

Army Aviation

MAY, 1973

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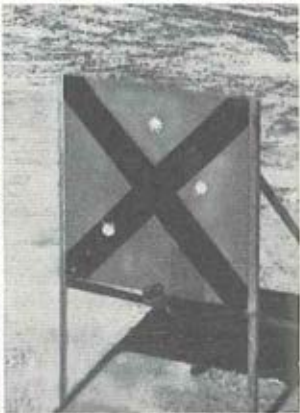
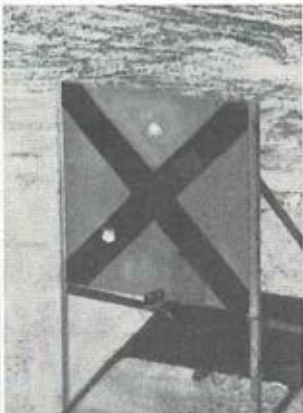
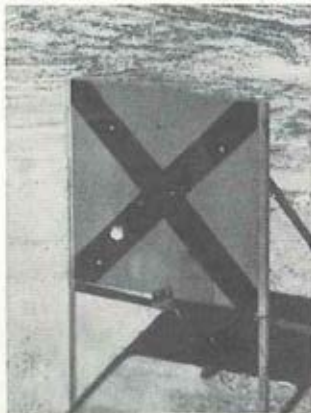
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ARMY AVIATION

VOL. 22 — MAY 1, 1973 — NUMBER 5 DEPARTMENTS:

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Shoot, Move, and Communicate!

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Director of Army Aviation, OACSFOR, DA 8

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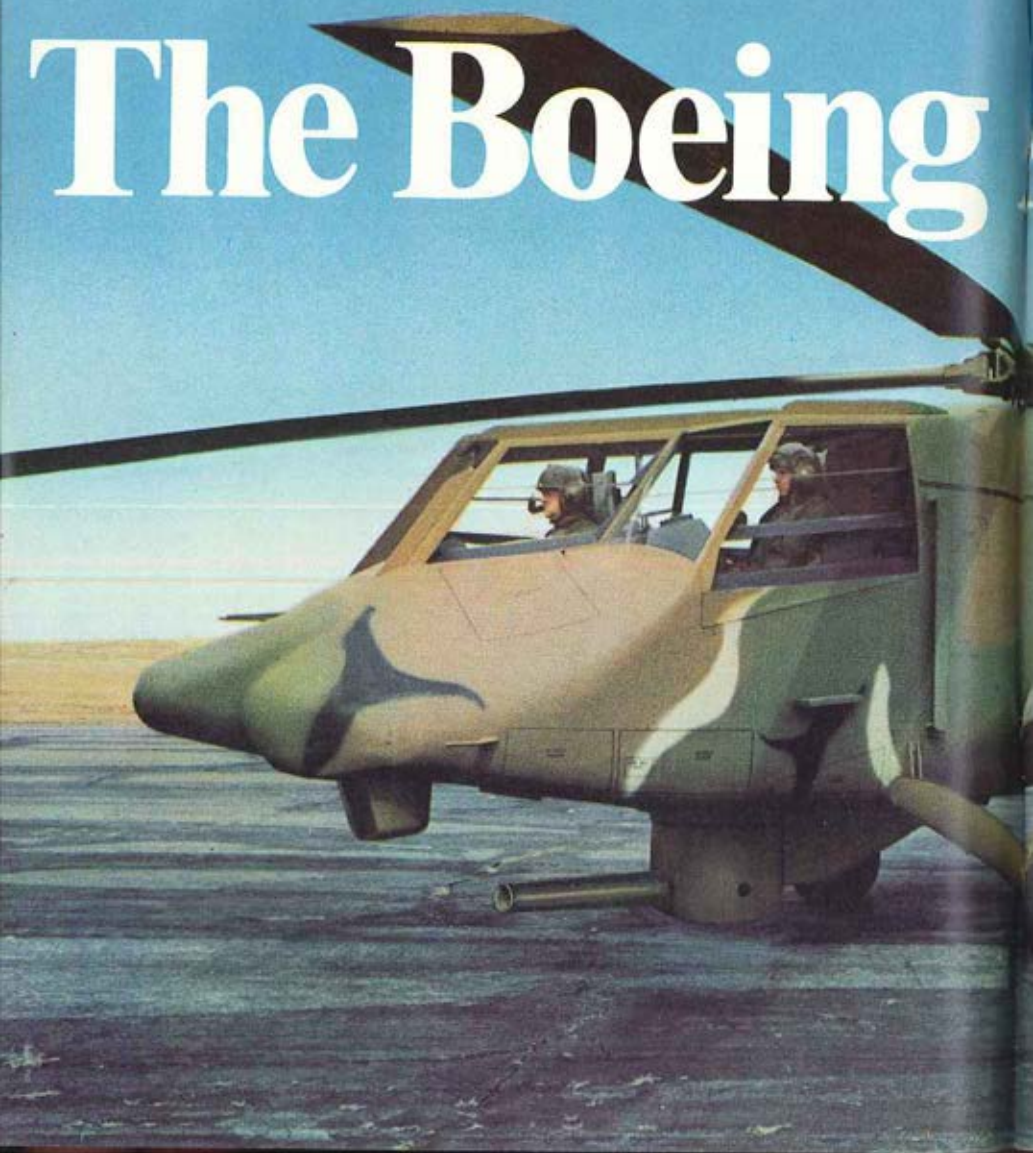
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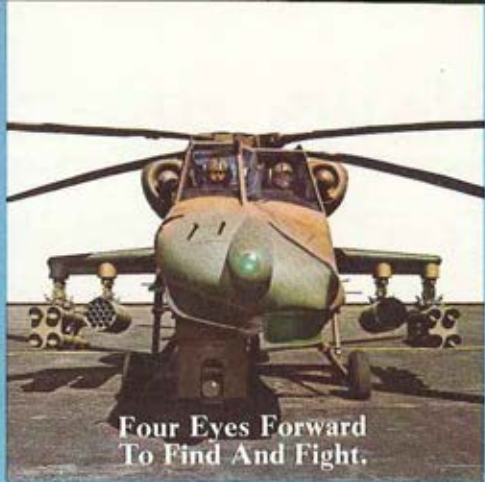
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AAH



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To Find And Fight.



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"News Briefs"

FIRST established on 1 October 1961, the Mohawk Project Manager's office — a part of Hq, AVSCOM, St. Louis, Mo. — was deprojectized on 31 March 1973. A farewell to the Mohawk Project was held in St. Louis with appropriate ceremonies marking the occasion.

On hand were various representatives from industry who were associated with the systems incorporated on the Grumman-built aircraft, and several of the former active U.S. Army Mohawk PMs.

Included in the group were Colonel Edward L. Nielsen, USA (Ret.) and Lieutenant Colonel "Bud" Morris, Ret., the Project Manager and Deputy Project Manager during 20 October 1963 and 1 December 1968; Colonel Jack Koletty, USA (Ret.), the first Project Manager from 1 October 1961 through 1 August 1963; and the last Mohawk Project Manager, Colonel John A. Love, who served in the assignment from 1 Dec 66-31 Mar 73.

The Mohawk remains in the active Army inventory performing its surveillance mission, the older models being converted to the newer OV-1D configuration. With this milestone underway, the last major effort with the Mohawk has been completed, and management will now fall under the Commodity Commands of the U.S. Army Material Command.

As part of the Army's Schools Realignment Plan, aviation pilot activities will be realigned and consolidated at Ft. Rucker, AL, Fort Wolters, TX, and Hunter Army Airfield, GA will be closed and placed



GATHERING — Shown at deprojectization of the Mohawk Project Manager's Office are, l-r, COL E. L. Nielsen, Ret. (PM, 20 Oct 63-1 Dec 68); LTC "Bud" Morris, Ret. (DepPM, 20 Oct 63-1 Dec 68); COL "Jack" Koletty, Ret. (PM, 1 Oct 61-1 Aug 63); and COL John A. Love (PM, 1 Dec 68-31 Mar 73). The farewell ceremonies were held in St. Louis.

in a caretaker status, according to an April 17 announcement by Secretary of Defense Elliott L. Richardson.

In the same announcement, Richardson cited that Army Aviation training requirements would be reduced from 6,887 pilots in 1969 to 1,502 by June, 1974.

An Army TH-13T helicopter has been received by the Army Aviation Museum, enabling that activity to complete its collection of the Bell 13 series from models A through T. Used as an instrument trainer since 1963, the "T" has been phased out of service at USAAVNS.

As at 23 April, DOD had presented a proposal to Congress requesting a delay in the removal from flight pay for certain colonels and general officers. The purpose of the delay until 31 December 1973 is to provide DOD time to prepare new legislation on flight pay. Unless Congress acts on the current DOD proposal and grants the delay, flight pay for most colonels and general officers is expected to terminate on 31 May 1973.

USAAVNC is seeking certain historical data. It requests anyone who knows the names of any of the former commanders of Special Troops, USAAVNC, from 1954 to 1964 to contact CPT Richard Hamilton, Hqs Command, USAAVNC, Ft. Rucker AL 36360.



BG Samuel G. Cockerham (center), AAH Project Manager at AVSCOM, received his Master Army Aviator wings at special ceremonies conducted during the recent Advanced Planning Briefing for Industry held in St. Louis, Mo. Congratulating BG Cockerham are MG William J. Maddox, Jr., (left), Director of Army Aviation, OACSFOR, and MG Frank A. Hinrichs, AVSCOM's Commander.



Pilots feel lost without it.

You're keeping low, real low — flying the contours. Up ahead everything looks the same. No landmarks. And worse, it's getting dark.

But you're not worried because in one glance at your Projected Map Display you know exactly where you are, how far your target is, and the steering data to get you there.

Pilots who've flown with our AN/ASN 99 Projected Map Systems in the U. S. Navy operational squadron service consider it the most reliably effective navigation display system ever devised for tactical aircraft. In fact they tell us, "We feel lost without it."

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IN mobile warfare the *shoot and move* are more frequently discussed than the *communicate* which ties the shooting and the moving together. Unfortunately, the "*communicate*" aspect of aviation frequently suffers when we tailor our developmental requirements.

With the constant press to keep costs low, we tend to propose new aircraft with "*austere avionics*." This is shorthand meaning that we will get along with whatever is readily available and responsive.

Because the ability to communicate and navigate reliably involves a degree of sophistication, military avionics generally are high cost items. Also, our appetite for improvements is constantly whetted by the prospect of technological advances which are within reasonable reach. For these reasons, we should examine the military avionics picture and how it fits into the aviation program.

As avionics dollars are significant, some planners like to evaluate avionics as a percentage of the total aircraft cost. Under this criterion, avionics may consume from 10-25% of the price tag for an aircraft. Other planners measure avionics by the weight of the package at about \$1,000 a pound. Neither of these planning factors have much in their favor except that they are fast and easy to

use.

Actually, we do not handle avionics in such gross terms. Instead, we consider what are the *minimum* requirements that an aircraft, or a portion of the fleet, must possess in order to accomplish its assigned mission in an economical manner.


We break out general purpose avionics into five functional groups, each of which will be discussed in detail as to where we are and where we are going. The groups are:

- *Communications*
- *Navigation*
- *Identification*
- *Instrumentation*
- *Environmental Sensors*

Communications

From a *communications* standpoint, Army aircraft are in relatively good shape. The Army has developed AR-95-71, which delineates which aircraft are equipped with what radios on a standard basis. Additional equipment can be added where special approval has been obtained to meet hard requirements.

In brief terms, the standard communications configuration for Army aircraft is:



SHOOT, MOVE

**By Major General
WILLIAM J. MADDOX, Jr.
Director of Army Aviation,
OACSFOR, D/A**

1) A secure FM (frequency modulation) radio for tactical air-to-ground communications.

2) Complete provisions to include space and actual aircraft wiring for a second FM radio. TO&E units having a valid requirement for the second set can requisition the radio as a separate end item. Such sets are becoming available in the supply system.

3) A non-secure VHF radio for civil air traffic control and a non-secure UHF for military air traffic control. Some individual aircraft types may have only UHF or VHF, but not both.

A comment at this point on voice security is worthwhile. The Army's long range goal is to have all voice channels secure. Because of high costs it is likely that we must wait for the next generation of seeker equipment before we reach the goal.

Probably the greatest problem with secure voice operations is that the aviator frequently believes voice security to be a needless burden. He does not see immediately the total effect of the enemy signal intelligence effort. However, our communications monitors repeatedly have shown the great intelligence benefits we provide to the other side.

Note that all the systems mentioned above are limited to line-of-sight operation. Our big problem with nap-of-the-earth flight is that line-of-sight often

is broken both to the ground and to other aircraft.


For the future, it is probable that we will be able to communicate reliably only through the use of satellite relay or high frequency-single band radios. Obviously this nap-of-the-earth requirement may be costly and difficult to achieve. To meet it, the R&D people are at work now and various nap-of-the-earth testing is under way in the combat developments field.

Navigation

Navigation also offers a number of headaches, many of which have been with us a long time. Some of our people feel they've been there before and can find it again. This puts their navigational requirements at zero.

At the other end of the spectrum is the group which knows it must move from its present location to the forward edge of the battle area and deliver accurate fires within meters of friendly troops during night and adverse weather conditions.

Unfortunately, we have a mix of stateside equipment suitable for civil airways and en route air traffic control facilities but without any real battle-field capability. The ADF and the VOR are prime examples. We all know the range and thunder



AND COMMUNICATE

MOVE - SHOOT

(Continued from Page 9)

storm interference problems with ADF. The VOR, which works great in the States, is not available in many areas of the world. Also, it is line-of-sight. Therefore, other systems are required.

LORAN (*Long Range Navigation*) appears to be the best system at this time to meet the Army's tactical needs. However, at present it is not available in much of the U.S. and some complete overseas areas. Its big advantage is that it can be used for both ground and air navigation. It essentially lets the pilot, the rifleman, and the tanker *all* read from the same sheet of music, and it is a very accurate sheet.

LORAN'S major disadvantages are that it can be jammed and spoofed, and that it requires large complex ground stations. In the *Cheyenne* program, we attempted to overcome the jamming vulnerability by adding a separate navigation system to improve accuracy and back up the **LORAN**. Such a hybrid navigation capability, however, is expensive.

Therefore, we backed away from redundancy in the advanced attack helicopter and now ask only for the standard **LORAN** capability. While **LORAN** has been quoted at \$25-50,000 per aircraft, unit costs appear to be coming down into an affordable range. Our first aircraft should be equipped with **LORAN** by 1976, with the anticipation that additional geographic coverage will be provided in the form of ground stations.

The Army currently uses three special purpose navigation systems in small quantities: *Doppler*, *inertial* and *TACAN*. The *Doppler* and *inertial* systems are used for surveillance missions while the *TACAN* provides en route navigation and updating for the inertial system in some of our fixed wing utility aircraft.

Identification

The *identification* function concerns both air defense and air traffic control. The Department of Defense **AIMS** program (the acronym is too complicated to take up on a single page of this magazine) is a joint solution to be implemented by the mid-1970s. Under the **AIMS** program, all first line aircraft will be equipped with a transponder, sometimes called a "parrot" or a secondary radar, and an automatic altitude encoder. This equipment will allow a ground controller or air defense monitor to determine automatically the location, identification, and altitude of an aircraft.

Aircraft in tactical units will be equipped with a crypto computer to provide air defense units with a positive secure identification. Presumably this will prevent the air defense element from wasting one of its missiles on friendly aircraft. The **MARK XII IFF** (*Identification, Friend or Foe*) Equipment is now in the initial stages of deployment. Army aircraft will be equipped with an **AIMS** altimeter beginning

National Awards

The **AAAA** recently made a large mailing of national award blanks to several thousand senior aviation commanders. The blanks cover the large array of awards which are presented at the annual meeting in October. These include *Aviator of the Year*, *Aviation Soldiers of the Year*, *Units of the Year*, and the *McClellan Safety Award*.

As a participant in the awards selection process for the past two years, I have been distressed at the poor quality of many of the recommendations. Not only is good effort poorly described in the recommendations, but many highly deserving people and units are never recommended. You *cannot* expect the Army commander to propose his people and units for awards unless his aviation officer properly advises him.

Therefore, the burden of this effort rightly falls on the shoulders of unit aviation officers and commanders. Let's agree right now that morale is based upon appropriate recognition for service rendered. A basic precept of leadership is that the commander takes care of his people — and this includes recommending them when they are deserving.

Please take this plea to heart so that those who truly deserve to be recognized to achieve appropriate national recognition next October.

—MG W. J. Maddox, Jr.

early next year to provide coded altitude information to ground stations.

The *instrumentation* area of avionics is relatively quiet because our current instruments take care of us pretty well on a day-to-day basis. While there is a potential for improvements in instrumentation through the use of electronics, such effort has a relatively low priority for our development funds. The **AIMS** altimeter, however, is an example of an improved instrument which hitch-hiked on another program.

Environmental Sensors

The last of the avionics functional groups is *environmental sensors*. These are the devices used to prevent collisions with obstacles such as terrain, towers, wires, and other aircraft. Complete IFR flight at low level is possible within the current state of the art. Cost and complexity have precluded such a capability to date.

A good low level IFR capability could cost as high as one million dollars per aircraft. Until such costs can be reduced markedly, we probably will depend on radar altimeters, night vision goggles, and special aviator training. The basis for the training is under way at *Combat Development Command Experimentation Command (CDCEC)* in California and at *MASSTER* in Texas.

This is more than just another AAH.

Each competitor for the U.S. Army's Advanced Attack Helicopter contract claims that its design meets or exceeds all the major Army requirements and meets the Army's cost targets. Each has documented how it intends to do so.

We have, along with the others. But we can add this:

In the UTTAS competition we were one of the two sources selected. Regarding that selection two significant statements appeared in the press.

THE WALL STREET JOURNAL on August 31, 1972 had this to say on why the Sikorsky UTTAS contract was 50% lower; "Army officials said the contracts differed in size because Sikorsky's technological work in transport helicopters is 'more advanced.'"

In its October 1972 issue ARMED FORCES JOURNAL reported: "Sikorsky's UTTAS was superbly engineered, according to industry sources, and was designed right to the Army's production cost targets. Sikorsky also had done much more homework in the area of advanced technology, sources said."

Our AAH philosophy is identity with UTTAS: 53% of our AAH empty weight is identical with our UTTAS, 65% of AAH components are identical with UTTAS, 74% of AAH maintenance actions are identical with UTTAS, vital for today's manpower-critical Army.

In short, what's good for the Army UTTAS is good for the Army AAH.

Sikorsky Aircraft

DIVISION OF UNITED AIRCRAFT CORPORATION

**U
A.**

**FIFTY YEARS of
1923-1973
FIRSTS in FLIGHT**

MOVE - SHOOT

(Continued from Page 10)

As I reported some months ago when I flew with the "Night Owls" at CDCEC, the Army is about to receive a base line for night flight, that is, what we can expect a pilot to be able to do under varying levels of natural illumination at night.

It seems fairly apparent that the average aviator should be able to operate well below 500 feet, in dry weather, even on very dark nights. Of course, speed would have to be reduced. In fact, CDCEC has developed an eight week night vision training program for helicopter, low level, night proficiency. The program probably will be published by the Armor School.

Artificial night vision can be provided by infra-red sensors such as are included in the *Advanced Attack Helicopter (AAH)* program for both pilot navigation and gunner target acquisition. Also, night vision goggles utilizing light intensification principles appear to offer a relatively responsive capability. I have flown these goggles and find no difficulty in hovering and landing to what otherwise would appear to be a pitch black area.

The Army has taken the lead in aircraft collision avoidance by equipping its Fort Rucker rotary wing aircraft with a proximity warning device. It also has approved a program to equip three other high traffic density areas with the same system. The proximity warning device is considered to be cooperative because it responds to the same equipment in other aircraft.

A true collision avoidance system, which will pick up other aircraft without the use of another device, is expensive and technically complex. Cost estimates for such a system fall in the \$50,000 per aircraft range, which places such devices *outside* the reasonable cost area.

Cobra/TOW

Now back to the "shooting" and "moving." The *Cobra/TOW* program has reached the shooting stage. In fact, accuracy firings of fifteen missiles began the first week in April with the first shot scoring a hit only four inches from target center! The firing aircraft was at a hover at a range of 3,000 meters.

Incidentally, the first *Cobra* system has done well in its airworthiness and flight characteristics test. A total of eight R&D *Cobras* will be utilized in the development testing which is taking place at the Yuma Proving Ground.

UTTAS engine

In another developmental note, the General Electric T-700 engine for the *UTTAS* had accumulated about 90 hours of test stand operation without encountering major difficulty. The T-700 will be twinned in the *UTTAS* and is a candidate to become the power plant for the *AAH*. In the testing, General Electric has been able to remove, inspect and replace engine components without removing the engine from the test cell.

The T-700 is the first engine in the world designed from its inception for reliability and maintainability. Maintenance up to depot level will be accomplished with no more than a dozen tools from the standard mechanic's tool box.

Aerial recovery

An aerial recovery kit for retrieval of downed aircraft has been tested preliminary to its introduction into the inventory in FY 74. This kit was fully developed and tested by the Army to improve a capability to pick up rapidly those aircraft that can't make it home on their own.

One of the heartening statistics of the Vietnam war was that nearly half of all aircraft shot down by hostile fire were recovered and subsequently returned to operation. Much of the Vietnam recovery effort was accomplished with jury-rigged tackle.

The Vietnam experience proves that we must place a new meaning on the term "shot down." In the past, we considered that a shot down aircraft generally was a loss because it was applied primarily to fixed wing aircraft. With the helicopter, "shot down" is an interesting but *not conclusive* statistic.

Crashworthiness

Since the first installation of crashworthy fuel cells on helicopters, there has not been a single thermal fatality or injury in a survivable aircraft equipped with the new cells. This is a major milestone in the aviation field. We selected the aircraft with the highest density in the inventory to be first equipped. The UH-1 D and H models are now 80% completed.



Shown with BG William J. Maddox, Jr. (center), Director of Army Aviation, are, left to right, BG Etienne Marie D. DeGrasset, Military Attache, French Embassy; and MG Pierre Jarry, Defense and Air Attache. The officers were on hand when the European Aerospace Corp. brought their French helicopter to the Pentagon pad for General Maddox to fly.



Collins' Flyweight HF With New Light Craft Antenna

It's light. It's compact. It has an antenna that fits snugly even on light helicopters. And it has the necessary talk power to get through — including nap-of-the-earth missions where terrain can block line-of-sight transmissions.

Collins' 718U-5 Single Sideband Transceiver provides 280,000 channels at 100 watts peak and average power in the HF range, yet weighs only 35 pounds. Coupled with the new 437R-2 Antenna System, it brings full HF communication capability within reach of a broader range of light aircraft.

The 437R-2, a low-drag antenna, requires only 10 feet of wire. It avoids the unwieldy antenna that was often necessary on small aircraft before. Its compact size allows it to be located for optimum communications efficiency and protection from damage.

The whole communication system is automatically tuned, typically in 3 seconds (6 maximum).

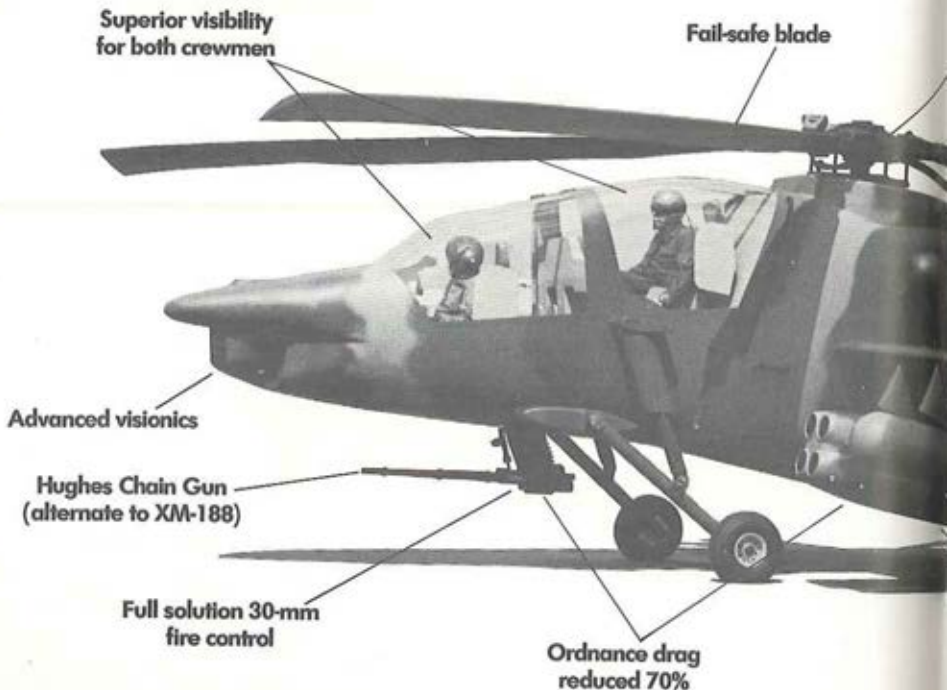
To find out more about high talk power with minimum weight penalty in any aircraft, see your Collins representative, or contact Collins Radio Company, Telecommunications Equipment Division, Cedar Rapids, Iowa 52406. Phone: 319/395-5369.



Our AAH: It all of the Army's almost two

The dead weight we've stripped from our Advanced Attack Helicopter results in two very real advantages for the Army: our AAH will perform the mission much more effectively than conventional designs — and it will cost considerably less.

Our AAH is faster. It has more reserve power for emergencies. Its rate of climb is two and a half times better than the requirement, its lateral acceleration twice as good. It can take cover in areas too confined for bigger helicopters.



meets or exceeds requirements. Yet it's tons lighter.

Its rollbar, static main rotor mast, and energy-absorbing structure give it even greater crew safety than the OH-6A.

Its ordnance system packs a full punch but is 280 pounds lighter than "standard"—and we've reduced drag by 70 percent.

Its advanced co-pilot/gunner visionics and pilot's night vision system uses a thermal imaging device already proven in nap-of-the-earth night flight.

It's a small, tough machine made to order for treetop combat, day and night.

It is unmatched in performance, unmatched in price.

HUGHES HELICOPTERS & ORDNANCE SYSTEMS

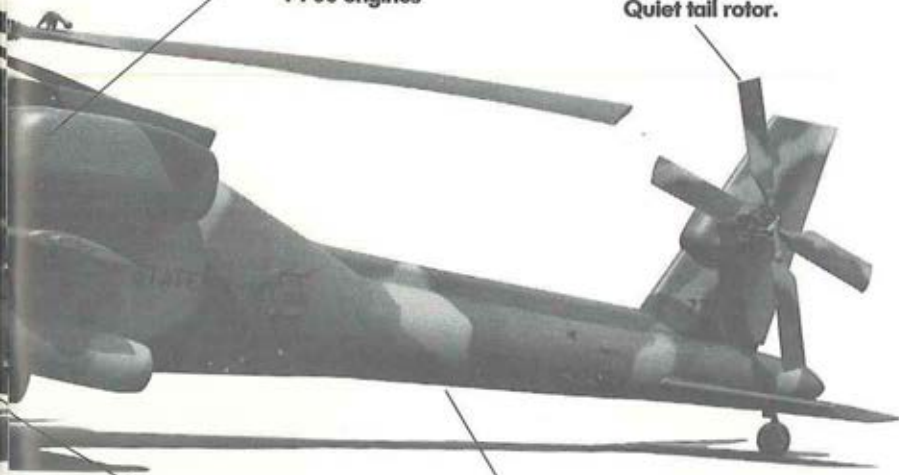
Combat-proved rotor system

Advanced technology
T-700 engines

Quiet tail rotor.

Exceeds payload requirements by 39%

Goes aboard the C-141 in half the allotted time





UH-1 RESEARCH HELICOPTER
 This helicopter was built by Sikorsky Aircraft Corp. and was used by the Army for research and development of new rotorcraft configurations. It was the first of a series of helicopters designed to meet the requirements of the Army's new rotary-wing aircraft program. The UH-1 is a single-engine helicopter with a main rotor diameter of 40 feet and a tail rotor diameter of 12 feet. It has a maximum speed of 155 knots and a maximum altitude of 10,000 feet. The UH-1 is currently in service with the Army and is being replaced by the UH-60 Black Hawk.

MOVE - SHOOT

(Continued from Page 12)

We are moving rapidly to put crashworthy cells in the remainder of the fleet. We expect that all first line aircraft, except CH-54s, will be re-equipped with the new cells by April 1976. Because medevac and instrument flying missions generally require additional tankage, a crashworthy auxiliary fuel cell for UH-1s is under development.

POW

During a recent visit to Fort Sam Houston, Secretary of Defense Elliot Richardson met a number of former prisoners of war recently released in Vietnam. He asked if there were anything the Department of Defense could do for any of them.

Staff Sergeant David F. Allwine responded that he wanted to become a helicopter pilot. While it is unknown at this time whether Sergeant Allwine will be accepted for flight training, it is interesting that such veterans have an interest in the aviation program.

Standardization

Last June, the Army kicked off its *Aviation Standardization Program* by a Department of Army letter, which subsequently was incorporated into AR 95-63. We recognized a year ago that the standardization program would be initiated in stages based on the availability of training literature and the capacity of commands to re-align the instructor pilot force.

The program established a standardization board apparatus with a *DA standardization policy board* at the top of the pyramid. Now that nearly a year has passed, the first meeting of the policy board is called for to assess progress and examine prob-

OUT TO PASTURE

FT. EUSTIS, VA. — The UH-1 Research Helicopter that set an unofficial world speed record for rotary wing aircraft, is shown in retirement in a small meadow, across the street from USA Air Mobility Research and Development Lab. The twin-engine aircraft flew at 274.4 knots (316 mph) on 15 April 1969.

lems. Accordingly, the board will convene on 23 and 24 May at Fort Eustis, Virginia.

Attendees will be members of the DA policy board from the Army General Staff and major commands. Readers who feel they have problems or comments which should be addressed by the board may state them through normal standardization board channels, or may write to me directly inasmuch as I will chair the policy board meetings.

Designation

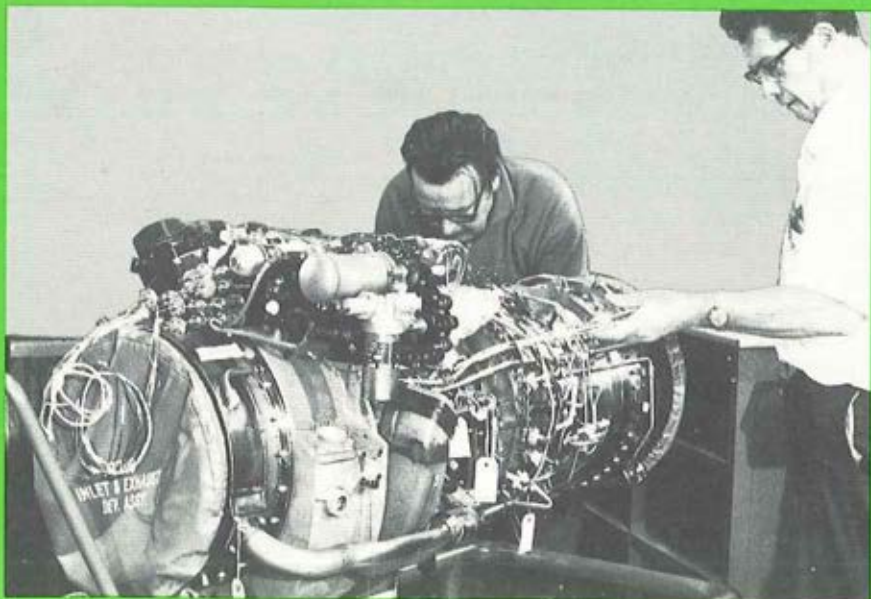
Official aircraft designations have been announced for the two *UTTAS* candidates which are undergoing fabrication at present.

The Sikorsky aerial squad carrier will become the **YUH-60**. Boeing Vertol's *UTTAS* will be the **YUH-61**. Both aircraft are designed against the requirement to carry eleven fully-equipped infantrymen in addition to a crew of three. Each manufacturer will build three flying prototypes and one ground test vehicle. This is a recent change in the development program.

Official aircraft designation must be proposed to and registered with the Air Force which is executive agent for such matters.

Personnel

The last of our aviators departed Vietnam on D+60, or 28 March. My Warrant Officer son, William, was among those departing on the 60th day after the cease fire took effect. He had been



The Army's T700: On test for UTTAS. On target for AAH.

The T700 turboshaft went on test ahead of schedule. It's an engine that gives the Army's newest helicopters exactly what's needed. Improved reliability. Low fuel consumption. Reduced cost of ownership. An engine that can be field maintained with only ten standard Army tools. An integral inlet particle separator to reduce sand and foreign object ingestion. Survivability. Low noise and smoke levels.

An outgrowth of a four-year Army-sponsored competitive technology program, the T700 was designed specifically for the Army aviation environment.

The T700 is on schedule for UTTAS. The same engine for AAH means reduced development, production and support costs . . . and a better return on investment for both systems.

205-56

GENERAL  **ELECTRIC**

standing by in the Delta with several crews prepared to make prisoner pickups.

Brigadier General Jack Mackmull departed country several days earlier to become the Deputy Commander of U.S. Army Aviation Systems Command (USAAVSCOM) at St. Louis. He replaces *Brigadier General Sam Cockerham* who has become the Project Manager for the Advanced Attack Helicopter. *Brigadier General Hank Bolz* is being reassigned after two years on the hot seat in the AAH program. As we begin development of the new AAH in a few weeks, this appeared to be a good break point to change Project Managers whose tours normally are stabilized.

In a recent column I pointed out that *Major General James Smith*, former commander of the 1st Cavalry Division, had been assigned to the Reserve Area Command at Fort Sheridan. It should be understood that the Army reorganization guide lines state that the requirements for such jobs are successful command of an Army division. Intention is to put more muscle behind the readiness of Reserve component units.

Major General Delk Oden, former Director of Army Aviation, Commanding General of Fort Rucker, and President of the Army Aviation Association of America, departed the U.S. for Teheran, Iran, on 1 April to become President of Bell Helicopter International Inc.

In addition to the Bell buildup in Iran, the Military Assistance Advisory Group also is expanding, in line with the new direction being taken by the Iranian Army. *Colonel Harry Jones*, Deputy Commandant of the Transportation School, is departing for Teheran to join the MAAG commanded by *Major General Ellis Williamson* and the Army Section commanded by *Brigadier General Leo Soucek*.

Ridiculous flight of the month

The moral of this month's ridiculous flight is: Stay alert in the cockpit — regardless of what you

USMC "Buy"

The Bell Helicopter Company will produce 24 UH-1N Marine helicopters under a \$9.5 million sole source contract awarded through AVSCOM. Deliveries will take place during January-December, 1974. The contract is actually a joint service venture with Navy funds paying for the aircraft, and the Army acting only as purchasing agent.

are doing or how routine things may seem to be. There just can't be routine operations where complex equipment is involved.

In a recent commercial aircraft accident which caused substantial loss of life, accident findings indicate that both pilots became distracted from their flight duties by other activities in the cockpit.

Here are two examples of the same sort of distraction occurring in Army aircraft in the past several weeks.

- Engine TOT was 150°. Pilot motored engine until TOT was 100°. He then reached over to start the clock but throttle advanced and engine started. TOT exceeded 1,000°.

- With seven passengers on board, pilot flew across 2,200' range line at 3,500' and started descent for extended final approach to airfield at 1,370'. During approach, both pilot and copilot were distracted by radio. Aircraft struck high terrain in a descending altitude.

And then there is the accident caused by not paying attention outside the cockpit:

- Aircraft was being taxied to tie down when number two propeller struck a fire extinguisher.

- Jeep was driven into aircraft without guide.

- Radio telephone operator with back pack radio walked under forward rotor system.

LOOK OUT! — YOU MAY BE NEXT!

Budget Message

IN the area of rotary-wing equipment, the U.S. still has far more helicopters dedicated to the ground combat role than the USSR and the Peoples Republic of China combined. The USSR, however, has several types of helicopters in production, and we can expect a steady increase in this force over the years.

The three major U.S. programs in this area are the AH1Q TOW-armed Cobra helicopter, the UTTAS squad assault helicopter, and the Advanced Attack Helicopter (AAH). A number of Cobras will be modified over the next few years to carry the TOW.

The UTTAS, which is now in the engineering development stage, will be able to carry

an entire Army squad, in addition to the crew. It will eventually replace the "Huey" as the mainstay of the Army assault helicopter force.

Contract awards for the prototype development of the AAH are scheduled for June, 1973. This helicopter will have greatly improved performance and survivability characteristics over the TOW-equipped Cobra.

It will also have a better operational capability during the night and in adverse weather. The AAH could be operational with Army Forces in the field by FY 1981.

— Extract from Statement of Admiral Thomas H. Moorer, USN, Chairman, Joint Chiefs of Staff, before the Senate Armed Service Committee, March 28, 1973.

Introducing the Xenon Landing Light...



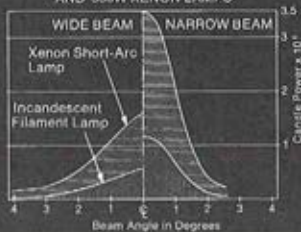
300% Brighter!

New from Spectrolab, the SL-500 landing light for helicopters and fixed-wing aircraft. 500 watts of reliable brightness that lasts longer and is 300% more efficient than conventional lights.

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Addressing an AAAA audience,
Brigadier General Eugene M.
Lynch, ODDR&E, discusses . . .

Defense Problems in Perspective



**Connecticut Chapter Meeting
Westport, Connecticut
Thursday, March 15, 1973**

“
Somehow I feel that had computer-oriented people been at Kitty Hawk on December 17, 1903, and at Roosevelt Field, New York, on the morning of May 21, 1927, Orville and Wilbur Wright would have packed up and gone back to building bicycles, and “Slim” Lindbergh would have lived out his years humping mail between Chicago and St. Louis.
”

LOOKING back on recent events I think we can agree that the President's efforts to achieve a generation of peace appear to have reduced the threat of war. However, the people of this nation must *not* interpret this as justification for slackening our vigilance or reducing our military strength.

Other nations are continuing to expand their military capabilities, and we *cannot* allow ours to falter in light of this; for in the International arena military power still remains a necessary ingredient if any negotiations are to be carried out in good faith.

We must also recognize the technological threat we face has not lessened. On the contrary we have seen quantum jumps in that threat and so our need for more effective defense systems is greater now than ever before. In the sixties, the Soviets caught up with us in nuclear-war technology and surpassed us in raw power of long-range missiles. At sea, they have already overtaken us in the size of their attack submarine forces; their surface ships use modern turbine engines and advanced missiles; they are building their first aircraft carrier; and they have good, long-range ocean surveillance. Along with these startling achievements the Soviet's land and air forces are steadily improving, and they are providing large quantities of new equipments to their allies.

In many areas we now find ourselves having to react, and when you try to maintain a technological edge while reacting, you find your systems' needs constantly increasing both in performance demands and complexity.

Therefore, at least half of the increase in the cost of our defense systems today stems directly from *demands for improved performance*. Aircraft must fly faster and higher; missiles must be more accurate and reliable; and our ships must maintain mastery of our sea lines of communication. Along with these demands for increased performance and the resultant growth in complexity of our equipment, the cost of manpower and maintenance is steadily rising. All of this tells us that the competence and capability of the military-industrial complex will be challenged to a much greater extent in the future than at any time in our past history.

I say this because the trend in military budgets will *not* permit us to have everything we want or even what we say we need.

The budget

The total DoD budget request for FY 74 is \$85 billion, as compared to \$80.9 billion appropriated in FY 73. Although you may be familiar with our request, there are certain things about this budget that are not evident at first glance.

- While there is an increase of \$4.1 billion over last year, \$3.2 billion, or 78 percent, represents the increased cost of military, civilian and retired pay; the balance is largely accounted for by the inflationary cost of materials and services.
- The FY 74 *outlay* for Defense represents 28.4 percent of the *total* Federal outlay — a reduction from 29.0 percent last year. Even more startling is the fact that this is a reduction of 14.1 percent from the FY 68 peak, which was 42.5 percent, and *is the lowest level since FY 50*.
- In terms of the dollar's constant buying power over the years, the Defense obligational authority in FY 74 is \$2.7 billion *less* than the pre-Vietnam war level.
- We hear criticism of the constantly escalating defense budget and people point out that there has been an increase of \$26 billion over what we had before the costs of the Vietnam war began to rise in 1964. What they don't understand is that salaries have gone up by \$21 billion in the past nine years and we are paying 326,000 *fewer* people.

Another point we should be aware of is the ratio of our RDT&E and Procurement funds to the total DoD budget. These are the key accounts for developing and purchasing weapons. Since 1964 the calculated increase in these two accounts amounts to 25 percent, whereas in the same period the Defense budget went up 55 percent, the Federal budget 118 percent and the general price index 39 percent. Add to this the fact that costs for our major systems have gone up by a factor of ten in

DEFENSE PROBLEMS

(Continued from Page 21)

the last 20 years and you can see that we may be starting to price ourselves out of business.

To put the budget in comparative perspective, the dollars spent for national defense this fiscal year will have the lowest buying power since 1951; manpower in the national defense will be at its lowest level since 1950; and the cost of weapons we say we'll need cost ten times as much as 20 years ago. In a nutshell, we face a future of decreasing dollars and manpower, increasing costs, and an increasing threat. Furthermore, according to current DoD projections, RDT&E and procurement programs probably will not increase significantly in the next five years.

Some alternatives

There are, of course, several alternative ways out of this dilemma.

One is to reduce force levels. This alternative has been used in the past, particularly as we developed and deployed more modern, cost-effective equipment. Part of our rationale has been that a few, more effective, new equipments should be able to replace many, less effective old ones. Theoretically this is valid, but experience has shown that the new systems are costing so much and are so difficult to maintain, that we have to retain the old along with the new.

We believe this total reliance on cost effectiveness is no longer appropriate and that force levels are now approaching the minimum essential to enforce our national policy. Therefore, the alternative of continuing to reduce force levels has all but run its course.

Another alternative is to expand and formalize



TRIO — MG James F. Håmet, 4th Inf Div & Ft. Carson Commander (left), and Arthur H. Kesten, Quad-A Executive Vice President (right), flank MAJ Rex M. Turner, Jr., the Pikes Peak Chapter President, prior to the March 26 professional luncheon at which Mr. Kesten was guest speaker.

the concept of mixed force levels, which we have termed a high-low force mix. Under this concept, we combine a smaller high-performance force with a larger standard force, with the mixed force designed for lower total cost. We seek technological superiority and a high degree of readiness and mobility for the high-performance force, and lesser degrees of complexity, readiness and mobility for the lower performance force. This is not a new idea since we really have had a high/low mix in our inventory since we started the build-up in World War II. But like the force level alternative, we have reached a danger point in the application of this solution.

Two options

There are two other options available to us: one, we could place more emphasis on continuing to improve existing systems instead of embarking on new programs. The other, we could make an all-out effort to arrest the cost growth resulting from constantly expanding requirements. But both of these are being implemented through our various management policies associated with the DSARC, Design-to-Cost, competitive hardware development, extensive and realistic operational testing, modular weapons, joint service programs, prototyping and interdependent international R&D.

Adding up all these options, and assuming that we make maximum mileage out of them, the fact remains that we face tough sledding in the future.

There are many among us who would say that we are down to just two alternatives—start canceling programs or request Congress to allocate more money.

There is an old saying that goes: "when in trouble return to the fundamentals," and despite our fancy computers, cost effective machines, and other gadgets for problem solving, I think we should all recognize that fundamentals in the military-industrial complex are our people. We seem to forget that over the years programs with a high potential for success failed because people failed; and programs with a low potential for success worked because the people made it work.

A look back

George Santayana in *The Life of Reason* wrote that "those who do not remember the past are condemned to repeat it"; and I believe it would be worth our while to take a cold, analytical look at our past to identify those practices which have developed along with our affluence and, if retained, could mean fiscal disaster for us in the future.

It is always difficult to go through a soul-searching exercise of this type because we all have a tendency to get on the defensive when criticized and stop listening. And so, if it will make you hear any better, I'll say that I'm not talking about anyone here tonight. But, and here I must become an absolutist, I say that with the challenges we face

in the future and the problems that we must solve if we are to survive, we can no longer afford the luxury of certain practices which have crept into our way of doing business.

Chicken Little Syndrome

The first practice is that of the "*Chicken Little Syndrome*" — where we run around yelling that the sky is falling if we don't get everything we ask for. In the future we are going to have to take a good close look at the way we define our military needs so that we protect those essential programs and capabilities which we really need to have to do our job, and cull out those nice-to-haves which, while they may represent a technological breakthrough, contribute little to improving our tactical or strategic posture.

If we took an unbiased look at some of our "*chicken little*" programs, we may find that about 90% of the military need was really *need*, and the other 10% a pursuit of the nice. Furthermore, we might find that a relatively small part of the final cost went into meeting the needs while the lion's share was used to chase that last ounce of nice-to-have. This becomes particularly expensive when people involved take the absolutist attitude that all specifications will be met if it takes all the money in the Federal budget.

Tragically, when such programs fail, too often it is not because the need-to-have requirements were not met, but rather the nice-to-have goals were technically unattainable. We must remember that the more complex a weapon becomes, the more costly the R&D, the procurement and the structure to support that weapon.

Stove Pipe Syndrome

The next practice to go is what I would call the "*Stove Pipe Syndrome*." Too often we get mesmerized by a particular program, view it out of context, and protect it against all comers. While I recognize that there is very little status associated with a simple, low-cost program, considerable stature can be gained by keeping that program in perspective and bringing it through at a cost we can afford and in quantities that will meet our needs. If we develop programs in isolation without regard to programs of other laboratories or services or nations we are wasting the three most precious resources we have: time, energy, and dollars. I am afraid that in the past too many *manufactured* differences in requirements resulted in duplicative programs with the only significant change being the final color of the paint, be it olive drab, sky blue or battleship gray.

Another stove pipe practice that may be pricing us out of business is the one-on-one analysis. When you put a tank, an aircraft, an air defense weapon or whatever in a model which matches it against all comers you finish up validating what I call the "*all singing—all dancing*" need. Add to this the

FRINGE BENEFIT

The sizable Army Aviation contingent in Iran has one unpublicized benefit . . . They have local sources for world-famous Iranian Beluga caviar. "So what?" you say . . . The Beluga caviar sells for \$90 a pound in metropolitan markets, and went well over \$100 a pound during the "meatless days."

"worst case" condition and you finish up with such a sophisticated piece of machinery that even if we had enough dollars to meet all of the specifications we couldn't afford enough of them to effectively do the job.

Credit Card Syndrome

The third practice is associated with the "*Credit Card Syndrome*" and here we share a common fault with the civilian sector since the majority of us are in hock up to our ears. Because our budget structure permits us to spread our payments over the years, we have a tendency to overcommit ourselves, R&D dollar-wise, and assume that a day of procurement reckoning will not come.

But I think the time has come for us to take a jaundiced look at this practice, not necessarily for what it will do to us in the way of today's budget but in terms of what it will do to our future bankruptcy. This means that we will have to discipline ourselves to be satisfied with that which we can afford to buy after the development phase; and this discipline must be practiced at all levels rather than, as we too often do, leave the painful decision to say "*No*" up to the next echelon above us, or Congress.

Bigger and Better Syndrome

Let me talk about the "*Bigger and Better Syndrome*" because there is a third term that goes with bigger and better — more expensive! I discussed the high-low mix alternative as a means of coming to grips with our problem. But the real reason this alternative has pretty much disappeared is that the low tends to become high and the high goes out of sight!

I'll admit we have some high cost programs which must be supported if we are to survive as a nation; they must be bigger and they must be better. But I am afraid we have too many programs which have crept into the bigger and better category for no good reason other than everyone else was doing it or that it would be nice to push the state-of-the-art.

Another syndrome which I feel is adding to our problems is that of "*I'll go you one better*." This syndrome is reflected in programs that begin with a relatively humble requirement on the part of the user, but as the requirement proceeds up through the system, frustrated scientists and pseudo-experts argue that what he is asking for doesn't push the state of the art and they start raising the performance ante.

(Continued on Page 26)

In this AAH, more power means less weight, less cost.

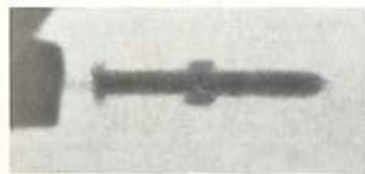
The Lycoming PLT-27 engine provides the power. And that pays off in a smaller rotor blade and airframe. But without any sacrifice in payload. That's why the PLT-27 is on this AAH. It's the engine that offers future growth capability. It's from the company which has built more helicopter engines for the U.S. Army than anyone else.

The Lockheed Lycoming AAH.



Power by Lycoming.





**Weapon integration
by Lockheed.**

DEFENSE PROBLEMS

(Continued from Page 23)

By the time the user's requirement gets through the system it has gone from a low-risk program measured in dollars and months to a high-risk program measured in millions and years, normally accompanied by an RFP heavy enough to cause a hernia. The tragic part of this is that while the poor user wanted a Vega he gets stuck with the bill for a Cadillac. And so he continues to live in World War II billets while his shiny car, because of the complexity and cost, gets an air-conditioned garage.

This leads to the "Quantification Syndrome." With the advancement of the computer we theoretically obtained a mathematical slave to validate professional judgments and expedite the implementation of strategy and hardware programs. But I wonder today who is the slave and who is the master.

I say this because I recall back in 1956 when the airborne concept was developed that four of us sat down and worked out the structures for the aviation battalions, groups, brigades, the armair brigade which was a forerunner to our current air cavalry combat brigade, and the air fighting division which served to launch the air assault division some seven years later. The general tactics and techniques, organizations and the basic equipment requirements generating therefrom, to include validation of the need for the armed helicopter, were all developed in roughly a three-month period, and the documents weighed about 10 pounds.

Selective Truth Syndrome

Today, if we were to undertake so monumental a task I am afraid that simply validating the need for, and determining the location of a relief tube in the smallest aircraft would take twice as long and the documentation would approach the all-up weight of the aircraft itself. Somehow I feel that had computer-oriented people been at Kitty Hawk on December 17, 1903, and at Roosevelt Field, New York, on the morning of May 21, 1927, Orville and Wilbur Wright would have packed up and gone back to building bicycles, and "Stim" Lindbergh would have lived out his years humping mail between Chicago and St. Louis.

Another practice that has to go is associated with the "Selective Truth Syndrome." Too many on both sides of the fence feel that if they present anything of a derogatory nature their careers, companies, or programs will be killed, and so they only say the good things and hope that the bad can be engineered out before they become known. Here's where cost overruns, slippages, deferments and the like really begin.

Somehow, we must all begin to "tell it like it is," recognizing that failures and mistakes are a part of progress and those that make them normally do so in trying to get something done. We have

some people in the system who don't make mistakes because they don't do anything; but if we all would quit living the image of perfection and start living up to the stature which progress demands of us then total truth would again become our way of life.

Not Invented Here Syndrome

Let me talk for a minute about the "Not Invented Here Syndrome." I am afraid that a degree of arrogance crept into our nation's thinking as a result of the fact that at the end of World War II our industries and technological base remained intact while those of our foreign competitors were almost totally destroyed. We seem to forget that the combat equipment we faced in World War II was as good if not better than ours in many instances. Some of us still harbor these feelings, continue to wear blinders, and feel that if we didn't invent it, it isn't worth having. But a cold unbiased look at the weapons systems of other nations would indicate that the technological gap is now a myth!

I recall an occasion while serving overseas when I was asked to return to Washington to brief on a foreign development. Although this development was ten years ahead of anything we had, I sat for hours and listened to arrogant criticism of that project — criticism which had no basis in fact. The interesting part was that when these people finished their critical appraisal they expressed the conviction the project was not up to the quality standards of the U.S. and that if we chose to compete we could do it bigger and better in this country. Having said that, they left the Pentagon, climbed into their VWs, MGs, and Renaults, turned on their Telefunken radios, and hurried home to grab a scotch and soda, cognac, or Lowenbrau while catching the news on their SONY televisions.

Let's face it, our R&D dollars are getting harder and harder to come by. And every buck of redundancy, or duplication that we spend is a buck that must be taken away from some other critical program needed for the next generation. Remember, science is a multi-national language.

A need for dialogue

The final syndrome I would like to touch on is that associated with histrionics. While there has never been a greater need for us to sit down in a quiet, informal, and candid environment to solve this nation's defense problems, we tend to turn such occasions into a dog and pony show with psychedelic charts, graphs, statistics and flashing lights — with oneupsmanship the order of the day.

I had the feeling that we were fast reaching the point where a military band would have to be present when we issued a Request for Proposal, that issuance would be preceded by "On-your-mark, get set, go" and that the country would relive the sight of a modern-day Paul Revere dashing off into the night screaming, "The Russians are

coming, *The Russians are coming.*"

Somehow we have to rebuild a healthy dialogue between the military and industry that generates mutual respect, trust, and candor. Since an RFP normally involves millions or billions of dollars and years of R&D effort, the least we can do is take a little extra time to make sure everything in it makes sense, and everybody who is involved understands what it's all about. Releiving the failures of the past, that proverbial warning "*haste makes waste*" has a particularly familiar ring.

After such a brutally frank assessment, I'm sure you will agree that we face quite a challenge; and you probably are wondering how we can go about meeting it. I suggest that since people have caused the problems people can solve the problems. But one or two dedicated people couldn't make a dent.

Therefore, I believe we should begin with ourselves as individuals. Shakespeare said "*to thine own self be true and it follows as the night the day thou canst not then be false to any man*" and herein lies the solution. If we want to ensure our credibility, first as a nation and second as the military-industrial segment of that nation, we must begin by strengthening our credibility as individuals.

C, C, C, and C

The four areas of challenge to our integrity all begin with the letter *C* — *competence, concern, compassion, and communication.*

We have shown that we have the *competence* to build bigger and more expensive things. Now let's put our competence to work building better and less expensive things, and solving our problems — not with more dollars — but with more common sense, and let us never forget that technical knowledge is only part of the equation; putting that knowledge to work in saying *no* when *no* must be said is the other half of the equation. Without both we will never be really competent.

Let's all get *concerned* about where we're going as a nation rather than where each of us is going as an individual or as an industry. And let's begin to be concerned about the debt we are leaving follow-on generations through our lack of true fiscal competence in the past and genuine managerial concern for the future.

And let us have the *compassion* to recognize that those who oppose our ideas, or criticize our actions, or question our motives, or trumpet our mistakes are not necessarily anti-military. Maybe they are just a bit more competent to judge and more concerned with what they see.

If we strengthen our competence, hone our concern, and exercise our compassion, the last problem — honest, straightforward *communication* — will be an easy challenge to meet. Failing in the other areas, we'll continue talking *at* rather than *with* each other — and times and dollars are running out.



MAJOR AWARD — COL Harold T. Smith, President of AAAA's Aviation Center Chapter, presents the "LTG William B. Bunker Memorial Scholarship" of \$1,000 to James Humphrys of Ft. Rucker, the AAAA Scholarship Foundation's largest award. The Enterprise H.S. senior will pursue Engineering at Cornell University this fall. (USA photo)

Some of you may be disappointed that I didn't cover a laundry list of our R&D programs and predict drastic changes. Others may have hoped that I would say that the future holds a business-as-usual forecast. But if this is the case, then maybe there are Lethargic Dynamists and Dynamic Lethargists among us as well.

As to our programs, they depend upon what we do, as individuals first, and then as a partnership. As to the perspective of the future, we hold the mold in our own hands. As to the adequacy of our defense to meet future threats, there are not enough dollars if we don't change some of our ways and maybe more than enough if we do.

And what's the alternative if we fail? Frank Barnett wrote an epitaph for this nation's tombstone, and it seems appropriate to close with those significant words:

"Here lies the only civilization which perished at the peak of its power, with its power unused. Here lies a decent people who wanted love, not empire, and got neither; who tried to trade power for popularity and lost both.

"Here lies a nation of advertisers who knew how to change consumer tastes in cigarettes, but were themselves manipulated on all the issues that really mattered to their salvation and survival.

"Here died a sort of Lancelot in the Court of Nations who, granting all his grievous flaws, was still somehow the noblest knight of all; except this Lancelot, crippled with an undeserved guilt complex, let his weapons and ideals fall unused, and so condemned all mankind to the Thousand-Year Night of the Russian Bear and the Chinese Dragon."

WHEN *President Nixon* set up the Blue Ribbon Defense Panel to study the nation's defense establishment in 1969, a wide variety of talent was assembled. Discussions among the panel staff often ranged far afield.

One day at lunch the subject of welfare came up, and the problems were duly examined. One member of the group listened quietly, then got up to leave. He is black and well over six feet tall.

Surveying the group, half smiling, he said: "Why are you so uptight about welfare? After all, the white man has the defense budget."

The defense budget is a source of continuing controversy — both as to size and as to content. Recent cutbacks in defense procurement have meant wholesale unemployment of skilled engineers and scientists. But there is clear evidence that many still feed at the trough of defense-budget welfare.

One need only consider the fantastic rise in the unit costs of our military hardware.

The Grumman Corporation's *F-14 Tomcat*, for example, a supersonic, swing-wing, carrier-based interceptor, will bottom out at no less than \$13-million a plane. The McDonnell Douglas *F-4 Phantom*, which the *Tomcat* replaces, costs \$4 million.

Although the *Phantom* first flew in 1958, both aircraft have very nearly the same performance characteristics in terms of maximum speed and altitude, maneuvering stresses and the like. The *Tomcat* is the subject of continuing controversy between its builder and the Navy.

This dispute is hardly an isolated case.

Another cancellation

Last year Congress, in despair, canceled the Army's new main battle tank, the *MBT-70* prototype, to be built by the General Motors Corporation, when its estimated production costs soared past \$1-million. The tank it was to replace, the Chrysler Corporation's *Mark 60*, is still being procured for \$343,000.

Estimates for the Navy's new *Spruance* class destroyers, being built by Litton Industries, now exceed \$100-million a ship. As recently as 1969 the Navy estimated that a *Spruance* would cost \$60-million. The last destroyers delivered to the fleet in the mid-1960's cost less than \$40-million.

Although inflation is a factor, there is also a fundamental management problem here. And it obstructs the efficient acquisition of any new weapon for the U.S.

That obstruction is the systems concept of doing business.

By the mid-1950's defense hardware had reached a stage of such complexity that the items required for the maintenance and support of a weapon often exceeded the cost, size and manpower needs of the weapon itself.

SOARING DEFENSE COSTS?

M60: \$343,000.



The term "weapon system" evolved to cover not just the ships, missiles, tanks and aircraft but all aspects of the weapon's operation and support requirements.

New disciplines sprang up in support of the new systems concept. Defense contractors had to identify people gifted in systems analysis, systems engineering, systems maintenance, systems reliability, value engineering and the like. At first, new titles were given to people who had been performing similar jobs under a different name.

One of the veterans of U.S. aircraft design, when asked about his value-engineering program, snorted, "All my engineering is valuable."

But the cult was forming. Complex analysis formulations were devised for the management of every aspect of a weapon system's life, and for the most part they were devised by people who had never managed anything. One Pentagon wag

BLAME IT ON THE SYSTEM

MBT 70: \$1,000,000.

ALBERT W. BLACKBURN

having a difficult time getting a handle on the huge defense establishment. Being conversant in neither tactics nor technology, they had been unable to assert the control they felt essential. Now in remarkably short time, literally thousands of management systems were imposed on the weapon-procurement process.

The military departments responded quickly. There is an old adage in the armed forces: "If the boss wants peanuts, feed him peanuts." The boss wanted management systems, and suddenly computer readouts were piling up on Pentagon desks.

Hardly anyone read the data. It was enough to riffle the pages and note how much in-depth information was being assembled.

One of the better managed programs of recent years has been the Navy's *Polaris*. For that program, the management experts developed a computer-based management system known as *PERT*. It purportedly told the Navy managers in advance how the various facets of that large and complex program were going.

The resulting printouts were something to behold. But a key leader of the *Polaris* effort scoffed: "If we'd relied on *PERT* to keep the program on track, we'd still be waiting for our first sub to go on patrol."

Contracts were broadened to give total responsibility for a weapon system to a single contractor. To win these multibillion-dollar contracts, the magic words of systems management had to be used in the proposals. A single copy in some instances weighed more than one ton.

Total Package Procurement

The process of management had become more important than the product such management was being asked to yield.

The *Cheyenne* helicopter program was awarded to the Lockheed Aircraft Corporation in 1966. Lockheed won mainly on the basis of its management capability.

Lockheed, unlike its competitors, had never before managed the production of a helicopter. But Lockheed's writers knew the magic words the evaluators had been tuned to expect — words like "life cycle costing" and "maintainability reliability."

The ultimate elaboration of the systems management mystique was known as Total Package Procurement. It envisioned the contracting for major weapon systems on a multi-year, multibillion-dollar basis before work on the first development model had been started.

It was the summit for true believers in systems analysis.

All problems were to be completely defined and thoroughly understood and a fixed-price contract written for the entire program. One of the bidders is eventually required to prove his claims but not

insisted there were two professions for which prior experience was required: street walking and systems analysis.

Still, the ability of the analysts to disrupt good managers was held to a tolerable level — as long as the analysts were confined to working with their pencils and desk calculators.

Then, in the early sixties, the systems management experts discovered high-speed digital computers. Incredible feats of data gathering could be performed. The cost and progress of every weapon program could be tracked on a day-to-day basis in amazing detail.

Hucksters of these new miracles of computer magic invaded the Pentagon by the score. When they spread their wares, they found their sales task a simple one.

The new masters of the Pentagon under Secretary of Defense Robert S. McNamara had been

THE SYSTEM

(Continued from Page 27)

until several years after the competition has been eliminated.

This is the approach that was used on the Lockheed C-5 and is being implemented on Litton's disastrous shipbuilding programs for the Navy at Pascagoula, Miss.

Some might ask what is actually wrong with the systems approach to weapon acquisition.

For one thing, it creates a multibillion-dollar monster that is most difficult to control. The gadgeteers have learned that the best chance of having a new device developed is to hang it on a new system, where a few millions are easily hidden.

Most important, the over-elaborated systems approach to management encourages overstaffing at every level. This generates a great deal of intramural strife on the one hand and ennuil born of too little constructive work on the other.

Grumman's top management is not unaware of the problem. Four years ago *Thomas P. Cheatham Jr.*, a senior vice president of the company, wrote in a report to the Defense Science Board:

"The country is too fat at its management and administration levels. Less and less is going into the direct and tangible good — and more and more into the planning, officialdom and rain-dance operations.

"In a single expression, our overhead is too high."

And this came from a senior executive at Grumman — the company that recently testified that, because of its inability to control its overhead, it would need more than \$400-million in additional funds on a fixed-price contract for the *Tomcat*.

Mr. Blackburn, an adviser on strategic and tactical weapons systems in the office of the Secretary of Defense in 1959-63, is a consultant in management and aeronautical systems in McLean, Va.

Another fault of the systems approach is that it seeks to replace mutual trust and confidence with reams of meaningless paper.

The manufacturer of an oil pressure gauge used on the Boeing 747 airliner offered the same instrument for the *Tomcat*. The company told all it knew about the gauge. Systems management demands more. Consultants were hired to prepare elaborate documentation. The final proposal was nine inches thick.

The product was not changed, but the price to the Navy was 67 per cent greater than the commercial price plus whatever markup the *Tomcat* contractor may have charged for his "systems management."

On the Government side, the Air Force management team for its new fighter, the *F-15 Eagle*, is headed by a major general. He has some 250

people on his staff. McDonnell Douglas, the company that is building the *F-15*, also builds the *Phantom*.

When the *Phantom* was being developed by the Navy during the late nineteen-fifties, its program manager was a lieutenant commander — four ranks below a major general. This lieutenant commander had no staff at all, not even a secretary.

Management by Service

The first step in reducing unnecessary costs in weapons procurement is to remove the word "system" from our lexicon and go back to focusing on our defense goals instead of on the process of getting there.

Next, we should use the civil service staffs more effectively. A great deal of dedication and talent is there. Often lacking, however, is the challenge, the motivation, the leadership.

We should also make the over-all management of new weapons a Service responsibility and re-establish the concept of breaking the big weapons into discrete components and contracting for them separately. Advancing computer technology allows us to do this with greatly increased confidence.

Two of the largest and most successful undertakings of the last 15 years, *Polaris* and *Apollo*, were managed in just that way.

The next step is to do away with management controls that are arbitrarily imposed on contractors. Controls should be selected by the contractor to suit his management capabilities and philosophy, not by the Government to satisfy some bureaucratic urge.

The one-eyed kings

Finally, there are too many people in the act. Congress and the General Accounting Office are getting into weapon procurement to a level of detail which their staffs are simply not equipped to handle. An old proverb says: "In a nation of the blind, the one-eyed man is king." There are a lot of one-eyed kings on Capitol Hill.

David Packard, Deputy Secretary of Defense for the first three years of the *Nixon Administration*, sought to implement some of these reforms. What is needed is a continuation of the Packard even-handed toughness to maintain pressure on the armed services to step up to their responsibilities and on the defense industry to live up to its promises.

There remains the philosophical question: Is it better to continue paying more for weapons and recognize that the high price of defense hardware is in fact another extension of the welfare program?

If the excess were a benign growth, one could perhaps be ambivalent about its existence.

It is not benign. It is a cancer that tends to drive out the ambitious and innovative and can deny the nation a truly productive and essential defense industry.

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Shown during a recent AAAA Connecticut Chapter dinner meeting at which BG Eugene M. Lynch (2d from right), ODDR&E, was the guest speaker, are, l-r, COL Robert R. Corey, Ret., former Nat'l Board member; Michael S. Saboe, Chapter President; and George R. Stack, VP, Programming. An extract from General Lynch's address appears elsewhere in this issue.

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FT. RUCKER, AL — LTC M. E. Hayes (2nd from left), DA escort officer, talks over a point with members of the ten-man EURO/NATO Basic Helicopter Training/Working Group visiting USAAVNS recently. Representing the Federal Republic of Germany were (from left), 1LT Heinz Schodel, LTC A. W. Heyer, and LTC K. Jablonski.

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KIMEL, Gerald D.
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APO Seattle 98731
LEMAY, Leonard N.
18th CAC
APO San Francisco 96215
NICOLLS, Timothy M.
4017-7 Spruce
APO Seattle 98731
SWEEN, Robert G.
Avn Det, Berlin Bde
APO New York 09742
ULSHER, John D.
118-B Mason
Ft Huachuca AZ 85613
WRIGHT, Harold J.
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CW2'S

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Killeen TX 76541
BARR, Charles M., II
Air Cav Trp, 11th ACR
APO New York 09146
BEARDEN, Hillman E.
202 Oak Drive
Daleville AL 36322
BOTTOMLEY, A.N., Jr.
213th Avn Co (ASH)
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PCS — CW2'S

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12 Edwards Street
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HEDGES, John R.
Quarters 2554-B
Ft Lewis WA 98433
HENRY, John A.
175th Avn Co (AA)
APO New York 09140
HEWTON, Jack A.
1130 Starbird Circle, #28
San Jose CA 95117
HILL, Ross N.
5330 East 9th Street
Tucson AZ 85711
KNIGHT, Michael S.
7005 Kingsbury Avenue
Lawton OK 73501
KOONE, Michael T.
166 Harris Drive
Ft Rucker AL 36360
LAWTON, Jack
117th Aviation Company
APO San Francisco 96358
LISTL, Karl
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Ft Campbell KY 42223
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WARHURST, Joel E.
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WEBER, Roy
2105 McDowell
Manhattan KS 66502



THE FIRST TEAM — Six Master Aviators of the 1st Cavalry Div, Ft Hood, TX, gather to pin master wings on LTC Daniel Romig (3rd from right), CDR, 2nd Bn, 7th Cav. From left: LTC Robert Molinelli, CW4S, Meckle Keys, Levi Hebert, and Ramon Williams; LTC Richard Jarrett; and COL Joseph Jagers.

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FT. CAMPBELL, KY — LTC John F. Zugschwert presents MG William J. Maddox, Director of Army Aviation OACSFOR, some mementos of his recent visit to the "En Garde" battalion of the 101st Abn Division.

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AAAA Activities

National and Chapter Meetings during April-June, 1973

Tenny Chapter (Ft. Campbell, KY). After dinner professional social meeting. **Mr. Ralph Alex**, Sikorsky Aircraft Div — United Aircraft Corp., guest speaker, with a UTTAS presentation. Members only. Ft. Campbell Officers Club. 1700 hours. 11 April.

Lindbergh Chapter (St. Louis). Sixth Annual Scholarship Awards Dinner. **Mr. Joseph P. Cribbins**, Director of Aviation Logistics DA, guest speaker. Washington University Club, 335 Mansion House Center. 1830 hours. 19 April.

Fort Polk Area. AAAA Chapter Activation meeting. Social hour, election of Chapter Officers and selection of a Chapter name. 1530-1700 hours. 25 April.

Midnight Sun Chapter. (Ft. Richardson AK) Professional Luncheon Meeting at Ft. Richardson Officers' Open Mess. **MG John C. Bennett, Ret.**, President of ERA Helicopters, guest speaker. 1200, 25 April.

Grand Canyon Chapter (Ft. Huachuca). Membership luncheon and election meeting. Members only. G&M Steakhouse, Sierra Vista. 1130-1300 hours. 25 April.

Fort Polk Area. Chapter Activation Meeting. Social hour followed by a membership meeting and an election of officers. Selection of Chapter name. Fort Polk Officers' Club. 1530-1700. 25 April.

Ft. Leavenworth Area Chapter. Annual Aviators Ball. **MG William J. Maddox, Jr.**, Director of Army

Aviation, guest speaker. Ft. Leavenworth Officers Open Mess. 1830 hours. 4 May.

Delaware Valley Chapter (Philadelphia, Pa.) Family Cultural Gathering at Philadelphia Museum of Art, 26th Street & Benjamin Franklin Parkway. Conducted tour of the Masters. 2-4 p.m., Saturday, 5 May.

Hanau Chapter (Germany). Late afternoon professional meeting. Discussion of Noise Abatement Procedures, Hanau AAF, and German/American Relations. Officers Club Annex, Fliegerhorst Kaserne. 1630-1830 hours. 6 May.

Sunbow Chapter. (Ft. Bliss TX) Late afternoon professional meeting. **MAJ Daniel S. Berliner**, guest speaker. 1600-1800 hours. 10 May.

National Executive Board. General business meetings; briefings, tour of Fifth U.S. Army and Hq, Health Services Command. St. Anthony Hotel, San Antonio, Texas. 21-23 June.

Alamo Chapter. Dinner Party in conjunction with visit of AAAA's National Executive Board to the Chapter area. 1830-2100 hours. Ft. Sam Houston NCO Club. Friday, 22 June.

National Awards Committee. Business meeting. Selection of 1972-1973 AAAA National Award winners. Shoreham Hotel. 17-18 August.

1973 AAAA National Convention. AAAA Workshops, followed by visit to AUSA Exhibits on 17 October; professional programming, membership luncheon, President's Reception, 18 October; professional programming, 1973 AAAA Honors Luncheon, 19 October. Shoreham Hotel, Washington, D.C.

CLASSIFIED ADVERTISEMENTS

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WIN A TRIP FOR TWO TO HAWAII, MEXICO, OR
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1973 AAAA SWEEPSTAKES

ENROLL ONE NEW AAAA MEMBER TO QUALIFY!
OCT. 16 DRAWINGS! NO PURCHASE NECESSARY!



FULL YEAR USE!

The two first prize airline tickets may be used at any time during the full year after Nov. 1. However, they are not transferable or negotiable, and may not be used by other carriers.

GRAND SWEEPSTAKES' FIRST PRIZE

As Grand Sweepstakes' winner, fly to and from your vacation point on **first class, round-trip** accommodations provided by American Airlines . . . or use similar space class, round-trip transportation between **any two points in the U.S.** served by the American Airlines system. The 1973 Sweepstakes is open to members enrolling one new member in AAAA during June 1, 1973-September 30, 1973, and to the new member with his enrollment. Winners need not be present at the October 16 AAAA drawing in Washington, D.C., to be eligible to win. A list of the names and addresses of all '73 winners will appear in the November issue.

GENERAL RULES

Seven chances to win! Sign up **ONE** new AAAA member before Oct. 1, using the AAAA application form on the opposite page, and clip it to your '73 Sweepstakes Coupon. **Both** your coupon and the membership application of the new member will be included in the main Sweepstakes' drawing. Enter as many coupons as you wish, but submit a new membership application with each entry. Separate prizes will be awarded to each of AAAA's Top Three Recruiters at the conclusion of the 1973 Sweepstakes with "Top Recruiter" standings being published in the July-October issues. Sign up one new member; **you might wind up enjoying Hawaii!**



BONUS!

Two Coupons (we'll make the duplicates) will be entered in the Sweepstakes for **BOTH** the recruiter and the enrollee in those cases wherein a two-year membership is initiated.



1973 AAAA SWEEPSTAKES

c/o AAAA, 1 Crestwood Road, Westport, Conn. 06880

As a member of AAAA and in accordance with the Sweepstakes' general rules, I wish to enter this Coupon in the AAAA 1973 Grand Sweepstakes. I've enclosed the membership application form and the first year annual dues of a new AAAA member to qualify this Coupon for Sweepstakes' entry. I understand I don't have to be present at the October 16 drawing in Washington, D.C. to be eligible to win.

Print Name _____ Rank _____

Address _____

City _____ State _____ ZIP _____

GENERAL RULES

No purchase is necessary. A member may submit as many entries as he wishes, but each entry must be accompanied by the application form of a new member. Entrants must be AAAA members at the time of entry. Renewals of Oct., 1972-Sept., 1973 memberships are not considered as "new" memberships. Additional Sweepstakes blanks will be provided on request, or a same-size facsimile may be used. Payment of taxes on prizes is the responsibility of the winner. All Federal, State, and local regulations apply. Selection of winners will be made on Oct. 16 at the AAAA National Convention. A list of all winners' names and addresses will be published in the November, 1973 issue of ARMY AVIATION MAGAZINE.



ARMY AVIATION ASSOCIATION

1 Crestwood Road, Westport, Conn. 06880

I wish to become a member of the Army Aviation Association of America (AAAA). My past or current duties affiliate me with Army Aviation and I wish to further the aims and purposes of AAAA. I certify that I am a citizen of the U.S., and understand that the annual membership fee of \$8 includes an annual subscription to ARMY AVIATION MAGAZINE. I've made my check payable to the "AAAA."

Print Name _____ Rank _____

Address _____

City _____ State _____ ZIP _____

CATEGORY OF AAAA MEMBERSHIP

- | | |
|--|---|
| <input type="checkbox"/> U.S. Government | <input type="checkbox"/> Aerospace Industry |
| <input type="checkbox"/> USA Active Duty | <input type="checkbox"/> Administration |
| <input type="checkbox"/> USA Civilian | <input type="checkbox"/> Marketing |
| <input type="checkbox"/> Army National Guard | <input type="checkbox"/> Engineering |
| <input type="checkbox"/> Army Reserve | <input type="checkbox"/> Manufacturing |
| <input type="checkbox"/> Army Retired | <input type="checkbox"/> R & D |
| <input type="checkbox"/> Other Services | <input type="checkbox"/> News Media |

- | | |
|---|--|
| <input type="checkbox"/> New Membership | <input type="checkbox"/> \$15 (2-Yr. Memb) |
| <input type="checkbox"/> \$2 (Initiation Fee) | <input type="checkbox"/> \$8 (1-Yr. Memb) |

The initiation fee applies to the applicant's first year membership only, and covers the one-time issue of a personal lapel pin and a membership decal. The individual membership will become effective on the first day of the month after the month of application.

1973 AAAA SWEEPSTAKES

ADDITIONAL PRIZES!

SECOND PRIZE*

Twin bedroom guest accommodations in Washington, D.C.'s posh Shoreham Hotel during the AAAA's 1973 National Convention . . . Four days and three nights! Complimentary guest tickets for two to all 1973 AAAA National Convention meeting functions, including Registration, three Receptions, and three Luncheons! . . . A guest dinner for two at one of Washington, D.C.'s finest restaurants, the Jockey Club, at any time during October 16-18!

THIRD PRIZE*

Complimentary guest tickets for two to all

'73 AAAA National Convention meeting functions, including Registration, three Receptions, and three Luncheons during October 16-19.

FOURTH PRIZE

A personal library set of six bound volumes of ARMY AVIATION for the 1967-1972 years.

FIFTH, SIXTH, AND SEVENTH PRIZES
A personal library set of three bound volumes of ARMY AVIATION for the 1970-1972 years.

*Non-transferable, no cash value. (Must be used in Washington, D.C., Oct. 16-19).

The size of our Army?
General Abrams feels
it should represent...

A
visible,
credible,
and
real
source
of
strength

THIS is my first appearance before your Committee as Chief of Staff of the Army. It is a great honor for me to be here.

For five years a part of my responsibility has been focused on a part of the Army—the part that has been in Vietnam. I have been working since last October to acquaint myself with the rest of the Army—its strengths and its problems. For this, one must go out of Washington to where the Army is, in our United States and on foreign lands. In this I still have more to do.

In my service in the Army, the Army has had a mission in three wars. I have been a part of each of these and a part of the peace that preceded each. During all this time I have seen first-hand that the Army as an institution and the individuals who comprised it have been of a character that our Nation deserves and can justly honor. I believe that the Army has always had a few soldiers, both officer and enlisted, who have shirked their duty, or sought personal glory and personal privilege or who have been dishonest or who have been disloyal to their country. Such soldiers have brought disgrace to themselves and shame to the Army.

In almost two hundred years they have not influenced the accomplishment of the Army mission because there have always been enough men and women, selfless in their devotion to each other, with a deep and abiding faith in their country and its institutions and a strong sense of discipline to accept intelligent, fair, and understanding direction. The United States still needs these men and women in her Army. I submit that the Army has them now and *will continue* to have them in the future.

Force Requirement

The requirement for military force has been scrutinized by Americans in the aftermath of every war involving this Nation. Now that we are at the end of a war, the people of the United States, Members of Congress, and even Members of the Military Establishment wonder what kind and what size Army our country needs and ought to have.

As you know from your many years of dealing with this question, there is no precise and absolute answer. Furthermore, the Army does *not* determine its own size. That is determined by the President, by the Secretary of Defense, and by the Congress.

You are well aware of the dynamic nature of contemporary international politics and the fact that we are passing through a period of great change in international affairs. I think you will agree

that transitory periods in world affairs by their very nature introduce uncertainties which offer new or different potentials for conflict.

It would be very comforting to view the world as some sort of emerging Utopia, but to do so one must blot out the problems associated with the growing U.S. dependence on access both to markets and to material sources, especially energy sources, beyond our shores. It means discounting the fact that the world is growing smaller with more and more countries interacting in world affairs which will create more opportunities for friction. And lastly, it means minimizing the awesome reality that formidable military force is in the hands of leaders whose ideologies and purposes are not yet compatible with ours.

I do not know, nor do I propose to forecast, when and where some contingency will arise calling for the use of Army forces. I only know that such a contingency probably will arise and it is our business to be prepared for it. We are faced with uncertainty and, in the face of uncertainty, *we need an Army*. There is even today no more positive declaration of national interest and national will than placing trained and disciplined military force on the ground.

A Common Approach

There is little doubt that real opportunities exist today to reach more lasting and less dangerous security arrangements which rely less on military confrontation and more on negotiation and cooperation. Diplomacy and military strength are not competing approaches in our pursuit of peace — they are part and parcel of a *common* approach to achieve detente. The condition for successful diplomatic solutions to major world problems in today's international atmosphere will be enhanced if military alternatives become unacceptable to other nations because of our military strength.

To further the prospect of negotiated settlements to future world problems, the United States *needs* a good Army. Its size should be sufficient so that it represents a *visible*, a *credible*, and a *real* source of strength. I think that this strength — real, credible, and honest — is needed during a period of negotiations such as those which have taken place with respect to Southeast Asia, those which will take place relating to Europe, and those dealing with strategic offensive and defensive weapons systems.

In this, there must be some sense of proportion. For a country of 210 million people with the most far-flung economic and commercial involvement of any country in the world, and with the largest consumption of the world's resources, the Army we have now must be right in size and capability with respect to our world position and our commitments.

Our success or failure in the three wars in which I have fought often turned in the final analysis on the outcome of a very few crucial engagements. Quite simply, it all came down to what a handful

General Creighton W. Abrams, Chief of Staff of the United States Army, who spoke so eloquently about Army Aviation personnel and their aircraft at the AAAA National Convention last October, delivered a very thoughtful and decisive statement in support of the FY 74 budget program. He spoke on March 29 before the Defense Subcommittee of the Senate Appropriations Committee. In addition to justifying the Army's request for the Advanced Attack Helicopter (AAH) and Utility Tactical Transport Aircraft System (UTTAS), the Chief of Staff discussed the rationale for why there should be an Army and the importance of modernization. These excerpts are provided to give ARMY AVIATION readers the benefit of General Abrams' thoughts.

of good soldiers could accomplish on the ground, under great stress, and sometimes against almost unsurmountable odds.

Some time, some place, once more the success or failure of our national policy will rest in the hands of a few dedicated, disciplined, courageous men, trained in time of peace to fight in time of war — the same kind of men who held out at Bastogne, who went ashore on Okinawa, and who inspired the defense of An Loc against overwhelming odds. It is the business of the Army to produce such men.

I am convinced that, regardless of what form that future conflict may take, we will always need good men in the right place at the right time. To insure this condition, the smaller Army that we are fielding today must be highly motivated, disciplined, fully manned, and fully equipped with modern weapons. An Army with these ingredients will be a professional force, unhampered by social turmoil, and composed of well trained and ready soldiers prepared to meet any crises. It is only this kind of Army that the country needs and can depend upon.

Army Goals and Challenges

Supporting the President's Strategy requires that our Army must remain strong, responsive, and viable. I mentioned a moment ago that the Army does not determine its own size. As a matter of fact, the budget now before the Congress which provides for an Army of 13 divisions and supporting forces, supporting administration, weapons and ammunition, along with pay and allowances, is consistent with the guidance given by the Secretary of Defense in support of the policy and strategy of the President. There is nothing in the Army's budget that is not needed to support that policy and that strategy. It is an austere Army...

The Secretary of the Army briefly outlined our new policies for systems acquisition. A critical element in this new procedure is the selection of a number of systems which, when developed,

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will clearly enhance our combat power and provide the quality equipment we need.

The weapons systems which I will now discuss are referred to as the "Big Five." They represent a family of weapons essential to our success on the battlefield of the 1980's. If these weapons are to be available when needed, we must begin development now. The "Big Five" are the most important of today's weapons developments for tomorrow's Army. *Ed. Note: General Abrams then described in detail the programs for the Advanced Attack Helicopter, the UTTAS, the XM-1 Tank, the Mechanized Infantry Combat Vehicle — or MICV — and the SAM D Air Defense Missile System.*

Again, let me emphasize that the designation of these weapons systems as our major development effort was done after careful consideration. I have personally reviewed the rationale for their selection, and I am confident that, barring unforeseen technological breakthroughs, we have accurately identified the vital equipment needs of the Army in the 1980's.

...I have talked about goals and needs in quantifiable terms, but I am the first to realize that it is the intangible strengths that make our Army work. Professional, dedicated, disciplined, and self-sacrificing are terms which have characterized your Army. They are the constants which insure mission accomplishment.

Worthy Praise

My experience in Vietnam and more recently as Chief of Staff confirm that these critical qualities are still very much present in our Army. Approximately 80% of our officers holding the rank of captain through colonel, less chaplains, lawyers and medical personnel, have had combat experience in Vietnam.

Many of our senior officers and noncommissioned officers possess combat experience which not only spans the Korean and Vietnamese conflicts, but includes World War II. This reservoir of combat experience is unmatched anywhere in the world and will be a source of strength for years to come.

The numerous valorous deeds by men of all ranks that have been acclaimed during the Vietnam conflict, amid the hue and cry here at home against our involvement, attest to the high standards of discipline and dedication which today's soldier is capable of achieving. The large number of our soldiers who have been ordered to second and third tours in Vietnam, served gallantly and who have since remained in the Army, lends emphasis to their sense of self-sacrifice and the strong conviction in their profession.

As Chief of Staff, I have high confidence that with your support, our Army, with its enduring intangible strengths, will be able to meet the challenges and, if necessary, the sacrifices of the future.



TWIST! — Ceremonies in which a father swears in his son are fairly common within the Army, but when a father swears his daughter into the Army, that's news! Here Colonel Donald H. Jersey, the Deputy Director of Army Aviation, swears in Dreama, age 19, in a March 12 Pentagon ceremony. After attending basic at Ft. McClellan, Dreama will go to Ft. Sam Houston for dental technician training.

Obituaries

MAISEL, Barnett M., WO, died February 22 in the Republic of Korea as a result of injuries sustained in the crash of his OH-58 helicopter.

DAL POZZO, Anthony, WO, died as a result of hostile action in RVN when his unarmed helicopter was shot down on February 15. The first American peacetime fatality is survived by his parents, Mr. and Mrs. Anthony Dal Pozzo Sr., 1155 La Vista Road, Santa Barbara, CA.

O'KANE, Robert F., LTC, died February 11 at Letterman General Hospital of cancer. He is survived by his widow, Mrs. Corinne O'Kane, of 16080 Darcie Lane, Salinas, CA.

SCROGGINS, James L., SP5, died of injuries sustained in RVN in the crash of an unarmed helicopter downed by enemy groundfire after the cease-fire. He became the second American peacetime fatality on February 23rd.

UH-1H/Cobra "Buys"

Under a March 15 contract, Bell Helicopter Company will furnish the Army 180 UH-1H utility helicopters with deliveries taking place during February-December, 1974. Cost of the fixed-price contract is \$27.3 million. In another action, the Army contracted for the production and delivery of 20 AH-1J helicopters from Bell. Deliveries under the \$5 million contract are scheduled for April, 1974-March, 1975.

WITH THE 11TH COMBAT AVIATION GROUP IN ACTION

WITH THE 11TH COMBAT AVIATION GROUP IN ACTION WITH THE 11TH COMBAT AVIATION GROUP

AFTER ten years of experimentation and the phenomenal development of Army Aviation in Vietnam, caution must be exercised in describing any related experiences as new or unique.

Reflecting on the actions of the 11th Combat Aviation Group in Military Region 1 during the past year, we find, however, there have been some truly unique experiences deserving of review and cataloging in Army Aviation's library of proven capabilities.

The catalyst for these experiences was the Communist Easter offensive launched on or about 28 March 1972. Those who remember the anti-aircraft fire at Khe Sanh, Ashau and Lamson 719 are particularly impressed by the offensive statistics of this enemy operation. In round conservative numbers, aviation elements were confronted with some 600 tracked vehicles mounted with 12.7mm and 14.5mm rapid-fire machine guns and an equal number of fragmentation-type AAA guns, including 23mm, 37mm, 57mm, 85mm and 100mm weapons.

Even though their numbers are awesome, they did not present any really unique problems. Avia-

tors had faced anti-aircraft concentrations before and were familiar with the techniques required to accomplish their mission with minimal losses.

Then, in May of 1972, the SA-7 *Strella* missile was employed for the first time. The utilization of this shoulder-fired anti-aircraft, heat-seeking missile, caused a little consternation among the flight crews of every service. For Army Aviators, low level, nap-of-the-earth flying was no longer thought of as a technique used to gain surprise. It became mandatory for survival! The *Strella* effectively prevented high level reconnaissance, overhead command and control, stand-off artillery observation, and "field grade" flying conditions no matter how blue the sky.

Large-scale joint operations added to the uniqueness of the environment in MR1. While not completely new, these operations were of a greater magnitude and complexity than before. Helicopter elements from the Army, Marines, USAF, and VNAF were employed in battalion and squadron size elements into multiple LZ's to secure a single objective. Concurrently, there was a great deal of joint support, in the form of artillery and naval fire from U.S. and ARVN guns, as well as USAF and VNAF tactical air.

We'd like to discuss three combat air assaults that the 11th CAG conducted. It should be kept in mind that they were joint operations and were conducted entirely at low level in a quasi mid-intensity environment. The term *quasi* is used here only because there was no threat from enemy air attacks.

Quang Tri Evacuation—1 May 1972

In late April, it became apparent that the emergency extraction of U.S. advisory personnel from the Quang Tri City area was imminent. On 30 April, 11th CAG was tasked by CG, FRAC to develop plans and make preparations for this airborne extraction. The plan called for the use of 15 UH-1H helicopters escorted by six Cobras.

A narrow corridor was established along the 20 kilometer route from the coast due west to Quang Tri and coordination was effected to neu-

ABOUT THE AUTHORS

LTC Stanley D. Cass was commander of the 11th Combat Aviation Group, Vietnam, from 14 June 1972 until its colors were transferred to Germany in March, 1973. A 1957 USMA graduate, he served with the 1st Cavalry Division, 1966-1967; was Branch Chief in the Department of R/WING at USAAVNS, 1967-1969; attended C&GSC, 1969-70; and was awarded a Master of Science Degree in Meteorology from Texas A&M in 1972.

Major Wilbert W. Sorenson was commander of D Troop, 17 US Cavalry, 11th Combat Aviation Group, Vietnam from 25 August 1972 until the unit was deactivated on 15 March 1973. A 1959 graduate of the Artillery and Missile OCS, he served with the 1st Aviation Company, 1962-1963; 1/9th Air Cav Sqdn, 1967-1968; attended C&GSC in 1971-1972; and needs pursuing his MBA Degree from Kansas University.

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tralize that corridor using naval gunfire and USAF tac-air. On the morning of 1 May it was decided to use the larger and more heavily armored USAF CH-53 helicopters for the actual extraction. The plan as developed by the 11th CAG would be retained, however.

At 1600 hours, after massive naval gunfire, B-52 "Arcrites", and some 300 sorties of tac-air preparation along the corridor, four CH-53 aircraft extracted over 50 U.S. military advisors from the embattled city. Back-up and search and rescue aircraft provided by the 11th CAG orbited off-shore should any aircraft be shot down or forced to land.

Due to the limited distances and the flat terrain, command and control problems were insignificant. Although unfamiliar with the area, the CH-53 pilots successfully navigated the corridor using time, distance, and heading techniques. The operation was completed without sustaining any casualties or combat damage.

Combined Operation—13 May 1972

This operation was a spoiling attack conducted in Quang Tri Province. The plan — as developed by the 11th CAG in conjunction with the FRAC Staff, USMC Amphibious Readiness Group, and the VMMC — called for the insertion of 1,200 Vietnamese Marines into two landing zones north of the My Chanh River.

Airlift assets were in the form of 20 CH-46s, five CH-53s, six AH-1Gs, six OH-6As and two UH-1Hs for command and control. In addition there were four AH-1Gs, four UH-1Hs, and three OH-6As, provided as augmentation and rescue aircraft.

The air cavalry seemed to be the key to this successful operation. For several days they had been probing the enemy's defenses with an eye toward selecting the most lightly defended access route to the objective area. This particular cav unit relearned a lesson from the past: *avoid* the temptation of using roads and rivers as primary navigation aids, for the enemy is adept at using road junctions and river bends to zero in his artillery and anti-aircraft guns.

They learned their job well, however, and it is doubtful if the operation would have been completed without the services of two LOH pilots who were familiar with the terrain in the objective area. For example, inaccurate maps and occasionally intense enemy fire caused some confusion among the lift elements. The scout team quickly re-oriented them and led the lift elements to the correct LZ.

This operation resulted in the capture of two tanks, two artillery pieces, numerous small arms, automatic weapons, and several mortars. Credit was also given for over 200 enemy KIA's. Friendly losses were limited to two aircraft which took light battle damage and one that sustained a tail rotor strike in the LZ.

Joint Assault—30 June 1972

On 27 June, planning began for counter-attacks in the Vietnamese Airborne area of operation with the paratroopers revealing a plan for the insertion of two battalions into a forward LZ just 10 kilometers south of Quang Tri.

After further coordination on 29 June, the plan was finalized and routes of flight, frequencies, call signs, and other pertinent information were exchanged. The operation called for an initial LZ preparation by B-52 and tac-air strikes, and massed artillery. Following the prep, air cav elements were to recon and mark the LZ for the lift elements which would already be airborne.

To maximize the element of surprise, air cav reconnaissance was not permitted prior to the assault phase. The entire elements of the two airborne battalions would be inserted in two lifts consisting of 25 US and 25 VNAF UH-1H helicopters. Six Cobras would provide gunship cover.

As the 50-ship operation progressed, a USAF FAC reported a number of active anti-aircraft guns in the vicinity of the LZ and due to a tactical emergency in another sector, the "aircap" for the assault would not be available. The flight continued up QL 1 until the cavalry team encountered a near total visibility obscuration just south of the LZ. This was caused by the preparatory fires on the LZ and the smoke screen that had been employed to the north of the LZ. An alternate LZ had been selected but was also obscured.

The air cav troop commander was ready to recommend another suitable alternate; however, by this time the lead lift ships had reversed course to avoid the smoke and dust and there was some delay in getting the flight turned around and back to the new LZ. Approval for the change in the LZ's

came from the ground commander who was in the command and control aircraft with the aviation group commander. This aircraft was at the same low altitude but no communication problems were encountered.

For the second lift, a ship was put in orbit at a slightly higher altitude over a relatively secure fire-base in the event that radio relay was needed back to the division command post. All necessary decisions were still made from the command aircraft.

The assault was completed by 0900 without casualties or combat damage. By the end of the day 102 enemy were killed and six SA-7 missiles, six 37mm AAA guns, and numerous individual weapons and equipment were reported captured.

There are, of course, many other examples. During the year, six large-scale combined operations and numerous company-size, single-service airborne assaults were conducted. These three examples, however, best illustrate the major points to be covered for the amount of knowledge and experiences gained from these operations was enormous. We'll limit comments to observations from an Army Aviation organizational perspective, however.

Route Selection

Undoubtedly the superior method of selecting a route to an objective area is to plan direct path and then request enough firepower to neutralize the corridor, as was done in the Quang Tri extraction. If prodigious assets aren't available, however, the other tried and true methods are still suitable. In the joint combat assault example, the route was selected utilizing photo imagery and other intelligence sources. In the combined opera-

tion example, the use of air cavalry proved to be extremely effective.

LZ Selection

No special problems were encountered in this well established process. However, the LZ's were usually out of artillery range, at least initially and there was unusual reliance on B-52 and tac-air strikes for LZ preparation. Lift elements were prepared to encounter large craters and a great deal of debris in the LZ.

Air Cavalry

Reconnaissance teams have demonstrated a remarkable capability to make deep penetrations into sophisticated enemy defenses, with little or no backup from combat and combat support assets. VR missions have been conducted without overhead tactical air and far beyond the range of artillery support.

Consequently, recon teams were designed to cope with several contingencies, particularly crew and aircraft recovery. If contact with a large enemy force was considered likely, as many as six aircraft: three AH-1Gs, two OH-6As, and one UH-1H were assigned to a single reconnaissance mission. The UH-1H was preloaded with aircraft recovery material and equipment capable of extracting a crew from tropical forest areas. Emphasis was on *immediate* extraction utilizing on-the-spot resources.

The extended operating ranges of these teams caused considerable problems in accurate spot reporting. It is difficult to scout, provide cover, and maintain an accurate map location simultaneously. The problem is particularly important when operating at low level and especially so when penetrating unfamiliar territory.

R&D should be initiated giving either the OH-6A or the OH-58 an inertial navigation system coupled with a voice tape recording device. The integrated system should then have the capability of debriefing operations and intelligence personnel at the end of the mission.

Material

In this environment, the AH-1G *Cobra* is not considered the best available weapons platform for gunship escort nor for the accomplishment of the various air cavalry missions. The following are some of the disadvantages of the aircraft.

(1) The super elevation built into the rocket pods make the system more difficult to use and relatively ineffective at low level.

(2) The enclosed cockpit suppresses outside noise making it difficult for the crew to know when they are receiving fire. That makes the ship particularly vulnerable on low level VR missions.

(3) The *Cobra* does not possess an adequate downed crew recovery capability. A crewman injured only slightly can normally ride out on the skids or on an open ammo bay door, if the ship

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has expended its ordnance. Otherwise, it has no extraction capability.

(4) Considerable difficulty has been encountered in removing crew members from Cobras that have crash landed and then rolled onto their left side. There were at least five examples during the last year. In one case, the gunner was KIA and it took nearly twenty minutes to extract him.

(5) The maintenance hours spent on the Cobra have been considerably greater than on the other aircraft in the group, making its availability consistently lower.

In each respect, the UH-1B/C model gunship is a more suitable weapons platform for low level escort and the various air cavalry missions. The additional engine power of the UH-1H would be especially useful if the aircraft is used as a converted gunship. For the Group's *Nighthawk* mission, a UH-1H was configured with a 7.62 mini-gun on one side and a .50 caliber machine gun on the other. It was, in everyone's opinion, great! VNAF gunships utilized the USAF XM-93 weapons system with considerable success.

Survivability

Combat losses were lower than anyone could have reasonably expected. Only one aircraft was lost to the SA-7 missiles and none to the large caliber anti-aircraft weapons. The remainder were lost to small arms and 50 caliber fire.

Comparing flying hours to the number of aircraft shot down, the ratio was one per every 1,000 flying hours. Unfortunately, the records aren't detailed enough to reveal how many of the aircraft downed were recovered and later returned to a mission-ready status.

Conclusions

Despite the precariousness of the tactical situation, everyone concerned responded admirably. The planning, coordination, and execution within



FT. RUCKER, AL — CW3 Michael J. Novosel (right), has his recently received Master Aviator Wings pinned on by LTC Clarence Wolliver, CDR; 6th Bn; AAVNS Bde. A Medal of Honor recipient, CW3 Novosel has held military aviator status 15 years in the Air Force and 15 years with the Army. (USA Photo)

each echelon reached a high degree of thoroughness and achievement. These successful operations proved that the present family of combat helicopters can survive on a modern battlefield utilizing tested tactics and certain equipment modifications.

Undoubtedly, the enemy has also learned a few things about combating helicopters. We can certainly expect to see an improved version of the SA-7 missile, for which an improved IR suppression system will be required. The ever-increasing dispersion on the modern battlefield requires the development of a navigation system for our scout helicopters. Lastly, there would seem to be a need to re-evaluate our gunship support for air cavalry units and combat assault escort missions.

Development of these conclusions would improve our adaptability which remains Army Aviation's byword for the future. We have good reason to be optimistic about that future for the air mobility concept continues to be an effective combat and combat support force, having met the challenge of the mid-intensity environment as we found it in Military Region I.

"Conventional Forces are Important"

IT is not true that the size of our conventional forces in Europe is irrelevant, or that their numbers do not matter. We are unmistakably in an age of approximate nuclear parity, and this means that strong conventional forces are more important, rather than less important, to the deterrence of war.

It is essential that the U.S. and its allies have the option of an initial conventional defense. We should not place ourselves in a position where we are forced immediately and irrevocably to nuclear war in response to aggression against us. Strong conventional

forces give us a conventional option, thus adding to the plausibility of our commitment to defend our vital interests, and thereby strengthening the total deterrent. . .

I strongly urge the Committee to treat with great skepticism and caution any proposal for significant unilateral reductions in U.S. forces in Europe at this time.

— Extract from statement of Secretary of Defense Elliot L. Richardson on the FY 74 Budget before the Senate Subcommittee of Defense Appropriations, Mar. 26.

On Guard!

MANY qualified Army Aviators continue to show they want to join ARNG aviation units on separation, but spaces in the Guard are getting hard to find.

In a recent survey, the States indicated they could readily fill as many as 2,000 more aviator spaces if they were given the authority, or given more units. At present ARNG is not authorized to enlist an aviator unless a TOE or TDA space exists for him.

Aviation Division

NGB is currently working to establish an Army Directorate Aviation Division, or activity, to oversee ARNG Aviation. The Division will be comprised of all aviation staff responsibilities that are now scattered throughout the Army Directorate.

Tentatively, it is to have the Aviation Safety Office, a Standards and Training Branch, an Aviation Personnel Branch, and the Aviation Logistics Center. The element may be located outside the Pentagon and is expected to be manned by an estimated 28 ARNG technicians.

Roundout

It has been announced that the 29th Brigade, Hawaii ARNG, is to become an integral part of the active Army's 25th Infantry Division. The aviation element is to be Troop E (Air), 19th Cavalry, organized under TOE 17-208H. The unit is to be equipped similar to an active unit which means that AH-1G Cobras may soon be in the Guard inventory.

ARNG AAAA Chapter

Oklahoma ARNG aviators held an AAAA Chapter Activation meeting in early April, and were congratulated in a letter from MG Francis S. Greenleaf, Chief, NGB. In his comments, General Greenleaf indicated he was pleased to note the Chapter activation and said, "*I heartily endorse the resolute action to participate fully in this professional Army Aviation organization. Please express my congratulations to those who promoted chapter activation and to those who become chapter officers and members.*"

Reserve Component Award

Announcement has been made requesting nominations for the 1973 AAAA awards. ARNG Aviation Units have won the "Outstanding Reserve Component Aviation Unit Award" in the past, and are encouraged to nominate units for the period 1 April 1972-31 March 1973.



In addition, Guardsmen will be considered by the AAAA Awards Committee for the "Army Aviator", "Aviation Soldier", and "McClellan Safety Awards" — if the nominations are received prior to 1 August 1973.

Well Done!

During the past five months the Army National Guard has experienced a significant reduction in aircraft accidents. I would like to commend each of you for your attention to the Aviation Safety Program and the progress you have made in this area.

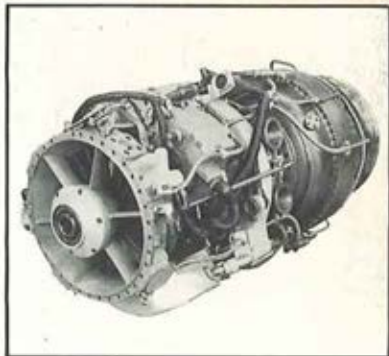
The keys to our program are *command attention* and *strong supervision*. Close attention to these areas will be vitally important as we approach Annual Training and increased aviation operations. Your State Aviation Safety Officer will be extremely valuable to you during this period. I urge each of you to insure that he receives the command support so important to your safety program.

Aviation spaces in the Army National Guard are getting hard to find

By LTC CHARLES R. JONES
Chief, Army Aviation Branch
National Guard Bureau

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