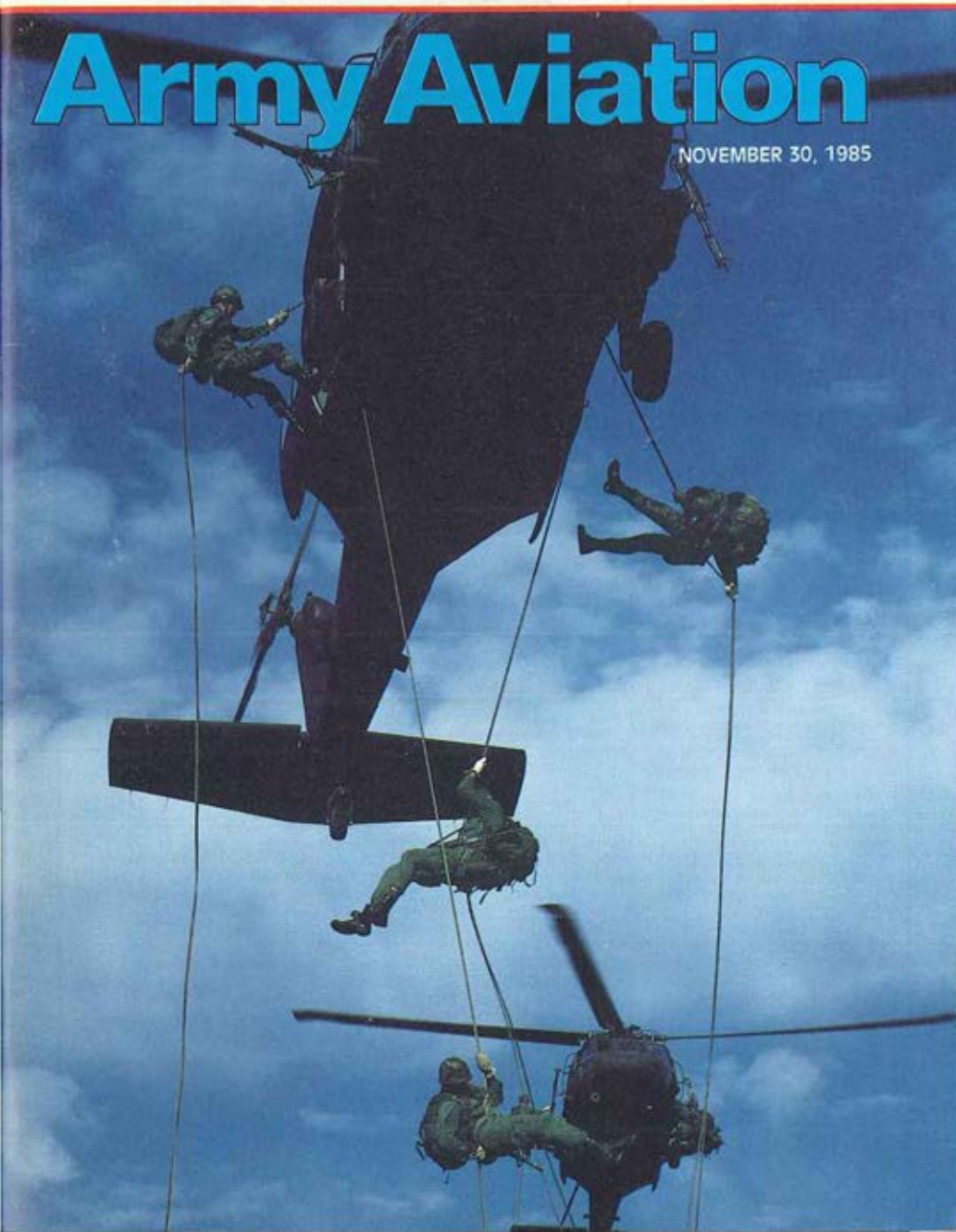
SPECIAL INSERT: THE ARMY'S UH-60A BLACK HAWK

AAAA SEEKS NOMINATIONS FOR ITS NAT'L AWARDS.

Army Aviation

NOVEMBER 30, 1985



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FORTHCOMING ISSUES
December 31, 1985—A general news issue with a centerfold **"Who's Who in AWO Aviation"** Directory.

January 31, 1986—A Special Issue providing an end-of-the-year update on the Army's **Light Helicopter Experimental (LHX) Helicopter.**

February 28, 1986—Full 1986 AAAA National Convention Professional and Social Programming Details.

FRONT COVER
101st Airborne Division troopers are shown rappelling from a BLACK HAWK

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Arthur H. Kesten

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Army Aviation

VOLUME 34 **NUMBER 11**

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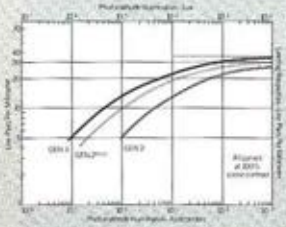

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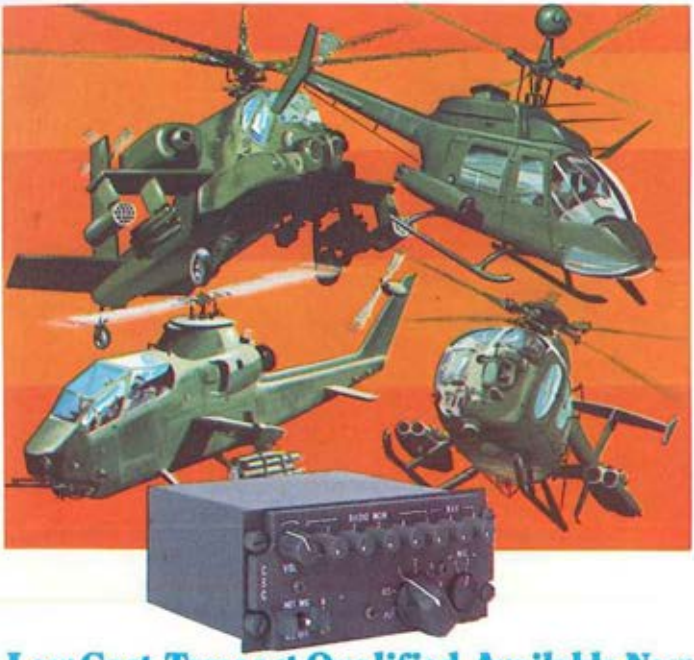

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*Army Material System Analysis Agency data.

MCDONNELL DOUGLAS

IN this BLACK HAWK special issue, the articles from the Program Manager and the TRADOC System Manager exemplify the teamwork necessary to ensure our UH-60 fleet remains safe and flyable. Only by working together can this be accomplished.

The timing of this special issue dedicated to the BLACK HAWK could not be better, as it provides me an excellent forum to discuss recent changes to the UH-60 **Aviator Qualification Course (AQC).**

Those changes were made in order to resolve recognized shortcomings in that training.

Up until now, we've been able to take only interim corrective measures because of limited resources. That restriction was removed in August, however, when **General Maxwell R. Thurman,** the Vice Chief of Staff of the Army, approved the airframe, manpower, and budgetary resources necessary to support the major program revisions needed for the UH-60 AQC.

BY MAJ. GEN. ELLIS D. PARKER
Commanding General, U.S. Army
Aviation Center & Ft. Rucker

Course length extended

This revision includes a directed military overstrength of 23 for one year and three additional UH-60 airframes assigned to the USAAVNC fleet. The course has been extended in length from four weeks to six weeks, with a preponderance of the additional training focused on the combat skills phase of training.

Previously, a specified amount of training time dedicated to combat skills was nonexistent. Only external and internal loading procedures were required

Teamwork!

to be trained. The combat skills portion of the program of instruction has been increased by 12.9 hours of flight training and the programmed syllabus has been increased to include ten additional tactical tasks.

A portion of this combat skills training also includes **night vision goggles (NVG)** training. If an individual is already NVG qualified before starting the UH-60 AQC, he will receive the training necessary to become aircraft qualified with the goggles. If the individual is not previously NVG qualified, he will receive familiarization training.

Changes in the academic curriculum have been made to increase the number of academic hours available for systems training from 46 to 70.

Significant changes

Let me summarize the significant changes in the new program of instruction. The overall course flying hours have been increased from 11.4 to 25 hours. Total academic hours in this program have been almost doubled from 147 to 259.

For the time being, flight simulator training time will remain constant at 10.5 hours.

Low initial class loads

Training under the new program of instruction began 7 October 1985. Initial class loads will be relatively low to permit us to train the USAAVNC personnel required to support this new program. Class loads should be maximized by March 1986, with a projected FY86 output of 568 students.

The changes made in this program will ensure that we graduate only the safest, best qualified and most proficient aviators to fulfill the needs of a growing BLACK HAWK fleet. IIIII

Inviting the "professionals"

The December 31, 1985 issue of *Army Aviation* is the fourth issue in which we have pursued our new format that brings 12-24 solicited field reports to you each month.

Unfortunately, not every one of the hand-picked correspondents whom we've invited have responded with the "500 words" we've asked them to provide. The editorial objective: to tell you what's new in their area of Army Aviation activity.

With the February issue we'll be starting the second cycle of invitations, and we look forward to having many new field reports from units, agencies and offices that we missed on the initial five-month go-around.

850 readers to be polled

Sometime in January—and while the December issue has been mailed—we'll poll 5% of the magazine's subscribers (850) in a random survey, taking every 20th addressee the computer spits out, and ask that reader (perhaps you), "Do we stay with the solicited field report format, or do we go back to the unsolicited article approach again and just publish what's in the bin each month.

At the same time we'll ask the representative 5% for their suggestions, directions, etc. All the foregoing is not meant to discourage you from picking up your pen, and telling us what you'd like.

Among other December field reports and articles you may expect to read are:

MG Parker's Christmas report that gets into the *Space Initiative*, the *OH-58 OT II*, *Fire Support*, and a *Welcome to the Avionics Maintainers (CMF 28)*.

COL George Shallcross, Ret. (now in Saudi) writes about a *Desert Surprise* that awaits you. *Aero-med Evac* is covered by LTC Ben Knisely, OSG. CPT Jeff Presnal at USAAVNC talks about *Creative Informal Rewarding*.

COL Frank Mayer, DCD at USAAVNS, updates us on the *Aircrewmember Protective Mask*, the *Aviator's Night Vision Imaging System*, the *Heavy Expanded Mobility Tactical Truck*, and the *Heavy Expanded Mobility Ammunition Trailer*.

LTC Clint Boyd on *FORSCOM Aviation*, Gary Fryman (*What's a Djibouti?*), COL Terry Rosser (*Today's 1st Aviation Brigade*), LTC Jerry Crews, MILPERCEN (*The new branch—How are we doing?*), and an ODCSRDA report from COL Gerald Kunde are also on tap.

Producing Aviators—The ARNG Aviation Recruitment Story is by-lined by John Stanko, and SGM William Dunn details the activities of the Aviation Center's Dept. of Enlisted Training.

And that's only part of the December issue! A good chunk of it will also be devoted to the *Who's Who in AWO Aviation* bi-annual directory.

Merry Christmas!

—Art Kesten, Publisher

Nominations sought for CY 1986 induction to the Hall of Fame

BACKGROUND: An AAAA-sponsored Army Aviation Hall of Fame honors those persons who have made an outstanding contribution to Army Aviation over an extended period, and records the excellence of their achievements for posterity. The actual Hall of Fame is located at Ft. Rucker, Ala., in the Army Aviation Museum where the portraits and narratives of each inductee are displayed.

ELIGIBILITY: All persons are eligible for induction, except active duty military personnel. DACs are eligible prior to their retirement. Anyone may nominate a Candidate for induction. Membership in AAAA is not a requirement.

NOMINATION PROCEDURE: Nominations should be submitted before January 31, 1986 to AAAA, 1 Crestwood Road, Westport, CT 06880, and include:

[1] The Candidate's full name and address, if living.
[2] A 75-100 word summary of the achievements for which the Candidate is being nominated.
[3] Add'l (optional) data not to exceed 1,500 words.
[4] A current photograph (preferably in color).

SELECTION: An eight member rotating Board of Trustees composed of members of the Hall of Fame, and chaired by GEN Hamilton H. Howze, will select a qualified list of Candidates at an April 9, 1986 meeting in Atlanta, Ga., at the AAAA's 1986 National Convention. COL E. Pearce Fleming , Jr., MG James F. Hamlet, COL John W. Marr, MG Spurgeon Neel, CW4 Michael J. Novosel, GEN Robert M. Shoemaker, and MG James C. Smith are the remaining seven Trustees who'll participate with GEN Howze in selecting the qualified Candidates.

MEMBERSHIP BALLOTING: By mail ballot, all AAAA members with seven or more years of current, continuous membership will then **elect** a specified number of Candidates for induction from those whose names appear on the Hall of Fame Ballot.

INDUCTION: Those Candidates elected by the AAAA members will be inducted at triennial ceremonies to be held during "AAAA Week" at Ft. Rucker in November, 1986.

NOTE: Current members of the Hall of Fame, in addition to the foregoing eight Trustees, include BG William B. Bunker, LTG Harry W.O. Kinnard, Frank N. Plaseckl, COL G.P. Seneff, Igor I. Sikorsky, COL Robert R. Williams, COL William W. Ford, MAJ O. Glenn Goodhand, MAJ Charles L. Kelly, Arthur and Dorothy Kesten, MAJ J. Elmore Swenson, COL John J. Tolson, III, MAJ Delbert L. Bristol, COL William J. Maddox, Jr., COL Jack L. Marinelli, LTC Spurgeon Neel, MAJ John W. Oswalt, William T. Piper, Sr., CSM Lawrence E. Kennedy, BG Robert M. Leich, COL Robert M. Nevins, Jr., LTC John Norton, CW4 Johnnie R. Sandidge, COL Claude L. Shepard, COL Jay D. Vanderpool, LTC Arthur W. Barr, LTG Allen M. Burdett, Jr., CW4 E.M. Cook, Joseph P. Cribbins, MG George W. Putnam, Jr., LTC Robert L. Runkle, CW2 Jerome R. Daly, CW2 Frederick E. Ferguson, MAJ Marion J. Fortner, COL Robert F. Litle, Jr., COL A.T. Pumhrey, COL John J. Stanko, Jr., and CW2 Ronald L. Tusl.

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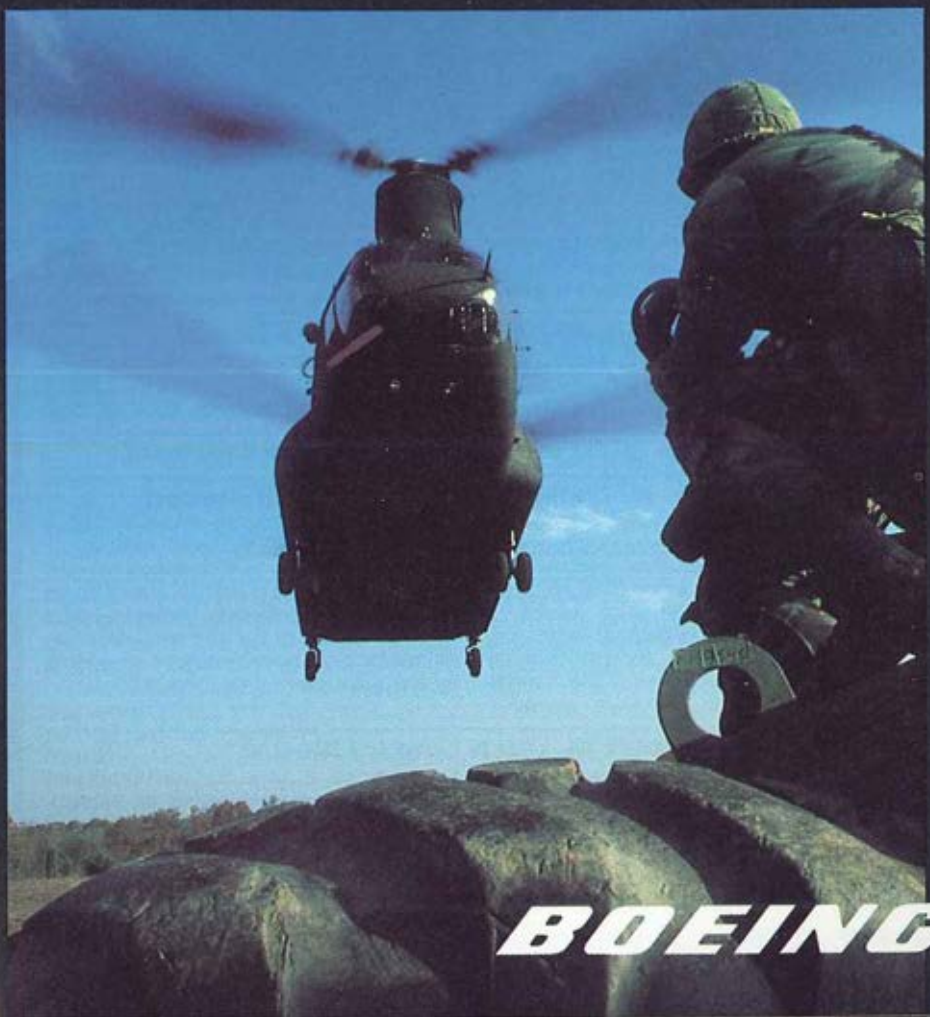

Nominations solicited for AAAA's CY85 National Awards

AAAA National Awards for accomplishments made during Calendar Year 1985 will be presented at an Annual Awards Luncheon on April 11 and an Awards Banquet to be held on April 12, 1986 at the 1986 AAAA National Convention in Atlanta, Ga. The individual awards will be made on Friday; the unit awards will be presented on Saturday. Senior members of the U.S. Army and U.S. Army Aviation will be invited to present AAAA's top awards on both occasions.

"Army Aviator of the Year Award"

Sponsored by the Sikorsky Aircraft Division, this award will be presented "to the Army Aviator who has made an outstanding individual contribution to Army Aviation during the awards period encompassing the previous calendar year." Membership in AAAA is not a requirement. A candidate for this award must be a rated Army Aviator in the Active U.S. Army or Reserve Components, and must have made an outstanding individual achievement.

"Aviation Soldier of the Year Award"

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

"Outstanding DAC of the Year Award"

Sponsored by the Boeing Vertol Company, this award will be presented "to the Department of the Army Civilian who has made an outstanding contribution to Army Aviation in the awards period encompassing the previous calendar year." Membership in AAAA is not a requirement for consideration. A candidate for this award must be a current Department of the Army Civilian.

"James H. McClellan Aviation Safety Award"

Sponsored by the many friends of Senator John L. McClellan in memory of his son, James H. McClellan, a former Army Aviator who was killed in a civil aviation accident in 1958. The award is presented to any individual who has made an outstanding contribution to Army Aviation safety during the awards encompassing the previous calendar period. Membership in AAAA is not a requirement; any individual, military or civilian, is eligible as a nominee for this award. The award is NOT intended to be given for competitions between units for safe flying, or for the accumulation of operational hours without accidents by any aviation unit or individual.

"Robert M. Leich Special Award"

Sponsored by the Association, the Award is named in memory of Brig. Gen. Robert M. Leich, the AAAA's first president (1957-1959) and Chairman of its Awards Committee for 23 years. Normally given to a unit for distinguished aviation-related service over an extended period, the Robert M. Leich Special Award may be presented to an individual recipient.

Individual, unit award nominations due by January 15, 1986

"Outstanding USAR Aviation Unit Award"

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

"Outstanding ARNG Aviation Unit Award"

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

"Outstanding Aviation Unit of the Year Award"

Sponsored by McDonnell Douglas Helicopters, this award will be made "to the aviation unit that has made an outstanding contribution to or innovation in the employment of Army Aviation over and above the normal mission assigned to the unit during the awards period encompassing the previous calendar year." Any Army Aviation unit or organization that has met the foregoing criteria is eligible.

Administrative Details

ACCOMPANYING DATA FOR INDIVIDUAL AWARDS: Documentation should include the nominee's name; his unit assignment, unit name, and address; and the name of his current unit and commander. A cover sheet should provide a brief outline of not more than 100 words citing the main reason(s) for the nomination. Detailed supporting information should be attached as inclosures; and be limited to 1,500 words or three pages (whichever is greater). The documentation should be typed, and must include a recent photo and the nominee's biog sketch. Winners will be asked in March to provide add'l "slides".

ACCOMPANYING DATA FOR ALL UNIT AWARDS: Documentation should include the name and address of the unit, and the name of the present commander and senior NCO. A cover sheet should provide a brief outline of not more than 100 words citing the main reason(s) for the nomination. Detailed supporting information may be attached as inclosures and is limited to 1,500 words or three pages (whichever is greater). Photos of BOTH the commander and senior NCO must accompany the nomination. Winners will be asked in March to provide add'l "slides". This form may be reproduced locally. Receipt of each nomination will be acknowledged by the National Office of the AAAA.

SUSPENSE DATE: The nomination(s) and accompanying data should be mailed before 15 Jan. to: AAAA Nat'l Awards Chairman, 1 Crestwood Road, Westport, Connecticut 06880. Please use stiffeners to protect the photo(s) being submitted.

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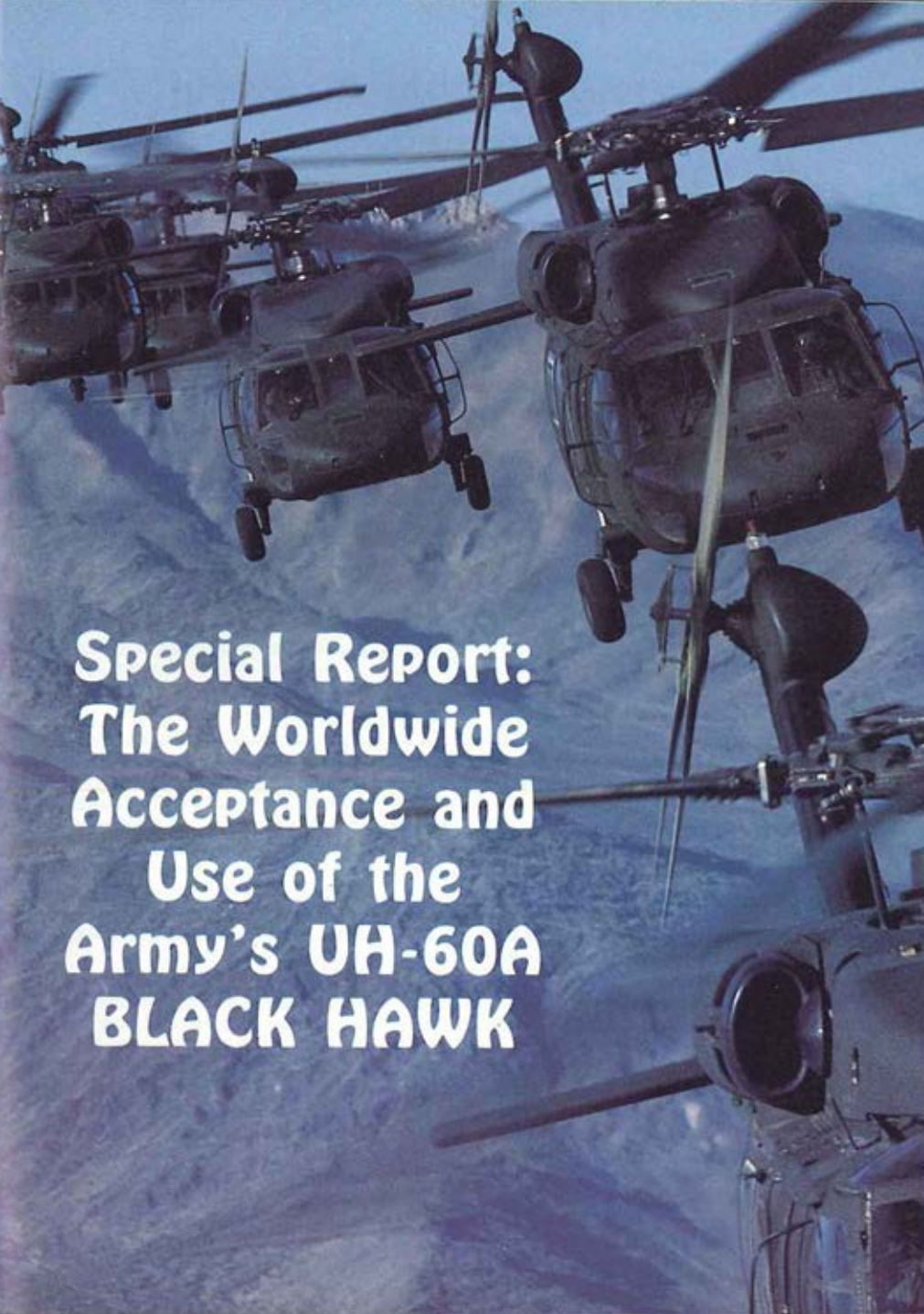


Special Report: The Worldwide Acceptance and Use of the Army's UH-60A BLACK HAWK

The UH-60A: A utility: helicopter with a future

BY MAJ. GEN. ORLANDO E. GONZALES, CG, USA AVIATION SYSTEMS COMMAND

I am especially pleased to introduce this special issue devoted to the worldwide acceptance and use of the BLACK HAWK helicopter by the U.S. Army. The fielding of the UH-60A over the past seven years has truly been a success story—one of which the BLACK HAWK Project Manager's Office, the **U. S. Army Aviation Systems Command (AVSCOM),** and fielded units can be justifiably proud.

The aircraft has now been deployed to all major Army commands in locations around the globe including Europe, Korea, Panama, Hawaii, Alaska, and the Continental United States. Soon the aircraft will also be delivered to Japan.

Some growing pains

As with any new force modernization system, fielding of the BLACK HAWK has resulted in some growing pains, but I'm happy to report that they have not only been relatively few, but also that the Project Manager's Office, working in conjunction with AVSCOM and the major contractors, has been able to resolve system and fielding deficiencies as rapidly as possible, thereby minimizing the impact on operational units.

The reception given the BLACK HAWK by the user community has been excellent. With over 300,000 flying hours logged thus far, the mission reliability has continued to exceed both requirements and expectations. Mission capable availability rates met or exceeded the DA Standard of 80% prior to the fleet grounding earlier this year.

The fleet grounding followed an accident caused by fatigue failure of a main rotor spindle. All UH-60s were grounded until we were sure of the cause of the accident and confident we could modify the spindle to preclude such a failure in the future.

During the grounded period we participated with the Safety Center, TRADOC, and using units in a major review of all aspects of the BLACK HAWK program—the hardware and support equipment, personnel qualifications and fill, and training and doctrine.

Rapid ungrounding

As a part of this review a comprehensive ungrounding plan was developed to insure BLACK HAWKs returned to service not only had the spindle fix, but had all other identified safety concerns corrected as well.

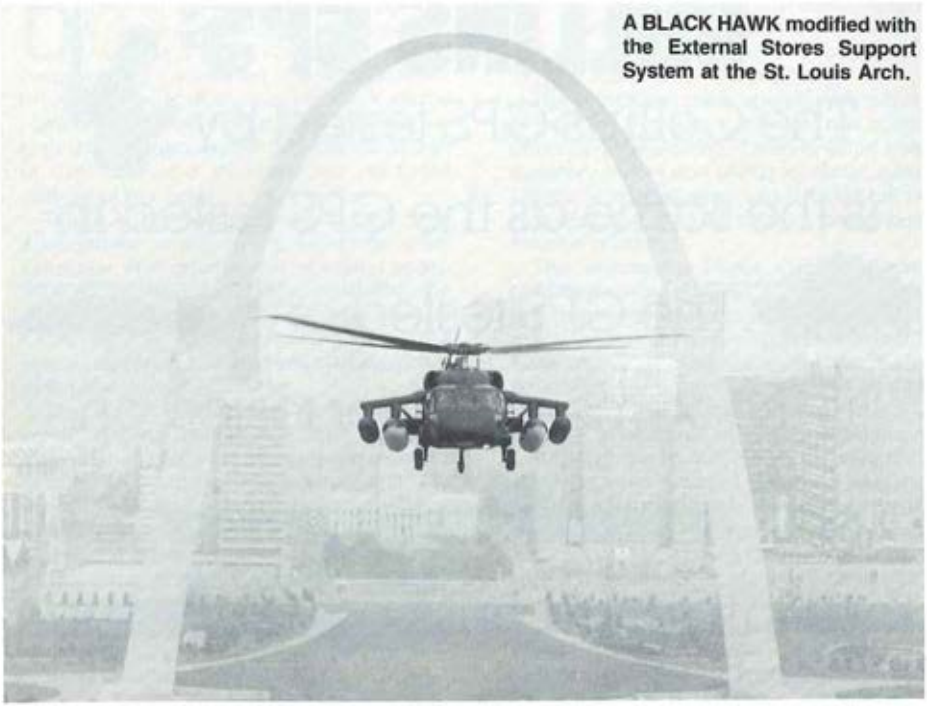
Thanks to the hard work of unit maintenance personnel and the contractors, and intensive management by the BLACK HAWK Operations Center, over 70% of the fleet had been returned to service by September.

Logistics supportability of the BLACK HAWK has made a very marked improvement over the last three years. **Not mission capable supply (NMCS)** rates for the fleet achieved the DA goal of below 10% during 1983 and continued to meet the goal during 1984 and 1985.

This resulted for the most part from a very effective program initiated by the Project Manager's Office in which the most significant NMCS repair parts are examined during monthly Supportability Reviews.

These reviews, which are attended by representatives from all major directorates in AVSCOM as well as contractor and BLACK HAWK unit representatives, serve to bring together all the essential talent (maintenance, procurement, and materiel management) necessary to expedite availability and delivery of the problem repair parts.

The BLACK HAWK has undergone many significant improvements during the past seven years of fielding. Major improvements include



A BLACK HAWK modified with the External Stores Support System at the St. Louis Arch.

de-icing capability, fuel boost pumps, a corrosion control program, polyeurethane painting, and water integrity modifications.

Future improvements which will add exciting new capabilities and will be addressed in detail in subsequent articles include the external stores support system, a hover infrared suppressor system, a night vision goggle compatible lighting system, and an inlet particle separator for the auxiliary power unit.

New ROC

The Army is also staffing a draft **Required Operational Capability (ROC)** for the BLACK HAWK Improvement Program which will provide the capability for additional mission performance at higher gross weights, a higher altitude, and at a higher temperature.

The future of the program is also enhanced by multiyear production contracts presently in effect on both the aircraft and the engines.

The major advantages of multiyear procurement are cost savings and stability of funding requirements. Two multiyear contracts for the airframe covering FY 82-84 and FY 85-87, respectively, and the multiyear contract for the engine covering FY 83-85, make the BLACK HAWK the Army's leading program for multiyear procurement.

A true "workhorse"

In summary, the BLACK HAWK continues to perform to the prescribed standards and has rapidly become the workhorse of the Army's helicopter fleet. Production deliveries are on schedule, program costs are stable, fielding to new units is on track, and significant improvements to the already outstanding basic aircraft are being made.

As you read through this special report, articles from representatives of the real users of the aircraft will continually underscore that the BLACK HAWK is indeed a weapons system with an exciting future in the U.S. Army. IIIII

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During the three years since the last BLACK HAWK issue of *Army Aviation Magazine,* the UH-60A BLACK HAWK Program has witnessed many significant milestones, the most important of which are the numbers and diversified locations of fielded aircraft (from approximately 300 fielded aircraft to over 650) and the improved readiness posture of the fleet.

The BLACK HAWK continues to fulfill all its expectations as the Army's workhorse utility helicopter. With dramatically increased performance, maintainability, and reliability, the BLACK HAWK is proving in everyday use that it is an excellent aircraft providing the Army a measurable increase in operational capability over previous aircraft.

The BLACK HAWK is the Army's first true squad-carrying assault helicopter, designed from the beginning to perform basic missions at 4,000 ft/95°F, the conditions describing the Army's "standard hot day".

Under these conditions, it has demonstrated that it will lift at least 11 combat-equipped troops, climb vertically in excess of 450 feet per minute, and cruise at 145 knots. It can perform its basic mission with an endurance of 2.3 hours, including 30 minutes of reserve fuel.

Daily maintenance inspections have been reduced to every 10 flight hours or 14 days. Major scheduled maintenance occurs at 500-hour intervals, compared to every 150 hours for the UH-1. Crash survivability of the occupants has been greatly increased with the combination of an improved landing gear design and creashworthy seats, allowing for a vertical impact of up to 38 feet per second without serious injury to all occupants.

Finally, the BLACK HAWK has an external load capability of 8,000 pounds.

In addition to increased performance and survivability, the main transmission and tail rotor gearboxes are designed to operate for 30 minutes **without** oil. The tail rotor has no bearing and requires no lubrication.

The aircraft can safely operate with only one of the three hydraulic systems or one of three generators functioning. There is an on board **auxiliary power unit (APU)** for starts, run-up checks, and emergency use. The aircraft has twin 1,507 shp T700 GE engines for increased mission reliability.

The **Automatic Flight Control System (AFCS)** provides a limited autopilot capability that greatly reduces pilot workload. The **Command Instrument System (CIS)** enhances the ease and ability to fly under instrument flight conditions; thus, the BLACK HAWK provides the user with significant performance advantages to accomplish its tactical missions.

Although the BLACK HAWK has capabilities its predecessors did not, there is always room for improvement. During the past year, retrofit of the fielded fleet has been completed for main rotor and tail rotor de-ice kits. Fuel boost pump and water integrity retrofit modifications have also been completed.

Using the technology gained in development of the SH-60B SEA HAWK, a corrosion prevention program has been applied to all new production BLACK HAWKs which improves sealing, riveting, and painting techniques as well as replacing over 150 components on the aircraft with more corrosion resistant components.

Operations deployments

Since 1980 the BLACK HAWK has been fielded to units stationed at Forts Campbell, Bragg, Lewis, Stewart, Devens, Benning, and Ord, US Army Europe, Korea, Hawaii, and Panama as well as the training bases at Forts Rucker and Eustis.

Managing the program: A continuing challenge!

BY COLONEL RALPH H. LAUDER, BLACK HAWK PROJECT MANAGER

Challenge
(Continued from Page 17)

Six National Guard and U.S. Army Reserve **Aviation Intermediate Maintenance (AVIM)** units are also fielded. During the past year, fielding to Panama, Hawaii, and Ft. Devens was completed and additional units were fielded at Forts Lewis and Bragg. Fielding to Ft. Ord is currently in progress and will be completed during 1st quarter FY 86.

Future deployments for next year include US Army Garrison, Japan; additional National Guard units in Alaska, Kentucky, and Oklahoma; additional units in US Army Europe, Forces Command, and the US Army Reserve.

Tactical BLACK HAWK units have participated in numerous major exercises worldwide during the past five years. Most notable were the three *BRIGHT STAR* exercises in Egypt. During these exercises the aircraft flew over 1,000 hours while maintaining operational readiness rates exceeding the DA standard of 80%. This was a significant achievement, considering the adverse conditions created in the hot, dusty, and sandy environment.

BLACK HAWK units also participated in three *REFORGER* exercises in Europe, greatly increasing the theater cargo and troop movement capability. Unit deployments to Honduras for more than a six month period proved the supply and maintenance capability to support the aircraft for long term deployments away from home station.

Finally, the operation of the BLACK HAWK in Grenada validated the crashworthiness, survivability, and ballistic tolerance of the aircraft.

Supportability

The key to supportability of any major weapon system begins with the materiel fielding effort, and the BLACK HAWK **materiel fielding team (MFT)** has established an outstanding reputation for supporting the gaining unit not only during initial delivery of the aircraft, but also after fielding has been completed.

In addition to active management of current fielding efforts, which include 18 different locations, each MFT chief is also responsible for coordinating follow-on support for previously fielded units on a geographical basis.

Two significant highlights of the materiel fielding effort are the **New Equipment Training Team (NETT)** and the **Total Package/Unit Materiel Fielding (TP/UMF)** Concept.

The NETT, comprised of instructors from AVSCOM, **US Army Communications and Electronics Command (CECOM),** Ft. Eustis, and Tooele Army Depot, instructs gaining units using a "teach the difference concept" and has received outstanding reviews from every unit on the quality of instruction.

BLACK HAWK was the Army's first system to test TP/UMF beginning in FY 83, and much of the TP/UMF Concept was institutionalized based on BLACK HAWK/AVSCOM experience.

Since late FY 84 all BLACK HAWK gaining units have been fielded under TP/UMF. Basically the concept requires the fielding command (AVSCOM) to requisition all initial repair parts, tools, and test equipment for the gaining unit.

This **Initial Support Package (ISP)** is then consolidated at a major depot and delivered to the gaining unit workload associated with delivery of the weapon system.

LAR training

Another significant milestone in BLACK HAWK supportability during the past year was the establishment of a highly specialized training course for BLACK HAWK **Logistics Assistance Representatives (LARs).** Even though contractor **Field Service Representatives (FSRs)** may be assigned to some units for up to one year after fielding to provide technical assistance, the LAR is essentially the fielded unit's direct link to AVSCOM for resolution of supply and technical issues.

This new training course will therefore make the LARs even more valuable with the additional technical expertise gained.

One of the greatest challenges to logistically supporting the BLACK HAWK is in the ability to provide enough required repair parts in a timely manner to support the field. In 1982 when the interim supply procedure of Contractor Logistics Support ended, the Army was faced with assuming the management of all BLACK HAWK repair parts, and the future looked bleak with aircraft **Not Mission Capable Supply (NMCS)** rates creeping higher.

An innovative and extremely effective management tool was initiated which became the

Supportability Review. First held biweekly, these reviews were subsequently changed to a monthly basis and are still held today.

Chaired by the Assistant Project Manager for Logistics, these reviews bring together all the functional elements of AVSCOM as well as contractor and field unit representativs to attempt to expedite delivery of the top NMCS repair parts "drivers."

Normally the number of items reviewed ranges between 50 and 100 with new items added each month and some items deleted from the review after they "get well" through this intensive management medium. The reviews have been so successful that a separate review is now also held at CECOM on a monthly basis to review the CECOM managed repair parts which are affecting NMCS rates.

More than any other single factor the Supportability Reviews have effected the greatly improved BLACK HAWK NMCS rates.

The BLACK HAWK fleet first attained the DA goal for operational readiness in 1983 and has continued to surpass the goal in each year thereafter while amassing over 300,000 flying hours **(See Chart 1).** The mission capable rates are shown only for the first eight months of FY 85 because at that time came the greatest challenge to BLACK HAWK supportability ever—the fleet grounding which began on 19 April 1985.

The fleet grounding was necessitated by the failure of a main rotor blade spindle which failed due to metal fatigue at a much lower than forecasted flight time since new. The spindle failure caused loss of the main rotor blade and the ensuing crash and total destruction of the aircraft.

While a technical remedy to the problem (a load-sharing tie rod would be installed through the center of all spindles) was developed relatively quickly, managing the installation of the spindles worldwide as well as the remainder of the ungrounding process required extraordinary measures.

An **Ungrounding Operations Center** was established within the BLACK HAWK Project Manager's Office to monitor the daily status of aircraft special inspection requirements, expedite the shipment of spindle modification kits and new (modified with the tie rod) spindles to the field, expedite other repair parts needed to unground aircraft, and continually monitor the status of each aircraft as spindles were reinstalled and the aircraft returned to service.

Ungrounding the aircraft was a slow and tedious process, especially considering that not all spindles were qualified to be modified in the field—many replacement spindles had to be manufactured from scratch.

I'm happy to report, however, that delivery of all of the new spindles required by the fielded fleet was accomplished by mid-October

BLACK HAWK OPERATIONAL READINESS

Fiscal Year	A/C Density	Flying Hours	DA STANDARDS (%) (80%) MC	(10%) NMCS	(10%) NMCM
1980	45.6	18,419	69.6	14.7	15.7
1981	121.3	34,250	73.9	13.4	12.7
1982	235.8	52,370	76.9	12.9	10.2
1983	343.1	63,429	80.7	9.8	9.5
1984	456.9	86,127	84.1	6.3	9.6
1985*	530.5	66,115	81.5	6.8	11.7

* 8 months only

Challenge
(Continued from Page 19)

1985 which was within the originally forecasted time period.

This was truly a grueling exercise in management, but without the extremely dedicated service of the AVSCOM and contractors' staffs and an extraordinary effort by the BLACK HAWK field units, ungrounding the fleet would have taken much longer.

Program status

Now that the BLACK HAWK fleet is flying again, deliveries of aircraft to new units has resumed. Over 660 aircraft had been fielded as of September 1985. The current Army procurement objective for the BLACK HAWK is 1,107 aircraft, but an increase of this number to over 1,700 aircraft is under consideration.

Current plans call for delivery of H-60 derivative aircraft at a rate of 96 per year. This rate includes procurement of the EH-60A QUICK FIX system which entered production in 1985. Production is currently planned through 1996.

The BLACK HAWK was the Army's first major weapons system authorized to award a multiyear production contract. This contract was the 294 UH-60A airframes and associated support for FY 82-84 at $950 million.

Department of the Army and Congressional approval of the FY 82-84 multiyear contract not only saved $81.1 million, but is testimony to the strength and stability of the program. The advantages of a multiyear contract are the cost savings resulting from economic-order-quantity material procurements, production efficiencies, and inflation avoidance.

Program criteria

Criteria the BLACK HAWK program was required to meet to achieve DA and Congressional approval for a multiyear contract were: benefit to the government, stability of the requirement, stability of funding, stability of the configuration, degree of cost confidence, and confidence in the capability of the contractor.

A second multiyear contract for 288 UH-60A airframes for FY 85-87 was awarded in first quarter FY 85. Multiyear II saved an additional $129 million over single year contracting costs for the three year period, and an additional $17 million was saved on certain spare parts which were included in the multiyear.

The Army awarded a multiyear contract (FY 83-85) to General Electric in October 1983 for T700 series engines for the UH-60, HH-60, and AH-64 aircraft. The BLACK HAWK program budget is structured to accommodate a subsequent engine multiyear contract.

The BLACK HAWK is truly the Army leader in multiyear procurement.

Future status

The future of the BLACK HAWK program is bright with many much-needed improvements in store for the aircraft. A **Hover Infrared Suppressor System (HIRSS)** development program is nearing completion and will be fielded in FY 87, and an inlet particle separator which will reduce sand erosion on the **auxiliary power unit (APU)** is also under development.

The **External Stores Support System (ESSS)** has also completed development testing. This ESSS will provide the BLACK HAWK with a self-deployment range of 1,150 nautical miles in the four-tank configuration and double the tactical range in the two 230-gallon external fuel tank configuration.

A crashworthy 230-gallon external fuel tank is under development for use with the ESSS. The ESSS will be fielded in the third quarter of FY 86 and the 230-gallon fuel tank is expected to be fielded in the first quarter FY 87.

A Congressionally mandated feasibility demonstration of a HELLFIRE missile launched from a BLACK HAWK was accomplished in May 1982. In compliance with subsequent Congressional direction, the Army awarded a development contract in September 1984 for integration and qualification of the HELLFIRE missile system on the BLACK HAWK.

Firing of the missile must be accomplished using a ground or other laser designator since the BLACK HAWK has no autonomous target detection; however, an automatic target handoff system is being considered for development as part of the qualification program.

The development effort is scheduled to be completed in early 1987 and production of limited quantities of the missile system for BLACK HAWK is being planned.

Another improvement which will be ap-

(CHALLENGE / Continued on Page 67)

Here are some of the world's most advanced helicopters: Black Hawk, Apache, 214ST, Seahawk, Night Hawk, SuperCobra, S-70, W30, EH 101, Seasprite.

What else do they have in common?
General Electric T700/CT7 turboshaft engines.

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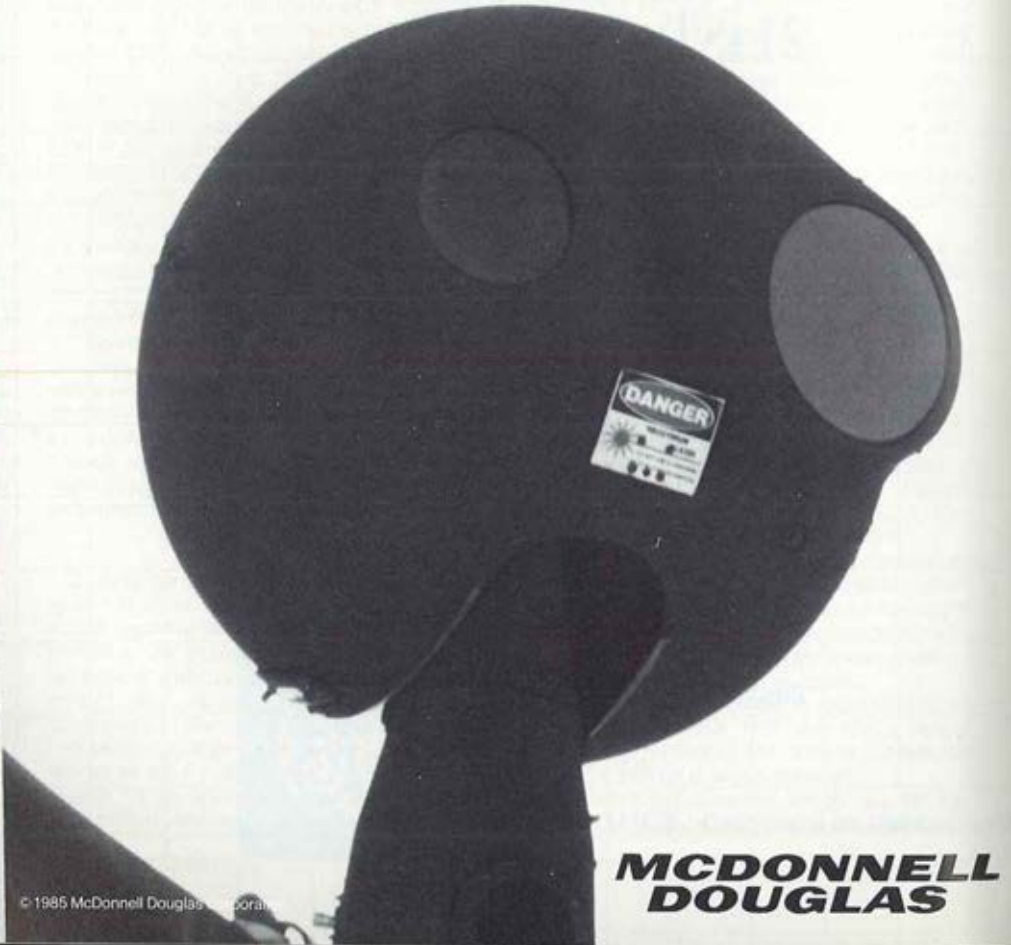
The sight has exceeded performance specifications. It is now in production for the Army Helicopter Improvement Program.

Watch for it.



MCDONNELL DOUGLAS

BLACK HAWK: The User's Perspective

BY COLONEL WALLACE D. GRAM, TSM—UTILITY & LHX HELICOPTERS

I am pleased to have the opportunity to provide an article, my first as TRADOC System Manager for Utility/LHX Helicopters, presenting the user representative's view of the BLACK HAWK Program.

As a recent aviation battalion commander working with UH-1 utility helicopters, I can well appreciate the tremendous combat capability that the BLACK HAWK provides to both the aviation unit commander and the supported units. I have admired the successes of this program from the so-called sidelines and feel very fortunate to finally have the opportunity to play a role.

After some turbulence during this past year, our UH-60A fleet is recovering rapidly, performing very well, and from all indications, retains the unprecedented user satisfaction that it has enjoyed since initial fielding. I continue to monitor all aspects of the program and will report on this from our perspective as user representative.

I'll address some of the major issues that impact on use of the BLACK HAWK, and in doing so, provide an update on our activities.

Fielding and distribution

As of 1 September 85, BLACK HAWKs are in service for the U.S. Army around the world. Distribution was slowed somewhat as we applied modifications to the main rotor spindle. However, the overall fielding period will not be affected as aircraft were continually produced (but held by Sikorsky) while the problem was being corrected.

The procurement objective of 1,107 aircraft with a total UH-60 requirement of 1,700+ remains firm; however, application of LHX and JVX may impact the total requirement for BLACK HAWKs in the aeromedical evacuation and special missions arena.

Supportability

The BLACK HAWK, although recovering from its recent worldwide grounding action, continues to exhibit outstanding characteristics of reliability and maintainability. The project managers intensive supply management efforts in the form of monthly supportability reviews attended by AVSCOM and user unit representatives are a key factor.

This is a very time-consuming endeavor for all parties, but its worth in terms of improved aircraft readiness is evident. Throughout this FY, contractor teams visited all BLACK HAWK units in the field to inspect high speed shafts and replace those that exhibited high vibration levels.

Initial inspections are complete and high vibration shafts have been removed, although a 100 hour recurring inspection is required. We remain concerned with the addition of special inspections and will work with the PM toward their elimination as soon as practical.

Training

No writing, from our point of view, would be complete without a report on training and emphasis on its importance to the success of the program.

Field commanders will be pleased to hear that the Aviation Center has staffed and received approval for a new 25 hour UH-60A **Aircraft Qualification Course (AQC) Program of Instruction (POI).** Beginning with October AQC classes, a more qualified and confident BLACK HAWK pilot will leave the training base for utilization tours. The USAAVNC is continuing to pursue a UH-60A **Initial Entry Rotary Wing (IERW)** track alternative designed to minimize resource demands, eliminate current training duplication, and provide a more highly qualified

User's Perspective
(Continued from Page 23)

UH-60A aviator to the field.

BLACK HAWK units have at times been severely undermanned during this past FY; however, that situation is being corrected. During FY 85, the U.S. Army Aviation Logistics School trained the following numbers of personnel in the BLACK HAWK MOSs:

FY 85	Classes	Students
67T10	51	484
67T30	20	91
66T	15	89
67T (Transition)	35	139

FY 86 will see UH-60A training noticeably mature, providing more and better qualified aviators and maintenance personnel to the field. Better forecasting of training requirements is the key to achieving the required personnel posture and enhancing aviation unit readiness. This is one of our highest priorities.

Improvement

Significant operational performance and safety improvement efforts have been initiated and some of the more important are being applied to the BLACK HAWK production line and to fielded aircraft.

Vision System Compatibility—After considerable time and difficulty, the PM and Sikorsky have a firm handle on night vision system compatibility problems and the 700th BLACK HAWK produced will be completely AN/AVS-6 (ANVIS) compatible.

All lighting on this aircraft is addressed—cockpit, troop compartment, cargo hook well, formation and position lights, as well as the landing and search lights. Commanders with fielded aircraft will be pleased to hear that a retrofit program has been initiated and BLACK HAWKS will begin accepting night vision modification kits in December of this year.

As more of our combat operations are flown at night, commanders in the field have convinced me that this program deserves our fullest attention to ensure that the capability for 24 hour combat operations is enhanced, as it should be, and the schedule to achieve this does not slip.

Aircraft Survivability Equipment (ASE) Suite—Major improvements in the area of aircraft survivability against the threat are being developed and will be fielded in the very near future. The cruise infra-red suppressor, developed and fielded with the first BLACK HAWKs, was heavy, bulky and marginally effective below 60 knots airspeed. It was clear that IR suppression at hover and nap-of-the-earth airspeeds was a requirement deserving our full effort and resources as soon as the technology could be provided.

In this regard **Hover Infra-Red Suppressor System (HIRSS)** production decision was made in November 1984 and the contract awarded in May 1985. BLACK HAWKs produced in February 1987 will have the HIRSS installed and fielded aircraft will be modified with HIRSS kits beginning in April 1987.

Application of this system will complete our near term ASE suite; however, you can be assured that the threat is being watched by our Combat Developer and Materiel Developer and modifications/additions to current equipment are being considered.

An ASE **Force Development Test and Experimentation (FDTE)** is planned (2Q, FY 86 Simulation, IQ FY 87 Flight Phase) to evaluate new concepts and determine what measures best enhance aircraft survivability in a high-threat air defense environment. For the first time a complete BLACK HAWK ASE suite will be evaluated in an operational environment.

Engine Upgrade—We are acutely aware of a need to upgrade the T700-GE-700 engine that has been such a solid performer throughout the development and fielding period. Because of mission weight increases, application of the **External Stores Support System (ESSS),** and the ever increasing requirement to fight in hot/day high altitudes, a substantial increase in primary engine power is needed to sustain the world-wide, all-environment capability that this aircraft was designed for.

We're looking at a number of alternatives that range from product improvement of the current engine to the development of a completely new engine. Most BLACK HAWK aviators will agree that the aircraft performs very well with the cur-

(USER's / Continued on Page 67)

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For more information contact Paul Domanovsky, Vice President — Programs/Government Requirements, Aerospatiale Helicopter Corporation, 2701 Forum Drive, Grand Prairie, Texas 75053-4005. (214) 641-0000.

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Transformation 1985: Sikorsky gears up!

BY WILLIAM A. MINTER, VICE PRESIDENT, H-60 ARMY/AIR FORCE PRODUCT LINE

Much has transpired at Sikorsky Aircraft since receiving the initial BLACK HAWK production contract award in December, 1976. Through these last nine years, Sikorsky's U.S. military helicopter production rate has increased from zero to over 13 aircraft per month in 1985.

During this transition, we and the Army have completed a number of design, manufacturing, and purchasing improvements which continue to drive the aircraft unit cost down while maintaining and improving quality. However, 1985 brings with it even more challenging requirements.

In 1985, Congress and the Department of Defense began to further refine procurement requirements and policies so as to improve the quality and reduce the cost of weapon systems necessary for the defense of our country.

Noticing the changing environment and requirements placed upon the defense industry, Sikorsky has intensified efforts to evaluate and adjust the manner in which it does business with the government to meet these changes.

This company-wide effort to quickly and efficiently mold Sikorsky and its policies and operations to comply with rapidly changing government initiatives as they arise has been termed *"Transformation '85"*, and will have implications on the UH-60A BLACK HAWK as well as other aircraft lines.

"Transformation '85" is the continuation of a long range program to keep Sikorsky current and at the top of the helicopter manufacturing industry. Goals of the company which are key elements of the *"Transformation '85"* strategy include continued technical leadership; product cost affordability; high product quality and safety; superior product reliability, availability and maintainability; and full compliance with new government procurement regulations.

Attainment of these goals will give Sikorsky the capability to continue to produce for the U.S. military the most technically advanced and affordable helicopters possible, and to meet the most stringent government requirements and procedures while doing so. Ongoing actions to achieve these goals are enumerated below.

Technical leadership

Sikorsky has always strived for technical leadership in the design and manufacture of its helicopters and this goal will continue its importance in the future.

New helicopter requirements, such as the U.S. Army's planned procurement of 4,500 LHX helicopters in scout, attack, and utility configurations, mandate the use of state-of-the-art composites, electronics, avionics, and mission simulation, and Sikorsky has and is developing further capabilities in these specialized disciplines.

The completion of a new 280,000 square foot engineering building complete with the most modern laboratories, simulation, and test facilities in the industry, represents an investment in excess of $40 million and testifies to our commitment to building the best, most technologically advanced helicopters in the world.

Complementing the expansion and improvement of Sikorsky's research and engineering facilities is a continuing expenditure of **Independent research and development (IR&D)** funds in areas of emerging technologies critical to future helicopter development. $34 million was budgeted for IR&D in 1985, and increased expenditures are projected for coming years.

Of course, the most valuable source of Sikorsky's technical leadership is our family of employees and their dedication and pride in a job

SIKORSKY AIRCRAFT'S NEW 280,000 SQ. FT. ENGINEERING BUILDING

well done. Today, Sikorsky Aircraft employs over 14,000 people, and the experience, knowledge, and skills of this work force is unparalleled in the helicopter industry.

Programs which upgrade the skills and education of employees, along with special recruitment efforts, are aimed at building up the technical capabilities of the company to meet the challenges of the future.

Product cost affordability

Keeping down product costs while maintaining high product quality has always been a goal at Sikorsky. In *"Transformation '85"* this goal has taken on even greater significance.

Sikorsky has already taken great strides in driving down costs in existing helicopter programs. Two successive multi-year procurement contracts with the U.S. Army for a total of 592 UH-60A BLACK HAWK helicopters have allowed Sikorsky to build aircraft and order parts and raw material in economical quantities, resulting in estimated savings of $204 million dollars to the U.S. Army and taxpayers.

These savings are largely the result of decreasing the cost of the material content of the BLACK HAWK from approximately $1.1 million per aircraft in 1984 to a projected $700,000 per aircraft at the end of our second multiyear procurement contract for the UH-60A helicopter. Sikorsky's aggressive use of multiyear procurement has kept BLACK HAWK costs flat in terms of current dollars and has driven costs in constant dollars downward continuously during the time period covered by Multi-year I and II **(See Figure).**

Other cost-reducing measures undertaken by Sikorsky include seeking out alternate sources for critical and high cost components, implementing make/buy decisions based on cost reduction criteria, should-cost-team audits of key suppliers, assistance to suppliers with respect to increasing productivity, expanded use of robotics and computer controlled machinery, and decentralizing shop floor opertions into operations centers.

Additionally, Sikorsky has ongoing company-wide programs designed to reduce product and operation costs while increasing quality. These programs, such as the Productivity Incentive Program, Target Zero Program, and Value Proposal Program, encourage company employ-

Transformation 85
(Continued from Page 27)

ees to come up with ways to save time, reduce scrap, and improve productivity, thereby lowering our costs to customers.

Product quality and safety

An even greater emphasis upon product quality and safety forms an integral part of *"Transformation '85"*. As recent trends have indicated, the U.S. Government has articulated an increased requirement for quality weapon systems—those which are built to exceed specification requirements under the most extreme mission conditions.

Sikorsky's products have always been designed and built with quality and safety in mind, and their demonstrated performance in the field has proven this. The UH-60A BLACK HAWK has become the workhorse aircraft of the U.S. Army, and it has met or exceeded every requirement it was designed to fulfill.

Its superb performance under battlefield conditions in Grenada, and in exercises in such diverse areas of the world as Honduras, Egypt, West Germany, and South Korea have all attested to the fact that quality was an integral part of the aircraft's design and construction.

All past and current models of Sikorsky helicopters have had this emphasis upon quality and safety, and *"Transformation '85"* will continue this thrust into the future.

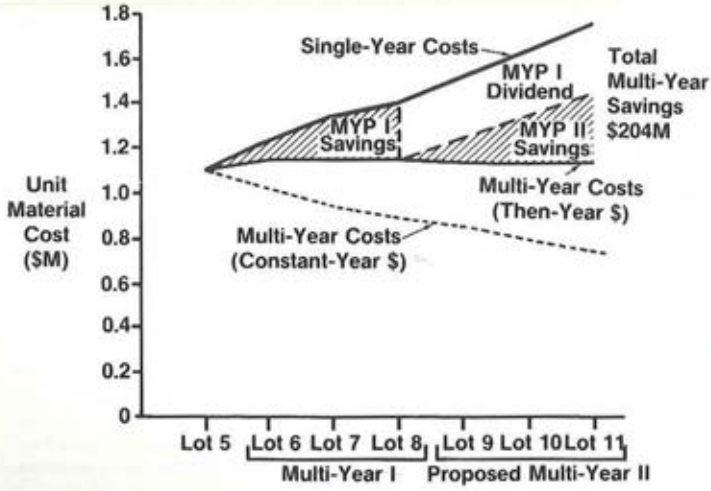
Product RAM

The U.S. Government has, in recent years, prioritized the **reliability, availability and maintainability (RAM)** attributes of those systems it procures. It has become increasingly important to the military to field weapon systems which can be easily maintained by its own personnel and which have high reliability when used in field operations.

Sikorsky takes pride in designing all of its aircraft to meet stringent RAM criteria, and in providing its customers excellent logistical support of its helicopters throughout their service life.

The U.S. Army's UH-60A BLACK HAWK helicopter demonstrates the high RAM which can be achieved when an aircraft is carefully designed and built to Government requirements. Since its introduction into the U.S. Army's inventory in 1978, the BLACK HAWK has, on average, paralleled the Army's required mission capable rate and fully mission capable rate for the aircraft. In Grenada the aircraft proved its reliability under severe combat and environmental conditions.

Future U.S. military procurements of helicopters will demand even higher RAM performance, without compromising aircraft capabilities or affordability. To meet these objectives,



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Transformation 85
(Continued from Page 28)

Sikorsky is aggressively pursuing low cost, innovative solutions with respect to advanced helicopter design, systems integration, materials selection, and logistical support to meet future helicopter requirements.

Compliance with regulations

Under the current administration, Congress, DOD, and the media have focused a great deal of their attention on defense contractors and their compliance with government regulations. As a result, government regulations and policies are rapidly being changed to reflect Congressional initiatives aimed at improving the government's procurement process.

The combination of increased government scrutiny and changing government poilicies and requirements has created an environment which demands aggressive performance by companies wishing to supply goods and services to the U.S. Government.

Sikorsky fully supports the government's efforts geared toward refining procurement regulations and policies, and the desire by the government to obtain quality goods at fair prices.

For example, in our multi-year contracts with the U.S. Army for BLACK HAWKs, Sikorsky has shared dollar savings with the government resulting from lowered inflation rates and increased aircraft production quantities. Under *"Transformation '85"*, Sikorsky has intensified its cost reduction programs, increased quality control activities, and carefully evaluated current and new government regulations to ensure our compliance with these directives.

By constantly scrutinizing our business operations and policies with an eye toward continued improvement, Sikorsky intends to work with the U.S. Government and the military to continue to build the most effective and affordable helicopters now and in the future.

The bottom line

All of Sikorsky's efforts—past, present and future—have one ultimate goal—customer satisfaction with the products we manufacture. All of our other goals and objectives: technical leadership, affordability, product quality and safety, reliability and maintainability, and compliance with government regulations, must be achieved if we are to satisfy our customers.

"Transformation '85" is Sikorsky's way of reaffirming and continuing the long standing relationship we have had with our principal customer, the U.S. Government. As a company, we intend to do everything in our power to supply the best possible products and to support our products according to the government's needs and requirements. IIIII

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Meeting the operational challenges in Korea

BY COLONEL ERNEST F. ESTES,
AVIATION OFFICER, EIGHTH US ARMY

The UH-60 BLACK HAWK fielding and employment in the **Republic of Korea (ROK)** has been a remarkable and resounding success. From its initial arrival in the ROK, the BLACK HAWK has continuously garnered praise from the crews who fly them and the soldiers supported by them.

BLACK HAWK versatility provides a wide variety and range of capabilities so crucial to executing the many missions of the **Eighth US Army (EUSA), US Forces Korea (USFK),** and **Combined Forces Command (CFC).**

From the Land of the Morning Calm, here is a brief description of the UH-60 fielding and stationing, progress in standardization and training, operational environment, special missions and capabilities, special deployments and reactions.

Fielding of BLACK HAWKs in Korea began in late-1983. Excellent planning, coordination, and execution resulted in a smooth transition from the UH-1s in some **Combat Aviation Companies (CAC),** the Air Cavalry Squadron, and the Medical Evacuation Company.

The **17th Combat Aviation Group's (CAG)** two CACs are equipped with 15 UH-60s each to provide Corps level aviation support to both US and ROK forces. The 2d Infantry Division's **2d Combat Aviation Battalion (CAB)** has one of its two CACs equipped with 15 UH-60s to provide Divisional aviation support, while the Division's 4th Squadron, 7th Cavalry has 27 UH-60s in three Air Cav Troops to provide the eyes and ears for the Division.

Finally, the 377th Medical Evacuation Company has 25 UH-60s to conduct medical evacuation and rescue missions throughout the entire Korean peninsula. Clearly the BLACK HAWK is being employed throughout its full range of capabilities here in Korea.

Initial pilot qualifications were accomplished with ease and the aircraft were immediately put to great tactical use. Training programs were geared toward the various types of aviation units and the missions they had to fly. During the recent extended grounding of all UH-60s, crews kept up-to-date by conducting classes, performing static cockpit drills, and doing a lot of table talk. When the safety of flight restriction was lifted, crews were eager to get back into the air.

At this time, EUSA has trained 94% of its UH-60 aviators in mission tasks and has given NVG currency rides to 60% of its UH-60 aviators who occupy NVG positions. A poll of UH-60 pilots during and after the extended grounding period revealed that none had lost confidence in the aircraft. Now crews are hard at work getting used to the Korean operational environment again.

Operational challenge

The Korean peninsula provides a plethora of terrain and weather conditions. First, the terrain varies from steep mountain ridges to flat, open, muddy, rice paddy areas, to rolling terrain. Wires and towers are virtually everywhere. You cannot fly far without finding urban terrain.

Second, the weather is very hot and humid in the summer, and bone-chilling cold in the winter. The distinct four seasons of the year provide plenty of rain, wind, snow, smog, dust, haze, mud, thunderstorms, and monsoons.

Temperatures range from +95°F to -30°F. You can take off from one location in perfectly clear weather and may have to shoot an instrument approach at your destination only 30 to 45 minutes away. Given such terrain and weather, the BLACK HAWK has met the challenges head on and won hands-down on every mission profile it has had to fly.

The variety of aviation units that employ the

BLACK HAWK provides a clear test of the aircraft's ability to meet both wartime and peacetime requirements.

First, for the 17th CAG, the UH-60 has proven ideal for use in "Rollercoaster" missions, a flight technique which takes maximum advantage of the unique mountainous terrain and rugged Korean environment. The BLACK HAWK has provided an additional cargo and sling load capability which enables rapid displacement of large quantities of organic, US ground and ROK Army soldiers and equipment.

CACs now have the true capability to relocate their own **Forward Area Rearm Refuel Points (FARRP)** to enhance responsiveness to both US and CFC organizations. The majority of collective training events include cross-FLOT scenarios, integration of available combat firepower, NVG operations, terrain flight, and joint/combined forces to obtain a totally synchronized ROK/US operation.

Second, the 2d Infantry Division has employed its BLACK HAWKs to practice small raids, insert virtually any size ground unit, relocate FARRPs, emplace reconnaissance patrols, conduct air assaults of varying sizes, relocate artillery and provide rapid logistical resupply. Self deployment of the 4/7th Cav and 2d CAB are now possible.

Entire 105mm Howitzer batteries can be moved; M60A3 engines can be slung in and out for deadlined tanks; and retrans conexes can be emplaced on the highest pinnacles of Korea, thereby extending the communications capability of the Divisional aviation forces.

Third, the 377th Medical Company now possesses an aircraft with the speed, agility, fuel efficiency, and equipment to significantly decrease the en route time for patient pick-up delivery to medical treatment facilities. In itself, this single capability significantly enhances casualty survival by getting patients to definitive medical care earlier after injury or onset of illness.

Across the board, commanders have been employing the BLACK HAWK in all types of mission profiles, terrain, and weather, especially during annual training exercises.

Each spring, US and ROK forces participate with US elements of I Corps in a wargame exercise called *Team Spirit*. Aviation units in the ROK have now had the opportunity to employ the BLACK HAWK during *Team Spirit 84* and *Team Spirit 85*.

The 17th CAG flew BLACK HAWKs to conduct numerous air assaults, cross-FLOT operations and organic equipment moves without falling below the DA **Operational Readiness (OR)** standard. The 2d CAB flew 372 BLACK HAWK hours training infantry units and conducting air assaults, including movement of supporting artillery. Large multiship operations were not unusual.

The 4/7th CAV provided screening and reconnaissance for the division with their BLACK HAWK availability remaining well above the DA OR standard. Finally, the 377th used their BLACK HAWKs to provide medical evacuation support for the full exercise and for the rest of the Korean Peninsula.

The reactions of crews and soldiers supported by the BLACK HAWKs have been nothing less than positive . . . The crews and commanders alike believe the BLACK HAWK to be a super machine with proven capability and survivability. The BLACK HAWK has proven its reliability and durability while operating under all kinds of weather conditions and over the dichotomous Korean terrain.

A combat capability

Commanders know they now possess the capability to deploy, maneuver, and sustain for combat on the Korean peninsula. The increased speed and fuel efficiency greatly extends the range per fuel load.

The PDS, doppler navigation and command instrument systems greatly reduced aviator workload and fatigue factors, thereby enhancing pilot efficiency and crew rest. The anti-icing and de-icing systems have increased the capability to continue a variety of missions throughout the Korean winter months.

In a country like Korea with its extremely varied terrain from the DMZ in the north to Cheju Island in the south, the BLACK HAWK power for climb and maneuverability make it the most practical and safe aircraft to fly and emplov.

BLACK HAWKs are meeting the challenges and providing US and ROK commanders with a reliable, capable, and survivable air assault, combat support, and medical evacuation helicopter. IIIII

The UH-60A in Panama: Reducing the risk!

BY LT. COLONEL MICHAEL H. ABBOTT, CDR, 210TH COMBAT AVIATION BN

The 210th Combat Aviation Battalion at Ft. Kobbe/Howard AFB in Panama recently underwent some major reorganizations. One of the reasons for these changes was the introduction of the UH-60 BLACK HAWK into this unique organization. Its fielding commenced in September 1984 and was completed in January 1985. A total of 22 UH-60's are currently assigned: 15 to the 114th Combat Support Aviation Company, 6 to the 214th Medical Detachment, and one to the 590th TAMC. In its short time in country, the BLACK HAWK has already proven to be a significant upgrade to the mission capability of the 193d Infantry Brigade (Panama).

A unique environment

Perhaps the key to understanding the significance of the UH-60 in the Central and South American region is understanding the environment in which it must operate. A large majority of the region is mountainous with landing zones often ranging from 5,000 to 12,000 feet in elevation. The power and payload capacity of the BLACK HAWK were extremely valuable when these aircraft were employed at these elevations in Costa Rica, Guatemala, Honduras, and Colombia since their introduction to the 210th CAB. A second factor of importance is the over water exposure of helicopters operating in tropical regions. Some mission requirements necessitate extended overwater operations, often terminating with naval shipdeck landings. The increased safety risk in performing these missions has been reduced to a minimum with the BLACK HAWK because of its dual engine feature and the effectiveness/accuracy of the Doppler navigation system. During a recent training exercise with the U.S. Navy, numerous BLACK HAWK crews conducted shipdeck qualifications on the aircraft carrier USS Eisenhower. One crew and aircraft stayed with the carrier for ten days of training and support as it traveled throughout the Caribbean.

The same features which reduce the safety risk in overwater operations also reduce the safety risk in jungle operations. Much of the environment is characterized by vast jungle expanses where readily accessible emergency landing zones are scarce. The platform stability inherent with the BLACK HAWK's automatic flight control system, along with its power, have also increased the MEDEVAC capabilities in the jungle environment, particularly during hoist operations.

There is another operational factor inherent throughout the region which has not yet been reduced by use of the BLACK HAWK but will be in the future. The scarceness of refueling locations in each of the countries where the 210th has operated or may be called upon to operate has been a limiting factor to the unit's operational flexibility.

The lack of adequate roads has further hampered the establishment of tactical FARPS. The 210th is eagerly awaiting the arrival of ESSS. This will provide a measurable increase in the unit's ability to sustain tactical operations in its mountainous, jungle, and water environments.

Self deployment routes to other countries, particularly when those routes necessitate avoidance of certain national airspace boundaries, will be enhanced with the increased fuel capacity of ESSS.

Personnel

The 210th transitioned to the BLACK HAWK through a combined influx of newly-assigned personnel with previous BLACK HAWK experience and school qualification training for

many of the already assigned personnel.

The mixture was good in that those personnel with in-country experience were paired with those newly-arrived, just as those with extensive BLACK HAWK experience were paired with those without. Supervisory personnel newly assigned came with an average of four years UH-60 experience.

On the other hand, crew chiefs were almost all newly school trained. The key to the personnel posture was that all of them, no matter what their UH-60 level was, were proud to be BLACK HAWK and attacked their new challenge with great enthusiasm. As a result, training flourished and mission accomplishment was their number one priority.

Training

The previously discussed environmental factors have led to some very interesting training opportunities with the BLACK HAWK. Recent high altitude qualification training in Costa Rica also incorporated the use of portable oxygen systems while operating for extended durations above 12,000 feet.

Air Assault training is conducted with infantry, field artillery, and special forces units assigned to Panama. Night Vision Goggle training continues on the increase following the extended grounding. Mission assignments to other Central/South American countries have provided opportunities for C-141 and C-5 deployment training.

The flying hour program completed during the first year was 3,797 hours total for the 22 aircraft. The significance of this accomplishment lies in the fact that when you subtract the 486 hours that were flown during the initial train-up period as the aircraft were being fielded, the remaining 3,311 hours were essentially flown over a six month duration when the aircraft were not under the world-wide grounding. This averaged out at 17.9 hours per day for every day the fleet was flyable in FY 85.

Maintenance

One challenge for a maintenance officer with a unit full of brand new aircraft is to develop a good flow chart in anticipation of his first major inspection.

The 210th was able to do this with its BLACK HAWK fleet with little problem, in spite of the worldwide groundings and the small unit deployments. The first 500 hour PE is anticipated in early November 1985.

One factor which was anticipated early in the BLACK HAWK fielding in Panama was the potential for corrosion due to the salt air environment. An anti-corrosion plan which includes washing the aircraft after every mission, fresh water engine flushes every 10 hours, and complete engine flush every 100 hours, has thus far been successful in limiting detected corrosion to some tail rotor drive shaft spherical washers.

The unit has experienced frequent problems with yaw trim servo failures and has recently found excessive wear on pitch control rod bearings on several aircraft over 300 hours. In spite of these problems, the BLACK HAWK has met or exceeded DA readiness standards since being brought into the Panama fleet.

The payoff

What the BLACK HAWK has done and continues to do for the U.S. Army's mission in this vital part of the world might best be captured by summarizing the results of a UH-60 MEDEVAC mission last December.

An American soldier was seriously injured in an accident which occurred during a brigade field training exercise. A UH-60 from the 214th Med Det extracted him from the jungle location and flew him some 50 NM to Gorgas Army Hospital where upon he clinically died while in the emergency room.

Immediate actions by the medical staff to revive him were successful. Today, this soldier owes his life, in part, to the capability of the BLACK HAWK and its speed.

The UH-60 continues to provide a significant increase to readiness and international relations throughout Latin America. IIIII

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A look back on the March and April aviation mishaps

BY BRIG. GEN. DONALD H. WILLIAMSON, DIRECTOR, BLACK HAWK TASK FORCE

Following two mishaps in March and April of this year, the Army grounded over 600 BLACK HAWKs. Investigations by the Army Safety Center, **Army Aviation Systems Command (AVSCOM),** and Sikorsky determined the probable cause of the March mishap at Ft. Bragg to be a missing bolt in the flight control mixer assembly.

A painstaking safety of flight inspection of the entire fleet did not find any other missing bolts.

Failure of a main rotor spindle led to the loss of a rotor blade that resulted in a mishap at Ft. Rucker in April. The teardown analysis and follow-on fatigue tests revealed that nonconforming or uneven threads and droop stop pounding were possible contributors to a stress fracture of the spindle.

A thorough review

The Army Materiel Command and AVSCOM, with assistance from NASA, made a thorough review of Sikorsky testing, design, manufacturing, inspection, assembly, and quality control operations with recommendations made and operations adjusted to further strengthen safety-related processes.

AVSCOM and Sikorsky did extensive research and testing to design, develop, and produce hardware modifications and flight load surveys to strengthen the spindle assembly. A stainless steel tie rod was developed, tested, and is being installed with over 500 UH-60's completed by mid-October.

The tie rod not only strengthens the spindle by about 40%, but has shown in tests that it will hold the blade to the hub even with a failed spindle. Spindle assemblies have been shipped to all BLACK HAWK units and all UH-60's should have been equipped by mid-November.

Concern over aviation mishaps and specifically those that occurred in March-April caused the Army to form a *special task force* to review the safety-related aspects of UH-60 operations, training, and maintenance.

The review included input and assistance from AMC, AVSCOM, PM BLACK HAWK, Sikorsky, General Electric, NASA, Aviation Center, USAALS, FORSCOM, and USAREUR.

The mishap history of the BLACK HAWK is not unlike that experienced by the rest of the Army's helicopter fleet. Human error has accounted for 69% (18) of the Class A and B mishaps, materiel failure 12% (3), and other 19% (5) (weather, classified, unknown).

Looking ahead

Safety improvements and reduced risk can be realized by applying greater attention to detail in design, manufacture, inspections, assembly, overhaul, maintenance, and aircraft operations.

It is too often the case that a slip up in these critical areas can cause an aircraft to become unglued. It was with this in mind that the BLACK HAWK Task Force concentrated on the following:

- Critical parts manufacture and overhaul
- EIR and QDR processing
- Flight load surveys
- Flight data recorders
- Predictive analysis of component service life
- Training and operation.

The emerging results of the review have not singled out one specific element that will produce a dramatic improvement in safety, but a number of loose ends that when pulled together will enhance overall safety and operation of the UH-60.

AROUND THE WORLD — ABOVE: UH-60 MEDEVAC helicopters gathering snow in Korea. RIGHT: Hovering prior to landing. BELOW RIGHT: Making an approach to the U.S.S. Eisenhower off the coast of Panama. BELOW: Lifting a field artillery piece in North Carolina.

Since the 82nd Airborne Division is composed of paratroopers, it's not restricted to arrival at conventional secure airfields, ports, or beachheads.

The 82nd can deliver all its paratroopers and supporting equipment, except for rotary-wing aircraft, immediately into combat through various air delivery means including air drop, **Low Altitude Parachute Extraction System (LAPES),** and heavy equipment air drops.

This air delivery capability has posed problems for the 82nd's rotary-wing aircraft since they cannot be delivered in the same manner as the trucks, artillery, and tanks. The 82nd **Combat Aviation Battalion (CAB)** aircraft are normally airlanded using Air Force C-130's, C-141's, or C-5A's into a secure airstrip where the rotary wing aircraft reassembly takes place.

Rapid support

The introduction of the UH-60 into the 82nd Airborne Division in June of 1981 enabled the 82nd CAB to support the Division almost as soon as the troops were on the ground in the objective area.

Because the speed, load capacity, and range of the BLACK HAWK are significantly greater than those of its predecessor, the UH-1, the BLACK HAWKs can be introduced at the **Initial Support Base (ISB),** and self-deploy more than 300 miles to the objective area. They would then be able to support the tactical operation by moving troops and expanding the secure area.

The UH-60 aircraft has been totally integrated into the 82nd Airborne Division during the last four years. Through its performance, advanced technology, and overall capabilities, the BLACK HAWK has changed the way the 82nd and the 82nd Airborne Division do their missions.

The BLACK HAWK has given new dimensions to the airborne, and enhanced capabilities in terms of increased mobility and sustainment of Division firepower required by the current airborne doctrine.

The 82nd Airborne Division has a unique mission among the active Army divisions. Simply stated, the 82nd's mission is *"to deploy anywhere in the world, on no-notice, and fight immediately on arrival."* For the 82nd CAB, support of the Division mission means it must be able to deploy anywhere in the world on no notice, fly, and fight immediately upon arrival.

Proven in combat

This enhanced capability was combat proven during the Grenada rescue operation when UH-60's were flown to an ISB at Barbados, prepared for flight, and self-deployed to Grenada. As 82nd troops were inserted into the Point Salines Airfield, UH-60's were available to move the paratroopers as directed by the Division Commander.

BLACK HAWKs have hastened changes in airborne doctrine because of their increased mobility and support of organic Division firepower. Under the former airborne concept, the size of an airhead was limited to the circular distance surrounding the drop zone or airfield an airborne division could defend on the ground. The planning size of such a division airhead was usually 10 to 15 kilometers in diameter, which was what the troops could reasonably defend.

The old division airhead has evolved into an airborne area of operations possibly as large as 60 to 80 kilometers in diameter. Within this area there are multiple landing zones for the air delivery of troops and equipment. The UH-60's now enable the ground commander

(82ND AIRBORNE / Continued on Page 44)

UH-60/82nd Abn Division: Total integration!

BY LT. COLONEL RICHARD H. WHITE, CDR, 82ND COMBAT AVIATION BN

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82nd Airborne
(Continued from Page 39)

to move his troops to positions where they can most effectively counter enemy advances. The commander can also avoid large build-ups of troops or equipment in single areas which become lucrative targets.

Performance of conventional infantry missions in the 82d Airborne Division has been significantly improved by the UH-60. Using a smaller number of aircraft than the UH-1 helicopter companies, BLACK HAWK companies can move more infantry troops and their supporting equipment faster. Using flights of five or 10 BLACK HAWKs with rapid turnarounds, airborne battalion commanders can now maneuver entire companies into their positions.

In September 1985, 15 UH-60's were sent to the **National Training Center (NTC),** Ft. Irwin, CA, as part of an airborne infantry battalion task force. Thirty UH-60 pilots flew more than 725 hours within a 30-day period in the severe blowing sand of the Mojave desert. The strong BLACK HAWK engines were unfailing in the high density altitudes and mountainous terrain. The BLACK HAWK proved to be an added advantage for the airborne infantry task force against the opposing force in desert terrain at the NTC.

Artillery raids

The 82nd CAB has been instrumental in developing some new applications for the BLACK HAWK as the aviation elements combine with other combat arms. The Division artillery has teamed up with the aviation battalion to conduct lone-gun and two-gun raids.

Using the 8,000-pound cargo hook on the BLACK HAWK, an M102, 105-millimeter Howitzer can be carried externally while the gun crew and the tube's ammunition ride inside. The UH-60 carries the team to a prearranged firing point where the gun crew sets up and executes its fire mission.

The BLACK HAWK then returns immediately to retrieve the gun and crew before counter-battery fire can be brought in. The UH-60 and gun then move to the next firing point for the next fire mission.

The 307th Engineer Battalion of the 82nd Airborne Division regularly uses BLACK HAWKs to move engineer teams on deep-attack raids. The Division engineer realized that this battalion would initially be operating from an airborne area of operations with many vital targets located some distance from the engineer's area.

In conjunction with the engineers, the UH-60 companies developed plans to move engineer demolition and security teams to target areas using forward refuel points to increase the radius of the attack area.

The 82nd CAB and the 307th Engineers actually conducted such raids over long distances in North Carolina and Virginia against simulated targets such as oil refineries, dams, bridges and power stations. Cooperation with civilian agencies allowed the units to train as realistically as possible, while permitting the greatest margins for safety.

Readiness / training

Members of the 82nd Airborne Division are well aware that there is no magic warehouse that opens immediately after an alert notification. The equipment on hand is the same equipment that will go to combat. A unit's state of readiness and level of training cannot be significantly raised during the 18-hour period between alert notification and deployment.

Therefore, members of the Airborne Aviation community work hard in crewmember training and maintenance programs to keep aviation assets ready for combat.

The 82nd must be prepared for a wide variety of missions under very diverse conditions around the world, so the 82nd CAB pilots must be prepared to fly under the same circumstances. The unit training program for BLACK HAWK aviators makes maximum use of the UH-60 **Aircrew Training Manual (ATM)** task list in FC 1-212.

Both BLACK HAWK company commanders in the 82nd CAB require almost all ATM tasks under all designated conditions for their Flight-Activity-Category-1 pilots. This provides reasonable assurance that the BLACK HAWK aviators can perform the conventional missions such as sling loads and internal troop loads under day, night, and night vision goggle conditions in support of Division missions.

The company commanders also require FAC 1 aviators to be able to accomplish the specialized missions such as the deep attack, lonegun raids, and parachute operations. Consequently, all FAC 1 aviators are familiar with specialized missions for the Division.

Each company further guarantees mission accomplishment and pilot proficiency through the use of extremely rigorous **Pilot-in-Command (PIC)** programs. Not only must the prospective PIC demonstrate his control of the UH-60, but he must also show his ability to plan, coordinate, and conduct any type of mission the BLACK HAWK company may support.

A large number of these PIC evaluations are conducted during actual support for line units.

Expert on the ground

Aviator professional development is also accomplished through the assignment of UH-60 aviators as **liaison officers (LNO)** to deploying infantry units. Since the majority of the BLACK HAWK pilots are jump-qualified and are on airborne status, the LNO can actually jump into combat with the infantry task force headquarters.

This gives the aviator an appreciation of what his ground counterpart is doing, and puts an aviation expert at the ground commander's right hand.

Training as part of the combined arms team is an ongoing process between the 82nd CAB and the ground units. The LNO's advise the ground commander and his staff on the capabilities of the BLACK HAWK and the creative ways in which it can be employed in tactical situations.

Other aviators such as staff officers who fly with the BLACK HAWK companies have a very extensive ATM task list even though they are carried as FAC 2 pilots. Since these aviators may be flying operational missions soon after deployment, the extensive task lists are necessary to ensure that these pilots can fly missions when combat conditions, crew rest, and attrition reduce the number of FAC 1 pilots.

White Ft. Eustis is still teaching the new 67T10's their basic tasks, and instructing the 67T30 and 66T30 (UH-60 Technical Inspector) in formal classes, the skill-level-2 BLACK HAWK mechanic is only receiving unit training. Since the E-5, skill-level-2 mechanic is the hinge pin of our maintenance program, the 82nd CAB has begun efforts to increase their training and proficiency.

The 82nd CAB has joined with the Logistic Assistance Office and Sikorsky representatives at Ft. Bragg to provide semi-formal training for this upcoming generation of BLACK HAWK crewchiefs, and ensure the continuity of a viable maintenance program.

A happy team

During the past four years, the BLACK HAWK aviators, crewmembers, and commanders have grown up with their BLACK HAWKs, and become a team. The pilots believe in the aircraft, and enjoy flying it under the most trying conditions.

The crewchiefs and mechanics appreciate the challenge of maintaining the most sophisticated aircraft in Army Aviation. And the commanders have been able to exploit the BLACK HAWK's enormous capabilities which enable the 82nd Airborne Division to meet its 18-hour worldwide deployment mission. IIIII

"The best helicopter to be fielded in Europe . . ."

BY COLONEL RAYMOND G. BOLAND, COMMANDER, 4TH AVIATION BRIGADE

The Fourth Brigade (Aviation) became the first divisional Combat Aviation Brigade (Provisional) in Europe on November 15, 1984 and was officially activated on March 15, 1985. The Brigade's organization includes a combat aviation company activated at Ft. Benning, GA., as the 121st Aviation Company.

In mid-1981 the company traded in their UH-1 HUEYs for UH-60A BLACK HAWKs. In June 1982 the 121st CAC deployed to USAREUR to the Giebelstadt AAF, and in August 1982 assumed the colors of E Company, 3rd Aviation Battalion (Cbt). Upon activation of the provisional brigade, E Company became the 21st **Combat Aviation Company (21st CAC). deployment to Europe in June 1982, it has** participated in three REFORGER exercises.

Challenging conditions

From the extensive training and frequent participation in REFORGERs, the aviators found that operating in the European environment was more challenging because of two unusual characteristics unique to Germany.

The first is the proliferation of high power lines that represent one of the most serious hazards to helicopters flying in the world. Adding to this problem is the frequency of limited flight visability due to heavy fog.

The combination of those two factors raises a particularly serious safety concern to aviators flying with **Night Vision Goggles (NVG).** NVG flight was an aspect of training that gave the unit its biggest challenge upon arrival in USAREUR.

Night Vision Goggles do not accurately register fog conditions until the aircraft is already in the fog. Often the fog is much worse than is perceived through the NVGs and if the aircraft's speed is excessive for those conditions there may be little reaction time to avoid the high power lines that may suddenly appear.

During Exercise REFORGER '85 the 21st CAC gained valuable experience when it had to operate its BLACK HAWKs during severe cold weather temperatures. The past winter was the most severe winter in years and it posed unanticipated problems.

Severe icing conditions made ground deicing equipment extremely valuable and meant that only a limited number of aircraft could be fielded at any one time due to the length of time it took to de-ice an aircraft. A crew of three took approximately 1½ hours to de-ice a helicopter and it took the crew an additional hour to preflight.

Depending on the severity of the weather, an aircraft may have undergone de-icing several times within a 24 hour period. Snow and ice had to be removed from the rotor blades, the top of the aircraft, and the stabilator surface.

While the BLACK HAWK has some de-icing capabilities, and in fact is certified to de-ice up to moderate icing conditions, our experience in the winter of '85 alerted commanders and aviators to allocate additional time so that deicing actions could be accomplished without delaying missions or training.

The BLACK HAWK is the Army's best all-weather helicopter and as such, it's the best helicopter to be fielded in Europe. As training continues and the role of the UH-60A BLACK HAWK within a heavy infantry division expands, we'll be able to see the extent of its value as a combat aircraft.

The BLACK HAWK's ability to provide rapid resupply over extended distances provides the division commander with the capability to support quick combat operations through the division zone. This capability considerably adds to the flexibility of the scheme of maneuver for a heavy division.

Air Traffic Control

7th Signal Command: 66,000 GCAs and over 10 million operations

FT. RITCHIE, MD. — As I complete my tour as the first DA selected commander of the **U.S. Army Air Traffic Control Combat Support Activity (USAATCCSA),** I appreciate this opportunity of presenting the first of a series of articles dealing with **Air Traffic Control (ATC).**

Colonel Melvin McLemore

A Report by Colonel Everett O. Greenwood

assumes command at the end of August and we can expect to hear from him periodically. To set the stage, I will briefly address Air Traffic Control within 7th Signal Command since I know many are not familiar with our ATC responsibilities.

I serve both as the 7th Signal Command Assistant Chief of Staff for Air Traffic Control, and as Commander of USAATCCSA. The 7th Signal Command has responsibility for all Army air traffic control within the continental U.S., as well as Alaska and Hawaii.

This mission involves both fixed ATC facilities that support Army airfields and tactical ATC elements that support the command's corps and divisions during field exercises and tactical deployments. About 1,100 military and civilians are involved in the fixed mission, and there are more than 850 soldiers in the tactical element. This is just less than a total of 2,000 personnel.

The fixed ATC mission involves some 54 airfield control towers, 17 ground controlled approaches, four radar approach controls, five flight operations/flight coordination centers and numerous navigational aids located at Army airfields. This is about 80 facilities in all.

In the past year, they handled over ten million aircraft or operations as they are referred to, which included 66,000 GCA's. The 7th supports Army Aviation at Army airfields, which is not to be confused with the **Federal Aviation Administration (FAA)** support to civilian aviation. The personnel work very closely with the FAA because their activities must be well coordinated.

On the tactical ATC side, there are two ATC battalions and a signal support company that are assigned to USATCCSA, which is headquartered at Ft. Ritchie and is one of the 7th Signal Command's intermediate commands. USAATCCSA exercises command and control over these organizations.

The 58th ATC Battalion, which supports the XVIII Airborne Corps, along with its 245th Company, is located at Ft. Bragg, and has one company, the 192d, at Ft. Campbell, Ky. One platoon from the 192d is located at Hunter AAF, Ga. This platoon, and one from Ft. Campbell, initially provided tactical ATC support to operations in Honduras.

The other battalion, the 16th, is headquartered at Ft. Hood with its 68th Company located at Ft. Sill, and its 57th Company at Ft. Lewis. This battalion is spread out since the platoons from these companies are located with the division that they support.

Consequently, the 16th has companies and platoons located at nine different intallations in the western U.S., including Alaska and Hawaii. Elements of this battalion also supported III Corps during **Exercise GRANADERO I** in Honduras. This makes for a really challenging command and control situation for the battalion.

Most of the 16th's platoons at one time or another have been committed to providing ATC support in Honduras.

Another extremely small company located at Ft. Rucker, the 256th Signal Support Company, provides general support maintenance for the tactical ATC equipment in the two battalions. They get to travel a lot.

In the dual capacity of commander of USAATCCSA and Assistant Chief of Staff for ATC, I'm responsible for all ATC, both fixed and tactical, in the 7th Signal Command. We have an extremely small staff to support our USAATCCSA and ACSATC responsibilities. To take up this slack, other 7th Signal Command staff elements are tasked to support my staff elements.

At Ft. Huachuca, the **USA Information Systems Command (USAISC)** headquarters has an ATC staff element and an ATC activity. It is our next higher staff element and functions as the USAISC staff element for ATC on a world-wide basis.

Anyone with additional questions are asked to call us at Ft. Ritchie (AV 277-4302) or visit.

—COL Everett O. Greenwood
Cdr, USA Air Traffic Control Combat Support Activity

Awards & Honors

AWARDS

AAAA Chapter-Selected "Aviation Soldiers of the Month"

OCT.—Army Aviation Center Chapter
SSG Johnnie W. Wicker, III
OCT.—Hanau Chapter
SP4 Charles E. Hancock

HONORS

USAAVNC — FT. RUCKER, ALA.
★Distinguished Graduate; +Honor Grad.

OCT. 11, 1985—Guest Speaker: COL Jacob B. Couch, Jr., Director, Dept. of Combined Tactics, USAAVNC.
Warrant Officer Senior Crs Class 85-6: †CW4 Robert A. Hanaike.

OCT. 17, 1985—Guest Speaker: BG Frederick M. Franks, Jr., Deputy Commanddant, Command & General Staff College.
Officer RW Aviator Crs 85-16: ★2LT Stephen C. Smith; +2LTS James E.Messer, Jr., Michael L. Grace, Mark S. Fisher,Tommy D. Beaty.
Warrant Officer RW Aviator Crs 85-15: ★WO Timothy A. Baker; +WO Patrick J. Donnelly, Richard R. Rutten, Authur T. Southwick, Marvin D. Robbins.

OCT. 18, 1985 — Guest Speaker: BG Rodney D. Wolfe, DCG-East, USA Recruiting Command, Ft. Sheridan, Illinois.
Aviation Officer Advanced Crs 85-3: ★CPT Mark E. Warzecha; +CPT David K. Parker, Robert L. Thomas, Paul J., Moade, Kevin S. Noonan.

NOV. 8, 1985 — Guest Speaker: COL Robert L. Goodbary, Cdr, Combat Aviation Brigade, 1st Cavalry Division, Ft. Hood, Tex.
Aviation WO Advanced Crs 85-9: ★CW2 Terrence C. Lewis; +CW2s Dennis A. Nagel, Jack W. Newberry, Mark S. Timmermeyer, Billy J. Dowdy.

NOV. 15, 1985 — Guest Speaker: MG Orlando E. Gonzales, CG, USA Aviation Systems Command, St. Louis, Mo.
Officer RW Aviator Crs 85-20: ★2LT James J. Kenney; +1LT G. Scott McConnell, 2LTs Reuben D. Dickenson, Gregory L. Christian.
Warrant Officer RW Aviator Crs 85-19: ★WO Jordan J. Hemaidan; +WOs Scott T. Curtis, Brett A. Patrick, Frank E. Al bright.

USAALS — FT. EUSTIS, VA.
(Outstanding Graduates, unless noted)

SEPT. 17—Aircraft Maint Officer Crs: WOC William H. Ahlersmeyer.
SEPT. 19—Aircraft Fire Control Repairer: PFC Joseph R. Kenney, Jr.
SEPT. 19—Aircraft Powertrain Repairer: PV1 Michael A. Harmon.
SEPT. 9—Aircraft Maint NCO Advanced: SFC Jose Borges-Fernandez, SSG Thomas F. Shields. **SEPT. 30**—SSG Donald Hightower, SSG Robert C. Updyke.
SEPT. 20—Tactical Transport Hel Tech Insp: SGT Michael A. Baughman.
SEPT. 10—Tactical Transport Helicopter Repairer: SP4 Thomas O. Morrison, PV1 Mark P. Milam. **SEPT. 24:** SP4 John E. Sutton, PFC Jonathan F. Barnett.
SEPT. 10—Aircraft Armament Tech Ins: SSG Tim L. Laney.
SEPT. 11—Tactical Transport Hel Repairer BTC: SGT Ronald L. Brower.
SEPT. 24—Util Hel Tech Insp: SSG Donnie R. Peace.
SEPT. 11—Util Hel Repairer BTC: SGT Kenneth J. Bottomley, SSG David L. Lawrence.
SEPT. 11—Aircraft Weapons System Repairer: PFC Curtis M. Reed. **SEPT. 17:** PFC Phuc T. Van.
SEPT. 11—Attack Helicopter Repairer: PV1 Scott D. Clark. **SEPT. 18:** PV1 Ronald R. Omdoff. **SEPT. 25:** PFC Shaun C. Bone. **OCT. 1:** PFC Todd A. Thorpe.
SEPT. 12—Observation Airplane Repairer: PV1 Sidney J. Toll, Sr.
SEPT.12—Aircraft Electrician Crs: PFC Stephen A. Morgan. **SEPT. 26:** PV1 David J. Grenke.
SEPT. 12—Attack Helicopter Tech Insp: SGT Donald L. Harvey, SGT Ronald E. Spigner.
SEPT. 12—Observation/Scout Hel Tech Insp: SSG John E. Malone. **SEPT. 17:** SSG David C. Pope
SEPT. 13—Utility Helicopter Tech Insp: SSG David H. Frost.
SEPT. 13—Utility/Cargo Airplane Tech Insp: SSG John R. Garrett.
SEPT. 16—Aircraft Powerplant Repairer: PV1 Bradley J. Cooksley.
SEPT. 17—CH-47 Med Hel Repairer: PVTs Andrew P. Fairfax, Edward G. Barrington. **SEPT. 24:** PV1 Christopher G. Caspino.
SEPT. 17—CH-47D Med Hel Repairer: SGT Charley C. Barrett, Jr.
SEPT. 20—Med Hel Tech Insp: SGT Mark E. Halverson.
SEPT.19—UH-60A Hel Repairer Transition: SGTs Michael R. Delorey, Thomas S. Bennet, David G. Rombach, Charles A. Harris, Jr.

Command & Staff

Major General Claude T. Ivey, as DCG, XVIII Airborne Corps, Ft. Bragg, N.C.

Major General Gary E. Luck, as CG, 2d Infantry Division, APO S.F. 96224.

Major General Burton D. Patrick, as CG, 101st Airborne Division (Air Assault), Ft. Campbell, Kentucky.

Major General Bobby B. Porter, as CG, 82d Airborne Division, Ft. Bragg, N.C.

Brigadier General George M. Baxter, to Office of the US Defense Representative —Pakistan (ODRP Islamabad, State Dept. Pouch), Washington, DC.

Brigadier General Roger K. Bean, to ADC, 9th Infantry Division (Motorized), Ft. Lewis, Washington.

Brigadier General Frederick M. Franks, Jr., as Deputy Commandant, USACGSC, Ft. Leavenworth, Kansas 66027.

Brigadier General Merle Freitag, to Directorate, Resources & Management, ODCSLOG, DA, Washington, D.C.

Colonel John N. Bertelkamp, as Project Manager—COBRA, USA AVSCOM, St. Louis, Missouri.

Colonel H.E. Culley, to Corps Aviation Office, Hq, XVIII Airborne Corps, Ft. Bragg, North Carolina.

Colonel John A. Geurin, as Military Staff Assistant to USDR&E, DDT&E, OSD, Washington, D.C.

Colonel William P. McMonegal, as Army Attache, USDAO Islamabad, Pakistan.

Colonel Galen D. Rosher, as Deputy Director, Directorate for Advanced Systems, USA AVSCOM, St. Louis, Missouri.

Colonel John Tragesser, as Program Manager—Advanced Scout Helicopter, USA AVSCOM, St. Louis, Missouri.

Colonel Demetrios G. Tsoulos, as Commander, USA Community Hospital, Seoul, Korea.

ACATT. THE HOW-TO-FIGHT TEAM TACTICS TRAINER.

For the first time, pilots will be taught not just how to fly, but how to fight–as a team.

ACATT (Aviation Combined Arms Team Trainer) will provide a heavy work load in a realistic combat environment to train scout and attack helicopter crews in the critical decision-making and battle-management skills for combined arms operations.

The heart of the trainer is the McDonnell Douglas helmet-mounted visual system. It provides a 360° look at the action. Each crew member sees the others on the team, the terrain, and the target relative to his position and attitude. The scene changes in real time to reflect the movement of each helicopter. Weapons firing, clearly visible and in color, adds realism.

The ACATT system consists of two scout and two attack helicopter simulation modules and an instructor module. The system's design permits additional cockpits or modules to provide different configurations and will accommodate future weapon systems.

ACATT is being developed by the McDonnell Douglas, AAI, and Allen Corporation team. It's an effective, affordable system which the U.S. Army needs to gain and maintain essential helicopter team combat skills. For more information, contact: Beau Witt, ACATT Mktg. Mgr., P.O. Box 426, St. Charles, MO 63302. Telephone (314) 925-4857.

ACATT

MCDONNELL DOUGLAS

Force Requirements

Supporting the staff transport mission has high priority

WASHINGTON, D.C. — Enhancement of the administrative utility fixed and rotary-wing aircraft fleet continues to be a priority program at HQDA.

The total requirement for 365 utility fixed-wing aircraft far outstrips the available resources of 223 C-12s and U-21s. This shortfall of 142 utility fixed-wing aircraft represents a dollar value of $312.4M (FY 85) and continues to impede MACOM ability to support all users.

Growth in aviation procurement funds is not probable in the near term. The most reasonable solution seems to be a change in how the Army accomplishes the staff transport support mission.

HQDA has approved a study to develop the Army's total requirement for administrative utility fixed and rotary-wing aircraft. The study will establish the requirement for utility operational/administrative support airlift aircraft (both fixed and rotary-wing) and compare operational and organizational concepts for the period 1985 to 2000.

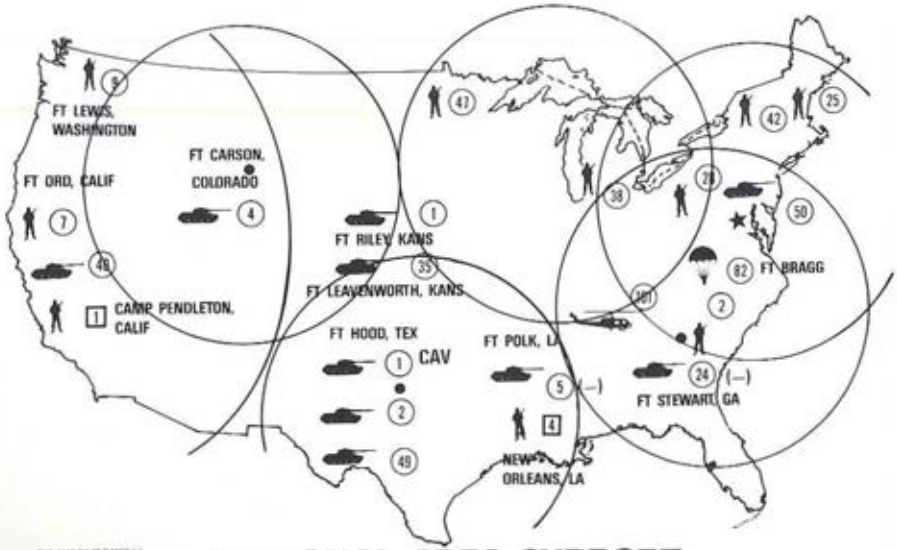
Requirements and capabilities will be generic and will facilitate present, future, and contingency wartime mission accomplishments. The HQDA study will develop a proposed organization, and a concept for manning and stationing of available assets under a single centralized command for peacetime support of CONUS MACOMs.

Options will be developed which use 50% and 75% of the present authorized fixed-wing aircraft fleet and 25% of the pre-

A Report by Brigadier General Wayne Knudson

sent TDA rotary wing fleet. Military spaces allocated to TDA's will be minimized.

Deployable and CONUS based TO&E organizations will be developed to support mobilization and war. Options authorizing and provisioning for surge or temporary reinforcement via



NATIONAL AREA SUPPORT

commercial carrier or lease will be developed.

Results of the study are to be presented to the Army leadership in January 86.

One way to visualize a peacetime area support concept for CONUS MACOMs is shown in **Fig (opp).** The diagram is not to scale and is not intended to depict the outcome of the study.

In this example, overlapping support areas are established for regional support under a single centralized command for support of CONUS. The centralized command would receive all requests for support via computer data links. Appropriate and available aircraft would be tasked through a single operations center to support mission requests on a CONUS-wide basis as opposed to a command or installation basis.

Completed mission data would also be provided via these data links and computer generated **operational support airlift (OSA)** reports would be provided by the centralized command.

Two products are expected from the study. First, a validated Army-wide requirement for Staff Transport Aircraft which can become the basis for acquiring new technology aircraft to support the Army's modernization efforts and second, an operational concept which can improve available support to the Army with assets currently on-hand.

OT II finds AHIP coming up short

The final results of AHIP's **Operational Test II (OT II)** are in and the news is not good.

After detailed reviews by Department of Defense and Army analysts of the test results, it has been assessed that the AHIP did not demonstrate an operationally effective capability in the Scout/Attack Team role and air cavalry role but did in the **Field Artillery Observer (FAAO)** role.

The bottom line is that OT II did not provide sufficient data to prove that the AHIP was more effective than the OH-58C in the attack and air cavalry roles.

What does this mean?

On 26 September 1985, the **Defense System Acquisition Review Council (DSARC)** met to consider the Army's recommendation that the AHIP proceed from low-rate production to full production.

A primary consideration was the OT II test results.

The DSARC authorized the Army to continue production for Field Artillery Aerial Observer force development. However, the AHIP will not be procured or fielded for either the attack battalion or air reconnaissance squadron pending further follow-on operational testing and another thorough DSARC review.

The Army is proceeding immediately to plan and conduct follow-on operational evaluation to demonstrate **what we intuitively know:** that the AHIP is operationally more effective than the OH-58C in the attack and air reconnaissance roles.

— BG Wayne Knudson
Dir. of Force Requirements, ODCSOPS, HQDA

A NICE SPLICE — Splicing of the first all-new production model CH-47D for an international military customer, the Japanese Self-Defense Forces, occurred at the Boeing Vertol plant in Philadelphia earlier this fall when the aircraft's major fuselage sections were joined. Boeing and Kawasaki Heavy Industries will co-produce 47 additional "D-Model" CHINOOKs through the early 1990's.

Beech Model 2000: Special as its mission.

It gets there high and fast and then loiters for hours, a rock-steady airborne electronic listening post.

The Beech Model 2000 special missions aircraft is an exceptional aircraft. That's the way it was designed. Its unique tandem wing/pusher prop configuration and its lightweight, mirror-smooth graphite/epoxy composite construction make it a perfect match for SEMA requirements:

- *Cruise speed – 350 knots.*
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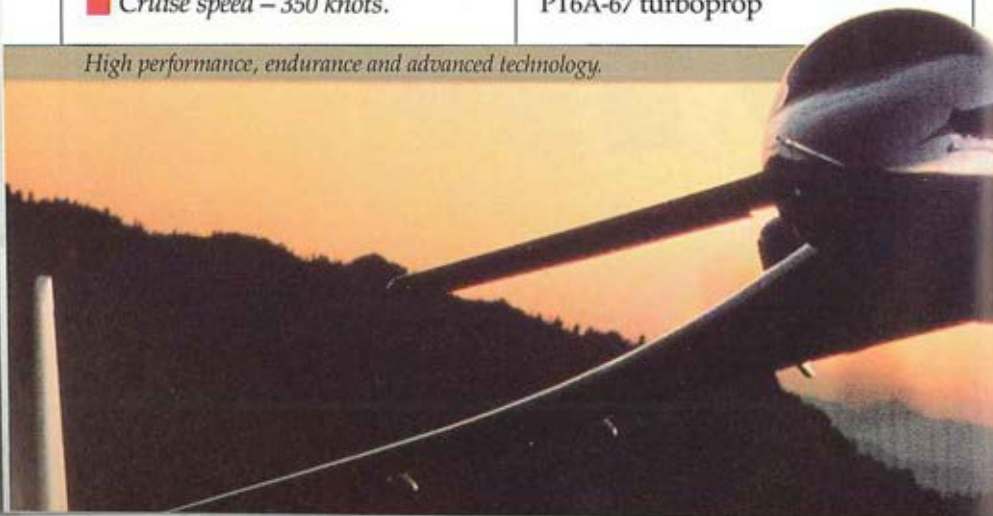
- *Cabin sound – Inherently low.*
- *Antenna platform – Superb.*

Utility advantages.

The 1000-shp. Pratt & Whitney PT6A-67 turboprop

High performance, endurance and advanced technology.



engines turn four-blade props at 1,500 rpm at cruise. This minimizes sound.

It has a large cabin, excellent empty weight/useful load ratio and c.g. range. Furthermore,

For the Army, new efficiency and versatility.

it is outstandingly flexible in utility/support mission roles.

Its inherent stability and low-drag aerodynamics give it highly desirable performance characteristics. The state of the art instrument panel provides important advantages in reducing pilot work load.

The pressurized Beech Model 2000 is the logical synthesis of advanced technology, aerodynamics and pusher propulsion. It offers military planners an airborne opportunity for a major advance in special and utility missions.

At Beech, tomorrow's technology is working today.

For more details on the Beech Model 2000, write:
Beech Aircraft Corporation,
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Wichita, KS 67201.

Beechcraft

A **Raytheon** Company

Operations

Sixth Army Area: Every imaginable terrain and challenge

PRESIDIO OF SAN FRANCISCO — Greetings from Sixth U.S. Army, home of the AAAA's *"Outstanding Reserve Component Aviation Unit of the Year"* — California, Colorado and Arizona's 40th Combat Aviation Battalion, commanded by **LTC James Ghormley**, CA-ARNG.

Our slice of the continental land mass provides every imaginable terrain and weather challenge for aviators and their machines. ARNG and USAR units in the twelve western states personify a *"Commitment to Excellence"* and represent a significant threat to any would-be aggressor.

Army of Excellence — AOE will have a profound impact on RC aviation in the next three years. Here in Sixth Army, FY 86 will see the 40th CAB convert to the Div Cbt Avn Brigade structure here under the command of **COL Ed Zysk**. Co D, 40th CAB (AH), CO-ARNG, has begun its conversion to the 35th CAB (AH), 35th Inf Div (Mech), under the command of **LTC Bill Westerdahl**.

In the L.A. basin, the 63d ARCOM Avn Bn (Prov), under **LTC Jake Benjamin**, is preparing the way for the FY 87 activation of the 336th CAB, a corps level utility helicopter lift battalion.

At last count, FY 87 through FY 89 will see the activation of one Corps Avn Brigade Hqs, four Avn Group Hqs, four Avn Bn Hqs, the conversion of seven attack companies and Air Cav Troops to Atk Hel Bns, and the addition of five new aviation companies to the RC aviation force structure in Sixth Army alone. This is a formidable management challenge, especially when the key leaders can devote a maximum of 38 days a year to the training and organization effort.

A Report by Colonel Richard C. Antross

Centralized Aviation Readiness Training Teams (CARTT) provide training assistance and support and are the key elements in helping RC unit commanders meet the same ATM and ARTEP standards as their active Army counterparts.

LTC Steve Bauman heads an eight-man active duty team at Hamilton Field, CA, providing assistance to units in WA, OR, CA, NV, and AZ.

CARTT-Denver, headquartered at Buckley ANG Base in Aurora, CO, and led by **LTC Rick Sauer**, assists in Idaho, MT, UT, WY, ND, and SD and provides C-12 airlift support to active Army, USAR and ARNG users in the inter-mountain area. MILPERCEN assigns only quality officers, warrant officers, and NCOs to these demanding and professionally rewarding team assignments.

AWRASS — Risk management and conservation of human resources are realities, not concepts in Sixth Army. The **Army Western Region ALSE and Survival School (AWRASS)** sponsored by the Aviation Division, Sixth U.S. Army, and hosted by the OR-ARNG, began operations in 1985.

AWRASS trained 180 students in ten different courses, including Basic, Cold Weather, and Sea Survival and an ASI Awarding ALSE Course taught by Ft. Eustis instructors at Camp Rilea, Astoria, OR. An expanded program begins in Jan. 1986.

Combined Arms Training — The toughest challenge for RC aviation units is to find and coordinate meaningful combined arms training opportunities during annual training.

I'll mention just two of the many success stories that occurred this year. At Gowen Field, Boise, ID, the ARNG's 163rd ACR exercised all of the regiment's air assets plus supporting cargo aircraft in a major tactical exercise. Over 80 aircraft from MT, UT, and the 124th ARCOM vied for airspace and conducted realistic tactical operations to include MILES air-ground engagements with aggressor forces.

In California, **COL Jerry Childers**, Commander of the 7th Cbt Avn Bde, fully integrated **MAJ Joe Conley's** 336th Avn Co (USAR) cargo helicopters from the 49th Trans Co (MH), CAARNG, and 124th ARCOM pathfinder units, into Exercise *Celtic Cross III*.

This was the first test of AOE light division aviation brigade tactics and techniques for the 7th ID. On the first night of the five-day exercise, the 336th airlifted 450 marines to LZ's in the Ft. Hunter-Liggett mountains in an operation that began at 2000 hours and did not end until 0730 the following morning — under

illumination conditions where NVG's could not be used (although the 336th has one platoon of "night fighters" in currency status).

Ten impact awards were presented to members of the 336th by the 7th ID in recognition of their outstanding performance as citizen-soldiers.

In future reports, I'll highlight individuals and units that make working with and for RC aircrews and leaders, the most rewarding of assignments in Army Aviation.

— COL Richard C. Antross
Aviation Officer,
Sixth U.S. Army

A GOOD START — With 190 people registering at the last minute, there were 523 participants in the First Annual 5K "Run for the Museum" sponsored by the AAAA Army Aviation Center Chapter and kicking off from the Physical Fitness Center at Ft. Rucker, AL.

7th Combat Aviation Brigade comes on line at Ft. Ord, Calif.

FT. ORD, CA — The Army's first **Combat Aviation Brigade (CAB)** has come on line at Ft. Ord, CA, as the 4th maneuver brigade of the 7th Inf Div (L). Activated in Apr 1985, the 7th CAB consists of an HHC, the 74th and 206th Aslt Hel Companies (Sep), the 2nd Sqdn, 10th Cav (Recon), and the 307th Avn Bn (Atk Hel). The 536th Aircraft Maint Co is located in the Div Support Command.

A Report by Colonel Jerry W. Childers

The 7th CAB's first test came in Aug 1985 when the new reorganized 7th ID (L) took to the field for *Celtic Cross III,* the Division's first opportunity to shake out its new structure. The CAB, augmented by the 336th Aslt Hel Co (USAR), proved capable of providing routine aviation support for the Division while the Brigade staff performed planning for the independent maneuver force operations.

Near the end of the exercise, the CAB successfully executed a "Deep Attack" 30 kilometers behind enemy lines using attached Infantry, Field Artillery, and Engineer forces.

The 7th CAB has been told to train for contingency operations in low intensity combat while retaining the capability to fight a mid-high intensity battle. This has brought about a resurgence of Vietnam era employment techniques to include high speed contour reconnaissance operations, armed escort of air assault operations and aerial fire support for infantry engaged in close combat.

Major emphasis is being placed on night operations because light infantry forces will be at their best during the hours of darkness.

During coming months, the 7th CAB will train for and participate in a National Training Center Rotation and a major deployment outside the United States.

Next spring, the Brigade will be the subject of close attention from TRADOC as the Light Infantry Division design is certified for implementation throughout the "Leg" infantry divisions of the Army.

On 1 Oct 1985 the 7th Division joined the RDF and was placed on an alert status that is equal to the status of the 82nd Abn Div. It's truly an exciting and challenging time to be a member of the Combined Arms Team in the *Bayonet Division.* The 7th CAB intends to live up to its motto by always being there:

"Above the Bayonet"

Future reports will focus on lessons learned as we continue to expand the envelope for Army Aviation.

— COL Jerry W. Childers
Cdr, Combat Avn Brigade
7th Infantry Division

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Ft. Carson's 4th Cbt Aviation Bn truly flies "Above the Best"

FT. CARSON, COLO. — Army Aviation's motto "Above the Best" is a reality at Ft. Carson.

A Report by Major (P) Stephen P. Snow

With our airfield elevation of 5,870 feet, and bordered on the west by the Rockies, reaching skyward to 14,000 plus feet, the 4th Combat Aviation Battalion, of the 4th Infantry Division, *"Ironhorse"*, finds itself indeed flying *"Above the Best"*.

The proverbial train is moving fast here in the *Ironhorse* Division. The past year found *Ironhorse* Aviation deployed worldwide. In September 1984, A Co (Atk), had just returned from support at the **National Training Center (NTC)**, and the 179th (ASH) just deployed to Honduras.

October brought with it a 100% Battalion moveout for a two week FTX, and external ARTEP, under typical "Front Range" weather conditions that included: two inches of snow, 90°F temperatures, followed by six to eight inches of rain. With the advent of winter, elements of *Ironhorse* Aviation deployed to the Federal Republic of Germany to participate in *REFORGER*.

The train barely stopped for fuel when, in late spring, the 4th CAB was notified that it would provide *Task Force Bravo Support* in Honduras, and simultaneously provide NTC support with its attack and general support assets.

Late summer found *Ironhorse* Aviation at the newly acquired Pinon Canyon Maneuver Site, 100 miles south of Ft. Carson. Three weeks of intensive training here, coupled with the aforementioned mission stretched the Battalion's assets considerably.

The flying was the easy part. Logistical support was the hard part. To support these and future operations, several logistical initiatives were undertaken.

The Aviation Logisticians rallied together, and formed an installation level Aviation Logistics Readiness Council. The charter of this Council is to review problem areas on a monthly basis, and make recommendations both to the **Division Aviation Officer (DAO)** and the Assistant Division Commander (Support) for problem resolution.

The council explores all related Aviation logistical matters, assesses internal problems, identifies systemic problems and energizes the appropriate staff principal, or **Army Materiel Command (AMC)** agency as necessary.

Additionally, to provide for a collective effort, and acquire the best technical input into the Aviation Logistical Readiness Council, two technical Boards were developed — the Installation Aviation Quality Assurance Board, and the Maintenance Test Pilot Standardization Board.

These two Boards draw on the experience of those individuals most involved in obtaining a quality end product from ongoing maintenance operations.

The whole Ft. Carson Aviation Logistical Community has been organized under the staff control of the DAO. This gives the DAO direct access to all logistical happenings within the Division, and provides him with the necessary information to advise the Commanding General on the operational capabilities of the Aviation Fleet for peacetime operations and for wartime contingencies.

Other exciting initiatives are ongoing such as development of Class IX sustainability, battle damage repair, and possible development of a Support Battalion for the Combat Aviation Brigade.

We look forward to a continued dialogue through this forum. The sharing of ideas is essential for strengthening the force. Ironhorse Aviation stands ready!

— MAJ (P) Stephen P. Snow
Executive Officer, 4th CAB

WAR COLLEGE — Four Army Aviators attending the National War College in Washington, DC, are (L to R): LTC (P) Kenneth Chien, COL Alan F. Jones, LTC Robert N. Seigle, and LTC Mendel S. Solomon.

Product Assurance

The bottom line: Elevate Product Assurance or lose out

ST. LOUIS, MO. — The **Army Materiel Command (AMC)**, AVSCOM's higher headquarters, has taken a new posture—Schedules be damned! If you cannot make the item as specified, the system should be examined and root causes rectified.

Tough words? Yes—and they have been a long time coming. They must be acknowledged as an edict from the taxpayer.

Product Assurance relies on Industry to independently control both quality of design and conformance of manufacturing under MIL-Q-9858A. When *Product Assurance* is a low corporate priority, the indicators typically are reflected via obscure titles which are not considered an equal status to Engineering or Manufacturing, and are frequently recruited from outside the company as an expendable middle manager.

If your DOD Industry operates in this mode, your management has not listened to this nation's JURAN and DEMING Quality proponents.

The taxpayer, via Congress, is **demanding** reliable and less cost-consuming DOD items with the military thrust to revitalize *Product Assurance* to assure design guarantees of critical performance characteristics in the service environment.

What does this mean?

Know your user and provide a product that meets or exceeds his needs. If you fail, the redesign is your responsibility.

Sound unreasonable?

The meek rationalize why it cannot be done, "too many requirements to be met", "You made me make it too light and fragile".

The DOD equipment issues of high acquisition plus unprogrammed operating and support costs reflect the three profit centers of Engineering, Manufacturing, and Product Support competing for profits.

A Report by Edward J. Hollman

The corporate responsibilities of product safety and the life cycle cost are being delegated to the old *"Buyer Beware!"* syndrome. *Engineering* off their design to *Manufacturing* in many cases with minimal classification of critical characteristics.

Manufacturing, having to meet cost incentives and schedules, invents manufacturing shortcuts to make its commitments to profit. Any resultant impact in performance or conformance is then resolved by deviations and waivers.

When the product is fielded the third profit center—*Product Support*—has its motivation of parts and service. This syndrome has lead us into the DOD credibility problem with Mr. Taxpayer.

Public concern of aviation safety related material failures should awaken the need for design and manufacturing cooperation to achieve confroming hardware. Waivers cloud the issues and compromise our safety-of-flight objectives.

Our Commanding General at AVSCOM has recently sent personal letters on Quality issues to the Chief Executive Officers of the various helicopter and major component producers requesting their personal attention.

Two have replied proactively outlining actions and programs being initiated to assure manufacturing excellence. However, to date most of the responses are public relation type "Thank you for your letter—we're proud of our product".

Looks like Industry is still not convinced the Government will act to obtain a Quality product. The bottom line for Industry is that producers that do not work hand-in-hand with the Army user in the soldier's best interest will cease to be supported by Taxpayer dollars.

—Edward J. Hollman
Dir, Product Assurance
USA AVSCOM

SIKORSKY DELIVERS FIRST QUICK FIX

Sikorsky Aircraft delivered its first EH-60A QUICK FIX special electronics mission aircraft to the U.S. Army last month. The EH-60A is a basic UH-60A BLACK HAWK modified with a special electronics package to intercept, monitor, and jam enemy communications signals.

R & D

Applied Technology Directorate pursues three major programs

FT. EUSTIS, VA.—I'm delighted to be able to update the AAAA membership on the activities at

A Report by Colonel Patty E. Brown

the recently renamed **Aviation Applied Technology Directorate (AATD)** aka "AVLABS" or "ATL" at Ft. Eustis, Va.

I'd like to highlight three programs which have high potential for substantial payoff in Army Aviation.

The **Combat Maintenance/ Battle Damage Repair (CM/BDR)** and the **Flight Data Recorder (FDR)** programs are initiatives aimed at reducing O&S costs and increasing availability of our helicopter fleet.

The CM/BDR program objective is to reduce maintenance on Army aircraft in order to achieve increased operational availability, through maximum deferment of maintenance, cannibalization and the use of combat expedient repairs for short periods of time.

CM/BDR is a comprehensive engineering effort to develop the field-expedient inspection methods, damage assessment criteria, and cannibalization and repair techniques which will allow aviation maintenance personnel to defer all but essential maintenance and perform expedient repairs during heavy combat periods or during surge operations.

The program will be accomplished through the use of AR's, FM's, and TM's/handbooks which include CM/BDR concepts, training, and various repair kits which include tools, materials, and procedures for a "quick fix" and return to battle. Currently underway are a wiring repair kit, fuel cell repair kit, fluid line and control tube repair kit, a cannibalization and serviceability handbook, and a structures repair manual.

The objective of the FDR program is to enhance the diagnostics and condition-monitoring capabilities of current and future helicopter systems. In Phase I, the data recorders will be installed and flown on UH-60 and AH-64 aircraft beginning in December 1985 to demonstrate flight data recording capabilities and expert systems concepts and techniques.

Phase 2 will integrate expert systems concepts with the stored data capabilities of the data recorders to provide a diagnostic maintenance capability which will be demonstrated in FY87/88. Through the development of these advanced diagnostic procedures, we can reduce the number of inspections and schedule maintenance tasks now required that will result in enhanced reliability and availability.

The purpose of the third program, the **BLACK HAWK Armor System (BASS)**, is to reduce vulnerability and increase aircraft and personnel survivability. The program was initiated by AATD at the request of the 82nd CAB as a result of their experience in Grenada.

The system is composed of lightweight armor panels designed to protect personnel in the cargo area, thus decreasing aircraft vulnerability and reducing personnel casualties from small arms fire. The system may be quickly installed and removed without aircraft modification.

The present outlook for incorporation of these programs into our Aviation systems is very good and will further enhance our ability to conserve and protect our limited and valuable aviation and personnel resources.

Unfortunately, space does not permit me to discuss the numerous other technology programs at AATD, but should you be in the Ft. Eustis area, please drop by and I'll be happy to provide additional information on our Army Aviation R&D programs.

— COL Patty E. Brown
Dir, Aviation Applied Technology Directorate

73rd AVIATION COMPANY REUNION

A reunion of Bird Dog drivers who served with the 73rd Aviation Company (Airplane Surveillance) (Light) will be held April 10-12, 1986, at the Marriott Marquis Hotel in Atlanta, Georgia, during the AAAA National Convention.

Please plan to attend if you flew TO-1D's with the 73rd in Vietnam. For details, please call Bill McGee at (315) 422-5608 on weekdays or (315) 457-0702 on weekends.

AVIATION FIRST — The U.S. Marine Corps recently performed the in-flight refueling of two CH-53 SUPER STALLION helicopters while each aircraft carried a 23,000-pound external load — a Light Armored Vehicle 25. The refueling occurred at an altitude of 3,000 feet over Camp Lejune, NC, at an average speed of 110 knots.

Safety

"We must change our management of aviation risks"

A Report by Colonel Terence M. Henry

FT. RUCKER, ALA. — Army Chief of Staff **General John A. Wickham, Jr.** told MACOM safety directors meeting in Washington this past June that he is seeing the same problems in Army Aviation safety that he saw three years ago.

Although Class A through C accidents were down, the Class A accident record for fiscal 1985 underscores **General Wickham's** statement. Human error was a definite factor in 33 of the 46 Class A accidents in FY 85, and willful violation of rules and/or established operating procedures by aircrews and supervisors accounted for about one-third of the human-error accidents.

Materiel factors were involved in 14 of the Class A accidents in FY 85. The Class A accident rate for FY 85 was 2.96 higher than the year-end rate for the past two years. Thirty-one people were killed in the 46 accidents, and total dollar losses exceeded $81 million.

High-risk environment — A look at human-error accidents in high-risk flight profiles underlines the fact that the Army Aviation mission grows more demanding every year.

More than half of the total number of Class A helicopter accidents last year occurred during terrain flight, night, or NVG flight, or a combination of the three.

Fifteen to 20 years ago we were flying relatively simple aircraft costing $16,000 to $34,000 each and we generally flew relatively simple flight profiles.

Today we're flying aircraft costing $5 million a copy and our aviators will soon be climbing into the cockpits of helicopters costing $8 million. The percentage of flight operations in a high-risk environment will continue to grow and the challenge to reduce accidents will become even more formidable.

We can't change the fact that our mission is high-risk. What we can change, and have to improve, is our management of these risks. A big chunk of that responsibility rests squarely on the shoulders of the unit commander. More than 80% of the areas requiring corrective actions (as identified by centralized investigation and analysis of human-error accidents during fiscal 85) were targeted at unit-level deficiencies.

Improving command risk management decisions at unit level is critical to future improvements in safety in aviation operations.

We believe the accident picture will improve as those risk management decisions beyond the individual aviators's level are taken out of the cockpit and are made up the chain of command as appropriate.

—COL Terence M. Henry
Cdr, USA Safety Center

A PROUD FATHER — Major General Ellis D. Parker (left) pins aviator wings on his son, 2LT David B. Parker following his graduation from the Initial Entry Rotary Wing course at Ft. Rucker, AL, Sept. 19.

Test & Evaluation

Aviation Board tests a variety of systems and products in OT's

A Report by Colonel Stanley E. Grett

FORT RUCKER, ALA. — The Aviation Board has been heavily involved in the planning and execution of numerous **Operational Tests (OT)** involving both equipment and concepts over the past several months since I assumed Command on 24 June 1985 after attending the U.S. Air War College.

Two of the Board's most recently completed tests include the AN/AVR-2 **Laser Detection System (LDS)** and the XM-40 CB Protective Mask.

• The XM-40 CB Protective Mask was an OT II, conducted at Hunter Army Airfield, Ga., during the period 22 Jan-7 Jun 1985, with player personnel provided by the 24th CAB, 24th Infantry Division.

The purpose of this test was to provide data with which to evaluate the XM-40 mask as an interim replacement for current protective masks.

Special attention was directed toward vulnerability, visibility, comfort, and compatibility with optical systems, NBC equipment, weapons systems, and speech communications.

Current and Future Testting — The Aviation Board is currently engaged in testing an air-inflatable, transportable maintenance shelter, a high frequency-single side band NOE communications system, and an improved radar warning receiver.

Our test schedule for the near term, includes such tests as the UH-60 230-gallon fiberglass external fuel tank, Air-to-Air Combat, US Army Aviation/Aircraft Survivability Equipment, and the AH-64 Combat Mission Simulator.

Down the Road — We, at the Aviation Board, hope to use the **Concept Evaluation Program (CEP)** to expand from our traditional focus on materiel acquisition by providing increased test and evaluation support for doctrine, force design, training, and materiel innovations.

Our plan is to serve the Aviation Center as a focal point to assess the potential utility of proposed concepts and materiel innovations for evaluation and possible inclusion into a full developmental and testing program.

We intend to be proactive with this program, making Army Aviation an even more effective fighting force.

—COL Stanley E. Grett
President, U.S. Army Aviation Board

CLASS PHOTO — Army Aviators attending the Armed Forces Staff College in Norfolk, VA, recently gathered for a group photo. Front row (L to R): LTC Rodney E. Willis, MAJ John M. Ward, MAJ Mike Carden, MAJ (P) Henry C. Ruth, III, MAJ (P) Wayne H. Stephens, MAJ R.J. "Ben" Gay. Back row (L to R): MAJ Garnett R. Stowe, Jr., MAJ Ken Allen, MAJ (P) Randy Woodson, MAJ Ron Bell, MAJ (P) Richard L. Noel, MAJ (P) David E. Cowley. Missing: MAJ Lynn E. Lanzoni, MAJ Frank G. Whitehead.

Training

Flt Standardization and Safety covered at TRADOC Conference

FT. MONROE, VA.— During 9-12 September 1985, the TRADOC Aviation Flight Standardization Committee and Safety Conference met at the Ramada Inn in Newport News, Va. *Aviation Leadership,* a keystone of safety, set the tone for this year's conference.

As TRADOC Aviation Officer, I convened and hosted this year's meeting, while **MG Carl H. McNair, Jr.,** TRADOC Chief of Staff, gave the opening remarks.

Key speakers included **MG Ellis D. Parker,** Commander,

A Report by Colonel Joe D. Carothers

USAAVNC and Ft. Rucker; **BG Wayne Knudson,** Director of Force Requirements, ODCSOPS, DA; **BG Richard Stephenson,** Deputy Commander, AVSCOM; **COL Willis R. Bunting,** Assistant Director, OPM, MILPERCEN; and **COL Lewis Carter,** Chief, **Research Analysis and Investigation Division (RAID),** USA Safety Center.

Topics of discussion ranged the full gambit of TRADOC's FW and RW wing assets—from C-12s to the Army's AH-1 Surrogate (modified COBRA). Of 43 issues submitted by the 17 TRADOC installations, nine were forwarded to the DA Policy Committee for resolution.

Updates of the TRADOC FY 86 Flying Hour Program and operational support program, in conjunction with a safety seminar, were given by TRADOC aviation staff. **General Wickham's** safety film strongly emphasized the DA's great concern for aviation safety. (Numerous copies were provided to unit representatives).

The research, development, fielding, and training programs of the AH-64, JVX, AHIP, and LHX were, of course, "hot" topics of informal discussion. The conference allowed everyone to informally update each other on the status of their portion of these ongoing and important projects and also allowed time to discover and recognize new and old personnel in their various agency positions.

The constant refrain heard throughout the week was "Now that all installations have all UH-60s fully flyable, training backlogs can be reduced and OR rates can only get better".

In addition, the AH-64 ATMs are due to be out in the field in the first week of October while aircraft fielding continues at a fast pace.

The conference closed at approximately 1200 hours on 12 September. **All** issues addressed to the TRADOC Standardardization Committee were either withdrawn, resolved, or forwarded.

While these annual meetings are directed by regulation, they accomplish a great deal more than just meeting a regulation/requirement. They allow installation commanders in the field the opportunity to express their problems and needs to the MACOM for solution on a face-to-face basis.

—COL Joe D. Carothers
Aviation Director, TRADOC

A KEY SPEAKER — Major General Ellis D. Parker, Commanding General of the U.S. Army Aviation Center and Ft. Rucker, was a key participant at this year's TRADOC Safety Conference.

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User's Perspective
(Continued from Page 24)

rent engine; however, some who have participated in desert operations know that the fully loaded BLACK HAWK needed all its available power and then some.

This situation will only worsen as aircraft weight increases. It's our responsibility to ensure that all aspects of this increased power requirement are thoroughly analyzed with regard to airframe and powertrain compatibility. Commonality with the APACHE and possibly other service's air vehicles is a primary concern in our effort to keep the cost to a minimum and influence industry's direction.

Summary

In 1985, we have seen the BLACK HAWK weather the effects of a major grounding action. As complete recovery nears, we see that many improvements to the BLACK HAWK system have been applied and our fielded units' ability to use the aircraft to its fullest potential is closer to achievement. I look forward to reporting further progress in coming issues as other advanced technology systems join the BLACK HAWK in service to the Army of Excellence. IIIII

Challenge
(Continued from Page 20)

plied to new production aircraft beginning in first quarter FY 86 is the **Night Vision Goggle (NVG)** compatible lighting system. This system, which incorporates many user-designed improvements, will allow quickly changing the exterior and interior aircraft lighting from a nontactical mode to lighting compatible with use of the new ANVIS-6 NVG.

Modification kits for retrofit of the previously fielded BLACK HAWKs will also be delivered beginning first quarter FY 86.

The Army is staffing a draft **Required Operational Capacity (ROC)** for an improved BLACK HAWK. The improvement program was narrowed to the following areas after evaluating all feasible improvements:

- increased external lift;
- improved reliability, availability, and maintainability;
- improved flexibility to perform multiple roles;
- improved crew effectiveness;
- improved combat survivability;
- worldwide self-deployment; and
- expanded adverse environment operational capabilities.

The need to transport the **High Mobility Multipurpose Wheeled Vehicle (HMMWV)** and perform other missions at high altitudes and temperatures is the central requirement. Additional improvements are planned in the areas of sand erosion, protection from **electromagnetic pulse (EMP),** lightning and high energy laser weapons.

Now in its seventh year of deployment, the BLACK HAWK has performed remarkably well and has met or exceeded most DA goals while logging over 300,000 flight hours. It provides the commander with a troop and cargo mobility capability for present and future battlefields.

When merged with the remainder of Army aviation—attack, scout, cargo, and electronic surveillance—the BLACK HAWK affords the commander the greatest multiplier of combat power ever enjoyed. IIIII

TOP GRADUATES — MG Robert F. Molinelli (right) Director of Combat Support Systems, ODCSRDA, HQDA, and speaker at recent flight graduation ceremonies at Ft. Rucker, chats with the distinguished graduates of the two graduating classes: WO1 James A. Strine (left) and 2LT Charles F. Galwell.

TOP POST — The U.S. Army Aviation Center and Ft. Rucker has been awarded the Commander's Cup for overall installation excellence by the U.S. Army Training and Doctrine Command. In winning the top honors, the installation was rated number one over 17 other TRADOC posts across the country.

Q. What similar purchase have more than 12,000 Army Aviators made in the past 15 years?

A. They've purchased AAAA-endorsed flight pay insurance. As an active duty or or as a Reserve Component Army Aviator, don't you think you owe it to yourself to get the basic facts about this coverage which has returned more than $2 million in lost flight pay to claimants?

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Please forward me the pertinent details of the **AAAA-endorsed** flight pay insurance coverage.

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☐ I am a student pilot undergoing Army flight training.

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Briefs

The **Mt. Rainier Chapter's** early September Golf Tournament drew ±50 members. Comment: "A positive money-making fun event; let's do it again." Tournament winner: **COL Tommy Stiner,** Cdr, 9th Cav Bde. Newly-elected AAAA officers announced at the dinner meeting: **LTC Robert S. Lay** (VP-Memb) and **CPT (P) Michael W. Hackerson** (VP-Prog).

New Chapter Officers

Colonial Virginia: COL Grover E. Snipes (SrVP).

Corpus Christi Chapter: Ms. Mercy Vrazel (Sec).

Greater Atlanta Chapter: BG William C. Page, Jr. (Hon Pres); COL Geary D. Martin (Pres); LTC Clinton B. Boyd (SrVP); Matthew M. Serletic (Sec); MAJ Roderick D. Wolfe (Trea); MAJ RonalD. W. Rankin (VP-Memb); LTC Emory N. Deason, Jr. (VP-Prog); LTC Ronald R. Tamaccio (VP-Res Comp); MAJ Edward S. Chambers, Jr. (VP-Planning); COL Terry L. Gordy, Ret. (VP-Corp Memb).

Jack H. Dibrell-Alamo: CPT James S. Rice (Trea).

Old Ironsides Chapter: MAJ Jose Hinojosa (SrVP), CPT James Cres (Trea), WO1 Kelly E. McDougall (VP-Prog), and LT Timothy Drake (VP, Publ).

Thunderhorse Chapter: 1LT Ozzie H. Gorbitz (VP-Prog) and SGM Charles L. Baker (VP-Enl Memb).

Joint Meeting

Members of the **U.S. Army Black Aviators Association (USABAA)** will hold their 1986 Annual Meeting in conjunction with the AAAA's 1986 Nat'l Convention in Atlanta during April 9-13. **POC:** CWO Carl Burhanan, Ret., 1535 Craig Place, San Pedro, CA 90732.

Members of the **Vietnam Helicopter Pilots' Ass'n (VHPA)** will have a display booth at the same AAAA Nat'l Convention.

AAAA Overview

■■USAAVNC Captain selected as CY85's "Trainer of Year"

CPT Michael D. Rampy, Officer-in-Charge, Air Assault School, 1st Battalion, 1st Aviation Brigade (AASLT), Ft. Rucker, Ala., was named as AAAA's **"Aviation Trainer of the Year"** for Calendar Year 1985. "A disciplinarian, mentor, demonstrator, teacher, and role model," **Rampy** "has overseen the development of the school into the primary Air Assault Course of Instruction in the US Army."

"His accomplishments as a trainer have been pivotal in the development and conduct of air assault training and doctrine at the Aviation Center. Through his determined efforts the air assault program of instruction, training materials, and training techniques have been thoroughly revised and updated to reflect current airland battle doctrine and AOE initiatives."

Captain Rampy received the AAAA **"Trainer Award"** sponsored by the Singer Link Flight Simulation Division, at an Army Aviation Center Chapter Awards Dinner held December 9. The initial recipient of the new award was **SFC Walter D. Smith,** Chief of the Basic Technical Division, Dept. of NCO Training, USAALS, Ft. Eustis, Va.

■■"Aviation Soldier of Month" program initiated

The AAAA now supports a **Chapter Awards Program** wherein a Chapter-selected **"Aviation Soldier of the Month"** is cited and receives a complimentary, one-year Association membership underwritten by the National Office. Any active AAAA Chapter may submit the name of one **"Aviation Soldier of the Month"**—twelve a year. Doubling up is not permissible in those instances where a Chapter selection is not made in a given month.

Membership begins on the first day of the month after the month in which the National Office receives notification from the Chapter of the **"Aviation Soldier's"** selection. A second (or third) complimentary membership will **not** be provided should the NCO or Soldier be selected in another month during his "complimentary membership year."

Worldwide notification of the **"Aviation Soldier's"** selection will be made in the next immediate issue of ***Army Aviation.*** Local area members are encouraged to nominate candidates through their Chapter Secretaries.

■■$1,000 incentive for Chapter Scholarships

Although a majority of the $36,000 in CY86 AAAA Scholarship Awards are memorial scholarships, many are straight (unnamed) AAAA Scholarships. The AAAA Scholarship Foundation now supports a program wherein it will **match** a Chapter's $1,000 donation to the Foundation with $1,000 to create a $2,000 scholarship to be awarded in the name of the Chapter.

■■12 Active Chapters earn 30-inch lectern seals

In having met their quarterly membership meeting requirements in CY85 (and having accomplished this with Nat'l Office meeting notice distribution), 12 Chapters received individual 30-inch, four-color, masonite lectern seals during October-November. Included were the **Colonial Virginia, Monmouth, Army Aviation Center, "Follow Me", Washington, D.C., Citadel, Jack H. Dibrell-Alamo, Lindbergh, Ft. Hood, Corpus Christi, Mt. Rainier,** and **Schwaebisch Hall Chapters.**

■■1986 AAAA Convention Presentations

Maj. Gen. Ellis D. Parker, USAAVNC CG and Chairman of the Presentations Subcommittee of the 1986 AAAA National Convention, has designated **Lt. Col. "Clint" Boyd,** Chief—ODCSOPS Aviation Division, Hqs, USA FORSCOM, as the Vice Chairman. Theme for the 2½-day professional program will be ***"Combined Arms Partner."*** The program opens with the keynote address at 10 a.m., Thursday, April 10.

N. Texas, Avn Center, Rhine Vly, Schwaebisch $parkling

Largest Membership Gain

(Standings as at 1 November 1985)

The 16 Master Chapters
$1,200 First Prize—$600 Runner-Up

Curr Rank	Chapter Name	Memb Gain
1	Army Aviation Center Chapter	+223
*2	North Texas Chapter	+44
*2	Southern California Chapter	+44
3	Washington DC Chapter	+43
4	Morning Calm Chapter	+41
5	Colonial Virginia Chapter	+17
6	Lindbergh Chapter	+15
7	Delaware Valley Chapter	−2
*8	Connecticut Chapter	−4
*8	Corpus Christi Chapter	−4
9	Monmouth Chapter	−8
10	Mount Rainier Chapter	−16
11	Fort Hood Chapter	−17
12	Fort Bragg Chapter	−31
13	Air Assault Chapter	−118
14	Monterey Bay Chapter	−134

The 18 Senior Chapters
$600 First Prize—$300 Runner-Up

Curr Rank	Chapter Name	Memb Gain
1	Rhine Valley Chapter	+139
2	Thunderhorse Chapter	+34
3	Stuttgart Chapter	+19
4	Suncoast Chapter	+15
5	Greater-Atlanta Chapter	+1
6	Chesapeake Bay Chapter	−1
7	Old Ironside Chapter	−4
8	Combined Arms Center Chapter	−5
9	Bonn Area Chapter	−7
10	The Citadel Chapter	−9
11	Jack Dibrell Chapter (Alamo)	−10
12	Coastal Empire Chapter	−11
*13	Wings of the Marne Chapter	−20
*13	Indiantown Gap Chapter	−20
14	Hanau Chapter	−25
15	"Follow Me" Chapter	−36
16	Mainz Chapter	−60
17	Aloha Chapter of Hawaii	−63

The 14 AAAA Chapters
$300 First Prize—$150 Runner-Up

Curr Rank	Chapter Name	Memb Gain
1	Schwaebisch Hall Chapter	+108
2	Taunus Chapter	+72
★	Tar Heel Chapter	+66
4	Tu-Can Chapter	+54
5	Edwin A. Link Chapter	+28
6	Mid-America Chapter	+15
7	Nurnburg Chapter	+11
8	Tennessee Valley Chapter	+10
*9	Chicago Area Chapter	+2
*9	Checkpoint Charlie Chapter	+2
10	Northern Lights Chapter	−3
*11	Pikes Peak Chapter	−4
*11	Lone Star Chapter	−4
12	Cedar Rapids Chapter	−7

*Tie

Largest Percentage Gain

(Standings as at 1 November 1985)

The 16 Master Chapters
$800 First Prize—$400 Runner-Up

Curr Rank	Chapter Name	Perc Gain
1	North Texas Chapter	+18
2	Army Aviation Center Chapter	+13
3	Morning Calm Chapter	+11
4	Southern California Chapter	+10
*5	Colonial Virginia Chapter	+6
*5	Washington, DC Chapter	+6
6	Lindbergh Chapter	+2
7	Corpus Christi Chapter	0
8	Delaware Valley Chapter	−1
9	Connecticut Chapter	−2
10	Monmouth Chapter	−3
11	Fort Hood Chapter	−4
*12	Air Assault Chapter	−8
*12	Fort Bragg Chapter	−8
*12	Mount Rainier Chapter	−8
13	Monterey Bay Chapter	−37

The 18 Senior Chapters
$400 First Prize—$200 Runner-Up

Curr Rank	Chapter Name	Perc Gain
1	Rhine Valley Chapter	+71
2	Thunderhorse Chapter	+28
3	Stuttgart Chapter	+14
4	Suncoast Chapter	+12
5	Greater-Atlanta Chapter	+1
6	Chesapeake Bay Chapter	−1
7	Old Ironside Chapter	−3
8	Combined Arms Center Chapter	−5
9	Bonn Area Chapter	−6
*10	Jack H. Dibrell (Alamo) Chapter	−7
*10	Coastal Empire Chapter	−7
11	The Citadel Chapter	−8
12	Wings of the Marne Chapter	−12
13	Indiantown Gap Chapter	−14
14	Hanau Chapter	−18
15	"Follow Me" Chapter	−22
16	Aloha Chapter of Hawaii	−37
17	Mainz Chapter	−38

The 14 AAAA Chapters
$200 First Prize—$100 Runner-Up

Curr Rank	Chapter Name	Perc Gain
1	Schwaebisch Hall Chapter	+121
2	Tu-Can Chapter	+100
3	Taunus Chapter	+79
*4	Mid-America Chapter	+28
*4	Edwin A. Link Chapter	+28
*5	Tennessee Valley Chapter	+16
*5	Nurnburg Chapter	+16
6	Checkpoint Charlie Chapter	+6
7	Chicago Area Chapter	+2
★8	Tar Heel Chapter	0
*9	Pikes Peak Chapter	−6
*9	Lone Star Chapter	−6
10	Cedar Rapids Chapter	−8
11	Northern Lights Chapter	−9

★ Chapter Ineligible

AAAA Calendar

SEPTEMBER 1985

■■SEPT. 6. Tar Heel Chapter. Shrimp Boil/Professional Meeting. NCARNG Support Facility #1. LTC Leslie Everett, Guest Speaker.

■■SEPT. 17. Indianapolis Chapter. Chapter Activation Meeting. Allison Conference Center.

■■SEPT. 17. Washington D.C. Chapter. Professional Business Meeting. Arlington Hall, Fort McNair. BG Rudolph P. Ostovich, III, Guest Speaker. "Aviation Branch Proponency and Combat Developments".

■■SEPT. 19. Lindbergh Chapter. Social Meeting/Happy Hour. Executive International Inn.

■■SEPT. 24. Aviation Center Chapter. Professional/Business Meeting. Fort Rucker Officers' Club. Dr. Jay R. Sculley, Asst. Secretary of Defense for Research, Development & Acquisition, Guest Speaker.

■■SEPT. 24. 'Follow Me' Chapter. Professional Luncheon/Plant Tour. UTC/Pratt & Whitney Plant, Columbus, GA. Presentation on the LHX and walking plant tour. Mr. Robert A. Wolfe, VP for the Small Engine Program for Pratt & Whitney, Guest Speaker.

■■SEPT. 25. Coastal Empire Chapter. General Membership Meeting/Elections. Hunter Army Airfield Officers' Club.

■■SEPT. 25. Jack H. Dibrell Chapter. Professional Meeting/Plant Tour. Fairchild Gen-Aero Plant, San Antonio.

■■SEPT. 26. Colonial Virginia Chapter. Professional Luncheon Meeting. Fort Eustis NCO Club. Mr. William B. Peck, Manager for the V-22 Osprey Engineering Design, Boeing Vertol, Guest Speaker. "The V-22 Osprey (JVX) Development Status".

■■SEPT. 27. Corpus Christi Chapter. "Bayfest '85" Family Festival. North Shorline, Corpus Christi.

■■SEPT. 28. Aviation Center Chapter. "Run for the Museum", 5K & 1 mile Road Race/Fun Run. Fort Rucker Physical Fitness Center

OCTOBER 1985

■■OCT. 3. North Texas Chapter. General Membership Meeting. Sheraton Center Park Hotel. Mr. Sergei Sikorsky, Guest Speaker. "Soviet Helicopter Developments".

■■OCT. 4. Mainz Chapter. General Membership Meeting. Village Inn, MLKV, Mainz.

■■OCT. 5. Morning Calm Chapter. Chapter Picnic. Camp Red Cloud, Republic of Korea. Fun run, Static Displays, Sports Demonstrations.

■■OCT. 6. Corpus Christi Chapter. Fish Fry & Family Picnic. CP&L Park.

■■OCT. 8. Citadel Chapter. Professional/Speaker Meeting. Jenkins Hall Auditorium. MAJ Michael J. Masterson, former Commander of the Division 86 Air Cavalry Squadron, guest speaker.

■■OCT. 10. Air Assault Chapter. General Membership Meeting. Air Assault EM Club. LTG Jack V. Mackmull (Ret.), former Commander XVIII Airborne Corps, Guest Speaker.

■■OCT. 15. AAAA National Executive Board. Quarterly Business Meeting. 2:15-5:00 P.M. Sheraton Washington Hotel.

■■OCT. 21. Stuttgart Chapter. Professional/Speaker Meeting. Nelligen Officers' Club. MG Edwin M. Aguanno, Director J4/7 USEUCOM, Guest Speaker.

■■OCT. 22. Edwin A. Link Chapter. Professional/Dinner Meeting. Holiday Inn Arena, Binghamton, New York. General Richard H. Thompson, Commanding General, Army Materiel Command (AMC), Guest Speaker. "Army Materiel Command and Army Aviation Programs."

■■OCT. 24. Mount Rainier Chapter. Fort Lewis Officers' Club. MAJ James C. Adamson, U.S. Army Astronaut, Guest Speaker.

■■OCT. 26. Colonial Virginia Chapter. 1st Annual Aviation Ball. Fort Eustis Officers' Club. MG Richard D. Kenyon, Chief of Legislative Liaison, DA, Guest Speaker.

NOVEMBER 1985

■■NOV. 2. Fort Hood Chapter. Family Fun Day. Pegasus Run & Championship Chili Cookoff. Yellow Ribbon Park, Fort Hood.

■■NOV. 9. USAREUR Region - AAAA. 1985 Aviation Ball. Heidelberg Officers' Club. Patrick Henry Village.

■■NOV. 9. Lindbergh Chapter. President's Dinner Dance. Stadium Club. Installation of BG Richard E. Stephenson as new Chapter President.

■■NOV. 13. Citadel Chapter. Professional/Speaker Meeting. Jenkins Hall Auditorium. Mr. Fred M. Bryant, guest speaker. "The Enola Gay".

■■NOV. 14. Jack H. Dibrell Chapter. General Membership Meeting/Luncheon. Fort Sam Houston Officers' Club. BG Ronald K. Andreson, Project Manager for LHX, Guest Speaker. "The Light Helicopter (LHX) Project".

■■NOV. 14. Monmouth Chapter. General Membership Meeting. Fort Monmouth Officers' Club. MG Robert D. Morgan, Commanding General of CECOM and Fort Monmouth. "CECOM Objectives and Restructuring".

■■NOV. 19. Lone Star Chapter. General Membership Meeting. Coors Hospitality Room. COL Charles Beckwith, guest speaker. "America Held Hostage".

■■NOV. 22. Greater-Atlanta Chapter. General Membership Meeting/Elections. Ft. McPherson Officers' Club.

■■NOV. 22. Washington D.C. Chapter. 1st Annual Social Event. Cameron Station Officers' Club. The U.S. Army Quartet, entertainment.

■■NOV. 26. "Follow Me" Chapter. General Membership Meeting/Election. Ft. Benning Officers' Open Mess.

■■NOV. 27. Thunderhorse Chapter. Troop Hangar. General Membership Meeting.

DECEMBER 1985

■■DEC. 4. Monterey Bay Chapter. General Membership Meeting. CAB Classroom. Dedication of the Helicopter Monument. MG William Harrison, guest speaker.

■■DEC. 7. North Texas Chapter. Learning Center/American Airlines. COL Robert Stewart, guest speaker. "The Space Shuttle Program".

■■DEC. 7. Checkpoint Charlie Chapter. Christmas Party. Columbia House Restaurant.

■■DEC. 9. Aviation Center Chapter. Awards Dinner. Ft. Rucker Officers' Club. Presentation of the "Trainer of the Year Award". LTG Crosbie E. Saint, guest speaker.

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LOCK IN YOUR LOW FARE!

The special AAAA Convention Fare will be valid for all **Eastern** flights between Sunday, April 6, 1986 and Monday, April 14. Tickets should be purchased at least 21 days prior to departure in order to guarantee delivery. However, **Eastern** urges you to protect yourself against future fare increases by purchasing your airline tickets without delay.

Advance Register for the '86 AAAA Convention and get an "A-Brella" as a 1986 Take Home Memento!

* * *

The A-Brella is a handsome American-made multi-purpose tool that's guaranteed to come in handy at AAAA's 1986 gathering in mid-April in Atlanta.

* * *

The AAAA TRACK RECORD: 1983—A downpour in Atlanta between the Convention Center and the Hall of Fame Luncheon; 1984—A rainstorm in DC just prior to and during the Awards Banquet that made the parking lot-to-hotel trek a pure joy! April,1985—April showers (What else?) and then some on the night of the Awards Banquet and a 75-yard open field run in the rain between the hotel and the Banquet Hall across the street. Yes, an "A-Brella" is certain to be welcomed as an AAAA giveaway by the spouse of each '86 Advance Registrant.

* * *

We'll have busses for the six block trip between the Atlanta Marriott Marquis Hotel and the Convention Center, but don't get caught in the rain again! Get yourself a dandy A-Brella! Complete and submit the tearout Advance Registration Form on the following pages and do so prior to March 10, 1986.

1986 AAAA National Convention
Advance Registration Form—Hotel Registration Form

MARRIOTT MARQUIS HOTEL AND GEORGIA WORLD CONGRESS CENTER, ATLANTA, GA — APRIL 9 -13, 1986

I plan to attend the 1986 AAAA NATIONAL CONVENTION. I understand I must return this form by **MONDAY, MARCH 10, 1986**, and that I may receive a full refund of my function fees by phone call made to the AAAA on or before **WEDNESDAY, APRIL 2, 1986**, or by written notification to AAAA that is received not later than **APRIL 2.** Please **print** or **type** all information. **NOTE:** Military fees and room rates apply only to Active Army and DAC personnel and to those Reserve Component and retired AAAA members who are not in the current employ of defense contractors or suppliers on a full-time, part-time, or consulting basis.

FULL NAME, INCLUDING RANK _____

MAILING ADDRESS _____

CITY_____ STATE_____ ZIP_____

NICKNAME FOR BADGE _____ SPOUSE'S NAME, IF ATTENDING _____

UNIT OR FIRM NAME FOR BADGE_____ OFF. PHONE ( )_____

UNIT OR FIRM CITY AND STATE FOR BADGE_____

ARE YOU A MEMBER OF YOUR UNIT OR FIRM'S EXHIBIT HALL STAFF? ☐ YES; ☐ NO

ARE YOU A CHAPTER DELEGATE? ☐ YES; ☐ NO; IF SO, WHAT CHAPTER?_____

1986 AAAA Convention Registration Form

SPECIFIC FUNCTION HELD AT THE 1986 NATIONAL CONVENTION OF AAAA	NOTE—Keynote Address and Prof'l Program begin at 10 a.m, April 10	MIL/DAC MEMB. OR SPOUSE*	CIVILIAN MEMB. OR SPOUSE*	ITEM LINE TOTAL	OFFICE USE
REGISTRATION (Needed to attend Professional Sessions.).....		☐ $10	☐ $55	$ _____	_____
MEMBERSHIP LUNCHEON, Congress Center, Thurs., April 10.....		☐ $7	☐ $14	$ _____	2 _____
SPOUSE'S BREAKFAST, Marriott Marquis, Friday, April 11.....		☐ $6	☐ $6	$ _____	3 _____
AWARDS LUNCHEON, Congress Center, Friday, April 11.....		☐ $8	☐ $16	$ _____	4 _____
PRESIDENT'S RECEPTION, Marriott Marquis, Friday April 11.....		☐ $9	☐ $17	$ _____	5 _____
►1ST AVN BRIGADE DINNER, Marriott Marquis, Friday, April 11.....		☐ $25	☐ $25	$ _____	6 _____
SPOUSES' TOUR—HIGH MUSEUM & SHOPPING, Sat. April 12.....		☐ $10	☐ $10	$ _____	9 _____
LUNCHEON (Sitdown), Congress Center, Saturday, April 12.....		☐ $6	☐ $12	$ _____	10 _____
● RECEPTION & AWARDS BANQUET, Marriott Marquis, Sat., Apr.12.....		☐ $25	☐ $50	$ _____	11 _____
AVIATION BRUNCH, Marriott Marquis, Sunday, April 13.....		☐ $6	☐ $12	$ _____	12 _____
★ MEMBERSHIP FEE FOR NON-MEMBERS.....		☐ $15	☐ $15	$ _____	_____

■ TOTAL (Circle:) Mastercard Visa Personal Check Business Check $ _____ M V P B

CREDIT CARD NUMBER _____ EXPIRATION DATE _____

CARDHOLDER NAME _____

★ AAAA membership is required to attend the Professional Sessions. ● Formal/Black Tie, Dark Business Suit; Military Blues/Mess Jacket. * Spouses are not required to register. ■ Mastercard & Visa credit cards only; no others accepted for function fees. ►Limited to 1st Aviation Brigade members and their spouses.

Please complete and return this form with the appropriate Convention Fee or Fees and your hotel deposit, if applicable, to: AAAA, 1 Crestwood Road, Westport, CT 06880 by Monday, MARCH 10, 1986.

Headquarters Hotel Reservation Form
1986 AAAA National Convention — Atlanta, Ga.

HEADQUARTERS HOTEL — ATLANTA MARRIOTT MARQUIS HOTEL — APRIL 9-13, 1986

NOTE: THE 1986 CONVENTION KEYNOTE ADDRESS AND PROFESSIONAL PROGRAM START AT 10 A.M., THURSDAY, APRIL 10

PLEASE CHECK THE ROOM RATE DESIRED:

( ) MILITARY RATE, SINGLE BEDROOM, $51 ( ) CIVILIAN RATE, SINGLE BEDROOM, $80

( ) MILITARY RATE, DOUBLE BEDROOM, $51 ( ) CIVILIAN RATE, DOUBLE BEDROOM, $80

ARRIVAL DATE _____; ARRIVAL TIME _____; NO. NIGHTS _____; DEPARTURE DATE _____

SHARING ROOM WITH _____

GUARANTEED? CIRCLE: Mastercard Visa American Express Personal Check Business Check

CREDIT CARD NUMBER _____ EXPIRATION DATE _____

CARDHOLDER NAME _____

I understand that to receive a room at AAAA convention rates, I must register or attend at least one of the functions of the 1986 AAAA NATIONAL CONVENTION and that I must return this form to AAAA by MONDAY, MARCH 10, 1986. The Atlanta Marriott Marquis Hotel will NOT accept direct reservations for rooms or suites at AAAA convention rates. Reservations received after MARCH 10, 1986 will be accepted on a space-available basis. Military identification may be requested by the hotel to receive a room at a military rate. The military room rate applies only to Active Army and DAC personnel and to those Reserve Component and retired persons who are not in the current employ of defense contractors or suppliers on a full-time, part-time, or consulting basis.

Reservations will be held until 6:00 p.m., then released for sale to the general public, unless guaranteed or covered by deposit equal to one night's stay. Guaranteed hotel reservations must be cancelled before 6 p.m. destination time on the day of arrival. Cancellation or change of hotel reservations may be directed to AAAA by phone up to WEDNESDAY, APRIL 2, 1986. Failure to notify the hotel of a change in the arrival date may result in full cancellation.

Room charges are subject to applicable local and city taxes. Check-in time is 4:00 p.m. and check-out time is 1:00 p.m. for the Marriott Marquis. If a room at the hotel you prefer is not available, one at the nearest rate will be reserved at a nearby AAAA-designated overflow hotel.

Please complete and return this form with the appropriate Convention Fee or Fees and your hotel guarantee, if applicable, to: AAAA, 1 Crestwood Road, Westport, CT 06880 by Monday, MARCH 10, 1986. Phone: (203) 226-8184.

STATEMENT OF OWNERSHIP, MANAGEMENT, AND CIRCULATION (Required by 39, U.S.C. 3685)

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I certify that the statements made by me in this statement dated Sept. 5, 1985 are correct and complete.

—Dorothy Kesten
Managing Editor

November Advertisers

AAAA offers $36,000 in Scholarships to 12 1986 college-entry Freshman

BACKGROUND—The AAAA Scholarship Foundation, a separate non-profit educational activity created to provide scholarship aid to the sons and daughters of AAAA members and deceased members, announces the availability of $36,000 in assistance funds for the 1986 college-entry year.

1986 AWARDS—Twelve scholarships will be presented—One $8,000 four-year scholarship ($2,000 a year); three $4,000 four-year scholarships ($1,000 a year), to include the William B. Bunker Memorial Scholarship limited to Engineering School applicants; and eight $2,000 two-year scholarships ($1,000 a year).

AWARD PHILOSOPHY—Operating on the premise that ample scholarship assistance is available to those in need, the AAAA National Scholarships are awarded primarily on the basis of academic merit and personal achievement. The AAAA seeks to honor those outstanding students whose well-rounded secondary school activities indicate solid career potential.

APPLICATION PROCEDURE—Student-applicants are asked to request the appropriate application forms by writing to the AAAA Scholarship Foundation at 1 Crestwood Road, Westport, CT 06880. Requests for applications must be received on or before December 15. All forms, together with other supporting data, must be returned to the Foundation on or before January 20 to receive Awards Committee consideration. The student-prepared application should state the full name of the applicant's parent-member and address of student if different.

ELIGIBILITY CRITERIA—The AAAA applicant must also be unmarried, a citizen of the United States, and a high school senior who has applied to an accredited college or university for Fall 1986 entry as a freshman. Program participation is limited to the children of members with an effective date of membership on or before March 31, 1985.

SELECTION AND NOTIFICATION—Selection of winners will be made by the 22-member AAAA National Awards Committee during the February 15-28 period with each applicant to receive a list of the winners not later than April 1.

Application Form for AAAA National Scholarships

Applicant's Name (Please Print)

Street

City State ZIP

*Parent's Name Rank/Grade (if applicable)

Parent's Address

City State ZIP Residence Phone Number

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Plan to attend the 20 Year Reunion of the 1st Aviation Brigade!

The first Five-Year Gathering of the **Golden Hawks** will be held during the AAAA's National Convention in Atlanta during April 9-13, 1986.

All Brigade members from the **11th, 12th, 17th,** and **164th Combat Aviation Groups**—the **34th General Support Group**—the **125th ATC Battalion**—and all other subordinate aviation groups, battalions, companies, detachments, and units affiliated at one time or another with the **1st Aviation Brigade** — past or current — and their spouses are invited to attend the Brigade's informal **20th Year Reunion Dinner** at the Atlanta Marriott Marquis Hotel on Friday evening, April 11, 1986.

The **Reunion Dinner** will follow the AAAA **President's Reception** during 6:30-8:00 p.m. in the Imperial Ballroom of the Atlanta Marriott Marquis. The seven former Brigade Commanders—and their ladies—will be AAAA Honored Guests in this reception's receiving line.

There'll be after dinner entertainment (**The Sherwoods,** or parts thereof), some slides, and some nostalgic commentary on the Vietnam years of the Army's largest aviation unit ever! **COLs John Marr, John Todd,** and **Terry Rosser** are the Tri-Chairmen for this **20th Reunion Brigade Dinner.** Then, too, each Brigade attendee is asked to bring some Vietnam War Brigade memorabilia (photo, banner, spitoon, etc.) for three-day viewing at the Brigade's 40-foot display booth in AAAA's Exhibit Hall.

All seven May 1966-March 1973 Brigade Commanders—**LTG "Phip" Seneff, LTG Bob Williams, MG George Putnam, BG Sam Cockerham, BG Jack Hemingway, MG Bob Mackinnon,** and **LTG Jack Mackmull**—have indicated they'll be in attendance.

In addition, many other Deputy Brigade, Group, Battalion, and Company Commanders, including **LTG Jim Merryman; MGs Don Parker, Ben Harrison, Jim Smith,** and **Orly Gonzales; BG Rudy Ostovich;** and **COLs Potter Campbell, Gene Conrad, Dick Stoessner, Sy Berdux, Dave Robinson,** and a host of many, many other **Golden Hawks** too numerous too mention in this preliminary "Roll Call", are certain to be present.

Pass the word! **April 11, 1986—Atlanta, Ga!** Clip out the AAAA Convention Registration Form on pages 74-75, sign up for the **Reunion Dinner** and whatever AAAA functions you'd like to attend, and do it now! The 550 **Reunion Dinner** seats will go out, first come, first served!