P). By cueing the Longbow with the Unmanned Aerial Vehicle (UAV), targeting predictability and accuracy rose tremendously.

The Longbow was able to connect digitally with other AH-64Ds, the CGS-P, and the Aviation Tactical Operations Center (AVTOC) during our training at Ft. Hood. This digital connectivity is key in providing neartime situational awareness for the aviation and ground commander. The ability to push a VAB to digitally transmit critical mission data in a formatted report (such as shot-at-files, present position report, free text messages and Fire Control Radar (FCR) targets-all) from the Longbow, while the crew is fighting/flying is a real advantage for both the crew and the commander. Similarly, the ability to conduct digital handovers between crews is another great enhancing feature of the Longbow.

The Radar Frequency Infraometer (RFI) provides another tremendous advantage for the AH-64D crew. It does an excellent job in detection, categorization, and classification of air defense systems. The FCR does a good job in sweeping the battlefield for you, but when combined with the RFI, you can get down to the nuts and bolts - shooting the most dangerous Air Defense threat first! While we were not able to shoot the Longbow's fire and forget Hellfire missile during training for the AWE, we have no doubt that it would be as lethal and effective as demonstrated during testing.

Our experiences with the Longbow Apache indicated that it does everything that is contained in all of the fancy briefing slides and color brochures that you have seen. It is clearly a tremendously capable system. Now, where do I sign up to become a Longbow pilot????

Multiple Integrated Laser Engagement Simulation/Air-to-Ground Engagement System II (MILES/AGES II) MILES/AGES II is the next step in wargaming technology for the AH-64A. Like its predecessor, the MILES/AGES II provides real time feedback on the MILES battlefield. However, it has several new improvements. First, the hardware now includes a MILES compatible laser detector whose PK is modified by the aircraft survivability equipment.

The laser range finder functions out to 10km, based on a stronger laser. Likewise, the designator now provides laser kill-code energy out to 8km for Hellfire engagements. It also provides 30mm kills out to 2500m. The system retains the capability to conduct target update and store operations, and way point navigation. Crews can conduct Remote Hellfire handoffs, and they receive actual time of flight notification in the HAD. MILES/AGES II Hellfire firings can be conducted in LOAL (Autonomous and Remote), LOBL (Autonomous and Remote), Normal, Ripple and Remote firing modes, and can be conducted AH-64 to AH-64, AH64 to Hellfire Ground Support System (HGSS), and AH-64 to OH-58D. The only requirement not eliminated by MILES/AGES II is the outfront boresight. If crews do not accomplish this task, engagements will not produce kills. One limitation associated with this new MILES/AGES system is that the 2.75 inch rocket capability is not available.

To date, our aircrews have utilized the system to effectively engage and destroy targets during home-station training. All indicators at this point show this improved system to be a very reliable system, with a stronger laser that helps ensure AH64 lethality on the MILES battlefield. It is nice to finally have a system that realistically replicates our capabilities, rather than arbitrarily handicapping us with a statistician's expectation of our potential. We really look forward to testing this updated system more when we deploy to the NTC for our pending Advanced Warfighting Experiment.

In summary, there is good news "on the horizon." Virtually all of the attack helicopter related systems we have worked with in Force XXI have lived up to their billing.

What else have we learned along the way? Train-up time for the aviators and maintainers on these new systems has been relatively painless. We have used computer based training (CBT) to a large degree. There was some initial pain involved with the EGI system - we incurred about 8-10 days down time per airframe during the installation process. Luckily, it appears to be a relatively robust system. We have had few breakages so far. We have also experienced few hardware related problems so far with AMPS and MILES/AGES II.

In conclusion, each of these systems enables us to "fight smarter, not harder." After the initial learning curve, we have continued to seek increased applicability with the systems which we have been provided. While our work in Force XXI is far from complete, we feel that our collective future is bright. **Attack!**

★ ★

LTC Eller and CPT Boyd are Company Commanders, 1st Battalion, 4th Aviation Regiment, 4th IP(M), Fort Hood, TX.

Editor Note: This article was written before the recent AWE.

■ FEATURE

BY COL STEPHEN J. FERRELL
and CPT JEFFREY M. METZGER

THE AVIATION DIGITAL BATTLEFIELD: A VIEW FROM THE FIELD

An easy user perspective of what worked at the recent AWE.

The Task Force XXI Advanced Warfighting Experiment (TF XXI AWE) Conducted at the National Training Center (NTC) in March was a tremendous training experience for the 1st Brigade Combat Team (1st BCT) and aviation elements that participated from the 4th Infantry Division's 4th brigade. The objective of this Army directed exercise was to evaluate the benefits of digitizing Army units and leveraging information to enhance the lethality, survivability and tempo of operations. The information gained during the "Desert Hammer" (NTC rotation 97-06) training events will assist decision makers in acquisition judgements that lay ahead.

Our aviation task force (48 aircraft: a mix of cavalry, attack, utility and medium lift aircraft) that deployed in support of the division and the Army's first digitized brigade (1BCT of the 4th ID) also advanced five distinct TF XXI initiatives: the Aviation Tactical Operations Center (AVOTC), the AH-64D Longbow, the enhanced (digitized) Kiowa Warrior, the Army Airborne Command and Control System (A2C2S), and the Aviation Mission Planning System (AMPS). Keep in mind that the observations in this article are only an early aviation task user perspective; the official assessments of this experiment are being compiled and will be presented to TRADOC in the near future.

A challenge to this writing is establishing a basis of reference for the reader to digest information on a crowd of new systems used during the AWE. The display at Figure 1 is designed to help in this aim. It reflects the five main components of the Army Battle Command System (ABCS). These are the baseline digital systems resident in the newly designed AVOTC and in the 1BCT TOC. What follows is a brief description of the functions of each ABCS system, and the other centerpiece TF XXI system, applique (a computer through which we received situational awareness), followed by some user insights on each.

It's difficult to describe the challenges that both contractors of the Army user faced as these complex systems were introduced and integrated in our TOCs, but we can tell you they were numerous and continuous. Overall, the ABCS system operated without

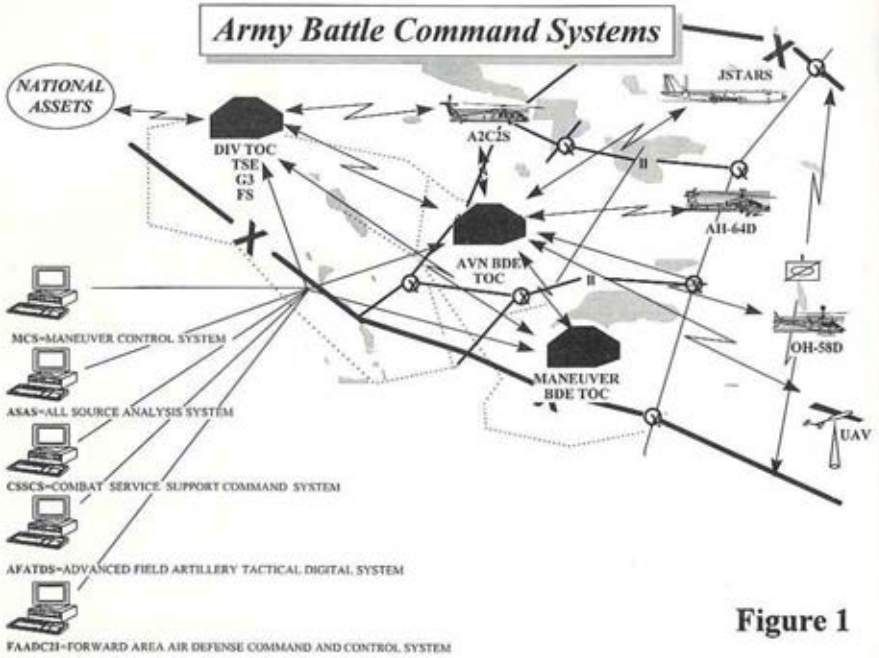


Figure 1

major setbacks or repetitive shutdowns. In reporting shortcomings, the system still lacks a clean integration, suffers from an unwieldy extraction of information (need to improve user friendliness and access to the most urgent user needs), and needs improvement in reliability.

Maneuver Control System (MCS) is the primary battle command source for TF XXI. It provides a common picture, decision aids and overlay capabilities to support the commander and staff via interface with the data populated from the other ABCS systems. MCS satisfies all information requirements for a specific operation and effects the control and plans for current and future combat operations. This system shows the current operations picture with the capability to display information from the other systems (i.e., artillery, CSS, obstacle, enemy overlays) for current or future planning. Our chief insights on the MCS:

Benefits of the system:

- an excellent planning tool; used this system in a number of ways to include terrain analysis for aviation employment (OP's, battle positions, etc.)
- provided functional display screens to track, brief and control operations in near real time.
- provided all commanders with a relevant common picture.
- accelerated C2 functions through the digital transmission of orders, reports and routine messages.

Areas for improvement:

- lacks fidelity for precision graphics (no "file draw" function).

All Source Analysis System (ASAS) is the TF XXI intelligence fusion system which provides a timely, accurate and relevant

picture of the enemy situation to commanders at all levels. The remote work station (RWS) supports the S-2 at battalion and above with automated situation development, targeting, tactical warning and battle damage assessment. Enemy order of battle, weather, enemy ADA systems, terrain data/analysis and other IPB products (modified combined obstacles overlay [MCOO], situation templates, etc.) are available via ASAS. Among other uses, the ASAS home page provided intelligence summaries (INTSUMS) and updates from all levels for the S-2 to reference and use. Our thoughts on the usefulness of ASAS:

Benefits of the System:

- a powerful all source intelligence system that rapidly provides the S-2 section relevant information.
- Great preparation and briefing tools; the ability to access data, overlays, (INTSUMS) and do terrain analysis horizontally and vertically with the click of a button is wonderful

Areas for improvement:

- tendency of the system to fail without warning
- requires intense management and resourcing to QC the data.

Advanced Field Artillery Tactical Data System (AFATDS) is the fires support C2 system for TF XXI, deployed from division down to the firing batteries. AFATDS provides automated decision support for the fires subsystem and gives the FS coordinator automated support for the planning, coordination, control and execution of close support, counter fire, interdiction, and ADA suppression fires. Some comments on AFATDS:

Benefits of the System:

- provides excellent situational awareness (SA) through observer/fire unit locations, fire support coordination measures, and ongoing calls for fire
- liable communications and excellent screens to display fires plan/overlay
- allows completely automated fire mission processing decreasing mission response time and increasing the effects of fires.

Forward Area Air Defense (FAAD) C2I provides the TF XXI air defense capabilities. It integrates the ADA fires units, sensors, and C2 centers into a coherent system capable of defeating the low altitude aerial threat. It allows the commanders and staff to coordinate, direct and control the counter-air fight and provides the third dimension situational awareness component for TF XXI by displaying near real time airtracks of friendly, enemy and unknown aircraft (a common air picture). The FAADC2I is a real winner, especially some of the additional benefits it brings to the AVTOC. Some FAAD system thoughts include:

Benefits System:

- excellent display that tracks the location and progress of acquired aircraft.
- Provides the commander a clear and current picture of air defense coverage extensively to track mission aircraft when voice communications was lost

Areas for improvement:

- only as good as the radar coverage provided by the positioning of the ground base sensor (GBS); low flying aircraft often disappear from the screen.

Combat Service Support Control System (CSSCS) provides timely CSS information to the commander and an automated system for logistical, medical, financial and personnel information processing. CSSCS injects CSS overlay information (main supply routes [MSR's], forward arming and refueling points [FARPS], etc.) and provides current logistical data to MCS for reports. Our insights on CSSCS include:

Benefits of the System:

- pre-filled database allows for tracking and reporting of almost all MTOE items.

- provided automatic reporting of all classes of supply
- common graphics interface with MCS enhanced ALOC battle tracking

For TF XXI the applique is the C2 computer/system that provides brigade and below elements with real time situational awareness (SA) of both friendly (blue, and enemy (red) units over a communications structure referred to as the Tactical Internet (TI). The applique assists the commander and staff in the dissemination of orders, and critical information. The SA displays were present in two key aviation command posts during this exercise, the AVTOC and the redesigned prototype UH-60 A2C2S. Now let's review some main insights on situational awareness and command and control.

The situational awareness (SA) provided by the applique (and transferred to MCS) was a true combat multiplier. I believe one of the greatest insights from the AWE was the benefit SA provided soldiers, leaders and the commander. Battlefield commanders seek information in two primary areas: the enemy and the friendly situation/status. Armed with the current enemy and friendly situation, commanders can confidently direct and synchronize operations. The applique computer screen, populated blue and red icons through EPLRS and position data transmissions via the internet system. This awareness gave commanders at all levels a real time and common view of the friendly and (with less precision) enemy situation. The SA provided in the applique systems in ground vehicles, the AVTOC and the A2C2S provided the task force an unprecedented ability to anticipate and control aviation operations.

We can illustrate the beauty of SA by reviewing one NTC battle scenario. On training day 11 we were directed to conduct an aviation attack against up to two MRB's in the southern part of the 1BCT sector (vicinity of the Whale Gap). The maneuver battalions of the 1BCT were positioned in depth in the central corridor with the option to move the deeper mechanized battalion south in the event the regiment used that approach. We never heard the order for the mechanized infantry battalion to move south to an area of the battlefield where attack helicopters were engaging enemy forces.

However, using the SA from applique in the AVTOC and aboard the A2C2S the TOC staff and the aviation task force commander recognized this contingency was in progress. Exploiting the SA we were able to redirect combat power, expedite air and ground attacks, and advise attack company crews on exact friendly locations in the close battle that ensued. The end state was an effective massing of fires and not fratricide.

In addition, the MCS system on the A2C2S and its terrain analysis tools were used by the commander and staff to assess the feasibility of a hastily selected attack position. Finally, nearing the end of the mission, the commander used the real time SA to anticipate aviation commitment in the north (and raise attack readiness levels without orders) to defeat a developing threat in the northern portion of the brigade's broad sector. The applique and SA added clarity to a normally fuzzy picture of the friendly and enemy units during combat operations to permit the commander to act without guessing.

A key in any combat operation is effective battle command. Success begins with a tactical operations center that can assimilate information to assess/develop enemy and friendly courses of action for the commander to consider and execute. The AVTOC, shown at Figure 2 is a huge acquisition for Army aviation. The improvements to the aviation TOCs we've used in the past are significant. Finally we have a fully functional design similar to ground maneuver TOCs, which provides the structure and

OH-58D (I)- Kiowa Warrior

- Reconnaissance aircraft providing digital link with AVTOC and ground maneuver units
- Uses enhanced positioning system (EGI) to provide increased navigational accuracy
- Capability to use RF Hellfire missiles

A2C2S- Army Airborne Command and Control System

- UH-60A helicopter with communications and computer suite designed to give airborne commanders seamless connectivity with ground TOCs
- Provides Situational Awareness and ATCCS link to airborne Commander

AH-64D- Longbow Apache

- Digital attack aircraft with Fire Control Radar (FCR)
- Uses FCR with Radio Frequency Interferometer to Detect, classify, prioritize and engage targets
- Exploits full potential of fire and forget (RF) Hellfire missile

AVTOC - Aviation Tactical Operations Center

- Command and control center for all Brigade Aviation operations
- Integrated system of ATCCS work Stations, AMPS, additional C2 equipment and advanced radio suite

AMPS- Aviation Mission Planning System

- Automated system providing planning and synchronization tool specifically for aviation
- Provides system for tactical planning, mission management, and maintenance management

Figure 2

equipment to effectively integrate battlefield systems (maneuver, intelligence, fires, ADA, C2, etc.) for efficient battle preparation, tracking, reporting and command. And for the first time during this AWE we had direct feeds from JSTARS and Unmanned Aerial Vehicle (UAV Hunter and Predator) for a sensor link that triggered decisions for maneuver and fires against the enemy.

An area needing further study is acceptance and confidence in the information commanders and TOCs receive (eliminate redundant analysis on intelligence that now is readily available at all levels). In addition we must determine how the vast amount of information should be presented to the commander to direct actions inside the enemy's decision cycle. With the ABCS systems, essential information was available at the TOC; now it is critical to arrange and manage the information/displays to facilitate battle command decisions. We saw the need to further improve the AVTOC by enhancing TOC mobility, improving the MESHNET (voice and intercom communications network) system, and rearranging equipment layout, but unanimously agree that the AVTOC is a winner for Army aviation.

Another sure fire winner in this exercise was the AH-64D Longbow. It was arguably the most effective and decisive combat/killing system on the battlefield. If any system highlighted the advantages of new technologies and situational awareness it was the AH-64D Longbow. The ability to digitally hand off targets, sector engagement

areas and maintain SA between aircraft were all affirmed at the AWE. Study of the crew cockpit tapes speaks volume to the benefits of digital technologies and awareness between combat systems. There was much less voice communications between pilot and copilot and between Longbows due mainly to cockpit screens that displayed essential enemy (targets) and friendly (location of wingman and depiction of fire control measures) information. Armed with this information, crews were able to quickly focus on the critical tasks of maneuver and target engagement.

Longbows were effectively employed as the lead elements against the enemy to destroy or suppress enemy ADA (set conditions), gain intelligence and initiate the attack. During the China Lake deep attack against high value radar sites the Longbows located and destroyed threatening enemy ADA and the critical high value targets more effectively than ever before. When joined with the additional firepower of the AH-64A elements these assets became a decisive combat force on the battlefield (on one mission attack aviation destroyed over 60 enemy combat systems to defeat the regimental attack on a less likely enemy attack avenue).

Some other lessons and intuitions were equally important to Army aviation and combat operations as we return from this experiment.

- The best computer on the battlefield is still the soldier. There is no substitute for the ingenuity of our great soldiers. Armed with more information than ever before, success still depends on leaders and soldiers to direct and execute actions against the enemy. Soldiers continue to excel in taking acquisition system designs and discover new and improved ways to support the commander and fight the enemy.

- Adept tactical reporting must be sustained, and positive communications and cross-talk between commanders is indispensable.

- The embedded navigation (GPS and EGI) systems available on the Longbow, AH-64A, OH-58D, UH-60 and CH-47 are a tremendous combat multiplier. Knowing exactly where you are is a key and first step in executing any mission.

"The best computer on the battlefield is still a soldier."

- The applique improved our ability to move ground elements to designated locations on time (i.e. TAC, FARPs and LNO's).

- We must continue to press for collocation of real time UAV and JSTARS feeds into aviation command posts. Integrating these systems into the AVTOC's intelligence and targeting cells expands our insight on the enemy immeasurably.

★ ★

COL Ferrell is Brigade Commander, and CPT Metzger is Digitization Officer/Battle Captain at 4th Brigade, 4th Infantry Division (Mech), Fort Hood, TX.

BY MAJ PETER E. CURRY

CHANGES TO OFFICER MANAGEMENT SYSTEM ARE ON "SHORT FINAL"

The Officer Personnel Management System XXI (OPMS XXI) Task Force is fine tuning its recommendations to change the way the Army manages officers. You may be asking yourself, "Why change now, what has changed?" We need to change because:

- The political landscape has changed. The world no longer has a two superpower structure, which is causing us to review how we equip and employ forces.
- The nature of warfare is changing. Our national security is being increasingly challenged by nations and groups using asymmetrical means.
- Our Nation's economic priorities have also changed. In the need to gain a "peace dividend" from the demise of the Soviet Union, our Nation's leaders are trying to find ways to reduce the national debt.

These changes have caused the Army to conduct an internal review aimed at gaining efficiencies and increasing its capabilities to fight tomorrow's wars. The Army's main engine for change is the Force XXI initiative.

Reducing officer turbulence is one goal.

OPMS XXI study is the officer management part of this overall review. GEN Dennis J. Reimer, Chief of Staff of the Army, chartered a task force to review how we manage officers and increase the system's efficiency and unit effectiveness.

Methodology. Based on the charter issued by GEN Reimer, the task force, led by MG David H. Ohle, began operation on July 1, 1996, with 35 officers and soldiers from each branch of the service, including two aviators. While some have previous personnel experience, most bring to the task force a great deal of field experience—precisely what we needed to ensure that we address the needs of the field commanders.

Once we formed the task force, we began three months of intensive research into efforts done in the past in the area of officer development and management. We also analyzed the state of the current system. Previous studies such as OPMS I, conducted in 1971, and OPMS II, conducted in 1984, were critical in establishing a baseline of knowledge and getting a sense of how this large organization incorporates change. As

we viewed these works, as well as others, we established our line of departure by using the Deputy Chief of Staff for Personnel's Precursor Study Group papers.

DCSPER's Precursor Study Group. This group was formed about a year prior to the task force. This seven-officer group examined nearly 60 issues related to the Active component officers and warrant officers. These issues ranged from questions about manning and inventory to those about assignment and leader development.

The group also considered issues of major concern today and those with potential ramification for the future as the Army continues to evolve into the 21st century. The PSG organized the issues into three categories, recognizing that many were interrelated. Those categories were: Structure and Distribution, Leader Development and Training, and Career Management. We organized the task force around these categories, then added a top flight Operational Research and Systems Analysis cell to crunch numbers and provide some analysis for the anticipated consequences for any proposed recommendations.

After the task force got up to speed on the personnel system, we began to review options and recommendations. One of the key aspects of our review methods was to ensure that the field Army, as well as the schoolhouse, had direct input into our efforts. We established a Council of Colonels -- a group of senior officers that offered advice and feedback on our efforts. That group provides us the azimuth and sanity checks as we work through the issues.

After a briefback to the CSA, the task force defined the problem, then began to develop the characteristics of any future officer system. Over time, the task force designed options for a new Officer Development System. After briefing the CSA on these efforts, we briefed the Army's Board of Directors—a group of Title X four-star generals—on four possible options for revising the system.

These options ranged from simply tweaking the system, all the way to separating the Army into four distinct career fields. The CSA then gave us approval to develop two courses of action that fell into the middle of the range described above.

"One of our benchmarks is to keep majors at an installation for three years."

Currently we are developing these two mid-range options. Our design criteria is focused on three areas:

- Enhance the warfighting capability of the Army. Our aim is to reduce officer turbulence and increase unit effectiveness. One of our benchmarks is to keep majors at an installation for three years. We think this will allow those in the operational Army to remain in a branch-qualifying job for 18-24 months and will give commanders more flexibility in developing future leaders.
- Provide reasonable success. We want to provide many paths to success. The Army of the future needs not only commanders, but also highly skilled specialists that better support the commanders.
- Bring grades and skills closer to what we really need. We need to balance our structure between operational and operational support requirements.

Impact for Aviation Officers. How will this new system affect Army aviators? Our

(Changes To OMS—cont. on pg. 49)

THE RELEVANCE OF ARMY AIR TRAFFIC SERVICES (ATS)

A recent study conducted by the Army's Force Integration Support Agency (USAFISA) concluded that Army Air Traffic Services (ATS) are broken. In fact, the study suggests that Army ATS is in such a total state of disrepair that only total dissolution or radical restructuring will correct its downward spiral.

One of the primary recommendations of the study is the consolidation of all tactical assets at Fort Rucker, Al. It is felt that this move is the only sure method of ensuring the future survival of Army Air Traffic Services. In recent months, Army Aviation leaders have focused a great deal of attention on this problem to determine proper disposition of USAFISA's recommendations. What should concern most of us is that, based on the study, the fundamental relevance of Army ATS has been called into question. It would seem as though the ATS world is literally imploding!

"The fundamental relevance of Army ATS has been called into question"

However, based on my observations here in Europe, discussions with ATS commanders throughout the world, and after action reviews conducted with various Aviation Brigade Commanders, not only is Army ATC alive and well, but it is providing value added to Army operations everywhere it is engaged.

Here in Europe, Army ATS is a thriving element of the command. The Battalion currently maintains fixed facilities at nine different USAREUR airfields, supports four different tactical installations in support of operations in Bosnia and Hungary, and it has provided contingency packages in recent months for various operations in the Theater. The mission is being executed by some of the Army's most professional soldiers under tough conditions despite a lack of adequate resourcing or oversight from the Aviation community.

As a result of the extensive Flight Following Network recently established in Bosnia and Hungary, the total cost of flight operations in that Area of Operation as been reduced according to some estimates by as much as 50%. This figure is applied based on the elimination of the need to conduct dual ship operations in the Theater as a

direct result of available Flight Following. As the operation in support of Operation Joint Guard (OJG) continues, plans are being developed to provide an emergency instrument recovery capability at Camp Colt, (which is one of the most isolated of our forward facilities), an integrated radar based fight following capability, an Instrument Flight Rules (IFR) enroute structure that supports high use Air Corridors, and finally an Airspace Command and control plan which facilitates the rapid, seamless transition of Aviation elements across Multi-national boundaries. There is no question that ATS is providing "Value Added" in Bosnia.

The Battalion recently participated in contingency planning and the rehearsal of a proposed Non-combatant Evacuation Operation (NEO) in Africa. The complexity of this operation clearly dictated Army ATS involvement. The basic operational concept was a deliberate deployment by an air assault force from an Intermediate Staging Base (ISB) to a Forward Operating Base (FOB), an estimated 100 kilometers from the target area.

In order to evacuate the large number of American citizens in the target area, multiple sorties had to be executed to and from the target area over a six to eight hour period. As planned, the mission was to be executed under the cover of darkness. Prevailing weather conditions were such that there existed a high probability that the force would be faced with less than optimal weather conditions at some point during execution. In other words, the potential existed that the force would be unable to safely recover to the FOB. When coupled with the austere conditions at the remote strip and the addition of Air Force C-130's and CH-53's, the operation clearly fell into the high risk category.

As a consequence, a small tailored ATS package was added to the task organization. The ATS organization consisted of only fifteen personnel and included both a Tactical Tower and a Precision Approach Radar Team (PAR). The Tactical Tower team provided terminal control, deconflicting the myriad of aircraft movements in and out of the FOB/FARP, while the radar team was given the task of recovering aircraft which might have encountered inadvertent instrument conditions. As a consequence of the successful, full scale rehearsal conducted at the CMTC, the Battalion's ATS package clearly demonstrated the value of having the right mix of tactical controllers for complex night aviation operations. This successful rehearsal highlighted the fact that Tactical ATC provides relevant service to the Aviation Task Force in three ways;

"There is no question that ATS is providing 'Value Added' in Bosnia."

- ***Increased Probability of Success:*** There is no doubt that this continues to be one of the theater's more complex contingency operations. The number of aircraft involved, the austere nature of the field, the weather conditions, and night execution introduced a number of variables which directly impacted the probability for success. The inclusion of the ATC Tactical Tower team ensured a disciplined flight environment, facilitating the appropriate level of control in and out of the field and the FARP.

- ***Increased Aviator Confidence***: As

aviators departed the field for the target, they left knowing that should they encounter inadvertent instrument conditions during any one of the six to eight sorties they were required to fly, the Tactical Radar team would ensure their safe recovery. The alternative they faced was to return to the target or to attempt to land in an unsecured area while loaded with precious cargo.

• ***Mitigation of Risk***: It goes without saying that the overall risk of an operation of this nature falls into the high risk category. This is due in large measure to the complexity of the operation, the Multi-service nature of the mission, the variety of different aircraft involved, the number of moving parts, and the dynamic nature of contingency operations. The presence of ATS in this particular operation enabled the commander to significantly "buy down" the overall risk of the mission.

The Army's overfocus on fixed based ATS operations in the past has created a situation where the community may have lost sight of the real value of Army Air Traffic Services. The group that recently reviewed the ATS community focused its efforts almost entirely on the installation mission. However, fixed based operations should be considered nothing more than a means to keep tactical controllers proficient.

The future of Army ATS rests in its ability to provide unique services to the commanders in the field. That is the relevance of Army ATS! As a vital combat multiplier on the battlefield.

★ ★

LTC Irish is the Commander 3-58 AV(ATS)s, APO AE.

Changes To OMS

(Continued from Page 46)

initial analysis reveals that the new system will have several positive impacts on aviation officers:

- Officers will spend longer tours in key developmental assignments above the rank of captain. We are still developing the optimum length of time.
- Increase focus on developing the warfighting skills through the rank of captain.
- Provide more ways to succeed for those officers who specialize in other fields.
- Improve officer development by integrating aviation officers across the entire Army spectrum.

Exactly how this new system will affect your career choices and development depends on which course of action is chosen. Our final report to the CSA is due out by July 1. As you can see, we are truly on "short final."

Our plan is to implement many of our recommendations as soon as possible. We will publish another article in this magazine around August to support this effort and to get the word out to you. That article will lay out the plan and its specific impacts on Active-duty, Army aviators.

Until then, hold what you've got, and continue to excel. If you have any comments or questions, you can email me at curryp @ hoffman-emh1.army.mil or visit our home page at http://www.army. mil/opms. We will reply to all inquiries.

★ ★

MAJ Curry is located at OPMS XXI Task Force Aviation, Fort Rucker, AL

■ FEATURE BY LtCOL PETER R. McGREW, USMC, RET.

GRUNTS AND FLYBOYS GO SAILING

Twenty-three hundred miles above the earth in a geostationary orbit at longitude 055.00 West, a stabilized one ton communications satellite named INMARSAT-B operates tirelessly and efficiently 24 hours a day. One hundred and fifty miles southeast of Mayport, FL, a 93,000 ton combat laden carrier, the USS *Kennedy* (CV-67) ploughs through the Atlantic's pristine waters.

Proving downlinks and rapid reprogramming work!

Aircrews flying F-18, EA-6B and SH-60F aircraft practice combat flight operations around the clock. On deck, 90 feet above the warm blue breaking waves, stand two USAF electronic combat technicians, MSgts Gary Lang and Chuck Rogers from the USAF Reprogramming Flight in the 68th Test Support Squadron (TSS), Eglin AFB, FL. They are preparing to demonstrate for the first time, at-sea, over-the-horizon access to the Multi-Service Electronic Combat Bulletin Board System (MSEC BBS). This important combat capability is significant because it permits deployed warfighters from all services to electronically acquire and upload new threat data, (i.e. Mission Data Sets (MDS)) to their Electronic Warfare (EW) equipment.

Sounds like the beginning of a new Tom Clancy techno-thriller, but it is in fact one of the many cost-effective steps being taken by the Army Target Rapid Reprogramming Project Office (ATRR-PO), the Communications-Electronics Command's Software Engineering Directorate (CECOM-SED) and the Night Vision and Electronic Sensors Directorate (NVESD) to speed the uploading of threat MDS to Army Target Sensing Systems (ATSS). Rapidly reprogrammable ATSS now play an important part required in Force XXI and digitization of the battlefield.

Over the years, the US Army (as the lead service for specific lightweight airborne EW survivability systems) has expended significant efforts and assets in the development, production, fielding and maintenance of electronic combat systems for its airborne platforms and those of its sister services. This survivability equipment has progressed from hard wired analog devices, to systems capable of being reprogrammed by changing software threat data. This reprogramming or updating of the software, although 'expensive', permits improvement and sustainment of the survivability equipment

by optimization of its programmed operational and threat information. Reprogramming is the information age alternative to the more expensive and lengthy process of building more and more "new" systems.

A notable (and the most widely fielded) aviation electronic combat system for all the services and many Foreign Military Sales customers, is the AN/APR-39 Radar Signal Detecting Set (RSDS) family. The analog AN/APR-39(V)1 is being rapidly replaced with the digitally reprogrammable AN/APR-39A(V)1/3. Soon to be fielded is the AN/APR-39A(V)2 (primarily for all USMC low-slow, fixed and rotary platforms).

Up until early 1990, the AN/APR-39A(V)1 had only one planned Operational Flight Program (OFP) version number 020.9 and MDS number 017. The changing events of 1990 in the Persian Gulf, military and political developments in other parts of the world, and the fielding of other `linkable' lightweight EW survivability systems, served to hasten the development timetable. The Program Manager for Aviation Electronic Combat (PM-AEC), CECOM-SED and NVESD set out to formally codify the OFP and MDS required to ensure that the AN/APR-39A(V)1 and its derivatives would be able to accept and process emerging threat changes in different locations. Numerous interim OFP changes to accept interfaces with the AN/AVR-2/2A Laser Detecting Set, AN/AAR-47 Missile Warning Set, a one-way 1553 bus board, and the AN/APR-39A(V)3 receivers were fielded between 1991 and 1995. But the recently fielded and most important OFP (version number 023.9) included the activation of the RS-485 bus within the processor. This set the stage for the Army to do what the other services had been doing for years—upload or reprogram an MDS at the unit level without establishing a massive and costly logistical effort. In a parallel ef-

fort, the Army established the Army Reprogramming Analysis Team-Threat Analysis (ARAT-TA) and collocated it with the USAF 53D Wing at Eglin AFB. ARAT-TA was created to monitor electronic signals and systems worldwide, build more responsive and geo-tailored MDSs, and seek improved ways to program/upload ATSS.

Concurrently, the USAF established its first classified Bulletin Board System (BBS). The BBS would allow its worldwide deployed units with EW reprogrammable systems to 'reach out and touch someone' who was maintaining an encrypted BBS 'stuffed' with MDSs.

To capitalize on all this activity a practical demonstration was required to exploit just how effectively the services have adapted and expanded their reprogramming capability. The US Army quickly joined with the USAF 68 TSS, part of the 53D Wing, to demonstrate the flexibility and capabilities of the BBS in an expeditionary-type environment. In December of 1995, MSgts Lang and Rogers visited Magnavox in California to learn the operation of the Magnavox INMARSAT B MX 6060 Portable Satellite Phone with the BBS at Eglin, via the INMARSAT B. (Test file download times were: 8KB—20 secs, 37KB—2 mins 45 secs, and 45KB—3 mins 19 secs).

From there, they visited SRI International in San Francisco to learn new methodology used to upload/reprogram the AN/APR-39A(V)1 User Data Module (containing the MDS). This process uses an inexpensive RS-232/485 converter cable and unclassified laptop software developed by SRI International under contract to the ATRR-PO.

Back at Eglin, ARAT-TA had obtained an AN/APR-39A(V)1 (programmed with OFP 023.9) and a MX-9848A Test Bench Set—a configuration that replicates the RSDS installed on an aircraft. As the designated technicians for this multi-service deployed test, MSgts Lang and Rogers

dry ran numerous tests to verify the satellite phone, satellite, and BBS setup. They then coordinated with the US Navy in Norfolk, VA, and a date was set for their movement to Mayport, FL to meet the USS *Kennedy*.

Thus, the stage was set. On 21 February 1996, the *Kennedy* (with our two MSgts aboard and enjoying their first night sleeping in a "rack" to the melodic tunes of 60,000-pound aircraft being thrown off the bow and 40,000-pound aircraft arresting on the stern) set sail into the sunset.

On 22 February, as the USS *Kennedy* was under flight operations, they set up their portable satellite equipment (a total weight of 45 pounds including the carrying case) in five minutes. The compact satellite equipment and the RSDS were configured on the O-10 level (adjacent to the myriad of rotating and scanning radar antennas).

After aligning the integrated GPS satellite phone antenna with the INMARSAT-B satellite they were able to dial 'home' to the BBS at Eglin AFB and download three files with geo-tailored MDSs. The MDSs were MDS026 (17KB, taking 6 mins 18 secs), 031 (18.3KB, taking 2 mins 15 secs) and, 034 (21.3KB, taking 2 mins 30 secs).

Each of the Army developed, executable MDS files self-extracted to reveal the appropriate pilot kneeboard sheets and pertinent notes for each MDS. MSgts Lang and Rogers used the same communication software protocol (PC-PLUS and Z-modem) that is standard for the Multi-Service BBS.

On 23 February they moved the equipment to a different location aboard the USS *Kennedy* to verify that it was possible to access the satellite from all parts of the ship. The new position was portside aft near the carrier Fresnel Landing Lens.

Uplinking to the satellite on a frequency of 1.6 GHz and downlinking at 1.5 GHz, they were able to download additional MDSs: 029 (size 15KB, taking 2 mins 20 secs), and 030 (size 4.3KB, taking 18 secs). They then uploaded MDS 029 and 031 (downloaded the previous day) to the RSDS; each took 1 min 25 secs, including verification.

Additional data available from the BBS deals with other survivability equipment and their capabilities against specific threats e.g., AN/ALQ-144A(V)1/3, AN/AAR-47, and AN/APR-39(V)2 RSDS. Although this data is not formatted in an MDS structure for reprogramming, it allows users to ensure they have the most recent information that relates to areas of operation and systems' effectiveness. For example, changes in switch settings for the AN/ALQ-144A(V)1/3 Infrared Countermeasures Systems were loaded for worldwide dissemination as soon as they were "blessed" by the PM-AEC in St. Louis.

To test effectiveness of the BBS E-Mail function, ARAT-TA posted several questions to the MSEC BBS at Eglin that were received at sea, answered by MSgt Lang, and returned via the INMARSAT-B. Such a capability allows Electronic Warfare Officers the ability to interrogate experts on threat information, systems capabilities, problem areas that require assistance and provides a way to pass real-time information. All the download tests were completed at 2400 Baud, so the above download times appear somewhat long. 9600 Baud is the standard rate for the BBS, therefore actual rates will be considerably reduced. For the above download tests, the average cost per minute ranged between $3 to $6.00—an insignificant amount when one considers that prior to DESERT STORM, data and reprogramming processes could easily take weeks/months to filter down to the units. Some MDSs were not fully optimized, because many times the tactical environment and operational tempo precluded CECOM EW fielding teams from having timely access to deployed aviation

units. With the rapid and expansive fielding of OFP 023.9 for the AN/APR-39A(V)1, a reprogramming cable provided by ATRR-PO, and a little investment by the supported unit (any secure laptop/PC and STU-III), any user can enjoy the fruits of the reprogramming/information warfare highway.

Does this exercise and capability have relevance to present and future operations? The answer is yes. Looking back in recent combat history, Task Force 118 (now the 4-2nd Cavalry) was stationed aboard USN vessels in the Persian Gulf for three years (in Operation PRIME CHANCE and EARNEST WILL) and again aboard the USS *Nicholas* during DESERT SHIELD/ STORM. TF118 encountered a variety of threat emitters. The emitters covered everything from naval surface search, ship rendezvous radars, target acquisition, track, AAA emitters, coastal emitters to airborne platforms. In addition, the 160th Special Operations Aviation Regiment (Airborne) regularly deploys to ensure its aviators can complete their missions anywhere, anytime. Their deployment aboard the USS *America* for the planned invasion of Haiti would have been easily supportable via MSEC BBS and INMARSAT-B.

Looking to the future, the USN and USMC have an important stake in the success of this connectivity. The USN (with HH-60Hs) and the USMC (with AH-1Ws, UH-1Ns, MV-22s, and CH-53s) are scheduled to get the AN/APR-39A(V)2 RSDS (the big brother/sister to the AN/APR-39A(V)1/3). At sea for considerable periods of time on Amphibious Assault type ships, they will have the need and the modus operandi to update MDSs, access other threat data and provide secure communication data back to "homeplate." The USN is outfitting numerous major surface combatants with permanent INMARSAT terminals. These terminals will provide satellite access for personal and military communications around-the-clock. In addition, USN Cyclone Patrol Craft (currently using AN/APR-39A(V)1) can also dial home for support.

The success of expeditious global communication channels to update or reprogram AEC systems is an important step that has other ramifications for the low-slow platforms. By their very nature, the reprogrammable EW equipment carried on these platforms must be small, compact, lightweight and maintain current geo-specific threat data files. From experience in all the services we know that cramming too much data into the processor's memory can cause some processing and display ambiguities. Consequently, for the U.S. Army, smaller has proven to be better through the use of this electronic medium. For the USAF, this field demonstration highlighted the deployability, accessibility and readiness that is now available "immediately" to its deploying units in a bare base scenario.

Finally, we need to blow our horn a little in the way that all the services worked together on this successful demonstration. "We" had USAF personnel downloading Army MDSs on a Navy ship, all to demonstrate 24 hour access to a Multi-Service Electronic Combat BBS, for Army, Navy, Air Force and Marine platforms via a civilian operated satellite. (Go Purple!).

Meanwhile, back at the USS *Kennedy*, our two intrepid airmen (Lang and Rogers) enjoyed a job well done. As one reward, they got an opportunity to join an elite aviation club that most USAF personnel never get—a catapult shot from the bow of an attack carrier. Hooah!!!

★★

Lt. Col McGrew, USMC, Ret. is an engineer with SRI International and assigned to the ARAT-TA, Eglin AFB, FL, and winner of the 1996 AAAA ASE Award.

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 Ave., Westport, CT 06880-2000, Tel: (203) 226-8184, FAX: (203) 222-9863, E-Mail: aaaa@quad-a.org.

Dear Editor:

In a syndicated newspaper column seen all over the country in early January, COL (Ret) David Hackworth accused pilots of the 101st Airborne Division (Air Assault) and my unit, the 8/229th Aviation Regiment, of wasting our training flights by flying to Owensboro, Kentucky, to eat barbecue.

There I was, as stories told by pilots usually start.

First, I drive the 140 miles to Ft. Knox, Kentucky from my home. Then, we fly off into the sunset, practicing instrument flight procedures enroute to Evansville, Indiana. Linking up with the other two AH-64 Apaches there, we fly to Owensboro, Kentucky, where we stop for a meal (gasp!) in the middle of what will be a 14 hour workday by the time most of us are back home. Enroute back to Ft. Knox in a night formation flight, we make a simulated attack, using our own airfield as the "target". After landing, it takes about two hours to complete the postflight, debrief, and do the paperwork. Then, the long drive home.

On days when I have to take time off my civilian job as an airline captain to fly in the Army Reserve, I lose money on the deal. Many soldiers in the Reserve or Guard are in this situation. The job is no picnic for active duty pilots, either. Ft. Campbell and the 101st is one of the toughest assignments in the Army.

David Hackworth is seriously mistaken if he thinks that what motivates any U.S. Army helicopter pilot to fly demanding and dangerous training missions is strapping on that Apache and FLYING TO LUNCH! He is also misinformed in his belief that platoon leaders and company commanders are planning, briefing and executing training flights in order to enjoy a good meal. Hackworth "researched" his recent column by talking with a restaurant manager, an air traffic controller, and a couple of disgruntled pilots. In doing this, he has taken a broad swipe at those same small unit leaders he professes to support.

A specific allegation against the 8/229th at Ft. Knox is that we "do a rib run almost every [drill] weekend." Mr. Hackworth, if your source is a current Apache pilot here, then he is also indisputably a liar.

Not only do we not go on "a rib run" on most drill weekends, but we never have time to fly two flights to ANY destination and back on drill weekend. Often, we do not fly at all, as we are conducting some other sort of training that day. When we do fly during drill, it is one hop, departing and returning to Godman Army Airfield. We eat at the chow hall, or enjoy a fine lunch at Burger King(r). (Is that OK, or should we eat MRE's?)

Aviators purchased fuel in Owensboro 465 times during 1996, for an average of 1.3 fuelings per day. From July through December 1996, Apache pilots from Ft. Knox flew 1288 sorties. Of these, 38 were to Owensboro. For

nine of the 38, the ground time was too short for the crew to have purchased food anywhere but from a vending machine. This hardly equals the "eight to 10 Army helicopters parked here at any one time" cited by Hackworth.

I have been a pilot in the 8/229th since our first drill in August 1989. I served on active duty and in other reserve outfits before that. In eleven years of flying Army aircraft from Louisville or Ft. Knox, I ate barbecue in Owensboro exactly three times. This was always incidental to a mission, and not the purpose of the trip. Flying from and returning to Ft. Knox on one tank of gas limits our radius of action, and does not provide us with adequate training. My job is to fly a helicopter, and I train by operating the machine. Instrument approaches and other facilities in Owensboro are excellent, and the flying service there has a government fueling contract. We obviously have to stop someplace for fuel. If we are flying all day, we are going to eat, too. Tell me, Mr. Hackworth -- what destination would suit you better?

Official policy at Ft. Campbell prohibits soldiers there from going into commercial establishments in duty uniforms. This is only loosely enforced, as a glance in any nearby off-post restaurant at lunch hour will reveal. If some hungry pilots ate barbecue at the Moonlite during a required fuel stop, this hardly strikes me as fraud.

Another accusation Hackworth levels against my unit is that we undertook a particular flight to St. Louis. This was planned to return the same day. Was it realistic training for the pilots? Of course! Pilots undertake occasional long distance flights to stay sharp on procedures, and a busy destination is a challenge. If passengers and pilots can conduct official business there, so much the better. If a Reserve unit like mine is deployed, that deployment would probably involve flying to a coastal city for transport on a ship. Are we to prepare for this flight by remaining within sight of Ft. Knox?

This trip to St. Louis was delayed overnight by what Hackworth described as "bad weather." Is he using the quotation marks to indicate that he finds this somehow suspect? I did that earlier in questioning his method of "research". Perhaps he would have preferred that the pilots push on in lousy weather, dying in the process as happens all too often. After all, dead men don't incur hotel room charges. Not that it mattered this time. All of these men paid their own overnight expenses anyway.

Mr. Hackworth, I would like to extend an invitation to visit the 8th Battalion, 229th Aviation Regiment at Ft. Knox on any drill weekend. Come see what we do for yourself, instead of smearing our commanders and instructor pilots with groundless accusations. I am writing as a private citizen today, so my invitation is personal and unofficial. If you would like to pay us an official visit, let me know. I can begin the arrangements for that also.

I'll even buy lunch.

CW4 Thomas J. McDonald
Ft. Mitchell, KY

1997 AAAA CONVENTION

The 1997 AAAA Annual Convention was held in Louisville, KY, 23-26 April. At left, before the ribbon cutting, the ARNG State Army Aviation Officers gathered for a group photo at the conclusion of their conference which always precedes the convention. The exhibits (left center) featured displays from 163 industry and government organizations. Army Aviator Astronaut, MAJ(P) Nancy J. Currie, (left below) recruits a new member to the Astronaut Corps.

The professional sessions opened Thursday morning. Below clockwise, MG Dave Robinson, Ret., Senior VP and Membership Chairman, presents the 1996 Membership awards. Net member gain award in the AAAA Chapter category was accepted by the VP Membership for the Black Knights Chapter, West Point, NY, MAJ Keith R. Darrow and the Master Chapter award went to the Morning Calm Chapter. Accepting for the chapter was Mr. John H. Bae, who was also named the Top Gun for having recruited 530 new members. Runners up (not pictured) who also received awards were CPT Susan M. Lind with 292 members; CW3 Dale E. Stroud, with 118, both of the Aviation Center Chapter; MAJ Andrew B. Nocks of Leavenworth Chapter with 75 and CW2 Russell O. Stark, also of Aviation Center with 74 new members.

The 1996 Top Chapter Award was won by the Monmouth Chapter. Monmouth President Ron Kurowsky accepted the award from MG Richard E. Stephenson, Ret., AAAA President.

Right: Keynote Speaker, The HON Togo D. West, Jr., Secretary of the Army, presented the AAAA National Awards after his address. The 1996 Robert M. Leich Award was presented to A Co, 5th Bn, 159th Aviation Regiment, V Corps, USAREUR. MG Petrosky, Aviation Branch Chief assisted in the presentation. Accepting for the unit were MAJ Roland C. Haun and 1SG Ray Aldeguer, the commander and senior NCO.

Left: The Award for Outstanding Aviation Unit of the Year - USAR went to the Aviation Support Facility - Olathe, New Century, KS. Accepting the award for the facility was Michael D. Walsh, the Facility Supervisor. COL Michael A. Bendas represented the Chief of Army Reserve at the presentation.

Right: The Outstanding Aviation Unit - ARNG award was presented to the 1st Bn, 151st Aviation Regiment (Advanced Attack Helicopter) South Carolina Army National Guard. LTC Earl M. Yerrick, Jr. the commander and CSM George E. Dorr, senior NCO. COL Joseph L. Ferreia, Director, Army Aviation & Safety Directorate, NGB, co-presented the award.

The Award for Outstanding Aviation Unit of the Year - Active Army was presented to the 4th Bde, 1st Armored Division, V Corps, USAREUR and Seventh Army. The Brigade Commander, COL William L. Webb III accepted the award on behalf of the unit which returned from Bosnia in December 1996.

Left: The James H. McClellan Aviation Safety Award for 1996 was awarded to CW3 David E. Milligan, 2nd Squadron, 17th Cavalry, Aviation Brigade, 101st Airborne Division (Air Assault). Co-presenting the award was BG Thomas J. Konitzer, Director of Army Safety and Commanding General, U.S. Army Safety Center.

Right: The 1996 Joseph P. Cribbins DAC of the Year Award was won by Kenny Deskins, Assistant Director and Senior Training Specialist, U.S. Army Aviation Logistics School, Fort Eustis, VA.

Left: CPL (now SGT) Troy E. Pontello, D Company, 2d Battalion, 4th Aviation Regiment, 4th Infantry Division, (MECH), Fort Hood, TX, was the 1996 Soldier of the Year. The Aviation Branch Command Sergeant Major, CSM Marvin E. Horne co-presented the award.

Right: The 1996 Army Aviator of the Year was 1LT (now CPT) Donald J. Lee, 1st Battalion, 4th Aviation regiment, 4th Brigade, 4th Infantry Division (MECH), Fort Hood, TX.

Left: Thursday morning's Professional Program continued with a presentation by MG Emmitt E. Gibson, Commanding General U.S. Army Aviation and Troop Command.

Right:The final morning presentation was a briefing by Paul Bogosian, Acting Program Executive Officer, Aviation. He reviewed PEO programs and the status of the move of the office to Huntsville, AL.

Left: Thursday afternoon featured an Enlisted Soldiers Briefing conducted by Aviation Branch Command Sergeant Major Marvin E. Horne.

Right: The last professional presentation of the day was the Logistics Forum chaired by MG Emmitt E. Gibson, CG, ATCOM. Among the panelists were (pictured left to right): COL Jesse M. Danielson, Director of Combat Developments USAAVNC, Wimpy D. Pybus, Chief Aviation Logistics Office, DCSLOG, and MG Gibson.

Right: On Friday morning the opening speaker was the Honorable Gilbert F. Decker, Assistant Secretary of the Army for Research, Development and Acquisition. After his address, Mr. Decker was awarded the Order of St. Michael Gold Award for his outstanding support of the Army and Army Aviation during his entire career.

Left: MG Daniel J. Petrosky, Army Aviation Branch Chief and Commanding General, USAAVNC and Ft. Rucker, AL and the 1997 AAAA Annual Convention Professional Program Chairman was the next presenter and then chaired the rest of the day's program.

Right: The next speaker was MG William F. Kernan, Commanding General, 101st Airborne Division, (Air Assault), Ft. Campbell, KY. MG Kernan briefed on the Division's unmatched capabilities and its impending reorganization.

Left: "21st Century Combined Arms Fires" was the title of MG Randall L. Rigby, Jr.'s presentation. MG Rigby is the Commanding General of the U.S. Army Field Artillery Center, Ft. Sill, OK.

Left: Next MG George H. Harmeyer, Commanding General, U.S. Army Armor Center, Ft. Knox, KY, briefed on "The Future of the Mounted Force".

Right: LTG John M. Keane, Commanding General, XVIII Airborne Corps, Ft. Bragg, NC delivered a very thought provoking presentation on the capabilities of Army Aviation as an integral part of the modern Army.

Left: "Operation Joint Endeavor" was the topic of the AAAA Active Army Unit of the Year commander's address. COL William L. Webb III, commander of the 4th Brigade, USAREUR .

Right: MG John M. Riggs, Assistant Deputy Chief of Staff for Operations and Plans, Washington, D.C. was the final briefer of the Friday morning session. "A Viable Force for the Future" was the title of his presentation.

Right:The Acquisition Forum was chaired by Mr. Paul Bogosian, Acting Program Executive Officer, Aviation and included the PMs of all major Army Aviation systems under the PEO umbrella. Preceding the Acquisition Forum was a presentation by COL Gerald L. Crews, Ret. on "Marketing Yourself for a Second Career".

Right: Saturday morning's First Light Breakfast featured an address by LTG Ronald V. Hite, Military Assistant to the Assistant Secretary of the Army for Research, Development. MAJ(P) Nancy Currie, Army Astronaut and BG Richard G. Capps, Assistant Adjutant General, Florida both received Silver St. Michael Awards at the event. Left to right, LTG Hite, MAJ(P) Currie, and AAAA President Stephenson.

Left: The Spouse Breakfast capped off a most successful Spouse program, including a tour of Churchill Downs. Pictured are, left to right, are perennial AAAA Hostess/ Godmother Toddy Todd; Spouse Program Chairman, Dianne Stephenson; members of the Soldier of the Year's family, Patty Pontello, Tommie Helen Wertenberger, Jean Maldonado, and Maxine Adams along with Spouse Program Vice Chair, Bobbi Robinson.

Left: The Industry Panel was chaired by Boeing Helicopter's CEO James Morris and included Dan R. Bannister, Chairman, Dyncorp, Stuart F. Hall, Executive VP, LME, Inc., Robert Kenney, VP Government Business Development, Sikorsky Aircraft, and Charles A. Vehlow, VP Apache Programs, McDonnell Douglas Helicopter Systems.

Right: The last element of the Professional Sessions for 1997 was the popular Operation and Training Forum Chaired by MG Petrosky, Aviation Branch Chief. Pictured left to right are panel members LTG John M. Keane, CG XVIII Airborne Corps, MG Petrosky, and LTG Leonard D. Holder, Jr., Commanding General, US Army Combined Arms Center.

Right: The 40th Anniversary of the founding of the AAAA was observed by a substantial group of founding members at a lunch on Saturday hosted by AAAA founder Art Kesten. Pictured from left to right are A.T. Pumphrey, Sid Achee, Harry Townsend who are seen giving the prize of a very dusty UH-1 model from Art's office to Elisabetha and Russ Baugh for correctly naming all 14 Cub Club Guidelines broken by club members.

Left: 1997 AAAA Annual Banquet Speaker was GEN Henry H. Shelton, Commander-in-Chief, U.S. Special Operations Command, MacDill Air Force Base, FL.

Left: New AAAA President MG Dave Robinson, Ret. thanks outgoing President Dick Stephenson for his service over the last two years and hands him the engraved "AAAA Cube" as a memento. See you in Charlotte, NC, 1-4 April 1998.

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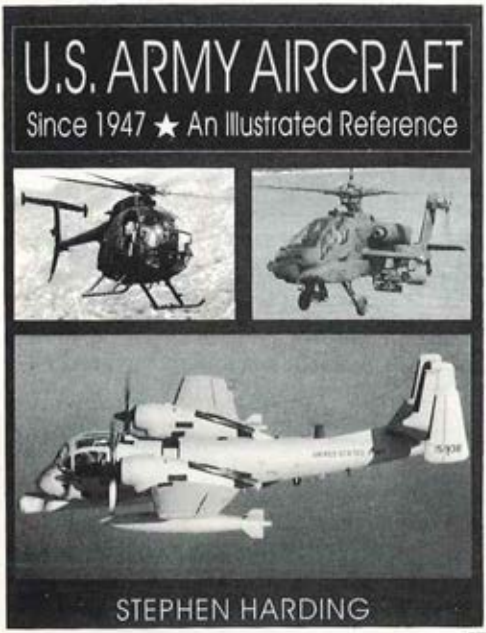

U.S. ARMY AIRCRAFT
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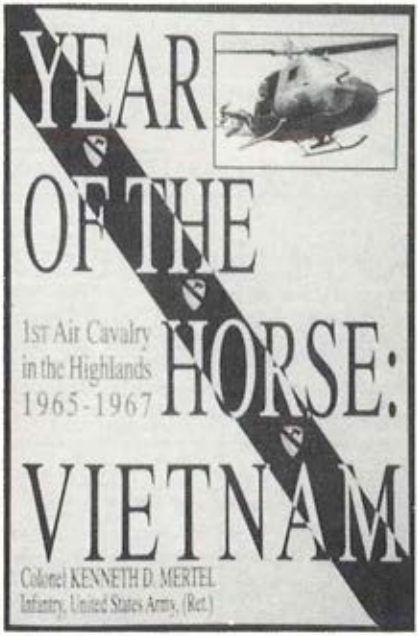
Stephen Harding

U.S. Army Aircraft Since 1947 is the only comprehensive, up-to-date guide to the 124 types of helicopters, fixed-wing aircraft and experimental flying machines used by the U.S. Army since 1947. After a concise yet thorough introductory history of U.S. Army Aviation, the author discusses each aircraft type used by the Army's air arm, which is the largest, most technologically advanced and most combat experienced force of its kind in the world today. Within each chapter the author includes information on aircraft serials, markings, weapon systems, operational history and other technical data. Illustrated with more than 220 color and black and white photographs, *U.S. Army Aircraft Since 1947* is the definitive reference source on its subject and a must-have volume for all military aviation historians and enthusiasts. [Schiffer Publishing Ltd. Size: 8 1/2" x 11", 264 pages, hard cover; ISBN: 0-7643-0190-X].

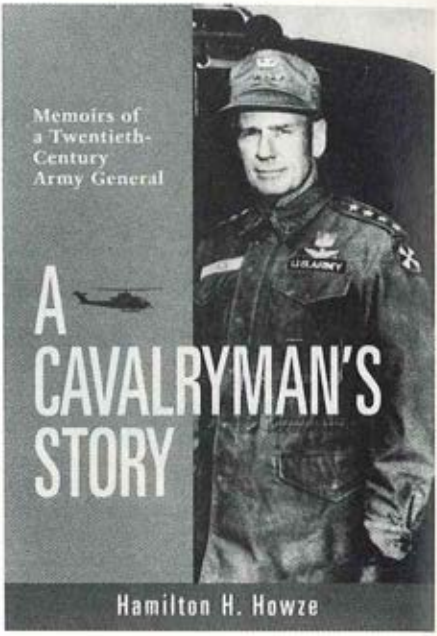
YEAR OF THE HORSE: VIETNAM
1st Cavalry in the Highlands 1965-1967
COL Kenneth D. Mertel (USA, Ret.)

Year of the Horse: Vietnam is the day-by-day story of the Jumping Mustangs - 1st Battalion, Airborne, 8th Cavalry, of the 1st Air Cavalry Division. After describing the activation of this then revolutionary airmobile division at Fort Benning, GA on 1 July 1965, COL Mertel gives a vivid picture of the building of his own Jumping Mustang Battalion, the rigorous training of officers and men, and, finally, the long voyage across the Pacific to Vietnam. Now the test. The answer came quickly and dramatically in a rapid succession of search and destroy operations. COL Mertel pays tribute to the many acts of heroism of his men, who lived, worked and fought together in some of the world's most inhospitable conditions. He also writes movingly of those who never came back. [Schiffer Publishing Ltd. Size: 6" x 9", 384 pages, hard cover; 59 color photographs, 9 maps; ISBN: 0-7643-0190-X].



A CAVALRYMAN'S STORY
Memoirs of a Twentieth Century Army General
Hamilton H. Howze

A Cavalryman's Story is the memoir of a professional soldier, born into the lineage of West Point and recognized today as the father of U.S. Army Airmobile tactics and doctrine. With understated charm and humor, GEN Howze writes of his polo-playing years in a 1930s Army that still relied on horses, and then of the sudden, almost remarkable transition to armored divisions, when the U.S. entered WWII. It was in the mid-1950s that GEN Howze emerged as one of a handful of perceptive Army officers who recognized the potential of a sky cavalry. As the first director of Army Aviation, GEN Howze promoted the concept to industry, the government, and the public. His vision came to fruition in the 1960s when he presided over the U.S. Army Tactical Mobility Requirements Board, known as the Howze Board, which proved the viability of sky cavalry in combat. *A Cavalryman's Story* provides an authoritative look at the forging of the modern Army and a wry perspective on the perennial absurdities of military life, whether in peace or war. [Smithsonian Institution Press. Size: 6" x 9", 316 pages, hard cover; ISBN: 1-56098-664-6].



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AAAA President's Message
MG John D. Robinson, Ret.

What a great Convention we had in Louisville this year! The industry exhibits were superb and the professional sessions arranged by our Branch Chief, MG Dan Petrosky, set a new standard of professionalism through the participation of many top leaders in the Army. The entire AAPI team led by Lynn Coakley and the expert coordination of Bill Harris made everything look easy --- but we know the challenges were myriad. It was a special time to visit with long standing friends.

At the Convention, MG Dick Stephenson concluded his two year term as President. He has done yeoman work helping us understand the changing environment and worked hard to prepare the Association to support the Army in the next millennium. We all owe Dick much for his enormous commitment, insights and the courage to tackle tough and often unpopular issues.

In the past two years as your Senior Vice President, I learned a lot about AAAA at the National level and what it demands from its senior leaders. Much has been said recently in the press about volunteering ... believe me, you learn that in spades as an AAAA volunteer. It is a labor of love combined with a desire to continue to serve the Army that is so much a part of us. Fortunately, I am greatly privileged to have MG Carl McNair (Ret) and LTG Merle Frietag (Ret) as trusted wingmen on our flight into the next two years. Both men are incredible professionals I have known and respected for many years. Our lineup of elected Vice Presidents and the potential for a strong National Executive Board supported by National Members at Large sets the stage for us to move boldly into the future.

The entire DOD and especially the Army are being asked to find ways to meet National Security objectives at least cost. While new technologies are being harnessed, people remain the essence of the Army and that investment must be protected. Technology gives enormous advantage but highly trained and dedicated soldiers win battles. Army Aviation has assumed increasing importance in Force XXI leveraging superbly trained aviation warfighters and highly technical fighting platforms which break friction with the ground but fight in the ground regime. As we move toward the close of this century, AAAA renews its dedication to the Army, its active and reserve component aviation soldiers, and the industrial base which produces and often supports aviation fighting systems.

The Executive Group is putting the Association's various Committees together now. Many dedicated and capable members have offered to serve; for this we are grateful. We anticipate resolving administrative issues quickly so as to get on with such matters as governance, membership, the magazine, scholarships, innovative chapter support, professional symposia and our annual convention format. Through all this, we hope to show the importance of air maneuver in the ground battle through a professional and informed dialog with those who have a vision for the Army in future battle.

Finally, because this is the Information Age, we hope our membership will leverage the Internet AAAA homepage and use electronic mail to connect with each other and share ideas throughout the membership. I look forward to the next two years as your President. Together, we can make a difference and help our Army to move into the next century with the most powerful capability in history.

Above: MG Carl H. McNair, Jr., Ret. (center), then AAAA Secretary-Treasurer, now AAAA Senior VP, visited the 25th Infantry Division (Light) Aviation Brigade at Wheeler Army Airfield, HI in the last week of January. With COL Michael E. Freeman (left), Brigade Commander, and CSM Leon Hite, Jr., (right), MG McNair reviewed AAAA programs for the membership and received a briefing on the Aviation Brigade's operations.

Below: Chapter Officers of the recently activated AAAA Jimmy Doolittle Chapter, Columbia, SC pose for a photo opportunity. Standing, left to right: LTC Les D. Eisner, VP Membership, SGT Ruppert G. Baird, Secretary, and LTC Earl M. Yerrick, Jr., President. Seated: WO1 T.C. Rownd, Treasurer, CW4 Jimmy B. Robinson, VP, Programs, and CW4 Lem E. Grant, Senior VP. Not pictured: CW2 Kent B. Puffenbarger, Chapter Historian.

New AAAA Chapter Officers

Aviation Center:
MAJ James R. Yonts (Vice Pres. Publicity).

Cedar Rapids:
Mr. Michael K. McDonald (President).

Central America:
1SG Byron O. Lewis (Senior Vice President).

Colonial Virginia:
CPT Hugo E. Reyes (Vice President, Awards).

Iron Eagle:
CSM Michael F. Noehl, Jr. (Vice President, Enlisted Affairs).

Jimmy Doolittle:
LTC Earl M. Yerrick, Jr. (President); CW4 Lemuell Grant (Senior VP); SGT Ruppert G. Baird (Sec); WO1 Tullius C. Rownd (Treasurer); LTC Lester D. Eisner (VP, Membership); CW4 James C. Robinson (VP, Progs); CW2 Kent B. Puffenbarger (Historian).

Ragin' Cajun:
MAJ Ricardo A. Glenn (Senior Vice President).

Rising Sun:
SGT Joseph Garcia (Senior Vice President); SFC Douglas H. Kelley (Treasurer); CPT Leonard W. Bowley (Vice President, Programs).

Washington DC:
1LT John L. Morgan (Sec).

Hall of Fame Nominations Due July 1, 1997

An AAAA-sponsored Army Aviation Hall of Fame honors those persons who have made:

- an outstanding contribution to Army Aviation over an extended period;
- a doctrinal or technical contribution;
- an innovation with an identifiable impact on Army Aviation;
- efforts that were an inspiration to others, or
- any combination of the foregoing, and records the excellence of their achievements for posterity.

All persons are eligible for induction, except active duty Generals and Colonels. Membership in AAAA is not a requirement.

Contact the AAAA National Office (203-226-8184) for Nomination Documentation requirements. All nominations must be postmarked no later than 1 July 1997.

An eight member Board of Trustees is responsible for selecting a specific number of candidates from all nominations received for placement on the Army Aviation Hall of Fame ballot. The ballot will be mailed to AAAA members with two or more years of current continuous membership in the Fall of 1997.

AAAA Annual Essay Contest

The fourth Annual AAAA Essay Contest is underway. The contest is designed to encourage the writing of original essays on topics that further the general knowledge of U.S. Army Aviation. Suspense Date is 1 July 1997.

DOCUMENTATION

The official application form should be used and is attainable from the AAAA National Office, 49 Richmondville Avenue, Westport, CT 06880-2000; Telephone (203) 226-8184; FAX, (203) 222-9863. The forms may be reproduced locally.

AWARD PRIZE

First prize earns $500 honorarium; second prize earns a $300 honorarium; and a third prize earns a $200 honorarium.

PRESENTATION

The three winning essays will be published in ARMY AVIATION Magazine. Essays not awarded prizes may also be published in ARMY AVIATION. The winning essay may also be considered for presentation at the AAAA Annual Convention.

National Awards Presented at Fort Rucker

The 1997 AAAA Aviation Center Chapter Banquet on 16 January 1997 was the occasion for the presentation of a number of AAAA National Functional Awards. This year's event marked the first time that the AAAA has sponsored Air Traffic Control awards in addition to the Trainer of the Year, Air/ Sea Rescue, Fixed Wing, and Army Aviation Medicine awards.

The ATC Facility of the Year Award was presented to **Cairns Army Airfield Tower,** Ft. Rucker, AL, CPT James M. Corcoran, Commander and 1SG Marcos Arias, Senior NCO. Cairns Army Airfield was one of the busiest Army Airfields in the world in 1996 and handled more than 220,000 aircraft movements (on a par with Atlanta's Hartsfield International) without a single ATC related incident. The facility introduced new, more efficient primary crash procedures and reorganized the flight corridors from two satellite heliports. Cairns Tower personnel also helped in numerous fundraising and community projects during the year.

The ATC Company of the Year for CY 1996 was **E Company, 58th Aviation Regiment ATS,** APO, AE, CPT John W. Jones, Commander, and 1SG Anthony W. Wells Senior NCO. During 1996, the company provided outstanding installation and tactical ATS support to USAREUR and NATO aviation assets, participated in over 20 aviation exercises, recovered two aircraft that had declared emergencies under instrument conditions and supported Mountain Shield and Operation Joint Endeavor for eight months.

ATC Controller of the Year was **SSG Richard T. Cofer,** E Company, 58th Aviation Regiment (ATS), APO AE. During the awards period, SSG Cofer served as the ATS Training NCO for Coleman Army Airfield, Germany; ATS LNO; Facility Chief at Giebelstadt AAF, and AN/TSW-7A tactical tower Facility Chief during Joint Endeavor. SSG Cofer consistently distinguished himself as the most outstanding air traffic controller in the unit and his ATS technical and tactical skills made him an invaluable battalion asset.

ATC Manager of the Year was **SSG Thomas I. Melo**, A Company, 1st Battalion, 11th Aviation, Aviation Training Brigade, Ft. Rucker, AL. During 1996, SSG Melo distinguished himself as the Facility Chief of the Molinelli Aerial Gunnery Complex. SSG Melo managed three shifts of controllers who operated the facility 19 hours a day and managed 40 firing pads, two running live fire lanes, a diving fire lane and seven rearming and refueling points. He took over the position of chief after a series of tragic accidents and immediately did a top to bottom analysis of operations that led to a revamped Flight training manual and Facility Training Procedures Guide. He also organized a ready reaction team during Hurricane Opal that resulted in the recovery and hangaring of almost 100 aircraft in less than two hours.

1996 ATC Maintenance Technician of the Year was **SFC Charles E. Dick**, A Company, 4th Battalion, 58th Aviation Regiment, Yongsan, Korea. SFC Dick served as the Company Air Traffic Services Maintenance Coordinator and repaired and maintained all ATS equipment assigned to Guardian Control, Yongsan VIP Heliport, and the 3d and 4th Tactical Enroute Pla-

SSG Thomas I. Melo (right), the 1996 Air Traffic Control Manager of the Year received his award from MG Daniel J. Petrosky, U.S. Army Aviation Branch Chief.

The 1996 Trainer of the Year Award was presented to CW2 Charles P. Watson (center right) by award sponsor Hughes Training, Incorporated's CW4 Robert J. Monette, Ret., Regional Director, International Marketing, (left) and BG Rodney D. Wolfe, Ret., Manager, Fort Rucker Region Office, and MG Richard E. Stephenson, Ret., then AAAA National President.

The Air/Sea Rescue Award was won by Company G,104th Aviation Regiment, PAARNG. Accepting for the unit was MAJ Alexander Roy (center left) and 1SG Mark Withington (center right). Mr. Gary Olson, (left), Product Line Manager for Lucas Aerospace Cargo Systems, the award sponsor, presented the award with MG Stephenson (right.).

1996 ROTC Top Aviation Branched Cadet of the Year was 2LT Matthew S. Raider of Auburn University. He accepted his award from BG Burt S. Tackaberry (left), Deputy Commanding General and Assistant Commandant, USAAVNC and Fort Rucker and MG Stephenson.

toons. SFC Dick's tactical ATS equipment knowledge is unsurpassed and he was twice selected as the Battalion's best Maintenance Technician during the Battalion's Annual ATC Equipment Rodeos. In addition, he supervised installation and maintenance for a new non-directional beacon for Camp Eagle and was selected by higher headquarters to be the maintenance representative for a new state of the art system that provides ground base ATC personnel with near real time aircraft position displayed on video maps.

The AAAA Air/Sea Rescue Award was presented to **G Company, 104th Aviation Regiment, PAARNG**, Philipsburg, PA. Sponsored by Lucas Varity, the award was presented to the unit for actions during early 1996 when record snow hit the east coast and rising temperatures and heavy rains caused major flooding in central and western Pennsylvania trapping dozens of people. Using four Boeing CH-47D Chinooks equipped with personnel rescue hoists the mission began on 19 January and lasted 34 hours. Conditions were extremely dangerous, subjecting crew members to the risk of hypothermia and requiring regular deicing of the aircraft. Fourteen lifesaving missions were conducted, most at night under night vision goggles in dropping temperatures and snow squalls.

CW2 Charles Preston Watson was the 1996 AAAA Trainer of the Year. Sponsored by Hughes Training, Inc. the award was presented to CW2 Watson for leading the fielding of the Army's newest and most advanced Aerial Signals Intelligence System, the Guardrail Common Sensor, System 1. Serving as the ASE and EW Officer for B Company, 224th Military Intelligence Battalion (AE), he also personally developed the RC-12N software training scenario and led the fielding of the Army's first ASET III Trainer. He assisted in the PME-T in-flight training system development and served as the user link to ASE/EW courses given at the Army's Special Electronic Mission Aircraft course at Ft. Huachuca, AZ.

The AAAA Army Aviation Medicine Award for 1996 went to **Dr. (CPT) Terrence L. Larkin**, Battalion Flight Surgeon, 4th Brigade, 1st Armored Division, Operation JOINT ENDEAVOR. The award is sponsored by Gentex Corporation. As the Regimental Battalion Flight Surgeon, CPT Larkin immediately stepped in as the Brigade Flight Surgeon upon deploying to Bosnia in support of Operation Joint Endeavor. In an extremely logistically immature and potentially dangerous threat environment, he set up two base camp aid stations and ensured their daily success despite shortages of medical personnel.

The AAAA Army Aviation Fixed Wing Unit Award sponsored by FlightSafety International, went to the **224th Military Intelligence Battalion (Aerial Exploitation)**, Hunter Army Airfield, GA . During 1996, the Battalion flew 11 RC-12N and 11 OV-1 Mohawks 6922 hours in support of the XVIII Airborne Corps, supported eight major deployment exercises with the Navy, Marines, Joint Reconnaissance Center and other Army units. This was accomplished while retiring the last 11 Mohawks in the Army and maintaining an exemplary safety record.

Also recognized at the event were the 1996 AAAA U.S. Military Academy Top Aviation Cadet of the Year, 2LT Philip J. Root and the 1996 AAAA ROTC Top Aviation Cadet of the Year, 2LT Matthew S. Rader.

23d Annual Joseph P. Cribbins Product Support Symposium

Sponsored by the Lindbergh Chapter of AAAA
January 29-31, 1997 • St. Louis, MO

The Professional Sessions began Thursday morning with a greeting by Daniel J. Rubery, President of the Lindbergh Chapter. Denis R. Little, Vice President and General Manager GE Military Engines Operation, delivered the Industry Keynote address. The Government Keynote Speaker was John F. Phillips, Deputy Under Secretary of Defense, Logistics.

The National Award Presentations were made at the Thursday evening dinner. The AAAA Outstanding Aviation Logistics Support Unit of the Year Award was presented to the **127th Aviation Support Battalion.** Deploying from Germany in late December 1995, the 127th ASB established operations in six different forward locations in Hungary and Bosnia to support 130 Task Force Eagle aircraft and the 4th Aviation Brigade. Every aviation system averaged 12-15 percent above the DA readiness averages while flying over 31,000 hours, three times the normal OPTEMPO. Pictured above accepting the award for the unit was MAJ Richard J. Koucheravy, Commander, A Company, 127th ASB, Hanau, Germany (center) from Mr. Rubery, Lindbergh president (left) and MG Emmitt E. Gibson, CG, ATCOM (right).

The AAAA Army Aviation Materiel Readiness Award for Contributions by an Individual Member of Industry went to **Ms. Christine L. Henderson** (facing page). Ms. Henderson, Logistic Support Team Leader, was recognized for her outstanding accomplishments as a Senior Logistician providing Trainer Program, Government Furnished Equipment, Special Operations, User's Conference, and newsletter support to the Utility Helicopter Project Manager's Office (PMO) in 1996. Ms. Henderson's superior performance contributed greatly to the Utility Helicopter PMO saving over $11.5 million dollars in trainer cost by finding and procuring salvage parts.

Advanced Engineering and Planning Corp. (AEPCO) and **Logistics Management Engineering (LME), Inc.** was awarded the AAAA Army Aviation Materiel Readiness Award for Contributions by an Industry Team, Group or Special Unit. The Apache Attack Helicopter Aviation Restructure Initiative (ARI) Team of AEPCO and LME led the Army's Aviation Initiatives to restructure and modernize Army Aviation and effect multimillion dollar cost savings in the

process of supporting USAREUR and FORSCOM in the restructuring and conversion of all Apache units to the ARI structure.

DynCorp, Fort Rucker Division was awarded the AAAA Army Aviation Materiel Readiness Award for Contributions by a Major Contractor. By daily meeting the most demanding aircraft availability requirements in Army Aviation, DynCorp established the keystone of Fort Rucker's mission accomplishment. DynCorp's unparalleled safety program contributed to another 205,000 hours without a maintenance-related accident; that total now an astonishing 2,387,000 hours. Their innovative application of new technology saved millions of dollars in 1996.

Westar Corporation/Avion, Inc. was awarded the AAAA Army Aviation Materiel Readiness Award for Contributions by a Small Business Organization. The Westar/Avion Team continued to support the readiness needs of ATCOM by providing exceptional technical support to the Flight Safety Parts (FSP) and New Source Testing (NST) requirements. They were instrumental in assuring that the backlog of untested parts is being tested which provided ATCOM with additional sources of supply, which resulted in reduced procurement cost and spare support and provided the Army aviator with a safe, reliable, operationally ready aircraft system.

A special Lindbergh Chapter award, the Joseph P. Cribbins Lifetime Service Award was presented to Mr. Vincent F. Cremonese, Director, Military Customer Support, McDonnell Helicopter Company, for his more than 30 years of superb support to Army Aviation.

In addition, the Symposium Chairman, COL Kenneth E. Kellogg, Ret. was awarded the Order of Saint Michael Silver Award for his outstanding leadership of the very successful event since 1986.

Also honored at the Symposium were the winners of the Lindbergh Chapter's AAAA Membership Drive. The top new member recruiter, Susan E. Barnes, won round trip airfare to the AAAA Annual Convention in Louisville, KY. LTC Mike McClellan, Ret. placed second and won $100. Third was Jan Garmon, who netted a $50 award. Special thanks to the Committee: COL Kenneth E. Kellogg, Ret., Chairman; Co-Chairmen COL Norbert Patla, Ret. and LTC Robert Vlasics, Ret.; Administrator Nancy Vermillion; Awards, LTC Gary R. Butler, Ret.; Committee Member LTC Mike McClellan, Ret.; Registration, Susan Barnes, Gary Boltralik, Jan Garmon, Bridgette Murphy, and Vicki Schmitz.

We sure showed them ... didn't we?

CAREERTRACK

Active AAAA members may have a 30-word classified employment ad published in two consecutive issues of **ARMY AVIATION** free of charge. For further information, contact: **AAAA**, 49 Richmondville Avenue, Westport, CT 06880; Telephone: (203) 226-8184; FAX: (203) 222-9863.

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AAAA CALENDAR

A Listing of Upcoming National and Chapter Events.

July 1997

4 July 18. AAAA Scholarship Board of Governors Executive Committee Meeting, National Guard Readiness Center, Arlington, VA.

4 July 19. AAAA National Scholarship Selection Committee Meeting to select 1997 National Scholarship recipients, National Guard Readiness Center, Arlington, VA.

September 1997

4 Sep 2-4. AAAA Army Aviation Simulation Symposium, Crystal Gateway Marriott, Arlington, VA.

October 1997

4 Oct 13. AAAA National Executive Board Meeting, Sheraton Washington Hotel, Washington, DC.

4 Oct 13. AAAA Scholarship Foundation Executive Committee Meeting, Sheraton Washington Hotel, Washington, DC.

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