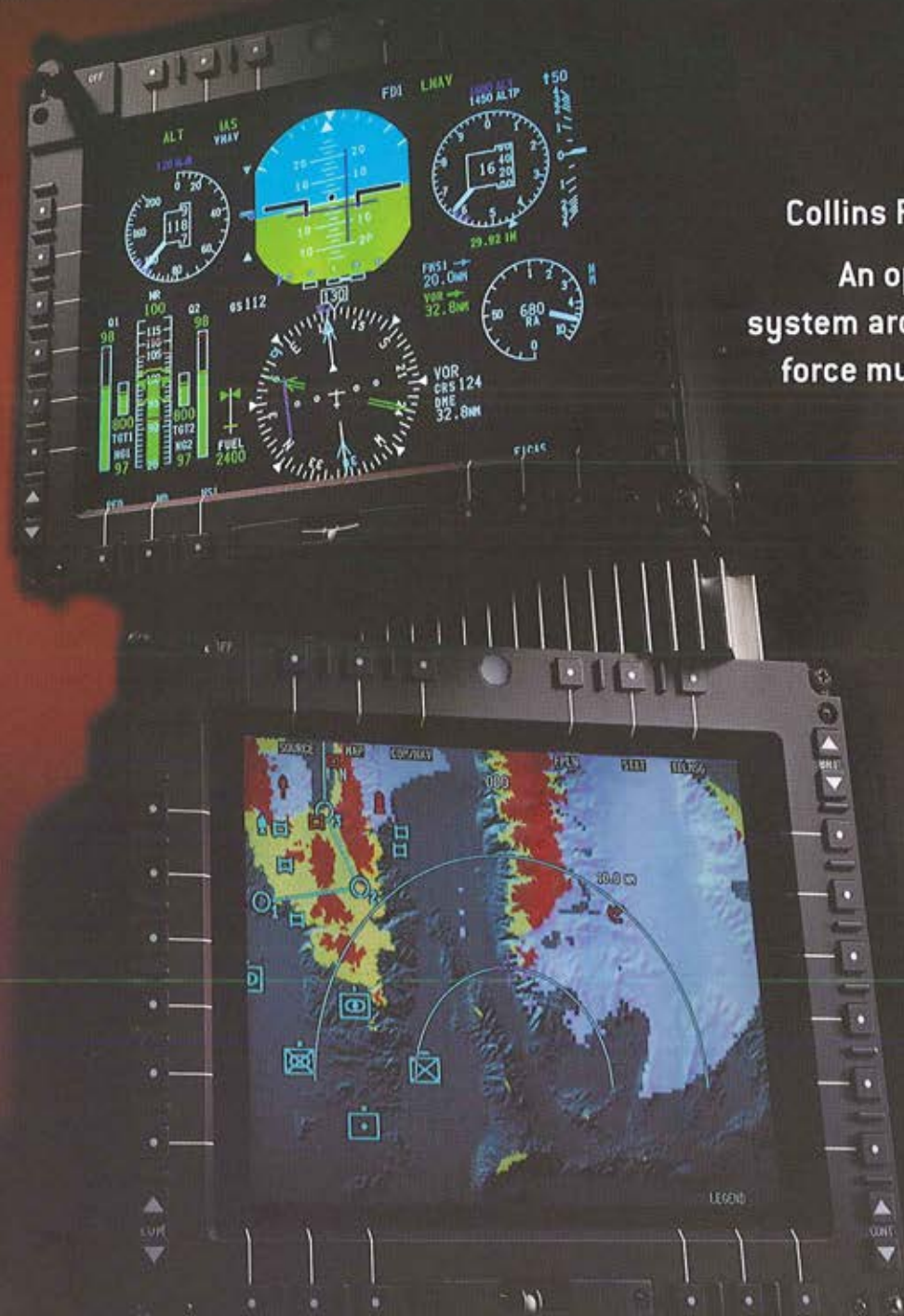


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The Directorate of Combat Developments' Aviation, Materiel and Logistics Systems Division will host the 2nd Annual Aviation Ground Support Equipment (AGSE) Users Conference on Dec. 5 and 6 at the Fort Rucker, Ala., Officers Club. The theme for this year's conference is "Focus on the Future." Attendance is intended for brigade, battalion and company-level maintenance officers and NCOs. Attendees wishing to depart with an electronic copy of the presentations are encouraged to bring one CD-R compact disc. Fort Rucker billeting reservations can be made by calling (334) 255-2626 or (DSN) 558-2626. Attendees are requested to RSVP NLT Nov. 10 to Capt. Rob Wegner by phone at (334) 255-1580 or (DSN) 558-1580 (fax ext. 9191) or via e-mail to WegnerR@rucker.army.mil.

The 2001 Defense Appropriations Act, signed by President Bill Clinton Aug. 9, includes funding to equip two Interim Brigade Combat Teams and a 3.7-percent military pay raise. Army leaders had requested \$537 million to stand up a single IBCT in fiscal year 2001. Congress provided the requested amount and an additional \$100 million for that first interim brigade. It also funded \$500 million to equip a second in the coming year.

Gen. William F. Kernan became the first Army general to head NATO's Allied Command Atlantic when he took the reins of leadership from Adm. Harold W. Gehman during a Sept. 5 change-of-command ceremony aboard the U.S.S. *Theodore Roosevelt* in Norfolk, Va. Along with becoming the supreme allied commander, Atlantic, Kernan became the commander in chief of the recently redesignated U.S. Joint Forces Command. Kernan is the former commander of both the 75th Ranger Regiment and XVIII Airborne Corps.

The U.S. Army Operational Support Airlift Agency (OSAA), headquartered at Fort Belvoir, Va., is seeking highly qualified enlisted soldiers, warrant officers and commissioned officers to serve in various full-time AGR positions. The OSAA is a Department of the Army field operating activity under the National Guard Bureau and is responsible for fixed-wing operational support airlift. Interested personnel should see the Army National Guard's official website (www.arng.ngb.army.mil/Hosted/hr/smo/index.htm) for four announcements #00-15, 00-24 and 00-31.

In August, soldiers from Company A, 2nd Battalion, 10th Aviation Regiment, took part in Thunder Bay, Ontario's "Thunder in the Air 2000" air show. A crew took one of the unit's UH-60 Black Hawks to the three-day event, which raises money for the Canadian Children's Mental Health Association.

Bell Helicopter Textron has hired former U.S. Marine Corps Gen. Terry Duke to be its vice president for government business. After assuming his new position on Nov. 1, Duke will oversee the Texas firm's foreign military sales and U.S. government aircraft support operations, and will report to Bell's John Murphey.

on the cover

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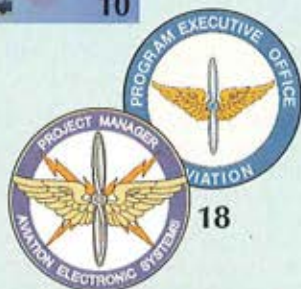
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ARMY AVIATION is the official journal of the Army Aviation Association of America (AAAA). The views expressed in this publication are those of the individual authors, not the Department of Defense or its elements. The content does not necessarily reflect the official U.S. Army position nor the position of the AAAA or the staff of Army Aviation Publications, Inc., (AAPI). Title reg[®] in U.S. Patent office. Registration Number 1,533,053. SUBSCRIPTION DATA: ARMY AVIATION (ISSN 0004-248X) is published monthly, except April and September by AAPI, 49 Richmondville Avenue, Westport, CT 06880-2000. Tel: (203) 226-8184, FAX: (203) 222-9863, E-Mail: aaaa@quad-a.org. Army Aviation Magazine E-Mail: magazine@quad-a.org. Website: <http://www.quad-a.org>. Subscription rates for non-AAAA members: \$30, one year; \$58, two years; add \$10 per year for foreign addresses other than military APOs. Single copy price: \$3.00. ADVERTISING: Display and classified advertising rates are listed in SRDS Business Publications, Classification 90. POSTMASTER: Periodicals postage paid at Westport, CT and other offices. Send address changes to AAPI, 49 Richmondville Ave., Westport, CT 06880-2000.

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TRAINING FOR THE FUTURE

The Aircraft Survivability Equipment and Electronic Warfare Officer Course

By Maj. Gen. Anthony Jones

Today's Army aviator will face a battlefield strewn with weapon systems linked to radar and other devices that operate within the electromagnetic spectrum. All of these mechanisms have the same goal - to reduce an aviation unit's warfighting capabilities. These weapons are an imminent danger to aircrews and they also jeopardize the commander's ability to accomplish the mission.

The Aircraft Survivability Equipment and Electronic Warfare Officers Course (ASE/EWOC) is a graduate-level, professional-development course designed to train aviation warrant officers in the art of electronic warfare. The mission of the ASE/EWOC is to provide commanders with an expert trained to analyze the threat of air-defense systems and counter those systems using the combat multiplier of aircraft survivability equipment (ASE).

Located at Fort Rucker, Ala., and under the command of Headquarters and HQs. Company, 1st Battalion, 145th Aviation Regiment, 1st Aviation Brigade, the course is offered 12 times a year and can accommodate up to 30 students. It is a two-week program of instruction presented in three major blocks: Duties and Responsibilities of the EWO; Theory and ASE System Diagnostics; and Mission Planning. Students must have at least a secret clearance to attend the course. Upon completion of the course, warrant officers are awarded the additional skill identifier of H3 EWO. The course is also a prerequisite for all tactical operations officers.

In the ASE/EWO course threats ranging from small arms to third-generation man-portable air-defense systems are broken down by guid-

ance type and EWOs are trained to analyze each system's strengths and weaknesses. Placing a trained ASE/EW (ASI-H3) officer in each aviation unit reduces the risks that aviators may face in future battles.

The ASE/EWO training includes analyzing radar, infrared, laser and electro-optical threats. Students utilize the Air Force Tactics, Techniques and Procedures Guide 3-1 Vol. II (AFTTP 3-1 Vol. II), the Multi-Services Electronic Combat Bulletin Board system (MSECBBS), Electronic Warfare Threat CD-ROM and other sources to determine if an air-defense system is a threat to Army aircraft. If it is determined to be so, can it be detected, decoyed and jammed? Through de-



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tailed analyses of air-defense systems, aviators learn to apply tactics, techniques and procedures to specific threats. Understanding the capabilities and limitations of an adversary lifts the smoke of doubt and allows the aviator to make decisions based on facts.

Knowing the purpose and proper use of all ASE is a major part of the EWO training. In the ASE/EWO course, officers learn the skills and knowledge needed to assist the comman-

der in dealing with the lethal threats on the modern battlefield. The EWO is trained on the systems for all tactical helicopters and Special Electronic Mission Aircraft suites in the Army inventory. They are then capable of training the crewmembers on the correct operation and employment procedures for each piece of ASE in the unit, the tactics associated with the equipment, and ultimately increase the crew's chance of survival.

ASE uses the laws of physics to provide early warning and protection for Army aircraft when engaged by an air-defense system. It is not an illusion performed with smoke and mirrors; its truth is based on mathematical fact. The best ASE in the inventory is the trained aviator with knowledge and understanding of the capabilities and operating systems of his equipment and his adversary. The Electronic Warfare branch at the U.S. Army Aviation Center is determined to continue to modernize and update ASE/EW training to meet the changing threats. The USAAVNC's goal is to assist aviation commanders in accomplishing the mission.

The ASE/EW officer is the link to the future for the modern aviation unit commander and is one more way to ensure that our aviators retain the overmatch that is demanded in highly complex environments.



Maj. Gen. Anthony R. Jones is commanding general of the U.S. Army Aviation Center at Fort Rucker, Ala., and chief of the aviation branch.



Air Ambulance Crew Wins Air/Sea Rescue Award

by CSM Edward Iannone

Members of the crew of a Task Force Hope UH-60 helicopter from the 214th Medical Detachment distinguished themselves by exceptionally meritorious service by saving the lives of 36 people during Hurricane Mitch disaster-relief operations in Honduras. Their bravery, persistence and dedication has earned them the distinguished Army Aviation Association of America (AAAA) Air/Sea Rescue Award, created and sponsored by TRW Aeronautical Systems (Lucas Aerospace).

SFC Hector Hernandez, NCOIC for the 214th Med. Det., and Maj. David Parramore, the detachment's commander, accepted the award on behalf of the crewmembers at the AAAA Aviation Center Chapter's Annual Awards Banquet in Fort Rucker, Ala. The AAAA Air/Sea Rescue Award honors members of air rescue commands for outstanding bravery and valiant performance in air/sea rescues.

During the period of Nov. 1 through Nov. 18, 1998, the crew members of "Witch Doctor 36" conducted 10 live rescue-hoist missions in severe weather conditions to rescue 36 Honduran civilians from the raging floodwaters caused by Hurricane Mitch. These civilians were, in many instances, stranded in trees over a period of several days, exposed to the environment, harassed and often bitten by poisonous snakes also seeking refuge from the raging waters. In one instance, the UH-60 crew conducted a hoist mission to provide food, water and medical treatment to a Honduran family isolated from civilization for 11 days. Over this

17-day period, the crew flew a total of 69 incident-free hours, treated and/or transported 192 injured patients, and transported 23,000 pounds of food and medical supplies and equipment.

"We are proud to be the creator and sponsor of an award that recognizes the achievements of individuals who are willing to risk their own lives to save the lives of others," said Ken Maciver, executive vice president and general manager of TRW Aeronautical Systems (Lucas Aerospace). "As a manufacturer of rescue hoists, we are also thrilled to be able to contribute to the life-saving efforts of these heroes by giving them the tools to help them do their jobs. These individuals display bravery and heroism every time they go to work, and any action that is taken to recognize these individuals will surely never be great enough to reflect the recognition that they truly deserve."

The Air/Sea Rescue Award was created by TRW Aeronautical Systems (Lucas Aerospace) in 1989 to honor air rescue crews who, by using a personnel rescue hoist, display outstanding dedication and courage to save lives or ease suffering in a crisis. The award became an AAAA award in 1991 with sponsorship by TRW Aeronautical Systems (Lucas Aerospace).

To be eligible for nomination for the AAAA Air/Sea Rescue Award, the rescue must have been performed using any personnel rescue hoist and the crew members named in the nominating form must have had an active role in the rescue effort.



CSM Edward Iannone is the aviation branch command sergeant major at Fort Rucker, Ala.



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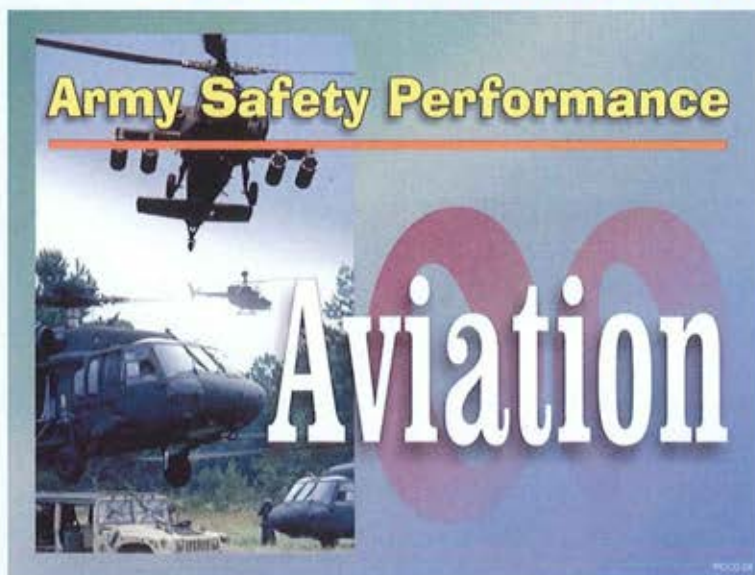


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AVIATION SAFETY PERFORMANCE: Back on Track and Moving in the

Right Direction



By Brig. Gen. Gene M. LaCoste

Proactive leadership, great teamwork and a five-step process called "risk management" helped the Army reach a significant milestone in aviation safety performance in fiscal year 1995. For the first time ever, we broke the 1.0 mark and closed out the year with a Class A flight accident rate of 0.83 per 100,000 flying hours. Sustaining the momentum in FY 96, we set another new record with a world-class aviation safety Class A flight accident rate of 0.74. But even as we celebrated our successes, warning signs loomed on the horizon: accelerating operational tempo (OPTEMPO) through continuous deployments, multiple taskings, declining experience base, reduced resources, failure to follow and enforce standards, and a lack of discipline.

The negative cumulative effect began to take its toll in FY 97 with our Class A flight accident rate rising to 1.26. The upturn highlighted that three major factors — a systematic process for developing aviation training, the disciplined development of leaders, and the introduction of system safety design principles into aviation materiel systems — had possibly reached their maximum effect. Without a defined course of action to halt the upward climb in

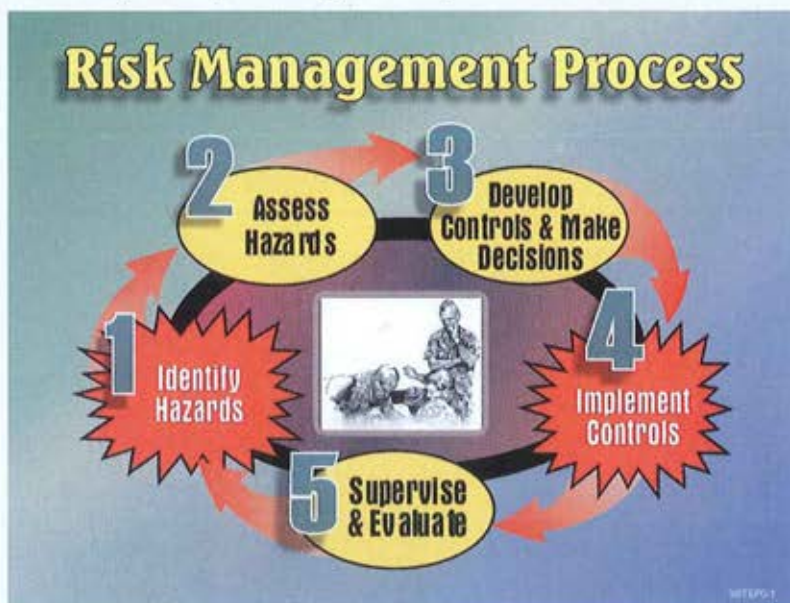
accident rates and improve our safety performance, a further decline in safety was imminent.

By the end of FY 99 Army aviation had experienced its worst safety performance since operations Desert Shield and Desert Storm. With 18 Class A aviation flight accidents, the red flags were impossible to ignore. The bottom line was that soldiers were dying and we were destroying costly equipment at a rate that was unacceptable. Leaders who understood and accepted responsibility

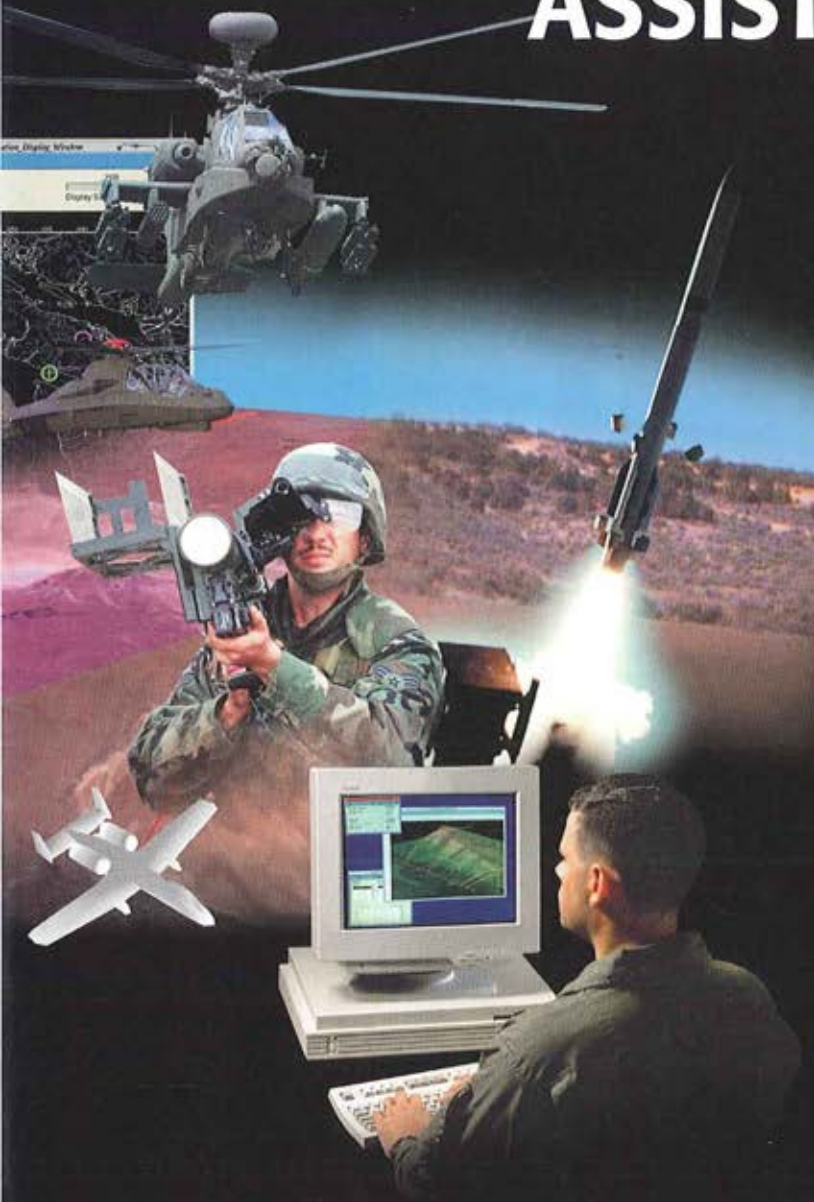
stepped up to the plate to solve this Armywide problem.

Armywide Short-Term Initiatives

The aviation community didn't find any silver bullets to solve its problems. There are none. We did, however, quickly recognize that we could reverse the negative safety performance trends and potentially continue to reap modest gains using proven techniques: leadership involvement at all levels, effective risk management, discipline and strict adherence to stan-



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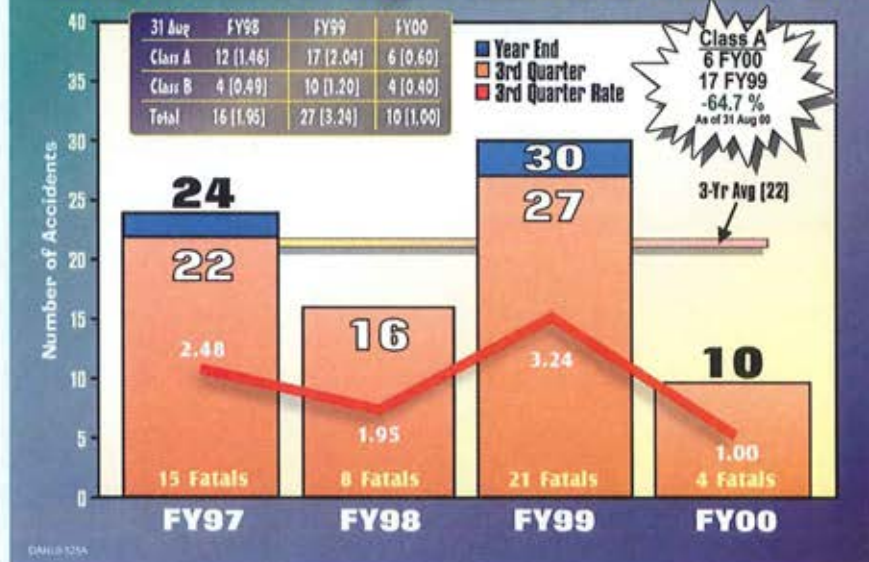
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Army Aviation Flight Accidents Class A-B



Specifically, they were chartered to define measurable accident prevention goals and identify the most important Armywide investments needed to achieve them. The means to achieve the Army goals will be the integration of accident-prevention and risk-management requirements into the aviation planning, programming and budgeting system.

An in-depth analysis of accident experience involving all force-modernized aircraft during the last five years has been completed. The ASIST is currently prioritizing and validating requirements in various areas of doctrine, training, leader development, organization, materiel and soldier performance.

Implemented as a mutual initiative of the commanding generals of the U.S. Army Aviation Center and the U.S. Army Aviation and Missile Command, the Program Executive Officer-Aviation and the Director of Army Safety, ASIST will be an ongoing process that will continue to take a long-term view of aviation safety. Continued reductions in casualties, accident rates, and cost — and a resultant increase in readiness — can only be realized through an increase in funding to support the prioritized investments recommended by the ASIST.

Safety Center Initiatives

Safety is a commander's program; however, we at the Safety Center

dards. Other initiatives included:

- Increasing the flying-hour program and fencing the funds allocated to the program.
- Increasing promotion opportunities for warrant officers.
- Increasing the fill of crew chiefs within units.
- Improving the flight-training program (Flight School XXI).
- Establishing a recapitalization program for all aircraft.

These initiatives have produced commendable results this fiscal year. With one month left to go in FY00, we are currently at the best ever aviation Class A accident rate: 0.60 accidents per 100,000 flying hours. Our Class A-B rate of 1.00 is the best in recorded aviation history. The most remarkable and by far the most important fact is that we have had four fatalities this fiscal year compared to 21 at this same point last year. This is the best record since 1972, when the Safety Center began collecting data in our current database. That year the fatalities reached 91.

For the short term, leader involvement, informed risk-management decisions being made at the appropriate level, and enforcement of standards and discipline, have helped us stabilize and improve our aviation safety performance. We've regained some lost ground in safety performance and pushed forward to make a

new mark. But we have to remember that the environment is fragile and that a longer-term strategy for sustainment and continued improvement is critical.

Armywide Long-Term Initiatives

In March 1999 the Army's leaders directed an Aviation Safety Investment Strategy Team (ASIST) to chart a path toward breakthrough gains in aviation safety. The ASIST is the first-ever initiative in Army aviation using a risk-based, aviation system-wide analysis leading to Armywide decisions or controls.

Proactive Safety Initiatives



- NCO Professional Development
- Mobile Training Team
- Assistance Visits
- Junior Officer Professional Development



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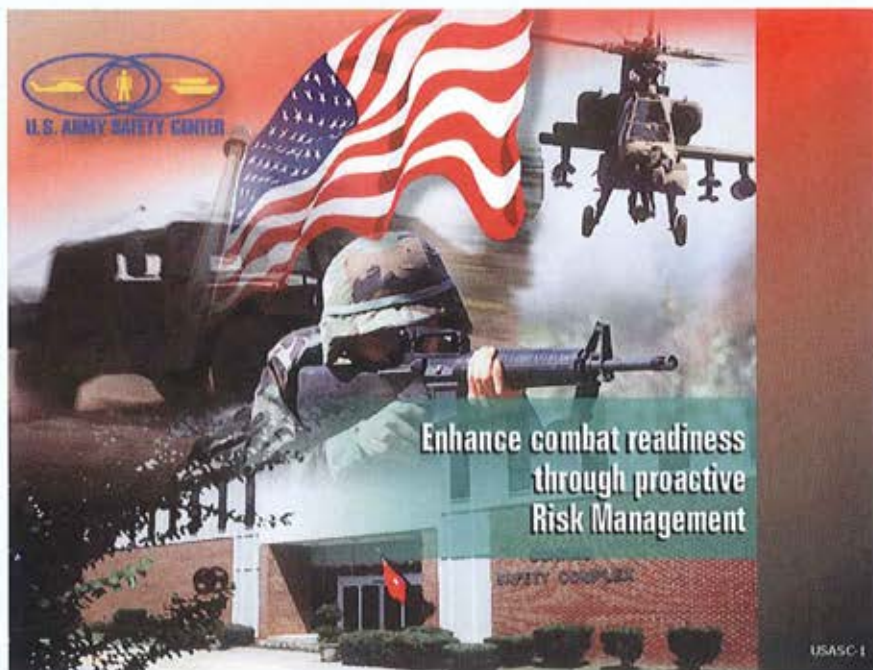
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skills learned on duty will help soldiers become better risk managers off duty as well.

- Junior Officer Professional Development Course.

A majority of critiques from soldiers attending the NCO professional-development course strongly recommend that their supervisors — company-grade officers — get some badly needed risk-management training as well. As a result of these recommendations, we have developed a special three-day course focused on hazard identification, application of risk management, and leader responsibilities for integration of risk management into both the planning and execution phases of training and operational missions. This program is specifically targeted to young lieutenants, captains and warrant officers.

The Way Ahead

The Army's leaders are committed to holding the high ground in aviation safety performance we've worked so hard to achieve. The ASIST will continue its work to ensure that appropriate support is secured to provide additional resources to fund the identified and prioritized investments. And the Safety Center team will continue to help commanders through our Assistance Visit Program and to train soldiers in risk-management techniques through our NCOPD and JOPD programs.

While all of the initiatives are important, ultimately it will be leadership, discipline and standards that save lives. I firmly believe that a disciplined force trained to standard produces a combat-ready force that executes the mission safely. In all of our operational and training missions, we must enforce standards and strive to make informed risk-management decisions. Risk management is the bedrock of our safety program. From crew chief to general officer, each of us has a responsibility for using it effectively to ensure that an even safer future lies ahead for Army aviation.



Brig. Gen. Gene M. LaCoste is the director of Army safety and commander of the U.S. Army Safety Center at Fort Rucker, Ala.

fully recognize that commanders' plates are full and that they are challenged on every front. To assist commanders in making decisions on where to focus their limited time and resources, the Safety Center has developed three new risk-management tools commanders can use to attack safety concerns.

stays with the commander. The exception is when an issue beyond the commander's control can be resolved at higher levels through the Safety Center's intervention.

- Noncommissioned Officer Professional Development Course.

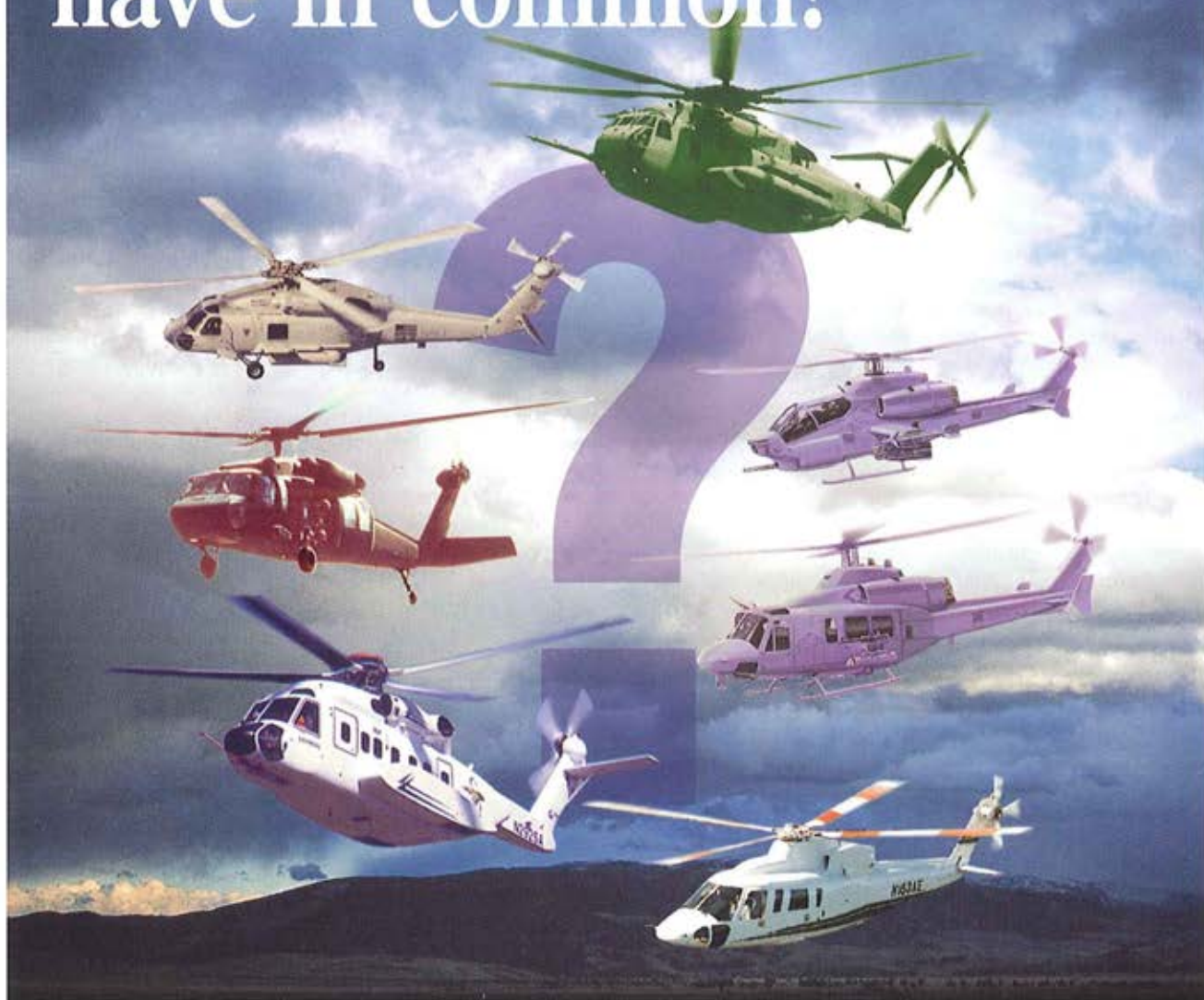
The intent of this training is to teach safety to NCOs, not to pro-

The Army's leaders are committed to holding the high ground in aviation safety performance.

- Assistance Visit Program. This program is conducted by Safety Center personnel trained in risk-management techniques. It offers commanders an outside look and information packages tailored to the unit. This is not an inspection; it is a means to look at ways to identify and mitigate or eliminate hazards to soldiers. The team looks at trends. From the analysis, we provide commanders direct feedback on how effective their safety programs are in accomplishing the mission, how to improve the safety environment, and how to integrate risk management into all unit operations. Everything found in the unit

duce safety NCOs. NCOs are the leaders on the ground "where the rubber meets the road" and are most likely to have a direct impact on accident prevention. Therefore, the Safety Center has designed a 45-hour course focused on hazard identification and risk management. The target audience is sergeants and staff sergeants, the first-line supervisors who will be able to integrate risk management into both the planning and execution phases of training and operational missions by speaking up when something doesn't "look right." An additional benefit of this training includes a positive habit transfer in which risk-management

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BASEOPS: The Future Is Now!

By Bill Jacobs

In today's world the aviation industry, Federal Aviation Administration and other assorted businesses are embracing the so-called "Technological Wave." They are using the web to do business.

The question has to be asked: "Why aren't U.S. Army airfields around the world following the example of businesses around the world"? Also, why are some airfield operations (BASEOPS) professionals still so dead set on continuing to produce blizzards of paper?" I cannot answer those questions for other military airfields, but I can tell you what we do at Ansbach Army heliport (AHP) BASEOPS in Germany.

Army pilots (fixed and rotary wing) have to cope with a myriad of preflight tasks — weather briefs, NOTAMS, wire-hazards updates and filing flight plans, to name a few. There are several ways to accomplish these tasks,

flight plan to Ansbach BASEOPS from a personal computer or Macintosh at home or work.

Why does Ansbach AHP BASEOPS do this? Call it common sense! It keeps pilots and unit operations personnel from wasting time by walking (or driving) up and down flight lines bringing flight plans or picking up flight information. It places all the information at the pilot's fingertips. It also brings BASEOPS in line with the secretary of defense's policy on offices going "paperless" and getting a head start on the Federal Act of 2003 that requires all government offices to reduce the paperwork wherever possible.

Since the website's inception in May 1999 it has been "hit" or accessed 6,600 times! Also, we started accepting flight plans last January. It started slow, with approximately 40 electronic flight plans during January. During June we received more than 130 electronic flight plans. The number of

flight plans we have received is amazing. Why? Because most of the Ansbach AHP's aviation assets were deployed to Kosovo during KFOR operations. As of July we have had a significant jump in website hits and electronic filings. During January our electronic flight plans filings only made up 10 percent of our flight plans received. By June it was up to 60 to 70 percent.

"Why aren't U.S. Army airfields around the world following the example of businesses around the world"?

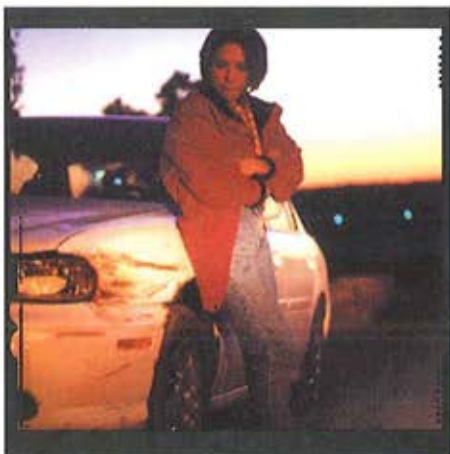
including faxing, telephone briefs and so on. But Ansbach AHP BASEOPS has taken a technological step forward by going paperless for flight planning and filing. It's the first Army airfield/heliport to fully embrace Internet/Intranet technologies and e-mail to better serve our customers, Army aviators.

At Ansbach AHP we are using e-mail and a website to give pilots access to NOTAMS, weather briefs, weather satellite pictures, Army aviation regulations, FAA regulations, helicopter safety and standards information, Local Flying Standard Operating Procedures for virtually all airfields in Germany and much, much more. A pilot can get all this and file his

LAN) Ansbach BASEOPS is now doing Army aviation business at the speed of light! We are continuing to provide our pilots with the best service possible. Why aren't other airfields in the Army attempting to save pilots time, money and "The Black Forest" in paper usage? I don't know. But I can say without a doubt, come to Ansbach AHP and we will show you the future of Army airfield operations. Now!



Bill Jacobs is web designer and webmaster of Ansbach's web-based flight-planning system. He can be reached via e-mail at jacobsb@cmtymail.98asg.army.mil, or by phone at (DSN) 467-2872/2047.



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The State of Army **ASE**



By Dr. Steven L. Messervy

The Aviation Electronic Systems Project Office is responsible for aircraft survivability equipment (ASE). This includes the Advanced Threat Infrared Countermeasures (ATIRCM)/Common Missile Warning System (CMWS), the Suite of Integrated Radio Frequency Countermeasures (SIRFC) and other ASE systems. The Project Office is assigned to the U.S. Army Program Executive Officer-Aviation. The Project Office's goal is to ensure mission success by acquiring for the warfighters the effective means to defeat all types of current and future threats to the aviation force..

AES Project Office Mission

The mission of the Aviation Electronic Systems (AES) Project Office is to develop a family of systems designed to counter the above threats in the infrared (IR), radio frequency (RF) and laser-guided system arenas. In addition, the AES Project Office is responsible for the development of aircrew integrated systems and aviation survivability life-support equipment for aviators.

The AES Project Office currently manages six ASE systems from its offices at Redstone Arsenal, Ala. These include the currently fielded AVR-2A(V) Laser Detecting Set, AN/APR-39A Radar Warning Receiver and AN/ALQ-144A(V)3 IR Countermeasures System, and the still developmental AN/ALQ-211 SIRFC and AN/ALQ-212 Advanced Threat Infrared Countermeasures/Common Missile Warning System (ATIRCM/CMWS). The sixth system is the Aircraft Survivability Equipment Trainer (ASET) IV. The following paragraphs will provide system descriptions, current status, capabilities and planning for each of the systems.

AVR-2A(V) Laser Detecting Set

System Description

The AN/AVR-2A Laser Detecting Set is a passive laser-warning system which receives, processes and displays threat information resulting from aircraft illumination by threat laser-aided weapons. As shown on Figure 1, the AVR-2A consists of four sensors mounted on the aircraft surface plus one internally mounted central-interface unit.

The AVR-2A is currently installed on such Army and Navy aircraft as the AH-64A/D, OH-58D, MH-47E, MH-60K, AH-1S, MV/CV-22, SH-60R, HH-60H, AH-1W/Z, UH-1N/Y and EH-101, as well as on the United Kingdom's WAH-64D. The U.K. has obtained the AVR-2A via Foreign Military Sales (FMS). Other potential FMS customers include the Netherlands and Taiwan. Future installations of the system are planned on the RAH-66, CH-47F, UH-60L and C-130.

The potential for loss of aircraft and lives to existing and evolving missile threats is too great to be discounted or ignored. Warfighters need to survive in the fight to fight again.

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A high-contrast, black and white photograph of two pilots in flight suits standing in front of a military aircraft. The aircraft's canopy is open, and the scene is set against a dark background with some light sources, possibly from the aircraft's instruments or lights. The overall mood is serious and professional.

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SUCCESS: For future aircrews, our heritage of success will continue with next-generation, Sanders-built systems. These will include Advanced Threat IR Countermeasures for U.S. and allied helicopters; the Common Missile Warning System; EW Suites for the F-22 and JSF; and IDECM RF Countermeasures for the F/A-18E/F, B-1B and F-15.

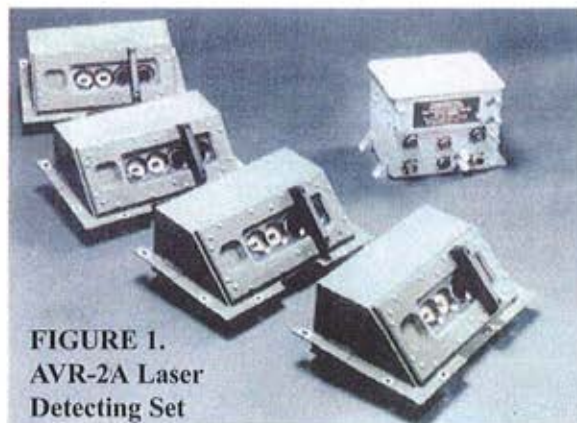


FIGURE 1.
AVR-2A Laser
Detecting Set

Capabilities

The AVR-2A detects and categorizes laser threats as either rangefinders, target designators or beamriders. It also identifies the direction of the threat, prioritizes threats according to lethality, and displays threat data to the aircrew both visually and audibly. This information is currently displayed on the AN/APR-39A(V) or multifunction display on the OH-58D. AVR-2A data will ultimately be fused through SIRFC and displayed to the aircrew on the multi-function display or a dedicated Aircraft Survivability Equipment Display (ASED). The AVR-2A can also be used for training by serving as a MILES/AGES receiver.

Planned Upgrades

A horizontal technology insertion approach on improvements incorporated on the AN/AVR-1 Ground Laser Warning Set will be applied to the AVR-2A through an engineering change proposal on order to improve system performance and correct the ARC-220 EMI issues. This upgraded system is currently identified as the Enhanced AVR-2A. The Enhanced AVR-2A will increase system performance against improved and emerging threat systems, significantly improve angle-of-arrival information, include 1553 data bus interfaces, provide improved EMI protection, reduce power consumption, reduce weight, be a lower-drag configuration, and have a reduced system cost.

Program Status

The AVR-2A is currently unfunded in the POM. The prime contractor is Raytheon Systems Company.

AN/APR-39A(V)1/4 Radar-Warning Receiver

System Description

The Army's current principal radar-signal detecting device is the AN/APR-39A(V)1/4. It provides pilots warning of radar-directed threat air defense systems by general category [i.e., gun, missile type, and radar mode (search, acquisition, or track)]. The system has been fielded in two versions, the AN/APR-39A(V)1/4 and (V)2. The first version is deployed

on Army AH-1F, AH-64A/D, CH-47D, MH-47E, UH-60A/L/Q, MH-60K and OH-58C/D helicopters. The second version will be installed on Navy and Marine Corps AH-1W, UH-1N, V-22, CH-46, CH-53 and KC-130 aircraft.



FIGURE 2. AN/APR-39A(V)1 Radar-Warning Receiver

System Capabilities

Both versions of the system are designed for use on low- and slow-flying fixed- and rotary-wing aircraft. The (V)2 has an improved frequency tag ambiguity resolution, a greater capability against pulsed Doppler threat radars, a continuous-wave radar capability and improved detection capabilities versus long-range search radars. The less capable AN/APR-39A(V)1/4 model detector, considered to be too costly to redesign and upgrade, will be replaced by the AN/ALQ-211 SIRFC system currently in engineering and manufacturing development (EMD).

Program Status

This system is considered to have reached its full potential and is no longer economically upgradeable. Available Army aviation funding will be used to develop and field the much more capable SIRFC system. There are no planned upgrades to the AN/APR-39A(V)1/4 system.

AN/ALQ-144A(V)1/3 IR Countermeasures System (CMS)

System Description

The AN/ALQ-144A(V)1/3 CMS is an active, continuously operating, omnidirectional, electronically fired IR jammer. It is designed for use on helicopters to confuse or decoy threat IR missile systems. The system was designed in the 1980s and has been upgraded throughout its operational life in reaction to threat-system changes. The AN/ALQ-144(V)1 system is currently installed on OH-58D, UH-60A/L/Q, EH-60A and MH-60K aircraft. The AN/ALQ-144(V)3 system is installed on AH-64A/D and AH-1F aircraft.

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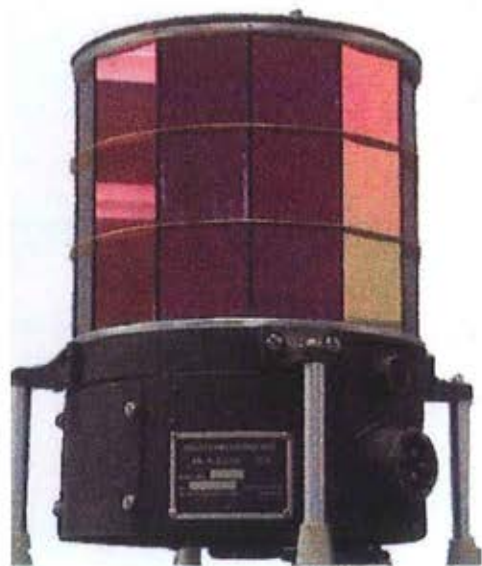
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FIGURE 3. AN/ALQ-144A(V)3 Countermeasures Set



System Capabilities

The AN/ALQ-144A(V)1/3 provides omnidirectional IR jamming against several known IR threat missile systems.

Planned Upgrades

Recently, an equipment change proposal was approved for the AN/ALQ-144A(V)1/3 enhancing the system's effectiveness against known IR threats. This improvement was initially incorporated on the AH-64A and UH-60 aircraft deployed to Albania as part of Task Force Hawk. No additional upgrades are currently planned for the AN/ALQ-144A by PM AES.

Program Status

The AN/ALQ-144A(V)1/3 is currently in production for Army UH-60Ls and foreign military sales customers. Its management was transitioned to the U.S. Army Logistics Readiness Center, Communications Electronics Command, at Fort Monmouth, N.J., in September.

Currently Fielded and Developing Systems

All the systems described above have been fielded for several years and, as should be expected, various problems and shortcomings relative to evolving threat systems have been identified. Some of these issues have been addressed through field modifications and upgrades to the systems, while others are judged too costly and/or better dealt with through end-item replacements. The

AN/APR-39A(V)1/4 Radar Warning Receiver and the AN/ALQ-144A(V)1/3 IR Countermeasures System are programmed for replacement by the SIRFC and ATIR-CM/CMWS systems, respectively.

AN/ALQ-211 Suite of Integrated Radio Frequency Countermeasures (SIRFC)

System Description

The Army is in the later stages of a development program to enhance aircraft survivability against a growing worldwide threat of RF-guided air-defense systems. The program, now in the final test-and-evaluation stage of EMD, is known as the AN/ALQ-211 Suite of Integrated Radio Frequency Countermeasures (SIRFC) system. The mission of the AN/ALQ-211 SIRFC is to provide self protection against radar-guided anti-aircraft artillery (AAA), surface-to-air missiles (SAMs) and airborne intercept (AI) for all Army AH-64, MH-60, CH/MH-47 and UH-60 aircraft.

The SIRFC provides situational awareness, sensor fusion, resource management, target identification, target location, target cueing and pre-emptive and terminal mode electronic countermeasures (ECM) against fire-control radars and semi-active missiles for both air-to-air and surface-to-air weapons. These threats include pulse radar, pulse Doppler and continuous wave (CW) radars in a wide operational frequency range. SIRFC consists of two basic integrated functions: an Advanced Radar Warning Receiver (ARWR) and an Advanced Threat Radar Jammer (ATRJ). The system is comprised of four LRUs (see Figure 4).



FIGURE 4. AN/ALQ-211 SIRFC System Configuration

Program Status

The PM-AES has overall responsibility for managing the SIRFC program under the Army PEO-Aviation at Redstone Arsenal. Execution of the SIRFC program is

currently with the PM for RF Countermeasures at Redstone. The SIRFC Milestone II and the EMD contract for SIRFC both occurred in the third quarter of fiscal year 1995 (3QFY95). Low Rate Initial Production (LRIP) is planned for 1QFY02.

The objective of the SIRFC EMD program phase is to design, fabricate, integrate, test and correct deficiencies in the system. Five EMD systems are being built for qualification, integration and testing on the AH-64D and the Navy/Air Force CV-22. Full systems will be used for testing. An LRIP of SIRFC systems is planned as a ramp-up for full production. SIRFC initial installation is completed for the AH-64D and currently under flight test at China Lake Naval Weapons Station, Calif. The Air Force, through the Navy, is integrating the SIRFC on the CV-22; the first flight for the CV-22 with SIRFC took place in May. Other planned platforms for SIRFC installation are the MH-47E and MH/EH/UH-60.

AN/ALQ-212 Advanced Threat Infrared Countermeasures/ Common Missile Warning System (ATIRCM/CMWS)

System Description

The Army Project Office is leading a tri-service development program to enhance aircraft survivability against the growing worldwide threat of IR-guided missiles. The program, now in advanced EMD, is known as the AN/ALQ-212 Advanced Threat Infrared Countermeasures (ATIRCM) system, a component of which is the AN/AAR-57 Common Missile Warning System (CMWS). These systems together provide automatic, passive missile detection, threat-type declaration, crew warning, false-alarm suppression and cues to other onboard systems such as dispensers for countermeasure decoys. For the Army only, the ATIRCM/CMWS adds active, directional countermeasures via a laser, an arc lamp and an Improved Countermeasures Dispenser (ICMD).

The ATIRCM/CMWS is programmed to be deployed initially on the Army MH-60K, the Air Force F-16 and the Navy AV-8B. The F-16 and AV-8B platforms are currently unfunded requirements in the services' budgets. When fully tested and proven on these aircraft, the system will be installed on a range of other tactical aircraft.

The ATIRCM/CMWS program will improve existing countermeasures by combining the functions of the missile detector, IR jammer and decoy dispenser to permit more effective countermeasures against a greater number of IR and RF threats.

The ATIRCM/CMWS is being built using a modular

concept to allow tailoring of the system configuration to each aircraft. The CMWS component system will detect incoming missiles and, upon declaration of a valid threat, provide an appropriate command for initiation of on-board expendables. When the component system is installed on Army rotary-wing aircraft, the command would be sent to either the active jammer or the countermeasure dispenser. When installed on Navy, Marine Corps and Air Force tactical aircraft, the command would be sent to the countermeasures dispenser system (CMDS).

The CMWS, when installed on tactical aircraft, will also provide audio and/or visual warning to the aircrew to permit initiation of appropriate defensive maneuvers in conjunction with manual or automatic countermeasures dispensing. Component modularity will also permit product improvement to each subsystem independently of the other, thus allowing for system growth to defeat new types of threats.

Program Status

The ATIRCM/CMWS Milestone I/II was conducted in 3QFY95, the contract for ATIRCM/CMWS was awarded in 4QFY95 and Milestone III is planned for 4QFY03. The program is scheduled to commence developmental testing in 1QFY01.

Adjunct programs of ATIRCM/CMWS [Advanced AIR Countermeasures Munitions (AIRCMM) and Advanced Visual Electro-optical Signature and Suppression Analysis (AVESSA) passive features] are acquisition programs with the PEO-Aviation as the milestone decision authority. The AIRCMM is a new-development set of flare decoys developed to counter existing and advanced IR threats. With its payload identification capability, it will allow for automatic dispensing, time-sequenced routines to counter the advanced threat. PM-AES also has overall responsibility for managing these programs.

Test Program

The first fully-integrated ATIRCM/CMWS EMD system was demonstrated by Sanders, the prime contractor, in April 1998 and contractor qualification testing (CQT) began in July 1998. During CQT the system is subjected to a series of tests designed to prove its operation under extreme conditions. Air vehicle integration on the Army EH/MH-60 began earlier in 1998.

Developmental testing, beginning in FY01, will consist of Production Qualification Test (PQT) (contractor/government) prior to Milestone III and a Production Verification Test (PVT) (contractor/government) prior to materiel release. Modeling and simulation, using both hardware-in-the-loop (HiTL) and fully digital models, is being used throughout development to minimize risk and

reduce testing. The U.S. Army Operational Test and Evaluation Command (USAOPTEC) will provide a system assessment (SA) as input to both Milestone III and materiel release. The Air Force's 46th Test Squadron at Eglin Air Force Base, Fla., and the U.S. Naval Air Warfare Center's Aircraft Division will also provide developmental test reports for Milestone III.

Developmental test and multi-service operational test and evaluation, consisting of combined DT/operational test (OT) and dedicated OT, will be used to provide a combined system evaluation report as input to Milestone III. Combined DT/OT will consist of two parts, the first of which includes all data requirements necessary for the evaluation to support the LRIP decision and, second, the production decision.

The ASE training device strategy is a building block concept to train Army aviators on the proper employment of ASE.

Simulations and Models

The simulation strategy supports the life-cycle management and evolution of ATIRCM/CMWS through the simulation of end-to-end (E2E) engagements of SAM threats against ATIRCM/CMWS-equipped rotary- and fixed-wing aircraft. The near-term focus is the support of developmental and operational testing and military worth studies/analysis of alternatives processes that lead to the Milestone III acquisition decision. The mid- to far-term focus is post-production training, combat development and performance predictions on follow-on platform integration. The scope includes a family of simulations that range from those currently under development to those already developed; from one (missile) versus one (aircraft) to many versus many; from very high fidelity to low fidelity; and from strictly digital, constructive simulations to HITL simulations, as appropriate.

EMD quantities currently being procured and delivered, as noted above, will be used for system integration and tests on designated lead platforms. LRIP is a planned initial production buy in FY02, with follow-on, full-rate production starting in FY03 after a successful Milestone III decision. First unit equipped (FUE) in the field is expected to be at the end of FY03 or early FY04.

AN/TPQ-45 Aircraft Survivability Equipment Trainer (ASET) IV

System Description

The ASE training device strategy is a building block con-

cept to train Army aviators on the proper employment of ASE. The ASE Trainer (ASET) IV, shown in Figure 6 below, is a set of tactical threat-emitting training devices that teach realistic force-on-force and collective-team training under the "train-as-you-fight" concept.



FIGURE 6. ASET IV

Each system consists of two IR SAM threat simulators, one RF SAM threat simulator, two AAA threat simulators, and a command-and-control vehicle. Six Man-Portable Air Defense Systems (MANPADS) are normally deployed with, but are not part of, the ASET IV. The five threat simulators and command-and-control vehicle are mounted on six M1097 Humvees, which are designed to emulate a mechanized brigade-based air-defense network. These components are shown on Figure 7.



FIGURE 7. ASET IV Components

[(upper left - IR SAM simulator, middle - command-and-control vehicle; upper right - RF SAM simulator; lower left - AAA threat simulator; lower right - MANPAD (optional)]

The ASET IV can be used with all aircraft containing ASE systems. For the Army, these include AH-1F, UH-1H/V, RC-12, CH-47D, MH-47E, OH-58C/D, EH-60A, MH-60K, UH-60A/L/Q and AH-64A/D.

Capabilities

The ASET IV is a group of ground-based air defense

threat emitters that create an electronic warfare environment for training aviation crews to maintain their proficiency in tactics, techniques and procedures. The ASET IV permits home station train-up prior to training center rotations. It helps to strengthen a unit's warfighting readiness posture. The ASET IV can operate with or without instrumentation.

The ASET IV provides tactical training against SAM and AAA, and stimulates ASE and records the counter-countermeasures response. The ASET IV threat emitters of the RF SAM and AAA have the characteristics of enemy threat radar, and will trigger the radar-warning system and activate the jammer on board the aircraft. The emission of a jamming signal by the aircraft can be detected and analyzed on the ASET IV for effectiveness and subsequent simulation of a realistic jamming response. Additional realism is added to the exercise by equipping the vehicles with Multiple Integrated Laser Engagement Systems-Air Defense (MILES-AD), which provide "kill and be killed" capability and "flash-bang" weapons effects.

Program Status

The program completed its production, and has also received Congressional plus-ups for upgrades to the sys-

tems. The Threat Simulator Management Office (TSMO) provides support for the program, while Sierra Technologies is the prime contractor. Fielding of one system to Fort Hood, Texas, another to Fort Campbell, Ky., to support warfighter exercises, and planned fielding of the third system was accomplished during FY00.

Planned upgrades to ASET IV to provide night-fighting capability via an IR camera, to upgrade the threats and to upgrade to Operator Training (OT) Interactive Multimedia Instruction (IMI) were partially funded and began during FY98. Work is continuing on these upgrades.

Summary

The potential for loss of aircraft and lives to existing and evolving missile threats is too great to be discounted or ignored. Warfighters need to survive in the fight to fight again. Aviation, as part of the combined-arms team, must be responsive, deployable, agile, versatile, lethal, survivable and sustainable to meet the Army vision of soldiers on point for the nation. Aircraft survivability equipment is an integral part of this vision.



Dr. Steven L. Messervy is the project manager, aviation electronic systems, at Redstone Arsenal, Ala.

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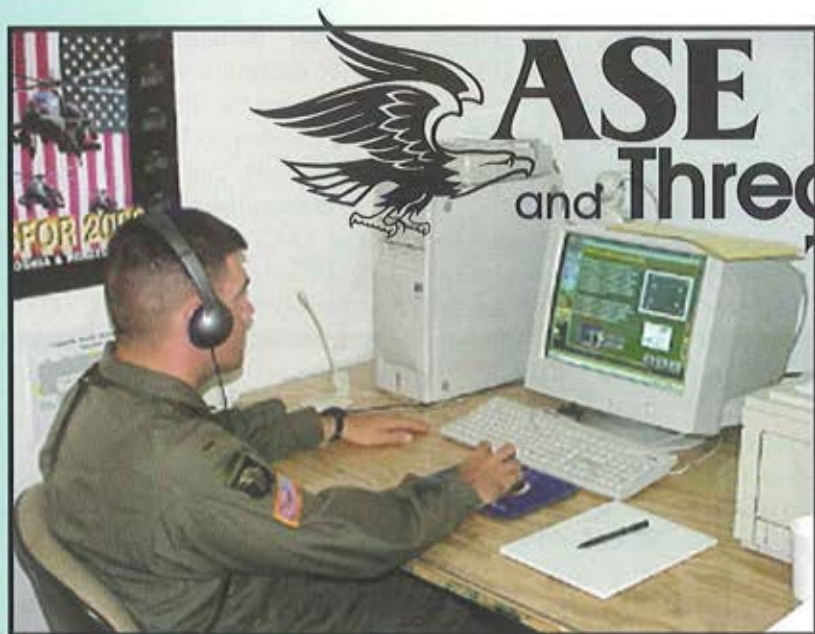
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ASE and Threat Training in TF EAGLE

By CWO 4 Jack B. Pike

The Task Force Eagle (TFE) Aviation Brigade at Camp Comanche, Bosnia-Herzegovina, had one of the best aircraft survivability equipment (ASE) and threat-training programs in the Army. The TFE Avn. Bde. had more than 150 aviators in theater, flying three types of helicopters. In the seven months of the SFOR 6 deployment, 138 (92 percent) of its pilots finished ASE training. Many Army units have a difficult time accomplishing that kind of training standard in a year with a third of the pilots.

What is the secret to this success? It definitely is not any one person or thing, but is a combination of several ingredients.

First, to have a worthwhile training program you must have something worth learning. The recent release of the Army Aircraft Survivability Equipment-Aircrew Trainer (ASET-AT) is a move in the right direction. The ASET-AT is a CD ROM-driven software package that provides aircrew members with detailed and up-to-date information on the description, limitations and capabilities of his aircraft's electronic detection and countermeasure equipment. Video and reference materials of various weapon systems provide additional training materials, with several thousand digital images of weapons utilized on computer-generated slide shows for recognition training.

The second ingredient of a successful training program is having qualified and motivated trainers, as well as command support. This brigade had an abundance of these individuals in the form of

ASE/electronic warfare officers (EWOs) and commanders who were concerned about the combat survival of their aircrews. Before we get into making a successful ASE/threat-training program, let's look at the background of electronic warfare in Army aviation.

The Air Force, Navy and Marines do an outstanding job in electronic warfare and in operating in the electromagnetic spectrum. The Army, Air Force and Navy routinely conducted flight operations in that environment following the World War II-era introduction of radar in both the Allied and Axis forces. Tactics developed more than 55 years ago are still used today; one of the most widely known is to drop thin strips of metal from aircraft to confuse the radar. During WWII the strips were known as window; today we call it chaff. Our predecessors also learned that if they flew low radar couldn't see them because of its line-of-sight limitations.

They also learned that if they flew in tight mass formations they would appear as a single target. Today we call that exploiting the "radar resolution cell." Since the end of WWII the Air Force and Navy have invested a lot of money into research and development for electronic warfare (EW) and its countermeasures.

The Army began its EW program in the 1970s after learning some hard lessons in Vietnam. Many of those lessons resulted from the North Vietnamese army's introduction of SA-7 shoulder-fired, heat-seeking missiles and radar-guided anti-aircraft guns.

Army doctrine up to that point had been for aircraft to come in high, outside the range of small-arms fire, then rapidly descend to the landing zone. The enemy's new, high-tech weapons and tactics forced our aircraft down into the trees, marking the beginning of nap-of-the-Earth (NOE) flying.

The trade-off for not getting killed by the man-portable air defense surface-to-air missiles (MANPADS) was vulnerability to small-arms fire.

The NOE doctrine was taught and practiced by Army aviators until Operation Desert Storm proved that it was not always the best method. The flat deserts of Iraq provided no concealment for Army helicopters, which were forced to operate in the electromagnetic spectrum of radar and infrared homing missiles.

Fortunately, as early as the late 1970s the Army was developing and fielding such ASE as the APR-39(V)I radar-warning detector, chaff-and-flare decoy dispensers and the ALQ-144(V)I infrared missile jammer. To train aircrews on the operation of these systems the Army introduced the Aircraft Survivability Equipment Trainer (ASET). This was a high-speed computer for its day and it provided good training in the use of the new EW equipment, but pilots did not place the necessary emphasis on the training. Since there was no war they apparently felt there was little need to learn about something they were not using. A lot of aviation units did not even install the ASE on their aircraft, and left the devices boxed up in storage.

That attitude toward ASE rapidly changed with the massive Operation Desert Shield deployment to Southwest Asia - some units forgot to bring their ASE, and the units that did bring it found the equipment was unserviceable due to inadequate usage. Once the equipment was installed and functional, there was a lack of knowledge on how to operate the ASE or about the tactics needed to properly deploy it. The lesson learned was that each unit needs to have a subject-matter expert to oversee unit training, equipment maintenance and programming. Out of this came the electronic warfare officer (EWO).

In 1993 Fort Rucker, Ala., started a

drive, suffered from low memory and came with a monitor that required a light pen for program response. It was very slow in operation and the training modules were very lengthy - the AH-64 training module, for example, was about 22 hours in duration.

Moreover, the ASET II was difficult to upgrade and just did not hold the pilot's interest. For training to be effective, pilots must understand, learn and retain the presented information. The program obviously had to be overhauled. The first initiative took place in 1997: unit-level EWOs started transferring the unclassified information from the ASET II onto simple Power Point slide shows and operating the programs

Army provides its pilots less than six references for weapon-system study, while the civilian sector has twenty times that number in good solid reference books pertaining to both former Soviet weapons and free-world systems. If unit members go to the base TASC for models of weapons, they might get a box of 12 plastic models. Civilian hobby stores, on the other hand, can provide 10 times that number of accurate, detailed scale models of both ground and air systems that pilots might encounter on the battlefield. These can provide pilots with any combination of five different ways to learn their ASE and threat recognition.

Setting up a training center in garrison is easy and relatively inexpensive. The military provides computers and TV/VCRs, as well as some references. If you're the EWO on a military post, go to the library and stock your shelves with their books. Some libraries will let you keep them on extended checkout. If that's not possible, get different books and rotate your selection. Poll the members of your unit for books and video tapes that they may want to donate or loan to the training center. Unit members can also be a source of scale models, either by loaning them to the training room or building the models you purchase.

EWOs should also write the contractors who build the Army's ASE and request product tapes, or pick them up at displays located at the various Army and aviation conventions. The Internet is an endless source of images of various weapon systems. Another network to tap is other EWOs from either other Army units or our sister services. ASE/EW officers are professionals, and they pride themselves in helping other EWOs and in not being too proud to ask for help. As you can see, with a lot of imagination and some outside resources, a worthwhile training program can be developed.

Does the training stop once a unit deploys? No, because no matter where a unit deploys the training goes with it. You don't have to move your whole garrison training center, but do bring some of the necessary items. We started the TFE ASE/Threat Training Center with a couple of computer systems and ASE training software. The pilots have a quick, proficient way to learn about their EW equipment. The Fort Rucker ASET-AT program does provide information on most of the



large-scale train-up of ASE/EW officers. This began as two-week road shows touring various commands and training 40 to 50 officers per class. This continued for about a year, then it settled down to a resident school at Fort Rucker, where a class has since been pumped out every month. The intent was to have a school-trained EWO in every aviation unit down to the company/troop level. Today that is the rule rather than the exception.

The primary job of the EWO is to train the unit's aviators in the description, capabilities and limitations of their aircraft's ASE, as well as teaching sound tactics to survive missile and gun engagements. The problem EWOs had to first overcome was the 10-year-old ASET II training device. What was high speed in 1985 had become antiquated by the mid-1990s. The ASET II used an 80286 processor, had no hard

on modern, higher-speed computers. More information was added, as were digital photos and movie clips, resulting in two to three times the data with a viewing speed 50 to 60 percent faster. Having an expedient ASE training program was not enough, however, for crews had to be taught weapon-system recognition and tactics.

The next step was to provide aviators with multimedia training centers - secure rooms outfitted with various training aids and devices. Computers were a necessity, not just to run the Power Point ASET slide shows, but also to provide a media with which to view thousands of digital images of weapon systems. Training VCR tapes were collected to show weapon systems in operation and product tapes from the manufacturers of the ASE were used to show its operation.

It's important to mention here that the

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Army ASE systems, but has shortcomings which can be supplemented by locally manufactured Power Point slide shows. The TV/VCR allows aviators and crew chiefs to view various weapon-system training tapes. The small reference library gives the crews the opportunity to do detailed study on the weapon systems they may encounter. Now we have the training program, but all these training aids and programs do not work without the people to push it.

In the Bosnia deployment we had several things working for our training program. First, we had a captive audience of more than 150 pilots and several dozen crew chiefs. If nothing else, training filled in those long days when there was no flying. The people that got the pilots and crew chiefs in front of those computers were the unit's ASE/EW officers and the training NCOs. The commanders who had seen or worked the programs were in a better position to push the programs down to their soldiers, not by threats but by example. The individual pilots we worked with were dedicated professionals who wanted to be the best at their profession, and they went into the training with a positive attitude. The best indicator that our training was working was when a "salty" 20-year-plus chief warrant officer 4 said "I learned something new."

TF Eagle did have an excellent training program, and it did not cease to exist at the end of the deployment. When the task force broke up at the end of its tour, I truly expected to see four or five outstanding training programs in individual units on return to our home stations.



CWO 4 Jack B. Pike has been the ASE/Electronic Warfare Officer for the 8th Bn., 229th Avn. Regiment, since 1993, and was the TF Eagle Avn. Bde. ASE and threat training officer during SFOR 6's deployment to Bosnia-Herzegovina. Pike was presented the AAAA ASE/EW Officer Award for his unit's training program in 1997.

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Aging Avionics

By Larry Johnston and Lt. Col. Corwyn Tiede

Today's rapidly evolving technology has created a threat of obsolescence looming continually over the designers, developers and procurers of our nation's weapons systems. Army aviation is not immune to this threat, particularly in the area of avionics. Aging avionics is a multifaceted issue, stemming from several source problems that include diminishing manufacturing sources (DMS), evolving operational requirements and the cost associated with trying to continually insert rapidly changing technologies. It is the mission of the Project Manager for Aviation Electronic Combat (PM AEC) to formulate and execute an effective strategy for combating aging avionics. The purpose of this article is to present AEC's assessment of the aging avionics problem and the strategy for effectively supporting Army aircraft and systems.

Mission

PM AEC provides the mission-area leadership for determining the future technology direction and architecture for aviation electronics, digitization and horizontal technology insertion (HTI), while developing and producing the most capable, sustainable and cost-effective solutions for warfighters.

AEC works commonality across aviation platforms in the areas of digitization; communications; data transfer and exchange; mission planning and rehearsal; and navigation. Among the common avionics systems centrally managed by PM AEC (see Fig.1) are the AN/ARC-220 Non-Line of Sight (NLOS) Radio, the Improved Data Modem (IDM), the Aviation Mission Planning System (AMPS), the Doppler GPS Navigation System (DGNS), the Embedded GPS Inertial System (EGI), Global Air Traffic Management (GATM) and the Joint Precision Approach and Landing System (JPALS).

AEC is also the aviation integrator of the new Joint Tactical Radio System (JTRS), as well as the executor of the Army's Embedded Battle Command (EBC) in all rotary-wing aircraft. The JTRS and EBC are the critical elements in digitizing the aviation fleet by providing the gateway to the tactical internet (TI). It is in this role as the proponent for common aviation electronic solutions that AEC addresses the problem of aging avionics.

The Problem

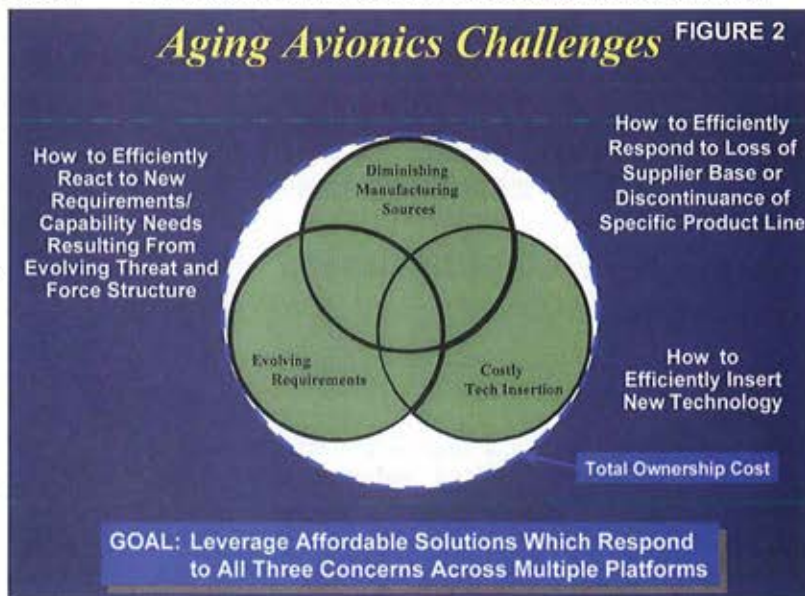
Figure 2 depicts the three major challenges to addressing aging avionics. DMS refers to aviation's ability to efficiently respond to a loss in the supplier base for an avionics subcomponent or the discontinuance of a specific product line. Aviation experience with this problem includes the loss of suppliers for aviation-quality glass



for multifunctional displays (MFDs) for Apache and Intel processors for the Comanche.

Ironically, the DMS problem is more prevalent in newer electronic systems rather than in the legacy systems due to the rapid rollover of technology. Technology insertion refers to the ability to incorporate various technologies that evolve or improve at faster and faster rates at minimal cost. Examples include advanced processors, higher-density memory chips, ring-laser gyros to replace mechanical gyros, and multi-mode, multi-band radios to replace federated radios.

Evolving requirements result from the impact of new, improved technologies on tactics and doctrine. The Army's current digitization initiative is a prime example of how advancements in communications and computer technology have stimulated the need for increased battlefield situation-



al awareness, more rapid and secure battlefield information exchange, and more robust information assurance. The warfighter's appetite for information increases commensurate with advancements in processing speed, memory storage and communication bandwidth.

The Solution

Having defined the problem, we now look at Army aviation's strategy for addressing aging avionics. Figure 3 depicts the path from the problem to the objective solution, which is an open systems architecture for avionics. We define "open systems architecture" as a compendium of commercial standards, specifications and interface control documentation that facilitate the form, fit and function replacement/integration of systems, components and piecemeal into the aircraft with minimal time and expense.

The critical descriptor in this definition is the word "commercial." Current avionics architectures tend to be closed and proprietary to the respective platform prime contractor, often built to military specifications. Military-unique, high-technology parts and components are becoming increasingly expensive as the military market decreases relative to the commercial market. Proprietary or unique parts and components adversely impact the ability to affect avionics changes for any of the aforementioned reasons (i.e. DMS, technology insertion, evolving requirements).

For example, if a vendor discontinues production of a particular avionics part, it is inherently more difficult to find a form, fit and function replacement when it must interface with a unique, proprietary architecture. With an open architecture, it will be faster, easier and cheaper to procure, test and qualify a substitute part that will be available from multiple vendors and will already possess the necessary interfaces. Multiple sources of standard parts and components with common interfaces also mitigate against the need to affect expensive engineering redesign efforts to fix an aging problem.

Achieving a true avionics open system architecture is an evolutionary process that requires the participation and cooperation of such players as industry, platform program managers, research-and-development centers, and other military services, with PM AEC serving as the catalyst and facilitator. The goal cannot be achieved immediately, so the aviation strategy must include migration plans toward an open architecture while simultaneously implementing other efforts to combat aging avionics as we move along the path toward the desired end state. We will now shift focus to these other efforts, depicted in Figure 3 as the four major thrusts along the solution path that collectively minimize aging avionics.

Interim Product Improvements

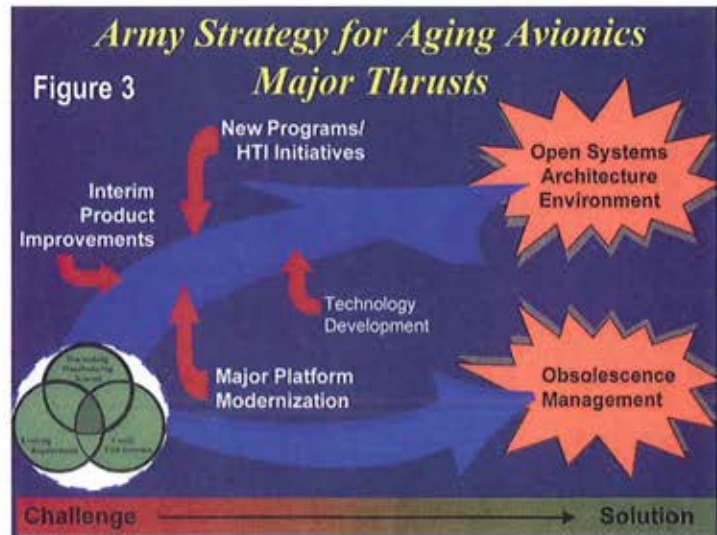
AEC is executing preplanned product improvements (P3I) to several key avionics systems, including IDM, DGNS, EGI and the AN/ARC 220 HF radio. The primary purpose of these improvements is to increase operational performance.

The IDM P3I will incorporate improved processors and memory modules to facilitate implementation of EBC. AN/ARC 220 will receive software upgrades to improve baud rate from 2400 bps to 9600 bps. DGNS and EGI will both receive a new GPS receiver module in SEM-E form factor that will provide critical anti-jam and anti-spoof capa-

bilities. GATM is implementing modifications for a Protected Instrumented Landing Systems (P-ILS) and changing to a new Identification Friend or Foe (IFF) system that incorporates Mode S and Mode 5. AEC is using these opportunities to ensure that state-of-the-art components and parts are used to reduce the risk of obsolescence.

Major Platform Modernization

In similar fashion, all the aircraft in the modernized fleet (AH-64D Longbow Apache, CH-47 Chinook, OH-58D Kiowa Warrior and UH-60 Black Hawk) are currently under-



going major modernization efforts to provide for, among other things, high-speed data busses, improved multifunction displays, digital moving maps and more. Platform program managers are using these efforts as opportunities to upgrade avionics parts and components to preclude obsolescence.

New Programs/HTI Initiatives

As the HTI manager for all Army aviation, AEC is spearheading several initiatives to promote avionics commonality while meeting operational requirements. These include common flat-panel displays, digital map generators and loaders, data-transfer devices for mission-planning data and a common Soldier-Machine Interface (SMI) to present common situational awareness (SA) in the cockpit.

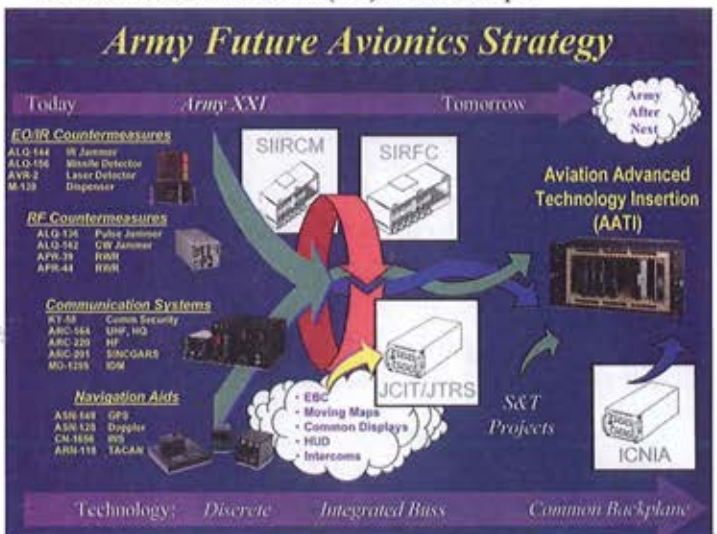
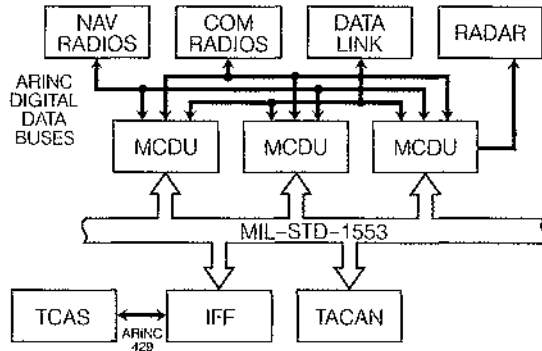


Figure 4

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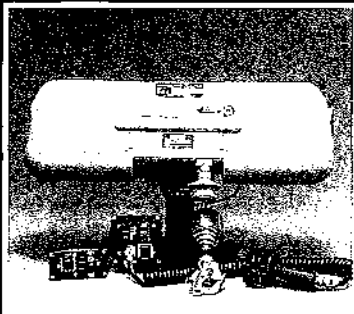


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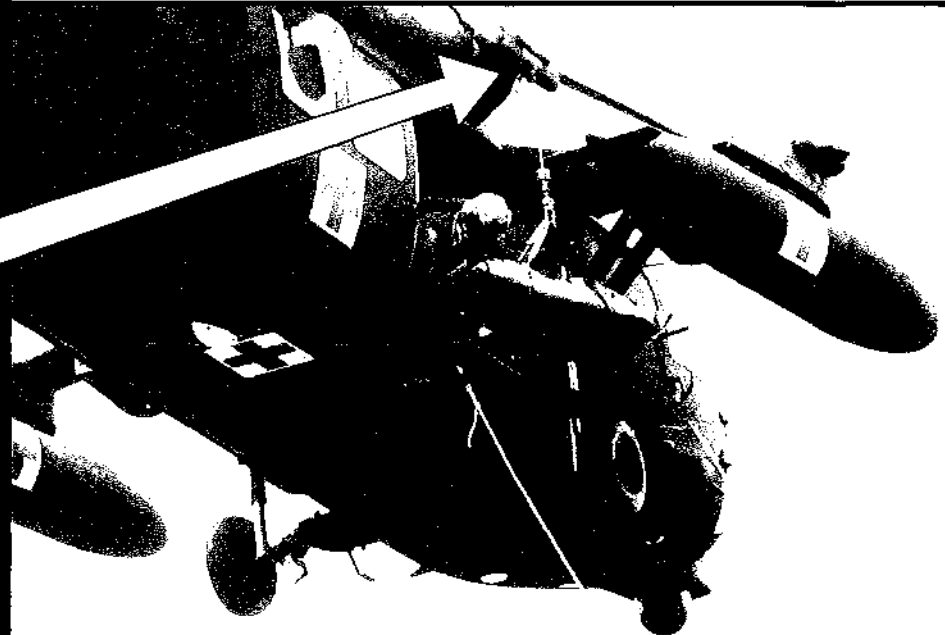
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AEC also manages the Advanced Avionics Technology Insertion (AATI) program, which is intended to migrate common avionics from the current multitude of federated systems to a much smaller family of systems that emulate required functions (i.e. communications, navigation, surveillance, aircraft survivability, etc.) in software modules hosted in a common, open architecture, multi-channel processor (see Figure 4). These programs and initiatives are further opportunities to combat aging avionics by introducing state-of-the-art avionics parts and components that adhere to commercial open standards.

Technology Development

Probably the single most critical thrust towards achieving avionics open systems architecture is technology development. Unfortunately, funding for avionics technology development has not fared well in recent years.

Fortunately, one of the few Army avionics technology efforts that is currently ongoing is the Rotary-wing Open Systems Avionics (ROSA) program, managed by the Aviation Applied Technology Directorate (AATD) of the U.S. Army Aviation and Missile Command's Research and Development Engineering Center. ROSA represents the Army's concerted effort to identify those commercially available technologies that can form the building blocks of a true open architecture, and explores how to best piece together those building blocks to provide an architecture that is not just open, but efficient, supportable and low cost.

Obsolescence Management

The last axis of the Army strategy we need to address is obsolescence management. An open avionics systems architecture, while the desired end state, is not a panacea. Our objective solution affords managers greater flexibility in

dealing with obsolescence problems, but cannot completely eradicate them.

As the Army increases its reliance on commercially available parts and components, we will experience a higher incidence of discontinued product lines given a high turnover rate driven by consumer markets. Aviation PMs are pro-actively managing this dynamic situation by employing a variety of commercially available software tools and databases that provide early warning of an obsolescence problem, and further aid the PM in performing trade studies to outline solution options based upon cost and technical factors. This intensive management effort must continue indefinitely, even after we achieve the objective solution.

In sum, the source of aging avionics is threefold; DMS, evolving user requirements and the need to continually insert rapidly changing technology. The centerpiece of Army aviation's strategy to combat aging avionics is the migration to an open systems architecture that minimizes the time and cost associated with introducing new avionics systems, parts and components.

As aviation moves along the migration path to this open architecture, a combination of modernization, P3I and HTI programs and initiatives are helping to preclude the incidence of obsolescence. Finally, a proactive program of obsolescence management is necessary to insure against the loss of a supplier base or the discontinuance of a product line. Aviation Electronic Combat continues to serve at the core of these efforts as a manager, catalyst and facilitator for the benefit of the Army rotary-wing fleet.



Larry Johnston is the Project Manager, Aviation Electronic Combat, and Lt. Col. Corwyn Tiede is the Product Manager, Avionics, at Redstone Arsenal, Ala.

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Navigating to the Next Century

By Maj. Layne Merritt and Maj Vince Tobin

It has been raining on and off all day. It is now 1900, three hours before a battalion attack mission. There is a significant number of threat air defense weapons arrayed between our target and us. The plan calls for the suppression of enemy air defenses (SEAD) on ingress and egress. The lethal SEAD will require all aircraft on the mission to confine their flight to specified corridors to avoid the effects of friendly weapons. The combination of less-than-ideal FLIR conditions and the need for precise aircraft positioning demands an accurate navigation system onboard the mission aircraft.

The Army has responded to meet this need. The Project Management Office for Aviation Electronic Combat (PM AEC) has completed fielding the Embedded GPS Inertial (EGI) system for Kiowa Warriors and Apaches. In addition, less than a year from now we will complete fielding the Doppler GPS Navigation System (DGNS) to the cargo and utility fleets. As indicated by the system names, GPS is common to both systems and contributes heavily to overall effectiveness. Beyond GPS, however, there is capable augmentation to both systems in the form of inertial or Doppler navigation. These integrated systems provide much better performance than the Desert Storm-era GPS receivers that we "velcroed" into the cockpit.

As we complete the fielding of these systems, the requirement for upgrade is already here. In fact, the upgrade beyond the upcoming one is already in the early planning stages at the GPS Joint Program Office

(JPO) in California. Why is there an immediate need for upgrades just as we field these systems? The answer is due to the proliferation of evolving technologies worldwide. As in most cases, when an overmatch capability exists the threat vigorously attempts to neutralize that capability.

The signal from GPS satellites is very weak - less than background radiation. The fact that we have receivers that can isolate and use this signal is a technological marvel. However, the weak signal means that even small, cheap, low-power transmitters can interfere with its operation. The power required for each satellite to continuously broadcast over half the surface of the earth is a primary restriction to strengthening the signal. We can expect that the continuing worldwide proliferation of transmitting devices will affect the GPS, even on the battlefield.

Until now, we had been intentionally introducing error into the civil GPS signal to prevent an adversary from using our system for military advantage. In May President Bill Clinton mandated that the intentional error in the signal be set to zero in response to the desires of civil users in the United States. The civil users - primarily the airliners - had lost patience with a system that was not as accurate as it could be. It is now the responsibility of the Department of Defense (DOD) to prevent threat targeting while allowing civil access to the more accurate system.

Note that it was the civil signal into which we had been inducing error. For military users of GPS, it is not news that there is an encrypted signal

that has been providing us more accurate positioning. The issue here is the encryption and the need to maintain its use within DOD. The chairman of the joint chiefs of staff (CJCS) has mandated a new GPS security system for all GPS receivers procured after 2001. The system is a set of computer chips that will reside in a tamper-proof coating. Attempting to get into the module will destroy it, thereby preventing reverse engineering. The system is called the Selective Availability Anti-Spoofing Module (SAASM).

All military users of GPS must abide by the CJCS mandate to use SAASM. Because repeated GPS upgrade requirements appear to be inevitable, an open system architecture on our systems will allow for upgrades while minimizing costs over the long term. The GPS JPO developed a concept for specifying interface (how the card fits into the larger system) and performance requirements for GPS circuit cards. This is intended to allow multiple vendors to produce these cards, yielding competition and lower prices. The resulting GPS cards are called GPS Receiver Applications Modules (GRAMs). Modifying the concept slightly to accommodate the CJCS-mandated security requirements, we have the avionics version of GRAM-SAASM, the basis for pre-planned product improvements (P3I) for both the DGNS and the EGI.

The requirements for improving the navigation systems fielded do not stop here for Army aviation. While GPS serves the civil aviation fleet as a supplemental means to navigate under Instrument Flight Rules (IFR) in the

National Airspace System (NAS), the current DGNS and EGI are lacking some attributes required to use GPS for IFR. Most significant of these attributes is the lack of a noncorruptible waypoint database. Civil systems require a noncorruptible database to preclude the potential for a pilot to type in a bad coordinate and fly into an obstacle under IMC. Since our navigation systems already require upgrade for the reasons discussed above, the GPS IFR flight requirement has been added to

the list of those that the P3I will meet. The Army's Global Air Traffic Management (GATM) program, another in the PM AEC stable, includes the GPS IFR navigation solutions discussed above, but goes further. As the world's airspace becomes more crowded, civil-aviation agencies are imposing equipment requirements to improve pilot situational awareness, and increase safety and efficiency. The price of not being equipped, in many cases, is

exclusion from airspace. In order to fight the fight, Army aviation assets must be able to get to the fight.

The GATM program goal is to ensure that Army aircraft have the equipment needed to fly in worldwide civil-controlled airspace. The GATM requirements include navigation, communications, surveillance and integration into the aircraft. PM-AEC strives to improve digital communication data links and provide both more capable transponders and shielded navigation receivers to present solutions necessary to meet the formidable GATM requirement.

The military services also desire a GPS-based precision approach and landing capability. To remedy this, the Army is partnered with the Air Force and Navy on the Joint Precision Approach and Landing System (JPALS) development, with PM AEC as the Army acquisition manager for the system.

GPS accuracy is not sufficient to allow aircraft to safely descend to a decision height of 200 feet or less on a glide slope as does an ILS. The JPALS Program is pursuing using what is called differential GPS to achieve the required accuracy. Differential GPS makes use of a GPS receiver-transmitter at a surveyed location to compare the known surveyed position with the position given by the GPS satellites and receiver. The difference between these two positions is used as the GPS position error for aircraft within several miles of the location. By continuously transmitting these "error corrections" the ground station provides the aircraft navigation system with the information it needs to achieve sufficient accuracy to safely execute a precision approach.

As seen in the discussion above, PM-AEC is busy developing and fielding accurate and secure navigation solutions to meet the Army's warfighting needs.



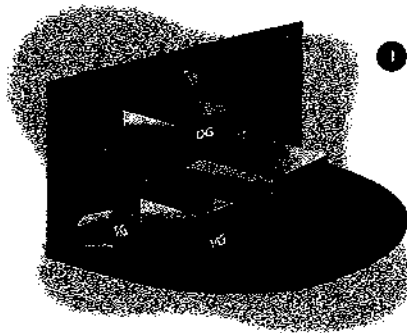
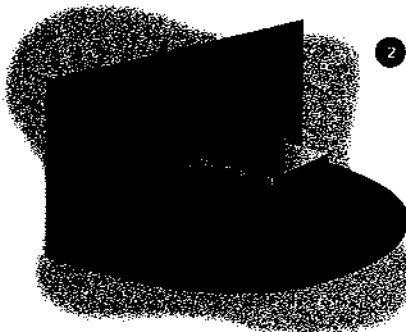
Maj. Layne Merritt is the PM AEC's Assistant Product Manager for Global Positioning Systems, and Maj. Vince Tobin is the Assistant Product Manager, Test and Evaluation, in the RAH-66 Comanche Program Manager's Office.

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Black Hawk Gyro Replacement

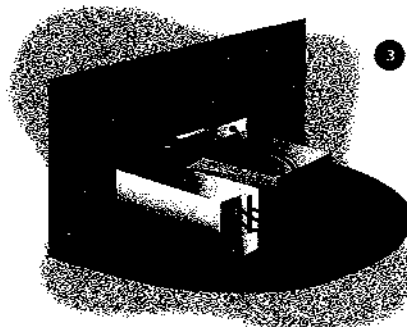
LCR-92H "FOG" AHRS Retrofit in the UH-60

The LCR-92H is a solid-state strapdown "fog" (fiber optic gyro) AHRS (Attitude Heading Reference System) which replaces older mechanical gyros. A single LCR-92H replaces three older gyros in the UH-60 with a highly reliable, accurate & cost effective system. The retrofit can be accomplished with a minimum of effort, without altering aircraft wiring. An adapter harness mates with the aircraft connectors, and the mounting hardware uses existing mounting holes. The existing compass flux valve and cockpit control unit remain, and are utilized by the LCR-92H AHRS. The procedure is as follows:



- 1
- 2
 - Remove pilot side VG (CN-1314, CN-1497/A, or CN-811), the DG (CN-998) & the Rate Gyro (TRU-2/A)
 - Bolt the connector mounting bracket of the adapter harness to top front of the DG shelf.
 - Harness tie the VG, DG and Rate Gyro harnesses and reroute them to the connector mounting bracket.
 - Plug the existing gyro connectors into the mating connectors on the mounting bracket.

- Install LCR-92H adapter plate and tray, utilizing existing three point VG mounting holes.
- Install LCR-92H AHRS in tray.
- Fasten D Sub connectors of mating harness to the LCR-92H AHRS.



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MEMORIAL

In February a moving memorial service at the U.S. Army Transportation Museum at Fort Eustis, Va., honored the memory of 21 aviation soldiers killed during the first years of American involvement in Vietnam.

The soldiers were members of the 140th Transportation Detachment, an H-21 helicopter maintenance unit that had first deployed to Vietnam from Fort Eustis in December 1961. The 21 died on Feb. 10, 1965, when a bomb destroyed the hotel in which they were billeted in the port city of Qui Nhon.

Though the bombing occurred just after the United States became fully involved in the Vietnam War, it remains one of the most deadly attacks carried out on U.S. forces during that conflict.

The memorial service was organized by members of the Transportation Corps Aviation Association. About 60 members of the association were among those who attended the ceremony.

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New Whirltower: Corpus Christi Army Depot



The rotorhead on the new whirltower is some 87 steps above ground level. (Photo by Ken Case)

Seen adjusting the rotorhead on the new whirltower at Corpus Christi Army Depot, Texas, are (left to right) Clyde Rodriguez and Dennis Moreno from the contractor Bradleys' Inc.; Ray Reeves, CCAD Equipment Engineering; Fred Jimenez, CCAD whirltower operator; and David Bartels, CCAD project manager.

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Sgt. Lisa Marie Duncan
1Lt. Lee S. Fennema

In Memoriam

Lt. Col. Charles W. Jones, Ret.



Still a Fine Automobile

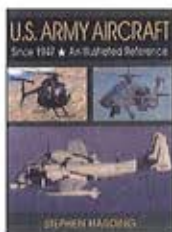
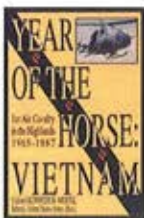
Retired Brig. Gen. Jack W. Hemingway and his wife, Shirley, pose proudly with their 1930 Ford Model A Sport Coupe on its 70th birthday. The vehicle is one of four Model As the Killen, Texas, residents own.

The car, which Jack restored over several years, was featured in a recent issue of "The Restorer," a publication of the Model A Club of America. A 40-year member of AAAA, Jack belongs to the Phantom Corps Chapter.

ARMY AVIATION Book Store

Year of the Horse: Vietnam 1st Cavalry in the Highland 1965-1967 by Col. Kenneth D. Mertel (USA, Ret.)

Year of the Horse: Vietnam is the day-to-day story of the 1st Battalion, Airborne, 8th Cavalry Division. 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. [Schiffer Publishing Ltd., Size: 6"x9", 384 pages, hard cover; 59 color photographs, 9 maps; ISBN: 0-7643-0190-X].

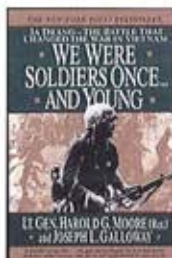


U.S. Army Aircraft Since 1947 An Illustrated Reference by Stephen Harding

This is the only comprehensive guide to the 124 types of helicopters, fixed-wing aircraft and experimental flying machines used by the U.S. Army since 1947. 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. [Schiffer Publishing Ltd. Size: 8 1/2" x 11", 264 pages, hard cover; ISBN: 9-7643-0190-X].

Black Hawk Down by Mark Bowden

Black Hawk Down is the gripping story of the October 1993 battle in Mogadishu, Somalia. Bowden captures the harrowing ordeal through the eyes and words of the young men who fought the battle, a battle that ultimately led to the posthumous awarding of two Medals of Honor. [Atlantic Monthly Press, hardcover, ISBN: 0-87113-738-0]



We Were Soldiers Once ... And Young by Harold G. Moore & Joseph L. Galloway

We Were Soldiers Once ... and Young presents a picture of men facing the ultimate challenge, dealing with it in ways they would have found unimaginable only a few hours earlier. It reveals man's most heroic and horrendous endeavor. [Harper Collins Publishers, Size: 5 1/2" x 8", 483 pages, paperback. ISBN: 0-06097576-8].

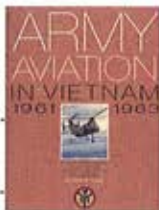
Year of the Snake One Helicopter Pilot's Story of a Year in Vietnam's Mekong Delta, Vinh Long 1965-1966 By W. Bailey Jones

Based on the author's journal entries, Year of the Snake presents a gripping account of the daily activities of one of the first armed helicopter units to serve in Vietnam. Valuable for its insights on the war, its depictions of early gunship operations and its thoughtful analysis of armed helicopter tactics and techniques,

Year of the Snake is both an important historical resource and an entertaining memoir. [Shade Tree Publishers, size: 8.5" X 11", paperback, ISBN: 0-967073-1-6.]

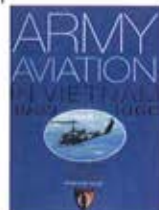
Army Aviation in Vietnam 1961-1963 Vol. 1 An Illustrated History of Unit Insignia, Aircraft Camouflage & Markings by Ralph B. Young

Army aviation came of age in Vietnam and experienced an incredible proliferation of unit insignia and markings on both its fixed- and rotary-wing aircraft. This comprehensive volume surveys the vast array of camouflage schemes and official and unofficial markings that graced Army aircraft during the early years of American involvement in Southeast Asia. Army Aviation in Vietnam, 1961-1963 is a must-have work for any serious student of Army aviation history. [The Huey Company, Inc., Size: 8 1/2" x 11", 124 pages, hard cover and paperback. ISBN: 0-9671980-0-3].



Army Aviation in Vietnam 1963-1966 Vol. 2

The second volume in the series covers the years 1963 to 1966 in the same rich detail that characterizes the first volume. [ISBN: 0-9671980-3-8]



The Forgotten Hero of My Lai: The Hugh Thompson Story by Trent Angers

The true story of the Army pilot who refused to participate in a war crime, this book explains Thompson's actions during and after the My Lai massacre. It traces Thompson's life from his birth in Atlanta in 1943, through his adolescence in Stone Mountain, Ga., and his 20 years in the U.S. military, and examines in depth the less-than-honorable way the Army treated him following his courageous stand. [Acadian House, Size: 6" x 8 3/4", hard cover, 247 pages, ISBN: 0-925417-33-5].

Breaking the Phalanx by Douglas A. Macgregor

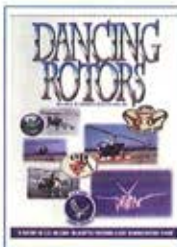
This work proposes the reorganization of America's ground forces on the strategic, operational and tactical levels. The analysis argues that a new Army warfighting organization will not only be more deployable and effective in joint operations; reorganized information-age ground forces will be significantly less expensive to operate, maintain and modernize than the Army's current Cold War division-based organizations. [Praeger Publishers, Size: 6" x 9 1/8", paperback, 283 pages, ISBN: 0-275-957942].

Breaking the Phalanx

A New Design for
Landpower in
the 21st Century

Douglas A. Macgregor

Praeger Publishers



Dancing Rotors by Harry E. (Ned) Gilliland, Jr.

Dancing Rotors documents the evolution of U.S. military helicopter precision flight demonstration teams from 1948 through 1976. A wealth of very unique helicopter history, heretofore untold, is now within the reach of every helo enthusiast. [Aerofax, Inc., size: 8 1/2" x 11", 483 pages, paperback. ISBN: 0942548-57-4].

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LEGISLATIVE REPORT

Col. Sylvester C. Berdux Jr.
AAAA Representative to The Military Coalition (TMC)

Cost of Living Allowance (COLA) Increase

It appears that the COLA increase, to be announced as we go to press, will be around 3.4 or 3.5 percent for this year.

Coalition Members Meet with Senator Warner

On Wednesday, Sept. 6, members of The Military Coalition (TMC) met with Sen. John Warner (R-VA) to express their unanimous and enthusiastic support for Warner's provision in S. 2549, the Senate fiscal year 2001 National Defense Authorization Act (NDAA), that would extend lifetime TRICARE eligibility to Medicare-eligible military beneficiaries (TRICARE-for-Life). Warner was upbeat about TRICARE-for-Life being included in the final NDAA and listened intently to TMC members as they expressed their appreciation for his leadership in developing this amendment. Warner was also receptive to the coalition's views on what is needed to strengthen the final legislation.

The most frequently voiced concern and recommendation was that the conference report language needed to include an emphatic statement about Congress' intent to make TRICARE-for-Life a permanent program as quickly as possible. To guarantee that the Department of Defense (DOD) would comply with the spirit and intent of the proposal, Coalition members also recommended that the legislation be as clear and directive as possible about ensuring TRICARE will pay on a "coordination of benefits" basis as second payer to Medicare (i.e., pay the full Medicare copayment), and that it ensure there will be no enrollment fees or premiums.

Coalition members left the meeting feeling very positive that progress is being made toward restoring the promise of lifetime health care, and that there is strong support among the conferees and the conference leadership, particularly Warner, for the inclusion of TRICARE-for-life in the final version of the NDAA.

Savings Bonds Information

There are billions of dollars worth of U.S. savings bonds 30 or 40 years old, and some are worth more than five times their fair value, held by retirees who could use the money for many things or other investments.

Officials in the Bureau of the Public Debt, which maintains records of the issue and redemption of all U.S. savings bonds and savings notes, say that many bonds have been lost, held as memorabilia or were purposely destroyed during World War II bond burning. Public Debt is taking action to get the word out to customers about matured savings bonds and to provide assistance in determining final maturity dates. Bond owners can look into the following resources:

- The Savings Bond Wizard™ and the Savings Bond Calculator. These tools help owners determine the value of their savings bonds; they also tell owners the final maturity date, the next interest accrual date and yield information. Both are available free of charge by visiting Public Debt's website at www.savingsbonds.gov.
- Public Debt's website also includes a special section about matured and maturing bonds. It's updated monthly to keep the public informed about which bonds have reached maturity and, therefore, no longer earn interest.

Members of the military retiree community are encouraged to search through their attics, garages and basements for matured bonds and to redeem those old bonds at their local financial institutions.

To find out more, visit www.savingsbonds.gov, call (800)4US-BOND [(800) 487-2663], or write to Savings Bonds, Parkersburg, WV 26106-1328, RE: Old Savings Bonds.

TRICARE Debt Collection Assistance Officer (DCAO) Program

There is a new DOD program to assist TRICARE beneficiaries who have credit hassles caused by TRICARE related claims problems.

On July 26 the position of Debt Collection Assistance Officer (DCAO) was established at all lead agent offices and military treatment facilities, worldwide, to help you understand and get assistance with debt-collection problems. If you receive a notice from a collection agency or a negative credit report because of a medical or dental bill, you should call or visit the nearest DCAO. To find the DCAO nearest to you, go to www.tricare.osd.mil/dcao/DCAO_Directory.doc. You must bring or submit documentation associated with a collection action or adverse credit rating to the DCAO. This includes debt-collection letters, TRICARE explanation of benefits (EOB) and medical/dental bills from providers. The more information you can provide, the faster it will be to determine the cause of the problem. The DCAO will research your claim with the appropriate claims processor or other agency points of contact, and will provide you with a written resolution to your collection problem. The collection agency will be notified by the DCAO that action is being taken to resolve the issue.

The DCAO cannot provide you with legal advice or fix your credit rating, but can help you through the debt-collection process by providing you with documentation for your use with the collection or credit-reporting agency in explaining the circumstances relating to the debt.

Other resources are in place at lead agent offices and military treatment facilities to help beneficiaries who are having problems with TRICARE claims, but have not been sent to collection agencies or who have Beneficiary Counseling and Assistance Coordinators (BCACs, formerly known as Health Benefits Advisors), who can assist you with your concerns. Go to www.tricare.osd.mil/tricare/beneficiary/bcac_dir.htm to find the BCAC nearest you.

Expansion of Dependent Eligibility for TRICARE Retiree Dental Program (TRPD)

On August 10 DOD published a Final Rule in the Federal Register allowing dependents of certain retired members of the uniformed services to enroll in the TRPD even if the retired member does not enroll.

Previous eligibility of dependents (other than surviving spouses and dependents) for the TRPD was contingent on enrollment of the retired member. This applied even in cases where the member could not benefit from TRPD coverage. In such cases, members had a choice of enrolling solely to obtain coverage for their dependents or doing without the coverage altogether.

This change now provides eligibility for dependents when the retired member would not benefit from the program due to any of the three conditions stipulated in law. These are, briefly, dental care from the Department of Veterans Affairs (VA); employee-only dental coverage; or a medical or dental condition which precludes dental care. Documentation must be presented that verifies the above criteria have been met. The documentation requirements are specified as being:

1. confirmation by the VA of its authorization for the members ongoing, comprehensive dental care;
2. confirmation by a member's employer or the employee's dental plan administrator that the member is enrolled in a dental plan through employment that is separate from the member's uniformed service, and the dental plan is not available to the member's dependents; or
3. confirmation by the member's physician or dentist of the member's inability to utilize TRPD benefits due to current and enduring medical or dental condition.

For information concerning the benefit limitations under TRPD, as well as length of initial enrollment (24 months), contact the Plan Administrator Delta Dental at (888) 838-8737 or visit the TRPD website at www.ddpdelta.org.

Social Security Publications Online

The Social Security Administration has 110 publications on its website in either pdf or html format. The documents are divided into categories that make it easier for you to find the information you're looking for. This information can be viewed at www.ssa.gov/pubs.

Health Care Fraud

The Program Integrity Office of the TRICARE Management Agency (TMA) is the office responsible for investigating alleged fraud and abuse cases committed against the military health system, TRICARE, TRICARE beneficiaries and the American taxpayer. In 1999 the office, working in conjunction with the Defense Criminal Investigative Services, recovered more than \$29 million in fraudulent TRICARE payments.

Beneficiaries are urged to report instances when they detect fraud or abuse by the provider. If you suspect fraud and abuse it can be reported to the Managed Care Support Contractor or by fax to (303) 676-3981, or by writing to TRICARE Management Activity, ATTN: Program Integrity, 16401 East Centertech Parkway, Aurora, CO 80011-9043.

Fixed Wing Change of Charter

The Change of Charter Program for the Fixed Wing Product Office and Utility Helicopters Project Office took place on June 26, 2000. Pictured (from left to right) are then Brig. Gen. Robert E. Armbruster, then deputy for systems acquisition, Col. Robert P. Birmingham, then aviation systems project manager, Mr. Keith Roberson, deputy project manager for utility helicopter, Lt. Col. William G. Lake Jr., then former fixed wing PM who relinquished command to Lt. Col. Stephen Walters (right), the new PM fixed wing. Lake is now the PM utility helicopter.



Aloha Chapter Corner

The AAAA Aloha Chapter is running strong in the land of the rainbow warrior and continues to support the aviation cause through active participation in the military and civilian communities. Although the chapter has been active since 1990, it was rechartered in 1996 and since that time the annual membership has increased nearly 50 percent every year. The chapter's current president is Col. Doyle D. Broome Jr., and he is supported by a staff of volunteers who selflessly give their time to support membership, fundraising, charity events and the chapter's day-to-day operations.

One of our major fundraisers here in Hawaii is the annual AAAA golf tournament, played this year in April at the beautiful Leileihua Golf Course. We fielded 36 foursomes for this event and received tremendous support from the 25th Infantry Division and civilian organizations around the island. The tournament organizers made this a first-class scramble by working hard for donations and awarding great prizes, including free rounds of golf at local resort courses for the top six finishing teams. A special thanks to Tom's Golf Shop and Sikorsky Helicopter for their generous donations. The tournament consistently raises \$2,500 a year for membership activities and chapter operations.

Our major event every year is the AAAA Aviation Ball, which is set on the tropical shores of the island of Oahu. Due to rigorous chapter fund raising every year, nearly all enlisted soldiers attend the ball free of charge, which is a great reward for these aviation troopers. More than 750 soldiers and spouses attended this event. This year the Aviation Ball was held at the Sheraton Waikiki Resort and we were honored to have Lt. Gen. Ellis D. Parker (Ret.) as our guest speaker. Besides an excellent speech during the formal portion of the event, he was kind enough to award several Orders of St. Michael during a ceremony before the ball. The event this year was a great success.

Let me briefly touch on our highlights for the upcoming year. First, we are planning a 5K and 10K run on Wheeler Army Airfield in November as a chapter fundraiser. We will also sponsor a charity football clinic in February called "Athletes Helping Kids," which brings current and retired NFL players to the island during Pro Bowl week to interact with the area's young people. We have a special Order of St. Michael presentation coming up this summer as we bid farewell to our assistant division commander for support, Brig. Gen. Tucker, who has been a great supporter of Army aviation here in Hawaii. These activities along with quarterly membership meetings and other chapter activities are keeping the AAAA presence strong here in Hawaii. — *Capt. Bernie Miller, chapter treasurer.*



Pictured left to right: Col. Doyle D. Broome Jr., Lt. Col. Yvette Kelley, Lt. Col. Jeffrey Kappenman, Capt. Bernie Miller, Lt. Gen. Ellis D. Parker (Ret.), CWO 3 John Mclochlin, CWO 3 Dave Guarino and Lt. Col. Paul Disney



Paul Bogosian (*left*), deputy program executive officer for Aviation-PEO, presents the Comanche charter to Col. Bob Birmingham, in a RAH-66 Comanche change of charter ceremony. The event took place at Redstone Arsenal, Ala., in the Sparkman Center's Bob Jones auditorium on Friday, Sept. 15. Birmingham is also president of AAAA's Tennessee Valley Chapter.



At the recent PEO Aviation change-of-responsibility ceremonies for Maj. Gen. James Snider and Maj. Gen. Joseph Bergantz, previous Comanche program managers (PMs) and deputy PMs posed with incoming PM Col. Robert Birmingham (*second from right*). Left to right are Mr. Darrell Harrison, current deputy PM; Snider, PM 1994-1997; Brig. Gen. Orlin Mullen (Ret.), PM 1991-1993; Bob Hubbard, deputy PM 1986-1994; Bergantz, 1997-2000; Maj. Gen. Ronald K. Anderson (Ret.), 1983-1990; current PM Birmingham; and Lt. Gen. Bud Forester (Ret.) who, according to Birmingham, joined him to help provide "hair balance" to the photo.

Solicitation now under way for CY00 AAAA National Awards: Nominations due at the AAAA National Office on or before Jan. 15, 2001

"Award Presentations"

Eight AAAA National Awards for accomplishments made during calendar year 2000 will be presented at the 2001 AAAA Annual Convention in Charlotte, NC. Senior members of the U.S. Army will be invited to present the AAAA's top awards to the 2000 winners.

"Outstanding Aviation Unit Award"

Sponsored by The Boeing Company, this award is presented annually by the AAAA "to the active Army aviation unit that has made an outstanding contribution to or innovation in the employment of Army aviation over and above the normal mission assigned to the unit during the awards period encompassing the previous calendar year." Any active Army aviation unit that has met the foregoing criteria is eligible for consideration.

"USAR Aviation Unit Award"

Sponsored by Honeywell, this award is presented annually by the AAAA "to the U.S. Army Reserve aviation unit that has made an outstanding contribution to or innovation in the employment of Army aviation over and above the normal mission assigned to the unit during the awards period encompassing the previous calendar year." Any U.S. Army Reserve aviation unit or organization that has met the foregoing criteria is eligible for this award.

"Joseph P. Cribbins DAC of the Year Award"

Sponsored by The Boeing Company, this award is named for Mr. Joseph P. Cribbins, the award's first recipient in 1976. It is presented annually by AAAA "to the DAC who has made an outstanding individual contribution to Army aviation in the awards period encompassing the previous CY." A candidate for this award must be a current Department of the Army civilian.

"Aviation Soldier of the Year Award"

Sponsored by Bell Helicopter Textron, this award is presented annually by AAAA "to the enlisted man serving in an Army aviation assignment who has made an outstanding individual contribution to Army aviation during the awards period encompassing the previous calendar year." Membership in AAAA is not a requirement. A candidate for this award must be serving in an Army aviation assignment in the active U.S. Army or the reserve components, and must have made an outstanding individual achievement.

"James H. McClellan Aviation Safety Award"

Sponsored by GE Aircraft Engines in memory of James H. McClellan, a former Army aviator who was killed in a civil aviation accident in 1958, this award is presented annually "to an individual who has made an outstanding individual contribution to Army aviation safety in the previous calendar year." The award is NOT intended to be given for the accumulation of operational hours without accidents by any aviation unit.

"The Robert M. Leich Award"

Sponsored by the Northrop Grumman Corporation ESSS, this award is named in memory of Brig. Gen. Robert M. Leich, USAR, the AAAA's first president (1957-59) and its Awards Committee Chairman for 23 years. It is presented annually to a unit for sustained contributions to Army aviation, to a unit or an individual for a unique, one-time outstanding performance.



"ARNG Aviation Unit Award"

Sponsored by Honeywell, this award is presented annually by the AAAA "to the Army National Guard aviation unit that has made an outstanding contribution to or innovation in the employment of Army aviation over and above the normal mission assigned to the unit during the awards period encompassing the previous calendar year." Any Army National Guard aviation unit or organization that has met the foregoing criteria is eligible for consideration.

"Army Aviator of the Year"

Sponsored by the Sikorsky Aircraft Division, UTC, this award is presented annually through the AAAA "to the Army aviator who has made an outstanding individual contribution to Army aviation during the Awards period encompassing the previous calendar year." Membership in AAAA is not a requirement for consideration. A candidate for this award must be a rated Army aviator in the active U.S. Army or reserve components, and must have made an outstanding individual achievement.



ACCOMPANYING DATA FOR INDIVIDUAL AWARDS: The official "Nomination Form for Submission of All AAAA National Awards" is the only form used by the Awards Committee in its selection of annual AAAA National Awards winners. Copies may be obtained from any chapter secretary or by writing to AAAA, 49 Richmondville Avenue, Westport, CT 06880-2000 or by calling the AAAA National Office, (203) 226-8184.

The forms should be accompanied by a recent photo and biographical sketch of the nominee. Photos of the commander and the senior NCO must accompany each unit nomination. The "Nomination Form for Submission of all AAAA National Awards" and the accompanying photo(s) must be received at the AAAA National Office on or before January 15. Please use stiffeners to protect the photo(s) being submitted. Awards nominations materials — including photographs — cannot be returned.

Tennessee Valley Chapter



Al Carreon, treasurer of AAAA's Tennessee Valley Chapter, presents a \$500 check to Fran Sullivan for the National Military Dependents Golf Tournament held at Redstone Arsenal, Ala., Sept. 11-14.



Al Carreon presents a \$300 check to Linda Leonard (left) and Becky Taylor for the Officers & Civilian Women's Club Pineapple Golf Tournament held at Redstone Arsenal's golf course on Oct. 6.

AAAA/AHS Golf Tournament 2000

On Friday, Aug. 18, the Army Aviation Association of American and the American Helicopter Society held a 32-team, best-ball scramble at the golf course at Redstone Arsenal, Ala. Although the thermometer climbed into the mid-90s by the afternoon, our best scores descended deep into the low 60s. All survived the Alabama heat, and a few teams tried their best to match the thermometer with scores approaching the nineties. Everyone had a great time.

The scramble was made more exciting and challenging thanks to the funding and sponsorship provided by AEPCO, LESCO and ALS (O2K Logistics Winners) for our "Hole-in-One Championship," which offered a new Mercury Mountaineer SUV, provided by our friends at Ray Pearman Lincoln Mercury, or \$27,500 in cash for a hole in one on Meadow View #7. Many thanks to Paul Smith of LESCO for the hole-in-one prize idea. Other exciting prizes were also offered on the other par 3 holes for a hole in one, but despite all the talent on the course that day no one drove away in the new Mountaineer! We'll blame it on the strong breeze redirecting some otherwise perfect shots.

Many players did go home with other cash prizes for outstanding play during the tournament:

1st Place (with lowest score of 59) went to: **Jeff Myhand, Bob Raymond, Ric Cone and Jim Reeb.**

2nd Place (won tiebreaker score of 61) went to: **Fred Clark, Charlie Vaughn, Mike Boyd and Darryl Wortman.**

3rd Place (also with score of 61) went to: **Jim Bolton, George Chinia, Scott Blaney and Joe Grey.**

4th Place (also with score of 61) went to: **Steve Parker, John Logan, Winston Walker and Larry Watkins.**

Closest-to-the-Pin went to: Meadow View #2: **Winston Walker ●**

Meadow View #7: **Jim McKern ●** Hillside #3: **Bob Schmidt ●** Hillside #6: **Miles Montgomery**

Longest Drive (Male) went to: Meadow View #5: **Winston Walker ●** Hillside #9: **Mike Williams**

Longest Drive (Female) went to: Meadow View #1 and Hillside #1: **Angie Yates**



Besides being a great day of fun, excitement and fellowship, the tournament also raised approximately \$1,200 towards the AAAA Scholarship Fund thanks to the generosity of many of Team Redstone's finest contractor support corporations. The following companies made contributions of \$100 each: Aviation & Missile Solutions; Avion; Boeing Sikorsky JPO; Camber, CAS; Hawk Enterprise; Logistics Support Facility; Lear Siegler; SAIC; Sikorsky Aircraft; System Studies & Simulation; Teledyne Brown Engineering; and Veridian.

Especially generous contributions were additionally made by CAS (\$500) and Mevatec (\$300). A big thanks also goes to all our volunteers who worked so hard to make this year's tournament successful: Dave & Phyllis Heberer (AEPCO); Gayle Pribil (AEPCO); Mike McClellan (AEPCO); Mike Boyd (CAS); Gary Bass (FLIR Systems); and Norb Patla (CSC).

We look forward to seeing you at the next year's tournament!

Lost Members

Help us find our Lost Members. We'll give you an additional month on your AAAA membership free for each member you help us locate. Simply write, call or E-mail us with the Lost Member's current address. AAAA, 49 Richmondville Avenue, Westport, CT 06880-2000. Tele: (203) 226-8184; FAX:(203) 222-9863; E-Mail: aaaa@quad-a.org.



Basse, Alexander J, CPT
Bonet, Jose, SPC
Bray, Dayna, SPC
Burger, Eric, SPC
Colthren, Marlin A., SPC
DeVenney, Steven D., CDT
Foster, David, PV2
Fulton, James A., Mr.

Futch, Herbert L., SGT
Gass, Gregory P., 2LT
Hammond?Armstr, Faye, SSG
Hoffman, John C., 2LT
Howard, William B., 2LT
Hutto, Michael K., WO1
Jamieson, William J., 1LT

Lane, Shane R., WO1
Maizner, Frank D., CDT
Marubu, Maryann, PFC
Mastroianni, Jordan H., 2LT
ers, Donald, SGT
McKenney, Nicholas, PV2
Morales, Rodolpho, SPC
Munoz, Benjamin, SGT

Osgood, Mike C., Mr.
Patterson, Terrell, SGT
Philos, Nickolas M., PFC
Polk, George W., SFC
Pry, Gerald R., LTC
Reimers, Richard D., MAJ
Robinson, Timothy J., PFC
Roe, Jacob M., WO1

Roe, Marc A., 2LT
Rosado, Michael J., SGT
Schaefer, Don B., Mr.
Schneider, Benjamin D., PFC
Smith, Jodi, SSG
Sprafin, Ken, Mr.
Starnes, Tommy D., CW3
Watts, Sarah S., 2LT

Wiley, Ryan A., 2LT
Williams, Jared T., SPC
Worstell, Barry A., CW4
Zaldumbide, Eduardo, MAJ

AAAA NEWS

Rhine Valley Chapter



The Rhine Valley Chapter recently contributed more than 250 hours in support of the Heidelberg International Wandering Club and the 26th Internationale Jubiläums-Volkswandertage in Heidelberg, Germany. Participants from adjoining countries as well as numerous military communities made up the 5,133 walkers. The Rhine Valley Chapter's 20 volunteers were responsible for set-up, teardown and providing a continuous supply of beer, wine and soda to the sun-soaked walkers. The march concluded late Sunday afternoon with 600 liters of beer, numerous cases of wine and thousands of sodas being "spoken for." Chapter President Lt. Col. Thomas Comodeca said AAAA's presence at the volksmarch solidified the Rhine Valley Chapter's connection and commitment to the Heidelberg and Mannheim communities. "The chapter's willingness to volunteer represented the professionalism of its members and commitment to a single goal and provided a great source of pride and respect for our fellow aviators," he said. Photo caption: Volksmarch supporters: (left to right) CWO 4 Michael E. Weist (Volksmarch Chairperson-AAAA), Capt. Amy Emanuel, 1st Lt. Antonio Jasso and Gabriele Jasso.

Taunus Chapter

Col. Schloesser opened the most recent meeting of the Germany-based chapter by welcoming the members and guests, then spoke about the movement of 12th Aviation Brigade to Giebelstad. He pointed out that one of the units remaining in Weisbaden would have to take over the Taunus Chapter, since most of the chapter's officers left with the 12th Avn. Bde.

Other topics of discussion at the meeting included such recent aviation-related events as the July dedication ceremony naming the 1st Military Intelligence Battalion's hanger after the soldiers who lost their lives in a November 1998 RC-12 mishap. The ceremony was followed by a reception.

Talon Chapter

During a recent hail and farewell in Würzburg, Germany, Lt.

Col. Rich Enderle, (*second from right*) vice president of AAAA's Talon Chapter and commander of the 7th Battalion, 159th Aviation Regiment, in Illesheim, Germany, presented the bronze Order of Saint Michael to Capt. Jim Bamberg (*left*), Maj. Joe Ciampini (*center*) and Maj. Mike Jimerson (*right*).

Assisting in the presentation was the battalion's acting command sergeant major, MSgt. Hector Marin (*second from left*).



TOP CHAPTERS

The 1 October 2000 Membership Enrollment Competition standings have the following chapters ahead with two months left in the CY00 contest ending 31 December. The rankings are based on CY00 net membership gain.

Master Chapter (170+ Members)	Senior Chapters (80-169 Members)	AAAA Chapter (25-79 Members)
1. Aviation Center Chapter100	1. Connecticut Chapter9	1. Wright Brothers Chapter13
2. Tennessee Valley Chapter58	2. Flying Tigers Chapter6	2. Mission Ready Chapter11
3. North Texas Chapter34	3. Jack H. Dibrell Chapter6	3. Bavarian Chapter10

TOP GUNS as of 1 OCTOBER 2000

The member who sponsors the greatest number of new members during the contest year ending 31 December 1999 wins an all expense-paid trip to the AAAA Annual Convention, as well as a \$300 cash award, and receives a plaque. Please note that the Top Gun program has been expanded to include prizes for 2nd place, \$400; 3rd place, \$300; 4th place, \$200; 5th place, \$100.

Mr. William J. Cannon453	CPT Michael J. Musiol22	Mr. Warren J. Davis, Jr.16
Mr. John H. Bae122	MAJ Robert M. Cumbie16	LTC Michael F. McClellan, Ret.14



In what was undoubtedly the most elevated ceremony of its type, Army Lt. Col. Jeffrey N. Williams received AAAA's Bronze Order of St. Michael onboard the Space Shuttle Atlantis while the craft was in low-earth orbit on April 21. The flight engineer and lead extravehicular activity crewmember for STS-101, Williams was presented the OSM by the shuttle commander, Air Force Colonel Jim Halsell, as Army Col. Jim Voss (Ret.) read the traditional citation.

Pictured (from left to right in front row) are crewmembers Halsell; Williams; Voss; Col. Scott Horowitz, USAF; (back row) Dr. Mary Ellen Weber; Yuri V. Usachev; and Col. Susan J. Helms, USAF.

Washington-Potomac Chapter

The Washington-Potomac Chapter held a professional development meeting on Sept. 8, 2000 at Fort Meyer, VA. The featured speaker was Col. Reed Kowalczyk, Army Aviation Division Chief, Office of the Deputy Chief of Staff, Operations, who briefed on Army Transformation. Highlighting the event was a silver Order of St. Michael presentation to SFC Pamela L. Shugart, (right), Aviation Training NCO National Guard Bureau and Chapter VP Programs. SFC Shugart was recognized for her exemplary service to the NGB and her outstanding efforts supporting the chapter over the last five years, which brought great credit upon the AAAA, the Army Aviation Branch, and the U. S. Army. MG Fred Rees, Vice Chief NGB (left) attended the event and congratulated SFC Shugart.



Phantom Corps Chapter Fort Hood and Central Texas

"Hot Wings" is the name we used to identify the AAAA team during the third annual Killeen-area Relay for Life organized by the American Cancer Society. The team, consisting of 25 members of the Phantom Corps Chapter, raised more than \$2,350 and walked or ran over 200 miles to help fight cancer in support of the 15-hour event. The team provided support for everything from initial setup to communications and teardown. Although no speed records were established, everyone had a great time supporting an important cause.

More than 100 golfers enjoyed a great day in central Texas as they supported the Chapter's annual AAAA Golf Tournament on May 3. The tournament raised funds to support chapter activities and provided a welcome opportunity for members to get together for some fun and camaraderie. Many local businesses provided various forms of sponsorship and support as Capt. Jim Delaney and Capt. Jeff Hagar, Mr. Mike DiGennaro and Mr. Dave Boyken did a tremendous job of coordinating the event. Although no one won the car offered for a hole in one, Chapter President Bob Harmon presented awards and prizes to the winning teams. We owe an extra thanks to DynCorp for their tremendous support again this year.

The chapter held its elections during a general membership meeting in June. The following personnel were elected for the 2000-2001 term:

Secretary: Lt. Col. Mike Dixon; Treasurer: Lt. Col. Michael Thome; VP Activities: Maj. Mike McMahon; VP Corporate Affairs: Mr. Mike DiGennaro; VP Membership: Ms. Gerri Shelp; VP Enlisted Affairs: MSgt. Johnny Moreno; VP Scholarships: Maj. Jim Delaney.

Mr. Bob Harmon and Mr. Dave Boyken are remaining in their positions as president and vice president until early fall, when elections for their positions will be held.

During the general membership meeting, CWO 5 Bob Whatley (Ret.), CWO 4 Skip Tackett (Ret.) and MSgt. Charles Momon were inducted into the Order of St. Michael for their various contributions to Army aviation. They each played crucial roles in fielding and training the first two AH-64D Apache Longbow battalions in the Army. CWO 5 Whatley received the silver medal, while CWO 4 Tackett and SGM Momon each received the bronze medal. CSM L.M. Morgan of the 21st Cavalry Brigade presented the induction certificates on behalf of AAAA and the brigade commander, Col. Greg Walker.



MSgt. Charles Momon (left) is presented the Order of Saint Michael by 21st Cavalry Brigade CSM L.M. Morgan.



(From left to right): CWO 5 Bob Whatley and CWO 4 Skip Tackett (both now retired) and MSgt. Charles Momon — recent inductees into the Order of Saint Michael at III Corps, Fort Hood, Texas.

AAAA NEWS

NEW MEMBERS

AIR ASSAULT CHAPTER FORT CAMPBELL, KY

CPT William E. Brown, III
CPT Julie M. Carskadon
CPT Russell J. Elizondo
CW4 Norman J. Elmore
CW4 Gregory P. Fuchs
MAJ Steven G. Millward
COL Michael L. Oates
MAJ Roberta K. Samuels
CPT Thomas E. Williams

ALPHA CHAPTER HONOLULU, HI

CW4 George P. Perry
CW3 Everett W. Rose

AMERICA'S FIRST COAST CHAPTER JACKSONVILLE, FL

CW4 Peter G. Hull

ARIZONA CHAPTER MESA, AZ

CW4 Paul D. Hutchinson, Ret.
LTC Terry E. Thrall

AVIATION CENTER CHAP. FORT RUCKER, AL

2LT Matthew R. Adams
WO1 John A. Alci
2LT Brian C. Angell
1LT Matt P. Barlow
2LT Steven B. Barrier, Jr.
WO1 Angela J. Barros
2LT Sean W. Baxter
2LT James C. Bean
CW2 Keith O. Bean
2LT Ralph L. Becki
WO1 Michael G. Behrendt
WO1 Timothy G. Benedict
2LT Craig W. Blackwood
WO1 Randall B. Boykin
WO1 Gideon B. Brent
2LT Stephanie L. Breske
WO1 Paul C. Breley
WO1 Shaun J. Breth
WO1 Dan A. Bright
WO1 Joseph D. Brooks
1LT William J. Brooks
WO1 Aaron L. Brown
WO1 Christopher A. Bryce
2LT Josh A. Burton
2LT Jeffrey S. Christy
2LT Clinton R. Cody
2LT Brantley J. Combs
WO1 Jorge Correa
2LT Chad P. Corrigan
WO1 Ana M. Cortez
WO1 Michael G. Cosby
SPC Stephen D. Covell
WO1 Bobby G. Craig
2LT Steven M. Danelson
WO1 Errol A. Davis
WO1 Allan D. Davison
2LT Corey B. Di Pietro
WO1 Jennifer L. Eke
2LT Lee A. Evans
2LT Daryl A. Ferguson
WO1 Daniel E. Fink
SGT Jeremy A. Flanders
WO1 Nicholas J. Gatewood
2LT Ryan A. Gidea
WO1 Benjamin A. Greever
WO1 Shannon D. Gregory
2LT William J. Griffith IV
MAJ Richard D. Hagerman
WO1 Kelly R. Hale
2LT Elisabeth J. Hammond

WO1 Jacob Harmosan
LTC Dyfird A. Harris
WO1 Victoria L. Hatfield
WO1 Kent R. Hellmun
1LT Amy B. Hernke
PVT Michelle Hollaway
WO1 Frank J. Jablonski
PVT John O. Jacobs, Jr.
WO1 Jason H. Jenkins
WO1 Michael Kailian
LTC George G. Kelly
WO1 Christopher A. Lee
2LT Ryan D. Leonard
2LT Jeffrey H. Lester
2LT Ryan L. Lundberg
WO1 Dario H. Marchena
2LT Casey A. Martinez
CPL Clarence A. Massey
WO1 Michael T. Mauss
2LT Jess McConnell
2LT Greg A. Meert
2LT Benjamin D. Minchhoff
WO1 Aaron G. Mitchell
COL Alan L. Moloft
2LT Joseph L. Morales
WO1 William J. Nabinger
WO1 Richard T. Nielsen
2LT Matthew L. Pasker
2LT Benjamin C. Peterson
WO1 Bryan P. Pierce
CPT David J. Pinter
2LT Bryant G. Puerto
WO1 Robert R. Rayner
WO1 John P. Rosa
(CH)COL Robert M. Santry
2LT Matthew J. Scher
WO1 Christopher Schlenker
2LT Stephen M. Schlesinger
2LT Peter L. Schneider
WO1 Patricia L. Schnell
2LT Mary E. Scott
2LT Jeffrey B. Shaw
WO1 James A. Sims
2LT Jeremy P. Singleton
WO1 Jenice M. Skelly
WO1 Brian M. Smith
WO1 William C. Smith III
WO1 Sean T. Soder
2LT David K. Sokolowski
2LT Michael R. Starkey
2LT Leonard Jack Stewart
2LT William E. Stovall
WO1 Fred D. Taroli
WO1 James R. Taylor
CW2 John M. Tew
WO1 Michael A. Thompson
WO1 Isaac Y. Van Meter
WO1 Edgardo Velez
WO1 Adam S. Wagner
CW3 Jeffery L. Wagner
WO1 Timothy J. Watson
WO1 Ryan B. Weaver
WO1 Joe C. Wilburn
2LT Patrick R. Wilde
WO1 Jason P. Williams
PV2 Lyndon W. Wilson
2LT Erikka J. Woods
WO1 Michael D. Wright
WO1 Bradley W. Yeager
WO1 Zane A. Zanenghi
2LT Timothy J. Zielicke

BIG RED ONE CHAPTER ANSBACH, GERMANY

CPT Jeffrey S. Amos
Mr. William R. Jacobs

CEDAR RAPIDS CHAPTER CEDAR RAPIDS, IOWA

Mr. Jim S. Eliason

Mr. Alan R. Jahn
LTC Louise P. Morgan, Ret.

CENTRAL FLORIDA CHAP. ORLANDO, FL

MAJ Alan M. Chinoda
Mr. Thomas N. Crosby
Mr. Tim Gifford
Ms. Cindy L. Hall
Mr. Joseph A. Kelleher
Mr. Richard A. Lund
CW3 John R. Mings, Ret.
Mr. Roger North
Ms. Tracy G. Okell
Ms. Yvette Pae
Mr. Jack Reeves
Mr. Jim Styerwalt
Mr. Arthur J. Volk
Mr. Gary Wentz

COLONIAL VIRGINIA CHAPTER FORT EUSTIS, VA

TSgt Richard R. Burkett, Jr.
LTC Lorraine E. Tyacke

CONNECTICUT CHAPTER STRATFORD, CT

Ms. Theresa M. Colaresi
Mr. Keith Dee
Ms. Margi Goode
Mr. Steven Riccietelli
Mr. Charlie Winchester

EDWIN A LINK MEMORIAL CHAPTER

BINGHAMTON NY AREA
Ms. Sue C. Bement
Mr. Rod W. Kennard
Mr. Damon T. Layton
Mr. Rigoberto Maximo
Ms. Robin E. Petrus

FLYING TIGERS CHAPTER FORT KNOX, KY

COL Colbert T. Gautreaux, Ret.

GREATER ATLANTA CHAPTER ATLANTA, GA

LTC Boyd D. Collins
Mr. Ricardo Martinez
CPT Michael P. Schaefer
CPT Michael D. Sennett

INDIANTOWN GAP CHAPTER

INDIANTOWN GAP, PA
CPT John D. Kovac
CW4 Bobby C. Sebren

IRON MIKE CHAPTER FORT BRAGG, NC

CPT Edward H. Bailey
Mr. Jackie Barr
SGT Kim J. Bell
1SG Ronald R. Brasley
CPT Evan J. Brown
CPT R. James Cook
SGT Karlo D. Felix
SPC Tara C. Gowin
MAJ Selwyn Jamison
MAJ Frederick H. Jessen
SPC Jay F. Marrero
SGT Dennis S. Smith
CPT Jason C. Smith

JIMMY DOOLITTLE CHAPTER

COLUMBIA, SC
LTC Carle E. Dunn, Ret.

LEAVENWORTH CHAPTER FORT LEAVENWORTH, KS

MAJ Charles L. Atkins

LINDBERGH CHAPTER ST. LOUIS, MO

LTC Earl S. Creech
Mr. Larry D. Swann

MACARTHUR CHAPTER NEW YORK/LONG ISLAND AREA, NY

WO1 Joseph Dercole

MICHIGAN GREAT LAKES CHAPTER

GRAND LEDGE, MICHIGAN
SFC Randy A. Foreback
CW2 Russell K. Wilcox

MID-AMERICA CHAPTER FORT RILEY, KS

LTC Mark W. Hinton
MSG Loretta M. Thomas

MONMOUTH CHAPTER FORT MONMOUTH, NJ

Ms. Deborah A. Baker
CW3 James J. Denhartog
Mr. Edward T. Dooney
CPT Daniel J. Dreher
SGT Scott G. Laubach
CW3 Tim D. Lelie
Mr. Pasquale A. Nolletti
CW3 Michael J. Polyak

MORNING CALM CHAPTER SEOUL, KOREA

SGT John A. Alam
PFC Kimmy R. Barnard
Mr. Dong Kyu Chang
PFC Jae Y. Choi
PFC Jong Duk Choi
MAJ Karen J. Diefendorf
SPC Sandra K. Drenon
Mr. Hui Kon Eun
SPC Frank A. Haithcox
PV2 Jung Min Han
SPC James K. Holman
Mr. Keo In Kim
SPC Angela M. Perez
SPC Harry L. Porter
SGT James O. Sides
SSG Christopher D. Smith
PV2 Joon Ho Yoon

NILE DELTA CHAPTER CAIRO, EGYPT

SFC Victor L. Feldman

NORTH COUNTRY CHAPTER FORT DRUM, NY

CW2 John P. Greiner

NORTH TEXAS CHAPTER DALLAS/FORT WORTH

Mr. John Chaplin
CDT Adam J. Walker

NORTHERN LIGHTS CHAP. FORT WAINWRIGHT/ FAIRBANKS AK

MAJ Tony Angelo

OREGON TRAIL CHAPTER SALEM, OREGON

CW4 Barry L. Brown
CW4 Richard A. Chagnon
Mr. Jude Dennis

Mr. Michael R. Dennis
Mr. Tony Erickson
Mr. Jimmy E. Hazen
MSG Rudy Hernandez
Mr. Gerhardt Paasche
SGT Floyd R. Peterson
Mr. Michael Tucker
Mr. Brian H. Wilkins

PIKES PEAK CHAPTER FORT CARSON, CO

Mr. Bryan Graves
LTC Robin G. Speiser, Ret.

RHINE VALLEY CHAPTER HEIDELBERG, GERMANY

CPT Jonathan J. Elterbeek
1SG Kevin L. Harris
MAJ Craig A. Holton
CW3 Michael J. Nevada
CW4 John M. Pike, Ret.
MAJ Michael G. Rossman
CSM Stewart R. Souders
CPT Richard C. Spencer
MAJ Brian C. Wright

SOUTHERN CALIFORNIA CHAPTER

LOS ANGELES, CA
CW3 Kevin P. Keim
LTC Pete Seitz

TALON CHAPTER ILLESHEIM, GERMANY

CW3 Jeffery E. Brummer
CW2 Bjorn D. Johnson

TAUNUS CHAPTER WIESBADEN, GERMANY

MAJ Lawrence V. Fulton
CPT Bryan K. Phillips

TENNESSEE VALLEY CHAPTER

HUNTSVILLE, AL
LTC Rod C. Bissell, Ret.
Ms. Brenda A. Brahan
Ms. Minerva Cantres
Mr. Robert S. Dowling
CPT(P) Ian B. Klinkhammer
Mr. Mickey E. Mittag
LTC Richard B. Pennycuik
Mr. Richard L. Powell
Mr. Frank B. Snyder
Ms. Kimberly A. Stenberg
MAJ Gary E. Thie

WASHINGTON-POTOMAC CHAPTER WASHINGTON, DC

COL Kerry M. Brown
LTC Michael J. Delaney
LTC Michael D. Gayle
CW5 Keith G. Harris
SFC Patrick J. O'Brien

MEMBERS WITHOUT CHAPTER AFFILIATION

LTC Rufino I. Betancourt
SGT John R. Mueller
CPT Tim A. Smith
CW4 Cleveland Valrey, Ret.
SFC Travis A. Wagner

☛ **Jan. 26, 2001** AAAA Scholarship Executive Committee Meeting, National Guard Readiness Center, Arlington, VA.

☛ **Jan. 27.** AAAA Awards Selection Meeting, National, Guard Readiness Center, Arlington, VA.

☛ **Feb. 1-4.** 11th Armored Cavalry - 100th Anniversary, February 1-4, 2001. Active Duty and Veterans at the Riviera Hotel/Casino in Las Vegas. Contact: Gene Johnson, 4054 Venita Court, Las Vegas, NV 89120-1442. (702) 456-3218 or gene677@aol.com.

☛ **Feb. 11-13.** HAI Heli-Expo, Anaheim, CA



Army Aviation Hall of Fame

The Army Aviation Hall of Fame sponsored by the Army Aviation Association of America, Inc., recognizes those individuals who have made an outstanding contribution to Army aviation. The actual Hall of Fame is located in the Army Aviation Museum, Fort Rucker, Ala., where the portraits of the inductees and the citations recording their achievements are retained for posterity. Each month Army Aviation Magazine will highlight a member of the Hall of Fame. The next triennial induction will occur in the spring of 2001. Contact the AAAA National Office for details at (203) 226-8184

Maj. Gen. George S. Beatty, Jr. Army Aviation Hall of Fame 1992 Induction

During the 1960's when the Army's Air Mobility concept was born, tested, and proven in combat, George Beatty played key roles in each of the phases.

In 1962 he was assigned to the Army's Tactical Mobility Requirements Board ("Howze Board") where he was instrumental in the writing of the plan for the accomplishment of the Board's mission. He supervised the running and recording of the field tests of all aspects of the Board's interest. Upon completion of the Board report, he and Colonel (later Lieutenant General) John Norton went to Washington to brief the Board's findings and recommendations to the Secretary of Defense and other interested Federal Agencies.

He was assigned to the 11th Air Assault Division (AAD) in January 1963 as Commanding Officer, 1st Brigade and commanded that Brigade through all of the testing and field exercises. He briefly commanded the 11th Aviation Group in 1965 during which time a composite Aviation Company was formed and sent to the Dominican Republic to support the XVIII Corps.

When the 11th AAD was redesignated as the 1st Cavalry Division (Airmobile), Beatty was assigned as Chief of Staff where he coordinated the planning and loading out of the division. In Vietnam, he served as Chief of Staff, and then Brigade Commander of the 1st Brigade. During this eventful year he saw the air assault concept, which he had helped pioneer, proven under fire and accepted by the U.S. Army.

From 1968 to 1970, he commanded the Army Flight Training Center at Hunter Army Airfield at Fort Stewart, Georgia where several hundred rotary wing pilots were graduated every two weeks. Training of South Vietnamese students was initiated during this period, and their unfamiliarity with the English language required the introduction of special innovative teaching techniques to enable those students to succeed.

Throughout his career, General Beatty was involved in many pioneering developments in the concepts, training, organization, tactics, and equipment that have been incorporated into Army Aviation as we know it today.





THROUGH THESE
EYES.

ON THIS
BACK.



WITH THIS
FIST.

For the Army to be all it wants to be,

Army air power must be all it needs to be.

The Comanche, Chinook and Apache

guarantee that it is.

 **BOEING**
Forever New Frontiers