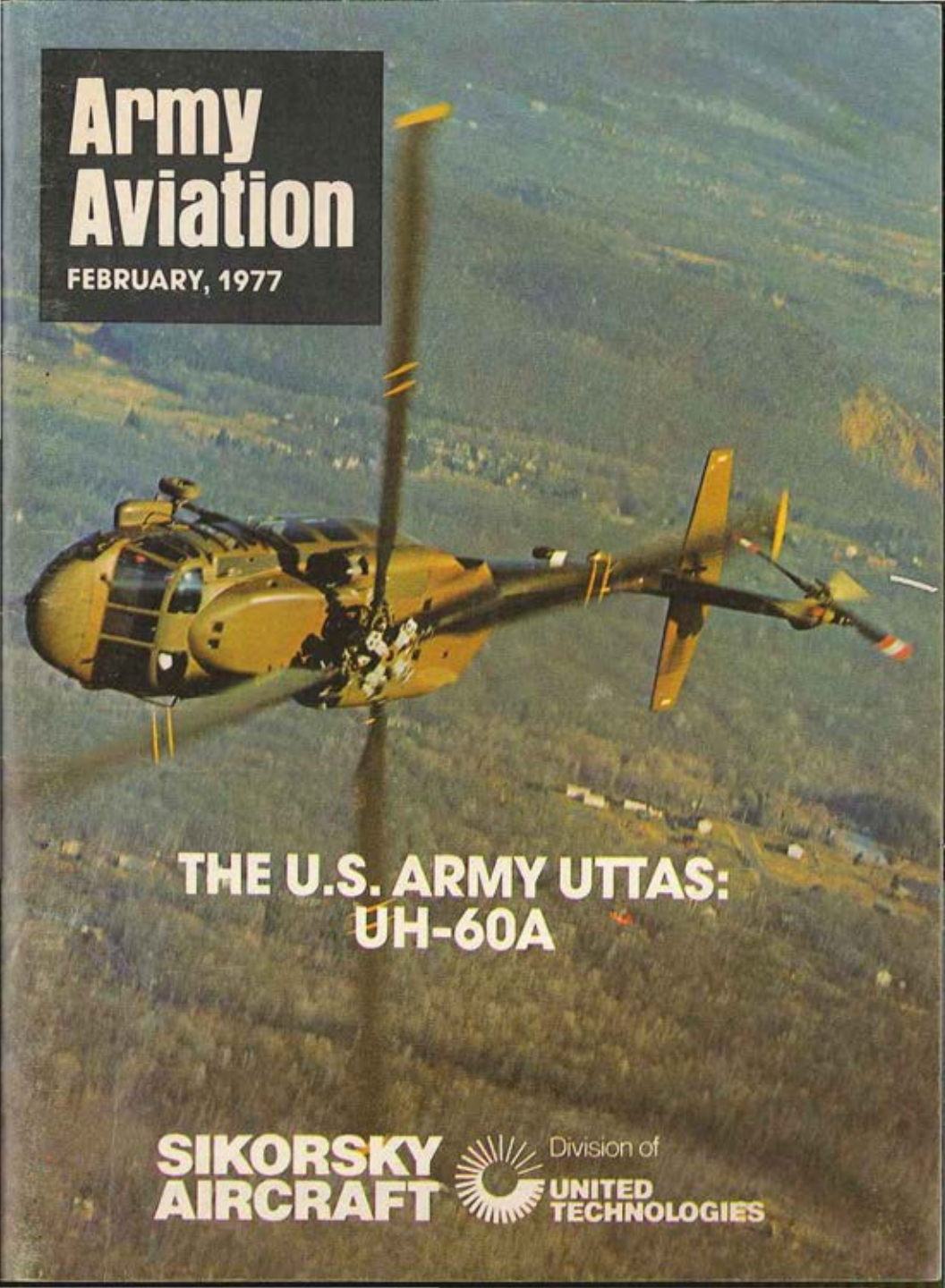
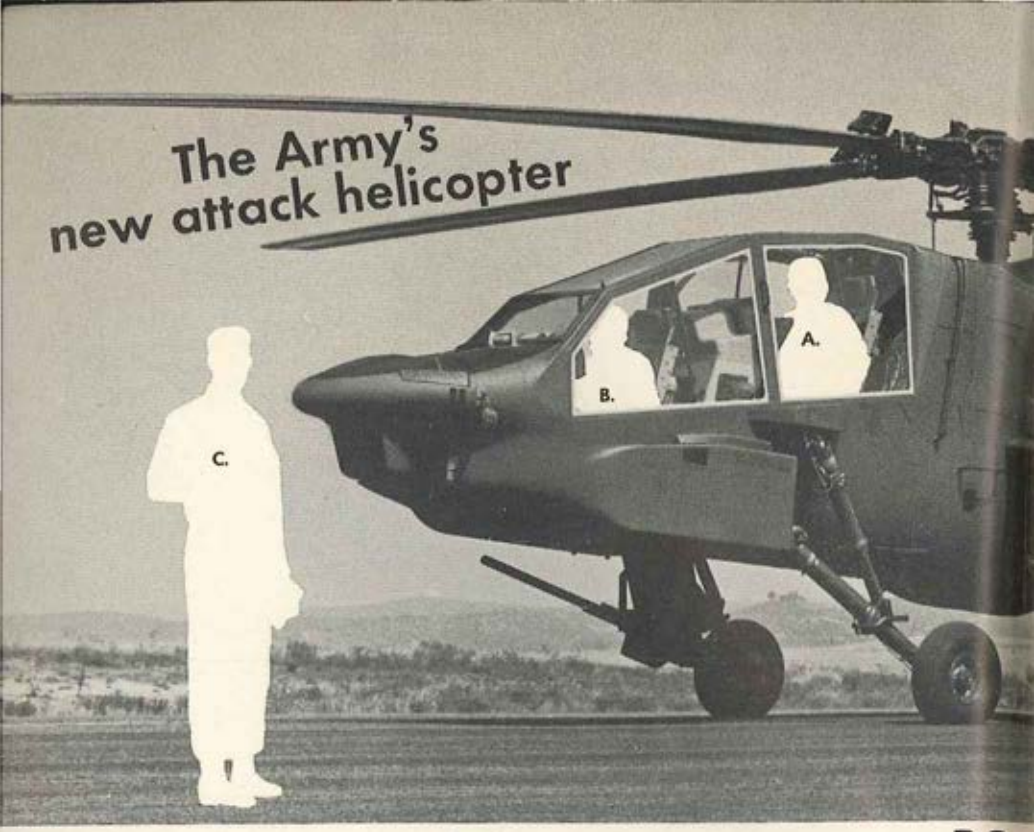
Army Aviation

FEBRUARY, 1977



THE U.S. ARMY UTTAS: UH-60A



Put yourself

The Army's Advanced Attack Helicopter is being built by Hughes. Integration of a Target Acquisition Designation System, pilot night vision, and HELLFIRE is underway. The YAH-64 provides technology of the 80's for the year 2000.

A. Built For The Pilot—Outstanding visibility. Near the center of gravity for best "feel" in nap-of-the-earth flying. The proven four-blade quiet main rotor and fail-safe stationary mast provide maximum agility, safety, negative-G control. Top forward speed, 204 knots. Sideward and rearward speed, 45 knots. Vertical rate of climb, twice the Army's requirement. Low canopy glare, quiet tail rotor and small radar and IR cross sections make the YAH-64 most difficult to locate. Survivability: up to 23mm hits absorbed with only localized damage. Redundant systems to prevent loss of control.

B. Built For The Copilot-Gunner—Unobstructed front seat location for best visual target spotting. In front of weapons firing effects to avoid interference with IR target acquisition. Flight controls identical to the pilot's for safety, survivability, ease of training and interchangeability. Fully integrated weapon systems deliver a deadly barrage of Hellfire missiles, 2.75-inch rockets and 30mm fire under all operating conditions.

Pilot and copilot compartments enclosed with protective armor. Crew crash survivability at

Hughes YAH-64.

in their place.

impacts in excess of 30 mph.

C. Built For The Ordnance Crew—Easy access to all weapon systems. Interchangeable wing pylons accept rocket launchers, missile launchers, extended range fuel tanks. Preboresighted launchers loaded or unloaded in minutes. The Hughes XM230 Chain Gun, a small, lightweight, easily maintained, reliable cannon, is designed specifically for the AAH mission. It can be loaded to full capacity by two men in just 12 minutes—or to normal mission complement in only four minutes—without use of ground support equipment.

D. Built For The Maintenance Crew—Maintenance hours per flight hour have been reduced 38% from Army requirements. Only standard tools required. Easy access to all dynamic components. Inspection and maintenance require no ground workstands. Upper deck access panels and engine nacelles serve as maintenance/inspection platforms. Easy maintenance features include two-man blade installation and removal; lubrication-free rotor system; grease-filled intermediate and tail rotor gear boxes; 20-minute engine change; slide-in/slide-out main rotor transmission without removing rotor, hub or controls.

Designed to Cost—The YAH-64 will be produced within Army cost objectives.

Hughes Helicopters
A Division of Summa Corporation

Built for the men who have to live with it.

Army Aviation Magazine

[Endorsed by the Army Aviation Association - AAAA]

Volume 25 - February 28, 1977 - Number 2

CONTENTS

ARMY AVIATION is published monthly except May and Sept. Second class postage paid at Westport CT.

By GEN HAMILTON H. HOWZE, RET.
Chairman, Board of Trustees,
Army Aviation Hall of Fame

Hall of Fame

AAAA sets new 'Hall of Fame' procedures

BY 17 July 1976 action, the **AAAA National Board** entrusted the **Army Aviation Hall of Fame Program** to a six-member **Board of Trustees** that I am privileged to chair. (Members appear below).

Our **Board** will have the responsibility of making the year-to-year selection of inductees from those nominated. No attempt will be made henceforth to select inductees according to time periods, as in the past, nor will any predetermined number of inductees be selected in any year.

Persons serving on active duty in the armed forces shall be ineligible for consideration until separated or discharged.

ANYONE MAY NOMINATE

The **Hall of Fame** nomination procedures are simple . . ANY person, AAAA member or not, may submit one or more nominations. Each nomination should include the nominee's full name, address, present occupation (if known), and the reason(s) for nomination.

The submission may be brief, **but it must be specific.** If dates and military organizations are applicable, they should be included.

The suspense date for the 1977 Hall of Fame nominations is 1 April 1977.

Generalities should be avoided. It should be thoroughly understood by each person submitting a nomination that one of more Trustees may not know the nominee at all; therefore, it's quite important that the nomination itself be sufficiently specific to give each Trustee a proper basis for his vote.

AAAA TO ACKNOWLEDGE RECEIPT

No nominating letters will be returned to their originators, although AAAA Hqs will acknowledge the receipt of each. The names of the nominees selected for induction will be announced in **Army Aviation Magazine**, as well as the date and plans for the 1977 induction ceremonies.

All nominations should be submitted on or before 1 APRIL 1977 to:

AAAA, Attn: Hall of Fame Program, 1 Crestwood Road, Westport CT 06880.

LTG KINNARD

MG SMITH

BG CANEDY

BG GOODHAND

CW4 WASHER

AAAA TO RECOGNIZE DAC FOR OUTSTANDING '76 ACHIEVEMENT

DAC Award

New AAAA Award to be presented in April

AAAA's **National Executive Board** approved the sponsorship and 1977 presentation of an **"Outstanding Department of the Army Civilian Award."**

The initial presentation of the **"Outstanding DAC Award"** will be made in conjunction with the Lindbergh Chapter sponsored **1977 Product Support Symposium** and the **Fifth Region—AAAA Convention** to be held in St. Louis, Mo. during 28-30 April 1977.

ASS'N-WIDE NOMINATIONS SOUGHT

With selection to be made by AAAA's **National Awards Committee,** the award is to be presented to a Dept. of the Army Civilian who has made an outstanding contribution **to Army Aviation** during the previous calendar year.

Membership in AAAA is not a requirement for consideration. A nominee for this award must have been a DAC during the awards period, and must have made an outstanding **individual achievement.**

Requests for nominations were mailed to each of AAAA's 10,000-odd members by direct mail in early February.

CHAPTERS AID IN EFFORT

The 55-odd worldwide AAAA Chapter activities were sent copies of the "Nomination Form" for mid-Feb. use on unit bulletin Boards. The action was handled by the Chapter VP's for Publicity.

GOOD JOB! — MG A.B. Crawford, Jr., CG, ECOM, congratulates Monmouth Chapter AAAA officers and committee members on receiving the Assn's "1976 Top Chapter" Award. From l-r, Vince O'Donnell, Harry Smith, Len Donnelly, Al Smith, MG Crawford, COL Darwin Petersen [Pres], George Hogelin, MAJ George Crofoot, Jack Mannix, and Howard Dean. A $6,000 AAAA Scholarship Fund donation was a significant '76 action.

Career Opportunities in the land of Growth and Change..

Iran

If you've never considered an overseas assignment before, or if you have extensive overseas experience, Bell Helicopter International would like you to evaluate the advantages of living and working in Iran. We would welcome the opportunity to discuss with you the many career opportunities available now. We offer an excellent income plus our outstanding company benefit program including relocation and transportation expenses for you and your family.

HELICOPTER INSTRUCTOR PILOTS

Minimum 1500 total R/W hours, 250 of which must be as an Instructor Pilot. Successful applicants must possess the desire to instruct foreign students in all phases of helicopter flight operations and procedures.

ROTOR/WING MECHANICS

Should have at least two years experience on military Rotor/Wing aircraft with specific experience on airframe, power plant, or armament systems. Prefer applicants with previous overseas experience.

ARMAMENT TECHNICIANS

Should have at least two years experience on military aviation armament systems. Prefer avionics/electrical background with thorough knowledge of 7.62 and 20 mm gun systems.

For immediate attention, please send resume in complete confidence to:

Bell Helicopter International

1901 Central Drive, Bedford, TX 76021

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MUST BE U.S. CITIZEN

In production now, a rescue hoist just right for the UH-1 and UTTAS.

Backed by over 50,000,000 man-hours experience hoisting men aloft on a wire rope.

Our latest rescue hoist, proved in U.S. Army tests, is already operational with military services abroad and helping in civilian rescue missions here at home.

If you fly a rescue mission helicopter this reliable hoist will make your assignment faster, more dependable. Here's why:

Spend less time over target because this high speed hoist lifts a single payload 265 feet per minute. You can rely on it.

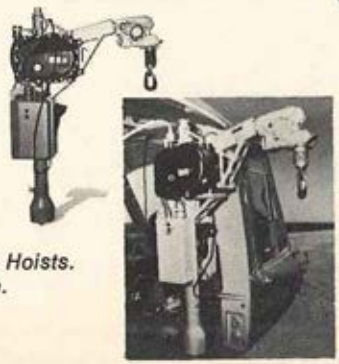
Clear most terrain objectives because the self-contained cable is 250 feet long. Anti-fouling feature protects against twisting of cable by load which can lead to cable fouling.

Operate without interruption because this hoist is rugged and built for continuous duty, not just intermittent use. Perfect for extensive training missions.

Change direction of reeling, up or down, without affecting aircraft stability. Automatic acceleration modulation of reeling protects against aircraft damage and personnel injury. Starts and stops gently.

Reduce on-board weight because this hoist is lighter than other hoists in inventory. At least 12 pounds lighter.

For a dependable, mission-responsive hoist, specify Western Gear. Applied Technology Division, Western Gear Corporation, 14724 East Proctor Avenue, City of Industry, California, 91744. Telephone 213 • 968-6525.



Western Gear Personnel Rescue Hoists. When reliability is a matter of life.

western
GEAR CORPORATION

Applied Technology Division

By MAJ. GEN. JAMES C. SMITH,
Commander, U.S. Army Aviation
Center, Ft. Rucker, Alabama

Training

Snow slows the USAAVNC SFTS's

Like most of the country, the Center was hit hard by mid-January's record cold and snow. Actually, we only got enough snow to whiten the trees, but more serious was the temperature plunging to 7° Fahrenheit. While not exceptionally cold for a lot of you readers, it certainly put a crimp in our activities here in the "Sunny South." The resulting energy shortage most acutely impacted on the operation of our synthetic flight simulators, which are big users of electricity.

Following up on last month's report to you that **Ben Harrison** had picked up the reins here as Deputy CG, this month I'm happy to pass on the word of his selection for major general rank. He's number 24 of 39 selectees.

Also in my January report, I stated that we were moving toward implementation of a revised **Initial Entry Rotary Wing Training Program**, with a starting date in June. The program has now been funded by TRADOC and the first students will begin training on 13 June.

DAEDALIAN AWARD

This is the third consecutive year a branch in the Center's Department of Undergraduate Flight Training has won the Daedalian Army Aviation Flight Safety Award.

Branch II of the **Advanced Division** received the award for logging 8,642 accident-free flight hours from 1 July 1975 through 31 March 1976, a most noteworthy accomplishment.

Of these hours, 2,100 were accumulated under the high risk conditions of nap-of-the-earth flight training while qualifying some 140 student pilots.

The award is given annually by the Daedalian Foundation, a charitable, nonpolitical, non-profit organization of the Order of Daedalians whose primary concern is the promotion of flight safety in the military services.

AVIATION CENTER SCHOOLING IS ACCREDITED

The schooling conducted at the Army Aviation Center has earned "accreditation" for the second year of its five-year accreditation period.

The approval came at the December annual meeting of the Assembly of Delegates of the Southern Association of Colleges and Schools and was recommended by the Assembly's Commission on Occupational Educational Institutions (COEI).

Yearly accreditation is contingent on the USAAVNC continuing to meet all training and academic standards of the Association. These conditions are ascertained through a review of an annual report submitted by the Center to the Executive Committee of the COEI.

Accreditation is symbolic of quality and commitment as recognized by the civilian academic community.

NEW SFTS FACILITY

On the subject of simulators, I recently cut the ribbon that officially opened

Fort Rucker's most recent **Synthetic Flight Training Systems [SFTS]** Facility.

LTC Elmer Curbow, chief of the Flight Simulator Division, commented at the ceremony that this new $1,538,000 facility is one of the most advanced in the world today. When the complex is completed (this is the first of three phases), it should be the most sophisticated in the world for several years to come.

One simulator for the CH-47 "Chinook" has been installed. The facility also includes six UH-1 "Huey" cockpit procedural trainers. Two simulators for the AH-1 "Cobra" gunship will be installed in the near future. Construction on an adjacent facility for a UTTAS flight simulator is also planned.

The prototype CH-47 simulator features visual simulation for day or night training and practice in hovering to lift sling loads such as heavy artillery pieces. The simulator should trim the cost of actual flight training by more than $600 per hour.

In addition, construction of four UH-1 "Huey" cockpit module mockups has begun at the U.S. Army Transportation Center, Ft. Eustis, Virginia. Synthetic flight training on these machines will cut the cost of training from $250 to $60 per hour. These mockups should be completed by February 1978.

XMAS PARTY [Delayed]—LTC Ernest F. Estes, AAAA'a Morning Calm Chapter Pres., left, greets MG John K. Singlaub, CofS, Eighth USA, as, right, LTCs Lanny Standridge [52nd Avn Bn], Grant S. Green [2nd Avn Bn], and Jerry V. Lambert [19th Maint Bn] look on.

EURO/NATO

Mid-January saw the Center hosting a week-long **EURO/NATO aviation training symposium** in which the conferees discussed existing and proposed Initial Entry Rotary Wing (IERW) training. Of special note was the tentative agreement reached between representatives of DOD and participating nations on plans for implementing an improved and expanded IERW program in June.

Representatives from Denmark, the Federal Republic of Germany, Norway, and the United States, plus observers from Italy, Canada, Australia, Great Britain, and France attended the conference. In addition to formal discussions, the visitors observed all phases of IERW training and visited other post activities.

COL Kurt J. Veeser, Deputy General for German Army Aviation (and a Ft. Rucker graduate of 1958), was the senior German Army representative. Concurrent with this primary duty, COL Veeser was guest speaker at the Center's biweekly graduation ceremonies which included the Center's second EURO/-NATO class.

The conference provided an excellent forum for exchanging ideas concerning helicopter training requirements of the different participating countries. Tentative plans were made for a follow-on symposium later this year in the Federal Republic of Germany.

STREAMLINED INSTRUCTION

Although the administration, management, production, storage, and distribution of all Army Aviation Correspondence Courses will be the responsibility of the U.S. Army Training Support Center, Ft. Eustis, Va., as of 1 June, the job of revising, updating present subcourses and developing and testing new ones will remain at Ft. Rucker.

Education specialists and professional editors of the Extension Training Development Branch within the Course Development Division, will continue to revise and update and develop new courses, all

of which parallel, supplement, or replace resident training, to keep students up to date with current training and doctrine at the Army Aviation Center.

The Training Extension Course [TEC], also under the Extension Training Development Branch, reports that the first increment of TEC lessons under the new setup is in the final stages of validation and should be available to Active Army and Reserve components during the summer of 1977. These innovative lessons use two media for presentation - audio-visual and programmed text.

TEC lessons are prepackaged, multi-media, soldier-tested, performance-oriented training materials. One of the largest benefits to be derived from them is the standardization of instruction and proven teaching quality of each lesson. This is due to "soldier testing" of each lesson to insure that it does, in fact, teach the student to perform the task or tasks that it was designed to teach. During the validation the lesson objectives are tested as opposed to testing individuals. Pretests are given to determine if the student already knows the subject matter being taught. If he does, he is directed to lessons that progressively develop his job knowledge. After the instruction is completed, he is retested to determine his proficiency.

The TEC program is a valuable self-supporting instructional tool which can readily be applied to the institutional, as well as the unit, training programs.

CATALOGS AND SOLDIERS' MANUALS AVAILABLE

To aid the aviation oriented serviceman in his career advancement, courses available to him are listed in the **Catalog of Instructional Material** and **Catalog of Correspondence Courses**. Also there are **Soldiers' Manuals** available.

The **Soldiers' Manuals** are being distributed through normal distribution. The catalogs and replacement copies of the manual may be obtained from the Extension Training Management Division at the Army Aviation Center (ATTN: ATZQ-T-E) Ft. Rucker, Ala. 36362.

MOVIN' ALONG! — The 21st woman to be rated as an Army Aviator, 2LT Megan C. Jans is congratulated by MG James C. Smith, USAAVNC CG, and Chaplain [MG] Orris E. Kelly, right, Army Chief of Chaplains. The Dec. graduate has since moved on to USATC for maintenance training.

The **Catalog of Instructional Material** includes resident course lesson plans and more than 215 programmed texts on a variety of subjects ranging from highly technical matters to standard descriptive data. It covers current doctrine and tactics as taught in the resident courses and also tells how to obtain training aids from the Aviation Center.

In the **Catalog of Correspondence Courses** are contained seven professional courses and 10 functional courses. The former courses are aimed at overall career development, while the functional courses deal with additional specialized training.

The **Soldiers' Manuals** are designed to help the serviceman advance by grade in his MOS (Military Occupational Specialty). Advanced individual training (AIT) covers a broad spectrum. The **Soldiers' Manuals** emphasize what the soldier has to know for his MOS, grade and skill level. For instance, a soldier must know and be able to perform the tasks in the manual for his current grade and also have the manual for the next grade.

There are three series of the **Soldiers' Manuals** which are developed by the Aviation Center. These are **71-P, Flight Operations Coordinator; 93-J, Air Traf-**

fic Control Radar Coordinator; and 93-H, Air Traffic Control Tower Operation.

The first skill qualification tests from these manuals are scheduled for the summer of 1978.

The **Soldiers' Manuals** are another facet of the Aviation Center streamlining its instruction to improve the professional qualifications of every individual and unit in the Aviation community.

JOINT SERVICE EXERCISE

During the period 29 November - 13 December, Aviation Center personnel participated in the USAF **Exercise Red Flag 77-2** at Nellis Air Force Base, Nev. The purpose of the test was to train Air Force air crews (both helicopter and high performance fixed wing) in a realistic combat environment.

To accomplish this, the Air Force deployed squadron-size units to operate against an integrated air and surface threat. The exercise was designed to encompass the tactical operation of an attack helicopter team against a simulated threat force in the attack. The attack was supported by the **Red Flag** air defense simulator array in conjunction with USAF tactical ground attack aircraft, physical and electronic suppression, and threat fighters protection missions.

Objectives of the **Red Flag** exercises which are of special interest to Army and its combat developer include:

- To train scout and attack helicopter pilots in the techniques of operating in the desert environment against a simulated threat array.
- To train USAF and Army Aviators in the techniques of combined target attack with live ordnance against a simulated threat array supported by air defense weapons.
- To train Army Aviators in the evasion and defensive maneuvers to be used against threat air attack in conjunction with friendly fighter protection.
- To train Army Aviators in the techniques necessary to survive in an active radar, ADA, and Communication Jamming (COMJAM) environment.
- To investigate the airspace management requirements which may be generated by joint USAF/Army attack helicopter operations on the line of contact.
- To investigate the benefits and problems inherent in the operation of a US-AF Forward Air Controller in an Army helicopter.

NEW HOME — MG James C. Smith, left, and COL Raphael J. Dinapoli, Cdr, USA Aeromedical Center at Ft. Rucker, cut the ribbon on a new $1.2 million barracks that will house personnel of the Lyster AH Med Co.

AVIATION CENTER'S WORLDWIDE IMPACT

The impact of the Army Aviation Center's mission is also felt far beyond its "Wiregrass" environs and Alabama. For instance, 20 Army air traffic controllers have recently been trained here to assume the Air Force radar approach control mission at Fort Campbell, Kentucky. That will be the first time the Army has maintained and operated an Army radar approach control facility fully staffed with its military controllers and supervisors. The six weeks' training given them in the Aviation Center's Air Traffic Control School used a simulation of the Fort Campbell control area in the school's sophisticated computerized radar simulator and conventional approach control laboratories.

NEW ENGINE FOR OH-58A HELICOPTER

The **U.S. Army Aircraft Development Test Activity [USAADTA]** has completed test flying two Allison 250-C20B engines each for 1,750 hours on two OH-58A helicopters. This test should serve to establish a 1,500 hour military TBO on the T63-A720, the military version of the 250-C20B engine.

The T63-A720 free gas turbine engine is rated at 420 shaft horsepower and derated to the transmission power limit of 317 shaft horsepower. The engine is one of several modifications planned for a portion of the OH-58A fleet to be converted to the OH-58C for use as an interim scout helicopter.

READY FOR EVALUATION TESTING

The first of its kind, the **CH47 Visual Flight Simulator [CH47FS]** System, is undergoing the final stages of assembly here at the Aviation Center.

This highly sophisticated visual system displays a realistic forward looking view of an external terrain board scene which responds to the operation of the simulator cockpit controls. The terrain board landscape is traversed by a color TV camera probe mounted on a moving gantry. The system includes a 6°-of-freedom cockpit motion system and its computer software.

Testing and evaluation began on 17 January 1977 utilizing both USAAVNC and FORSCOM instructor pilots and transition students. Concurrently and through August 77 FORSCOM CH-47 pilots will be used to evaluate the device's unit training effectiveness and its potential for maintaining aviator proficiency. Operationally, FORSCOM is expected to be the prime user of this sophisticated simulator.

Concurrent with operator testing, development personnel will be gathering developmental and operational data for a **Cost and Training Effectiveness Analysis [CTEA]** from which a **Basis of Issue [BOI]** will be derived to recommend regional distribution of the device.

Paralleling **CH47FS** testing, the first AH1 visual flight simulator will be installed in the same facility as the **CH47FS.** A ready for evaluation date of March 77 is projected for this device.

Last UH-1H Purchased by the Army

AN era came to a close on Dec. 22 when the Army accepted its last UH-1H helicopter, a model that has been in production at Bell Helicopter Textron (BHT) for 18 years. Over 10,000 **Hueys** have been purchased by the U.S. and foreign governments, making the **Huey** number eight in all-time production of aircraft, and the No. 1 production model since WWII.

The U.S. Army has purchased over 7,000 **Hueys.** There are over 4,000 in the Army inventory today, and they are expected to stay in use for about 15 years.

Although no add'l UH-1's will be produced for the Army, **AVSCOM [U.S. Army Aviation Systems Command]** will remain the procuring element for the other services, and the Foreign Military Sales/Military Assistance Program. Except for early USAF buys, **AVSCOM** has procured the aircraft for all the Services.

FIFTH IN UH-1 SERIES

The current model UH-1H is the fifth in the series of UH-1 **Iroquois** helicopters. The USAF purchased 173 HU-1A's, between 1958 and 1960. Engine and fuselage changes took the **Huey** up to model UH-1D, which was redesignated the UH-1H in 1967 when a more powerful engine and larger main rotor were installed. Around 7,400 D and H models have been purchased by AVSCOM for use by the Army and foreign governments.

By CPT ROBERT E. MARKHAM, II
Co C, 159th Aviation Bn [ASH]
101st Abn Div [Air Assault]

Operations

101st ASH Platoon "Deployed" by C-5A

CAPABLE of strategic deployment from Ft. Campbell to potential combat zones anywhere in the world, the **101st Abn Div [AASLT]** utilizes a **Division Reaction Force [DRF]**, an infantry battalion task force ready to deploy with all necessary support within 24 hours notice. Inclusive in the DRF deployment is an **assault support helicopter platoon** (eight CH-47's). The latter provides airlift capability for the task force artillery, **Avn Bn**, was deployed by C-5A **Galaxie.** Within a half hour of notification, **Co C**

During the **101st's** recent **REFORGER** Exercise, an ASH platoon of **Co C, 159th Avn Bn,** was deployed by C85A Galaxie. Within a half-hour of notification, **C Co** maintenance personnel began to dismantle the aircraft. While after-action reports of previous tear-down exercises indicated a 180 man-hour average per aircraft, **C Co** personnel reduced this average to 103.7 man-hours, a substantial reduction.

The tear-down man-hours ranged from 87 to 128 man-hours per aircraft, depending on the problems encountered. The primary delay in disassembly was in **rotor blade removal.** Add'l special tools were needed to tear-down all eight CH-47's simultaneously. "Frozen" hinge pins were another delaying factor.

Other techniques which reduced time delays were 'talking through" the disassembly and reassembly sequence; performing detailed inventories of hardware kits and shop sets; and conducting detailed inspections of transmission stands, aft pylon stands and blade racks prior to beginning the tear-down sequence.

Disassembly completed, the personnel and equipment were moved from a holding area to the C-5A (right photo). Palletized equipment, personnel, and the eight aircraft were ready for shipment as their assigned chalk numbers indicated. After simulated travel time elapsed, the deployment phase was concluded as the ASH platoon arrived at the "Interme-

(Continued on page 41)

Tear-down disassembly

C-5A holding area

By COL WILLIAM E. CROUCH, JR.,
Chief, Aviation Systems Division,
ODCSRDA, Dept. of the Army

RD&A

December 1976 — A Landmark Month!

December 76 was a landmark month for Army Aviation with competitive contracts awarded for Phase II of the **Advanced Attack Helicopter [AAH]** program and for procurement of the **Utility Tactical Transport Aircraft System,** better known as **UTTAS.**

The winners, as you may already know, were Hughes for the AAH and Sikorsky for the UTTAS. The real winners are the American soldiers who will benefit from increased firepower and mobility.

ADVANCED ATTACK HELICOPTER

The Advanced Attack Helicopter program moved on to the most important phase of its development in December 76 with the selection of Hughes as the winner. The announcement was made on 10 December after the program go-ahead by the **Defense Systems Acquisition Review Council [DSARC]** on 7 Dec 1976.

The contract to Hughes completed the hard fought competitive airframe development which began in June 73. Summarizing Phase I, both contractors built two prototypes and a ground test vehicle with first flights on 30 September and 1 October 1975 for Hughes and Bell respectively.

Government competitive testing was conducted from July through September 76 by the Army Engineering Flight Activity at Edwards Air Force Base with operational input from OTEA. Approximately 450 total flight hours were accumulated on each design, about 120 of which were in the Army tests.

The 50-month Phase II program which Hughes is pursuing includes building three additional prototype aircraft and the integration, test, and qualification of the associated subsystems and weapons. The **HELLFIRE** is being developed by the Army as a separate program; however Hughes will develop and use its own 30mm cannon - the **XM 230 Chain Gun.** Army tests ofthis gun have shown it to be highly reliable and it should prove to be a worthy system for the AAH.

NEW ACRONYM: TADS/PNVS

The **Target Acquisition Designation System [TADS]** and **Pilot Night Vision System [PNVS]** for the AAH will be developed competitively as part of the AAH program. Proposals for this "program within a program" are now being evaluated and we expect to award these contracts in March 77.

Following a **TADS/PNVS** fly-off in 1979, a winner will be selected for final production. The **TADS/PNVS** contract is potentially a big one in that the same systems will ultimately be used by scout helicopters as well.

We still have a long way to go in the AAH development program before production but we have passed one more major milestone successfully.

UTTAS

Rather than culminating a program, the production contract award for $83.4 million to Sikorsky Aircraft Division marks a real beginning - the beginning of a new era wherein the Army will now have a tactical utility aircraft providing the mobility required for future battlefields.

UTTAS is designed from the wheels to the top of the rotor with the soldier in mind. Inherent in the UTTAS design are greater performance, and better reliability, maintainability, and survivability. features than ever combined before in a helicopter which wears the Army green.

The **UTTAS** is the result of a very deliberate process initiated in the sixties with the introduction of an advanced development engine. This ultimately led to the **General Electric T-700 engine** which now powers both the UTTAS and AAH.

This engine represents a giant technological step forward - not only is it far simpler in its construction and easier to maintain, but it delivers more power at half the weight and with 20% less Specific Fuel Consumption than the current **Huey** engine. It can be maintained in the field with ten simple tools.

These engine features, coupled with the tremendous improvements found in the airframe and dynamic components, mark the **UTTAS** as one of the most advanced rotary wing developments to ever roll from U.S. production lines.

It is the Infantry that will benefit most from the tactical advances the UTTAS will offer. Not only can a full squad be carried into any engagement aboard a single aircraft, but the squad can be moved quicker and with far greater survivability than ever before.

With crashworthy seats, crash resistant fuel cells, and unprecedented agility, this aircraft is designed to survive the rigors of battle.

With respect to the actual development schedule, it is sometimes said that hardware is too long in coming, but the **UTTAS** is an excellent example of what can be done once the requirement is clearly defined, the program approved, and industry swings into action.

The bulk of our time is sometimes spent in deciding what we want, **not how to build it.** In this case, first flight came only 26 months after award of the engineering contract in late August 72. Delivery of the first production aircraft in August 78 will be only 71 months from go-ahead on the engineering development contract.

FIRST 214C—COL Franklyn Goode, r., Cdr, USA Bell Plant Activ, accepts papers on first Model 214C for the Imperial Iranian Air Force. Bell President James F. Atkins is all smiles at the milestone, as is COL Edward Aguanno, l., Iranian Program Manager, AVSCOM.

The **UTTAS** now moves into the home stretch. As it passes into the hands of the troops, we recall a quote of **GEN Walter P. Kerwin,** Army Chief of Staff: "Our soldiers deserve to have . . . and must have . . . a tactical helicopter that will give our soldiers and our field commanders the air mobility which, in conjunction with the combined arms team, will give our Army the added edge it needs to meet any foe anywhere and make him wish he'd never taken the field of battle against the modern American Army."

The research and development is complete; now the true measure of the product lies ahead in its tactical employment.

Senator Strom Thurmond questions
Dr. Harold I. Brown, the nominee
for Secretary of Defense

Congressional

AAH debated in confirmation hearings

Chairman Stennis. We start over now. I am going to hear from Senator Thurmond.

Senator Thurmond. Dr. Brown, I was asking this morning about the threat. I wish to propound another question along this line.

Do you believe that the current threat justifies real growth, and by real growth I mean expenditures beyond the rate of inflation, real growth in the defense budget in the next few years?

Mr. Brown. I do not think I could answer solely in terms of the current Soviet military capability; but I believe that if trends continue as they have, then it may well be necessary to have real growth in the next few years in the Defense Department expenditures.

I think some of that we may be able to offset with the savings which I have mentioned, but I cannot make a prediction of how that balance will come out.

Senator Thurmond. Dr. Brown, in 1968, as Secretary of the Air Force, you proposed an aircraft then designated as the AX to strengthen the ability of the Air Force to render effective close support to the Army. This proposal followed development by the Army of the CHEYENNE helicopter. At that time General McConnell, Air Force Chief of Staff, saw the CHEYENNE as an infringement on the Air Force role of close support.

In June of 1966 you took a position which indicated you had strong doubts about the use and effectiveness of an attack helicopter.

As you know, the AX became the A-10 and the CHEYENNE program was terminated because of technical problems and lack of support in the Congress.

Since that time the Army has developed a new attack helicopter. This helicopter is known as the AAH. Are you familiar with it?

Mr. Brown. Yes, sir.

Senator Thurmond. An attack helicopter.

Mr. Brown. Yes, sir.

Senator Thurmond. And provides support to the Army ground troops in a nap of the earth deployment technique with its principal weapon being a new fire and leave missile known as the HELLFIRE missile.

Senator Goldwater, the ranking minority member of our Tactical Air Power Subcommittee, has strongly supported the AAH, as have the last two Secretaries of Defense and all committees of the Congress.

Dr. Brown, I would like to know, based on the explanation I have just given, whether or not you would have any problems supporting the Advanced Attack Heli-

copter in the role you have described?

Mr. Brown. Well, I have no preconceived notion about this. My experience with this particular role and mission discussion goes back to the House report which I guess is what, 13, 14 years ago.

I believe that we have to look at the missions carefully. We have to make sure that we are not duplicating unnecessary things; but I start out with no preconception of what the Army should be doing or what the Air Force should be doing.

As you mentioned in the case you cited, one aircraft went on to become an inventory aircraft, the A-10, and the other one was cancelled for technological reasons.

I have no idea what I will conclude about forthcoming developments. I simply have not had a chance to look at them enough to decide, but I start without any preconceptions.

Senator Thurmond. The AAH came along and was approved by all committees of Congress; and the Secretary of Defense.

Mr. Brown. Yes, sir.

Senator Thurmond. And even Senator Goldwater, who I think may have had some questions at the time, is a strong supporter now, as I understand, of the AAH.

Mr. Brown. Yes, sir.

Senator Thurmond. And so you do not think you would have any trouble?

Mr. Brown. I do not have any preconceptions. I cannot say whether I will support it or not, because I simply do not know enough about it.

What you have said tells me that there is a good deal of support for it.

Senator Thurmond. Would you look into it very carefully and if necessary go out in the field and do some research, because this is an extremely important weapon to the Army?

Mr. Brown. Yes, sir.

Senator Thurmond. Extremely so. The Army has recently entered into a full development contract for the AAH and any new Secretary or new Administration will have, of course, the power to review the program.

I suppose you are not opposed to attack helicopters in general?

Mr. Brown. Not in principle. I think they need to be examined as compared to other ways of delivering the same effect and compared with them on how much they cost and what they do.

NINE HUGHES EXECS VISIT HQ, AVSCOM

Purpose? For everyone to meet the AAH Project Manager. Seated: Thomas R. Stuelpnagel, VP & GM; COL Ed Browne, AAH PM; and John N Kerr, AAH Program Director. Standing from left, are W.J. Blackburn, Manufacturing; L.P Sonsini, Product Assurance; M.F. Gerardis, Finance & Management; C.E. Schaaf, VP, Legal; Dr. Fred C. Strible, Commercial; R.E. Brix, Ordnance Div.; and Carl D. Perry, VP, Marketing. □

FT. SAM'S 507TH MED CO [AA] COVERS A 1000,000-MILE AREA IN ITS MAST OPERATION

Milestones

Pioneer MAST unit flies 2,000th mission

A 507th Medical Company (AA) helicopter flew the unit's 2,000th MAST patient in mid-January, marking a milestone when it responded to a call from the Otto Keiser Memorial Hospital in Kennedy, Tex. A patient there required movement to Methodist Hospital in San Antonio for treatment of cardiovascular problems.

Within five minutes of receiving the call, the crew* was aboard the chopper and en route to Kennedy. The patient, an elderly lady, had suffered injuries to her head which put her in a comatose condition. She later suffered a heart attack. At Methodist Hospital the chopper was met by waiting doctors and nurses who moved the patient into the hospital and MAST's 2,000th patient mission was complete.

The first **MAST [Military Assistance to Safety and Traffic]** mission was flown July 15, 1970.

"MAST is actually only a part of a multi-fold mission the 507th performs," said **CPT Bruce Furbish**, operations officer. "It is a part of the Emergency Medical Services of San Antonio and surrounding communities."

Other missions — calling on the efforts of 33 officers and 109 enlisted soldiers — include moving military patients between military installations in a 250-mile radius of Ft. Sam Houston; providing delivery of whole blood, biological and medical supplies; and transporting medical personnel and supplies.

But MAST is what has made 507th pilots, crew chiefs, and medics perhaps the most visible of military personnel in the South Texas area.

The 507th, commanded by **LTC Ron Barden**, is made up of four platoons, only two of which are at Ft. Sam Houston.

"The other two," said **CPT Furbish**, "are at Fts. Hood, TX, and Sill, OK. The entire 507th responsibility is for an area in excess of 100,000 square miles."

Responding to emergencies is a constant job. Sadly, somewhere, there is always another accident on a highway, explosion at a factory, or a seriously ill baby in a home, and MAST operations will be called on to evacuate a patient. And the men and women of MAST will continue to respond.

Perhaps **Manda Reid**, director of nurses at the Otto Keiser Memorial Hospital, best summed up the feelings of the civilian community toward MAST when she told **1LT Eddie Polk**, "I don't know what we would do without you people."

*1LT **Eddie Polk**, co-pilot; **CW2 David Williamson**, pilot; **SP5s Sammy Hullander**, crew chief, & **Gerald Seabron**, Medic.

By MAJOR VICTOR ANDERSON,
Fort George G. Meade, Maryland

Opinion

I HAVE just finished reading **LTC Terence M. Henry's** comments (Jan 15 **AA**) to an article by **COL Sam Kalagian, Ret.** entitled "Who Leads the Troops?" (Sep 76 **AA**). I'm not an advocate of, nor do I endorse, **COL Kalagian's** policies or style. However, **LTC Henry's** choice of words at the conclusion of his effort requires some comment from an interested observer, and his statistics, when viewed from another quarter, question - if not their own validity - certainly their value.

Contrary to **LTC Henry's** assertion that, " . . a look at the career backgrounds of those 25 who were selected . . reveals a factual contrast to the author's [**COL Kalagian's**] opinion", the facts - as stated by **LTC Henry** - in no way refute the words of **COL Kalagian.** The example given by **LTC Henry** of **COL Kalagian's** offerings was, "The officers who make up the aviation command list are generally those who have demonstrated their 'potential' for command by their recorded success in non-aviation staff work, civilian schooling, non-aviation military schooling, and non-aviation assignments at DA/DOD and JCS staff level. The majority of those officers who now appear on aviation command lists have not been in an aviation assignment for four years or more . ."

LTC Henry then goes on to say that, " . . The facts show only one of the 25 has served on the JCS or OSD staff with nine more having served at the DA staff level." The inference of that statement is that these are the facts contrary to what **COL Kalagian** had to say . . and certainly, they may well be the facts, but there is nothing in that statement that denies anything that **COL Kalagian** said.

LTC Henry's next sentence, "The remaining (60%) have served primarily at corps/division level or lower", adds nothing to his assertion.

The next sentence, however, lends credibility to **COL Kalagian's** opinion that "The majority of those officers who now appear on aviation command lists have **not** been in an aviation assignment for four years or more." **LTC Henry** has opted to only give the statistics for the LTC Command Select List while failing - through design or error - to answer **COL Kalagian's** allegation.

As for **LTC Henry's** aside that, " . . 21 of the selectees are Senior Army Aviators . . " it is most assuredly hoped that the statement tells all that 16% of those slated by MILPERCEN to command TO&E aviation battalions/air cavalry squadrons, are not even Senior Army Aviators.

LTC Henry then goes on to say, " **COL Kalagian** further opines, "Usually the record will reflect . . . the command selected LTC's last served with aviation on an aviation battalion staff . . " He then goes on to point out what he considers assets on behalf of the LTC's, but at no time can he find himself in disagreement with **COL Kalagian.**

I feel these comments were brought on by the failure of **LTC Henry** to read properly what **COL Kalagian** has written or, at the worst, were a poor attempt to discredit the Colonel's words.

It should be pointed out that in the paragraph in question there would appear to be a printing error, and I have taken this into consideration.

What is most distressing is **LTC Henry's** closing statement: "Perhaps the author . . chooses to remember how things were or at least how he remembers them." Somewhat patronizing, but perhaps there is value in remembering. Perhaps in remembering we have an insight into remedying past errors and seeing they're not repeated.

But beyond those things, perhaps **COL Kalagian** does remember. Perhaps he even remembers before **LTC Henry** was a part of the U.S. Army. Perhaps he remembers lessons learned when the Army returned victorious from the encounters in which it was entered.

A brief letter to the editor is welcomed on any subject. Letters must be signed; however, the writer may ask to have his name withheld. Submit letters to: Editor, Army Aviation Magazine, 1 Crestwood Road, Westport CT 06880.

By THOMAS E. McGUIRE,
Office of the Project Manager,
Navigation/Control Systems
DARCOM

Procurement

In viewing the area of "cost per unit," we often compare apples to oranges

During a recent symposium at Fort Rucker, one of the featured speakers stated that one highly desirable avionics item had **almost tripled in price.**

As it turned out, however, his statement was based on the inflated **procurement cost** of the first 200 units produced, compared with the constant dollar **production cost** for the first 1,000 units produced. Although he had inadvertently made an "apples to oranges" comparison, most attendees immediately categorized the avionics equipment as too expensive.

Subsequent efforts to set the record straight were unsuccessful, because many people just don't understand the makeup of various cost figures quoted by the materiel developers. I therefore concluded that something ought to be done to create a better understanding of the cost of avionics within the Army Aviation Community. Hence, I've prepared this article for "**Army Aviation.**"

A MATRIX OF COST

Perhaps the best way to illustrate our problem is to provide a matrix of cost for a piece of avionics equipment. The unit can be described in terms of hardware (or procurement) cost, in various year dollars, and for any quantity.

The first term used to describe the equipment is **Design to Unit Production Cost [DTUPC].** This term is the key to a new and unique procurement concept.

The Army first determines the possible cost and minimum technical parameters for some selected item. These parameters are determined using past experience, judgment, and our requirements. We next define the item we want in our specifications. The specifications are less rigid and allow various tradeoffs to achieve our DTUPC.

With the DTUPC we define for our contractor what we are willing to pay for a certain capability.

In order to define our cost in a "baseline" or "point of time" estimate, we tell all potential contractors that we want an item that will have, for example, an average unit cost of $25K for a buy of 1,000 units, in constant FY 74 dollars, on a production rate of 20 to 30 systems per month.

It is very apparent that each of these criteria **can and may vary** five years later when this item will enter production. For example, the quantity actually produced will change depending on availability of funds, utility to the Army, and actual performance of the equipment during testing.

In addition, the **real inflation rate** is unknown. Hence, we have defined our equipment at a "constant" point from which both the Army and the contractor can measure changes, and hopefully

agree on our moving target value. We have established the **Design to Unit Production Cost**, signed a development contract, and our program is underway.

Now the fun begins. The Project Manager's Office provides information regarding the **DTUPC** data to other Army units per our contract as $25K, 1,000 units, FY 74 $. However, people in the budget business require more data than **DTUPC**. They're interested in the total procurement cost, including in-house cost, spares, test equipment, etc.

Thus, the PM provides a second estimate as a procurement cost, $34K per unit, 1,000 units, FY 74 $. Later, someone applies the inflation rates for our period of production and determines the unit cost of $52K per unit, 1,000 units, inflated dollars.

And, finally, returning to my first illustration, we provide an estimate for the first 200 systems, inflated as $74K each.

The following matrix [**Figure 1**] displays a number of possible - and correct - ways to define the price for the AN/-XXX.

COST DATA OF "ANXXX"
The "Design to Cost" is:
$25,000 in FY-74 $ for 1,000 units.
The "Procurement Cost" is:
$34 million in FY-74 $ for 1,000 units.
The "Procurement Cost" is:
$52 million inflated $ for 1,000 units.
The "Procurement Cost" is:
$52,000 ea. in FY-74 $ for 200 units.
The "Procurement Cost" is:
$74,000 ea. inflated $ for 200 units.

I believe the Project Manager's Office needs to do some public relations work to educate our users regarding cost terms, and to help them understand their meanings. We think that DARCOM has done a fine job in defining what elements of cost are to be included in the various cost terms.

This breakout of discrete cost elements is called the **Key Cost Analysis Definition** and is shown in **Figure 2** on the next page.

You can see that the term, **"Fly-away [or Production] Cost,"** is composed of both non-recurring (tooling) and recurring (labor and materiel) costs. The appropriation that pays for this is **PEMA**, and the work breakdown structure includes major system equipment.

Please notice the term, "Procurement Cost," at the fifth line. It also includes the non-recurring and recurring cost categories, and is paid for with PEMA dollars.

But notice the **"Work Breakdown Structure."** Here we see not only major system equipment (AN/XXX) but 'other' and spares. To expand a little more, note **Figure 3** which adds a further breakout of what is included within the **"Work Breakdown Structure."**

COMMODITY: Other Items
Definition: Training, Test Equipment, Test & Evaluation, Project Management, Data, Site Activation, Support Equipment, Industrial Facilities.

COMMODITY: Spare Parts
Definition: Component Subassemblies, Piece Parts

These charts (**Figures 1, 2, and 3**) are helpful to grasp the terms used to define **"Cost". Please note:** Hardware cost, recurring production cost, and DTUPC are synonymous.

Figure 4 shows us how we arrive at our **Total Cost.** For example, the **Design to Cost** refers to the actual hardware production cost and **excludes** approximately ten other categories.

These other categories are "rolled up" in the term, **"Procurement"**, and include modification, training, test equipment, data, in-house cost, etc. . . and the list of other costs can be quite extensive.

But the key point is that the Army incurs significant costs **beyond** the **DTUPC** in the purchase and fielding of a new system. Again, note that I'm not referring to operations and maintenance costs

KEY COST ANALYSIS DEFINITION

	TERM	Hard-ware Cost	Fly-away cost	Produc-tion Cost	Weapon System Cost	Procure-ment Cost	Program Acquis. Cost	Pro-gram Cost	Life Cycle Cost
COST CATEGORIES	R&D						X	X	X
	Invest. Recur. Cost	X	X	X	X	X	X	X	X
	Invest. Non-Cost		X	X	X	X	X	X	X
	Opera-ting Cost								X
APPROPRIATIONS	RDTE						X	X	X
	PEMA	X	X	X	X	X	X	X	X
	MCA						X	X	X
	OMA	X		X				X	X
	All Other Approp.							X	X
WORK BREAKDOWN STRUCTURE	Major System Equip.	X	X	X	X	X	X	X	X
	All Other				X	X	X	X	X
	Initial Spares Repairs					X	X	X	X

FIGURE 2

It's tim for AAA

1977 AAAA NATIONAL AWARDS PRESENTATION

AAAA National Awards will be presented at the **Annual Honors Luncheon** held at the **1977 AAAA National Convention** in Washington, D.C., Oct. 19. The Secretary of the Army normally makes the award presentation to the **"Aviation Soldier of the Year"** with the Army Chief of Staff invited to present the awards to the outstanding units. The **'Army Aviator of the Year"** award is customarily presented by the Vice Chief of Staff while a representative of the McClellan Memorial Foundation presents the safety award.

AWARD TO THE "ARMY AVIATOR OF THE YEAR"

BACKGROUND: This award is sponsored by the Army Aviation Association, and is presented "to the Army Aviator who has made an outstanding individual contribution to Army Aviation during the previous calendar year."

ELIGIBILITY: A candidate for this award must be a rated Army Aviator in the active U.S. Army or in its Reserve Components. Membership in AAAA is not required.

AWARD TO THE "AVIATION SOLDIER OF THE YEAR"

BACKGROUND: Sponsored by AAAA, this award is 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 covering the previous calendar year."

ELIGIBILITY: A candidate for this award must serve in an Army Aviation assignment in the active U.S. Army or its Reserve Components.

e to nominate
A Nat'l Awards!

"JAMES H. McCLELLAN AVIATION SAFETY AWARD"

BACKGROUND: Sponsored by the McClellan Memorial Foundation and the many friends of Senator John L. McClellan in memory of his son, James H. McClellan, an Army Aviator who was killed in a civil aviation accident in 1958, the award is presented "to an individual who has made an outstanding contribution to Army Aviation safety during the awards period covering the previous CY."

ELIGIBILITY: Any individual - military or civilian - is eligible as a nominee for this award. Membership in AAAA is not a requirement.

INDIVIDUAL AWARDS ACCOMPANYING DATA: Documentation should include the nominee's name and address (if military, also include 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. Additional supporting information attached as inclosures should be limited to 1,500 words or three pages - whichever is greater - and be typed. A recent photo of the nominee should also be included as well as his official biographical sketch, if available.

AWARD TO THE "OUTSTANDING ARMY AVIATION UNIT OF THE YEAR"

BACKGROUND: Sponsored by Hughes Helicopters, this award is presented "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 covering the previous calendar year."

ELIGIBILITY: Any active U.S. Army Aviation unit, group, or organization that has met the foregoing criteria is eligible.

AWARD TO THE "OUTSTANDING RESERVE COMPONENT AVIATION UNIT OF THE YEAR"

BACKGROUND: Sponsored by AAAA, this award is presented annually "to the Reserve Component 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 covering the previous CY."

ELIGIBILITY: Any Army National Guard or Army Reserve aviation unit or organization that has met the foregoing criteria, and is of battalion-size or smaller, is eligible.

DOCUMENTATION FOR UNIT AWARDS ACCOMPANYING DATA: Documentation should include the name and addres of the unit, and the name of its present commander. A cover sheet should provide a brief outline of not more than 100 words citing the main reason(s) for the nomination. Additional supporting information should be attached as inclosures and be limited to 1,500 words or three pages, whichever is greater.

SUSPENSE DATE: Nominations should be mailed **on or before July 1, 1977** to: AAAA, Attn: Awards Committee Chairman, 1 Crestwood Road, Westport CT 06880.

Suspense Date: 1 July 1977

or **life cycle costs**, but only to those costs paid for by procurement dollars.

It's very apparent why we encounter problems in defining the price for a system. We're dealing with a number of variables — all independent. An example? The use of constant **or** inflated dollars — and if inflated, to what dated series of inflation rates? Or, shall we discuss **Production Cost** or **Procurement?**

Finally, what quantity of items is of interest, the **average cost** for the total buy — or the **incremental price** for a specific procurement?

Let us begin with the **DTUPC** of $25K and assume we'll purchase 1,000 units, bringing the major system equipment **hardware cost** to $25 million. We may also have to buy gages and fixtures from the first producer to aid in later competitive efforts, non-recurring tooling, **plus** all of the initial modification (ECP), and ship the equipment to a depot or aircraft facility.

Next, we add the various **"other" charges** plus **"spare parts"** to find that the total procurement program is now $35 million in FY 74 dollars. Then, finally, we apply the inflation rate and discover that our **Total Procurement Cost** has become $51.7 million.

The following digested table categorizes the **cost drivers** for us:

Hardware	**$26.3**
Other	**2.5**
Spares	**3.6**
In-House	**2.0**
Inflation	**17.3**
Total	**$51.7M**

We notice at once that **inflation** and the basic **hardware cost** are the two key cost items. Thus, **time [inflation]**, plus **DTUPC**, must be reduced to the absolute minimum to reduce our procurement cost.

Let's discuss **"time."** Setting a minimum on the time to develop and field the hardware is not so simple. We often encounter technical problems which stretch out our program. Remember, we are pushing the state of the art in most cases and one must expect problems.

Testing - both contractor and government - is also prone to problems, and the only solution is more **time.** And often we delay a program because the funds are inadequate during a period of time to purchase all the items we need.

In total, we spend a significant amount of **time** developing and producing equipment. If we assume engineering development and testing will require three years followed by a four-year procurement cycle, we must estimate **inflation factors** during the fourth to eighth year from today.

Based on past experience, we believe that **inflation** will add 50% to 70% to our system cost before the Army is equipped with our new avionics item.

The last variable we must address is the **cost-quantity relationship.** The experience (or learning curve) is a basic cost-estimating tool that recognizes certain economics of scale, i.e., full scale production yields decreasing cost over a period of time based on larger buys of material, better production techniques, and other quality control and management functions.

Unfortunately, the converse is true. Thus, if we reduce production quantity **below** our original plan on which the **DTUPC** was developed, the unit production cost will increase.

We'll "slide" up the learning curve and undergo a large unit cost increase. Unfortunately, many of the other costs - including data, testing and tooling, etc. - are not quantity dependent.

Hence, reduction in production quantity will **NOT** significantly reduce the total price of support items. We therefore have a ballooning effect on the **average procurement** cost for our system as we amortize large non-recurring costs over a smaller production base.

The improvement curve analysis displays an approximation of the "lot" cost for a **DTUPC** of $25K and the total cost is as follows:

Lot No.	Lot Size	Unit Cost	Total Cost
1	200	$32K	$ 6.4M
2	400	$25K	$10.0M
3	400	$21K	$ 8.4M
Total			$24.8M

This cost in constant dollars is also displayed as the **inflated cost.** Therefore, the inflation factor and the reduced quantity impact can be readily visualized.

One can next envision the impact of reducing the production quantity, and simultaneously slipping production one or two years. These two negative effects can easily add 20% to 40% to the procurement cost of any system.

Now we come to the final stage where the hardware, procurement cost, learning curve, and inflation all meet in the budget. Earlier in this article I cited the high cost for the initial (or low rate) production quantity.

By looking at the three-year budget for a production cycle we can see a number of reasons. Just for example — gages, initial training, data, test equipment, and test/evaluation are budgeted against the **first year procurement.**

As I indicated before, these items are relatively independent of quantity. In addition, we must have all of this front end loading to test, field, and support our equipment - and, finally, in-house Government management is most intensive during the first contract.

I've prepared a sample three-year

BUDGET COST DATA

LOT SIZE	200 UNITS	400 UNITS	400 UNITS	TOTAL 1,000
HARDWARE:				
200 at $32,000	$6,400K			
400 at $25,000		$10,000K		
400 at $21,500			$8,600K	$25,000K
GAGE & FIXTURES	700K	--	--	700K
MODIFICATIONS	100K	100K	50K	250K
TRANSPORTATION	98K	150K	127K	375K
TRAINING	100K	--	--	100K
STE	800K	350K	350K	1,500K
SYSTEMS MANAGEMENT	75K	50K	25K	150K
DATA	300K	100K	100K	500K
TEST & EVALUATION	200K	--	--	200K
SPARE PARTS	960K	1,500K	1,290K	3,750K
IN-HOUSE COST	800K	600K	600K	2,000K
TOTAL COST	$10,533K	$12,850K	$11,142K	$34,525K
INFLATION FACTOR	1.4147	1.4965	1.5637	
TOTAL INFLATED COST	$14.9M	$19.3M	$17.5M	$51.7M
AVERAGE PROCUREMENT COST PER UNIT	$74,500	$48,250	$43,750	

budget to purchase the "AN/XXX". Please note that the **total cost for hardware** still totals $25.0 million; procurement is $34.5 million (uninflated); and the **total inflated cost** is $51.7M to track with my earlier number.

But look at the individual unit cost! Note the difference when each Project Manager buys in different years . . . the **average unit procurement cost** "drops" from over $74,000 each to $48,000 and to $43,000.

The most important thing to remember is that the price for the equipment depends on what you want to buy, when, and how many!

Finally, when questions regarding the cost for a Project Managed system arise, take the extra time to call the Project Manager's Office and get the latest correct data with a proper evaluation of what you need.

I believe that **cost data** should be presented in a triplicate format that includes our DTUPC goal, and the inflated procurement cost for **both** small and large scale production.

The full impact of fielding equipment and high inflation cannot be denied. However, the user must understand what the developer is facing.

We do not exist in a vacuum; our systems are complex, expensive, and difficult to manage. One cannot define the unit cost for any system with a single quote.

Give us a call and let the Project Manager have a chance to answer your questions. After all, he's responsible for the program and has the best information available regarding his program.

Without support from you, the user, the Project Manager cannot operate. The only way to score is for the entire team to agree on where we are going and how. The Project Manager wants very much to be a member of that team.

Top WO Graduates Cited at Fort Rucker

THE **"Best of the 185"** — that's what they called **CW2 Reginald C. Murrell** of North, S.C., and **CW3 Robert D. Klarner** of Peru, Ill., on their recent graduation from the U.S. Army Aviation Center.

Murrell was Distinguished Graduate of the **Aviation Warrant Officer Advanced Course** while **Klarner** topped all of his classmates attending the **Warrant Officer Senior Course.**

The two aviators, each of whom received **"No. 1"** plaques from the Army Aviation Ass'n of America, graduated on December 15.

The Deputy Commanding General of the Army's Training and Doctrine Command, **LTG Frank A. Camm,** addressed the 185 graduates at the Fort Rucker ceremonies, and complimented both **Murrell** and **Klarner** on their outstanding academic records.

Smith, Murrell, Klarner, Camm

PLAN TO ATTEND THE

CW4 REUNION

June 11-12, 1977 — Ft. Rucker, Ala.

Reservations are now being taken.
CONTACT:

Robert W. Meade
15 Pineway Dr.
Daleville,
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Enterprise,
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Why don't they?

By COLONEL OBEL H. WELLS,
President, Persia Chapter, AAAA

AMONG the many advantages God gave man, one of the most useful is the ability to communicate. This most wonderful tool allows a man living in the 20th Century to inform himself of man's experiences throughout history and, if he is wise, avoid making the same mistakes his predecessors made. Without risking the actual experience, he can know that it is dangerous to step on a poisonous snake or fly a helicopter into clouds if he is a novice aviator.

I used the words "ability" and "allows" and hasten now to emphasize this does not necessarily mean we **do** communicate; for we do not very effectively. Neither, all too often, do we profit from previous mistakes. There are still too many people spending too much time inventing the wheel. And there are still a lot of people flying into mountain sides or hanging the wrong kind of equipment on the wrong kind of flying machines.

A fantastic amount of useful knowledge about Army Aviation has been developed in recent years. Fortunately, the majority of this has been retained and serves as the basis for future development. Unfortunately, too much of it never reaches the "new ears" in Army Aviation - largely because we lack an effective forum for communicating our thoughts. Mind you, I am not belittling the many splendid means we have developed for exchanging information. I am merely saying it is not enough.

The faces in Army Aviation are changing very rapidly. Valuable, experienced minds are retiring or joining that great AAAA Convention in the sky. At the same time, new fledgling Aviation units are sprouting their wings. CONUS Army Aviation is facing new challenges in development and employment; USAREUR Army Aviation is recovering from the neglect imposed by Vietnam and building into a dynamic force; and our friends, such as the Iranians, are forging ahead in the development of Army Aviation elements.

AN ELEMENT OF NEWNESS

Within all these aviation activities, there is an element of newness and, inevitably, some lack of experience. There is a resulting waste in time, money, and effort when few of us can afford the luxury.

What we need very badly is a regular opportunity for those responsible for directing the efforts in Army Aviation to talk with one another - to talk, talk, and talk until they communicate. We almost had this at one time in the various AAAA conventions.

I still believe the AAAA Conventions can serve the purpose if carefully programmed. Clearly, the players are all

[Continued on Page 47]

Aviation Division, NGB, Reorganization

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Mrs. Linda Byram, 2020

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CPT Ken Boley
558-2520

ARNG AVIATION OPERATIONS OFFICE
COL Ralph B. Mathews*
Ms. Debbie Horne 2215

ARNG SAFETY OFFICE
LTC Roy S. Runkin*
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ARNG AVIATION LOGISTICS OFFICE
LTC Alvin A. Marshall‡
Mrs. Linda Gross 2028

TRAINING AND STANDARDS BRANCH
LTC[P[Pasquale Taddeo* 2244
MAJ Walter Mueller, Operations
MAJ Roy Hoffman, Unit Training & Readiness
2LT David Lusker, Indiv & Crew Training; Standardization

AVIATION SAFETY BRANCH
MAJ Timothy Flynn* 4455
MAJ Sixto Perez

SURFACE SAFETY BRANCH
LTC David McCormack, 4456
CW2 Garland Hughes

AVN MAINTENANCE BRANCH
MAJ[P] Raymond D. Engstrand* 2027
MAJ[P] Rodney L. Lindsay, Maint Analyst
Vacancy—Maint Analyst
MAJ Donald Bowes, Quality Assurance
Vacancy—Avionics
MSG Roy S. Harper, Stat. Librarian
Mrs. Linda Portaszkiewicz

FLIGHT CERTIFICATION BRANCH
CW2 William Mosier* 2207
Ms. Marilyn Montville
Mrs. Shirley Jones
Mrs. Mary Jo Smith

AVIATION MATERIEL BRANCH
LTC Alvin A. Marshall* 2029
Logistics Officer
CW4 Jack Sink
CW4 Frank Thompson
CW3 Jerry Nowicki
MSG Richard Taylor, Statistician
Miss Jeanne Simms

TELEPHONES:
AUTOVON:
584 + EXTENSION
COMMERCIAL
681 + EXTENSION

*Chief
‡Acting Chief

THE "TOP" ARNG UNITS

The Army Aviation Assn's 'Outstanding Reserve Component Aviation Unit Award' has been won by ARNG aviation units since the inception of the award in 1970. Seven "top" units have received the large AAAA Trophy from the Army's Chief of Staff at AAAA's National Convention.

By COL JOHN J. STANKO, JR.,
Chief, Army Aviation Division,
National Guard Bureau

On Guard!

The Aviation Division, NGB, Reorganization

THE Army Aviation Division of the National Guard Bureau has been reorganized internally. Although no increase or decrease in strength occurred, the functional realignment — with identifiable objectives and responsibilities — will have a positive impact on ARNG aviation for years to come.

As shown in the Organization Chart (**Fig. 1**), the **Army Aviation Division** retains the **Aviation Logistics Office** (NGB-AVN-L), with a Maintenance and Materiel Branch. The mission of the **ARNG-ALO** is to "perform logistic management functions for aviation assets in the ARNG, maintain liaison with commodity commands, supervise the aviation general support maintenance program in the ARNG, and maintain operational control over the four TARS shops."

OPERATIONS OFFICE ACTIVATED

To team with the **ARNG-ALO**, an Army National Guard **Aviation Operations Office** (NGB-AVN-O) was organized with a Standards and Training Branch and a Flight Certification Branch.

The primary mission of the **ARNG-AOO** is to perform program management functions designed to enhance combat readiness for all aviation elements of the Army National Guard. The program includes all aspects of Aviation Operations, Training, Standardization, and Administration, and the **ARNG-AOO** provides liaison between DA and other major Army Commands and the States.

The **Occupational Safety and Health Act [OSHA]** has mandated an accelerated interest in safety, and NGB is responding. Because of the outstanding accomplishments in ARNG Aviation Safety, the consolidated **ARNG Safety Office** (NGB-AVN-S) was placed in the Aviation Division.

Although the Safety Office is supervised by the ARNG Director of Safety, the full responsibility for the total safety program resides with the Chief of the Aviation Division.

ASO COVERS GROUND & AVIATION

The **Safety Office** is comprised of an Aviation Safety Branch and a Surface Safety Branch with a mission "to develop and direct a program of safety management for all ground and aviation elements of the Army National Guard (ARNG). This program will include safety policy, program control and guidance, and program evaluation at all levels for the purpose of reducing and keeping to a minimum **accidental manpower and monetary losses**, thereby enhancing the combat readiness of the ARNG through resource conservation."

Each of the three "Offices" that make up the **Army Aviation Division** are intensive management centers in the prime functions of aviation — training, logistics, and safety.

Colonel John J. Stanko, Jr., a longtime Army National Guardsman from Pennsylvania, was assigned as **Chief, Army Aviation Division, NGB** on 1 July 1976.

FIRST TWO DHC "TWIN OTTERS" NOW IN USE BY ALASKA-ARNG

THE first two de Havilland **Twin Otters** have been bought by the U.S. Army and designated the **UV-18A.**

It is appropriate that these very unique aircraft be assigned to two of the Army's most unique units, the Army National Guard's **First** and **Second [Eskimo] Scout Battalions,** with headquarters in Nome and Bethel, Alaska.

The Scout Battalions were derived from Alaska home guard units that were raised to resist the Japanese invasion during WWII. The Battalions are comprised of Scout teams, drawn from the many villages throughout Northern and Western Alaska, and perform reconnaissance missions along the frontier of the United States that is closest to Russia.

AN 800-MILE SWEEP

Diagonals across the Battalion areas can stretch to 800 miles, and communications requirements dictate a dependable, versatile aircraft.

The **Twin Otter** is such an aircraft and it will provide command, administrative, logistical, and personnel flights from battalion headquarters to remote village sites throughout northern and western Alaska on a year-round basis.

The **Twin Otter** is readily convertible from wheels to wheel-skis, floats, or high flotation tires — all of which will accompany these two aircraft for the U.S. Army. While these **UV-18A Twin Otters** will carry 19 troops, two men can change them in 15 minutes to cargo planes capable of carrying a payload of more than two tons.

Gude, Ott

NEW USES BEING FOUND

With over a decade of proven performance behind it, the **Twin Otter** continues to find new applications with the same high level of dependability for which it and de Havilland have become world renowned. More than 500 **Twin Otters** are now serving 57 countries from the North Pole to the South Pole, with 135 civil operators as well as 18 other defense, police, and government organizations.

In the accompanying photo, Major General Charles A. Ott, Director, Army National Guard, accepts a commemorative photograph of the two **Twin Otters** with Alaska Army National Guard markings from Colonel Joseph L. Gude, Ret., the Washington representative of de Havilland Aircraft.

TOP INDIVIDUALS, UNITS NOW SOUGHT FOR AAAA AWARDS

Nominees for the **"Outstanding Reserve Component Aviation Unit Award"**, the **"Reserve Component Aviator of the Year"**, and the **"Reserve Component Aviation Soldier of the Year"** are being sought by the **Fifth Region—AAAA** (covering the Fifth Army Area), the **First Region—AAAA** (covering the First Army Area), and **AAAA National Hqs** (covering the Sixth Army Area and Alaska, Hawaii, and P.R.).

The individual nominees need not be members of AAAA. Nomination forms may be obtained by writing: AAAA, 1 Crestwood Road, Westport CT 06880.

COL KEITH J. RYNOTT,
Commander, U.S. Army Agency
for Aviation Safety, Ft. Rucker

Safety

ASO Course now being given at Ft. Rucker

A new aviation safety officer (ASO) course has been developed and is being presented at the U.S. Army Agency for Aviation Safety (USAAAVS) at Fort Rucker, AL. For about 20 years, Army ASOs received their initial safety training at the University of Southern California. The move to Fort Rucker will result in considerable dollar savings to the Army as well as provide the most relevant and up-to-date aviation safety instruction available.

The course is taught at USAAAVS on a scheduled basis. Each class consists of 30 students and lasts about 10 weeks. Included in the course is instruction in mishap investigation and reporting, aerodynamics, structures, physiology, safety programs management, psychology, law, and other safety-related subjects. The course also addresses operations, maintenance, and facilities and all other areas related to aviation safety.

The objective of the **Aviation Safety Officer Course** is to give prospective ASOs a working knowledge of aircraft accident prevention techniques and the motivation and abilities required to conduct an effective accident prevention program and aircraft accident investigation. When the ASO completes this course, he will be able to organize and administer an accident prevention program at the unit level.

The course is intended primarily for rated Army Aviators but civilian personnel may attend.

ELIGIBILITY REQUIREMENTS

- A rated Army Aviator assigned or to be assigned the duties of an Army aviation safety officer, Additional Skill Identifier (ASI), Suffix "IS," or warrant officer flight safety technician, ASI, Suffix "B"; currently serving in an aviation assignment.
- A civil service Army flight instructor; or
- A contract civilian Army Flight instructor; or
- A safety director, or assistant, of a major command or an installation, having Army aircraft.

PREREQUISITES

- High school level mathematics and physics or equivalent is required. A review of these subjects just prior to attendance would be wise.
- Maintenance and/or instructor pilot background is desirable but not mandatory.

SERVICE OBLIGATION

An obligated tour of one year active duty service for officers and warrant officers computed from the date of course completion or termination of attendance for academic reasons, whichever is earlier. Civil service personnel should agree to a minimum of two years in a utiliza-

[Continued on Page 36]

Life Membership

AAAA Enrollment Plan to End Sept. 30

AT its February 12 meeting in Washington, D.C., AAAA's **National Executive Board** approved a **Life Membership Program**, with an effective starting date of April 1, 1977.

A member-applicant would make a one-time **$150 donation** to the **"AAAA Scholarship Foundation, Inc."** and forward his donation directly to the **Foundation** at 1 Crestwood Road, Westport, CT 06880.

The AAAA — on notification from the **Foundation** of the member's donation — would provide a **Life Membership** to the applicant with appropriate credentials signifying **"Life Membership"** to follow in a later correspondence.

The **AAAA Scholarship Foundation** would retain the $150 sum in the donor's name, and on his or her death would — together with all other funds received in memory of the donor — provide a **Memorial Scholarship** in the **donor's name** in the academic year following his or her death.

The **$150 donation** to the **AAAA Scholarship Foundation, Inc.** would be considered deductible for tax purposes.

The 1977 **"Life Membership Program"** enrollment will cover a six month period, and terminate on September 30, 1977. A consolidated roster of **Life Members** enrolling in AAAA during 1977 will appaer in the October, 1977 **Convention Issue** of **"Army Aviation."**

A member may request that his current year dues — if already paid — be credited towards his **"Life Membership."**

AAAA Life Membership Form
Complete and return to:
AAAA Scholarship Foundation, Inc.
Crestwood Rd.
Westport CT 06880

APPLICATION FORM FOR LIFE MEMBERSHIP

I would like to enroll as a **Life Member** of the **AAAA**, and have enclosed a check made payable to the **AAAA Scholarship Foundation, Inc.** in the amount of $150.00. I understand that my donation is tax deductible, that the donation - along with other funds donated in my name — will underwrite an AAAA Memorial Scholarship in my name on my death, and that I hereby authorize the use of the funds for this purpose. When available, please forward my **Life Membership** credentials to me at the address appearing on the enclosure.

Name .....

Address .....

City ..... State ..... ZIP .....

Ready In Reserve

By LTC RICHARD R. NOACK,
Aviation Officer, Office of the
Chief of Army Reserve, DA

MAST unit activation is USAR milestone

A milestone in the USAR Aviation program took place on 22 December when the Deputy Secretary of Defense authorized the first U.S. Army Reserve unit to participate in the **Military Assistance to Safety and Traffic** [**MAST**] program.

The 273d Air Medical Detachment, Houston, TX, commanded by **MAJ Marvin E. Bonner**, was selected from nine USAR Air Med Detachments to pioneer this program based on achieved training goals and objectives. Observations and comments of **BG Charles E. Canedy**, Army Aviation Officer, following a staff visit to the 273d in May 1976, provided the impetus and support, together with that of **MG Henry Mohr**, Chief of Army Reserve, to get the program off the ground.

THE 25TH MAST SITE

In doing so, Houston, TX becomes the twenty-fifth **MAST** site in the United States and unlike the twenty-four Active Component **MAST** sites, the 273d, being a Reserve unit, will provide supplemental support to the existing **Emergency Medical Service** system only on a weekend basis.

Bonus mission coverage may be provided during the conduct of additional flight training periods and participation in the **MAST** program, in itself, permits a voluntary unit response to mass casualty situations which may occur.

Dr. Albert G. Randall, Director, City of Houston Health Department, and MAST Civilian Coordinator, is greatly enthused with this new program and stated: "The 273d Air Med Detachment will be a vital adjunct to the **Emergency Medical Services** Systems operating in our 13-county planning area, an area of about 2,500,000 population."

Recently, Hermann Hospital of Houston, TX initiated a civilian, private air ambulance service to provide emergency helicopter transport. Due to the size of the Houston-Galveston Planning Region and the potential for mass disaster situations, Hermann Hospital has endorsed the utilization of **MAST** services to augment local efforts.

ARMY-CIVILIAN COOPERATION

This spirit of cooperation between civilian enterprise and the 273d is also a first and should produce an outstanding MAST program with full community support in the Houston area. **MAJ Marvin Bonner**, Commander of the 273d, is naturally proud that his unit was selected as "first" to participate in the **MAST** program and stated: "This program will greatly enhance unit training, morale, recruiting, and retention, while at the same time promote a stronger community relationship and improve the image of the Reserve."

OCAR strongly supports that statement and is developing plans to expand the **MAST** program to other cities where USAR Air Med Detachments are located. **MAJ Bonner** is overly modest, however, when it comes to the training. How many air med detachments can boast 105% strength, 100% MOS qualification, all

aviators NOE-qualified, and all medical aidmen holders of **State Emergency Medical Technician Certificates** to name a few — not bad!

OCAR would like to express its appreciation to those whose efforts have made entry into the MAST program possible: **LTC Fred Mills**, DOD MAST Executive Agent; **BG J. Royston Brown**, Commander, 807th Hospital Brigade, Mesquite, TX; Supporting Flight Facility of the 90th Army Reserve Command, commanded by **MG Warren E. Myers**; HQ, Fifth U.S. Army and Readiness Region VII.

SAFETY/Continued from Page 33

tion assignment in the GS 1815/1825 job series involving Army Aviation safety after course completion.

QUOTA ALLOCATION

An Army quota allocation of 30 students per class is maintained by the Deputy for Professional Development. Quotas for courses will be suballocated to appropriate career branches and Aviation Warrant Officer Branch based on worldwide aviation safety officer requirements.

After being officially selected for attendance, students should phone AUTOVON 558-4510/3493, commercial 205-255-4510/3493, for a student information packet.

ALL THE WAY, AAAA!

With the January '77 enrollment of 19 new members, we'd like all members to know that the 32ND SIGNAL BATTALION [C] AVIATION SECTION in USAREUR supports AAAA 100%!. . Not 40%, but 100%!. CPT Marvin G. Metcalf, AO

ARMY AVIATOR WINS HAA AWARD

LTC W.F. Gabella, an aviator assigned to Ft. Richardson, AL, was named the recipient of the 1976 HAA Journalism Award by that organization. **Gabella won** the award as a result of a series of articles on helicopter operations in a mountainous environment which ran in **Flight Operations** magazine in early '76.

WITH IT! — Medical Aidmen of the 273d Air Med Det [TX-USAR] receive their State 'Emergency Medical Technician' Certificates from Mike Henson, right, EM Consultant, Texas Dept of Health Resources. Shown l-r are SSG Dean Evans; SP5s Geral Doucet & Larry Jackson; SP4 Sandra Montgomery; and SP5s Kent Bradbury and Bob Reineke. Not pictured: SP5 Don Krause and SP4 Randy Long. [OCAR]

Permanent Changes of Address as submitted by 'AA' subscribers

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SPACE CENTER? — No, it's the console at Ft. Bragg's UH-IFS Flight Simulator. Charles E. Leeds, supervisor (standing), discusses programming techniques with Ray McCabe, a console operator, as Glenn Allen monitors a busy flight. The simulator opened at Simmons AAF in December to help aviators meet their annual simulated flight requirements. [Ph: Paul Morgan]

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OPERATIONS/Continued from P. 14]

diate Staging Base (ISB" and began the final phase reassembly. Using only 81 personnel and limited equipment, company maintenance personnel worked around the clock reassembling the eight **Chinooks.**

Previous reassembly exercises required an average 240 man-hours per aircraft for reassembly, but **C Co** personnel set a new standard, averaging only 137.3 man-hours per aircraft. The man-hour range was 105 to 174 man-hours per aircraft.

Significantly, two of the aircraft were reassembled during the hours of darkness (top right photo). Night reassembly required an average of 27 man-hours per aircraft more than daylight reassemblies. Reasons? Inadequate lighting and subsequent damage to hydraulic and lubrication lines which had to be fabricated from materials and tools taken to the ISB.

After reassembly, the CH-47's were flown by test pilots and made ready for first support missions. All eight CH-47's were **completely reassembled** in 51 hours after "touchdown" of the C-5A in the simulated zone.

In summary, **C Company** accomplished a remarkable task . . The total time to disassemble, load, transport, unload, reassemble, and test fly eight CH-47's was 84 hours. All eight were flown during the next week during a field exercise and experienced only normal maintenance requirements.

The men and aircraft of **C Company** proved they are ready to serve with their impressive "Press on!" capability, and will be ready for their next 'rendezvous with destiny' within a 24-hour notification.

Leadership

MG SMITH

MR. TALLIA

The nine new **National Members-at-Large** recently appointed to AAAA's **National Executive Board** by **LTG Robert R. Williams,** Nat'l President, are shown here. All will serve for the 'Convention to Convention Year" ending 16 October 1977.

Representing various membership constituencies in AAAA are **MG James C. Smith,** USAAVNC Commander; **BG Charles E. Canedy,** Army Aviation Officer—DA; **BG Charles W. Bagnal,** ADC, 101st Abn Div (AASLT); **COL John J. Stanko,** Army Avn Div, NGB; **LTC Richard R. Noack,** AO, OCAR; and **CW4 Lloyd N. Washer,** OS Asgmt Off, WOD, MILPERCEN.

Also **CSM Walter W. Krueger,** CSM, 1st Cav Div; **Mrs. Thyra V. Bonds,** Chief, Prog Mgt Div, Ofc of the Proj Mgr for Acft Surv Equip, AVSCOM; and **Eugene J. Tallia,** Manager, UTTAS Marketing, Sikorsky Aircraft Division.

BG BAGNAL

MRS. BONDS

BG CANEDY

COL STANKO

LTC NOACK

CW4 WASHER

CSM KRUEGER

BG PARTAIN

USAREUR REGION ELECTS 1977-1979 OFFICER SLATE

The15-Chapter, 1,108-member **USAREUR Region—AAAA** has elected a 24-member Executive Board to govern its affairs in the next two years. New officers are **BG[P] Edward A. Partain** (Pres), left; **LTC James B. Thompson** (SrVP); **MAJ Matthew M. Serletic** (Sec); **CPT Dennis W. Trigg** (Trea); **CW4 Donald P. Baily** (VP, Memb); **CSM Gilbert Didriksen** (VP, Mil Aff); **COL Robert Sherman, Ret.** (VP, Allied Aff); **LTC Bobby O. Harber** (VP, Indus Aff); and **CW3 Michael S. Lopez** (VP, Publicity).

Calendar

Regional-Chapter Meetings, Feb.-Apr., 1977

FEB. 4. Ft. Riley Chapter. Professional Luncheon. **LTC Roy A. Crews,** OH-58 Weapons System PM, AVSCOM, guest speaker. O-Club. Memb/guests.

FEB. 5. Ft. Bragg Chapter. "1977 Army Aviator Ball." FBOOM. Memb/guests.

FEB. 8. Lone Star [Austin TX] Chapter. After dinner 'Election &Gen'l Membership Meeting.' AASF. **Members only.**

FEB. 12. Birmingam Area Chapter. Saturday Luncheon Meeting. Pioneer Restaurant. **Members only.**

FEB. 12. AAAA Nat'l Exec. Board. Business meeting. Stouffer's Nat'l Center Hotel, Arlington, Va.

FEB. 12. First Region—AAAA Executive Board. Business meeting. Stouffer's Nat'l Center Hotel, Arlington, Va.

FEB. 15. Ft. Benning Chapter. Late afternoon professional-business meeting. **Ralph P. Alex,** Chief, R&D Marketing, Sikorsky Aircraft Div., guest speaker. Chapter elections for '77-'79 terms. Country Club Ballroom. Memb/guests.

FEB. 16. Persia Chapter. Dinner-Dance. **LTG Robert R. Williams,** Nat'l President, guest speaker. Lavizan O-Club. Members/guests.

FEB. 17, Rhine Valley Chapter. Professional luncheon meeting. **COL Clement A. Wyllie,** Dir, Eval & Standzn, USAAVNC, guest speaker. Casino at Coleman Barracks. Members/guests.

FEB. 18. Cajun [Fort Polk] Chapter. Professional luncheon meeting. **Phil C. Norwine,** V.P., Gov't Marketing, Bell Helicopter Textron, guest speaker. FPOOM. Members/guests.

FEB. 19. Chesapeake Bay Chapter. Professional dinner meeting. **William C. Murray,** Asst Prof of Air Transportation, Catonsville Community College, guest speaker. Downtown Baltimore Holiday Inn. Medmbers/guests.

FEB. 23. Connecticut Chapter. Professional dinner meeting. **BG Joseph H. Kastner,** Dept Comdt, USA War College, guest speaker. Donat's. Memb/guests.

FEB. 24. Tennessee Valley [Huntsville Area] Chapter. Professional luncheon meeting. **Ralph P. Alex,** Sikorsky Aircraft Div., guest speaker. Redstone Officers Club. Members/guests.

MAR. 3. Coastal Empire [HunterAAF] Chapter. Professional dinner meeting. **MG Alton G. Post,** CG, USATCFE, guest speaker. O-Club. Members/guests.

MAR. 3. Bonn Area Chapter. Professional dinner meeting. **COL Crawford Buchanan,** AO, USAREUR, guest speaker. Amer. Embassy Club. Memb/guests.

MAR. 23-27. USAREUR Region-AAAA. 1977 Membership Convention with **GEN George S. Blanchard,** CINCUSAREUR, as keynote speaker. AFRC, Garmisch,-any. **Members and families.**

APR. 28-29. 1977 Product Support Symposium (Lindbergh Chapter, sponsor). Red Carpet Inn, Bridgeton, Mo.

APR. 29-30. Fifth Region—AAAA Convention. Red Carpet Inn, Bridgeton, Mo.

AUG. 25-29. First Region—AAAA Convention with the **Air Assault Chapter** as the Host Chapter. Sheraton Nashville Hotel, Nashville, TN.

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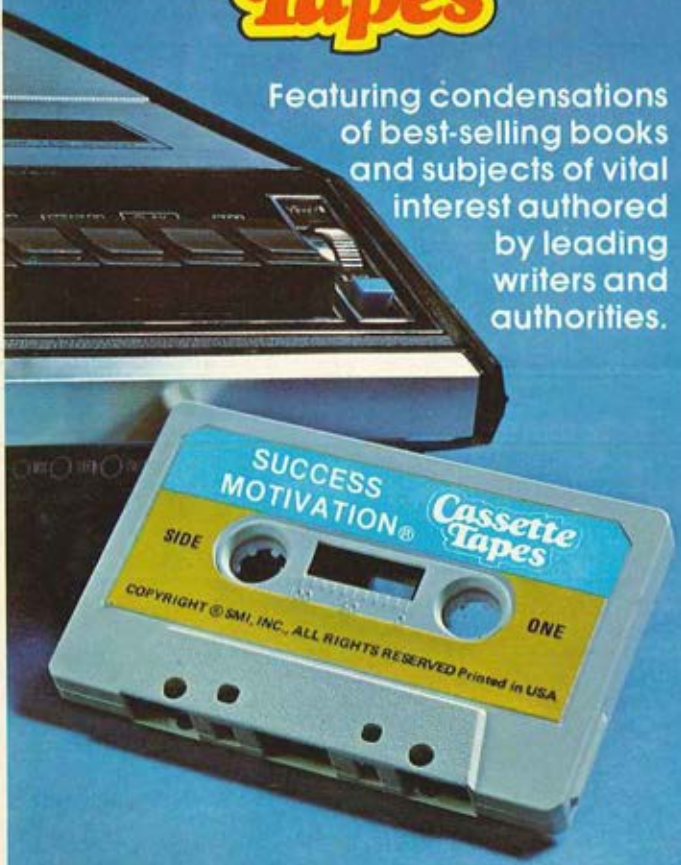

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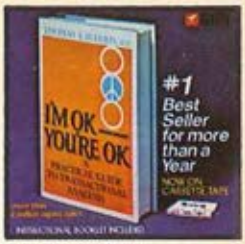

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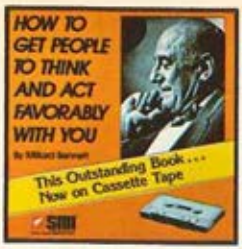

HOW TO GET PEOPLE TO THINK AND ACT FAVORABLY WITH YOU
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THE ART OF PUBLIC SPEAKING
by Millard Bennett

The purpose of this cassette is to help you solve the biggest problem you now face or ever will face – to get your ideas accepted by others. It gives you proven methods to move others to think and act favorably with you; to influence human behavior; to sell yourself, your skills, or your products or services; to increase your income; to become a competent leader; to attain security; and to enjoy the peace of mind essential to a full and happy life.

HOW TO USE TACT AND SKILL IN HANDLING PEOPLE
by Dr. Paul Parker

Getting along with other people consumes a large portion of your energy. Listen to this cassette tape and learn how you can direct that energy toward success. A better understanding of the basic qualities of human nature and how to make them work for you helps you succeed with others by caring about them — not by trying to manipulate them.

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by Dr. Robert Parrish

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by Dr. Jess Lair

What resources do you have to build the kind of life you really want? If you've ever felt that you've just hit bottom, you will find help when you discover what Jess Lair discovered: I Ain't Much Baby, but I'm All I've Got. What you **do** have is what everyone has—your own unique self. When you decide to accept yourself and love yourself and others, you are ready to begin making a comeback—or a beginning—to real living.

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Awards and Honors, Medals, Degrees, Obituaries, Ratings, and Command & Staff Changes

People

COMMAND AND STAFF CHANGES

MG Jerry B. Lauer, ODCSRDA (DAMA-WSZ), DA, Washington, DC 20310.

BG John P. Casey, Jr., OJCS, Attn: J-3/NMCC, Ops TM2, Wash DC 20301.

BG Charles W. Dyke, ADC(B), 3d Inf Division, APO NY 09033.

BG[P] Edward A. Partain, ADC(A), 1st Armored Div, APO NY 09696.

COL John L. Ballantyne, III, Box #1, Frankfurt Mil Comd, APO NY 09710.

COL Gilbert Beltran, ARR V, Fifth US Army, Ft. Sheridan IL 60037.

COL James H. Chappell, Company B, USAG, Fort Ord, CA 93941.

COL Larry E. Honsinger, Hq, 559th USA Arty Group, APO NY 09221.

COL Norbert B. Johnson, Hq, 5th Sig Comd, Attn: DCSOPS, APO NY 09056.

COL Ralph A. Matthews, ARNG-OAC, Bldg E4430, Aberdeen PG, MD 21010.

COL Howard H. Oakley, USAE-LSE, Box 6032, APO NY 09224.

COL John P. Stewart, Hq, V Corps Artillery, APO NY 09079.

COL Jerome J. Sullivan, HHC, 43d Cmbt Spt Group, Ft. Carson CO 80913.

COL John Woodmansee, Hq, TRADOC (ATCD-PG), Ft. Monroe VA 23651.

COL Clement A. Wyllie, Jr., Dir of Eval & Standzn, USAAVNC, Fort Rucker AL 36362.

AAAA AWARDS AND HONORS

100% AAAA UNIT MEMBERSHIP

32nd Sig Bn [C], APO NY. Cpt Marvin G. Metcalf, Aviation Officer.

CHAPTER HONORARY MEMBERSHIPS

BG Donald E. Rosenblum, CG, 24th Inf Div & Ft. Stewart, by members of the Coast Empire Chapter.

COL Jack R. Cantrell, Dep Post Cdr, Ft. Stewart, GA, by members of Coastal Empire Chapter.

COL Lawrence E. Zimmerman, CofS, 24th Inf Div & Ft. Stewart, by members of the Coastal Empire Chapter.

DISTINGUISHED GRADUATES

U.S. Army Aviation Center

(AAAA presents engraved silver sings)

CPT Eddie J. Reddick, Army Aviation Medicine Basic Course, Nov. 5.

1LT Blaine W. Hyten, ORWAC, Nov 23.

WO1 Philip E. Davis, WORWAC, Nov 23.

1LT William T. Lee, ORWAC, Dec 7.

WO1 Paul R. Boland, WORWAC, Dec 7.

CW3 Robert D. Klarner, Warrant Officer Senior Course 7T-1, Dec 15.

CW2 Reginald C. Murrell, Avn Warrant Officer Advanced Couse 7T-1, Dec 15.

1LT Gary D. Alverson, ORWAC, Dec 16.

WO1 David M. Parziale, WO Rotary Wing Aviator Class, Dec 16.

Pilot Aspirant Volker Nottenkaemper, Europe/NATO RWAC, Dec 16.

1LT Daniel T. Frank, ORWAC, Jan 18.

WO1 Rex L. Prickett, WORWAC, Jan 18.

U.S. Army Transportation Center

(AAAA Certificates of Achievement)

1LT Ronald L. Miller, Acft Maint Off & Repair Technician Course, TO36 AH-1G, Jan 21.

OBITUARIES

Chief Warrant Officer [W4] Robert H. Holt, 52, died July 21, 1976. A Master Army Aviator and Charter Member of AAAA, he'd undergone open heart sur-

gery at Brooke AMC in January, 1976. Entering the service in May, 1941, he served in WWII and Korea, and had two tours in USARV. He is survived by his widow, who resides at 9708 Bermuda Avenue, El Paso, Tex. 79925.

RATINGS

Master Army Aviator Badge

COL Joseph C. Burns, Aberdeen Proving Ground, MD.

LTC William W. Fraker, Hq, TRADOC, Ft. Monroe, Va.

A HOLE-IN-ONE FOR TOM HALL!

Colonel Thomas E. Hall, Ret., a Master Army Aviator and a Charter Life Member of AAAA, finally did it! . . Braving chilly and damp weather on December 15, he wound up with his FIRST hole-in-one after 30 years of golf.

Hall connected on the Golden Horseshoe's Spotswood Course near Williamsburg, sinking a five wood on the par-3, 155-yard 14th hole. He was playing with Alan Stewart at the time, and wound up with a four-under 35-31—67 for the day.

Why don't they?

[Continued from Page 29]

time-limited. The object has to be to get the most out of their time in terms of useful discussions which will result in exchanges of views and ideas.

WHY DOESN'T the Convention Committee identify the players who have or need information and get them in the ring long enough to discover each other's thoughts? This may result in helping all concerned in avoiding pitfalls, orienting programs on sound tracks, and it just may create some renewed interest in AAAA. □

[Ed. Note: COL Wells serves with the ARMISH MAAG [Iran].

NEW — Three members of the ATC Opns Div, USACC at Ft. Rucker, Ala., test the use of night vision goggles at High Bluff Stagefield. They are, l-r, SFC Jesse Justice, facility chief; PFC Elaine St. Amand, controller; and SSG Gabriel Imperial, shift supervisor. [USA photo]

"PEOPLE" is devoted to the personal accomplishments of AAAA members, and cites the award presentations made to AAAA Awardees at National, Regional and Chapter activities. □

AT at a time when some people are indicating we should ignore our experienced people, it was good to note that **BG Canedy** recognizes the importance of experience. **Why don't others?**

Those of us who were new aviators during the **11th Air Assault [Test]** days can testify to the value of having experienced, **qualified** people around, especially when someone is trying to prove a point.

Since most of us agree on the value of experience, **WHY DON'T THEY** identify some positions in the office of the **DA Aviation Officer** for senior warrants?

There must be some outstanding, medically-grounded senior AWOs who could make a valuable contribution to the overall Aviation Program by serving in that office, and this is not to say the positions should be limited to grounded AWOs.

CW4 CARL L. HESS
Fort Belvoir, Va.

ARMY AVIATION MAGAZINE
1 Crestwood Road
Westport, Conn. 06880

Meet me in St. Louis!

The **Army Aviation Association's 4th Annual Product Support Symposium** will be held at the Red Carpet Inn, Bridgeton (St. Louis) MO. Sponsored by the AAAA's **Lindbergh Chapter**, the **Symposium** will again feature key industry and government speakers who will present timely subjects relative to product support. Open and candid exchanges of viewpoints will follow in panel discussions.

Remember the dates! 28-30 April 1977.

The **Fifth Region—AAAA 1977 Convention** will be held at the Red Carpet Inn in Bridgeton, Mo. during 29-30 April. The host Chapter for this year's convention is AAAA's **Lindbergh Chapter.**

Additional information on either function may be obtained by writing **AAAA**, 1 Crestwood Road, Westport CT 06880; the **Lindbergh Chapter—AAAA**, Suite 408, 1139 Olive Street, St. Louis MO 63101;or by contacting **Loran Schnaidt** at (314) 436-6880.

Meet me in St. Louis!