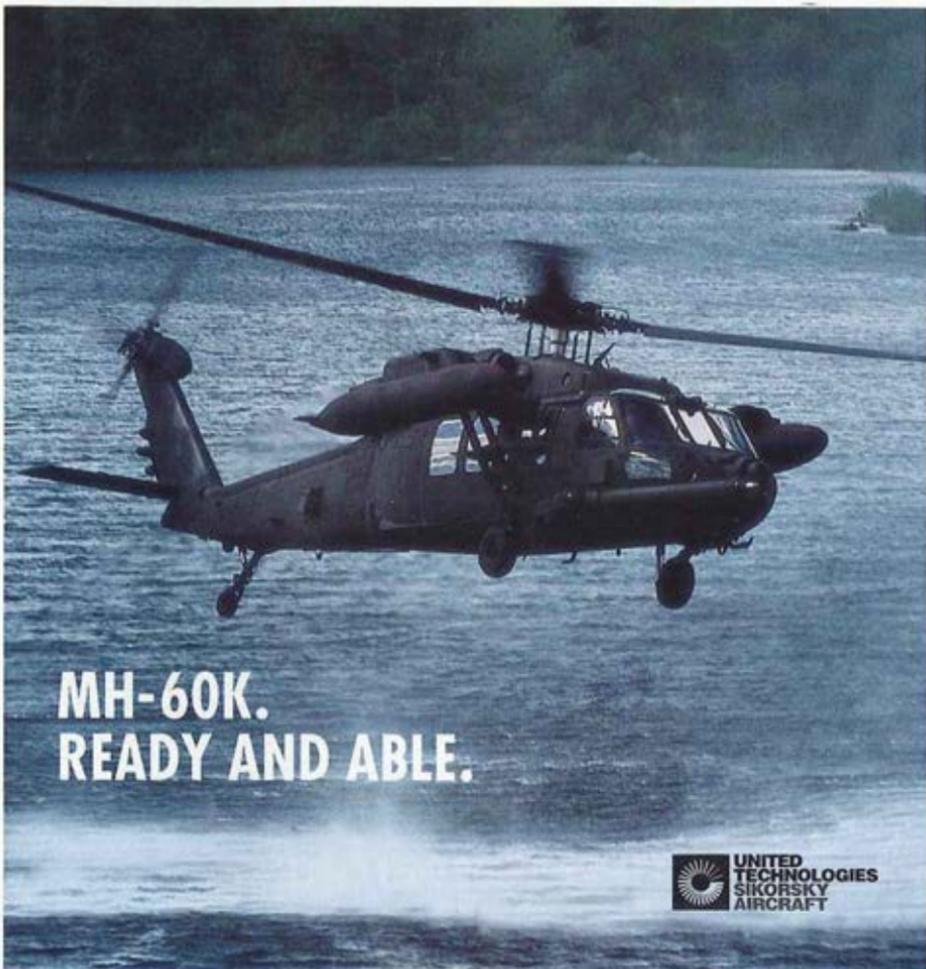


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Special
Operations
Aviation

SPECIAL OPERATIONS
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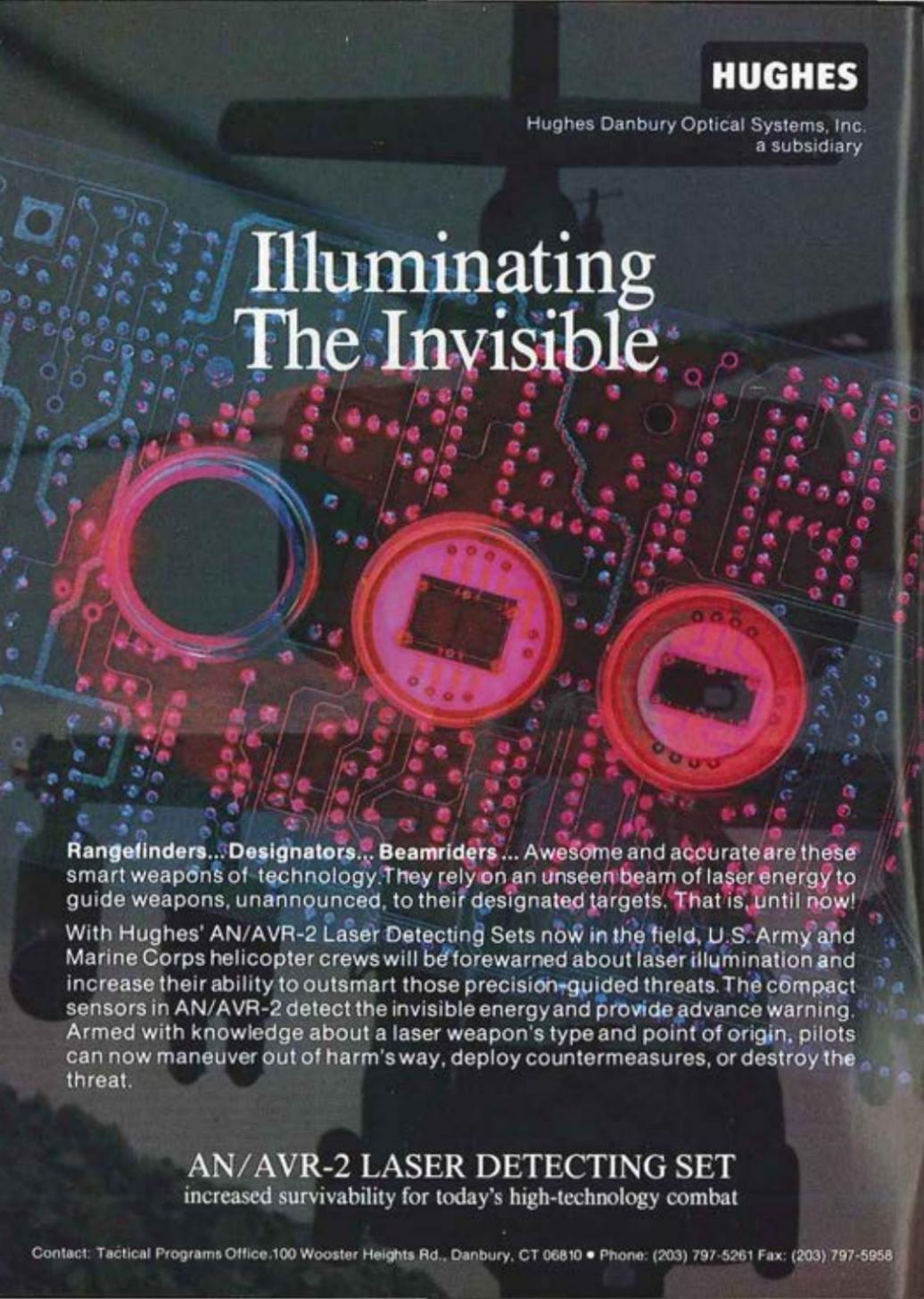
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FORTHCOMING ISSUES
August-September 1995 — 1995 Aviation BLUE BOOK.

October 1995 — Aviation Electronic Combat.

Briefings

A civilian instructor pilot was killed and two Army student pilots received minor injuries when their OH-58A Kiowa crashed about ten miles south of Troy, AL at about 9:30 p.m. on 19 May. Dead is **Madison A. Wilson**, 40, of Ozark, AL. Wilson was an instructor pilot for B Company, 1st Battalion, 212th Aviation Regiment, Ft. Rucker, AL. The two students, both assigned to 1st Battalion, 145th Aviation Regiment, were transported via FLATIRON air ambulance to Lyster U.S. Army Community Hospital, where they were treated and released. Army officials are investigating the cause of the accident.

BG Clyde A. "Lou" Hennies, Ret. was named Adjutant General of the Alabama National Guard on 7 June 1995. BG Hennies was the Director of the U.S. Army Safety Center, Ft. Rucker, AL before his retirement from active duty in 1991. Originally from Iowa, BG Hennies remained in Ozark, AL after his retirement. He was named Adjutant General by Alabama Governor Fob James during a press conference.

23 June 1995 saw the 160th Special Operations Aviation Regiment (Airborne) hosting an acceptance ceremony for the **Sikorsky MH-60K Black Hawk** and **Boeing MH-47E Chinook** at Campbell Army Airfield, Ft. Campbell, KY. Both helicopters are capable of air-to-air refueling and have advanced avionics systems that will allow pilots to fly low-level, day or night, in bad weather through all types of terrain.

The **Vietnam Veterans on the 282nd AHC** will hold a reunion at the Ramada Inn South, Nashville, TN on 11-13 August 1995. Interested persons should contact Tom Pullen, (910) 822-2902.

The Government of Romania and **Bell Helicopter Textron** announced on 15 June a major cooperative program to produce 96 AH-1F Cobra attack helicopters for the Romanian Armed Forces. Delivery of the helicopters, to be produced in Romania, will begin in 1996. Completion of the production run will be 2005.

The Department of Defense accepted the second and third Hunter systems for the Joint Tactical Unmanned Aerial Vehicle (JT-UAV) program on 15 June. The team of prime contractor **TRW Inc.** and major subcontractor **Israeli Aircraft Industries Ltd (IAI)** produced the systems under a \$169M low-rate initial production contract. In addition to the hardware, the contractor team provides training and support. In the first six months of 1995, Hunter air vehicles have made 213 flights, totaling 568.2 hours.

Shelley Putnam, former Executive Director of the **Army Aviation Museum Foundation, Inc.**, departed on 31 May to accompany her husband to Germany. Effective 1 June, **Linda Meyer** assumed the duties of manager of the Army Aviation Museum Gift Shop. All other responsibilities of the Museum Foundation will be assumed by **Mrs. Shay Collins**, named Foundation Manager.

Correction: The June 1995 issue did not correctly list **MG John S. Cowings'** new position as Commandant of the Industrial College of the Armed Forces. ARMY AVIATION regrets the error.

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FRONT COVER

Paid Advertisement: Sikorsky Aircraft, Division of UTC. The Sikorsky MH-60K Special Operations Aircraft passed a milestone in June with its formal acceptance by the 160th SOAR(A) at Ft. Campbell, KY. The highly-capable Black Hawk helicopter variants are now in operational training. Caption provided by the Advertiser.

SPECIAL OPERATIONS AVIATION

Special operations may be performed during periods of peace or war to support Theater or Joint Task Force (JTF) campaign plans, or as independent operations when the use of conventional forces is either inappropriate or infeasible. The nation's Special Operations Forces (SOF) provide a highly trained and rapidly deployable joint task force

capable of operating anywhere in the world in support of United States national security objectives. Special Operations Aviation (SOA) is an integral part of this capability.

By this I mean *Army and Air Force* SOA, which have experienced a symbiotic evolution, work closely together, and are an indivisible, joint, high technology force. Our aviation modernization and restructuring programs will place us in the forefront of the technological revolution, and permit us to continue fielding mobile, versatile, lethal, and deployable expeditionary forces.

The U.S. Special Operations Command's (USSOCOM) most important modernization concern for the 1990s has

*The Air Force
will concentrate
on fixed wing
and tiltrotor
aircraft, while
all SOF helicopters
will move to the
160th SOAR(A).*

been mobility — both air and sea. In the air, we have upgraded all C-130 platforms to Special Operations Force-Improved (SOFI) capability, with terrain following and night vision improvements, enhanced navigation, self-defense, and communications.

During the past year, JTFs have created a high demand for AFSOC AC-

130 gunships to support operations in Bosnia, Somalia, and Haiti. Their surgical firepower, superb sensor suite, and ability to refuel in flight for extended station time, make them ideal for surgical support. The eight AC-130H models in the active force, and the 13 new AC-130U models now being fielded, provide a robust gunship force that should be able to meet geographic CINC requirements, while still providing a reasonable level of OPTEMPO for the crews and sufficient time to conduct crew training and aircraft maintenance.

Army SOA, the Night Stalkers of the 160th Special Operations Aviation Regiment (Airborne) (SOAR(A)), continues to field the MH-60K and the

MH-47E, the world's most capable combat helicopters. Equipped with state-of-the-art navigation and communications suites, Terrain Following/Terrain Avoidance (TF/TA) radar, Forward Looking InfraRed (FLIR), and integrated glass cockpits, these air-refuelable helicopters can operate from land or sea bases to provide superb short- and medium-range insertion and extraction capabilities under all weather conditions.

These modernized and new platforms enhance our air capabilities, but still leave a gap in our ability to conduct long-range exfiltration of SOF from deep inside hostile or denied areas.

The CV-22, which will be in our FY 98-03 POM, will fill this deep penetration mobility void, allowing the Air Force Special Operations Command to concentrate on the fixed-wing fleet and the tiltrotor. All SOF helicopters will then be in the 160th SOAR(A).

The Air Force will fund procurement of the basic MV-22s, and USSOCOM's MFP-11 will fund the SOF modifications to make it a CV-22. This is a good example of the support that USSOCOM receives from the Services. We cannot manage large procurement programs such as a major aircraft development. For these kinds of programs, the Services do the development and USSOCOM funds only the SOF-peculiar modifications. As with many other areas, USSOCOM receives great support from all of the Services.

We are devoting a lot of money and effort to creating a superb, technologically advanced aviation fleet. The heart of the SOA capability, however, is our people. The quality of our people allows us to

develop new approaches to using high-technology in the face of stark challenges, surviving in, adapting to, and supporting military operations in modern high-technology and primitive low-technology environments.

The challenges of adapting a high-technology force to a low-technology environment will not be easy. The fight in Mogadishu on 3 October 1993 exemplifies this challenge. The 160th SOAR(A) employed some of its best-trained aviators and the best helicopters in the world in a low-technology environment. In an asymmetrical

application of force and technology, a simple weapon — the RPG-7 — was used to shoot down two Black Hawks, severely damage two others, and make the fight exceedingly difficult.

SOA will have to improve its capability to conduct surgical, and even non-lethal, operations. Many potential threats will put a premium on

extremely precise application of power to elusive and often almost indiscernible targets. Sometimes, the only way to achieve success within acceptable limits of collateral damage will be to use non-lethal technology. In many situations, only aviation will provide the mobility and speed required to take advantage of the perishable intelligence and fleeting opportunities needed to defeat small, covert, highly mobile targets hiding among the population.

When SOA is employed operationally, it falls under the Operational Control (OPCON) of the Joint Force Special Operations Component Commander (JFSOCC) through his Joint Special

“The quality of our people allows us to develop new approaches to using high-technology in the face of stark challenges.”

Operations Air Component Commander (JSOACC). All SOA, whether Army or Air Force, works for this commander in order to provide appropriate support to all members of the JFSOCC team. It is normal for 160th SOAR(A) helicopters to support Navy SEALs and for AFSOC helicopters to support Army Rangers and Special Forces if mission requirements so dictate.

USSOCOM has maintained a significant investment in aviation under two distinct chains of command (Army and Air Force). I have long believed that SOA could achieve synergism and efficiencies by having one SOA focal point. Therefore, USSOCOM is proceeding with an initiative to establish a single air manager for SOA, under the USSOCOM Directorate of Operations (USSOCOM/J3).

The experience of SOA units are a resource to be shared. Because SOA units have specially equipped aircraft, well resourced training programs, and outstanding people, they can work at the outer edge of the envelope. They have learned some hard lessons about training, night flying, and high-technology modifications. All aviation units in the U.S. military can benefit from what SOA has to offer, and I guarantee that SOA will continue to share what they have learned, and will learn, in the future.

Special Operations Aviation offers a meaningful challenge to those aviators who want to fly some of the most advanced aircraft in the world in some of the most demanding flight profiles. If you want to expand your professional capabilities in a highly demanding, but extremely rewarding, environment, I strongly urge you to investigate a tour with the 160th SOAR(A). The Night Stalkers can guarantee you an exciting, varied, and unusual experience on the

cutting edge of aviation training and employment.

Special Operations Aviation complements the other aviation assets of the U.S. Armed Forces with unique capabilities found nowhere else. When properly integrated into a JTF campaign plan, they provide the JTF commander with options that would not otherwise be available to accomplish operational and strategic objectives. In peacetime, SOA experiment with techniques and procedures that, when refined and shared with other units, can lead to significant increases in the capabilities of all aviation. SOA is a national asset that is part of the U.S. Armed Forces team effort to ensure the security of the United States. In a dynamic and rapidly changing world, SOA will continue to meet all challenges with the skill and determination that has been its hallmark in the past.

★ ★

GEN Downing is the Commander-in-Chief, U.S. Special Operations Command (USSOCOM), MacDill AFB, FL.

160th SOAR(A) WANTS YOU!



— Contact —
CW3 Bob Holcomb
DSN: 635-5689
Comm: (502) 798-5689

NIGHT STALKERS — LEADING THE WAY!

The new strategic landscape has enveloped our world in a dangerous peace. The nightly news reports reflects the uncertainty which can ultimately affect the American soldier. Consequently, we in Army aviation cannot afford to let our guard down and must remain ready at all times. No unit understands this better than the Night Stalkers of the 160th Special Operations Aviation Regiment (Airborne), Ft. Campbell, KY.

Task Force 160 was formed from the 101st Aviation Group in 1980. Since then, they have been at the forefront of aviation contingency operations. From Grenada to Panama, Southwest Asia, and Somalia — the Night Stalkers have been there.

In the Task Force, it's all about training for combat and taking care of soldiers. The training is demanding and realistic, but the rewards are numerous. GEN Matthew B. Ridgway once said, "Only through high training requirements, rigidly enforced, can low casualty rates be possible. Only well armed and equipped,

*There are
opportunities
for the larger
Aviation
Community
to benefit
from SOA.*

adequately trained, and efficiently led forces can expect victory in future combat." There is no doubt that the Night Stalkers's performance and reputation exemplify these words.

It all starts with a detailed assessment process. This process will normally take five days and includes a written general aviation knowledge test, a PT test,

Navy Class II swim test, psychological evaluation, and a hands-on NVG navigation flight evaluation. Following successful assessment, candidates advance to the next phase called "green platoon".

Originally formed in 1983, green platoon trains soldiers in required special operations aviation tasks such as Survival, Evasion, Resistance, and Escape (SERE) training, intense aerial navigation, and mission planning, just to name a few. The four month training program is rigorous and stressful — only the best graduate. But it doesn't stop there! Continuation training in specific aircraft is the next challenge. The results are the best-trained



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aircrews and support personnel in the world. If you're up for the challenge give them a call.

To complement great soldiers you must have great equipment — and the 160th SOAR(A) does. It has AH/MH-6 "Little Bird" helicopters, MH-47Es, and MH-60Ks. These aircraft are equipped with a highly sophisticated array of weapons and ordnance, advanced navigation and communication packages, integrated glass cockpits, and Forward Looking InfraRed (FLIR).

Army Aviation owes much of its modern night fighting tactics, techniques, and procedures to the innovations and initiatives of the "Task Force". For example, the standard of "time on target plus or minus 30 seconds" has been incorporated into many conventional aviation aircrew training programs. Furthermore, the unit was one of the first to initiate the use of

Global Positioning Systems (GPS), external fuel tanks for long range navigation, FLIR, and lip lights/finger lights. The Task Force is always experimenting with "strap-on technology" for various mission enhancements.

High-speed soldiers working with high speed equipment — the trick is for the larger aviation community to capture the lessons the Task Force is learning and the modernized equipment it is developing. We can and must learn from them — and we are doing just that. Always on the leading edge of aviation operations, their contributions to the Force XXI Army will prove invaluable as we move into the future.

★ ★

MG Adams is the Aviation Branch Chief and CG, USAAVNC and Ft. Rucker, AL, and Commandant, USAALS, Ft. Eustis, VA.

COMBAT SEARCH AND RESCUE (CSAR)

I imagine a still dark night. The quarter moon is hidden behind a blanket of white clouds, bringing effective illumination down to near zero. It would seem a perfect night for flying over unfriendly territories for the pair of F-15s, patrolling their mountainous sector, thousands of miles from home.

The constant engine roar heard in the cockpits contrasts agreeably with the serene surroundings until, from the dark depths below, a stream of fire spits upwards toward the two aircraft. Countermeasures are employed and evasive maneuvers begun, but even the high level of skill with which the pilots perform these actions cannot prevent one missile from hitting its mark.

Floating under a full tan canopy, the pilot begins to realize the full extent of his vulnerability. As he drifts downward into the darkness he once soared above, he wonders to himself what fate has in store.

Thirty minutes later, the S-3 of 3rd Battalion, 160th Special Operations Regiment (Airborne) receives a Combat Search and Rescue (CSAR) request for immediate extraction of a downed Air Force pilot in

Lessons Learned by the 3rd Battalion, 160th SOAR(A) for employment in real world missions.

hostile territory. This begins the well-rehearsed chain of events that follow.

● **N-HOUR.**

MAJ Jenkins (Battalion S-3): Colonel Franks, we've just received a CSAR mission on an F-15 pilot in the Ouachita mountains to the north.

LTC Franks (Battalion Commander): Is anyone in contact with him at this time?

MAJ Jenkins: Yes sir, AWACS is talking to him on channel A (PRC-112).

LTC Franks: OK, Andy — alert Major Howard and tell him to get the first-up crew spun up.

MAJ Howard (CSAR Air Mission Commander — talking on the phone): Roger, we'll be in the TOC in five minutes. See if you can find out about his physical status and ask CPT Walters (BN S-2) to prepare a briefing on the area.

● **IN THE TOC, N+00:05.**

CPT Hargrove (Special Forces Team Leader): Sir, my team is getting their gear. Do we know anything more about the isolated person's physical status?

MAJ Howard: AWACS thinks he has a broken ankle from the landing, but his

spirits seem high. He's moving to higher ground to try and find a landing zone for us to come in and get him.

CPT Hargrove: Any information on the threat in the area?

MAJ Howard: None from the pilot, but CPT Walters is preparing an Intel briefing for the area.

• **N+00:07. Two MH-60 and one MH-47 crews and a twelve-member ODA Security Team are seated in the briefing room.**

MAJ Jenkins: Gentlemen, the JSRC has passed us a CSAR mission to recover an F-15 pilot in the Ouachita mountains to the north. If you'll take a look at the survivor data card we've provided, you'll see all the information we currently have. At this time, the S-2 will brief you on the enemy situation. CPT Walters?

CPT Walters: Thank you, sir. A flight of two F-15s were conducting patrols in the vicinity of the northern border near Victoria. As the flight entered the Ouachita mountains from the south, they were engaged by what is believed to be an SA-6 missile system. This is the first evidence of an SA-6 in the guerrilla's possession, and therefore it is unknown if there are other systems in the area. Given the location of the engagement and the supply activity in the area, we believe that the insurgents have a base camp located near Jessville. This means that the area is controlled by the insurgents, and we can expect active patrols. If the insurgents can locate the pilot's chute, they will certainly pursue him. There are two likely areas for SA-14 engagements — both of these offer excellent fields of fire and maximize the weapon's capabilities. Their locations are posted on the briefing map. *CW4 Jones (Flight Lead):* Sir, do we know the location of the SA-6 launch site?

CPT Walters: The SA-6 is probably locat-

NIGHT STALKERS DON'T QUIT

BY COL DELL L. DAILEY

The Night Stalkers are proud of where we are. However, we can not rest on our laurels. We once owned the night, but now we must bring new combat multipliers to bear on target, plus or minus thirty seconds. We are not only committed to the future, but we recognize our responsibility to share lessons learned with and from the field as well.

The 160th SOAR(A) Regiment's vehicles for crafting the future include the recently developed Night Stalker series of master plans: semi-annual strategic leadership, Army Special Operations Aviation (K4), and regiment commanders conferences where the "Senior Stalkers" congregate to drive smartly to Force XXI.

Toward this effort, we have integrated the Army's imperatives: quality people — high quality soldiers, chosen from all ranks of the U.S. Army; leader development — includes supporting, caring for, and informing the families; training — realistic and stressful at the individual and collective level; force mix; modern equipment — employed to its fullest capability while being well-maintained, and facilities for a sense of "home", being a physical part of the community, and ownership; and doctrine, to ensure that what we develop is close to the right solution and in concert with the Army at large, in particular Army Aviation, and the joint services as well. This helps us to think unconstrained, yet be cognizant of our challenge to be ready given a scarcity of resources.

We can do no less to fulfill our responsibility to be ready at a moment's notice to fight our nation's wars on behalf of the National Command Authority.

★ ★

COL Dailey is the Commander, 160th Special Operations Aviation Regiment (Airborne), Ft. Campbell, KY.

CSAR EXECUTION CRITERIA

LAUNCH

1. CONFIRMED LIVE DOWN CREWMEMBER
2. CONFIRMED LOCATION
3. CAN ACCOMPLISH THE MISSION WITH ASSETS AVAILABLE
4. COVER OF DARKNESS

ABORT/DELAY

1. COMPROMISED LZ
2. LOSE CONTACT WITH ISOLATED PERSONNEL
3. ENROUTE THREAT

EXECUTION

1. CORRECT AUTHENTICATION
2. CONTINUOUS CONTACT WITH SURVIVOR: VISUAL/
COMMUNICATION

CSAR CHANGE OVER BRIEF

S-3
TIME HACK
ROLL CALL

S-3
WEATHER FOR THE NEXT 24 HOURS.
LIGHT DATA
GENERAL SITUATION
AOB - CHANGES IN ALERT POSTURE/OPERATIONAL
STATUS/MOVEMENT/NEW ACTIVITY.
MOB - CHANGES IN ALERT POSTURE/OPERATIONAL
STATUS/MOVEMENT.
GOB - LARGE TROOP MOVEMENTS/CONCENTRATIONS
EOB - CHANGES IN ALERT POSTURE/OPERATIONAL STATUS
RECOMMENDED CHANGES TO ROUTES.
PIR'S / IR'S
ECI / EEFI

S-3
FRIENDLY SITUATION
(LOCATIONS, MOVEMENT NEXT 24 HOURS, RECOVERY POINTS)
OTHER SOA FLIGHT ROUTES
CONVENTIONAL FLIGHT ROUTES
PASS OUT SPINS INFORMATION
BRIEF NEW ROZ's
CSAR PRIORITIES (SPECIFIC AOR's)

ES0
FIRE SUPPORT AVAILABLE

S-3
ISOPREP REVIEW (WEEKLY)

E & R PLAN REVIEW

AMC/FLIGHT LEAD
CREW BRIEFING

ed at this base camp near Jessieville and is resupplied from their caches. The SA-6 will be defended by SA-14s and a squad-size element. It is a safe assumption that the missile has been moved from its firing location and into a hide site.

CW3 Cooper (Chalk #2 PC): Sir, is there a weather forecast for that area?

CPT Walters: SGT Carroll is currently calling for the planning forecast for the terminal location and the reporting stations along the route.

CW3 Parker (MH-47 PC): Sir, it's looking like we may need to locate an area for me to set up the FARP. Can you take a look at the threat along the egress route and give me your recommendations?

CPT Walters: I suggest that you establish the FARP approximately five nautical miles from the release point along route "Alpha". This area is strongly influenced by government forces and should be

considered secure.

CPT Hargrove: CPT Walters, what's the likely avenue of approach the enemy will use, and what size and reaction time are we looking at?

CPT Walters: The most likely avenue of approach to the LZ is from the Northeast. This is an unimproved road, so the reaction time depends on how close the enemy is located to the LZ and by what mode of transportation they use. The closest known insurgent locations are 18 kilometers from the LZ. We can expect a 20-25 man security patrol, given the location and level of force in the area. Most civilians in the area are sympathetic to the insurgents' cause. Unfortunately, we don't have any more information at this time. We're expecting an update from the Joint Search and Rescue Center (JSRC) within minutes.

MAJ Howard: Andy, how long before we

can expect to get the Isolated Personnel Report (ISOPREP) data?

MAJ Jenkins: The JSRC is FAXing it to us now, George. Your fire support for this mission will be two A-10s controlled by the Airborne Warning and Control System (AWACS), call-sign King, on frequency 347.70 primary and 141.675 alternate. Check in with the AWACS upon lift off; they're operating in Joint Special Operations Area (JSOA) Kings-ton. The A-10s on ground alert at Barksdale have been notified and will be in sector in thirty minutes. All contacts throughout this mission will be coordinated through King. The A-10s' primary configuration is 51A as per the Special Instructions (SPINS). Your Combat Air Patrol (CAP) consists of two F-15s.

MAJ Howard: Does anyone have any questions? Okay guys, we've got work to do; let's get to it. Crewchiefs, prepare the aircraft and we'll see you in a few minutes at the backbrief by the aircraft. Cliff, let's get CPT Hargrove and conduct a tactical analysis.

CW4 Jones: Roger, sir. Glenn, can you get the 1/50,000 for the recovery site from CPT Walters?

CW3 Cooper: Already ahead of you, he's digging them out now. I'd like to recommend a couple of recovery points for our E&R (Evasion and Recovery) plan.

CW4 Jones: Okay, make sure the S-2 includes it in our EPA folder and brief the crewchiefs and security team before they depart for the aircraft.

CW3 Cooper: Will do.

● N+00:20.

CW4 Jones: Sir, we're ready. We've got our ingress and egress routes plotted and forwarded to the Joint Forces Air Component Commander (JFACC) for deconfliction. Our FARP is going to be located on the egress route on this hill. It'll arrive ten minutes before we do, so he shouldn't

spend more than 20 minutes on the ground. The S-2 says the FARP is inside one of the areas where the population density is sparse and there haven't been any reports of enemy movement through this region.

MAJ Howard: Dean, how do you feel about this location and with the time coordination for arriving there?

CW3 Cooper: Sir, I've talked with the S-2 and I think this is our best spot, but I planned an alternate location just in case. I've given that to Cliff and Glenn. As for the timing coordination, I'll be monitoring the Satellite Communications (SATCOM) net and will be able to determine your actual arrival time based on your execution matrix calls. I don't plan to arrive one minute earlier than I need to.

MAJ Howard: Good. CPT Hargrove, do you have anything to add?

CPT Hargrove: No, sir, my men are ready. I don't think we could be any more prepared than we are right now.

MAJ Jenkins: We've just received the launch authority from the JSRC.

LTC Franks: Okay, George, we'll be monitoring the net. Good luck!

● N+00:35.

CW4 Jones: Before takeoff checks are complete, are you ready in the back?

SGT Butler: Roger, sir, we're ready.

CW4 Jones: D12, this is D11, take off in five.

CW3 Cooper: This is D12, roger, in five.

● N+01:30.

AWACS: D11, contact Sandy 03 on TADS (Tactical Air Direction net) 154. Have a good flight.

CW4 Jones: Roger, contacting Sandy on TADS 154, thanks.

Sandy 03, this is D11, checking in. I'm five minutes from the contact point with two MH-60s.

Sandy 03 (A-10): Roger, D11. I have you five minutes from the Contact Point (CP).

"Eagle-One to Savior, we have Striker 27"



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AVIATION

Range Extension Fuel Systems



Falcon 32: Roger, he's ready for you. The LZ is hour glass-shaped, with its orientation being lengthwise east and west. He's at the middle of the LZ just inside the southern tree line. Do you copy, over?

CW4 Jones: Roger, Falcon 32, I've got a good idea what to look for. What's the enemy situation?

Falcon 32: D11, there's definitely an element moving up the hill along the road to the north. They should probably arrive within about 15 minutes.

CW4 Jones: Good copy, Falcon 32. Break; Sandy 03, did you copy, over?

Sandy 03: Roger, D11, what's your plan?

CW4 Jones: Sandy 03, please standby. (On another net) D10, this is D11, over.

MAJ Howard: This is D10, go ahead, over.

CW4 Jones: D10, I think we should try to get in there before that enemy element gets to him — things could get pretty messy if that happens. We can use Sandy to suppress them further down the hill and pin them down long enough for us to grab Falcon 31, over.

MAJ Howard: Good plan, let's do it. Go ahead and send Sandy ahead now, over.

CW4 Jones: Roger. Sandy 03, this is the plan.....

Sandy 03: Good copy, D11. We're beginning our runs now, out.

● N+02:49.

CW4 Jones: Falcon 31, this is D11, prepare to authenticate, over.

Falcon 31: Roger, D11, I'm ready.

● N+02:50.

CW4 Jones: Falcon 31, good copy on the authentication. We're 30 seconds out; do you hear us, over?

Falcon 31: Roger, I hear you. I'm ready for pick up, over.

CW4 Jones: Falcon 31, turn on your IR directional strobe now, over.

Falcon 31: I'm turning it on now.

CW4 Jones: I've got your strobe, leave it on until the recovery team gets to you. Turn away from the aircraft so you don't get debris thrown in your face, do you copy, over?

Falcon 31: Roger.

The two MH-60s land facing due west with Falcon 31 off the nose inside an established no fire zone. CPT Hargrove and his men depart the aircraft and establish their perimeter defense inside the aircraft no fire zone while the medic and a security member approach and conduct a visual authentication of Falcon 31. The medic lifts Falcon 31 on his shoulders in a fireman's carrying position and begins to head back to the team leader's position at the choke point. After the team leader is satisfied that everything is secure, he instructs the team to collapse the perimeter and board the aircraft, relaying his team's actions to the flight crews over the Sabre radio.

SGT Butler: Sir, I'm picking up some movement in the tree line at three o'clock.

CW4 Jones: Roger, Scott, keep your eyes on them. If they look like they're setting up to engage, you're cleared to fire.

SGT Butler: Roger — sir, Chalk Two is taking fire!

CW4 Jones: Engage!

CW3 Cooper: Lead, we took some fire from three o'clock, but the mini-guns seemed to have changed their attitude; we're ready for takeoff.

CW4 Jones: Roger, two, I just got a thumbs up from the team leader. We're on the go.

Sandy 03: D11, this is Sandy 03, we've completed our runs and see no other movement in the area. Did you get Falcon 31, over?

CW4 Jones: Roger, Sandy 03, we've got him and are proceeding to the FARP. Break, Falcon 32, this is D11, over.

Falcon 32: D11, this is Falcon 32, I copied you got him. Good job guys, and thanks. I'll be RTB at this time.

CW4 Jones: Roger, out.

• N+02:55.

This scene did not take place in the skies over foreign lands but at the U.S. Army's premier light fighter training center, JRTC, with the Night Stalkers of 3rd Battalion, 160th Special Operations Aviation Regiment (Airborne). It was typical of the CSAR mission scenarios conducted by the 3-160th at JRTC 95-8. In addition to support to the 3rd Battalion, 20th Special Forces Group (Airborne), the 3-160th executed JRTC's first Special Operation Combat Search and Rescue operational rotation.

JRTC 95-8 was the culmination of an immense amount of detailed planning and coordination that began at the D-180 conference. JRTC gave 3-160th the latitude to develop, implement, and execute a CSAR script that captured and standardized the actions described in the scenario.

The CSAR Task Force (CSARTF) of 3-160th began preparing by gathering all the TF members early in the planning process. Key players, such as the ODA 784 (the security element from 3rd Battalion, 7th SFG(A)), fully integrated their ground tactical security plan with the 3rd Battalion planners at the beginning of SOP development. The hard work of melding two dissimilar units into a single fighting task force happened early on so we were able to focus fully on the mechanics of SOP development.

Several key lessons learned evolved from JRTC 95-8, and were deemed critical to our mission success.

Rehearse, Rehearse, Rehearse. This cannot be overemphasized. CSAR operations are inherently confusing and time-sensitive. Rehearse all aspects of your SOP and wargame contingencies.

Anything that can be resolved beforehand allows more time to react to surprises.

Establish Launch, Abort, and Execute criteria early. This criteria is established in conjunction with the JSRC. Since the JSRC is the C² element once the CSAR is launched, it is essential everyone agrees to the established guidelines. However, don't make the criteria so restrictive that CSAR becomes too difficult to execute.

Develop CSAR checklists and formats and a thorough understanding of Air Tasking Orders (ATO), Air Coordination Orders (ACO), Special Instructions (SPINS), and Isolated Personnel Reports (ISOPREP). Providing prepared mission packets with all the appropriate information to the aircrews during the mission brief maximizes the time allowed to finalize details just before launch.

A dedicated ground security element was attached to the CSARTF. This relationship allowed the ODA to directly contribute to SOP development during all phases of the rotation. Every possible contingency was rehearsed, rehearsed, and rehearsed. The aircrews and security elements quickly coalesced into mission-ready teams that freely exchanged ideas and concepts. This exchange was absolutely essential to SOP development.

During JRTC 95-8, 3-160th maintained 24-hour theater CSAR coverage while providing continuous 3/20th SFG(A) support at the FOB. JRTC 95-8 validated our fighter management policy, strengthened our crew coordination and honed our battle-rostered crews. In all, the exercise was a resounding success that showed, once again, *Night Stalkers Don't Quit!*

★ ★

CW3 Frabott is the Battalion SIP, 3rd Battalion, 160th Special Operations Aviation Regiment (Airborne), Hunter AAF, GA.

A FORCE XXI APPROACH TO SELECTION OF ARMY SPECIAL OPERATIONS AVIATORS

In the face of shrinking resources, both manpower and financial, we are presented with ever increasing mandates to do more with less while preserving mission execution and success. It is not acceptable to consider adapting to these pressures by compromising performance standards.

We will not give cause for a fellow aviator to ever in casual conversation say, "I understand that the 160th has a new standard ... plus or minus ninety seconds!" Although one should never say never, with respect to this issue we feel safe with the comment, "It will *never* happen!" Instead, we must face these new realities with the same forethought, imagination, commitment, and energy that the 160th called upon during development and fielding of the MH-60K and MH-47E aircraft.

One way in which we can adapt is by improving the selection of future "Night Stalkers" to reduce training costs, improve the fit of pilots to missions, increase the tenure of pilots in the 160th, and improve pilot proficiency. The 160th will continue to succeed against the odds because we will act today to ensure future

A joint venture of the 160th SOAR(A) and the Army Research Institute (ARI).

needs are met.

With the assistance of the Army Research Institute (ARI), the 160th will embark on another mission essential endeavor to develop methods to aid in early identification of possible candidates for recruitment into Army Special Operations Aviation (ARSOA), and classification of these individuals according to

aptitude for specific aircraft or mission types.

The current system for recruitment, assessment, and selection draws from the Army wide population of aviators. Volunteers who exhibit potential are scrutinized for "goodness of fit" during formal assessment by the Regiment. This first look at possible candidates comes generally after several conventional Army Aviation assignments and accumulation of about 1,000 flight hours, of which approximately 100 are Night Vision Goggles (NVGs).

The long established process for Night Stalker candidate assessment and selection has proven effective and will not be replaced. However, the development effort now being started provides the

potential for enhancing the process through earlier identification of candidates, better development and tracking of candidate aptitude and reduction of the manpower required to conduct the selection.

Most people would agree that Special Operations Aircraft are more sophisticated than most other Army aircraft, in mission equipment, avionics, and airframe systems. Through training, the ARSOA aircrews possess greater than average levels of ability and proficiency. Given these factors, coupled with an environment of shrinking resources, the current process for accession of ARSOA pilot candidates, although adequate, may not be optimal. The current approach to selection and assessment may even be expected to degrade as aviation modernization progresses while at the same time the flying hours available for training are reduced.

Augmentation of the current selection and classification process is needed to ensure effective early identification and development of pilots with the attributes required for ARSOA service. An objective scientific approach is needed to identify candidates for Special Operations Aviation at the completion of initial flight training and associate these individuals with an aircraft for which they are best suited. Additionally, the process of early identification may facilitate duty assignments in conventional units that will optimize their development. After sufficient flight assignments, provided they volunteer, these individuals can be invited to enter the formal assessment process that leads to selection and assignment to the 160th.

ARI has already laid some of the groundwork for this project through development of selection tests and algorithms for assignment of flight students to specific aircraft during initial flight train-

ing. These tools have decreased training attrition and increased the proportion of students assigned to aircraft for which they have optimal aptitude. Using a similar model, the 160th intends to build a valid and reliable system for the early identification of future ARSOA candidates. The traditional approach to accession system development, however, is lengthy and often entails several iterations of product development and validation. Because Army Aviation is in a period of flux with regard to missions and mission equipment, this project will be directed toward rapid development of interim tools having known benefit and which anticipate changes in missions and equipment.

The approach that will be taken during this comparatively short-term (approximately two years) effort will be accomplished through a five-step process:

- *Definition of the decisions that are to be facilitated by the proposed products.* This means specifying the desired results for both selection and classification of candidates and relating those to objectively observable measures.
 - *Determination of the relevant personal attributes to be measured.* We will establish which features of a person contribute to, and predict, high likelihood of success in ARSOA training and operations. This step will emphasize measurement of attributes not previously considered, and will seek to preserve the diversity which is important to an organization's potential for innovation.
 - *Construction of the evaluation instruments.* Both existing and new tests, surveys, and other methods of observation will be used to measure the relevant attributes in a battery which will be validated against the Regiment's existing population of pilots.
 - *Construction of decision algorithms.*
- (SELECTION — continued on p. 24)

AERIAL REFUELING (A/R)

Seven years ago, the Army received its first modern Aerial Refuelable (A/R) helicopter. Today, it owns the largest single concentration of A/R helicopters in the world. Back then, the 160th Special Operations Aviation Group (SOAG) was borrowing and adapting Air Force and Navy programs to meet its needs. Now the 160th Special Operations Aviation Regiment (Airborne) (SOAR(A)), with its own tested procedures and instructors, is producing an unprecedented number of A/R qualified pilots. A/R has become nearly routine. "Routine" was a long time coming.

The 1980 tragedy in the desert of Iran reiterated the need for a fleet of long range, air refuelable helicopters. From this and other seeds was born the plans for the 160th SOAR's current fleet of air refuelable helicopters.

By 1986, E Company, 160th Special Operations Aviation Group had received the first of 12 (nav package) modified MH-47Ds. It was the addition of these navigation packages that transformed the "CHs" into "MHs", not refueling probes.

*How A/R
became "routine"
in the
160th SOAR(A)
and added
tremendous
capability.*

In 1987, four of the twelve MH-47Ds were fitted with probes at Boeing's facility in Philadelphia, PA. These four remained the only Army A/R helicopters for the next three years.

The actions during the hostilities in Panama required long range helicopters and by December 1989, E/160 was ready. Three probed MH-47Ds and their crews deployed

directly from Fort Campbell, KY, arriving at Howard AFB, Panama after flying for 15 hours. They made one stop at Hurlburt Field, FL, to link up and brief with their Air Force counterparts and HC-130 tankers.

This was the first self deployment by Army helicopters from their home base directly into a combat zone. They arrived in Panama flyable and ready to fight. The crews slept, briefed, and were back in the aircraft 16 hours after arrival, preparing to execute their H-hour mission. Air refueling played a vital role during Operation Just Cause, with many of E/160's missions requiring the procedure, including the 12 hour redeployment to Hurlburt.

The rest of the MH-47D fleet was

probed in 1990 and 1991. This increase in probed aircraft only exacerbated the already difficult task of training crews. The static number of worldwide tankers and the worsening ratio of tankers to receivers had the 160th working with U.S. Marine Corps as well as U.S. Air Force tankers.

In February 1991, four MH-47s and associated crews were airlifted to the western desert of Saudi Arabia for missions against Iraq during Operation DESERT STORM. All were successful. Most used A/R.

With this year's addition of 26 MH-47Es and 23 MH-60Ks, the existing 11 MH-47Ds, and plans to install probes on at least 10 MH-60Ls, a new era in Army Aviation has begun. This A/R era fixes the hardware problems identified in the deserts of Iran. It allows SOF the ability to deploy over very long distances, without wasting time or compromising surprise by "stopping to get gas". However, the new era also brings with it new challenges in training and sustaining: Staff coordination for the joint assets; joint coordination and standardization of A/R procedures; and Programs and Methods of Instruction (POIs and MOIs) updating and maintaining.

Aerial refueling of helicopters is a tremendous capability. It was used by the USAF during the raid on the POW camp at Son Tay, North Viet Nam, and is used by their rescue and special ops units today. The Navy continues to use helicopter A/R for their MH-53Es. The Army and the Night Stalkers of the 160th SOAR wholeheartedly endorse the expanding use of air refueling and accept its attached challenges. Night Stalkers Don't Quit!

- ★ ★ -

CWS Knight is the Regimental SIP, 160th Special Operations Aviation Regiment (Airborne), Ft. Campbell, KY.

SELECTION

(Continued from Page 21)

The decision goals and the measurement instruments will be synthesized into computer programs and assessment processes that produce predictions of success for candidates in each mission type.

● *Validation of the utility of the developed products.* The instruments and processes themselves will be assessed to determine their real effect in terms of the decision goals for the system.

A detailed description of this project is beyond the scope of this article, but one can readily see that this will be an arduous process with heavy requirements in manpower and other resources which will be costly in the near term. However, when the 160th collects the dividends from this investment we will reap a substantial profit in terms of ensuring our future success through better integration of aircraft and aircrews into an effective fighting system.

In summary, we quote one of the Army's most accomplished Special Operations warfighters, MG William (Bill) Garrison, who reminded us repeatedly that, "If we are going to remain successful on future battlefields, we must retain the ability to assess those like us..." There are four things that we can be certain will never change: 1) MG Garrison's remarks will remain explicitly correct, 2) the 160th will be called on again and again to serve in increasingly demanding circumstances, 3) the standard will always be "plus or minus thirty seconds," and 4) Night Stalkers Will Never Quit!

★ ★

LTC Franklin is the Regimental Psychologist, 160th SOAR(A), Ft. Campbell, KY, and Mr. Howse, is the Research Psychologist for Aviator Selection and Classification, ARI, Ft. Rucker, AL.

BRINGING LIVE-FIRE OPERATIONS TO CMTC

The darkness explodes from the sound and sparks of an AH-64A firing its 2.75 inch Folding Fin Aerial Rockets. Simultaneously, the AH-64's wing man uses his 30mm to engage a BRDM at 1,500 meters. Further to the west in the company's battle position the Attack Platoon Leader is requesting a remote engagement from his commander. The target is a 2S1 at 6,000 meters. This mission is the culminating event for a unit that has spent the last 24 to 48 hours planning and rehearsing. Successful execution is only achievable through extensive combined arms planning and preparation by staff sections throughout the Division.

This is high intensity combat in the former Republic of Danubia. Sownia, a province of the Republic of Danubia, has attacked into Vilslakia, also a province of Danubia. A United States Army AH-64 Task Force has deployed as part of a U.S. contingent to establish and maintain peace in this war-torn land. The country of Danubia does exist, as does the live-fire engagements, but only at USAREUR's Combat Maneuver Training Center (CM-

Aviation Task Force operations in the Republic of Danubia.

TC) and Grafenwoer Training Area (GTA). The deep attack, with an on-order hasty attack live fire scenario, provides a realistic and complex mission for Aviation Task Forces conducting rotations at CMTC. This demanding mission maximizes OP-TEMPO and collective tasks, in an environment that provides feedback from CMTC's obser-

ver/controllers.

CMTC designed this mission in four distinct phases: Deep Attack, Forward Assembly Area/FARP operations, Hasty Attack, and Occupation of a new Tactical Assembly Area (TAA).

Phase I: Deep Attack. *Plan* — The Aviation Task Force receives a mission to conduct a deep attack and, on order, a hasty attack. The Division deep cell, in part consisting of the Division Chief of Staff, DIVARTY Commander, and 4th Brigade Commander, formulates the plan. The 4th Brigade issues an order to the Task Force, which then refines the plan.

Prep— The Aviation Task Force attends the 4th Brigade maneuver and Fire Support rehearsals. The rehearsal synchroniz-

es all aspects of the mission to include information from the Brigade Combat Team (BCT). Critical information needed from the BCT is location of the Forward Line of Troops (FLOT), ground tactical plan, and passage point control measures. The Task Force Liaison Officer (LNO), located with the BCT, and 4th Brigade provide this information to the Task Force. The Task Force Fire Support Officer (FSO) is responsible for perhaps the most important task. The FSO must ensure synchronization and rehearsal of the fire support plan, which includes Suppression of Enemy Air Defense (SEAD). Finally, the Task Force conducts a thorough maneuver rehearsal with all Task Force elements and attachments.

Execution — This is where the mission changes from all the standard deep attack missions the Task Force plans and executes at home station. In this mission there is no notional enemy or friendly units, passage points, enemy Air Defense Artillery (ADA) or Combat Search and Rescue (CSAR). The attack companies depart their TAA, located near the Hohenfels Training Area (HTA) and fly a designated route into the HTA. They then conduct a passage of lines with a ground maneuver task force. If the company uses proper terrain flight techniques, maintains black out lighting, and uses effective counter measures they increase their chances of penetrating the enemy ADA.

CMTC uses the Tactical Radar Threat Generator (TRTG) to simulate enemy ADA. Execution of the SEAD plan occurs and accurate fires destroy known ADA sights increasing survivability. The companies continue to the battle positions and engage the target. Here, like the HTA, there are enemy vehicles and TRTGs. If the plan is successful, all aircraft will depart the battle positions, cross the FLOT, and occupy a forward assembly

area (FAA) at the Grafenwoer Training Area (GTA). Execution of the deep and hasty attack occurs at night.

Phase II: FAA/FARP Operations.
Rearm/Refuel — Ground occupation of the FAA and FARP occurs during the prep phase of the Deep attack. By moving Class III and V to a forward location the task force increases survivability and flexibility. The FAA collocates with the FARP, maximizing planning and briefing time for the on order hasty attack. This phase of the operation is perhaps the best training event that the Task Force receives in USAREUR. Task force refueling and rearming are tasks that do not occur during gunnery. Task Force synchronization at the FARP is critical. The Task Force must quickly conduct this difficult task in anticipation of the on order mission. This is especially true if the Task Force expects to conduct mass destruction attacks. Typically, the time required to conduct rearming and refueling is greater than anticipated.

Update — While the companies are conducting FARP operations, the Task Force Commander and S-3 receive the on-order mission to conduct a hasty attack. They quickly conduct mission analysis and issue a Fragmentary Order (FRAGO) to the company commanders, who in turn issue an order to their air crews. Due to the size of the ranges at GTA this mission is typically a phased employment attack.

Phase III: Conduct a Hasty Attack.
The attack — This mission provides the only opportunity in USAREUR for attack company commanders to maneuver their units during a live fire. It provides the commander with the opportunity to distribute sector of fires, execute command and control techniques and to conduct a battle handover with the follow-
(CMTC — continued on page 56)

COMANCHE IS HERE!

On 25 May 1995, the first Boeing Sikorsky RAH-66 Comanche prototype was officially rolled out of the Sikorsky Aircraft Plant in Stratford, CT during a ceremony that marked a major milestone of this development program. It was a rewarding and satisfying event, given the challenges that the program has had to overcome. Almost 1,000 civilian and military dignitaries attended the ceremony, which featured inspirational talks by the Chairman of the Comanche Tribe in Oklahoma, Wallace Coffey, and the U.S. Army Chief of Staff, GEN Gordon R. Sullivan.

"And now we will embark on new frontiers ... Comanche will be there," Chairman Coffey told the assembled crowd. GEN Sullivan alluded to the importance of Comanche's contribution to future battlefield situations when he said, "This is the flagship of the 21st Century Army. What you are looking at ... is the leading edge of the 21st Century."

Also on hand to offer their individual perspectives were Eugene Buckley, President of Sikorsky Aircraft Corporation;

*A report on
the arrival of
the Army's
newest
reconnaissance-
attack helicopter:
the Comanche.*

Denton R. Hanford, Vice President of Boeing's Helicopters Division; and James J. Morris, the Boeing Sikorsky Comanche Program Director. The U.S. military was also represented by MG Dewitt T. Irby, Jr., Program Executive Officer, Aviation; MG Ronald E. Adams, Commanding General of the U.S. Army Aviation Center and Ft. Rucker,

AL; myself; and Capt. Terry M. Kupovits, Commanding Officer of the Defense Plant Representative Office at Sikorsky.

The prototype that was rolled out in May represents the next generation of aviation technology that includes a composite airframe, Fantail anti-torque system, fly-by-wire flight controls, helmet display, low radar and infrared signatures, and a fully integrated cockpit. As development progresses, Comanche will demonstrate improved targeting and piloting image quality that will increase situation awareness and safety, provide increased combat effectiveness and battlefield survivability, and it will modernize the Army's corps and division scout and attack assets. Comanche will be easily

maintained, will require fewer personnel and support equipment, and will provide a decisive battlefield capability in day, night, and adverse weather operations. The system will provide an unprecedented level of operational flexibility and survivability to the battlefield commander.

This roll-out event is the culmination of years of effort given by thousands of dedicated individuals within government and industry who continue to believe in the critical need of this advanced system. Despite the numerous program restructurings, this team has kept Comanche on cost and on schedule. We now have a tangible piece of hardware and are anxious to get Comanche up and flying to demonstrate its extraordinary capabilities. Future tactical reconnaissance activities will depend on Comanche's unique, digital view of the battlefield.

In order to take advantage of the funds that remain available, the Program office, along with the Army staff and the user community, formulated a plan in which the first two prototypes will be supplemented by six Early Operational Capability (EOC) demonstration aircraft for initial field assessment and evaluation of airworthiness and reconnaissance and attack mission equipment. Test data provided by these aircraft assessments will help to support a Milestone II decision in October 2001, with low-rate initial production beginning in November 2004. The EOC aircraft utilized for initial operational test and evaluation will also be the aircraft assigned to the first unit for initial operational capability in July 2006.

Soon after the roll-out, the Comanche prototype was loaded and shipped to West Palm Beach, FL, where it arrived at the end of June. While on the way to Florida, the prototype was placed in static display at the Pentagon and on Capitol Hill in Washington, D.C., where government

and Congressional officials were able to visually inspect the aircraft and its technical features. This event provided a valuable opportunity to allow government leaders to see the first Comanche while gaining an understanding of its capabilities and its impending contribution to Force XXI. It also provided a means of demonstrating the Army's continued commitment to this vital system. The displays were also open to the media and public.

The aircraft is currently being prepared for its first flight, and initial flight testing that is scheduled to begin in November of this year. Boeing Sikorsky will begin flight preparation by testing all critical dynamic components on a Propulsion System Test Bed (PSTB). This will be followed by shake-down tests and instrumentation checkout prior to first flight. Initial flight testing is designed to demonstrate the aircraft's airworthiness and to determine the flight envelope. A second prototype will make its first flight in September 1998 and will incorporate an advanced reconnaissance mission equipment package that includes the target acquisition system and the integrated communications, navigation, and identification avionics system.

★ ★

BG Snider is the PM, RAH-66 Comanche PMO, St. Louis, MO.

AAAA AEC SYMPOSIUM SET

The 13th Annual Aviation Electronic Combat (AEC) Symposium will be held at the Galt House Hotel, Louisville, KY, October 30-November 1, 1995. This year's theme is *Joint Aviation Electronic Combat*.

The 1995 AEC Symposium is open to all interested AAAA members and will NOT be classified. Contact the AAAA National Office at (203) 226-8184 for Registration and Housing Forms.

AVIATORS NIGHT VISION IMAGING SYSTEM/HEAD-UP DISPLAY

The AN/AVS-7 Head-up-Display (HUD) system provides pilots with mission and safety enhancements while conducting ANVIS missions. It reduces pilot workload by superimposing flight, aircraft, and navigational information "heads-up" on the ANVIS night scene which allows the pilot to concentrate on the outside environment.

The HUD is under a five year production contract to AEL Industries, Inc., Cross Systems Division, Alpharetta, GA with ELBIT Ltd. of Israel as the major subcontractor.

The HUD is also slated for the following Army, Navy, and Marine aircraft; MH-60L/K, MH-47D/E, UH-1N, CH-46E, CH-53E, KC-130, HH-60H and V-22.

Description. The HUD acts as a sensory gathering device that retrieves flight, aircraft, and navigational information from various aircraft sensors, processes the data, and then displays it to the pilots.

The AN/AVS-7 system consists of an A-kit and a B-kit. The A-kit is aircraft specific and contains the mounting

Update on HUD fielding and an outlook for additional HUD-related activities.

brackets, aircraft wiring, connectors, transducers, and sensors that stay with the aircraft (weight averages 17 to 24 pounds). The B-kit (electronics) includes the signal data converter (SDC), converter control unit (CCU), and two display units (DU). The B-kit weighs approximately 17 pounds. The B-kit is interchangeable between the UH-60

A/L, MH-60L, CH-47D, MH-47D and UH-1V aircraft. A MIL STD 1553B version of the B-kit exists and will be interchangeable between the MH-60K and MH-47E as well as any future "bused" aircraft.

Symbology. The HUD allows pilots to display all, none, or any combination of the symbols (with minor exceptions) shown in Figure 1. The system has four independent primary modes and four declutter modes for each pilot. A symbology working group, chaired by PM-NV/RSTA, will develop a user survey to further evaluate HUD performance in the field. The results of the survey will be used by the working group to improve symbology and system performance. The first working group

How Do You Find Infinity?



With the new ANV-20/20 from Hoffman Engineering, you can find infinity in the field, on the flight line, or in the back of a transport. This compact, battery operated system allows accurate adjustment of infinity focus, assessment of high and low light resolution, and a visual check for NVD dynamic range....All in one portable package!

Using a wide aperture collimator, the ANV-20/20 also allows proper adjustment of NVD mechanical aspects such as tilt, alignment and IPD. The ANV-20/20 also features an 8-step "gray-scale" covering a range of 2 1/2 decades to check NVD dynamic performance.

The high resolution, high gain night vision devices of today require today's support equipment. They require equipment from the people who have designed NVD test equipment for over 15 years....

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**For Further Information or
an On-Site Demonstration,
Contact Beth Pryor at
203-425-8900.**

meeting is planned for September 1995.

Army Aircraft Status. UH-60 A/L and MH-60L: Fielding to XVIII Airborne Corps UH-60 units and the MH-60Ls began in February 1995. The entire Army UH-60A/L & MH-60L fleet should be completed by 1Q FY98.

CH-47D and MH-47D: The CH-47D HUD has one technical retest (Electromagnetic Vulnerability) remaining before fielding can begin. The test is scheduled for August 1995. By requirement, the HUD was designed to interface with the AN/ASN-128 Doppler. The office of the Project Manager for Aviation Electronic Combat (PM-AEC) is in the process of fielding the AN/ASN-149 (V) (149 GPS) to a portion of the CH-47D fleet. PM-NV/RSTA is developing the software required for the 149 GPS to interface with the HUD. The software fix should be in place by 2Q FY96. CH-47D A-kit installations to non-149 GPS aircraft will begin September 1995. B-kits will be fielded to CH-47 units beginning November 1995. The 160th Special Operations Aviation Regiment should start receiving HUD systems for the MH-47D in 2Q FY96. The entire CH47D and MH-47D fleet should be completed by 2Q FY98.

MH-60K and MH-47E: The contract to install the HUD on the MH-60K and MH-47E busser aircraft is in the negotiation phase and should be awarded 4Q FY95 with prototypes for both aircraft flying by 3Q FY96.

UH-1V: The requirement to incorporate the HUD into the UH-1V is under review by the Director of Combat Development (DCD), Ft. Rucker, Alabama.

HUD Training. An important aspect of any system's life cycle is training for the user. PM-NV/RSTA has worked closely with ATB, CECOM NET, ATCOM NET, and Ft. Gordon in developing an

effective training approach for the HUD. PM-NV/RSTA is using New Equipment Training (NET) for initial training, upgrading aircraft simulators, and reviewing PC based training packages (in conjunction with Marine platforms) to assist users in sustainment of HUD operator and maintainer skills.

NET is an integral part of HUD fielding. Shortly after receiving B-kits, units will witness the arrival of a CECOM NET team. The HUD NET will consist of operator (pilot) and maintainer training. The maintainer course is designed to provide MOS 68Ns the skills necessary to maintain the HUD at the AVUM level. These skills include system operation, fault isolation (internal system BIT), removal and replacement of LRUs, and electrostatic discharge procedures. The operator course will qualify pilots for operation of the system. The operator course includes a minimum of three 1.0 hour flights per pilot. To maximize the training benefits, these flights will be conducted on separate nights. The NET team requires approximately one week at each location to complete both courses.

The Aviation Training Brigade (ATB) at Ft. Rucker is currently developing an exportable training package which will incorporate the NET requirements. The package is expected to be approved for release by 4Q FY96. The next change to the Commander's Guide (TC 1-210), due November 1995, will reflect the HUD qualification requirements.

Under a Memorandum of Agreement between PM-NV/RSTA and STRICOM the HUD will be installed on all UH-60, MH-60, CH-47 and MH-47 simulators. The first simulators will be equipped in 4QFY96. PM-NV/RSTA and CECOM are investigating the use of a PC-based HUD training package as an additional aid to the simulators and the exportable

Two premier defense electronics companies have joined forces to further expand night vision technology—already a key advantage for U.S. Army battlefield helicopters. Now, Heads-Up Display (HUD) will assure safer, more efficient flight operations under all conditions.



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MASTER MODE SYMBOLOGY DISPLAY



TABLE 1: SYMBOLOGY DATA

Symbol No.	Description	Symbol No.	Description	Symbol No.	Description
1	Angle of Pitch Scale	2	Bearing to Waypoint Pointer	3	Compass Ref. Scale
4	Acft. Heading Fix Indicator	5	Angle of Role Pointer	6	Angle of Roll Scale
7	Barometric Alt. (MSL)	8	Adj./Program Mode Message	9	OK/Fail Message
10	Velocity Vector	11	Rate of Climb Pointer	12	Radar Altitude (AGL)
13	Low Altitude Warning	14	Radar Altitude Analog Bar	15	AGL & Vertical Speed Scale
16	HUD Fail Messages	17	Trim Indicator	18	MST, MEM, Hook messages
19	Engine, Fire, RPM warnings	20	Horizon Line	21	Page Number
22	Torque Limits	23	Torque Numeric	24	Ground Speed
25	Indicated Airspeed	26	Attitude Ref. Indicator	27	Engine Temperature
28	Distance to Waypoint	29	Bearing to Waypoint Numeric		

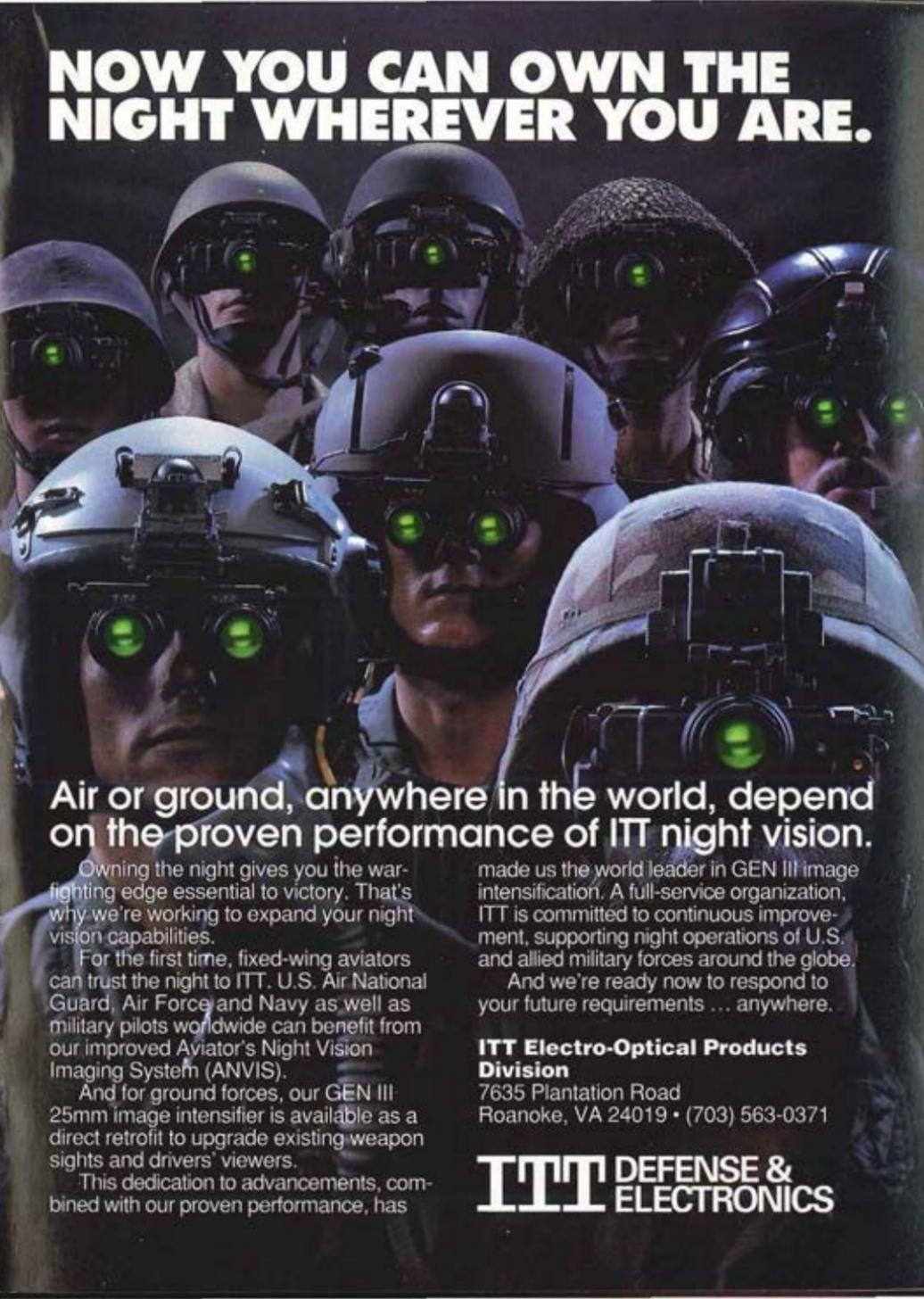
training package.

HUD Related Efforts. PM-NV/RSTA is also evaluating a "DAY HUD" to support MWO installation verifications and aid in future maintenance efforts. The "DAY HUD" utilizes the electronics of the standard HUD and replaces the display units to allow all symbology to be displayed during daylight conditions. PM-NV/RSTA is also working with the U.S. Army Safety Center to provide an

integrated system for flight data recording purposes. The HUD could provide a significant portion of the data required by a flight data recorder on non "bused" aircraft.

★ ★

Mr. Troxel is the Project Leader, AN/AVS-7, and MAJ Nicholson is the Assistant Project Manager, PM NV/RSTA, Ft. Belvoir, VA.



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AVIATION TECHNICAL TESTING

The U.S. Army Aviation Technical Test Center (ATTC), one of the Test and Evaluation Command's (TECOM's) nine technical test activities, has been extremely busy. The developmental testing workload has remained quite robust, while personnel and resources continued to drawdown due to reshaping within the Army. During 1994, ATTC flew well over 4,500 test hours, participating in 176 different flight projects and successfully completing 58 test programs. It is noteworthy that during this year of challenging testing, no major aircraft accidents or incidents (Class A-C) occurred.

Several significant test projects were completed in support of major weapon acquisition programs, to include the AH-64D Apache Longbow Pre-Production Qualification Test (PPQT) and the initial development testing of the Multi-Mode Radar (MMR) for the Special Operations Aircraft Product Manager, preparing the MH-60K and MH-47E for MMR qualification testing in 1995.

With regard to Longbow Apache,

Recent efforts include Longbow pre-production tests, MH-60K and MH-47E tests, and UH-60 quick reaction tests.

ATTC supported several short Preliminary Airworthiness Evaluations (PAEs), as well as an extended PPQT effort. PPQT was quite demanding and required six test pilots, several test engineers, an experienced military crew engineer/technical inspector, and contractor personnel. Initial Longbow qualification training for this test

was conducted at the McDonnell Douglas Helicopter Systems facility in Mesa, AZ, in April/May.

The bulk of the test flying was done at Yuma Proving Ground, AZ, with some additional mode development testing done at the Westinghouse facility in Baltimore with four missile firings conducted at YPG and the Missile Command's test facility at Eglin AFB. All total, ATTC flew over 400 hours in support of the Longbow PPQT, with the flying portion concluding just before Christmas.

The Force Development Test and Experimentation (FDTE) began in October 1994 at Fort Hunter-Liggett and was successfully completed, along with Initial Operational Test and Evaluation

(IOTE), ahead of schedule. ATTC test pilots were impressed with the Longbow cockpit and enhanced flight management systems. Overall, the Longbow is a significant enhancement of a proven system and will be a welcomed addition to Army Aviation.

In the Special Operations arena, ATTC provided off-site support to the Special Operations Aviation Regiment and the Special Operations Aircraft PMO. This support was provided in the form of several PAEs, shipboard compatibility tests, EMI/EMC tests, as well as a year long development effort for the terrain following/terrain avoidance feature of the MMR, which was completed in January 1995.

ATTC provided an instrumentation data van to Fort Campbell, KY to collect and reduce quick look flight data. In addition, ATTC experimental test pilots flew in mixed crews with 160th SOAR test pilots, in a combined test team environment. Both contractor and Department of the Army Civilian flight test engineers supported data collection on many of the test flights.

These flights were conducted with the crawl-walk-run risk management philosophy in mind. That is, the terrain following flights began in level terrain and then progressed to rugged terrain with obstacles, such as towers. Similarly, the test altitude (height of the aircraft Above Ground Level (AGL)), initially was established at 300 feet AGL and ultimately reduced to 100 feet AGL. The most demanding and challenging portion of this profile is flying in response to a cockpit display cue provided to the pilot by the MMR and the Integrated Avionics System (IAS). Most of the flying was done locally at Fort Campbell, except for the more rugged terrain, which was

conducted near Knoxville, TN. In total over 300 flight hours were dedicated to this effort in 1994.

The MMR software development has been evolutionary. During the development effort ATTC recommended numerous software enhancements to improve the performance and cockpit displays of the MMR. The MMR development phase has worked quite well in a combined test team environment. Qualification testing of the MMR began in March 1995 at ATTC's Airworthiness Qualification Test Directorate, located at Edwards AFB. It is anticipated that three hundred hours will be flown on both the MH-60K and the MH-47E during the qualification test. The bulk of this testing will be conducted on the surveyed courses at Edwards AFB, which were used for the developmental testing of the Air Force's AC-130. These two aircraft should perform much better in qualification testing due to the successful development effort preparatory phase. Both aircraft have been instrumented and have begun qualification testing.

During 1994, two high visibility safety-related tests were also flown. First, in response to a UH-60 Black Hawk Class A accident in USAREUR, ATTC tested various lateral center of gravity configurations with external fuel tanks. This testing, at the request of the PM, resulted in a better understanding of what caused the accident and modified operating procedures for managing external fuel to prevent out of lateral center of gravity situations in the future. The second safety-related test was initiated due to a UH-60 Black Hawk accident at the National Training Center. This quick reaction test, conducted at the request of the Army Safety Center,

investigated engine outgassing, a phenomenon which occurs when the aircraft is operated at a five to six degree nose-low attitude for a prolonged period of time without the fuel boost pumps operating. During this test ATTC was able to duplicate the accident conditions and determine what caused the engines to flame out. As a result, a Safety-of-Flight message was sent to the field which modified operator checklists for Black Hawks to ensure that engine fuel boost pumps will be on at all times. Both of these tests are excellent examples of how technical testing can support improving the overall safety of the fleet.

This past year has also been a strong testament to the Lead the Fleet (LTF) program. LTF has been a program in which each of the advanced aircraft (UH-60L, CH-47D, AH-64A, and OH-58D) fly profiles representative of what is flown by the fleet, but at an accelerated pace. LTF also provides the opportunity for additional tests to be flown on the same airframe in a "piggy-back" fashion, thus avoiding additional flying hour expense. Nearly fifty piggyback tests were conducted through the LTF program. This program has more than paid for itself over the years in cost avoidance. Roughly twelve hundred hours were flown in support of LTF testing.

Numerous other tests were flown over the course of the year, some which entailed significant test modification efforts by ATTC. Several of the more noteworthy tests include: the UH-1H U.S. Border Patrol modification program, the Aerial Reconnaissance Low (ARL) aviation test bed program, and the Hyper Spectral Imaging System Advanced Technology Demonstration (ATD).

The U.S. Border Patrol mod program entailed upgrading five UH-1H

helicopters with T-800 engines, enhanced avionics, FLIR, night searchlight, and law enforcement upgrades, and then testing this new configuration. The program is now winding down and the acceptance ceremony by the Border Patrol is scheduled for July 1995.

During 1993, ATTC modified a C-23A Sherpa for use as an Aviation Multi-sensor Test Bed. In 1994 and early 1995, this aircraft supported several technology demonstrations, as well as side-by-side sensor testing of various candidate sensor systems for the ARL Dash 7 aircraft. In addition, ATTC's U-21H was used for several technology demonstrations, culminating in an Advanced Technology Demonstration (ATD) of a Hyper Spectral Imaging system in Panama in December. This aircraft flew numerous test flights over different environments and the test data gathered has proven quite encouraging.

Throughout 1994 the test center managed a budget of over \$38M while expending 470 workyears. The testing described herein only scratches the surface of ATTC's total workload. Not only were airframes tested for airworthiness and systems performance, but aviation-related equipment was also tested, such as Survivability, Life Support, and Ground Support Equipment. ATTC has continued to provide responsive and quality testing to its customers in these challenging times of downsizing. Rest assured ATTC will continue to live up to its motto of "Test Above the Best".

★ ★

COL Bergantz was the Commander, U.S. Army Aviation Technical Test Center, Ft. Rucker, AL, when this article was written.

DIRECTED ENERGY WEAPONS: AN AVIATOR'S WORST NIGHTMARE

The former Soviet Union has dissolved and in its place is a commonwealth of independent states. Free enterprise is now encouraged and entrepreneurs have emerged offering access to equipment and hardware that was previously exclusive to the Soviet military.

Examples of hardware being offered include Soviet military night vision goggles and a Q-switched solid state laser pistol developed for the KGB.

Recently, a group of high power laser weapons was offered for sale by the former Soviets based upon systems reportedly built for the Soviet military. Line drawings of these weapons have been passed to U.S. technologists at open scientific meetings. The drawings present multi-vehicle configurations for a laser emitting at a level of 400 kw of average power. The diagrams show a complete self contained system with an integrated beam director. This device would be far larger than any reported mobile ground based laser system in the United States.

A Modern Battlefield Environment for Army Aviators. The Threat

*Tactics and
Doctrine
must be
developed now
to counter
this energy
threat.*

Simulator Management Office (TSMO), under the Program Manager for Instrumentation, Targets and Threat Simulators (PM ITTS), part of the U.S. Army Simulation, Training and Instrumentation Command (STRICOM), created a training environment where fixed and rotary winged pilots could experience the impact of threat laser air

defense weapons.

This was accomplished by implementing a virtual prototype in the Distributed Interactive Simulation (DIS) environment at the Aviation Test Bed at Ft. Rucker, AL in May 1994. This facility offered the opportunity for Army Aviators to train in a futuristic battlefield where threat laser air defense weapons were fielded without the obvious safety concerns associated with high powered laser beams.

The Los Alamos National Laboratory (LANL) was named the Project Leader responsible for providing a turn key simulation and subsequent reporting. In a coordinated effort between the TSMO, Defense Intelligence Agency (DIA), and subject matter experts from LANL, the

following objectives for the assessment were established:

- Demonstrate the utility of virtual prototyping of threat military systems.
- Assess the ability of a ground based laser weapon gunner to acquire, track, select aim points, and engage a variety of airborne targets.
- Assess the lethality of two specified laser weapons in terms of laser power on the target.
- Demonstrate how virtual prototyping in a distributed interactive simulation environment can be used to support and complement open-air testing.

This threat assessment study was designated the DISDEW, the Distributed Interactive Simulation of a Directed Energy Weapon.

The DEW Virtual Prototype. With input from the DIA Missile and Space Intelligence Center, specifications were generated for the two threat systems. Two virtual prototypes were created in software for the DISDEW project, a high power system, called XDEW, and a medium power system, called MDEW.

The DEW vehicle interface was based on the existing Air Defense Anti-Tank System (ADATS) simulator. The target acquisition and tracking capability of the DEW vehicles was provided by a system based upon optical contrast tracking using both a Day TV and FLIR.

During the operation of the DEW vehicle, the gunner received target intelligence updates via radio communication for targets outside of the 12 kilometer tracking range. Within 12 kilometers, the gunner attempts to locate, track, and lock-on to the target using the contrast auto tracker. Target lock-on resulted in the aim point cross hair tracking the center-of-mass of the target. The DEW gunner may then elect to offset the aim point to a softer area of the target

such as the aircraft canopy using a handgrip control or fire at the structural aim point on the aircraft.

Battle Scenarios. A significant amount of planning went into designing tactically relevant battle scenarios that created a combined arms environment. The DEW vehicles were deployed as a Red Air Defense asset in an over watch position defending a critical point within a combined arms battle. The Red Air Defense array included ZSU-23/4 anti-aircraft guns and SA-9 surface-to-air missiles.

The Blue Force included Army and Air Force aircraft that formed a Joint Air Attack Team (JAAT) with artillery support. Two manned AH-64s and two manned F-16s formed the JAAT. Both Red and Blue Forces included computer generated vehicles programmed to fight based upon prescribed maneuver and engagement rules. The vehicle appearance and behavior were implemented so that the human participants could not readily conclude whether the enemy vehicle was manned or unmanned. In addition to the JAAT force, the DEW was opposed with terrain following cruise missiles following programmed flight paths through the battle area defended by the DEW weapon.

Blue Force operations were based on the standard five paragraph order. At the start of each trial, warning orders were provided to the pilots that included launch points, launch times, passage points across the forward line, and the coordinates of the objective area. The intelligence report to the pilots prior to each mission warned of the presence of a new directed energy device of unknown capability and unspecified silhouette.

Since the DEW weapon is a line-of-sight device, two topically different terrains were chosen that offered contrasting opportunities of engagement.

The first was a Ft. Knox, KY database to provide a relatively flat ground terrain for long range engagements. The second was a Fort Hunter-Liggett, CA database that favored terrain masking and shorter range engagements.

Test Design and Monitoring. The test design consisted of 80 battle trials conducted on two terrains with the battle terminating when one of the three conditions were met:

- The DEW vehicle was killed
- All four JAAT aircraft destroyed
- Aircraft low on fuel or ammo expended
- or 85% of the objective area was destroyed.

The battle scenarios allowed execution of a typical mission in about 30 minutes. 80 valid trials were performed over an eight day period. Prior to record trials, the pilots were provided training with regard to directed energy threats to include viewing of directed energy threat videos.

Damage Assessment.

Damage assessment was evaluated in real time through the novel use of a damage server computer connected as a node on the simulation network. The damage server hosted a real time executable derivative of the U.S. Army HELAWS numerical laser damage model to quantify both single pulse and cumulative fluences on target. The damage server allowed the input of 31 steady state variables specifying the atmospheric conditions, laser performance specifications, and tracking jitter parameters.

The model also processed eight dynamic variables as generated real-time during the battle including target XYZ, target velocities, and number of pulses fired.

Data Acquisition and Analysis. Dataloger tapes provide a detailed record of "what" happened. In addition, the "why" of what happened was assessed through the use of pilot interviews conducted by test analysts who were assigned to observe and record the human responses of the pilot. This effort was further facilitated by daily oral debriefs in an open forum atmosphere.

Results. The test proved that laser weapon systems can dramatically effect battlefield operations. The initial DEW engagements changed the tempo of the attackers. The rotary winged aircraft immediately stopped and dropped into a masking posture. Tactics were then modified by both fixed winged and rotary winged aircraft requiring additional coordination, further reducing the tempo of the battle. Often attackers would abandon their primary assigned mission of destroying the target to search and destroy the laser system defending the

"The test proved that laser weapon systems can dramatically effect battlefield operations. The initial DEW engagements changed the tempo of the attackers."

Red Force.

The laser weapons increased the effectiveness of other defense assets. SA-9 missiles and ZSU-23/4 guns became more effective due to slower battlefield tempo.

Like all line-of-sight weapons, the engagement effectiveness of lasers is terrain dependent. This is especially true in low altitude cruise missile attacks. The DEW weapon system proved effective against cruise missile targets given line-of-sight.

The DISDEW study showed that virtual prototyping is a valuable tool for weapon system analysis and tactics development. (NIGHTMARE — continued on p. 49)

AVIATION RESTRUCTURING INITIATIVE: 6TH SQUADRON, 6TH CAVALRY PERSPECTIVE

The purpose of this article is to briefly describe how the 6th Squadron, 6th U.S. Cavalry accomplished the tasks of reorganization and training during the Aviation Restructuring Initiative (ARI).

Our intent is to briefly share some of our experiences and lessons learned so units about to convert to ARI, whether CONUS or OCONUS based, may gain from our experiences.

There are four important lessons intuitively obvious:

- analyze the mission and develop a plan early;
 - follow the plan;
 - allocate enough time and resources, and;
 - seek and welcome help from higher.
- The latter two became critical during execution.

Due to several variables driven by higher, the Regimental Commander and I postponed the implementation and execution of our ARI plan, initially putting us above glide path; we started with only seven months to complete the

The first line unit to transition to ARI reports on Lessons Learned.

training strategy and MTOE conversion plan. As a battalion commander you have few internal resources at your disposal to affect a major reorganization. It is paramount your staff and the Regimental/Brigade staff are joined at the hip early and remain so throughout the transition.

First, we developed our plan (discussed later in detail). This was a joint effort by all troop commanders and staff sections with guidance and final approval by the Regimental Commander and his staff. Next we decided how we would organize and execute. We divided the mission into three broad areas and task organized accordingly:

- Training (the most time consuming).
- Personnel.
- Logistics.

We then developed an event and milestone time-line to follow and track our progress. I tasked the Squadron S-3, MAJ Dyfied Harris, with organization, doctrinal employment, train-up and evaluation. My guidance was to research

and determine how best to organize for combat at the scout attack team level. At the Troop and Squadron level, develop a comprehensive "crawl, walk, run" training methodology and a recommended evaluation plan. This was an arduous task and took extensive time and effort, especially trying to develop work around solutions based on what I feel are major TOE shortcomings in command and control at all levels.

I tasked my Executive Officer, MAJ Bill Pierce, with the logistical and personnel support tasks. My guidance was to develop a plan to expeditiously and efficiently requisition and integrate new equipment, turn-in excess equipment, and sustain personnel strength without degrading or reducing overall combat readiness; an extremely exhaustive and difficult mission to say the least.

Throughout the entire process my number one priority was to take care of displaced soldiers and families. This required the whole chain of command getting personally involved to insure soldiers and their families personal and professional needs were met.

The second major emphasis was training Apache Scouts and Scout Attack Teams (SCATS). It became quickly obvious the school house produces Attack/"Gun" pilots, not scouts. Although our scout helicopters went away, the scout mission was still viable and remained. This initially became our biggest training challenge. First, we had to break the preexisting mind set, and second, we had to thoroughly train the scouting basics and emphasize proper team movement using reconnaissance and security scenarios as the training vehicles.

How we specifically accomplished our ARI mission will be discussed in the following sections by the S-3, S-1, and S-4, respectively.

THE TRAINING ARENA

by MAJ Dyfied Harris, S3

Our Aviation Restructure Initiative (ARI) training program began with many brainstorming sessions between Scout IPs, Gun IPs, Troop Commanders, Staff Officers and the Squadron Commander. During these sessions we asked ourselves many questions, the most important of which were:

- How should we organize for combat?
- What are the advantages and disadvantages of employing an AH-64 Apache-pure attack troop?
- How should we organize to train gun pilots to be scout pilots?

Although there were many possible answers to these questions we narrowed our focus to two possible solutions: (1) form each line troop with one attack platoon and one scout platoon, as diagramed by the MTOE; or (2) form each line troop with two identical platoons consisting of two scout crews and two attack crews. We chose the latter because it provided two balanced fighting forces with organic scouts and guns, this would limit the need to task organize.

Next, we asked guidance from higher. The Regiment Commander's guidance was twofold: (1) maintain proficiency in deep attack operations, at night (our METL), because we still had real world missions; and (2) expand the capabilities of the Apache by training Troops and Scout-Attack Teams (SCATs) in the reconnaissance and security missions. Based on the guidance from higher, we decided to "keep it simple".

We developed a progressive crawl-walk-run training strategy. Our final training plan covered six months and consisted of five phases: individual/crew training, team training, troop training, squadron training and an external evaluation. Each phase built the base for



6TH SQUADRON, 6TH CAVALRY



Scout Academics

TC-1-214

Perform Aerial Observation
Perform Masking and Unmasking
Perform Techniques of Movement
ID US & Threat Equipment
Perform Target Handover
Call for and Adjust Indirect Fire
Perform Actions on Contact
Search for and Identify Targets in TADS
Operate On-Board recording System
Reconnoiter and Recommend a Holding Area
Call for and Control a Tactical Air Strike
Transmit a Tactical Report
Perform Target Store Procedures
Reconnoiter and Recommend an LZ or PZ
Perform Route Reconnaissance

TC-1-214

Perform a Security Mission
Perform a Zone Reconnaissance
Perform a n Area Reconnaissance

STP 1-15II MQS

Plan Suppression of Enemy ADA
Plan and Conduct Reconnaissance Selection and Occupation of a Position
Prepare Intelligence Reports
Conduct Aviation Operations IPB
Apply Fundamentals of Fire Support Planning and Execution

MANUALS

FM-1-116 Cavalry Reconnaissance Troop
FM-1-117 Cavalry Reconnaissance
FM 5-36 Route Reconnaissance and Classification
FM 100-5 Operational Terms and Symbols

Fig #1

the next more complex phase of training (see detail discussion below). The culminating event for the training plan was the out-of-country external evaluation/validation.

Phase one, *Individual/Crew training*, was the most important phase because it laid the foundation on which all the other phases would build. We began by sending every aviator through "scout school" — a 12-hour classroom academic program designed by our OH-58 SIP to teach "gun" pilots to think like "scout" pilots and perform the scouting missions from the AH-64 platform. Instruction focused on fundamentals of reconnaissance and security, battle position operations, call for fire, etc (Figure 1).

The classroom instruction created a pool of potential Apache Scouts from which each line troop commander selected four crews to follow the "Apache Scout" track

and four crews to follow the "Apache Gun" track (Figure 2). Each troop commander had to choose his best pilots to be "Apache Scouts" because they had to maintain proficiency in all scout tasks and gun tasks. Their extensive training program enabled them to function as either scout crews or gun crews. However, the "Apache Gun" tracked pilots would only function as gun crews. Additionally, regardless of track designation, all troop commanders, platoon leaders and instructor pilots were required to complete training in the "Apache Scout" track. End-state of this phase was each line troop organized for combat with four "Apache Scout" crews and four "Apache Gun" crews.

During phase two, *Scout-Attack (SCAT) Team training*, we focused on how to best employ the AH-64 as a scout as a member of the SCAT team. Although we



6TH SQUADRON, 6TH CAVALRY



INDIVIDUAL/CREW TRAINING

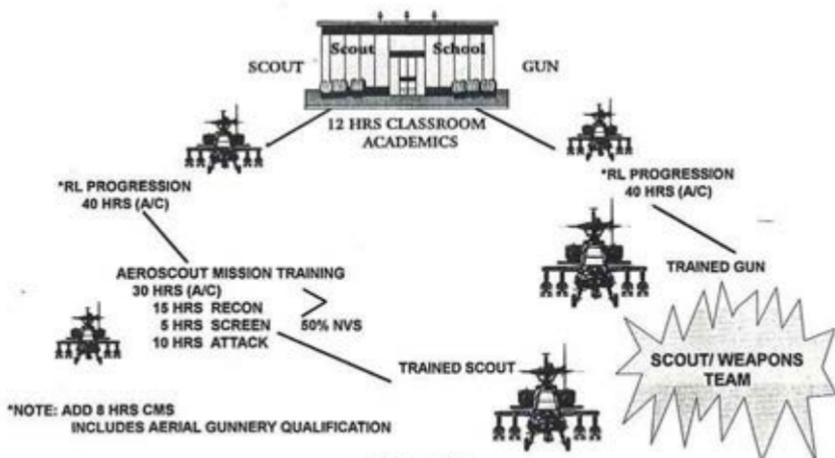


Fig #2

knew the Apache's optics, weapons, and navigational systems made it a more capable platform than the OH-58, we did not know how to exploit these capabilities during reconnaissance and security missions. An absence of "how to" manuals forced us to rely on the expertise of our OH-58 and AH-64 instructor pilots. They played a key role in developing and executing the SCAT Team training program.

The team training program utilized STX lanes and Combat Mission Simulators (CMS) scenarios designed to teach techniques of movement as a SCAT Team. We focused on fire and maneuver using the "wing-man" concept as it applies to traditional scout missions like reconnaissance and screening. During these missions the SCAT teams learned that although they had identical aircraft capabilities they need to delineate roles

and responsibilities (Figure 3). For example, the scout had to orient on the terrain and enemy, the gun had to protect the scout and orient on the enemy. Once the SCAT team learned these basic principles, they concentrated on using their superior optics and armament to ensure mission success. Throughout the training each SCAT team was observed, coached and critiqued by our remaining OH-58 crews, the Squadron Commander, and the S3.

Phase three, *Troop training*, was the point at which the squadron began to walk. Using squadron-generated orders and tactical scenarios to facilitate training, we focused on troop collective training. The troops primarily conducted four missions: screen, route/area recon, zone recon and attack. We especially focused on the Apache Scout's role in the deep attack mission (our METL). We used



6TH SQUADRON, 6TH CAVALRY



SCOUT vs WPNS TEAM TRAINING

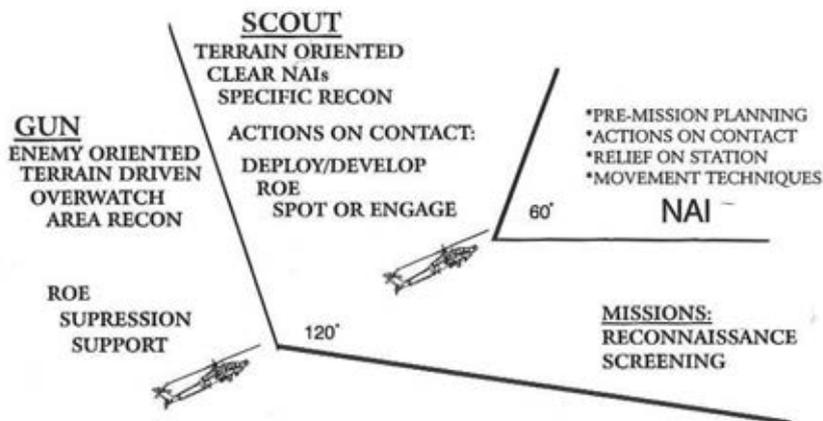


Fig #3

STXs and computer simulation (JANUS, UCCATS) to train pre-mission planning, movement techniques, command & control, actions on contact, BP operations and relief on station. The basic troop employment configuration for this phase was usually three SCAT teams and one extra crew, normally the commander, who acted as a scout or a gun depending on METT-T. If maintenance allowed for eight aircraft, the troop normally employed four SCAT teams. This phase ended with a Squadron FTX which included external troop ARTEPs.

Phase four, *Squadron training*, was the phase during which the squadron began to orient on our METL and putting the pieces together. The critical training objective during this phase was battle staff training. We focused on training the tactical decision making process, C3, and integrating the battlefield functions. We

use many different opportunities and techniques such as; MAPEXs, TTPs seminars, and computer simulation exercises. Once we attained a comfort level of proficiency, we re-enforced our simulation training through squadron-level STXs and FTXs.

What was particularly challenging about this phase was C3. A quick glance at the ARI MTOE structure shows that it lacks the necessary organic equipment to facilitate long range communications. There are no HF or SATCOM radios authorized. Therefore, we were forced to use FM retrans and/or redundant air-ground relay sites to gain effective communications with forward elements (Figure 4). Additionally, the lack of organic UH-60s made command and control difficult. We always utilized aground TAC as a backup to external UH-60 support. Obviously the TAC could

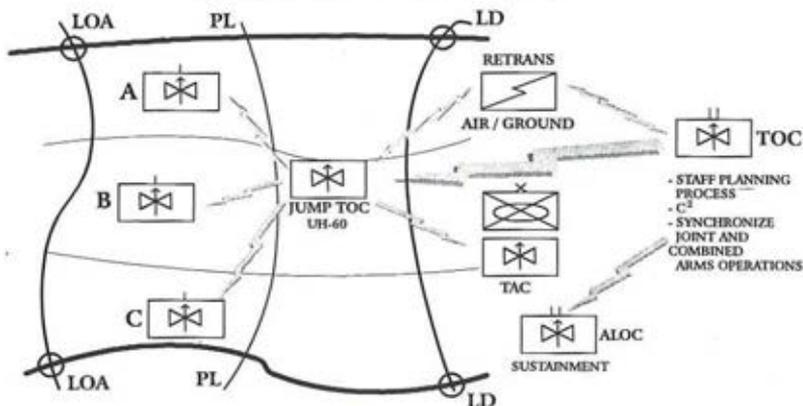
SQUADRON TRAINING

Fig #4

not keep up with the aircraft; however, when it was in position near the FLOT it often proved to be a more reliable means of communicating to the rear. At the conclusion of this training we were running at full speed and ready to execute phase five.

Phase five, the *ARTEP*, was our final stamp of approval. It was an out-of-country deployment and an external evaluation which was controlled and supported by the Regiment. The Regiment Commander decided we would go to the Polygon Range Complex because it provided the terrain and enemy air defense system that would challenge even the most experienced organization. He wanted to test the new ARI structure in a tough and realistic setting. To add to the realism, the Regiment developed a scenario which focused on the gradual build-up of hostilities; i.e., a road to war.

The final stage of the scenario was the Squadron's deployment to the region as a peacekeeping/peacemaking force. The *ARTEP* results confirmed that our train-up worked. After two weeks of training (one week train-up, one week evaluation), we left the *ARTEP* ready for combat.

In conclusion, the ARI train-up process was challenging. It was not simply a matter of turning in OH-58s and telling AH-64 pilots they were now scouts. We learned that there is indeed a fundamental difference in the way a scout pilot and a gun pilot thinks. We also learned that although the AH-64 has better optics, navigational equipment and armament systems, a solid understanding of the fundamentals of the scouting missions is needed before the advantages of the more capable platform can be exploited. These simple facts were critical to the success of our ARI train-up. However, as we

continue to train, we are sure there are many new lessons to be learned concerning training and maintaining under ARI.

THE PERSONNEL ARENA

by 1LT Robin J. Baker, S1

The Squadron's strategy for personnel transition under ARI occurred in two phases:

- Identify and fill critical personnel shortages.
- Reassignment of all UH-60 and OH-58 personnel.

We worked closely with USAREUR 1st PERSCOM, V Corps G-1, and our Regimental S-1 and CSM to ensure our soldiers and their families' personal and professional needs were met.

The Squadron S-1 and CSM tracked and reported the statuses of personnel to Regiment weekly. Although we began reporting shortages on the Unit Status Report six months before our E-date, replacements were slow in coming. The largest increases in critical MOSs under the ARI MTOE were 68Xs (Armament Repairer) and 93Ps (Flight Operations Specialist) MOSs. Under ARI the Squadron gained fifteen 68Xs and seven 93Ps. We were able to fill some of these critical shortages by transferring personnel from our sister unit (4-229 AHB), which was drawing down, and through Foreign Service Tour Extensions (FSTEs). However, shortages in personnel still existed and the Squadron had to be innovative to continue its training.

During aerial gunnery we borrowed manpower from 7-129 AVN (AVIM) and worked out a schedule with our sister squadron (2-6 Cavalry) to help each other during critical periods. Approximately five months after identify 68Xs and 93Ps as a shortage, we received sufficient numbers enabling us to successfully conduct an out-of-country external ARI

ARTEP evaluation in France.

The loss of OH-58 and UH-60 personnel was an area of great concern from the beginning. Initially, we were going to retain all personnel and equipment until the completion of the external ARI ARTEP in October. But, V Corps and the Regiment decided this may adversely affect soldiers and their families (i.e. moving families during school etc.) and place an undue burden on our organization. We received word during the April gunnery that OH-58 personnel would begin receiving orders on 15 May with the objective of all personnel transferred by 15 June. This placed a great deal of urgency on helping the OH-58 personnel transition smoothly. V Corps decided personnel with less than one year as of our E-date (October 1994) would be transferred to other units in USAREUR and those with less than one year would be curtailed back to the United States.

The next day, an emergency meeting was held with the OH-58 and UH-60 Personnel. We explained the circumstances on reassignments as explained by V Corps and had them fill out assignment questionnaires. MOS managers from 1st PERSCOM scheduled time to come and talk with 1SGs, Regiment, and Squadron CSMs of the soldiers being affected. Once we returned from gunnery, the S-1s, CSMs, and a representative from 1st PERSCOM met and discussed the questionnaires forwarded earlier. We then went through the list of personnel one by one and discussed personnel needs and preferences. The orders were quickly cut and although 100% of the personnel had not departed by 15 June, a majority were on their way.

We had a much longer lead time for the UH-60 personnel. They would not depart until the OCT-NOV period. V Corps and Regiment agreed UH-60s were a critical

asset and would be needed for the external ARI ARTEP in France.

OH-58 and UH-60 warrant officer assignments were worked through officer management at PERSCOM and the Department of the Army. For company grade officers, it was a different story. The biggest concern was the lieutenant's professional development. Officers with less than a year retainability would DEROS to the United States and attend the Aviation Advanced Course. However, we had five scout lieutenants with over a year's retainability, all non advance course graduates, with no aircraft to fly. Several officers could have transferred to other OH-58 units within Europe, but these units would soon be converting to the ARI MTOE and these same officers would then have been in the same dilemma. The Squadron and Regimental Commander decided to retain these lieutenants regardless of DEROS and place them in primary staff positions or key leadership roles. A flight waiver was requested and all were made FAC 3 aviators. The primary reasons for keeping these officers were:

- If we sent them all back to the advanced course simultaneously, they would be junior to their classmates and therefore at a disadvantage for an advanced aircraft transition.
- All the aviation officer slots under the new ARI MTOE required AH-64 qualified officers.

Since the system could not produce these officers fast enough, the OH-58 officers were used to fill these important positions. Currently OH-58 lieutenants are filling these critical positions: S-4, S-2, 3-5 PL and HHT XO. As AH-64 Apache lieutenants and captains are assigned, scout lieutenants and captains will depart for the advance course. We expect to complete this process by 1996. Aviation

branch has said primary staff or leadership positions will only help not hinder these scout lieutenants' professional development.

Although our most pro-active and best efforts were in place, the down side for many of our NCOs and enlisted soldiers was being forced to move to a job knowing they would only be there for 3-6 months before that unit transitions to ARI. This caused significant stress and trauma for soldiers and their families.

We are currently finished with the ARI train-up and evaluation. We are at approximately 90% total authorized strength on personnel except for company grade officers. Through any transition you experience growing pains. The key to success is to take the lessons learned from those before you and plan accordingly.

THE LOGISTICS ARENA

by CPT Jerry L. Baird, S4

Converting 6-6 Cavalry Squadron to the Aviation Restructuring Initiative (ARI) MTOE was an all encompassing task. More than 60% of the LIN's of equipment were affected by the change, and both the Headquarters and AVUM reorganized significantly.

Overall, the Squadron increased from 295 to 299 personnel, and prime movers were reduced by eleven vehicles. All of the OH-58 and UH-60 equipment became excess, and new technology replaced aging systems (SINCGARS replacing VRC-46, for example). Also, all of the property book duties and software were transferred to Regimental headquarters, further complicating the transition.

To accomplish all of this without suffering a degradation in equipment-on-hand status, the Squadron needed a plan. We quickly put our efforts into obtaining and reviewing copies of the new MTOE and manually computed S levels for every LIN. This listing provided an acquisition

plan of attack! Now that WHAT was needed was identified, the Squadron focused on WHERE the equipment could be acquired.

The draw down identified a sister battalion in the Regiment, 4-229 AHB, as a draw down unit. This provided a unique opportunity to laterally transfer items easily, and ease 4-229 AHB's departure. We also identified other draw down units, and by coordinating early with the Material Management Command, and V Corps ARI Fielding team, the Squadron filled as many shortages as possible with lateral transfers. Any other shortages that were not force modernization items and were non-stock funded, were ordered only after an exhaustive search.

The biggest problem with ordering the new equipment was the cancellation of requisitions due to the REQ-VAL database not reflecting the new authorizations. V Corps ARI Fielding team played a vital role in correcting the error, and after some initial growing pains, the requisitions remained valid. Also, it is VERY important to identify stock funded items because of the effect budget constraints have on stock funded acquisitions.

On the other side of the equation, a great deal of excess was created by switching the MTOE. Initially, the excess was divided into three main categories: (1) pure excess, (2) OH-58 Kiowa and (3) UH-60 Black Hawk-specific equipment held until disposition for the aircraft was received, and items retained as the Squadron submitted changes to the MTOE. Immediately, all of the "pure excess" items were identified to Material Management Command for disposition.

Turning in the excess aircraft and associated equipment was not an easy feat and the V Corps ARI Fielding Team provided essential coordination. Initially, there was confusion as to the exact time frame the

turn-in for the OH-58s would occur, and the V Corp/USAREUR ARI Fielding team had to secure waivers for aircraft transfer criteria, such as the minimum hours to phase required, etc. Later, the team helped coordinate the actual lateral transfers, significantly reducing transfer time. Upon completion of aircraft turn in, the aircraft special tools and aviation specific excess disposition was coordinated through V Corps with the assistance of the fielding team. However, many of these items are still awaiting disposition.

Finally, it was time to address the shortcomings of the new MTOE and what changes the Squadron wanted to implement. Through several meetings with our sister squadron and the Regiment, a common plan was devised, and 4610's were consolidated.

The primary key to success is knowing what the new MTOE is and what you need as soon as possible. Have a plan and coordinate with your Material Management Command to locate draw down units and the availability of equipment. This is critical to avoiding a degradation of equipment on hand status on the next USR. Also, work closely with the S3 and AVUM to keep close tabs on the OH-58 and UH-60 hours to phase, and identify the turn in criteria early. This can be a significant obstacle when coordinating for their disposition.

Consolidate and separate all of your OH-58 and UH-60 specific equipment, to include PLL. If you can, move it away from your ongoing AH-64 operations. This makes it easier to work with when disposition comes down. Also, know your ARI Fielding team they are great assets in dealing with equipment challenges!

Posture forward by identifying what is pure excess and what your unit wants to keep after the conversion. Code out the junk and justify what you want to keep.

Remember, you can ask for anything, but you have to do what is finally agreed upon by higher. You may not like what ARI gives you, but you must document and make adjustments the right way: complete DA Form 4610Rs with doctrinal reasons for changing the MTOE.

Conclusion. The ARI transition period was definitely a demanding period requiring the synchronization and exhaustive efforts of the entire chain of command and staff sections from Squadron to Corps level. My hat is off to all the soldiers, NCOs and officers that sacrificed and persevered to insure our ARI transition was accomplished safely and successfully. We came to understand we were not an "island unto ourselves" and that we still faced the normal day-to-day taskings, commitments, and training, while transitioning to ARI. Plans and timeliness must be sequenced and adjusted to accommodate real world events and missions. Failure to do so can run an organization into the ground; we all know our plate is full and often overflowing anyway. The train does not take a break at the ARI depot, it continues to move.

I hope this thumbnail discussion has provided some helpful ideas and strategies for converting to ARI and will make the transition smoother and/or easier. We have compiled a large quantity of research material and notes on our particular experiences and will be glad to share our lessons learned. Write to: Commander, 6-6 Cavalry, CMR 416, APO AE 09140 or call DSN: 467-4961 or Commercial: 011-49-9841-83-961.

Have fun and fly safe! Sixshooters — Always Ready !

★ ★

LTC Winblich is the Squadron Commander, 6-6 Cavalry, USAREUR.

NIGHTMARE

(Continued from Page 39)

DEW gunners exhibited a capability to acquire, track, lock-on, and offset aim points to soft areas of the aircraft. The DEW systems were effective in damaging FLIRs, Day TV optics, canopies, and missile seekers. Catastrophic airframe kills were also recorded on both fixed winged and rotary winged aircraft.

DISDEW Future. Advancing technology and the proliferation of this technology will significantly change the battlefeld of the future. The DISDEW remains in the Fort Rucker AIRNET Battle Lab as part of STRICOM's continuing support to Army Aviation training, tactics, and doctrine development. Through the use of virtual worlds, the TSMO is offering today's Army pilots an opportunity to train and develop tactics and doctrine before these threats are encountered in the real world.

Currently, the DEW system is being further developed in the Infantry School Dismounted Battlespace Battle Lab (DBBL) at Ft. Benning, GA to determine probable impact to the Infantry Fighting Force. The Army has been designated as the lead service for the development of threat DEW simulations and simulators. STRICOM is working to provide a testing capability of threat DEW in both virtual software environments and hardware simulators for open air operational testing.

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Mr. Price is the Project Director for Threat Directed Energy Weapons, and LTC Parsons is the Deputy Director, Threat Simulator Management Office, Office of the Program Manager for Instrumentation, Targets, and Threat Simulators, Redstone Arsenal, AL.

AIR TRAFFIC SERVICES (ATS) IN III CORPS

Combat airspace is becoming increasingly saturated as joint operations involve an ever-expanding mix of land- and sea-based artillery, rockets, missiles, aircraft, and Unmanned Aerial Vehicles (UAVs). The role of Air Traffic Services (ATS) is increasingly important to ensure the effective synchronization of combat power and prevention of fratricide.

Inherent in the requirements of a force projection Army and the versatility demanded by increasing incidents of operations other than war is the ability to rapidly deploy to a theater; establish an instrumented airfield to facilitate mass logistics and troop movements; integrate airspace control plans and measures into host nation airspace; and to establish and manage military airspace requirements.

2nd Battalion, 58th Aviation Regiment (ATS) is one of four active component tactical Air Traffic Services battalions in the Army and currently provides dedicated ATS and Army Airspace Command and Control (A²C²) Liaison to III Corps and its divisions.

Although at one time the battalion com-

ATS is critical to synchronize combat power and prevent fratricide.

position included units stationed in AK, HI, Ft. Ord, CA, and Ft. Polk, LA, the battalion currently consists of four companies and the battalion headquarters at Ft. Hood, TX, one company at Ft. Riley, KS, and one company at Ft. Carson, CO. Mission responsibilities include providing tactical ATS and liaison to Corps A²C² activities in joint and

combined operations. While the battalion is assigned to the 6th Cavalry Brigade (Air Combat), its companies provide direct support ATS to the corps headquarters and supporting divisions.

Tactical ATS companies provide four basic functions: A²C², airspace information, terminal, and forward area support services. A typical ATS Company consists of an LNO section, a Ground-Controlled Approach (GCA) team, control tower team, Airspace Information Center (AIC) team, and two or more Tactical Aviation Control Teams (TACTs). ATS companies provide the Corps with a wide variety of critical services to include A²C² liaison, navigational assistance, flight following, air threat warnings, weather

information, artillery advisories, en route navigational structures, and terminal landing area control.

Of all the ATS services, TACTs provide the greatest flexibility in employment to the maneuver and aviation commander. These highly mobile three-man tower teams with pathfinder training and capabilities can expediently deliver Air Traffic Services at remote landing sites, pick-up zones, drop zones, and temporary helicopter operating areas. Rapid deployment and set-up times, coupled with the ability to provide expedient Non-Directional Beacon (NDB) guidance, allow for a wide variety of applications in deep, close, and rear operations.

Recent TACT missions within III Corps illustrate the wide range of employment options to include LZ, PZ, DZ, FARP, airhead, and cross-FLOT beacon missions. Applications are similarly abundant for TACT missions in a peacetime CONUS environment. III Corps ATS assets have been used to enhance operational safety in sling-load operations in support of the National Forest Service, fire fighting mission in support of the National Interagency Fire Center, sea port operations, overwater training based from offshore oil drilling platforms, aerial gunnery support, and fixed-base ATC facility restoral missions.

Recent ATS operations in Somalia and Haiti illustrate the need to rapidly establish an instrumented airfield to facilitate the mass-transport of supplies, equipment, and troops into a theater of operations. Establishing terminal services is the primary mission of the GCA and Control Tower teams and is normally accomplished by either taking over or augmenting established facilities, or by using the tactical tower and GCA to establish terminal and radar services. In this role, the radar capabilities of the GCA provide

invaluable security, force protection, and IMC recovery capabilities which were exercised heavily during the deployment of two of the battalion's units to DESERT SHIELD/STORM.

Another important function of the GCA and tower teams is the peacetime restoration of inoperative fixed-base ATC facilities. Recently, the battalion was called on to install its GCA to provide radar services to Alexandria International Airpark in support of Joint Readiness Training Center operations, and is currently deployed to Robert Gray Army Airfield to provide emergency restoration of the fixed-base precision approach radar services. In both instances, the rapid restoration capability of the tactical GCA team enabled critical airfield operations to continue with minimal disruption of services. Similarly, the battalion's tower sections have been called on two separate occasions to restore Hood Army Airfield tower operations during emergency outages.

En route control is accomplished by Airspace Information Centers (AICs). Formerly referred to as Flight Coordination/Operations Centers (FCC/FOC), the AICs provide a full range of services to include A²C² services; maintaining locations of refueling points; terminal facilities and navigational aids; providing assistance and recovery assistance to aircraft in distress/emergency; coordinating traffic movements; providing additional communications capabilities for operational commanders; and by disseminating pertinent flight, threat, air defense warning, weapons status, and Airspace Control and Tasking Order (ACO/ATO) information to airspace users.

The 2nd Battalion exercises its AIC Sections during frequent deployments to the National Training center (NTC), where its air traffic controllers enhance aviation safety by operating the tactical

"Desert Radio" flight following facility. This facility controls rotational aircraft as they transit the established Standard Use Army Aircraft Flight Route (SAAFR) structure, while the battalion's ATSLNOs assist in the publication and distribution of the Airspace Control Order.

Other instances which required an established en route structure occurred most recently during III Corps' PHANTOM SABER exercise, as well as during the latest Battalion ARTEP when the unit assumed control of flight following at Ft. Hood using tactical equipment.

Without doubt, the greatest strength of the battalion lies in the quality and commitment of its soldiers; nowhere is this fact more apparent than in the A²C² arena. ATS LNOs support airspace elements at division and corps, and invariably become pivotal elements in the role of airspace management. Senior Air Traffic Controllers (MOS 93C) form the backbone of the LNO sections. Recurring ATS assignments, expertise obtained from advanced schools such as the curriculum available at the Air Ground Operations School, and training programs internal to ATS battalions combine to create liaison NCOs with a foundation in A²C² unparalleled in the aviation community.

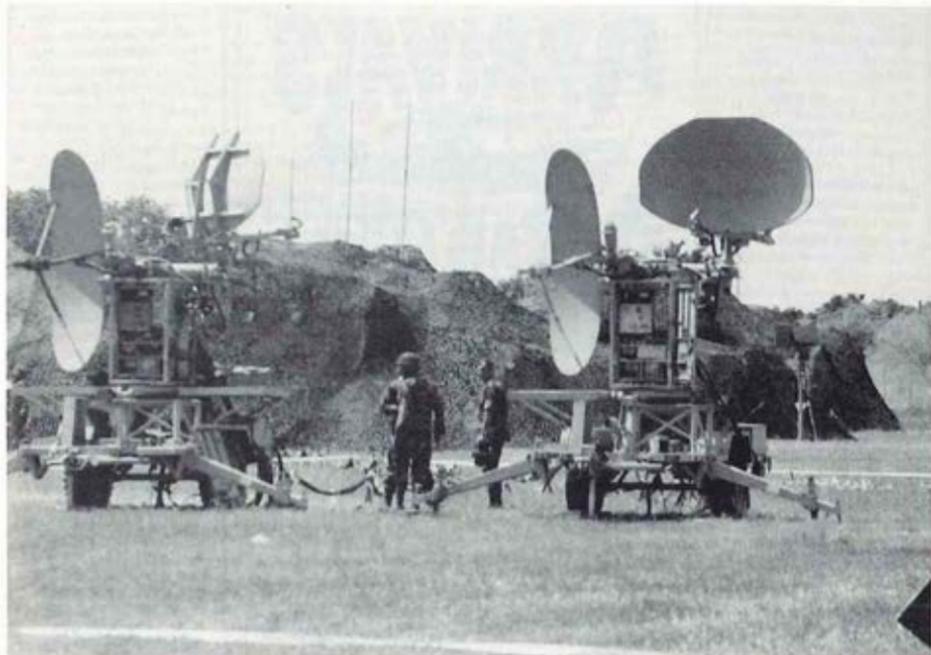
Consequently, ATS LNOs typically play a critical role in synchronizing the airspace requirements and users of the combined arms team, joint services, and host nations. III Corps ATS LNOs, although assigned to the Battalion's Headquarters Company, spend much of their time planning at the Corps and Division Headquarters and are critical to the development of airspace control plans and orders. Additional functions of the A²C² LNOs include the development, coordination, and deconfliction of Airspace Control Means, communications with the Airspace Information Centers, and maintaining a

real-time air picture for the area of operations.

Command and control of battalion ATS assets is the responsibility of the Battalion TOC in close coordination with the Corps A²C² Element. Extended distances and the requirements to provide support to multiple divisions make proactive and real-time communications and information management no easy task. The solution to the dilemma in III Corps was to co-locate the battalion TOC in the vicinity of the Corps Main. Although a relatively new practice within the Corps, the proximity to the Main offers several benefits — the ATS Battalion Commander is readily available to advise the Corps commander and his staff on A²C² matters, can participate in aviation operations and deep attack planning meetings, and the battalion has ready access to the key participants in the Corps A²C² organization (ADA, Aviation Element, ALO, FSE, ANGLICO, etc.).

Perhaps the most important advantage is the ability to receive the Airspace Control Plan, Airspace Control Order, Air Tasking Order, Air Defense Status and Warnings, and other pertinent airspace, weather, and threat information and to transmit near-real-time updates to the Air Information Centers through the existing III Corps Mobile Subscriber Equipment Local Area Network. The AICs, in turn, disseminate the time-sensitive information to the user. Although arguably a redundant function, this capability reduces information delays associated with compatibility problems as airspace information passes from the Theater Air Control System (TACS) into the Army Air-Ground System (AAGS).

Technological advances invariably pose unique challenges in the airspace management arena. Unmanned Aerial Vehicles, for example, continue to proliferate and certain models now boast a twenty-nine



foot wingspan. Accordingly, peacetime UAV training requirements in national airspace as well as procedural separation in combat present the battalion's leadership with daily challenges.

Fortunately, several new systems on the ATS horizon promise to transition the ATS community into the next century and to capitalize on the capabilities of the digitized battlefield. The Tactical Terminal Control System (TTCS), Air Traffic Navigation, Integration, and Control System (ATNAVICS), the Tactical Airspace Integration System (TAIS), and the Mobile Tower System (MOTS) will eventually replace currently fielded systems. The new systems offer significant improvements in reliability, maintainability, and sustainability, as well as in deployability, survivability, communications, and the A²C² automation required to effectively manage and display combat airspace.

Unfortunately, 2d Battalion, 58th Aviation Regiment (ATS) is scheduled to inactivate, and III Corps will become the only corps without active component ATS support after September 1995 and will not be able to participate in the process.

However, the three remaining ATS Battalions are not scheduled for inactivation and remain poised for the challenge. Future III Corps ATS and A²C² Liaison will transition to the National Guard, who will strive to maintain the air traffic controller qualifications, appropriate METL focus and training, dedicated A²C² liaison staffing, and the continuous tactical ATS support required to adequately support the robust training and mission requirements of III Corps.

★ ★

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CMTC

(Continued from Page 26)

on company.

FARP — After the attack the company returns to the FAA/FARP and conducts refueling and notional rearming. Here again the Task Force faces real world armament problems that affect the capability to conduct follow-on missions.

Phase IV: Occupation of a New TAA.

Ground Occupation — When the unit receives the mission to conduct a deep attack they also receive the mission to move to and occupy a new TAA. The noncommissioned officers prepare and execute this mission parallel to the deep and hasty attack.

Air Occupation — This is another difficult task. However, it is an excellent opportunity for the Task Force to execute its night TAA occupation SOP. The companies move into the new assembly area from the FAA/FARP by phase. Rehearsal of the occupation, to include procedures and the parking plan, is essential for mission success.

Be Prepared for Follow-on Missions — The optempo is never greater than it is at this point. The ground-crews are tired from the ground movement to and occupation of the TAA. The air crews are tired from four or more hours of missions. However, the missions have not stopped. There are still requirements to improve security at the new TAA, conduct scheduled and unscheduled maintenance on aircraft and conduct planning for follow-on missions. This tests the very core of the Task Force.

The training value of this mission is clear. It maximizes optempo and night collective training. Additionally, it allows the unit to execute tasks not normally executed, like night occupation of an

assembly area, company live fires, and Task Force rearming procedures.

The following is a list of five common trends observed in this mission.

- **Knowledge of the ground tactical plan and location of the FLOT is a weakness.** This is a serious issue, particularly in the event an air crew is shot down near the FLOT. Plan knowledge may save lives.

- **Rearming takes considerably longer than expected.** This is attributable to garrison training/battle drills of the armament personnel, inadequate numbers of maintenance personnel at the FAA to troubleshoot aircraft, and synchronization and rehearsal of the FARP plan.

- **Communications throughout the task force are not redundant nor in-depth.** The FAA/FARP is unable to talk to the TAA. Maintenance requirements are not quickly and accurately transmitted to the FAA, leading to delays in pushing forward the necessary parts, people, and tools.

- **Maneuver rehearsals are thorough at all levels from Division to Task Force.** These rehearsals are action-oriented, include key personnel and are not time-intensive. These rehearsals are the key to successful execution.

- **Downed Aircraft Recovery Team (DART) and CSAR are not thoroughly integrated into the mission.** An aircraft may be shot down near the FLOT but the TAA and CSAR aircraft never get the word. Additionally, downed aircrew pick up points are typically Air Control Points (ACP). While this plan sounds good, in execution it may not be very survivable, if the ACP is a road intersection or town.

★ ★

LTC Sheahan is the Senior Aviation Observer/Controller, and CPT Mathias is the Company Observer/Controller at the Combat Maneuver Training Center, Hohenfels, Germany.

**AIR ASSAULT
FORT CAMPBELL, KY**
CW4 Benny Aguirre
1LT Daniel R. Dempsey
PFC Matthew Giorgio
CPT Richard R. Hanes
WO1 Mark L. Matzen
2LT Richard J. Noble
CPT Kevin T.K. Sullivan
LTC Joseph E. Wasiaak, Jr.

**ALOHA
HONOLULU, HI**

MAJ Andre M. Davis
MAJ Hayward Hall, Jr.
CW2 Carl G. Herrick
MAJ Steve W. High

**ARIZONA
MESA, AZ**

Cadet Jeffrey S. Rains
Ms. Mary Lou Sherwood

**AVIATION CENTER
FORT RUCKER, AL**

MAJ Shucri A. Handal
CPT Craig A. Holton
SPC Christine King
2LT Bryan P. Marlyn
CW2 Bert W. Ross
1LT Melissa R. Stanfa
SGT Jonathan L. Studer
Ms. Kathy L. Turk
2LT Scott D. Wilkinson
2LT Stephen D. Zamarro

**BLACK KNIGHTS
WEST POINT, NY**

Cadet Mark C. Johnson
Cadet Abigail H. Thompson
CPT Timothy A. Waters

**CENTRAL AMERICAN
FT. CLAYTON, PANAMA**

SPC Ute M. Asbury
CPT Terry L. Lakin

**CENTRAL FLORIDA
ORLANDO, FL**

Ms. Cindy L. Cooper
Mr. Kenneth L. Sullivan



**COLONIAL VIRGINIA
FORT EUSTIS, VA**

PVT David E. Capp
PV2 Jennifer G. Gangler
MSG Joseph W. Shabbott
SSG James L. Stratton, II

**CONNECTICUT
STRATFORD, CT**

Mr. Larry L. Guyot, Ret.
Mr. Timothy B. O'Bannon

**CORPUS CHRISTI
CORPUS CHRISTI, TX**

Mr. Joseph W. Williams
**EDWIN A. LINK MEMORIAL
BINGHAMTON NY AREA**
Ms. Diana S. Federowicz

**FLYING TIGERS
FORT KNOX, KY**

SGT James C. Chilton
**GREATER CHICAGO AREA
CHICAGO, IL**
2LT Frank M. Irwin

**INDIANTOWN GAP
INDIANTOWN GAP, PA**

SGT Lori Ann Updegrave

**IRON EAGLE
HANAU, GERMANY**

CW2 Joseph K. Bays
CW2 George H. Kallstrom
CW2 Randy M. Kirgiss
CPT Kevin D. Lilly
CW2 Bryon K. McCrary
CPT Abe R. Ratliff, Jr.
1LT Luis Rodriguez, Jr.
CW3 Bryan H. Smith

**IRON MIKE
FORT BRAGO, NC**

CW2 Daniel R. Autrey

**LINDBERGH
ST. LOUIS, MO**

MG John J. Cusick
Ms. Sharon L. Kallenbach
SPC John D. Tomczak

**MINUTEMAN
WESTOVER AFB, MA**

SGT Kevin L. Redden
**MONMOUTH
FORT MONMOUTH, NJ**

Mr. Dennis Cheung
Mr. Michael Cinque
Mr. Terry L. Kuntz

Mr. Robert E. Torregrossa

**MORNING CALM
SEOUL, KOREA**
CW2 Kenneth R. Ford

**NARRAGANSETT BAY
N. KINGSTOWN, RI**
SGT Lynette C. Streiffeld

**OREGON TRAIL
SALEM, OREGON**
Cadet Katherine S. Karwan

**PHANTOM CORPS
FORT HOOD, TX**

CPT John J. Brooks

**PIKES PEAK
FORT CARSON, CO**
CW2 John J. Boruch

**POTOMAC
ARLINGTON HALL STN, VA**

MAJ Wilford D. Brown, Jr.
Mr. James M. Marotta
CPT R. Cash Sniively
CPT Kevin D. Willis
LTC Billy Wood

**TALON
ILLESHEIM, GERMANY**

CW2 Paul C. Russo

**WASHINGTON D.C.
WASHINGTON, DC**

Mr. Robert H. Bruce
Mr. Robert D. Forster
SSG Charles A. Lanier
Mr. James McAleese, Jr.
Mr. Steve Wilkes

**MEMBERS WITHOUT
CHAPTER AFFILIATION**

Mr. Harry Beardsley
Mr. Michael R. Dennis
CW4 Lemuel E. Grant
LTC Roy (Leroy) E. Knippa
Mr. Roy Maclean
MAJ Anthony E. Martin
PVT Samantha D. Selby
Mr. Richard R. Smolenski



ARMY AVIATION ASSOCIATION OF AMERICA (AAAA)

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Please check one: Change of Address; New Membership Application

I wish to join the Army Aviation Association of America (AAAA). My past or current duties affiliate me with the 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 purposes. Dues payments may be deductible by members as ordinary and necessary business expenses.

Rank/Col Grade _____ First Name _____ MI _____ Last Name _____ Sex _____

Mailing Address _____

Mailing Address _____

City _____ State _____ Zip + 4 Code _____

Active Duty or Civilian Job Title and Unit or Firm Name _____

Area Code _____ Office Phone _____ Area Code _____ Residence Phone _____ Area Code _____ FAX _____

Consent: do do not consent to the publication or release of the above information to third parties.

Signature _____ Date _____

Citizenship _____ Nickname _____ Spouse's Name _____

Date of Birth (Mo/Yr) _____ Social Security No. _____ www.aaaa.org

AAAA ANNUAL DUES

Applicants other than those listed below:
() 1 yr, \$21; () 2 yrs, \$39; () 3 yrs, \$57

Full-Time Students, Enlisted, WOCs, GS-8 DSG & Below:

Wage Band 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

AMEX Diners Club Mastercard Visa

Card No. _____

Act \$ _____ Exp. Date _____

Signature: _____

Date: _____

Check (✓) Your Professional Qualification:

- Army Avn Duty
- US Defense Industry
- DA/DCD Civilian
- Consultant
- Army Ret/ Guard
- Publishing/Other Avn.
- Army Reserve
- Foreign Military Service
- Army Retired
- Foreign Defense Industry
- Other US Military Service
- Other

Are you a former AAAA member? Yes No

If yes, what year did you join? _____

Chapter Affiliation Preferred _____

Print Name of Recipient _____

Aviation Warrant Officer Perceptions of AAAA

by CW4 Joseph L. Pisano, Ret.

At its October, 1993 meeting, the AAAA National Executive Board (NEB) authorized the Aviation Warrant Officer Affairs Committee to conduct a survey of aviation warrant officers.

The Committee, comprised of CW4 (Ret) Joe Pisano (Chairman), CW5 Dave Helton, CW5 Dave Prewitt, CW5 Ron Gerner, and CW5 Darrell Pope, proposed to determine the effectiveness of the Army Aviation Association of America not only from the perspective of our constituents, but from former members and nonmembers as well.

The Committee formulated a 35-question survey which was administered to those warrant officers attending the Warrant Officer Career Academy, as well as those in the various aircraft qualification courses at Fort Rucker, AL.

Those participating in the survey were given the option to do so anonymously. 84% chose this option.

DEMOGRAPHICS

The chosen venue was exceptionally productive with a response rate of 42.5%. This is significantly above the national response rate for this type of survey of less than 3%. Further, the goal of obtaining input from nonmembers and former members was also attained as indicated by the following response figures:

- Members: 26.5 %
- Nonmembers: 46.5 %
- Former Members: 27 %

The survey population densities were relatively consistent with both DA and AAAA populations.

- The average person responding to the survey was an active duty, rotary wing CW2 with approximately 13 years of service. CW3s accounted for 28%, CW4s 25%, WO1s 8%, and CW5s at 4%.
- A look at overseas service shows those having served or presently serving in Germany at 58.8%; in Korea, at 49.4%; and, in both locations, 28.2%.
- 18.2% of those responding saw combat in Vietnam; another 38.8% in the Persian Gulf and other locations, with 5.3% having been to both.
- The rotary wing utility community is represented by 60.6% of those responding; attack and scout pilots account for 31.2% and 30.6%, respectively,

and cargo pilots for 16.5%. 9% are dual-rated aviators and there are no fixed wing only participants.

- Special Operations aviators account for 5.8% of those participating.

Two notable exceptions to the similarity of populations are the small response of females (only two), and the lack of retired warrant officer input. Both shortcomings are attributable to the venue and were considered in its selection and weighed in analyzing survey results.

One final note on demographics, while ARNG participation (6.5%) was only half of AAAA's Guard population, representation by Reserve warrants was only one-tenth of a point less than the AAAA population.

WHY DID YOU JOIN?

When asked about their reasons for joining AAAA, both members and former members indicated positive command emphasis as their number one reason. The next most important reason was to belong to the Army Aviation professional organization. ARMY AVIATION magazine was another popular answer with both.

WHY DID YOU DROP?

Although the answers varied when former members were asked why they chose to drop their membership, there were two common threads:

- The first is a perceived lack of interest on the part of AAAA in dealing with warrant officer issues and an associated lack of dissemination of information pertinent to warrant officers. These reasons were invariably linked to the perception that AAAA's emphasis is mostly on commissioned officers and industry (see below).
- The second reason listed was perceived command pressure (for the "wrong" reasons) to join/participate. Quotas and furthering careers were referred to in every instance of this reason being given.
- A small number of those responding said they dropped because they were transferred OCONUS where there were no chapters.

When asked what changes would cause them to consider rejoining, the answers were consistent

with correcting the perceptions stated above.

WHY DIDN'T YOU JOIN?

Nonmembers chose not having time as their number one answer for not joining. However, 20 people said that they didn't have enough or any information about AAAA; 12 of those asked to be sent information, but only 11 provided their name and address. The names were passed to the National Office along with a recommendation to not only forward information directly to the individuals but to ensure that the applicable local chapters were notified and asked to follow up.

Other reasons given were the same as those of former members for dropping membership.

WHO BENEFITS FROM AAAA

Members and former members were asked which groups they perceived the Association concentrates on in its programs. The results are perhaps the most disturbing of all those received. Members and former members alike feel strongly that AAAA's programs emphasize general officers most with field grade officers a close second. Current members next put industry members and then company grade officers, while former members split evenly between those two groups. Junior enlisted and retirees were the unanimous selection for least emphasized with all others in between.

PROGRAMS AND BENEFITS

All three groups of participants were asked how familiar they are with the programs and benefits offered by AAAA.

- All participants were most familiar with ARMY AVIATION Magazine.
- Most members and former members were familiar with the annual convention, as were 55.1% of nonmembers.
- The scholarship program was selected as least familiar to 38.6% of members, 52.3% of former members and 79.5% of nonmembers.
- The majority of members and former members were somewhat familiar with chapter activities, membership benefits and the awards program, as well as 16 to 23% of nonmembers.

When asked to rank AAAA programs and benefits in the order of importance to them personally, both members and former members listed ARMY AVIATION Magazine as their number

one choice. Members next listed both chapter activities and the convention as their number two choice. Whereas, former members tended to list membership benefits as second and then chapter activities and the convention. Both groups chose the scholarship program as the least important with the awards program a close second.

CHAPTER ACTIVITIES

Members were asked if and how often they participated in chapter activities. Oddly enough, even though chapter activities was high on the list of selected important programs, 77.7% said they did not participate. Far and away, the main reason selected was that activities were held at inconvenient times and/or locations. The next most common reason was the chapter's choice of programs and/or activities.

When asked about serving as a chapter officer, 39.2% of those responding indicated that they had not been asked or elected. Another 15.7% indicated a willingness to serve. However, only 4 provided their names and a means of contacting them.

ANNUAL CONVENTION

Turning to the Annual Convention, 29.6% of current members said they had attended one or more while only 11.9% of former members had done so.

- Members selected the professional sessions as the most important reason for attending, followed by participation on a unit/activity display. Almost all former members left this question blank, leaving insufficient data to make any assessment.
- The standout reason for not attending was sites being too far away (time and cost), with not being able to get time off and overall cost next in line.
- A full 65% of those responding said they would be interested in attending warrant officer-specific professional seminars and 32.6% indicated they might possibly be interested.
- Similar percentages were found for a separate warrant officer social gathering at the Convention.

ARMY AVIATION MAGAZINE

Army Aviation Magazine was listed as a significant reason for both members and former members joining AAAA.

- Members indicated that 60.5% read it, versus 37.2% scanning it. However, the figures for

former members show only 23.1% read it, 53.8% scan it, and another 23.1% do neither.

● A resounding 93% of those responding indicated a need for more articles written by warrant officers and/or about warrant officer issues. More than half of those indicated that they would be willing to write an article. But, only 13 identified themselves.

WHAT WOULD MAKE AAAAA BETTER FOR AVIATION WARRANT OFFICERS?

Suggested changes to current programs and/or policies, together with additional services, were submitted by 27% of those responding. For the most part, these were a variety of restatements of earlier issues, such as increase information on warrant officer issues, by shifting some of the emphasis from commissioned officers and industry affairs. Some of the more noteworthy suggestions and recommendations (in no particular order) are:

- An article on warrant officer affairs in each issue of Army Aviation.
- Interviews with line pilots (warrant and commission) on what is happening in the field with new equipment, techniques, training, etc.
- Ensure lobbying efforts include warrant officer-specific, as well as aviation-related, issues.
- A flight pay insurance plan.
- Sponsorship of a Travel Club.
- More representation by warrant officers throughout the organization's leadership, from chapters to the National Level.

It is also significant that 27 of those responding included their name and a means of contacting them for further comment. The names of those willing to serve as chapter officers were forwarded to their respective chapter presidents.

RECOMMENDATIONS TO THE NEB

The Committee briefed these results to the National Executive Board at its April meeting in Atlanta.

It is apparent that the AAAAA programs and activities already in place are effectively reaching the membership. However, these Survey results demonstrate a need for evaluation of programs and activities to insure that the warrant officer segment of the population is fully considered and integrated.

Commanders at every level must guard against any action that may be perceived as pressure or

coercion to join or participate in the organization while simultaneously fostering a climate of information and support.

Further, the Committee presented the following recommendations for consideration by the NEB:

1. That the Convention committee consider options for incorporating a warrant officer-specific professional session into the schedule of events for future conventions.

2. That ARMY AVIATION Magazine actively solicit articles from those warrant officers who indicated their desire to provide them for inclusion in future issues of Army Aviation.

Further, that ARMY AVIATION Magazine consider the feasibility of a regular monthly warrant officer-specific feature in Army Aviation. (NOTE: This recommendation was adopted and initiated in the June issue.)

3. That the National Office add a notice in the vicinity of the change of address form in Army Aviation reminding members that they can maintain member-at-large status if they are PCSing to locations where a Chapter is not active.

4. That the National Executive Board revisit the possibility of a AAAAA sponsored flight pay insurance plan.

5. That the National Executive Board investigate the feasibility of sponsoring a Travel Discount Club.

Copies of the completed surveys are on file at the National Office.

In summary, the AAAAA is apparently providing a viable service as the professional organization of Army Aviation. The AAAAA leadership has indicated a willingness to be continuously vigilant in ensuring that the concerns of all segments of the membership are considered and included in the formulation of programs and policies. Involvement is, as ever, the most effective tool available to make certain that warrant officer concerns are addressed by all levels of the organization. Being active in chapter affairs, writing articles for ARMY AVIATION, and forwarding suggestions for improvements to the National Office are all an indispensable means to achieving our goals.

Our voices are being listened to — don't wait for the next survey. Get involved now. ■



Above: During the 10 February 1995 National Executive Board Meeting at Ft. Rucker, AL, MG Ronald E. Adams (left), CG USAAVNC and Ft. Rucker, joined then AAAA President, MG Ben Harrison (right) in presenting CW5 David Helton (center), Director, Warrant Officer Career Center, with an Order of St. Michael Gold Award.

Below: CDT (now 2LT) Jon D. Kerr (left) poses with his father, BG R. Dennis Kerr (right), Director, Human Resources Directorate, Office of the Deputy Chief of Staff for Personnel, Washington, D.C., during the U.S. Military Academy's graduation proceedings at West Point, NY on 3 June 1995. The younger Kerr has branched Aviation, and is on his way to Ft. Rucker for IERW.



New AAAA Chapter Officers

Aviation Center:

LTC B. Gordon White (Treas); LTC James W. Kelton (VP, Memb); CPT Curt S. Cooper (VP, Awards).

Colonial Virginia:

Ms. Mary M. Akers (Treasurer).

Frozen Chosen:

CDT Bret Aaron Yaeger (Pres); CDT Gary John Vanderbilt (SrVP); CDT Cory Dustin Fass (Secy); CDT Maura K. McGrane (Treas); CDT Ronald L. Bahl (VP, Memb); CDT Brady J. Clauss (VP, Programming).

Monmouth:

Mr. Paolo D. Paone (VP, Programming).

Washington D.C.:

MAJ Karen K. White (Secretary).

AAAA Aviation Soldiers of the Month

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

SPC Eric L. Shidler

February 1995

(Central American Chapter)

SPC Larry R. Adams

March 1995

(Savannah Chapter)

AAAA Aviation NCOs of the Quarter

SGT George S. Walker

2d Quarter 1995

Jonathan L. Studer
3rd Quarter 1995
(Aviation Center Chapter)

**AAAA
Aviation Soldiers
of the Quarter**

SPC Craig A. Martin
2nd Quarter 1995
SPC Christine King
3rd Quarter 1995
(Aviation Center Chapter)

**AAAA Chapter
NCO of the Year**

SSG Timothy N. McGee
1994
(Talon Chapter)

**AAAA Chapter
Soldier of the Year**

SPC Stephen S. Stalmach
1994
(Talon Chapter)

Aces

The following individuals have been named Aces in recognition of their signing up 5 new members each.

- CPT John W. Amick**
- CPT Regginial Barden II**
- CW2 Glenn A. Beck**
- 1LT Michael K. Bentley**
- WO1 Charles Betts III**
- WO1 Eugene Bishop II**
- CPT Lawrence Borkowski**
- 2LT David M. Bresser**
- CPT H. Michael Brinkman**
- Mr. Joseph A. Caines**
- 1LT Margaret A. Chañez**
- CW3 Wendall Condon**
- WO1 Lee S. Conley**
- 1LT William P. D'Albora**



Above: On 31 January 1995, eight soldiers from the 18th Aviation Brigade (Corps)(Airborne) were awarded the Soldier's Medal for heroic actions to save the victims of the March 1994 F-16 crash at Pope AFB. The awardees are, from left to right: CPT Manuel Diwa, CPT Krista Magras, SFC Manuel Wiscovitch, SSG(P) Henry Dawson, SSG Gregory Strong, CPL Charles Keller, and SPC Robert Miller. Not pictured: SPC Gregory Norrid. Below: In other Iron Mike Chapter news, on 30 January 1995, the 82d Airborne Division CG, MG William M. Steele, recognized spouses for their work in family support issues during UPHOLD DEMOCRACY. Front row, l to r: Mulu Flowers, Mary LaCoste, Linda Carter, Nancy Vinson, Jerri Page, Sue Thomas, Linda Moser, Anna Vogler. Back row: Thais Pacheco, Rosemary Ruth, Lisa Blackburn, Kendy Kaufmann, Karen Sargent, Maggie Frenzeen, Jennifer Pogue. Not pictured: Julie Mitchum.



NOMINATIONS OPEN

Nominations are now open for the AAAA Army Aviation Fixed Wing Unit Award, sponsored by FlightSafety International, the AAAA Army Aviation Medicine Award, sponsored by Gentex Corporation, the AAAA Army Aviation Trainer of the Year Award, sponsored by Hughes Training Inc., Link Division, and the AAAA Army Aviation Air/Sea Rescue Award, sponsored by Lucas Aerospace. These awards will be presented at the 1995 AAAA Aviation Center Annual Awards Banquet at Ft. Rucker, AL.

The awards period covers 1 September 1994 to 31 August 1995. Membership in the AAAA is not a requirement for consideration. Contact the AAAA National Office at (203) 226-8184 for the official nomination forms and requirements. The suspense date for all nominations for these awards to be received at the AAAA National Office is 30 September 1995.

AVIONICS AWARD AND ASE AWARD NOMINATIONS OPEN

Sponsored by Cubic Defense Systems, Inc., the AAAA Avionics Award will be presented at the 1995 AEC Symposium to "the person who has made an outstanding individual contribution to Army Aviation in the area of Avionics during the awards period encompassing 1 August 1994 through 31 July 1995."

Sponsored by Loral Electronic Systems, the AAAA Aircraft Survivability Equipment Award will also be presented at the 1995 AEC Symposium. It will be presented "to the person who has made an outstanding individual contribution to Army Aviation in the area of ASE during the awards period encompassing 1 August 1994 through 31 July 1995."

Contact the AAAA National Office at (203) 226-8184 for official forms. Suspense Date is 1 September 1995.

AAAA CALENDAR

A list of upcoming AAAA Chapter and National events.

October 1995

- ✓ Oct. 16. AAAA National Executive Board Meeting, Sheraton Washington Hotel, Washington, D.C.
- ✓ Oct. 16. AAAA Scholarship Board of Governors Executive Committee Meeting, Sheraton Washington Hotel, Washington, D.C.
- ✓ Oct 30-Nov 1. 13th Annual Aviation Electronic Combat (AEC) Symposium, Galt House Hotel, Louisville, KY.

December 1995

- ✓ Dec. 9. AAAA Morning Calm Chapter Christmas Ball, Seoul, Korea. Guest Speaker: LTG Richard F. Timmons, Commanding General, Eighth U.S. Army.

January 1996

- ✓ Jan. 26. AAAA Scholarship Board of Governors Executive Committee Meeting, National Guard Readiness Center, Arlington, VA.
- ✓ Jan. 27. AAAA National Awards Selection Committee Meeting to select 1995 National Award recipients, National Guard Readiness Center, Arlington, VA.
- ✓ Jan 31-Feb. 2. Joseph P. Cribbins Product Support Symposium sponsored by AAAA Lindbergh Chapter & AAAA Logistics Support Unit Awards & AAAA Industry Award Presentations, Stouffer Concourse Hotel, St. Louis, MO.

March 1996

- ✓ Mar. 27 - 30. AAAA Annual Convention, Tarrant County Convention Center, Fort Worth, TX.

April 1996

- ✓ Apr. 25 - 27. AAAA USAREUR Convention, Chiemsee, Germany.

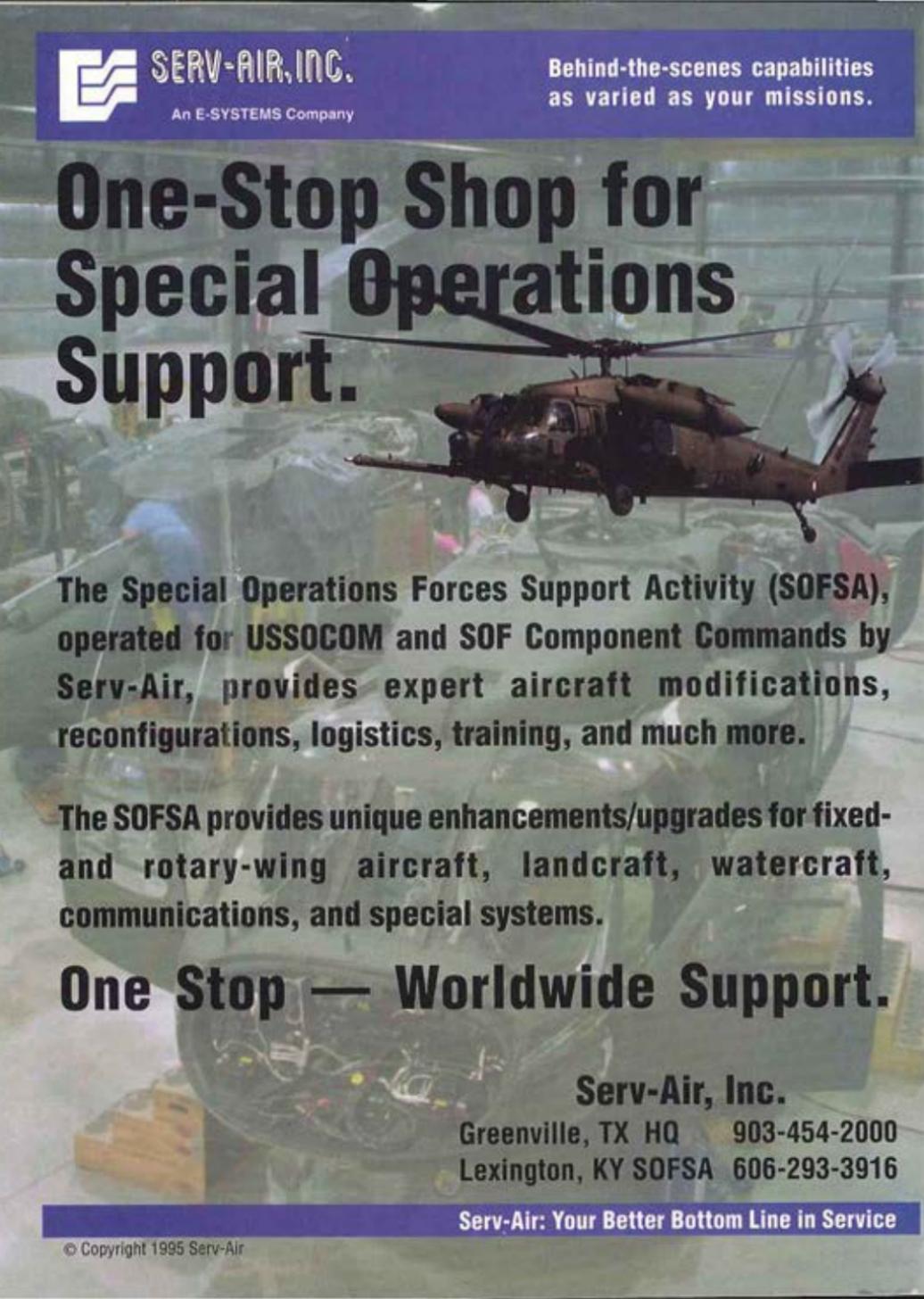


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