



IN WAR AND PEACE, THE NATIONAL GUARD IS AN INTEGRAL FIGHTING FORCE VITAL TO OUR NATION'S DEFENSE.

SIKORSKY. THEN. NOW. ALWAYS. THE LEADER.



www.sikorsky.com

### ARMYAVIATION

Publisher Lynn Coakley

Editor-in-Chief William R. Harris, Jr.

Editor Stephen Harding

Production Manager Barbara Ross

Circulation Manager Mary Ann Stirling

Circulation Assistants Debbie Coley Mary Ellen Kother Deb Simons

Advertising Robert C. Lachowski

44

#### on the cover

#### Paid Advertisement.

An AH-64D Apache Longbow demonstrates its agility by performing an aerobatic maneuver at a gross weight in excess of 16,000 pounds. The Boeing Company has delivered more than 100 Apache Longbows to the U.S. Army from its Mesa, Ariz., facility, where production is increasing to six aircraft a month in March. Caption provided by advertiser. Photo by Bob Ferguson

# briefings

#### The Aviation Applied Technology Directorate (AATD) at Fort Eustis, Va., recently conducted a suc-

cessful UH-60A Black Hawk drop test with external fuel tanks. Undertaken at NASA's Langley Research Center in Hampton, Va., the test was part of an ongoing cooperative research and development agreement between AATD and Robertson Aviation aimed at developing a crashworthy, ballistic-tolerant external fuel tank. The object of the test was to demonstrate that tanks filled with 200 gallons of water and mounted on a crash-damaged UH-60A could survive a 65-feet-per-second crash without leaking. The drop test caused severe damage to the outer shell of the tanks, but there were no leaks.

Kaman Aerospace Corp. has started initial flight testing of the production prototype SH-2G(A) Super Seasprite destined for the Royal Australian Navy. The aircraft is the first of 11 being built for the RAN, all of which are intended to operate primarily from the service's eight ANZAC-class frigates. The SH-2G(A) features an integrated tactical avionics system, advanced technology composite main rotor blades, a digital automatic flight-control system and forward-looking infrared, and will be armed with the Swedish-built Penguin antiship missile and Mk-46 torpedo. The first SH-2G(A) is scheduled for delivery in 2001.

The 7th Special Forces Group at Fort Bragg, N.C., and the 160th Special Operations Aviation Regiment at Fort Campbell, Ky., contributed troops to the nearly 100-strong Army force delivering supplies and providing rescue assistance following widespread December flooding and mudslides in Venezuela. Eight Puerto Ricobased soldiers from Company C, 3rd Battalion, 7th SFG, and 19 soldiers and two UH-60 helicopters from Co. D, 3rd Bn., 160th SOAR, operated in support of the Operation Fundamental Support relief effort. The United States and other nations continue to send aid to the stricken region.

Lockheed Martin Aeronautical Systems and Rockwell Collins Government Systems have signed a teaming agreement for the U.S. Air Force's upcoming C-130X Avionics Modernization Program. The program calls for providing the C-130 Hercules with both a glass cockpit and systems that will make the aircraft compliant with the requirements of the Global Air Traffic Management (GATM) program. Lockheed Martin is the manufacturer of the C-130, and Rockwell Collins is currently conducting several USAF aircraft-modernization programs — most notably the installation of GATM systems in KC-135s and C-5s.

The Army has named **AAI Corp.** the winner of the recently completed Tactical Unmanned Aerial Vehicle (TUAV) competition. The resulting \$4.8 million Army-AAI contract calls for the low rate initial production of four TUAVs, which will be used for developmental testing, operational training and as test articles for an initial operational test and evaluation scheduled for the third quarter of fiscal year 2001.

SEI Industries has introduced a new 700 U.S. gallon "Bambi bucket" aerial firefighting system suitable for use by UH-60 and K-Max helicopters. The new system meets government requirements for Class-1 aerial firefighting contracts, which specify a minimum volume of 700 USG.

# contents

vol. 49 no. 2

**FEBRUARY 29, 2000** 









#### FEATURES:

- 6 Stability & Support Operations by Maj. Gen. Anthony Jones
- **10** Aviation Soldiers Put to the Test by CSM Edward Iannone
- 18 Mission Ready ATS by Capt. Gordon Schmidt
- 20 Force Projection: The Air Traffic Service Challenges by Lt. Col. Joseph P. Mudd and Lt. Col. Cory Mahanna
- 22 USAALS: Meeting the Challenges of Force XXI and Army After Next by Lt. Col. Paul L. Barnard
- 24 Apache Longbow Training Lands at Eustis by Mr. William R. Harris Jr.
- 26 Amazing Men by Lt. Col. Paul J. Fardink (Ret.)
- 27 Apache Field Toolkits from CCAD by Ralph Yoder

#### SPECIAL FOCUS: Stability & Support Operations

- 12 Sinai Aviators by Maj. Bob Kiser, Capt. Pete Dykman & Capt. Jim Ivey
- **16** The UH-60Q in Stability & Support Operations by Lt. Col. Eugene H. Pfeiffer

#### **DEPARTMENTS:**

AAAA New Members37	Calendar41
AAAA News	Hall Of Fame
Arrivals & Departures32	Mailbox32
Briefings3	

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<sup>®</sup> in U.S. Patent office. Registration Number 1,533,053. SUB-SCRIPTION 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; ads \$10 per year for foreign addresses es 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.



British Aerospace and Marconi Electronic Systems - two great companies shaped by a unique history of innovation and expertise.

# Today

As one, we create a truly global aerospace and defense company with total systems capability across land, sea and air.

# Tomorrow

With this unrivalled breadth and depth of skills, just imagine what we can all do together.

### **BAE SYSTEMS**

With nine home markets across four continents, our aim is to be the preferred partner and our customer's first choice.

www.baesystems.com

# STABILITY & SUPPORT OPERATIONS

Maj. Gen. Anthony Jones

where wisely prepare for the future through a balanced review of past events and predictions for future operations. The last decade saw tremendous political turbulence in the world that caused the Army and Army aviation to dramatically adjust the mission profile we had operated in since the end of World War II. The advent of the Soviet threat for post-World War II America compelled the force to prepare for a potentially cataclysmic war in a fairly well defined scenario.

However, when that threat was diminished by events leading to the 1989 tearing down of the Berlin Wall, we faced more uncertainty than we had known or prepared for in nearly a half century. Indeed, the millennium's final decade saw an Army previously prepared for major theater war involved in small-scale contingencies and stability operations, adapting to a diversity of tasks to accommodate a continuously changing world political scene. In short, the Army was thrown into a situation that was becoming less defined as the 1990s progressed.

A major consideration in this changing environment demanded emphasis on operations that did not necessarily involve direct conflict, yet required the use of those assets normally employed in such conflict. While other organizations have not been precluded from involvement, the Army's established capability to deploy, — combined with its historical flexibility and versatility — has made it far more suitable to handle such operations.

Army aviation (including active duty, Army Reserve and National Guard soldiers) is particularly suited for this transition with its inherent deployability, flexibility and versatility to perform a wide range of missions. For example, the Army's utility and cargo aircraft have been used extensively to support the movement of multinational forces to secure vital lines of communication, transporting food and supplies to civilian populations, and assisting deployed forces in stabilizing regions in turmoil. These operations have become known as stability operations or support operations, which have developed into a familiar concept in the Army, yet one that is constantly being redefined to suit the ever-changing environment.

Stability operations involve the use of Army forces outside the United States and its territories to promote and protect U.S. national interests by supporting diplomatic initiatives, improving military-to-military relations and disrupting specified illegal activities. The deployed force conducts stability operations to accomplish such missions as protecting national interests, promoting peace or deterring aggression, maintaining or restoring order, or protecting life and property.

Support operations provide essential supplies and ser-

vices to relieve suffering and help civil authorities respond to crisis, and are divided into two categories. Domestic support operations (DSO) are conducted in the United States and its territories, while foreign humanitarian assistance (FHA) or overseas support operations are conducted outside the nation and its territories. Such operations are generally conducted in three broad phases — response, recovery and restoration — with Army forces less committed in each successive phase. The following examples illustrate various combinations of stability and support operations conducted in the last decade in which Army aviation played a significant role.

#### PROVIDE COMFORT

Operation Provide Comfort in northern Iraq began in April 1991 as a stability operation involving the deployment of an allied force and Army aviation assets from numerous U.S. Army, Europe, units, which were tasked to provide a secure environment for the Kurdish population of this volatile region.

This operation took on the responsibilities of a support operation by relocating the Kurdish population displaced by Iraq's military forces. Nearly every type of Army aircraft was utilized, including the AH-64, OH-58, CH-47 and UH-60, with additional aircraft from the United Kingdom, Spain, Italy, the Netherlands and France. The primary role of the AH-64s and OH-58s was reconnaissance and security of northern Iraq to prevent redeployment of Iraqi forces, while the transport of thousands of tons of food and water to the displaced Kurdish population was accomplished by the CH-47s and UH-60s.

Provide Comfort was clear evidence of Army aviation's ability to lead and participate in a multinational force committed to the protection and support of a displaced population, while preventing an escalation of hostilities. The potential for further uprising in this region made the use of Army aviation ideal, as it is a particularly agile force able to transition quickly from stability and support operations to an operation involving use of lethal force, when necessary.

#### TF EAGLE

Task Force (TF) Eagle is now in its fifth year of operation in Bosnia-Herzegovina. This organization reflects several types of stability operations, including peace operations, combating terrorism, foreign internal defense and appropriate show of force. It embodies all the elements that make such an operation one of our greatest challenges, including a very tenuous coordination effort with the other countries involved and the ever-present potential for con-



# "The best way

to learn about your car insurance is also the worst way."

Auto Insurance. Even if you never have to make a claim, it's comforting to know that USAA is rated among the highest in member satisfaction in the nation, according to a June 1999 *Kiplinger's* survey. We've been insuring military members for more than 75 years and reflect this experience in our 24-hour claims handling, competitive rates and flexible payment plans geared to the needs of military life. As for claims assistance, we hope you never have to find out how good we are. Whether you're enlisted or an officer, on active duty or in the National Guard or Reserves, just ask around.

Call us at 1-800-274-4307.



Property and casuality insurance is provided by United Services Automobile Association, USAA Casuality Insurance Company, USAA General Indemnity Company, USAA County Mutual Insurance Company and USAA, Ltd. and is available only to persons eligible for property and casuality group membership. Auto insurance coverage is available in all 50 states and in most overseas locations. flict of interest that can threaten the most carefully orchestrated effort.

TF Eagle uses all types of Army rotary-wing aircraft, including the AH-64, UH-60, OH-58 and CH-47s from various CONUS-based and USAREUR units. The mission includes reconnaissance and security, troop movement and transportation of supplies, with deployed units operating at a greatly accelerated pace. Although TF Eagle is a textbook case for stability operations, it has the potential to quickly progress to an armed conflict and is a multidimensional effort that is a testament to our ability to be responsive and to adapt to changing times and the instability of international politics.

#### HURRICANE MITCH

In the fall of 1998 Hurricane Mitch devastated Central America, leaving death, destruction and chaos in its wake. Strapped by a weak economy and remote terrain, the needs of the stricken nations resulted in a classic example of an Army support operation. More than 5,700 soldiers deployed to Central America to aid the recovery effort, allowing Joint Task Force-Bravo to rescue some 700 people and deliver 2.5 million pounds of food, nearly 100,000 pounds of medical supplies and 70,000 gallons of water.

Army aviation played a major role in this operation, completing nearly 350 airlift missions with a total of 25 CH-47 and UH-60 aircraft. In the first month of the operation the aircraft flew more than 330 hours, while distributing nearly 300,000 pounds of food, 11,000 pounds of medical equipment and 50,000 pounds of miscellaneous supplies. Movement of key personnel was also a vital part of their day-to-day operations. This response to a country in need typifies an Army aviation support operation.

#### THE FUTURE

Stability and support operations are key components in the spectrum of military operations. The Army has been successful for over 200 years, largely due to its demonstrated ability to adapt to changing times and the tenuous nature of the international environment. While the first mission of Army aviation will always be warfighting in defense of our nation, it is imperative we remain properly trained and able to shift our efforts and resources as needed across the full spectrum of operations. In 1986 Secretary of State George Shultz stated that "We must be prepared to commit our political, economic and, if necessary, military power when the threat is still manageable and when its prudent use can prevent the threat from growing."

These words remain just as valid today as we move into the next millennium.

"Above the Best!"

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.



# Faith.

Today, a flight student will take up one of the US Army's Apaches and climb to altitude for some high-risk maneuver training including touchdown auto rotations. An hour later another student will go up and do the same. And then another – with up to 10 flight hours a day in the same aircraft. What gives them the confidence to perform risky maneuvers like live firing, hot refueling and emergency procedures training?

We do. We're DynCorp Technical Services (DTS) and we provide the aircraft maintenance that keeps the Army's flight training operations moving 24 hours a day. If there's one loose screw or a bolt that needs tightening, we'll find it – and fix it! The US Army's pilots trust us because we have an unprecedented safety record: over 3 million flight hours without a single maintenancerelated accident.

For more than 50 years, our constant pursuit of excellence – on every assignment, at every level – has made us the professional and technical services choice in Army aviation. We're the only 15-time winner of the AAAA Materiel Readiness Awards.

When you need solutions, call DTS: 817.732.4481

#### DynCorp Technical Services, Inc.

One Source. Thousands of Solutions.

One Ridgmar Centre - Saite 600 6500 W. Freeway - Fort Worth, TX 76116

### A proposal in the works right now is requesting

Aviation Soldiers Put to the Test

> Special Duty Assignment Pay (SDAP) for CMF 67R crew chiefs. This would affect crew chiefs in the Aviation Unit Maintenance (AVUM) line: companies A, B and C, plus the quality control tech-

nical inspector (TI) in Company D, AVUM. This will affect 535 soldiers and NCOs in the Apache

and Longbow units. The amount asked for was one set price of \$220.00 a month. The reason to target the crew chiefs and TIs was mainly for the incentive to be a CC and TI, plus the unregulated hours they work.

#### WINGS

We have a proposal to change the name of the Aviation Non-Crew Members Badge (AVNCMB) to Aviation Badge and award the badge to CMFs 93C and 93P. The main reason for this action is to bring members of the two CMFs together into one team. Right now CMF 93 is aviation, but can't be recognized as AVN. The criteria for award of the badge will not change.

#### SDAP 93C

This proposal, which will become effective on Oct. 1, is directed towards tactical and tower operations, plus a few others within the air traffic control (ATC) field. Upon an individual's graduation from AIT and entry into the Units Training Program, the SDAP will be \$165.00 a month. After certification the SDAP jumps to \$220.00 a month. Soldiers must retain the rank of private first class or higher to be eligible for SDAP.

This SDAP was put in place for two reasons. First, because handling aircraft in the air and on the ground is a stressful job. Second, to provide an incentive for soldiers in these fields to stay in the Army. CMF 93C is at 78 percent Armywide. Once soldiers get FAA certified, they tend to leave the Army and go to work for the Federal Aviation Administration. We had to find a way to retain 93Cs, and we feel this will work.

#### **CMF 15**

This proposal combines all aviation enlisted personnel under one CMF, allowing for growth and better management. There are many reasons why we need to do this; one is that CMF 15 will align the enlisted aviation force with the warrant officer and commissioned officer forces.

#### SAFETY IN BNCOC

Beginning in April the CMF 93P BNCOC course will be increased by one week in order to teach risk-management to junior NCOs. No, it is not intended to create qualified A2 safety NCOs; it is intended to teach what safety looks like. This 45-hour program will teach NCOs the importance of safety and will give commanders more safety NCOs.

#### CONSOLIDATION OF MOS

We are looking at combining some aviation branch MOSs. The intention is to help low-density MOSs, which will help promotions and help us better manage those MOSs. It will also put more soldiers in the pool in a particular MOS. We are not going to combine MOSs and have less training time. We are not going to create soldiers who are jacks of all trades and masters of none. The intent is to work smarter and more efficiently. A study has already started. We hope to have the first draft done in a few months. This needs to be done because of the more streamlined units of the 21st century.

#### CINCOS' NCO BUY BACK

We just finished the draft listing those NCO positions we want to buy back. The CINCOS cutback of 1996 took many positions down to sergeant, mainly in the TI shops. These are the positions we want to buy back. A

#### by CSM Edward Iannone

sergeant or sergeant promotable often does not have the experience level of a senior staff sergeant. Sergeants need to be in the line companies or maintenance platoons and get the experience to be a TI when promoted to staff sergeant. BNCOC does not currently teach sergeants all the required skills necessary to be a TI. We are working on that.

#### **CREW CHIEF TRAINING**

Fort Rucker is looking at developing a crew chief "Train the Trainer" program. The objective is to standardize training throughout the Army. We will develop a Standardized Training Program (STP) packet to be issued to battalion NCOs chosen to be the Standardization Instructor/Flight Instructor (SI/FI). The battalion will select a sergeant or staff sergeant to come to Fort Rucker for one to two weeks of training on how to train soldiers to perform crew chief duties. Trained NCOs will return to their units with the STP packet and put together programs to train crew chiefs within their battalions.

#### INCREASE MOS-SPECIFIC TRAINING AT BNCOC LEVEL

We have a staff study going to see how much additional MOS-specific training needs to be added to our BNCOC. Right now the training varies from 18 to 26 hours. Our goal is to increase this by about 60 hours. It seems as though sergeants and staff sergeants do most of the maintenance and decision making. The intent is to have a qualified TI and maintenance manager upon graduation from BNCOC. We are not going to take anything out of BNCOC. We are looking at increasing the course length by 10 days or so. This will increase MOS-specific training to about 80 hours.

#### **A&P LICENSE**

The process of getting an Airframe and Power Plant (A&P) license is a fairly difficult process right now for aviation enlisted military soldiers in all services. Not only is it difficult to actually get the license, but having the proper documentation to authorize you to even take the test is also difficult.

All of the military services are streamlining the process of obtaining the license and documentation, and with the permission of the FAA are creating a process that only military members can use. A&P licensing is a threestep procedure:

1. Determine whether your MOS qualifies you for an "A" or "P," or both, and that you have at least 36 months experience in the aviation field;

- 2. pass a written test; and
- 3. pass an oral and hands-on test.

Right now this is all done at the FAA. Our plan is to have our local AG officers verify if you are eligible for an "A" or "P," or both.

We have achieved many goals in our quest but still have some to reach. We have been working closely with the FAA and DANTES to get the tests (which now cost \$70 each) administered free in Army education centers. We have developed a database to record all of the hands-on training received by each enlisted person. We have updated FAR 65 with all the current, and some future, MOS codes and their qualifications. We have correlated all our current MOSs to FAR Part 147, and will be able to give soldiers official, documented credit for each accredited military school they have attended.

Points of contact for this project are SFC Thomas B. Hamilton III of the NCO Academy at Fort Rucker (DSN 558-1305) and SFC Bryan Sheehan of the Aviation Proponency, also at Fort Rucker (DSN 558-2653).

All of the above issues are about soldiers and ownership of our aviation mission, the responsibilities of our leaders and the development of leaders for tomorrow. We are proud of all of our soldiers, and of all that they are doing for our Army and Army aviation. These initiatives are meant to solidify the traditions and comradery that have been a viable part of our Army aviation history and, more importantly, they will recognize our soldiers appropriately for their selfless efforts to meet mission demands. Above the Best!

# When your cockpit displays call for reinforcements, go in with a full backup unit.

0.51M

320

300

280

260

ILS

29.92 IN

22000

219 00

21500



Why settle for a single-function standby indicator when you can upgrade to a full backup solid-state suite in the same 3ATI panel space? That's the advantage of the new GH-3000 electronic standby from BFGoodrich. No single unit in military aviation offers so much backup protection in such a compact all-in-one display.

M

Combining all the basic flight cues — attitude, indicated airspeed, altitude, slip, mach number, Vmo/Mmo, heading and navigation — the GH-3000 saves cost, workload and panel space by replacing multiple standby instruments with a single 3-inch unit. Now you can have a complete standby EFIS in one easy-to-read AMLCD display.

Designed for rugged military environments, the GH-3000 is made in the USA and is FAA TSO-certified, conforming to RTCA DO-178B software certification criteria. The display can be fitted to meet MIL-L-85762A specs for night vision goggle compatibility. This commercial, off-the-shelf unit retrofits easily in existing panels, and its high sensing rate can

handle highly dynamic maneuvers. The BFG ESIS GH-3000: It's the full backup unit your outfit needs to keep moving forward. For more information, contact your BFG Avionics Military Sales team at 1-800-253-9525.

BFGoodrich Aerospace

5353 52nd Street, S.E. • P.O. Box 873 • Grand Rapids, MI, USA 49588-0873 Telephone:(616) 949-6600 • Fax:(616) 285-4224 • Web site: www.bfgavionics.com 1999 BFGeodrich Avianics Systems, Inc.

Avionics Systems

Army aviation offers many challenges, but very few measure up to those faced by the UH-1 aviators (call sign "Nomad") supporting the Multinational Force and Observers peacekeeping operation in Egypt's Sinai desert. These soldiers serve a one-year tour of duty as part of the 1st U.S. Army Support Battalion, a forward-deployed element of the 1st Corps Support Command at Fort Bragg, N.C.

# Sinai Aviators

By Maj. Bob Kiser, Capt. Pete Dykman & Capt. Jim Ivey



The Aviation Company, 1st U.S. Army Support Battalion (1SB), is organized into two flight platoons, one maintenance platoon, one shops and warehouse platoon, and a headquarters platoon. It conducts all activities related to American helicopter operations in the Sinai Peninsula. The company is based at two locations that are more than 250 miles apart, with almost all of the vast Sinai between them.

The 1SB aviators fly in one of the harshest operational areas in the world — the mountains and sandy wastelands of the Sinai. The Nomads fly over the waters of the Mediterranean Ocean, the Red Sea, the Gulf of Aqaba, the Gulf of Suez and the Suez Canal. Their mission includes crossing the international border into Israel, where part of the operational area contains the highly sensitive and volatile Gaza Strip.

### A Sensitive Operation

The Nomads' responsibilities are extremely diverse and, like everything else in this part of the Middle East, politically sensitive. The Avn. Co. undertakes general aviation transport and re-supply, aeromedical evacuation, aerial reconnaissance and security operations for the Multinational Force and Observers (MFO), an eleven-nation task force formed in 1982 to monitor Israeli and Egyptian compliance with the Camp David peace accords. Simply stated, the terms of the agreement between the two nations called for Israel to return control of the Sinai and the Suez Canal to Egypt. In exchange, Egypt would recognize Israeli sovereignty and agree to certain conditions regarding the deployment of Egyptian armed forces in the Sinai.

Israel, distrusting the United Nations to monitor these conditions, insisted on an independent force with a heavy American presence. The MFO is that force. It currently consists of soldiers from Norway, Australia, New Zealand, Fiji, Hungary, Colombia, Uruguay, Canada, Italy, France and the United States.

The MFO maintains two main bases in Sinai: North Camp, near El Arish, and South Camp, near Sharm El Sheikh. In addition, numerous observation posts and command posts are spread throughout three sectors in the Sinai wilderness. These outposts are manned by infantry battalions from Fiji, Colombia and the United States.

The conditions of the Camp David accords include the deployment of no more than one Egyptian mechanized division, with specific limits on heavy weapons, in the Sinai. This division is restricted to the vicinity of the Suez Canal, which separates Egypt proper from the Sinai.

On the other end of the Sinai, the Israeli border is defined on one end by the town of Rafah, part of the volatile Gaza strip, and on the other by the Israeli resort town of Eilat on the Gulf of Aqaba. The accords authorize the Israelis no more than one mechanized brigade in the vicinity of the border. The Israelis depend on sophisticated listening stations and ground-surveillance radar to secure the border, and very rarely have anything other than heavily armed four-wheel-drive vehicles (jokingly referred to as "road warriors" by the Nomads) within the zone set by the treaty. The toughest part of treaty verification along the Israeli border is Israeli air-traffic control. The Israeli Defense Forces (IDF) often use Nomad aircraft as training aids, vectoring F-15 and F-16 fighters as well as pairs of IDF AH-64 Apaches to intercept.

### Slingload to Tiran

Though the aviators of 1SB undertake a variety of challenging missions, few are as hair-raising as the sling-load operations flown in support of Observation Post 3-II. Located on Tiran Island, five miles off Sinai's coast in the Gulf of Aqaba, OP 3-11 is manned by U.S. troops who monitor Israeli and Egyptian naval and maritime activities in the strategically vital area where the Gulf meets the Red Sea.

Tiran Island now belongs to Saudi Arabia and is leased by Egypt so that the observation post can be operated there. The actual OP is located on the island's western edge, more than 800 feet up a cliff wall overlooking heavily mined beaches. The island is accessible from the water in a few locations, but the OP's location and the treacherous slopes leading up to it make resupply by any combination of sea and ground transport almost impossible. The OP 3-11 troops therefore rely on the sling-load missions flown on Thursday and Sunday mornings by UH-1s of the South Camp Aviation Platoon - for their transportation to and from work, as well as for food, water, mail, fuel and just about everything else.

countered in the south Sinai desert often limit the helicopters' load-carrying ability and flight performance. The slingloads carried out to Tiran Island consist mainly of water blivets and pallets holding food, equipment and fuel. When improvements or repairs need to be made to the buildings at the site, construction materials, equipment and prefabricated structures are also flown out. Because the Egyptian lease on Tiran prohibits the island's sand from being used to fill the sandbags needed to build and maintain the OP's security walls and bunkers, prefilled sandbags must also be carried out to



Most missions deliver 15 1,000pound slingloads to the island OP, and each mission requires two or three slingloads to be backhauled to the staging area at Sector Control Center 7 (SCC-7). The UH-1H can easily carry over 2,000 lbs., but the high winds and extreme heat enthe waiting soldiers. An average resupply mission will deliver more than 12,000 lbs. of supplies to Tiran Island in less than four hours. That adds up to more than 432 tons of supplies a year.

The four UH-1s and 30 soldiers of the South Camp Aviation Platoon also undertake a variety of other missions, including general-aviation and medical-evacuation support for the U.S. infantry battalions that rotate through South Camp every six months.

### Trust, But Verify

Treaty verification is what the MFO is all about. The actual verification task is accomplished by the Civilian Observer Unit (COU), a team of ex-U.S. military officers, augmented by State Department personnel on oneyear tours. The COU does a good portion of its work from four-wheel-drive vehicles, but the really critical missions are executed from the orange and white UH-1s of 1SB's Avn. Co.

A recent typical COU-support flight launched from the North Camp airfield (which is also the former Israeli El Gorah airbase) carrying three observers and three crew. Once the MFO's Canadian air traffic control personnel ensured the UH-1 had been cleared by the Egyptian sance of the Suez Canal from Port Suez in the south to Port Said on the Mediterranean. They covered the line of low ridges that have historically shielded the canal area from invaders and most importantly, the Giddi and Mitla passes. The temperature reached 120° F, winds were 20 to 30 knots with haze from blowing sand and dust, but the scenery was spectacular.

> Flying helicopters in the Sinai is both challenging and tiring. Here the author catches a nap between missions.

MFO basecamps, the UH-1 heads back to El Gorah.

### Other Missions

Like any other Army unit, the 1SB Avn. Co. catches its share of "hey you" missions. Unlike other units, these missions often involve crossing hotly contested border areas and executing in less than optimal circumstances.





Soldiers assigned to the Sinai-based Multinational Force and Observers (MFO) work on a UH-1 at the Israeli port of Haifa. The newly arrived aircraft had just been offloaded from a cargo ship and, after reassembly and a test flight, was flown to MFO's North Camp at El Gorah.

authorities to cross into the south Sinai and the sensitive Suez Canal zone, the orange and white Huey lifted off. The crew monitored the MFO frequency to insure that a sister ship, flying on a separate flight plan (multi-ship flights are frowned upon as provocative), got off as well. The day's destination was the small military airfield at Melaze near the historic Giddi pass, about 30 miles off the Suez Canal.

Over the next eight hours the two UH-1s conducted a zone reconnaisThe Suez Canal was busy, with a steady procession of container ships moving down it at quarter mile intervals. The COU's members had all the crossing sites on the canal templated and checked to insure that the Egyptian army was not undertaking any prohibited activities. After refueling, the UH-1 and its passengers checked on units of the Egyptian 2nd Army in the Mitla and Giddi passes. Then, after a second refueling undertaken with the aid of Army refuel teams dispatched overland from One typical mission in this category occurred in early September 1997, when Avn. Co. soldiers traveled to the Israeli port city of Haifa to unload and reassemble three UH-1V helicopters shipped in to replace older airframes in service with the MFO. The aircraft had been painted in the distinctive orange and white of the MFO at Cherry Point N.C., then forwarded to the maintainers of the 4th Bn., 159th Avn., at Fort Bragg for shipment preparation. A series of delays, uncertainty of the mode of transportation and the isolated MFO environment made planning difficult, though a recovery plan was ultimately executed in four phases.

Phase I consisted of all the planning and coordination needed to take delivery of the aircraft. This was the longest portion of the operation and involved much coordination between Israel, Egypt and the United States. The phase culminated with the Avn. Co. sending a leader's reconnaissance to the port so that key leaders could get an "on the ground look" at the dock area (where problems and delays, yet the entire re-assembly process only took a day and a half with limited assistance and personnel. The test flight portion took an additional day.

Phase IV consisted of an air movement and ground convoy back to North Camp at El Gorah. The day prior to the return flight the additional pilots for the mission arrived in Haifa. Both movements made it back to El Gorah without incident.

The entire operation was a huge success with few miscues. The soldiers, though they had to work

The 1SB Avn. Co. mission would be difficult under virtually any command structure. Under the spotlight of an 11-nation multinational force, conducting peacekeeping operations in one of the world's most publicized and politically charged flash points, all the usual challenges are magnified.

all re-assembly and initial flight would take place). The air mission commander and flight lead flew the egress route and familiarized themselves with Israeli civil and military airspace requirements and procedures. The force liaison got a chance to reconfirm extensive coordination that was completed by the Tel Aviv office of the MFO. As a result of this recon, tool and equipment lists were firmed up and finalized, vehicle requirements were confirmed and a better idea of time required was obtained.

Phase II of the operation began with the deployment of the advance party to Haifa. The party included the two force representatives, as well as the Avn. Co. maintenance test pilot and technical inspector. Phase II ended with the deployment of the main body by vehicle convoy. This was a particularly touchy part of the mission because of the need to cross the Egyptian-Israeli border with a convoy of four vehicles filled with an array of equipment.

Phase III began with the unloading and re-assembly of the aircraft. This was the portion of the entire operation that could have caused the most extremely hard, thoroughly enjoyed the unique experience of successfully conducting a complex operation in a foreign land with limited support. Their professional conduct and performance throughout this operation insured that the MFO will be able to keep the peace in the Sinai for many years to come.

### Maintaining the Fleet

The fact that 1SB's Avn. Co. maintains an operational readiness rate averaging 82 percent is nothing short of miraculous, especially given the fact that the unit is flying Vietnamvintage aircraft at a frenetic pace in an extremely hostile environment more than 5,000 miles from its support maintenance at Fort Bragg. This success is attributable only to the heroic efforts of the company's maintenance soldiers (there are no civilians).

These maintainers regularly work 80- to 90-hour weeks, and on weekends and holidays — whatever it takes. In one instance a maintenance team deployed more than 100 miles into the Sinai to replace the entire powertrain of a UH-1 after an N2 accessory gearbox failure. The soldiers worked for 10 days in 120-degree heat, completely exposed to the elements. In the end, UH-1 737 returned to El Gorah under her own power.

Working hand in glove with the maintainers are the Class IX warehouse personnel. Managing more than 4,000 lines of aviation parts, they set the standard for service and accuracy. In June the MFO Inventory Control Team conducted an audit of the Class IX warehouse that resulted in an incredible 100 percent location accuracy and 98 percent accountability accuracy.

### Meeting the Challenges

The 1SB Avn. Co. mission would be difficult under virtually any command structure. Under the spotlight of an 11-nation multinational force, conducting peacekeeping operations in one of the world's most publicized and politically charged flash points, all the usual challenges are magnified. No other unit in the Army, much less Army aviation, executes a mission of the complexity and OPTEMPO of the Avn. Co. The variety, complexity and political sensitivity of the MFO mission makes "Supporting the Force, by Air" a challenge every day.



4.4



# The UH-60Q in Stability Support Operations

By Lt. Col. Eugene H. Pfeiffer

S ince my last article, a year ago, the UH-60Q program has continued to progress. The four UH-60Qs operated by the Tennessee National Guard have accumulated over 1,000 flight hours, and have proven to be durable and well designed for their missions. The UH-60Q will perform its warfighting mission well, as demonstrated in its 1998 Operational Test (OT). It is also well suited for Stability and Support Operations (SASO), the focus of this month's edition of Army Aviation.

The UH-60Q technical baseline is also being applied to production UH-60Ls in accordance with congressional guidance. In 1997 Congress directed the Army to procure "four production UH-60Qs." Those aircraft are now on contract and due to be delivered late this year. Congress provided funds for three more in the fiscal year 2000 Appropriations Bill. There are 11 aircraft funded to date. The UH-60Q cockpit and Medical Mission Package (MEP) are key parts of the baseline for the Modernized Black Hawk Program.

The Tennessee National Guard has employed the UH-60Q in search or actual rescue operations at least four times in the two years it has operated the aircraft. In one instance, an injured hiker was hoisted out of mountainous terrain. In another, a UH-60Q was used to search for a crashed OH-58. The UH-60Q's Forward Looking Infrared (FLIR) system and search patterns, programmed through the Control Display Units (CDUs), are especially suited to this type of mission.

The UH-60Q has also been used in flood relief efforts — once in Tennessee and later in the Hurricane Floyd effort in North Carolina, where it was effectively employed in

Figure 1



numerous rescue and support missions. The on-board oxygen generation system (OBOGS) provided oxygen to several heart-attack victims. A major milestone was achieved during the crisis when a baby girl was born on one of the aircraft.

Operational experience has thus far validated the UH-60Q's design and demonstrated its reliability. The one area that could use improvement in reliability is the older radios such as the AN/ARC-164 (UHF) and the AN/ARC-201s (FM) - that are also used by other Army aircraft. Our experience with these systems underscores the importance of programs to develop advanced communication systems, such as the Joint Tactical Radio System (JTRS). Once available, these new systems will be easily integrated into the UH-60Q's bussed avionics architecture.

The limited employment of the UH-60Q to date has demonstrated its superiority over its predecessor, the UH-60A with kits. Brief looks at missions performed by UH-60A-equipped medical evacuation units - such as the Germany-based 45th Medical Company - illustrate the potential value of the UH-60Q in SASO. In Bosnia, for example, medevac crews helped recover injured people from mine fields. Swiss explosive ordinance disposal (EOD) teams with working dogs were lowered into areas adjacent to mine fields, then cleared a path through the minefield to the casualties. The casualties and the EOD teams were then recovered by hoist and evacuated.

The UH-60A's hoist and litter

carousel, which mounts in the center of the cabin, occupy much of the helicopter's cabin area in its medical configuration. This leaves very little room between the litter carousel and the edge of the cabin for the hoist operator to work (Fig. 1). This creates a very awkward and potentially hazardous situation. By contrast, the UH-60Q interior is open and extremely user-friendly for hoist work (Fig. 2). The UH-60Q hoist is external to the cabin and always available. In the UH-60A the hoist takes space which reduces litter capacity from six to three. Units must trade one capability for another, which increases the risk of having the wrong equipment configuration to do the hoist mission or inadequate capacity to evacuate the required number of casualties.

the "fly" mode, which puts the litters parallel to the cabin. In either position the six-litter configuration provides only a few inches separation between the patients on the litters and the overhead structure, making casualty care monitoring extremely difficult.

In the fly mode access is further restricted to the head and upper torso. The space between the cabin door the Baltic Sea to Lithuania to support ship-to-shore operations with the U.S. Navy hospital ship USNS Comfort. Some of the flight was over water with very little communications or navigational capability. The UH-60Q's integrated avionics, Tactical Air Navigation (TACAN) system, HF radio, FLIR and upgraded medical suite would have combined to clearly





T his situation is unacceptable, and the UH-60Q will eliminate this risk. During the UH-60Q OT the FLIR system was determined to be an enhancing capability for hoist operations because the pilot who is not on the controls can observe, first hand, what is happening under the aircraft. This improves crew coordination and further reduces risk.

Access for medical care of casualties in the UH-60Q is remarkably unrestricted at all litter positions, compared to the UH-60A system. In the UH-60A the litter carousel can be locked into two positions — the "load" position, which places the litters perpendicular to the aircraft cabin, and and the litter system is not sufficient to allow access by the medic to the casualties (Fig. 3). Some units equipped with the UH-60A medevac system have flown with the casualty in the load position to get better access for treatment purposes. This practice eliminates treatment at three of the six litter positions and compromises the crashworthiness of the system. The UH-60Q's litter system allows full-body access to the casualties by the medic and provides ready access to such medical systems as suction and oxygen.

In June 1998 the 45th Med. Co. self deployed UH-60A medevac aircraft from Germany through Poland and make the entire deployment safer and more medically effective. These same capabilities will manifest themselves exponentially on future battlefields.

The experiences mentioned here are typical of operational and training missions conducted by most of the Army's medevac units. While they are organized and equipped primarily for support of combat operations, such units have proven invaluable in SASO. Indications are that these missions will continue to be significant in the future, both in frequency and in the demands placed on crews and equipment.

The UH-60Q has demonstrated a significant advantage over the UH-60A and the medical kits it replaces. By 2003 the UH-60Q mission kit will be procured in conjunction with the Modernized Black Hawk Program, which will provide an even more capable medevac aircraft with which to undertake demanding combat and SASO missions.

Lt. Col. Eugene H. Pfeiffer is the assistant project manager for the UH-60Q in the Utility Helicopter Project Office, U.S. Army Aviation and Missile Command, Redstone Arsenal, Ala.

# Mission Ready

by Capt. Gordon Schmidt

ecent events in the Middle East, Europe and Southeast Asia confirm that in this modern era Army aviation must be prepared to deploy and operate anywhere in the world. Air traffic services (ATS) units facilitate the safe, orderly and expeditious movement of those aviation assets within some of the most austere environments. Therefore, to ensure success, ATS soldiers must be trained to world-class proficiency and equipped with the most modern systems.

Among those cutting-edge systems is the Tactical Terminal Control System (TTCS), it is one of the most recent air traffic control (ATC) platforms fielded to active-Army units. It provides leaders and planners the ability to manage the movement of military, allied and civilian aircraft throughout the area of operations.

TTCS is a highly mobile air traffic facility used at the brigade level to provide air traffic services at remote landing zones, drop zones and temporary helicopter operating areas. The system is capable of ground-to-air communications among Army, other military and allied aircraft. It is also capable of ground-to-ground communications internal to ATS units and other ground units. The modular design of the system allows some of the components of the TTCS to conform to man-pack configurations.

The system was recently put to the test during a 25th Infantry Division Cobra Gold exercise in Thailand. The TTCS was exposed to extreme heat, humidity and moisture throughout the deployment. Although the TTCS meets all military design specifications and standards, the air traffic controllers found that to ensure reliable operation, the electronics array required additional shelter from the elements.

"No matter how well the system may have been designed, moisture and electronics just don't mix," said SGT Eric Arant, TACT team leader assigned to Company G, 58th Aviation Regiment, who partici-

18

pated in the Cobra Gold exercise. "During a good rain storm the radios get drenched. We've also had problems with the Remote Set Controller overheating when all the radios are operating."

Rather than wait for these problems to damage the TTCS's components, Arant sought out a solution that would be cost-effective and easily implemented. After much research he discovered a modification kit known as "The Helmet Hard-Top." The kit is produced by the Amtech Corporation and is the ideal solution to these problems. Its composite design provides better protection than canvas "rag-tops" and has a much longer service life. The Hard-Top's weather-tight design ensures comfortable interior temperatures and its fiberglass composites don't conduct heat as readily as steel and cloth. Copper screen is molded into the structure of the lightweight shell to meet all communications equipment ground-plane requirements.

Army units can order the kit through normal supply channels (NSN C 2510-01-446-3535). It is shipped with all required mounting hardware and detailed instructions. Installation requires no special tools and can be accomplished by organizational level maintenance within four to five hours. Because the Hard-Top comes equipped with internal cargo compartment doors, the original locations of the FM1, FM2 and HF antennas need to be modified. Suggested areas to relocate the antennas are depicted in figure 1.

Although the Amtech Hard-Top has been in pro-

duction for some time it is just recently seeing service with Army ATS units. At about \$6000 per vehicle it is not an inexpensive way to weather-



Figure 1

proof the TTCS, but may prove to be a wise investment for many tactical ATC units. Combined with the TTCS, the Helmet Hard-Top creates a much more durable and reliable ATS platform ready for operation well into the 21st century.

\*\*

Capt. Gordon Schmidt commands Company G, 58th Aviation Regiment, at Wheeler Army Airfield, Hawaii.

# COBRO MAINTENANCE SCIENCE SCHOLARSHIP

#### Financial need is not a criterion. Personal motivation is!

#### FOR MORE INFORMATION:

Dean Charles C. Kirkpatrick Parks College of Engineering and Aviation Saint Louis University 3450 Lindell Boulevard P.O. Box 56907 St. Louis, MO 63156 (314) 977-8203

> DEADLINE FOR APPLICATION: May 1, 2000, for Fall 2000 Semester.

November 1, 2000, for Spring 2001 Semester. Parks College of Engineering and Aviation of Saint Louis University invites applicants for the Cobro Maintenance Science Scholarship to be awarded after May 1, 2000, for the semester beginning August 2000. The award will be for a minimum of \$19,000, renewable for up to three academic years.

#### **APPLICANTS MUST HAVE:**

- Achieved a 3.3 grade point average out of a possible 4.0 and have completed 60 semester hours or the equivalent at the college/university level.
- Contributed more than 50 percent of the cost of their college/university education from their own earnings (including military benefits).
- Completed at least one full year's employment in the avionics or a related industry (including military service).

Preference will be given to candidates who are U.S. citizens and who demonstrate a knowledge of computer-maintained databases, statistical inference analysis and an understanding of the key role of maintenance science and administration.

### PARKS COLLEGE of ENGINEERING and AVIATION SAINT LOUIS UNIVERSITY

# Force Projection: The Air Traffic Service Challenges



By Lt. Col. Joseph P. Mudd and Lt. Col. Cory Mahanna

"Tactical units at our combined arms training centers and on operational deployments are stressed with many airspace command and control technology problems." — MG John Ryneska, XVIII Airborne Corps and Fort Bragg, N.C., deputy commander.

Our direction is clear: Build a system which can provide early entry forces capable of joint operations with other services and nations — one free of fixed forward bases. Accordingly, our Army has made recent investments in power projection. Air Traffic Services (ATS) become one of the means our leaders have to prosecute this evolving way of warfare. For Army aviation the goal becomes the creation of a force with global rather than regional reach, and with the power to impose our will when and where we choose.

The phases of the force projection challenge include:

- pre-deployment
- mobilization
- deployment
- entry
- operations
- war termination and post-conflict
- redeployment

These phases could be applied to conflicts throughout history. What has changed are the means we use to accomplish these tasks. This is where ATS comes into the picture. Let's take a look at the entry and operations phases of power projection and see what evolutionary and revolutionary changes are at work.

The exterior of two of our force-projection enhancements is depicted above. In a nutshell, they get the Army into the joint/combined, high-tech, early-entry fight. They do this through networking between the Army (particularly Army aviation) and the rest of the joint/combined team. We are not talking about networking command and control C2; we deal with networking the warfighter at the point of attack.

Here is the inside story:

#### ENTRY

Major early-entry contingency scenarios require the synchronization of multiple-service and host-nation forces. These tasks are most acute near our selected airhead and seaport sites.

Air Traffic Navigation, Integration and Coordination System (ATNAVICS), an evolutionary ATS enhancement, provides the power-projection force a rugged and C-130 deployable tactical radar system that:

 is capable of rapid set-up with near immediate access to precision navigational aides;

 provides identification and vectoring to joint and combined strategic air assets;

contains jam-resistant manned navigational aides;

• has ground-to-air and ground-to-ground communications; and

· offers precision recovery of IMC aircraft.

ATNAVICS is a state-of-the-art, digitally integrated radar and navigation system designed to provide landing and navigation assistance to joint and combined aircraft by fully instrumenting a tactical airfield. This robust new system replaces the 1950s-era TSQ 71B Landing Control Central. ATNAVICS offers a joint and combined force more rapid and dependable service. Our sister services will want to place ATNAVICS in operation as soon as the security of a target airhead is assured. Consequently, ATS has been moved up in the operational chalk order and will be one of our "must have" early entry systems.

#### **OPERATIONS**

Once a power-projection play is called, our Army will have to execute. Joint forces will combine projection and information-dominance tasks with shaping the battlespace and decisive operations. Successful exploitation of joint/combined operational tasks will require service interoperability. This interoperability is crucial in the use and apportionment of airspace. Accordingly, ATS is now receiving a revolutionary new system called the Tactical Airspace Integration System (TAIS). It:

· offers fully digitized, three-dimensional battlespace visualization;

• will move our Army from a "restrictive" based A2C2 architecture to a "permissive" environment;

joins the Army Battle Command System (ABCS);

· is an Army Tactical Command and Control System (ATCCS) member;

ple the tremendous capability of TAIS not only with ATCCS, but also directly with individual aircraft through the Tactical Terminal Control System (TTCS). The TTCS replaces the AN/TSQ-97 Portable Air Traffic Control Tower and provides extremely mobile, state-of-the-art ground-to-air and ground-to-ground communications.

A power-projection army must continuously prepare for contingencies and must sequence activities, project conditions, practice force protection and train the force. ATS is on the scene every day as our Army conducts these activities. ATS ensures that training is conducted safely; that our soldiers' resources are not wasted and that required logistical sustainment goes uninterrupted.



- is compatible with Air Force, Navy and Marine systems;
- is C-130 deployable;
- has robust and rugged architecture; and

 is supportable and maintainable with minimum logistics. TAIS offers the commander an enormous increase in tactical capability. The system fills a massive information void found in today's analog A2C2 technology. For the first time, we are able to track the air battle in real time. This revolutionary capability will reduce the possibility of fratricide and will provide tactical and operational commanders with immediate situational awareness in the A2C2 area. This will reduce tactical planning time and increase force protection through decreased risk. In addition, we can couNevertheless, as you have seen in the preceding paragraphs, ATS is much more than a "stay at home" training aide. Proper use and planning for efficient modernized ATS will provide Army aviation with a global reach and an opportunity to achieve overwhelming superiority across the spectrum of conflict.



Lt. Col. Joseph P. Mudd commands the 1st Battalion, 58th Aviation Regiment, at Fort Bragg, N.C. Lt. Col. Cory Mahanna is the project manager for air traffic control at Redstone Arsenal, Ala.

#### ARMY AVIATION

# USAALS: Meeting the Challenges of Force XXI and Army After Next

By Lt. Col. Paul L. Barnard



he Department of Aviation Trades Training (DATT) is one of three aviation technician/ mechanic training departments of the U.S. Army Aviation Logistics School (USAALS) at Fort Eustis, Va. Our mission is to develop and conduct resident and nonresident aviation logistics maintenance training in electrical. avionics, structural, propulsion, powertrain and pneudraulics repair for the active Army, Army National Guard and Army Reserve. The DATT consists of the Propulsion and Powertrain Division, the Structures and Pneudraulics Division, the Electrical and Electronics Division and the School of the Americas (SOA).

The DATT trains approximately 1,500 Career Management Field (CMF) 67 soldiers annually in 22 military occupational specialties (MOS). The department conducts training in advanced individual training (AIT) courses, Basic Noncommissioned Officers Courses (BNCOC), the Advanced Noncommissioned Officers Course (ANCOC) and Phase II of the Aviation Maintenance Technician Warrant Officer Course (AMTWOC). Training focuses primarily on forcemodernization systems such as the UH-60 Black Hawk, CH-47 Chinook, AH-64A Apache and OH-58D Kiowa Warrior. However, the department still provides instruction on such legacy systems as the UH-1, AH-1 and OH-58. Training on these systems is necessary due to our fundamental mission under the Total Army Training System (TATS) to train Guard and Reserve soldiers.

The Propulsion and Powertrain Division (PPD) focuses primarily on training 68B (powerplant) and 68D (powertrain) MOSs. During the course, the 68B repairers develop a fundamental understanding of turbine engine theory, forms and records, 68G (sheet metal) repairers. This critical skill requires an artistic ability as well as a strong mathematics background. All aspects of structure repair are taught, including the repair of composite structures and blades. The Army's 68H (pneudraulics) repairers are currently trained at Sheppard Air Force Base, Texas, under the Inter-Service Training Review Organization (ITRO). The DATT employs four

The Department of Aviation Trades Training (DATT) is one of three aviation technician/ mechanic training departments of the U.S. Army Aviation Logistics School (USAALS) at Fort Eustis, Va.

troubleshooting and basic enginecomponent assembly, and perform turbine engine diagnostic tests. The 68D repairers are trained on the aircraft components that transmit turbine-engine power, which drives a helicopter's rotors. This course instructs soldiers on drivetrain components, inspection, disassembly and repair. The students also learn diagnostic test and inspection procedures while using magnetic particle and fluorescent equipment to determine component stress and structural defects.

The Structures and Pneudraulics Division (SPD) trains Army aviation's 68H instructors who work with Air Force instructors in a multiservice training setting. Students are trained in all aspects of the pneudraulics that link aircraft controls and operating components and in environmental control systems on the Apache helicopters.

The Electrical and Electronics Division (EED) manages our largest training load. The EED initially conducts a three-week basic electronic theory (BET) course for the 68F (electrician) and 68N (avionics) courses. The BET classes are also conducted for other USAALS courses such as the 68J (AH-1 fire control repair) and 68X (AH-64 armament electrical systems). The BET course is the essential foundation for all further electronic and electrical training within Army aviation.

After successful completion of BET the 68F students receive training on the repair and troubleshooting procedures for both force-mod and legacy aircraft electrical systems, which includes AC and DC, instruments, fuel, utility, environmental, lighting, fire detection and battery repair. The 68N avionics repairers are responsible for repair, troubleshooting and replacement of communication and navigation equipment, aircraft survival equipment (ASE) and electrical flight control components. Basic communication and radio theory and operation are taught, as is the use of the technical manuals that are fundamental to electrical/electronic troubleshooting.

The SOA trains approximately 60 Spanish-speaking students annually from Central and South American countries. The DATT provides technical training on UH-1H aircraft systems, component repair, troubleshooting and inspection procedures. The SOA instructors are both military and civilian subject-matter experts who teach all courses in Spanish.

Absolutely essential to the efficient, effective, and successful training of Army aviation soldiers are the innumerable training devices that are used to support the highly technical and sophisticated subjects taught. The training devices may be a simple aircraft component or a complex electrical wiring table. The DATT uses most of the Army's turbine engines within the classroom, and also uses Category B aircraft. Other training devices used by our instructors are electronically or computer-controlled. These devices simulate innumerable mechanical and electrical failures and faults. The DATT training devices play a critical role in providing field units with highly trained aviation repairers. Training in DATT and throughout USAALS would not be as effective without these training devices, which provide the students with real-world situations.

There are many ongoing initiatives that are planned to upgrade and modernize training within DATT. First, DATT and USAALS are investing considerable resources in digitizing all classroom instruction. Over the past year all lesson plans (LP) and programs of instruction (POIs) have been upgraded and transferred to electronic formats. Our training developers are developing multi-media, interactive PowerPoint/ToolBook classroom presentations. This past year, the Black Hawk project manager delivered two UH-60 Black Hawk transition to computer-based training (CBT) and computer-aided instruction (CAI). Technology is allowing us to manage increasing training demands while adjusting to significantly reduced schoolhouse training hours. As we move forward into the 21st century, CAI will play a bigger and increasingly more critical role in training efficiently and effectively.



Maintenance Trainers (BHMT). This state-of-the-art electrical/mechanical training device will be used by all DATT divisions and by the Department of Aviation Systems Training (DAST) to meet increasing 67T student loads. The versatility of the BHMTs permits DATT to use this invaluable training resource in more than 80 percent of our technically based courses.

One very exciting trend within USAALS and DATT is the gradual

The USAALS Classroom 21 facilities are now available to DATT. Additionally, USAALS has the capability to conduct distance learning by utilizing TELNET technologies.

A great example of CAI is our recent acquisition of a computerbased instructional system now employed in EED for BET training. The new digitized NIDA 130 is a comprehensive computer-based training curriculum in a multimedia, interactive, network environment that addresses all aspects of electronic theory and application, including the Army's new 1553 Data Bus.

The BET training capabilities are now limited only by the individual student's intellectual capacity and motivation, and by the allotted classroom hours. Educational opportunities beyond those required by our Critical Tasks Lists (CTLs) are available to the electronic and electrical repairers. Two additional examples involve the AN/AVS HUD and the UH-60 AFCS/CIS systems. In both cases, CAI combines all aspects of the required technical training standards required by the CTLs. Student progress is monitored continuously by the instructor via the classroom network station. Computer-aided instruction is intended to increase the instructor's ability to monitor, assist, challenge and assess student progress, as well as assign additional instructional challenges. CAI tangible benefits include, for example, the capability of the instructor to focus more on assisting students in instructional responsibilities and reducing significantly the classroom management workload.

The DATT is charged with providing Army aviation with the best-trained aviation repairers in the world. With the advent of the AH-64D Longbow and the RAH-66 Comanche, we are challenged even further to develop CTLs for POIs that will prepare our aviation soldiers for deployment worldwide and the capacity to perform their critical aviation missions. The DATT will continue to leverage technology and provide the best possible instruction for Army aviation's finest the aviation repairers.

Lt. Col. Paul L. Barnard is the Director of Aviation Trades Training (DATT) at the U.S. Army Aviation Logistics School (USAALS) at Fort Eustis, Va.

00

### APACHE LONGBOW Training Lands at Eustis



Fort Eustis will soon become the home for training on the state-of-the-art AH-64D Apache Longbow. All training devices for the new system will be completely digitized and will replicate the operation of actual aircraft systems. The new devices employ state-of-the-art electronics at a much greater level of technical integration than previously found on any aircraft training devices.

The first of the two devices is called the Multiplex Armament Visionics Weapons and Electrical Systems Trainer (MAVWEST). The MAVWEST system will be used primarily to train aviation arma-

ment, electrical and avionics systems repair specialists and, to a lesser degree, for helicopter-repair mechanics.

The second new device — the Airframe, Engine, and Drive Systems Trainer (AEDST) — is primarily a removeand-install-component trainer that will be used primarily to train repair mechanics. The system will feature fully integrated electronic technical manuals. Every student will receive a Portable Maintenance Aid, which is a hand-held computer that can be connected to the training device for downloading, troubleshooting, diagnostic and prognostic information. With this advanced diagnostic system, work will be virtually paperless. The training systems will each cost the Army between \$13 million and \$17 million.

The computer-driven Interactive Multimedia Instruction — integral for training tasks that can't be done on the new devices — was to have arrived at Fort Eustis in October. Because of development delays, transition training for aircraft repairers and armament, electrical, and avionics



Article 1 of the Apache Longbow Airframe, Engine, Drive System Trainer (AEDST) - L6 was delivered to Fort Eustis in October 1999.

soldiers will be delayed until the second quarter of fiscal year 2000. However, advanced individual training (AIT) for armament, electrical, and avionics repairers remains on schedule.

The transition-training students are already trained on the AH-64A Apache and will be instructed on the Longbow. The course for the AIT armament, electrical, and avionics repairers will be 33 weeks long, while the course for the transition soldiers will be five weeks for the helicopter mechanics and 11 weeks for the armament, electrical and avionics systems repairers. The instructors for the transition courses are now being trained in Mesa, Ariz. Since the current instructors are being trained to support new AH-64D Apache Longbow training at the U.S. Army Aviation Logistics School (USAALS), the organization will experience a double-training load (Apache A and Longbow). The first Longbows were delivered and tested at Mesa and have been fielded to the first two Longbow battalions at Fort Hood, Texas. The Longbow is completely digitized, whereas the older Apache is less sophisticated and doesn't have the AH-64D's mast-mounted radar dome. The Longbow can engage targets at a greater distance using newly configured radar/laser controlled Hellfire missiles. The Longbow radar identifies, prioritizes and can hand-off to other weapons systems enemy target data for engagement and destruction. The Longbow acts as an air-mobile, heavyattack weapons platform and employs laser- and radarguided missiles against enemy armor, reinforced bunkers, gun emplacements and large troop concentrations, and can be used in any weather condition and over any terrain. Twenty-four of the helicopters have been fielded to date.



Col. Kenneth Quinlan, deputy commanding general of the aviation branch and Fort Rucker, Ala., (fourth from right), and Col. Louis Bonham, assistant commandant of the U. S. Army Aviation Logistics School at Fort Eustis, Va., (third from right), assisted by members of USAALS' Department of Attack Helicopter Training and the Apache Longbow Program Manager's Office, cut the ceremonial ribbon marking the delivery of the first AH-64D Longbow Training Device (L6). These devices will be used to support Longbow maintenance and logistics training conducted by USAALS.

![](_page_24_Picture_3.jpeg)

Following the ceremonial ribbon cutting for the new L6 Longbow training device, Quinlan and Bonham are flanked by members of the USAALS staff, Longbow PM and Boeing Helicopter.

Though the new technology is here, it is not anticipated that the Longbows will completely replace earlier-model Apaches until well after 2010. Right now the fleet will be split 50-50. The original fielding plan was not fully funded, and called for the fielding of more than 750 Longbows, a number that has been reduced to 530. Because of the extended service life of the AH-64A, soldiers who work on the aircraft will be trained on both the AH-64A and the AH-64D Longbow. — Fort Eustis Public Affairs Office

Mr. William R. Harris Jr. is chief of USAALS' Training Operations Division at Fort Eustis.

![](_page_24_Picture_7.jpeg)

### 76% of the Commissioned Officers in the Aviation Branch read ARMY AVIATION Magazine!

Can you afford to be overlooked?

For further information contact our Advertising Department Bob Lachowski (203) 226-8184 x131

![](_page_24_Picture_11.jpeg)

#### CORROSIONX<sup>®</sup> SAVES THE ARMY MILLIONS!

![](_page_24_Picture_13.jpeg)

An Army-conducted test (reported in July 97 Army Aviation Magazine) showed that CORROSIONX reduced repairs by more than \$150,000 per airframe for helicopters deployed to Somalia. For more details and further product information contact:

![](_page_24_Picture_15.jpeg)

### Apache Field Toolkits from CCAD By Ralph Yoder

AH-64 Apache transmission mechanics in the field will soon be able to work on their aircraft using a tailor-made tool kit designed and fabricated at Corpus Christi Army Depot, Texas.

This kit, mounted on a push cart, has everything that field mechanics will need to complete repairs in a timely manner and have the aircraft ready to fly guickly.

The 700-pound kit consists of four drawers of special tools nestled in foam cutouts, plus a stand that can be assembled to hold the transmission. There are 36

tool items in the shadow-boxed drawers on the cart. Each tool has its place and there is an inventory required at the end of maintenance work, just like a medical team would do to make sure all tools are accounted for.

The idea for the kits was conceived during teleconferences among the various agencies tasked with solving problems with the AH-64's

sprag clutch; the device transmission which had caused a Safety of Flight grounding of the Apache Fleet.

Eight kits are being manufactured. Three are complete, to date. One has already been

![](_page_25_Picture_8.jpeg)

sent to Germany and another is being used by Gary Good, AMCOM engineering, to train mechanics from Ft Hood. Additional sets are being completed this week.

The entire kit can be boxed up and shipped anywhere Apaches are flying, and is intended for use in covered maintenance facilities at field sites.

![](_page_25_Picture_11.jpeg)

We were budgeted at about \$500,000 for building these kits, but so far we are under cost and ahead of schedule because of all the teamwork."

The entire tooling team is awaiting reaction from the field when they begin to use these tool kits. The kit bound for Germany should be used soon. "An accomplishment of this magni-

tude could not have been completed without a total team effort, and this is what can happen when employees care about providing a quality product to the soldier in the field," said Gary Richmer, chief of the Tooling Branch.

Ralph Yoder is the public affairs officer for Corpus Christi Army Depot, Texas.

![](_page_25_Picture_16.jpeg)

![](_page_25_Picture_17.jpeg)

Those involved in the work included Steve Porter, CCAD Mechanical Shop, Building 8 (*left front*) and (*left top*) Arnold Mendez, LSI contractor; and Gilbert Morin, Raul Moreno and Juan Gomez of CCAD Airframe Production Division/Flight Test, Hanger 44.

![](_page_25_Picture_19.jpeg)

Chris Santos (*left*) and Juan Gomez, CCAD Airframe Production Division/Flight Test, Hanger 44. Not pictured are Seth Garcia and Charlie Garza of CCAD Airframe Production Division/Flight Test, Hanger 44; Otis Johnson, crew chief of CCAD UH-1H Hanger 46; and Jim Kaylor, CCAD Quality Supervisor.

![](_page_25_Picture_21.jpeg)

The Apaches are ready to be shipped.

# **Amazing Men**

By Lt. Col. Paul J. Fardink (Ret.)

his life during the performance of his duties.

This article is dedicated to the memory of Robert D. Robbins, the 1984 AAAA DAC of the Year and Test Pilot, U.S. Army Aviation Engineering Flight Activity, Edwards AFB, Calif., who would give

A smilling Frank Plasecki tips his hat while flying his PV-2 in Washington, D.C., on Oct. 20, 1943. The type's first flight had occurred on April 11, 1943, making it America's second successful helicopter. (Courtesy Frank Plasecki)

INCREITING FORCE

"Like all novices, we began with the helicopter (in childhood) but soon saw that it had no future and dropped it. The helicopter does with great labor only what the balloon does without labor, and is no more fitted than the balloon for rapid horizontal flight. If its engine stops it must fall with deathly violence, for it can neither float like the balloon nor glide like the aeroplane. The helicopter is much easier to design than the aeroplane but it is worthless when done." — Wilbur Wright, 1909

As this century ends, man's technological achievements leave us in awe when compared to all that came before. Man not only learned to fly, he went into outer space and landed on the moon. Man not only learned how to fly at Mach 3 and beyond, he also learned how to hover. And when man learned how to hover, as well as take off and land vertically, he achieved his true freedom, surpassing all of God's winged and feathered creatures except the tiny titan, the hummingbird.

Indeed, the helicopter is one of the greatest inventions of the 20th century, with the last half of this century seeing this flying machine mature into an extremely versatile aircraft capable of performing a myriad of both civilian and military missions. But perhaps more amazing than the helicopter are the men who first had the dream and then the persistence to make it a reality, despite problems more complex than those faced by the Wright brothers some four decades earlier.

Igor Sikorsky, Frank Piasecki, Stanley Hiller, Larry Bell and Arthur Young are truly amazing men. Not because they were the instrumental forces behind the fledgling American helicopter industry, but because they were also the inventors, the design engineers, the fabricators, the test pilots and the businessmen! This rare mixture of talents, fueled by a determined perseverance, supported leadership styles inspiring subordinates to great achievement. Their own words clarify the justification for calling them "Amazing Men."

Despite an estimated 300 helicopter projects in the United States during and just after World War II, only four companies — Sikorsky, Piasecki, Hiller and Bell — actually achieved volume production before the end of the 1940s. Many obviously had found the design and development of the helicopter to be an impossible task.

#### Igor Sikorsky

On Dec. 14, 1967, in Washington, D.C., in the twilight of

![](_page_26_Picture_12.jpeg)

Larry Bell (on the left above) returns from an actual MASH mission during his 1953 tour of the front lines in Korea. After returning to the United States Bell stated: "One of the worthwhile achievements to come out of the Korean War was the advancement of the helicopter. The operation of helicopters on observation, supply, rescue and evacuation missions has accelerated the entire industry by 20 to 30 years in terms of service experience." He was right. (Courtesy Bell Helicopter)

On Sept. 14, 1939, Igor Sikorsky (left), wearing his trademark fedora, lifts a tethered VS-300 into the air for the first time. (Courtesy Sikorsky)

![](_page_26_Picture_15.jpeg)

**ARMY AVIATION** 

his career, Igor Sikorsky received aviation's prestigious Wright Brothers Memorial Trophy. It credited him "for the design and production of the world's first practical helicopter; for the conception and construction of the world's first four-engined aircraft; and for the design and production of a series of flying boats, which pioneered transoceanic air transportation." Sikorsky was a true genius who is often credited with having three distinct careers in aviation, but the helicopter was the one that kept beckoning.

At 20, Sikorsky built his first helicopter in 1909 and then a second in 1910 in the city of Kiev, Ukraine, in his father's

![](_page_27_Picture_2.jpeg)

back yard. His second machine's coaxial design was similar to that of the first, but it had three blades per rotor instead of two and almost lifted its entire weight of 400 pounds as indicated when attached to a crude scale device.

Years later, when asked why he abandoned these initial experiments with rotary-wing aircraft, Sikorsky answered: "I did not abandon it; I merely postponed it because I realized that the amount of money and the facilities necessary to solve the helicopter problems were more than I had at my disposal. Another stumbling block was the lack of engines of sufficient power and low weight. I still saw a great potential for helicopters in the future. I was always against large land areas or runways necessary for the operation of airplanes. To me, a flying machine had to rise and descend vertically, have the ability to stay motionless in the air or fly and maneuver as slow as its pilot desires or the mission calls for."

While building his second helicopter Sikorsky had also started construction of his first airplane, the S-1, a light biplane with a 15-hp engine driving a pusher propeller. But the S-1 was under-powered and refused to fly, so Sikorsky immediately began work on the S-2 by using the 25-hp engine from the helicopter and moving the propeller into a tractor configuration. With Sikorsky at the controls, both aviator and aircraft would experience their first flight on June 3, 1910, as Sikorsky literally taught himself to fly while testing the new aircraft!

Sikorsky's own words best describe the multiple dilemmas of those early days: "At that time reliable information and aeronautical science were practically nonexistent and the pioneer designer and pilot had only his meager experience, practical judgment and imagination to supply the nec-

essary data on which to build his machine.

"When the plane was ready, and no one could tell whether or not it was any good, the designer had to become a pilot and, having no instructor to explain or give advice, he had to seek flying knowledge by studying the birds, by playing with models and again by relying on imagination. After a crash it was sometimes difficult to know whether the machine was bad or the pilot had made a mistake, or whether it was something else. In order to win against such incredible odds, it was necessary to invest every bit of energy and time. Not eight hours a day, but often sixteen hours of intense and extreme effort were needed, and even so the results were anything but certain."

Later, the first successful helicopter to fly in the United States was Sikorsky's VS-300. On Sept. 14th, 1939, he took this machine a few feet off the ground to give the Western Hemisphere its first practical helicopter.

Igor Ivanovich Sikorsky passed away Oct. 26, 1972, and was inducted into the Army Aviation Hall of Fame on June 6, 1974, at Fort Rucker, Ala. The proudest moment of his life, Sikorsky would often say, was on the day he became an

American citizen. Sikorsky firmly believed that "... most Americans are not conscious of how wonderful it is to be an American and of the opportunities afforded them in this country."

#### **Frank Piasecki**

To most rotary-wing enthusiasts Frank Piasecki's name is synonymous with the tandem-rotor helicopter, and rightly so. On March 7, 1945, Piasecki flew the world's first successful tandem-rotor helicopter. Popularly known as the "Flying Banana," the PV-3 prototype was the forerunner of the modern tandem-rotor transport.

Piasecki also designed and personally flew America's second successful helicopter on April 11, 1943. He took this aircraft to Washington, D.C., for a demonstration flight on Oct. 20, 1943. In so doing, he became the first man to qualify with the Civil Aeronautics Administration (now FAA) as a helicopter pilot prior to receiving his fixed-wing pilot's license.

"When we landed at Washington National Airport, I first had to have an FAA test. A fellow by the name of Paul Young came out and gave me a test. He said, 'Well, what do you do when you fly a helicopter?' I said, 'Well, you do whatever you want.' He said, 'Well, what do you suggest a test to be?' I said, 'Well, I would fly in a square, keeping the nose pointed to the same compass direction, and I'd fly a square forward and backward into the position I started from.' He said 'O.K.' So I did it. He said 'OK, you now are a helicopter pilot!'"

Piasecki reflects upon the difficulty of those days trying to find a customer for his machine: "We took it to Washington, because we felt that the only way we could explain what a helicopter was, was to show it to people. In the Army and the Navy, everywhere we went, they said: 'Why do we need a helicopter, we did without it so far?' It was impossible to make them understand that there was something innovative enough to open a new field of unknown possibilities."

Frank Nicholas Piasecki was inducted into the Army Aviation Hall of Fame on June 6, 1974, at Fort Rucker. Now 80 years old, he lives in Haverford, Pa., and is still active with Piasecki Aircraft Corporation.

#### Stanley Hiller Jr.

Stanley Hiller Jr. founded the Hiller Aircraft Company in 1942, bringing together a shipyard welder, automobile mechanic and naval architect as the company's original organization. In December 1943 Hiller tested his first helicopter, tethered by cables in the stadium at the University of California, Berkeley. The first free flight of the XH-44 occurred on July 4, 1944. Hiller accomplished all of this by the age of 19!

Hiller's helicopter was the first efficient American helicopter with coaxial, counter-rotating rotors to fly successfully. It was also the first successful rotorcraft with a rigid-rotor system (the blades were not hinged at the hub), as well as the first to use rotor blades of allmetal construction.

He later remembered: "We restrained the aircraft improperly and while it lifted off the ground, it also rolled over on its side and there were almost four years of work pretty much down the drain. We had never seen a helicopter fly. There was no one I could talk to about helicopter flying because the nearest project was in Buffalo, N.Y. (Bell).

"This was the first helicopter to fly west of New York State and, because of that, the first accident took place; if we had been able to talk to someone, I would have had a better understanding of how to restrain the helicopter and what to look for to control it."

"Finally, after the rebuilding, we attached three cables on the three landing gears at a substantial distance," he added. "In doing so, we could make the aircraft lift up and down and yet have a freedom of motion permitting to feel its reactions. After a couple of weeks of these restrained flights, with some changes in the control systems, we released the cables and I was flying free."

Born on Nov. 15, 1924, in San Francisco, Hiller became interested in flying as a youth. "My interest in aviation came about in the 30s," he said. "My father had his own 1929 airplane; he liked to fly and taught me to fly at a very early age."

"In 1939 I was a young teenager attending an eastern school, and met Igor Sikorsky. At that time he was starting his development work on the VS-300, which is his really first successful helicopter. I carried that thought with me back to San Francisco when I returned there and later enrolled at U.C. Berkeley."

Stanley Hiller Jr. was inducted into the Army Aviation Hall of Fame on April 6, 1989, in Atlanta, Ga. Today, at age 75, Stanley Hiller remains the CEO of Hiller Investment Company and has been become known as the "Corporate Doctor," one of the nation's premier resuscitators of ailing corporations. He is also actively involved in a special project, the Hiller Museum of Northern California Aviation History, which is not far from his home in Atherton.

![](_page_28_Picture_13.jpeg)

#### Larry Bell and Arthur Young

At the beginning of World War II Lawrence "Larry" Bell had the foresight to hire a young Princeton graduate named Arthur Young. True, Igor Sikorsky had flown America's first successful helicopter in 1939, but Young was pursuing a design concept quite different from the three-bladed rotor systems designed by Sikorsky. Young had started with a two-bladed rotor, simply because he would have fewer blades to replace after his models crashed — and extensive model testing was his mode of operation!

Until that time the two-bladed, semi-rigid rotor system had proven unstable; all successful helicopters had used fully-articulated rotor systems with at least three blades. Young was the first to solve the stability problem by using a stabilizer bar. As Young said: "The bar was linked directly to the rotor so the rotor plane was controlled independently of the mast." The two-bladed rotor with stabilizer bar would become the distinctive characteristic of all early Bell helicopters.

When Arthur Young met Larry Bell on Sept. 3, 1941, Young actually flew one of his models off Bell's desk. "I took a fancy to him right away," recalls Young. "Larry was a marvelous person with a great sense of humor and he always knew what was going on." On Nov. 1, 1941, the two men signed a contract which gave Young a \$250,000 budget to build two prototypes like his model. Bell was given the patent rights.

Bart Kelley, a long-time Bell employee, remembers: "Larry Bell was the one with real enthusiasm, not only for this model, but also for Arthur Young and his direct approach. Young did not want to work in a big engineering department. ... He wanted to have a separate project team under his own control, far from the main plant of Bell Aircraft. And this Larry Bell did, over the fairly violent objections of other people within the Bell Company. On Nov. 24, 1941, we went up to Buffalo to join the company."

"But Model 30, its Bell number, or Genevieve, as it was christened when we first took it out December 1942, was a bit cumbersome. ... Since I was not a pilot and had never even flown an airplane, much less a helicopter, my first hops were brief and erratic, six inches or a foot at most. I did not fly it long. We were assigned a regular pilot, Floyd Carlson.

"We now began to encounter the problems of helicopters, problems that are not apparent until flights are attempted, and which had caused the demise of many pioneers before us. (I learned later that by 1943 there had been 343 helicopter companies that had failed.)

"To appreciate these problems, which cost us several crack-ups with the necessity of rebuilding and making design changes, it would be necessary to go into a lot of technical detail which would only tax the patience of the lay reader. Suffice to say, thanks to the flexibility of the Gardenville (ten miles east of Buffalo, New York) group, which could work in a coordinated way with a minimum of red tape, we were able to take these problems in our stride, so that by July 1943 we had Ship 1 flying well up to speeds in excess of 70 miles per hour. Then, due to an unsuitable landing gear, this ship was damaged in a power-off landing.

"Shortly after this Bob Stanley decided he should go out

![](_page_29_Picture_5.jpeg)

Arthur Young in free flight in Ship 1 (also known as the Model 30 and "Genevieve") in 1943. The first Bell machine had four long legs and no wheels in order to prevent the machine from inadvertently tipping over during initial hover testing. Young taught himself to fly while tethered to the ground in this machine. (Courtesy Bell Helicopter)

![](_page_29_Picture_7.jpeg)

to Gardenville to see what the helicopter was like. As the chief of Flight Test, Stanley felt it was his prerogative to fly the machine."

Robert Stanley had been with Igor Sikorsky back in 1939 when they were trying to solve the final configuration needed on the aft end of the first helicopter. Stanley relates with humor his first Bell flight: "My next Twirly Bird flight, which certainly was solo and was something of a cross-country flight (it threw me forty feet), occurred in January of 1943. In duration it was (discounting the bounces) of five minutes duration before the tomato went through the fan."

Movies still exist of the Stanley flight. He was unable to control the oscillations and was thrown from the helicopter through the turning rotor into a snow bank. Considering the helicopter rolled over on its side, Stanley was extremely fortunate in only suffering a broken arm! Lying on his back on a desk in the garage where the others had carried him, Stanley telephoned Larry Bell. "I'm sorry, but I've delayed your helicopter a little! " Ship 1 was rebuilt and on June 26, 1943, Carlson took it on its maiden flight around the meadow behind the garage, and by July it was exceeding speeds of 70 mph.

Larry Bell died on Oct. 20, 1956, at the age of 62 and is buried in Buffalo, N.Y. Ironically, this was also the same day that Floyd Carlson climbed into the XH-40 (the Huey prototype) and took it up for the first hovering flight. "At precisely the moment Floyd landed, we were notified that Larry had died," Kelley said. "It was, I felt, a fitting tribute to a man who had done so much to pioneer the helicopter." Larry Dale Bell was inducted into the Army Aviation Hall of Fame on Dec. 4, 1986, at Fort Rucker.

Arthur Middleton Young left Bell in October 1947, shortly after the Model 47 (the Army's OH-13 "Sioux") became the world's first commercial helicopter receiving the first Civil Aeronautic Authority commercial license on March 8, 1946. Young was determined to renew his pact with himself to return to philosophy, and he eventually established the Institute for the Study of Consciousness in Berkeley. Young died on May 30, 1995.

#### The Challenge

Sikorsky, Piasecki, Hiller, Bell and Young are all amazing men. Their history is as significant as their invention. Two – Piasecki and Hiller – are still alive, and all but Young are in the Army Aviation Hall of Fame. Some would argue that these founders of the American helicopter industry are of a vanishing breed. I disagree. Granted, today's scenarios are vastly different, yet man is still an inquisitive creature with free will and he is more technologically mature than ever.

So, there will be more amazing men in the 21st century, but perhaps they will be known more for specialized achievement in certain disciplines, like sensors, data processing, avionics and mission equipment packages. What is certain, however, is that they are still here, and the leadership opportunities in the American helicopter industry are beckoning them.

Editor Note — Army Aviation Hall of Fame Inductions are scheduled for Spring of 2001. Nominations are now open. Contact the AAAA National Office for more details — (203) 226-8184 ext. 123. The bibliography for this article is available upon request.

# Scholarship Foundation

#### BUILDING STRONG FUTURES

he ranks of the Army Aviation family are filled with heroes.

Many of these heroes' achievements are kept alive by having AAAA Perpetual Scholarships established in their names. Each year men like GEN Hamilton H. Howze, the father of air mobility, and Medal of Honor recipients like SFC Rodney J.T.Yano, live on through the award of their scholarships to the best and brightest young people in the world...our AAAA members and their sons, daughters, spouses and unmarried siblings.

There is only one way that these heroes have been and continue to be honored...through generous donations from heroes like you.

Giving opportunities exist at all levels from individual and the Combined Federal Campaign, to AAAA Chapter Matching and Corporate Matching grants. In addition, consider the AAAA MasterCard<sup>®</sup> credit card. MBNA America<sup>®</sup> Bank, the card's issuer, will make a contribution to the scholarship foundation—each time the card is issued or renewed, or used to make a purchase. Contact MBNA at (800) 523-7666 for more details.

You **can** make a difference. If each AAAA member charges just one tank of gas a month on this card, for example, we can have a tremendous impact on the lives of our future heroes, today's students.

For a complete list of current Perpetual Scholarships or to establish a new one contact the AAAA National Office (203) 226-8184 ext 125. Help us to recognize those upon whose shoulders we stand today.

![](_page_30_Picture_9.jpeg)

TO LEARN MORE ABOUT SCHOLARSHIP FUND OPPORTUNITIES, PLEASE CONTACT:

AAAA SCHOLARSHIP FOUNDATION, INC. 49 Richmondville Ave. Westport, CT 06880-2000 (203) 226-8184 Fax: (203) 222-9863 e-mail: aaaa@quad-a.org

# ARMYAVIATION mailbox

Share your opinion on matters of interest to the Army aviation community. The publisher reserves the right to edit letters for style, accuracy or space limitations. All letters must be signed and authors identified. The publisher will withhold the author's name upon request. The opinions expressed are those of the authors, and do not reflect the opinion of ARMY AVIATION Magazine. Send letters to AAAA MAILBOX, 49 Richmondville Avenue, Westport, CT 06880-2000, Tel: (203) 226-8184, FAX: (203) 222-9863, E-Mail: magazine@quad-a.org.

Dear Editor;

I have a correction to make to the lead reserve-component aviation article in the November issue. The AH-64 unit in Bosnia is not an Army National Guard unit. It is the Army Reserve's 8th Battalion, 229th Aviation Regiment, from Fort Knox, Ky., which took over the combat aviation mission in Bosnia in the summer of 1999. It is one of the two Army Reserve AH-64 battalions mentioned later in the article.

As an interesting sidelight, the battalion includes CWO 4 Gwen Schallow, who is the first U.S. Army woman (active or reserve component) to qualify as a pilot in command on an Apache. She deployed with her unit to Bosnia.

Lt. Col. Randy Pullen Office of the Chief, Army Reserve

#### Dear Editor;

In your November "Briefings" section you mentioned that Army Reserve CWO 4 Gwen Schallow had become the first female pilot in command of an AH-64 Apache helicopter. I think it is only proper to bring to your attention that CWO 4 Schallow is not the first female PIC of an AH-64 Apache.

From 1996 until 1998 I was commander of the Royal Netherlands Air Force's 301 Squadron. This unit ("the 301 Redskins") was the first AH-64 Apache squadron in the RNLAF. We were superbly trained by the 21st Cavalry Brigade at Fort Hood, Texas, in 1996.

Under my command I had two female pilots who served our country by flying the Apache. The first female pilot was Capt. van Meurs, who became PIC of an AH-64 in 1998. The second female pilot was 1st Lt. van Vuure, who became PIC in 1999. In 1999 1st Lt. van Vuure also became the first female instructor pilot on the AH-64 in the Netherlands. Both officers serve with distinction.

I cannot speak for the U.S. Army, but when it comes to women's participation in the Apache community the RNLAF holds the flag!

Lt. Col. Theo H. W. ten Haaf Royal Netherlands Air Force

#### arrivals/departures

#### COLONELS

Dekay, Gary E., 5741 NW 112th Ave, Miami, FL 33178.

McHale, Timothy P., 9025 Vernon View Drive, Alexandria, VA 22308.

#### LT. COLONELS

Casey, James M., ATTN: MPRI, Camp Doha, APO AE 09889.

Cox, Robert E. Jr, 5902 Mount Eagle Drive, Apt. 111, Alexandria, VA 22303. EM:coxemmett @aol.com

#### MAJORS

Ebner, Gregory R., P.O. Box 4602, Ann Arbor, MI 48106.

English, William T., 111 W. Horseshoe Road, Tallahassee, FL 32311.EM: english\_w@hotmail.com Gereski, David N., 12271 Charles Lacey Drive, Manassas, VA 20112.EM: david.gereski@ngbarmg.ngb.armv.mil

Hackle, D. Lee, 711 Deerwood Dr, Stockbridge, GA 30281.

Moreno, Kenneth G., 292 Shadyside Lane, Clarksville, TN 37043.EM: kgmoreno@hotmail.com Switzer, Michael R., 41901 Windward Way, Hollywood, MD 20636.

Traylor, John M., 420 Dare Road, Yorktown, VA 23692.EM: traylorj@eustis.army.mil

#### CAPTAINS

Altieri, Jayson A., 4033 Custer Drive, Fort Knox, KY 40121.EM: jumpmaster65@hotmail.com Cyrulik, John M., 6417 Old Scotts Court, Springfield, VA 22152.EM: john.cyrulik@hqda.army.mil Donnelly, Robert C., 21341 NE 23d, North Miami Beach, FL 33180.EM: ace64@aol.com Gill, Clair A., 2605 West Henderson Way, Clarksville, TN 37042.EM: clairgill@aol.com

#### **1ST LIEUTENANTS**

Bowman, Matthew J., 4602 Jana Drive, Killeen, TX 76542.EM: avgator@hotmail.com Hampton, Kimberly N., 118 Mark Avenue, Easley, SC 29642.EM: Hamptonk@aol.com

#### CW4S

Morris, Steven A., 127th Base, CMR 477, Box 2074, APO AE 09165.EM:

127asbaso@asb127hq.1ad.army.mil Seale, Noel C., 109 Chapelwood Drive, Enterprise, AL 36330.

Trexler, Edward B., 186 Raspberry Way, Madison, AL 35757.EM: trexlereb@pa-arng.ngb.army.mil

#### WO1S

Martin, Virgil G., A 2/52 Avn Regt, Unit 15210, Box 114, APO AP 96271.

Stanley, Marc T., 7215-B Manila Road, Fort Carson, CO 80913.EM: mntstan@hotmail.com Zavitz, Pete A., CMR #3, Box 16102, Fort Rucker, AL

36362.

#### SERGEANTS

Osberg, Justin W. SSG, 78 South Stonington Drive, Palatine, IL 60067. Phillips, Robert D. SGT, 102 Walnut Drive, Enterprise, AL 36330.

#### SPECIALISTS

Gilpin, Angie SPC, 1486 12th Armored Div Rd., #123, Fort Knox, KY 40121.EM: Sniper003@hotmail.com

#### CIVILIAN

Ephraim, Piet, Smiths Industries Aero., 3290 Patterson Ave. SE, Grand Rapids, MI 49512.EM: ephraim\_piet@si.com Woodruff, Walter W., 405 Almeria Court, Winter Springs, FL 32708. Young, William L., 130 Morning Mist Drive, Huntsville,

AL 35811.EM:

william.young@peoavn.redstone.army.mil

#### **RETIRED/OTHER**

Accinelli, Steven R. LTC, 3007 Huntington Drive, Dubuque, IA 52001.EM: accinellmt@aol.com Brophy, William S. COL, 301 Snowy Owl Lane, Fairbanks, AK 99712. Nakazawa, Nobue Captain, Room 7-406, Fujimi-cho, Utunomiya-shi, Tochigi Japan, 321-0146. Schuster, Michael W. LTC, 2059 Lake Park Drive, Apt. T, Smyra, GA 30080.EM: mwschust@doas.state.ga.us Weger, James E. LTC, 15602 Heathercroft Drive, Chesterfield, MO 35898.EM: jweger@memc.com Wickizer, Karl A. LTC, Rolls-Royce Allison, 1766 Timber Heights, Indianapolis, IN 46280.EM: karl.wickizer@allison.com

> The AAAA members listed above have recently informed us of their new addresses.

# AAAA NEWS

#### 2000: Year of Health Care Equity

More than ever before, the legislative planets seem to be aligning in a way that offers a real chance for the second session of the 106th Congress to substantively address a range of health care equity and delivery problems that have plagued the active, reserve and retired communities for decades.

Several signs lead us to be optimistic despite so many previous disappointments:

First, legislators' awareness and sensitivity is increasing. After years of unrelenting grassroots educational efforts, the lack of military health coverage for Medicare-eligibles is no longer a secret, and more and more legislators support finding a fix.

H.R. 2966, Rep. Ronnie Shows' (D-MS) "Keep Our Promises to America's Military Retirees Act," illustrates this case, picking up 202 cosponsors in only a few months.

Second, it's an election year, and Congress won't want to retreat from initiatives already under way that potentially address the lifetime health-care commitment. Key committee leaders have endorsed a variety of demonstration projects to explore ways to restore health coverage for older beneficiaries.

One or more of these concepts may yet fall by the wayside, but it will be a tall task for the naysayers to derail all of them.

Finally, Pentagon and Congressional leaders are making health care a major issue for 2000. Fresh from flexing their leadership clout on active-duty pay and retirement issues last year, the joint chiefs of staff now have assigned top readiness priority to upgrading health care for active and retired members, including Medicare-eligibles. A leadership task force, including the undersecretary of defense (personnel and readiness) and the vice chiefs of staff from all services, has been convened to recommend needed action. Senate Majority Leader Trent Lott (R-MS) has publicly endorsed putting billions of dollars a year toward fixing health-care shortfalls, both for current service members and retirees. Senate Armed Services Committee member and presidential candidate John McCain (R-AZ) pledged to introduce a major new health-care initiative soon after Congress returned in late January.

In late January Representatives from The Military Coalition met with staffers from Lott's and McCain's offices, from Shows' office, and the Senate Armed Services Committee staff to discuss health care "game plan" possibilities. The issues addressed included extending prescription drug coverage to Medicareeligibles, expanding Medicare subvention and FEHBP-65 nationwide, and upgrading the TRICARE system to make it responsive to active-duty and retiree needs. A similar meeting is scheduled with House National Security Committee staff members.

Senate leaders expect to introduce a major military health-care bill early in the 2000 session and bring it to the Senate floor for an early vote, as they did with the military pay and retirement bill (S. 4) last year. House leaders are also staffing legislative options, but House plans are less clear at this point. If the process follows the pattern of S. 4 from last year, as Senate leaders expect, the Senate action will set the stage for inclusion of a series of health care initiatives in the FY2001 Defense Authorization Act.

#### Defense Secretary Seeks Housing Allowance, Health Care Improvements

In a recent speech Secretary of Defense William Cohen announced he would recommend major budget increases to improve housing allowances for active-duty members and health care for active and retired personnel.

The current formula for computing housing allowance rates at each U.S. location starts with the median cost of local housing for each grade, then reduces those rates by an amount approximating 19 percent of the national median housing cost for each grade. Originally, Congress intended to limit this housing allowance out-of-pocket "absorption" to 15 percent of the national median cost, but funding shortfalls over the years have capped allowances at rates below the legislative intent.

Congress provided extra money to reduce the shortfall in 2000, but there is still some way to go.

![](_page_32_Picture_15.jpeg)

Cohen's plan calls for a revamping of the housing allowance philosophy and eventual elimination of the "absorption" concept. For fiscal year 2001 it would seek funding to the original 15 percent absorption target, and then phase in further increases to provide allowances that fully local cover median housing costs for each grade by FY 2005.

#### TMC Kicks Off Health Care Equity Mailgram Campaign

The Military Coalition sees 2000 as the year for action on our single biggest legislative goal: health-care equity for Medicare-eligible members of the uniformed services community.

Once again, we are asking for your help to deluge Congress with letters, phone calls and e-mails in support of this goal. TMC member, TROA's website already identifies several key health-care equity bills, notably H.R. 2966, the "Keep Our Promise to America's Military Retirees Act." While there are separate bills that address Medicare subvention Shows' H.R. 2966 is the only one introduced so far that would authorize Medicare-eligibles a choice of continuing TRICARE coverage after age 65 or enrolling in FEHBP. For retirees who entered service before June 7, 1956, H.R. 2966 would provide this coverage without charge to the retiree.

TMC and TROA are sponsoring a Western Union message campaign to provide members a quick, easy and inexpensive way to send the right message to their legislators. For members who have already written, called or emailed their legislators, this offers an additional vehicle to help ensure the government keeps its promises to uniformed services retirees - by using the Health Care Equity Hot Line to send mailgrams urging your two U.S. senators and your U.S. representative to take immediate action on health care equity legislation.

At present, no broad health care equity bill has been introduced in the Senate, but two or three bills are expected to be introduced shortly. Senate Armed Services Committee leaders also expect to seek Senate approval of a major health care bill (provisions to be determined) early in the year.

Until any such bills are introduced, the TMC Western Union campaign will send "generic" messages to all senators, bringing H.R. 2966 to their attention and urging their support for enactment of broad legislation to achieve the long-standing health care equity goals of TMC and TROA: nationwide implementation of TRICARE eligibility/Medicare subvention and FEHBP-65, with options for prescription drug coverage for Medicare-eligibles.

#### Special Compensation for Severely Disabled Retirees Update

The Department of Veterans Affairs believes it has found ways to retrieve the data the Department of Defense needs to centrally identify and pay nearly all retirees who qualify for the newly authorized special compensation for severely disabled retirees, without making them fill out an application form.

To be eligible, retirees must have completed at least 20 years of full-time uniformed service, received a nondisability retirement from their parent service, and received a disability rating of 70 percent or higher from the VA within four years after leaving service. Qualifying retirees will receive payments of \$100 to \$300 per month, depending on the highest disability rating attained within four years after retiring.

Defense officials had been hoping to be able to start paying the new compensation in the February 1 check, and this may still be possible for some rel-

# A L E R T ACT NOW TO END HEALTH CARE DISCRIMINATION!

### Tell Congress to Keep Health Care Promises Call (800) 423-8440

Over the last several years, Congress has become increasingly sensitive to the government's broken health care promises to Medicareeligible uniformed services beneficiaries — enacting pilot or test programs authorizing enrollment of Medicare-eligible uniformed services beneficiaries in TRICARE Senior Prime (Medicare subvention), Department of Defense retail and mail-order pharmacy programs, and the Federal Employees Health Benefits Program (FEHBP-65).

But 1,000 World War II veterans die every day, so the need for a "final fix" is increasingly pressing. Both defense and congressional leaders have expressed their hopes to make 2000 the "year of military health care." But we must make it clear that any health care fix has to include restoration of equity for Medicare-eligibles.

You can help ensure the government keeps its promises to uniformed services retirees by using the Health Care Equity Hot Line to send messages urging your two U.S. senators and your U.S. representative to take immediate action on health care equity legislation. Here's how:

Dial Western Union's toll-free Health Care Equity Hot Line number, (800) 423-8440, which is open seven days a week, 24 hours a day. If you have Internet access, you can send the same messages via Western Union's Web site (https://infonet.tsifax.com/hotline/hotline.asp).

Give the Western Union operator your full name, address, and ZIP code, plus your major credit card number and expiration date. Ask the operator to send The Military Coalition's pre-tailored health care equity messages to your elected officials. You don't need to know their names or addresses; Western Union will automatically send your messages to the right legislators.

Three Western Union messages will be hand-delivered the following day to your two U.S. senators and your U.S. representative.

You will be billed \$6.75 on your Visa, MasterCard, or American Express card (no other billing options are available).

If you are an overseas member or without access to the toll-free number, you can send a letter with your full name and voting address, plus your Visa, MasterCard, or American Express card

#### Dear Representative:

1 am writing to ask you to cosponsor H.R. 2966, the Keep Our Promise to America's Military Retirees Act, a bill to restore health care equity for Medicare-eligible uniformed services retirees.

WESTERN

As late as 1993, service recruiting and retention literature promised "lifetime health care" for members who endured the extraordinary sacrifices inherent in 20-plus years in uniform. But most older retirees who fought in World War II, Korea, and Vietnam find themselves locked out of military health coverage upon attaining age 65. H.R. 2966 would fulfill the government's promises by authorizing them a choice of continuing military TRICARE coverage after age 65 or allowing them to enroll in the same Federal Employees Health Benefits Program (FEHBP) authorized for every other category of federal retiree. For those who entered service . before June 7, 1956 (the date the first reference to "space available" care for retirees was put into law), this coverage would be provided at no cost. Congress has approved demonstration programs to test various coverage options for Medicare-eligibles. But 1,000 World War II veterans die each day, and urgent action is needed now to allow all Medicare-eligibles access to military health care, DoD pharmacy programs, and FEHBP. Please cosponsor H.R. 2966 and support comprehensive health care

equity legislation to ensure our nation keeps its health care promises to those who sacrificed so much to protect its interests in hot and cold wars over so many decades.

- Sincerely,
- .

(Note: Message will be tailored based on your representative's cosponsorship status. Similar messages will go to both of your senators.)

number and expiration date to: Western Union Hot Line Services (Attn: Hot Line manager), P.O. Box 1037, McLean, VA 22101. If you have any problems with the service or your bill, call (800) 336-3337, ext. 6015, Monday through Friday, 9 a.m. to 5 p.m. ET.

# Health Care Equity HOT LINE (800) 423-8440 (cost is only \$6.75)

# AAAA NEWS

atively recent retirees. But it looks like a more realistic hope for most may be March 1. The first payment will include a lump sum payment for the period retroactive to Oct. 1, 1999, the date the new authority took effect. insurance program — the TRICARE Dental Program (TDP). This new "third combine the TRICARE Selected Reserve Dental Program (TSRDP) and the

#### Cold War Certificate

The FY 1998 National Defense Authorization Act authorized the award of the Cold War Recognition Certificate to all members of the armed forces and federal government civilian personnel who faithfully and honorably served the United States anytime during the Cold War era (Sept. 2, 1945 to Dec. 26, 1991).

Applications must be made by letter with supporting documentation. This documentation should include the recipient's name, Social Security number, military service number or foreign service number, and dates of service. The letter and documentation should be mailed to: Cold War Recognition, 4035 Ridge Top Road, Fairfax, VA 22030-7445

You may also fax the information to (800) 723-9262. For more details and a sample cover letter refer to the Cold War Certificate website at http://147.103.18.232.

#### Improved TRICARE Dental Program on the WAY

The TRICARE Management Activity (TMA) announced on January 12 the release of the Request for Proposals for offers on the world's largest dental

insurance program — the TRICARE Dental Program (TDP). This new "third generation" dental contract will be implemented on Feb. 1, 2001, and will combine the TRICARE Selected Reserve Dental Program (TSRDP) and the TRICARE Family Member Dental Plan (TFMDP). The TDP will provide improved dental coverage for active-duty family members and eligible reserve-component personnel (Active Reserve/Guard, Selected Reserve, Individual Ready Reserve) and their family members worldwide.

This new "third generation" TDP has evolved into an enhanced program that will employ efficient commercial practices to administer this vital quality-of-life benefit. A major improvement reduces the 24-month mandatory enrollment period, which previously barred some active duty family members and reserve-component personnel and their family members from enrolling in the current TFMDP. The TDP requires the sponsor to have 12 months of service remaining at the time of enrollment.

The new plan also permits Reservists and their family members to enroll in the TDP if the Reservist is called to active duty in support of a contingency operation for more than 30 days but less than 12 months.

Since most employer-based dental policies require the employee to pay full premium costs while on active duty, the TDP provides the activated Reservist and family members with a low cost, comprehensive dental program while on active duty. The Reservist also has the option of enrolling his/her family members in the TDP and not themselves.

At the Oct. 11, 1999, AAAA National Executive Board (NEB) Meeting in Washington, D.C., the membership committee reported that a review of the current AAAA membership dues structure had revealed that some classes of dues had not been raised in over 20 years. Specifically, a series of slides comparing the AAAA with like and similar organizations showed that AAAA was consistently among the lowest if not the outright lowest in each category. After considerable discussion centering on the appropriate amount to raise dues, the following dues structure was approved to take effect July 1, 2000.

Individual dues - Currently \$14 enlisted, \$21 all others, to be raised to ... \$15 enlisted, and \$26 other
 Life member Dues - Currently \$300 to be raised to ... \$480

 Industry Dues to be raised from \$300 if company does under \$10M with government, and \$600 if over \$10M with government to be raised to ... \$475 and \$975.

Beat the increase and join AAAA, re-up, or get a Life Membership NOW! The NEB also voted to formally review dues structure every two years from now on.

## 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.

Arnold, Aric N., 2LT Barner, Ross, MAJ Beatty, Jon, Mr. Beshel, Deborah J., Ms. Blanding, James E., SPC Bradford, Don C., WO1 Brooke, J. Lynton, COL Brown, Tommie C., Mr., Ret. Bullard, James H., SFC Bussell, Gene H., WO1 Carr, Joseph B., SPC Chen, Michael L., Mr. Childree, Curtis K., PFC Clark, Curtis W., WO1 Cohoon, Bryan K., 2LT Conger, Leo A., LTC Crownover, Jeffery T., WO1 Davis, Royal A., 1LT Daw, Dennis W., SPC Diggs, Ralph S., PV2 Duggins, Nicole E., SSG

Dupre, Albert L., WO1 Ely, Patrick D., SPC Erickson, Heather E., SPC Fauth, Jason A., CW2 Fellmer, Mark J., 2LT Fick, Brian M., SPC Folz, Michael L., SPC Fontanez, Victor, Jr., MAJ, Ret. Fowler, Tina, Ms. Garrido, Gaspar, SFC Gennette, Edwin E., WO1 Gibson, William E., 1SG Hanners, Christopher, SPC Helwig, Edward R., CW2 Heyward, Eric J., SSG Hill, William T., 2LT Hooker, Richard D., LTC Hutson, Michael F., 2LT Lacourara, James, SPC Lange, Randy J., SSG Ledford, Kristine A., 2LT

Lester, Christopher, SPC Levi, William E., PVT Lewis, Roland G., WO1 Logan, Jerry W., SSG Lozier, Jeremy P., SPC Martin, Kevin C., SPC Matthewson, Alphonso E., LTC McCabe, Patrick W., 1LT McCoy, Michael G., MAJ McKinnon, Jody L., CAPT Melendez, Pablo L, SGT Meskill, Jeffrey J., 1LT Moreno, Isaac C., SPC Mullins, Robert R., Mr. Murphy, Charles, CPT, Ret. Murphy, Robert L., WO1 Norton, Kenneth R., SGT Osterhoudt, Keith E., WO1 Owens, Donald K., LTC Padilla, Vivianne M., PFC Pastella, John, 2LT

Presley, Peter J., 1LT Quillen, Joey R., PV1 Quinlan, Kenneth J., CW2 Ray, Eric E., WO1 Reed, Anthony, CW2 Rosa, Samuel, SPC Santini, Gregory P., PFC Schade, Christopher, PFC Schaefer, Christopher, WO1 Sefiane, Aziz, SFC Sema, Alvaro V., SGM Severance, Mark C., Mr. Smith, Leon W., SGT Solomon, Jeffrey B., WO1 Stanton, Dwayne T., 1LT Stauffer, Arnold F., 2LT Tate, Robert T., 1LT Waldbeiser, Garrett J., SPC Wiley, Christopher, WO1 Williams, Ryan, PFC Young, Troy M., SPC

# AAAA NEWS

### Phantom Corps Chapter

"Hot Wings" was the name given to the AAAA team participating in the second annual Killeen-area Relay for Life organized by the American Cancer Society. The team, 18 members of the Phantom Corps Chapter (Fort Hood and Central Texas), raised more than \$2,200 and walked or ran a total of 450 miles to help fight cancer in support of the 18 hour event. Although there were no speed records established, everyone had a great time supporting an important cause.

![](_page_35_Picture_3.jpeg)

The Phantom Corps Chapter also hosted its annual AAAA Golf Tournament, which drew more than 100 golfers. The tournament coordinated by Capt. Jim Delaney, Mr. Mike Digennaro and Mr. Dave Boyken — raised funds to support chapter activities and provided a welcome opportunity for members to get together for some fun and camaraderie. Although no one won the car offered for a hole-in-one, Chapter President Col. Bob Harmon presented awards and prizes to the winning teams.

The chapter held its fourth quarter general membership meeting in September, hosted by the 21st Cavalry Brigade and Ms. Gerri Shelp, the chapter's events chairperson. Maj. Mike McMahon provided a briefing about CHOICE, a collective training instrumentation system

used to support AH-64D Longbow Apache, OH-58D Kiowa Warrior and other collective-training activities. After the briefing, other members of the brigade demonstrated the equipment and techniques used to support the brigade's AH-64D training program. The 1st Cavalry Division's 2d Battalion, 227th Aviation, set the standard in unit attendance for the meeting as the battalion commander, Lt. Col. Don McWillie, led the way.

### Lindbergh Chapter

Retiring CWO 3 John Rainey received the Bronze Award of AAAA's Order of St. Michael during a recent ceremony at the Missouri National Guard's Aviation Classification and Repair Depot. Present at the ceremony were (*left to right*) Col. Edward C. Gruetzemacher, (AVCRAD commander); Mr. Rainey; SFC Terry Batey, C-23 flight engineer; CWO 5 John Reed, the AVCRAD's C-23 chief pilot; SFC John Terrey, C-23 flight engineer; and CWO 2 Jimmie Williams, C-23 pilot.

![](_page_35_Picture_9.jpeg)

![](_page_35_Picture_10.jpeg)

### Central Florida Chapter

Sam Richards (*left*), president of AAAA's Central Florida Chapter, presents donated toys to Marine Corps Reserve SSgt. Kempt for distribution through the USMC Toys for Tots program. The toys were purchased with funds the Central Florida Chapter raised during its December 1999 social, a monthly event normally used to help finance the chapter's scholarship fund.

#### **NEW MEMBERS**

AIR ASSAULT CHAPTER FORT CAMPBELL, KY CSM Daniel L. Mace

ALOHA CHAPTER HONOLULU, HI PFC Rosemary A. Armijo SGT Thomas E. Barber SPC Eric Burger SPC Jonathon Callahan SPC Anthony J. Digerolamo PV2 David Forster SFC Jeffrey S. Funk PV2 Fatima D. Gales SPC Joseph M. Lovotti SGT Mark Macfarlane SPC Brian McDonald SPC Wendell McRae PFC Nickolas M. Phillps SPC Larry D. Ratliff PFC Benjamin D. Schneider PFC Daniel Taitano

#### AVIATION CENTER CHAPTER FORT RUCKER, AL

WO1 Lois E. Bass WO1 Michael E. Baujan, Jr. WO1 Shawn R. Benjamin LTC Antonio Bellelli WO1 Michael T. Blaise WO1 Freddie L. Briggs Jr. WO1 William M. Clarke III WO1 Boyd W. C. Crawford WO1 Lawrence E. Eddingfield 2LT Jonathan G. Elias WO1 Gregory S. Ellis WO1 Curtis D. Foster 2LT Sonya L. Hora 2LT Eric Hren WO1 Trent M. Johnson 2LT Neil J. Julian WO1 Kevin D. Keister 2LT Connie M. Lane 1LT Brady W. Lemmon 2LT Timothy J. Lewis 1LT Noma C. Martini 2LT Jordan H. Mastroianni **2LT Timothy Mitchell** 2LT Michael C. Morgan WO1 James J. Morris **2LT Brian Musick** CW3 Larry D. Pittman 2LT Janice L. Price **CPT** Matthew Reimold WO1 Jacob M. Roe III 2LT Khirsten T. Schwenn 2LT Mashell J. Smith 2LT Michael C. Stull WO1 Mark A. Swiney 2LT Conrad J. vonSydow

BIG RED ONE CHAPTER ANSBACH, GERMANY CPT Timothy J. Vinson

BLACK KNIGHTS CHAPTER WEST POINT, NY CDT Daniel G. Buis CDT Jennifer T. Walker CDT Andrew G. Wilson-Rutan

CENTRAL FLORIDA CHAPTER ORLANDO, FL Ms. Cynthia K. Adams Mr. Errol J. Bannister Mr. Dennis W. Bray

CORPUS CHRISTI CHAPTER

CORPUS CHRISTI, TX Mr. Kenn H. Albers Mr. Larry M. Maxwell Mr. Randy Smith

#### INDIANTOWN GAP CHAPTER INDIANTOWN GAP, PA LTC Attilio G. Negro

MACARTHUR CHAPTER NEW YORK/LONG ISLAND AREA, NY MAJ Allen L. Hershman

MINUTEMAN CHAPTER WESTOVER AFB, MA MAJ David E. Hassen, Ret.

> MONMOUTH CHAPTER FORT MONMOUTH, NJ

Mr. Heinz Buell Mr. John Byrnes MAJ John DiNapoi Mr. Gerardo J. Melendez Ms. Louisa M. Rott

#### MORNING CALM CHAPTER SEOUL, KOREA

SPC Anthony D. Adkison PFC Ricardo Agostini Mr. Bum Soo Ahn Mr. Dong Soo Ahn Mr. Jong Kook Ahn Mr. Jong Man Ahn PFC Jaron L. Alderman SGT Mario A. Alfonzo SPC Arthur L. Allen SPC Raul M. Alvarez SPC Ricardo Amarohernandez SPC Billy R. Anderson SGT Simon R. Anderson SPC Ignacio G. Angel PFC Daryl M. Antonio PFC Danielle M. Applegate PFC Jorge A. Armenierovales PFC Sean E. Ash PFC Daniel J. Ashby SGT James L. Baber SPC Jennifer Barber SGT Billy J. Barbour SPC Timothy C. Barcus SPC Shai M. Bardfield PFC Michael A. Barnes SSG Michael Bays SPC Woodson J. Beall PFC Pamela D. Beasley SGT Leigh Bendel SGT Todd A. Bernard PFC Aaron K. Berry SPC Michael C. Bibbs SGT Gerald L. Bickett SGT Orlando Billups PV2 Matthew E. Blake SPC Brian D. Blanchette SGT Sabrina K. Bligen PFC Christine Ann Boggs SPC Michael E. Boggs SPC Terrance L. Bolger SGT Jason N. Bouchard SPC Mark E. Bowen SGT Nathaniel J. Bowers SSG Keith A. Boyer SGT Ricky E. Boysen SPC Dayna Bray CPL Thomas R. Breault SPC Aaron Brents PFC Jeffery L. Brooks SGT Jerel E. Brooks

PFC Robert R. Broughton SSG Edward M. Broussard PFC Eric M. Brown SPC Joshua Brown SPC Talana S. Brown SGT Terrance A. Brown PV2 Christopher M. Brunson PFC Carlos D. Bryant SGT Michael R. Bryant SPC Jon C. Buford SPC James Burgess SPC Jeremiah A. Burgess PFC Stephen J. Burke SPC Lisabel Burton SPC Michael D. Burton SGT Emanuel Butler PFC Brandon L. Buttram SPC Andrei H. Byfield SGT Lacey A. Cabble SGT Noel D. Cabias SGT Bruce E. Cain SPC Bryan J. Calpy SPC Jeffery J. Calvani SGT Jason Cambell PFC Shawn P. Cambell SGT Juan Campos SSG Perfecro A. Capinia SPC Benjamin E. Carr SGT Alan M. Carroll SSG Richard D. Carson SGT Vidal Carvajal Mr. Jin Ho Chang SGT Demetrius E. Chatz SPC Michael A. Chers SPC Aldo R. Chiaramonti SPC Robert J. Chiomento II Mr. Bong Won Cho Mr. Jung Won Cho Mr. Soo Hyun Cho PFC Sung Woo Cho Mr. Yong Nam Cho Mr. Bae Jin Choi Mr. Bok Kyun Choi Mr. Wan Young Choi PV2 Bong Wan Chun Mr. Chang Young Chung Mr. Seung Hwa Chung PV2 Derik S. Civilla PFC Mark A. Claudio SPC David P. Clemons SPC Tanzania D. Clomam PFC Jon D. Clough SGT Christopher M. Coates PFC Ronald J. Coleman PV2 Jason R. Conaway SPC Tracy E. Condon PV2 Adam E. Conter PFC Felicia A. Cooper SGT Cris A. Corder SPC Irma M. Coronado **PFC Michael Cortez** SPC Marlin A. Cothren SPC Jason L. Cousin SGT Eric Cozing SGT Jayson L. Crawley PV1 Terrance E. Crosland SGT Richard E. Dady SPC John D. Daley PFC David R. Daniel SGT Andrea Davis SGT Christopher Davis SGT Mark Davis SPC Tyson D. Davis SGT John Dawson SGT Torino P. Deguzman SPC George Mitchell Deleary SPC Jonathan N. Demers SGT Randy L. Dibble

SPC Randie Lee Dixon SPC Darrell W. Driffill SPC Christopher E. Dryden PFC Dominik Dziembowski SPC Jessie B. Earwood SSG Lotonya Eaton PFC Jeremy B. Edele SGT John E. Edgling PV2 Timothy L. Emerson SPC Douglas W. Eplin SGT Tonesia P. Ester PV2 Michael T. Evanskovich SGT David E. Everett SPC Clinton E. Ezell PV2 Albert W. Fannin SPC Alexander S. Farrell SPC Charles E. Fellers SPC Nicolas K. Fennell SPC Carisma Fields SGT Charles F. Fioccoprile SGT Beverly M. Flores SPC Dedrick M. Fondren SPC Jeremy Dale Foshee SGT Tyrone S. Frare SGT Deon L. Freeman SSG Thomas S. Freeman PV2 Joshua Frias CPL Hal J. Friday SPC Everett L. Frisbey SPC Dallel Shelton Fritts SGT Katherine E. Fry PFC Jennifer J. Funkhouser SGT Herbert L. Futch SSG Daniel Gaddis SGT Sergio Galindo SPC John J. Gallagher PV2 Jose A. Garcia SPC Robert Garcia SGT Beau J. Gardiner SPC Jon M. Gardner SGT Shawn R. Garnuette SPC Benjamin B. Garza PFC Thomas L. Geiger SPC Dane D. George SGT Gerri C. Geren SSG Glenn W. Gibson SGT Kamron L. Githens SGT Alan R. Goad SPC Edward G. Goins SGT Carlos Gonzalez PFC Daniel Gonzales SPC Rachel A. Gonzales PFC Sandra C. Gonzalez-Castro CPL Warren Richard Goodwin SPC Christopher Gouldthorp SPC Autumn R. Grady SPC Ryan P. Grady SPC Alexjandro R. Graham PV2 Chad C. Graham PFC David A. Granados SPC Kathryn J. Graves PV2 Andre M. Green PFC Craig E. Green SGT David N. Green PFC Jesse Green PFC Shonyna Green SGT Steven R. Gregory PFC Frank Grogan SGT Jose A. Guerra SPC Hiram E. Gutierrez Mr. Dong Soo Hahn SPC Michael Lee Halbach SGT David A. Haleman SPC Scott T. Halfhill SPC Jennifer R. Halloway Mr. Hwa Soon Ham PFC Terrance D. Ham Mr. Young Pil Ham

PV2 Jennifer M. Hammond Mr. Kyung Won Han Mr. Sang Woon Han SSG Richard E. Harbor SPC Derek E. Harkins SPC Andrew C. Harrison PV2 Ronald T. Harrison SSG Peter Hart PV2 James R. Hendrickson PFC Shaun A. Herbert SPC Harold Herglotz SPC Michael B. Hernandez SPC Patrick J. Hill SPC Zuwena Hill SPC Stephen L. Hinkley SPC Dieter N. Hirsch SPC Shawna T. Hogans SPC Derrick M. Holland Mr. Kim Pyo Hong PV2 Brandon M. Hosford PFC Corey L. Houston PV2 Hakeem W. Houston SGT Jamie D. Howard SGT Perry C. Hoyle SGT Joel Huante SPC Angela M. Huber SPC Kurt E. Huber SPC Freddie Hudson PFC Nicholas D. Huffman **CPL Keun Huh** Mr. Kyung Ja Huh PFC W S Huh PV2 Lawrence A. Hunsaker PV2 Mick D. Hunter Mr. Gwang Yul Hwang PV2 Jonathan D. Isaman SGT Mario M. Ivankovich SGT Saidu Jabbie PFC Raul K. Jaenz SSG Alan Jalbert PV2 Christopher J. James SGT Courtney R. James Mr. Jae Hyun Jang SSG Jose M. Jaramillo SSG Michael K. Jeffries SPC Donell Jenkins Jr. CPL Jung Jo SGT Ryan E. Jobb SFC Evicka J. Johnson PV2 Kevin L. Johnson SPC Magen L. Johnson SPC Shaniel M. Johnson SGT Trina J. Johnson PEC William G. Johnson PV2 Willie J. Johnson SGT David G. Jones SPC Scott K. Jones PFC Terrance R. Jones SPC Thomas Z. Jones PV2 David J. Juarez PFC Sang K. Jung Mr. Kil Won Kang Mr. Young Shik Kang PFC Joshua E. Kelley SGT James W. Kelly PFC Sarah J. Kerrigan PV2 Steven B. Keslar PFC Jason A. Kidd Mr. Chong Duck Kim Mr. Chong Wook Kim SPC Dae K. Kim Mr. Dong Hyun Kim Mr. Ga Hoon Kim Mr. Hee Sun Kim Mr. Hye Ryoung Kim Mr. Hyung Man Kim Mr. Joo Dong Kim Mr. Jung Ja Kim

**FEBRUARY 29, 2000** 

# AAAA NEWS

#### NEW MEMBERS cont'd.

Mr. Jung Soo Kim Mr. Mi Young Kim Mr. Pal Sun Kim Mr. Sa Young Kim Mr. Sang Cheon Kim Mr. Seo Kim Mr. Su Man Kim PFC Suejea Y. Kim Mr. Tae Ju Kim Mr. Yong Kil Kim Mr. Yong Woo Kim PFC Yoon Joon Kim Mr. Young Ahn Kim SPC Darrell W. King PFC James B. King SGT Norman J. King PEC William E. Kissel SPC Joshua A. Kolkow PFC Karl J. Kostecki PFC David E. Koslowski PFC Oh Seung Kwon PV2 Christina M. Labrie SPC Kenneth D. Lamm PEC Brian L Landrum SPC Daniel T Laswell SGT James R. Laverty SPC Ernie N. Lazos PV2 Benjamin D. Lear SPC Robert V. Lear SFC Albert Lee Mr. Bang Bi Lee Mr. Chong Dae Lee SGT Gary H. Lee **PVTHTLee** Mr. Hyun Sook Lee PFC Jae Young Lee PEC Ju Sok Lee Mr. Jung Ki Lee Mr. Jung Soon Lee Mr. Kyung Taek Lee Mr. So Won Lee Mr. Woo Young Lee Mr. You Kyung Lee SGT Darrel Lewis SPC Richard E. Lewis Mr. Kun Sung Lim SGT Gregory D. Lincoln PFC David W. Long SPC Michael D. Long PFC Aaron Lopez PV2 Amanda L. Loveless SGT John V. Lowe PV2 Timothy J. Lucinski SFC Carlton E. Lumbley SPC Louis A. Lund SPC Justin J. Lundy SPC Tracy E. Mabes SPC Paul J. Mann SGT Robert G. Marbra, Jr. SGT Shelton B. Marshall SPC Paul M. Marti SPC Crystal L. Martinez SPC Daniel Martin PV2 Gorje N. Martinez PV2 Dewayne Maxey PFC William L. Mayer PFC Medard Maynard SPC Pamela McCallum SPC Michael B. McCarty PFC Stephen L. McCarty SPC Scott E. McClure PFC Stephen E. McClure SGT Dennis R. McCoy PV2 Jason L. McCraw SGT Brian McGrady SPC Darin W. McMahon SSG Glen A. Meeker SPC Daniel J. Mejia

SGT Ralph P. Mellott SGT Christepher Messerue SPC John W. Miller SPC Terry A. Miller SPC Aaron Minor SPC Vargas N. Monge SPC Cordale T. Montgomery Mr. Dae Won Moon Mr. Man Soo Moon Mr. Yong Jun Moon PFC Christopher L. Moore PFC Clay Moore PV2 Michael Moore SPC Michael A. Moore PFC Omar K. Moore SPC Willie F. Moreland SGT Robert F. Morgan SGT Timothy L. Morgan PFC Eric M. Morin SGT Thomas L. Morse SPC Jason J. Muller SGT Robert W. Muller Mr. Sang Hyun Na **PVT Joseph Nash** SPC James Nevers SPC Michael D. Newport SPC Robert A. Newton SGT Kineh S. Ngadija SPC Huy Q. Nguyen SGT Michael S. Nixon Mr. Joo Chul Noh SSG Michael S. Nordhues SPC Jeramy M. Norris SPC Brandon J. Nunn SPC Javier A. Ocasio SPC Yoon S. Oh PFC Graham M. Ohea SSG Carl D. Olson SGT Peter F. Operacz SPC Luis A. Ortiz SGT Michael D. Owens Mr. Sung Ki Paik SPC Brady R. Palmer PFC Natasha L. Papile SPC Cecil T. Park Mr. Chun Hyo Park PFC Da I. Park Mr. Hei Bum Park PFC Joo Un Park Mr. Kyung Nam Park SGT Sei H. Park Mr. Tae Jun Park Mr. Ui Hoon Park Mr. Un Mi Park Mr. Young Sook Park SPC Christopher Parker PFC Diarra N. Parker PFC Robert L. Parks SGT Randall P. Parsons SGT Terrell Patterson SPC Negron J. Pedraza SGT Cyrus J. Pelton PFC Timojohannes V. Peltonen SGT Richard Pena PFC Antoinette M. Penny PFC Scott Petrik SPC Timothy J. Pfaff SPC Cherrie-Lee P. Phillip **PFC Robert Phillips** SPC Caraballo J. Pinela SGT Jaime J. Planelles PFC Johnnie D. Plunkett SPC Paula A. Polaski SPC Jason R. Polski SPC Jeremy B. Porter SPC Aaron R. Potter PV1 Randy J. Povk PFC Eric Powers

PFC Ronald R. Pressler SSG Ray Pruitt SGT Kelly P. Pugh SPC Laura B. Punturi SGT Mickey Quinn PFC Shane C. Rabbiosi PFC Eric D. Radford SSG Michael Rakestraw SPC Andr Ramirez-Magallanes SPC Bevon J. Randolph PFC Carol Lynn Ray PFC Kevin G. Raymond PV1 Charles L. Reese SPC James J. Reese SPC Bryan T. Reid PFC Fredrick D. Reid SPC Alexander M. Remrey PFC Kristopher M. Renno PFC Edgardo Renta-Ortiz SPC Jon Eric Reynolds Mr. Hae Won Rhee Mr. Jae Won Rhee Mr. Won Rhee SGT Darlene W. Ridgeway SSG Jose E. Rivera SPC Yanire S. Rivera-Torrez **PV1 Iterio Robbins** SPC Christine E. Roberts CPL John A. Roberts SGT Robert Roberts SPC Sonja K. Robertson PV2 Douglas D. Robinson SSG Fred Robins PFC Timothy J. Robinson SPC Donald P. Rodger PFC Daniel J. Rodi SGT Moreno E. Rodriguez PFC Alexander Roman SPC Jorge L. Roman SPC Francine O. Roper SPC Elias Rosado SGT Michael J. Rosado SPC Julio Rosario SPC Sandra Rosero-Rivera PFC Christopher Rudolph SGT George E. Russell SGT Joel L. Sambo SSG Jame P. Sampson SGT James D. Sanchez SPC Gary W. Sanders SGT David H. Sant SGT Jeremy Scheehl SPC Scott T. Schempp SGT David G. Schilling PFC Jeffrey Schutrop Mr. Hae Sung Seo SPC Daniel E. Sharts SGT Darren Shearer PFC Lamont Shelby Mr. Dae Sup Shim Mr. Jae II Shim Mr. Joo Hun Shin Mr. Kyung Ai Shin PFC Kevin Shoulders PFC Michael J. Shutka II PV2 Nathan Silvey PFC Tamisha Simms SPC Robert L. Sites SPC William D. Sizemore PFC Joshua R. Slater PFC Christopher A. Slaughter PV2 Clinton S. Sloan SFC Dixon G. Slueue SFC Timothy L. Smalley SGT Gerald E. Smith SGT Jason S. Smith SGT John Paul Smith SPC Rulannon G. Smith

SPC Sarah A. Smith SPC Tasha Smith SSG Wayne Smith SPC Bradley G. Snipes SPC Krzysztof Sobiesiak Mr. Doh Uhn Sohn Mr. Jae Yul Sohn Mr. Won Suk Sohn Mr. You Ree Sohn Mr. Jung Sik Son Mr. Jung Hee Song PFC Bradley D. Sparks SGT Daniel S. Speer PV2 James A. Spencer SGT Anthony W. Spinello SGT Donatian P. Stephan SPC George B. Stetson SGT Richard W. Stickels SPC Joshua J. Stieber SPC James Stinson SSG Timothy M. Stout SPC Stephen K. Straw SGT Garland Sturgell Mr. Joon Mo Suh Mr. Chun Ja Sung SFC Jeffery A. Sutherland PV2 Joseph L. Swanson SPC Gregory C. Taets SPC Jeff H. Talley SPC Brian G. Taylor SGT David S. Taylor SGT Richard L. Taylor SFC Alan W. Templeton SSG Clarence R. Thomas PV2 Kevin L. Thomas PV2 Patrick J. Thomas SPC Phillip B. Thomas SGT Garrett J. Thurman PFC Benjami P. Tiapula PV2 Brian J. Toliver SPC Mattew R. Toner PFC John K. Toney PV2 Wayne A. Toombs SGT Gordon D. Tunnell Mr. Do Hee Um PFC Tae Geun Um SSG Henrietta L. Upton SGT Scott M. Vachon PV2 Amar K. Valentine PFC Christopher J. Vantassel PFC Richard D. Vantassel SGT Eric T. Victorino SPC Duane K. Viedt SPC Michael A. Vigil SPC Edmond R. Viloria SPC Vincent R. Viloria PV2 Jessica Anne Wade SSG Shylonda C. Wallace SPC James M. Walsh SPC Thomas H. Ward SGT Joseph B. Warren II PFC Wyman Washington SPC Keith T. Watkins SPC Brandon Wayne SPC Gerald L. Waytasher SPC Rodney W. Weiser PV2 Nicholas D, Welch SPC Jon H. Whittaker SPC Earl M. Wicks PFC Christy L. Wilcamp PFC Jenna Wilinski SPC Bryant Williams SGT Dometrius L. Williams SPC Jared T. Williams SGT Keith Williams PV2 Lakendrick D. Williams SPC Lane V. Williams PFC Terry D. Williams

PFC Tiesha E. Williams SGT Gregory S. Wilson SPC Thelma S. Wilson PFC Billy Jay M. Wolford PFC Robert E. Wood PFC Robert E. Wood PFC Robert J. Wortman Mr. Tae Young Yanny Mr. Chun Kwang Yoo Mr. Suk Young Yoon SGT Loren York Mr. In Sun You SPC Robert D. Young Jr. PFC Jason A. Zerck

NORTH TEXAS CHAPTER DALLAS/FORT WORTH Mr. H. Wayne Hanks Ms. Nancy Konecki

NORTHERN LIGHTS CHAPTER FORT WAINWRIGHT/ FAIRBANKS AK Mr. Ken Burdette

PHANTOM CORPS CHAPTER FORT HOOD, TX CW4 Kirk A. O'Donnell Ms. Ronni K. Parsons

PIKES PEAK CHAPTER FORT CARSON, CO CPT Chad A. Collier CW2 Tracy W. Forehand

RHINE VALLEY CHAPTER MANNHEIM, GERMANY 1SG Mark E. McMillin

SAVANNAH CHAPTER FT STEWART/HUNTER AAF, GA SSG Sean M. Stroker

SHOWME CHAPTER JEFFERSON CITY, MO CW3 Timothy R. Voss

TARHEEL CHAPTER RALEIGH, NC Mr. Dan Smith

TENNESSEE VALLEY CHAPTER HUNTSVILLE, AL Mr. Timothy Lee Floate MAJ Rohan David Hosking MAJ Robert L. Massie Sr. Mr. Frank R. Paul Ms. Michele K. Platt Mr. Charles L. SanFilippo Mr. Gary P. Stiger Mr. Terry Alan Wales

WASHINGTON-POTOMAC CHAPTER WASHINGTON, DC SSG Steve H. West

Mr. Andrew M. Wilson

MEMBERS WITHOUT CHAPTER AFFILIATION CW4 Kenneth E. Elliott CW2 Robert S. Wilhelm, Jr. CPT Travis Zimmer

38

### Washington-Potomac Chapter

![](_page_38_Picture_1.jpeg)

Former Chief of Staff, Gen. Dennis J. Reimer was inducted into the Honorary Order of Saint Michael (OSM) at a luncheon sponsored by the AAAA Wasington-Potomac Chapter, on Sept. 28, 1999. After receiving the Gold level OSM award from AAAA President Maj. Gen. Carl H. McNair, Jr., (Ret.), Gen. Reimer (above right) was congratulated by many well wishers including the "Godfather of Army aviation logistians", Mr. Joseph P. Cribbins (above left).

![](_page_38_Picture_3.jpeg)

First Place Team for the Washington-Potomac Chapter Golf tournament held Aug. 13, 1999. Pictured (from left to right) are Col. Tom Taylor, Capt. Lem Clement, 1st Lt. Frank Germanese and Maj. John Lenk.

#### **1999 MEMBERSHIP WINNERS**

The winners of the 1999 "Chapter Membership Enrollment Competition" are:

MASTER CHAPTER CATEGORY

Morning Calm Chapter, Seoul, Korea CY99 Net Member Gain of 147 members Col. Stephen D. Mundt, Chapter President Mr. John H. Bae, VP Membership

#### SENIOR CHAPTER CATEGORY

Pikes Peak Chapter, Fort Carson, Colo. CY99 Net Member Gain of 17 members Lt. Col. B. Shannon Davis, Chapter President

#### AAAA CHAPTER CATEGORY

America's First Coast, Jacksonville, Fla. CY99 Net Member Gain of 27 members CWO 4 William R. Halevy, Chapter President 1st Lt, William B. Bradley, VP Membership

#### AAAA "TOP GUN" INDIVIDUAL

MEMBERSHIP RECRUITMENT Mr. John H. Bae, Morning Calm Chapter enrolled 693 new members Mr. William J. Cannon, Aviation Center Chapter enrolled 611 new members Maj. John C. Sauer, Aloha Chapter enrolled 78 new members SGM Kenneth G. Rich, Colonial Virginia Chapter enrolled 43 new members SFC Jade L. Beranek, Rising Sun Chapter enrolled 34 new members

See you in Fort Worth!!! **AAAA** Annual Convention March 29 - April 1, 2000

![](_page_39_Picture_0.jpeg)

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. Nominations are currently open for the ballot that will be distributed to all AAAA members in the fall of 2000. Nominations should be postmarked no later than July 1, 2000. Contact the AAAA National Office for details at (203) 226-8184

#### Master Sergeant Gary I. Gordon Army Aviation Hall of Fame 1995 Induction

Master Sergeant Gary Ivan Gordon served as a Sniper Team leader in Task Force Ranger of the United States Special Operations Command in Mogadishu, Somalia during Operation RESTORE HOPE. On 3 October 1993, Master Sergeant Gordon's Sniper Team functioned as a "Blue Team" in a traditional Air Cavalry assault operation. They provided precision fires from the lead helicopter during an assault, and at two crash sites, while being subjected to intense automatic weapons and rocket propelled grenade fires.

When MSG Gordon learned that ground forces were not immediately available to secure the second crash site, he and another sniper unhesitatingly volunteered to be inserted to protect the four critically wounded personnel, despite being well aware of the growing number of enemy personnel closing in on the site. After his third request to be inserted, MSG Gordon received permission to perform his volunteer mission.

When debris and enemy ground fires at the site caused them to abort the first attempt, MSG Gordon was inserted one hundred meters south of the crash site. Equipped with only his sniper rifle and a pistol, MSG Gordon and his fellow sniper, while under intense small arms fire from the enemy, fought their way through a dense maze of shanties and shacks to reach the critically injured crew members.

MSG Gordon immediately pulled the pilot and the other crew members from the aircraft and established a perimeter which placed him and his fellow sniper in the most vulnerable position. MSG Gordon used his long range rifle and side arm to kill an undetermined number of attackers until he depleted his ammunition.

![](_page_39_Picture_7.jpeg)

MSG Gordon then went back to the wreckage, recovering some of the crew's weapons and ammunition. Despite the fact that he was critically low on ammunition he provided some of it to the dazed pilot and then radioed for help. MSG Gordon continued to travel the perimeter, protecting the downed crew.

After his team member was fatally wounded, and his own rifle ammunition exhausted, MSG Gordon returned to the wreckage, recovering a rifle with the last five rounds of ammunition and gave it to the pilot with the words, "Good Luck." Then, armed only with his pistol, MSG Gordon continued to fight until he was fatally wounded.

His actions saved the pilot's life. MSG Gordon was awarded the Congressional Medal of Honor for this action.

# AAAA NEWS

#### New Chapter Officers

Black Knights Chapter: Cdt. Daniel G. Buis, President of Cadet Affairs Morning Calm Chapter: CWO 5 Robert S. Johnson, Treasurer; Maj. Gustavo E. Blum, VP Scholarships.

#### AAAA Soldier of the Month

A Chapter Program to Recognize Outstanding Aviation Soldiers on a Monthly Basis PFC Luke T. Katterhagen

December 1999 (Tennessee Valley Chapter)

SPC Richard K. Charles, III January 2000 (Tennessee Valley Chapter)

SPC Christopher E. Burris February 2000 (Mid-America Chapter)

#### AAAA NCO of the Month

A Chapter Program to Recognize **Outstanding NCO Soldiers** on a Monthly Basis

> SGT James R. Boyett February 2000 (Mid-America Chapter)

AAAA NCO of the Quarter

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

SSG Harry J. Bartel 2nd Quarter (Tennessee Valley Chapter)

#### AAAA Distinguished Instructor of the Quarter

A Chapter Program to Recognize Distinguished Instructors on a Quarterly Basis

SSG Erik D. Brotherton 1st QTR FY 20000 (Colonial Virginia Chapter)

#### New AAAA Life Members

Lt. Gen. Teddy G. Allen, Ret. Maj. Thomas H. Bryant Col. James R. Correia, Jr. Col. Charles H. Davis Mr. Gary W. Donald Capt. Roger E. Farris Mr. Michael A. Fitzpatrick

Capt. Stanley S. McGowen, Ret. Capt. Graig A. Peacock CWO 4 Stephen L. Woods, Ret. Lt. Col. John R. Wrinkle, Ret.

#### New AAAA Order of St. Michael Recipients

CWO 5 Myron F. Babcock (Silver) Col. Ted A. Crozier, Ret. (Bronze) Spc. Daniel Blackburn (Bronze) CWO 3 (P) Thomas M. Somers (Bronze) Lt. Col. George M. Bilafer (Bronze)

#### Aces

The following members have been recognized as Aces for their signing up five new members each.

> Mr. William J. Cannon Cdt. Ernest D. Meadows Mr. Victor W. Welner

#### New AAAA Industry Members

Advanced Torque Products, LLC Control Products Corp. John Deere Company Symetrics Industries, Inc.

Mar. 29. AAAA National Executive Board Annual Meeting, Fort Worth, TX.

Mar. 29-Apr. 1. The 2000 AAAA Annual Convention, Fort Worth Convention Center, Fort Worth, Texas.

Mar. 30. The AAAA Scholarship Board of Governors Annual Meeting, Fort Worth, TX.

Jun. 30-Jul. 4. The Vietnam Helicopter Pilots Association (VHPA) 17th Annual National Reunion, Washington, D.C. For further information contact Don Joyce, "Gold Eagle 4" (407) 870-5367.

#### ARMY AVIATION ASSOCIATION OF AMERICA (AAAA)

49 RICHMONDVILLE AVE., WESTPORT, CT 06880 PHONE (203) 226-8184 FAX (203) 222-9863

□ Change of Address: □ New Membership Application Please check one:

I wish to join the Army Aviation Association of America (AAAA). My past or current duties affiliate me with U.S. Army Aviation and I wish to further the aims and purposes of the AAAA. I understand that my membership includes a subscription to AAAA's official magazine "Army Aviation", and that my membership will start on the subsequent first of the month. Contributions or gifts to AAAA are not deductible as charitable contributions for federal income tax pur-poses. Dues payments may be deductible by members as ordinary and necessary business expenses.

Rank/GS Grade	First Name	MI	Last Name	Sex	Card No.
Mailing Address					Amt S
04001980-008405					Signature:
Mailing Address					Date:
Ĉity			State	Zip + 4 Code	Check (✓) Your Professi () Army Active Duty
Active Duty or Civilian Job Ti	itle and Unit or Firm name		6 X		( ) DA/DOD Civilian     ( ) Army Nat'l Guard
Area Code, Office Phone	Area Code	Residence Phone	Area Code	FAX	() Amay Reserve
one one one more	Then could	Residence I fichte	71100 0.000		( ) Army Retired
Consent: DI do DI do	o not consent to the publication	or release of the abo	ve information to	o third parties.	( ) Other US Military Service
Signature				Date	Are you a former AAAA
Citizenship	Nickname	Spouse'	s Name		If yes, what year did you
Date of Birth (Mo/Yr)		Social Security No.			<ul> <li>Chapter Affiliation Prefer</li> <li>Print Name of Recruiter</li> </ul>

#### AAAA ANNUAL DUES

calendar

Applications other than those listed below: () 1 yr, \$21; () 2 yrs, \$39; () 3 yrs, \$57 Full-Time Students; Enlisted; WO1s; GS-8 DACs & Below; Wage Board 12 DACs & Below:

() 1 yr, \$14; () 2 yrs, \$25; () 3 yrs, \$36 Add \$5 per year if you have a foreign, non-APO address. Add \$15 if your check is drawn on a foreign bank.

Check enclosed payable to "AAAA" or charge to Diners Club Mastercard DVISA

Amt S	Exp. Date		
Signature:			
Date:			
Check (✓) Your Profession	al Qualification:		
( ) Anny Active Duty	( ) US Defense Industry		
( ) DA/DOD Civilian	( ) Consultant		
( ) Army Nat'l Guard	( ) Publishing Other Assn.		
( ) Anny Reserve	( ) Foreign Military Service		
( ) Anny Retired	( ) Foreign Defense Industry		
( ) Other US Military Service	( ) Other		
Are you a former AAAA me	mber?  Yes  No		
If yes, what year did you join	n?		
Chanter A Offician Desformed			

# AAAA NEWS

A number of AAAA By-Laws changes were precipitated by the 9 May Department of the Army Civilians, Enlisted, Warrant Officer, Company 1999 NEB approval of the Strategic Planning Committee Report and the establishment of the new AAAA Chapter VP for Scholarships. Specifically the following sections were amended by vote of the AAAA NEB at this 11 Oct 1999 meeting. A full copy of the updated AAAA By-Laws is available upon request from the AAAA National Office, 203-226-8184.

1. 3.3 - change title only to EXECUTIVE BOARDS AND COMMITTEES.

2. 3.32 - Delete contents and relabel 3.33 to read 3.32-NATIONAL EXEC-UTIVE GROUP.

Relabel 3.34 to 3.36 REGIONAL EXECUTIVE BOARD, relabel 3.35 to 3.37 CHAPTER EXECUTIVE BOARD.

3. Add new 3.33-PRESIDENT'S ADVISORY COUNCIL The President's Advisory Council shall consist of the Past Presidents, Past Executive Vice President, and National Members at Large Emeritus and be chaired by the Immediate Past President. The Council shall advise the President on the overall condition and well-being of the Association and its external relations and, upon Presidential request, give counsel on issues raised by the President.

4. Add 3.34-NATIONAL STANDING COMMITTEES The National Standing Committees of Association shall be: By-laws and Legal Committee, Convention Committee, Fiscal Committee, Hall of Fame Trustees Committee, Membership Committee, Nominating Committee, Awards and Scholarship Selection Committee, and Strategic Planning Committee.

5. Add 3.341-The membership of Standing Committees shall be not less than five. Insofar as possible Committee composition shall reflect the composition of the AAAA membership and the Army Aviation Community. Members need not be members of the AAAA NEB and shall be appointed by their respective chairmen. Subcommittees may be organized as necessary. Except where otherwise established by the by-laws, Standing Committee Chairmen shall be appointed by the President and ratified by the National Executive Board. All chairmen must be members of the NEB.

6. Add 3.342- Each Standing Committee shall present to the National Executive Board at the Association Annual Meeting a report of its activities since the previous Annual Meeting. A written charter delineating Committee duties and responsibilities shall be developed and made subject to periodic review and revision.

7. Add 3.421-The BY-LAWS & LEGAL COMMITTEE shall advise the National Executive Board on the adequacy of the By-laws to enable proper functioning of the Association at the National, Regional and Chapter levels, be responsible for timely processing of approved By-law change petitions into By-law amendments and take such other actions relating to by-law and legal issues as the President or National Board may direct.

8. Add 3.3422-THE CONVENTION COMMITTEE shall consist of the Executive Director who serves as General Chairman, the Professional Program Chairman, the Military Affairs Chairman and the Local Chapter Chairman. The committee shall plan and coordinate the AAAA Annual Convention under the guidance of the AAAA NEB.

9. Add 3.3423-THE FISCAL COMMITTEE shall monitor the fiscal health of the association.

10. Add 3.3424-THE HALL OF FAME TRUSTEES COMMITTEE shall establish and oversee the entire nomination, election, induction and display process in order to preserve the heritage of outstanding individual achievement in Army Aviation for posterity.

11. Add 3.3425-THE MEMBERSHIP COMMITTEE shall advise the NEB on the trends in membership enrollment and retention, propose and implement policies, programs and procedures to insure healthy growth of the association. The committee is chaired by the AAAA Senior VP and 28. 6.22-Change to 6.34 and put in trail under 6.3 (paragraphs were shall include members and appropriate sub-committees representing renumbered appropriately.)

Grade Officer, Reserve Components, and Industry.

12. Add 3.3426-THE NOMINATING COMMITTEE shall consist of the President, Past Presidents, Past Executive Vice President and Presidents of the largest chapters equaling the number of serving Past Presidents and Past Executive Vice Presidents at June 30 of each year. The Immediate Past President Shall be Chairman of the Committee. In the absence of the Chairman at any Committee meeting, the most immediate Past President shall preside. The committee shall nominate qualified individuals to fill vacancies in the National Executive Board and process petitions for nominations from the floor at the Annual Meeting.

13. Add 3.3427-THE SCHOLARSHIP SELECTION & AWARDS COMMIT-TEE shall be responsible for selecting winners of scholarship grants and loans from a list of applicants presented annually by the AAAA Scholarship Foundation and winners of the AAAA National Awards from the list of nominees compiled by the National Office.

14. Add 3.3428-THE STRATEGIC PLANNING COMMITTEE shall under the guidance of the AAAA President establish mid and long term goals for the association, review the challenges to the association, and serve as forum for new AAAA programs and initiatives to better serve the needs of the Army, the Army Aviation branch, and all AAAA members.

15. Add 3.35-SPECIALTY POSITIONS. Qualified members shall be appointed by the President and ratified by the National Executive Board to serve in the positions of Archivist, Parliamentarian, Representative to The Army Aviation Museum and Representative to The Military Coalition. A written charter delineating the duties and responsibilities of each position shall be developed and made subject to periodic review and revision.

16. Add 3.351-The Archivist shall catalogue and preserve AAAA historical material.

17. Add 3.352-The Parliamentarian shall advise the National Executive Board Chairman on parliamentary procedure, and rules of order at meetings of the Board and as otherwise requested.

18. Add 3.353-The Representative to The Army Aviation Museum shall serve as the primary liaison with the Army Aviation Museum.

19 Add 3.354-The Representative to The Military Coalition (TMC) shall represent the AAAA at all meetings of the TMC and seek the guidance of the AAAA President and NEG on issues before the TMC.

19A 3.37 - Re-label item (5) as item (6) and add new item (5)-Vice President for Scholarships

20. 3.6411-Delete the term Executive Committee in the second line.

21. 3.6413-Add the words: "Chairs the Fiscal Committee," at the end of the paragraph.

22. 3.6415-Delete the phrase, National Executive Committee in lines six and seven.

23. 3.6416-Delete the term National Executive Committee in lines five and six.

24. 4.91-Delete the last phrase, "and National Executive Committee."

25. 4.101-Delete all after the first sentence and add: The Group shall develop for approval of the National Executive Board written policies and procedures by which investments decisions shall be made. The policies and procedures shall be made subject to review and revision in a timely manner.

26, 6.2-Delete-not needed.

27. 6.21-Delete-material now in 3.3426

# ARIVIYAVIATION **Book Store**

# 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 exp

![](_page_42_Picture_4.jpeg)

mental flying machines by the U.S. Army since The author includes info tion 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].

# 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

![](_page_42_Picture_8.jpeg)

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: 0-275-9579421

# 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].

#### Army Aviation in Vietnam 1961-1963

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 - including patches, mottoes and call signs - that graced Army aircraft during the early years of American involvement in Southeast Asia. Well written and lavishly illustrated, 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",

![](_page_42_Picture_17.jpeg)

124 pages, hard cover and paperback. ISBN: 0-9671980-0-3].

#### Dancing Rotors by Harry E. (Ned) Gilliand, Jr.

Dancing Rotors documents the evolution of U.S. military helicopte 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].

#### 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: 0-87113-738-01

![](_page_42_Picture_23.jpeg)

![](_page_42_Picture_24.jpeg)

#### A Cavalryman's Story Memoirs of a Twentieth Century Army

General Hamilton H. Howze A Cavalryman's Story is the memoir of a professional soldier recognized today as the father of U.S. Army Airmobile tactics and docs the first director of Army aviation, Howze promoted the to industry, the government, and the public. His vision came on in the 1960s when he presided over the U.S. Army

Mobility Requirements Board, known as the Howze Board, of sky cavalry in combat. [Smithsonian Institution Press, Size: 6"x9", 316 pages, hard cover, ISBN: 1-56098-664-6].

### 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.]

### 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

![](_page_42_Picture_34.jpeg)

5

VEAR OF THE SNAKE

City, State, Zip:				
fele:				
	Fax:			
prefer to pay by: Check MasterC	pay by: MasterCard		Visa	
Credit Card #		Exp.		
Signature:				
Black Hawk Down - Bowden	#	\$34.00*	\$	
J.S. Army Aircraft - Harding	#	\$50.00*	\$	
rmy Aviation in Vietnam 1961-196	3	1000		
Hardcover	#	_ \$45.00	\$	
Paperback	a	\$29.95	\$	
lear of the Horse: Vietnam - Meret	#	_ \$40.00*	\$	
Cavairyman's Story - Howze	#	_ \$32.95*	5	
Breaking The Phalanx - Macgregor	#	\$29.95	\$\$	
Jancing Kotors - Gililand		- 929.95	*	
And Young - Moore/Galloway	#	\$21.00*	\$	
ear of the Snake - Jones	#	\$30.00*	\$	
(prices include shipping/handling f	ee)	TOTAL	\$	
12 Martin Caller Contractor Contractor		2.400.000		

Tele: (203) 226-8184 FAX: (203) 222-9863 Allow 6-8 Weeks For Shipment \*Add 6% Sales Tax If Shipping to Connecticut

4	STORY	unie. As
202	OTOIN .	concept
eri-	STREET	to fruitio
used	Radition B. Sonne.	Tactical
1947.	whiteh many all the	Iduludi
orma-	which proved t	ne viability

Year of the Horse: Vietnam

cover; 59 color photographs, 9 maps; ISBN: 0-7643-0190-X].

Collins MMR. The final approach to final approaches.

ILS. MLS. GPS/GLS. The future is rapidly approaching. Bring it on. Collins Multi-Mode Receivers (MMRs) are ready. Our military MMRs come from a long line of proven, commercial TSO'd MMRs. They're designed to easily retrofit tankers, transports, fighters and other military aircraft. They're equipped to handle upgrades for future GANS/GATM/JPALS requirements. And they have the FM immunity required for operating at European airports today. Discover the final word in MMRs. Call 319.295.5100

www.collins.rockwell.com/government-systems

or fax 319.295.4777.

![](_page_43_Picture_4.jpeg)