

# ARMY AVIATION

NOVEMBER—DECEMBER, 1963

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# ARMY AVIATION

VOLUME 12

NUMBER 11

NOV.-DEC., 1963

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By BRIG. GEN. JOHN J. TOLSON  
DIRECTOR OF ARMY AVIATION,  
OACSFOR



# TACTICAL TRAINING FOR WARRANT OFFICERS

OVER a period of time, the numbers of warrant officer aviators in aviation units have been slowly increasing. Future TOEs and other documents which authorize personnel spaces will undoubtedly continue to reflect this increase. This will cause the over-all ratio of officer to warrant officer aviators in the units to change. However, the unit will continue to be authorized sufficient officers to command, administer and employ the unit. The officers will continue to be responsible for planning with and providing advice and assistance to the supported units. However, there probably will not be an officer aviator on board each aircraft or necessarily with each flight of two or more aircraft.

Frequently, the senior aviator with the flight will be a warrant officer. I am sure this already happens daily in many of the aviation units which are in support of ground units involved in tactical exercises. Although the mission may seem to be just another administrative or logistical type mission to the aviators, the ground commander con-

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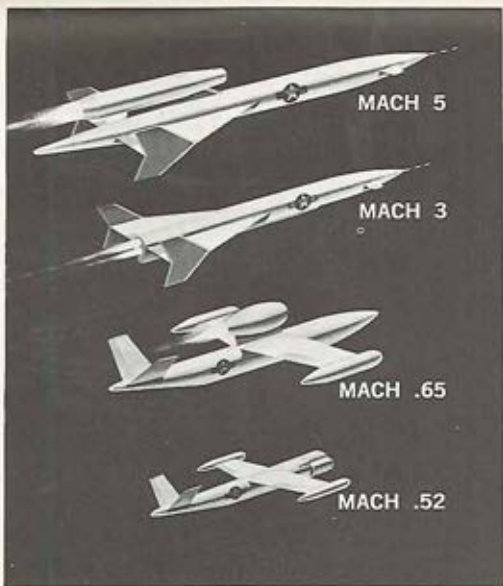


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siders it completely tactical. This type of situation will occur frequently as more aircraft become integrated into the lower units.

It is readily apparent that warrant officers are and will continue to be placed in situations where they will be required to be familiar with the tactical situation, the supported unit's operational plan and to advise the ground commander on the employment of Army aviation. The survivability of the aircraft and successful accomplishment of the ground unit's mission is greatly enhanced if the warrant officer aviator is thoroughly familiar with the immediate tactical situation and the supported unit's operational plan. The operational briefings conducted by the company officers for their warrant officers must be sufficiently complete to insure an adequate understanding of the tactical situation and mission to be accomplished.

### **TACTICAL TRAINING**

Many of our warrant officers are former non-commissioned officers who have had excellent training in the tactical units. All warrant officer aviators receive some tactical training in their flight training course. The tactical training given in the flight course is not intended to be the last they will receive since this type of training goes on constantly both in the classroom and the field during the training cycle of the aviation unit. Further, most every mission flown in support of a ground unit has some tactical implications.

Those of you assigned to the 11th Air Assault Division and its sup-

porting units are seeing Army aviation so completely integrated with the ground unit that every crew member on the aircraft must have some knowledge and understanding of the tactical situation if they are to perform their duties properly.

This all leads up to the fact that warrant officer aviators must become more tactically oriented since it is inevitable that they will serve in an aviation unit where an understanding of tactical operations is required.

### **DECCA SYSTEM**

The Army along with the other Services and civil aviation has been intensely interested in developing a capability to accurately navigate aircraft at low level during periods of darkness and low visibility. This low level, poor weather navigational capability is essential if Army aviation is to make its full contribution to support of our ground units. It is under conditions of poor visibility that combat units expect to gain their greatest tactical surprise. Past tests and experience with Decca type systems indicate that it has potential for helping to solve this problem.

The Decca system is a low frequency, hyperbolic navigational aid which gives a continual read-out of the position of the aircraft. A contract was recently awarded to a manufacturer in the United States to build 74, Mark VIII Decca receivers for installation in the aircraft of the 11th Air Assault Division at Fort Benning, Georgia. It is estimated that the Decca Ground system along with the receivers in the aircraft of the 11th Air Assault



**BEECH KING AIR**

**BEECHCRAFT**



Expected to fly this month for the first time, the new turbine-powered Beechcraft King Air will be ready for deliveries by fall, '64. The 6- to 8-place pressurized aircraft is expected to cruise at 270 mph and have a maximum range of 1,400+ miles. Powered by two P&W PT6A-6 turbines, the King Air grosses out at 9,000 lbs.

Division will be operational by the Spring of 1964. This system will greatly enhance support of the Division by improving the capability of the aviation units to accurately locate areas where equipment, personnel and supplies are to be delivered or picked up.

#### **SHORTAGE OF RESOURCES**

Many of our aviation units are still equipped with the older models and types of aircraft; yet a substantial number of the newer types are being brought into the inventory. The question of why a particular unit can't get some of these new aircraft comes up very frequently. Progress has always been expensive, and the provision of modern aircraft in adequate numbers is no exception. Our current funding program just does not allow procurement of sufficient quantities of the new aircraft to meet all requirements.

Issue of new aircraft follows a system of priorities established by Department of the Army. I assure you that deviations from this system of priorities are rare. There are many high priority activities which require substantial numbers of the new aircraft. Until these high priority requirements are filled, many of our aviation units will continue to be equipped with the older aircraft.

#### **EMERGENCY PROCEDURES**

Several recent accidents clearly illustrate that some of us don't know our in-flight emergency procedures. These accidents and their cause factor have been widely publicized



in Army Aviation Safety publications so I won't go into them here. Any Army aviator who is not completely familiar with every item of the emergency procedures or the aircraft he flies should not leave the ground. We should all study our -10s and practice until we are letter perfect in every detail. I would like to urge that all aviation unit commanders have their instructor pilots and check pilots emphasize emergency procedures during transition training, familiarization flights and check flights.

### TACTICAL CONTROL

A weekly service news publication published an article in August which indicated that certain Army aircraft operating in Vietnam had been placed under the Air Force's tactical air control system. The same publication later (September) ran an article which indicated that no Army aircraft in Thailand or Vietnam had been placed under the control of the Air Force. I mention this because the second article was short, and some of you may have missed it. These articles may have caused some confusion. For your information, the Army aircraft in Vietnam and Thailand are operated under Army control.

### PRESS RELATIONS

Because of the importance of this matter and the close tie-in with Army aviation I am going into some detail so that all can understand what is required.

A recent Department of Defense Directive (DOD 5410.14, dated 25 October 1963) has established a

uniform policy for dealing with U.S. news media representatives at the scene of military accidents that occur outside military installations.

The new DOD directive requires that maximum cooperation - consistent with national security responsibilities - be maintained with bona fide U.S. news media representatives desiring to cover military accidents occurring outside military installations. The military authority at the scene will:

a. Inform news media representatives of the presence of exposed classified material and ask them to cooperate in its protection. Photographers will be informed that violations of the prohibition on photographing classified DOD material are also violations of Federal criminal statutes.

b. Refrain from using force if news media representatives refuse to cooperate, but request:

(1) The assistance of appropriate civil law enforcement officials in preventing compromise of such material and in recovering all photographs, sketches, and negatives which are presumed to contain classified information.

(2) Informing the superiors of the offending news media representatives, that publication of such classified information or refusal to return it to military authority will be a violation of Federal statutes.

c. Submit to the Assistant Secretary of Defense (Public Affairs), through channels, a message report concerning refusals of news media representatives or their superiors to cooperate.



## ***EARLY BIRD***

*With Collins IFF transponder... ready before FAA/DOD deadlines... you can overcome flight traffic delays and be identified by your friends.*

Collins new IFF (Identification—Friend or Foe) Transponder, the only production IFF meeting all FAA/DOD requirements, assures ready identification on ground surveillance radars and complete compatibility with the U.S. traffic control. This will improve identification in crowded tactical situations and permit more rapid handling in the heavy traffic of the U.S. air traffic system. ○ Collins can offer quantity delivery of its IFF transponders early in the spring—a full nine months ahead of the January 1965 target for implementation of the IFF/ATC Beacon requirements. ○ The new design uses solid state components in all circuits and an improved final transmitter tube. This assures greater performance reliability and higher probability of mission success. It also reduces equipment weight, size and power drain, facilitating installation in aircraft ranging from helicopters to high performance jet aircraft. Transponder functions include automatic altitude reporting capability, 4096 codes on mode 3/A, circuit compatibility for the secure mode, three-pulse sidelobe suppression, modes 1, 2, 3 and C, emergency code and identification pulse.



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## PROVISIONS OF DIRECTIVE

The provisions of the DOD directive apply to all DOD components and cover military accidents occurring in the United States, its territories or its possessions, but outside the confines of military installations, the provisions do not cover military accidents involving nuclear weapons.

The DOD directive requires that:

a. All military and civilian personnel who normally deal with military accidents be fully conversant with the new policy.

b. Commanders of military installations advise civil law enforcement officials in their areas that they may be called upon for assis-

tance and cooperation when military accidents occur outside military installations and inform them of the provisions of law which make it a criminal offense to photograph, publish or refuse to surrender information of a classified nature.

## PROMOTIONS & ARRIVALS

Congratulations are in order for two General officer aviators. Brigadier General Robert H. York, Director of OSD, Adv Proj Agency (R&D Field Unit), Joint Operations Evaluation Group, Vietnam, and Brigadier General Harry W.O. Kinnard, Commander of the 11th Air Assault Division (T), Fort Benning, Georgia, have been nominated for promotion to Major General.

## SPECIAL MISSION AEROGYROS VISUALIZED BY LOCKHEED

A potential future application of the Lockheed-California Company rigid rotor concept is shown in the artist's conception of a special mission Aerogyro (right). Adaptable to virtually any size of air age vehicle, the rigid rotor principle is a key feature of the two XH-51A's built and flying under a joint Army-Navy contract.

The large tank-carrying Aerogyro shown has a movable engine exhaust deflection plate (rear) to provide directional control like the conventional tail rotor. Other rigid rotor Aerogyro designs being investigated by Lockheed-California Company include: an Infantry air scooter for one of two men; an all-weather drone; and a crane-rolle vehicle for lifting cargo objects. Lockheed studies have shown the feasibility of operating single



or tandem-rotor Aerogyros well above the 100,000 pound gross weight classification.

## COMMERCIAL USES

Lockheed Aerogyro designs also include applications for a mass market private-personal flight vehicle, and a commercial transport capable of performing service now provided by medium-sized planes.



BY  
COLONEL  
ROBERT R. COREY  
CHIEF-AVIATION DIVISION  
UTR, USCONARC  
FORT MONROE, VA.

## CONARC REPORT

**A**LTHOUGH not too highly publicized, a tremendously spirited Army aviation movement is progressing at the Army Special Warfare Center at Fort Bragg. Roles and mission may still be controversial in the employment of Army aviation in Unconventional Warfare, Counterinsurgency Operations, and Psychological Warfare, but the Aviation Section, Army Special Warfare Center, and the 22nd Aviation Detachment, Special Warfare, are doing an outstanding job in aviation support.

Army aviation activities at the Special Warfare School encompass the provision of crew and aircraft support in conjunction with school problems and demonstrations as well as further refinements to established Army aviation doctrine and techniques in all aspects of Army aviation. Perhaps the most informative single act is the demonstration put on by the aviation units for the numerous students who are fortunate enough to attend the Special Warfare courses. The employment of the CV-2 in a low extraction drop coupled with the various uses of the UH-1B and U-10 aircraft make the viewers realize the ef-

fectiveness and versatility of Army aviation in special warfare operations.

Aviation Officer for the Special Warfare Center is Maj. M.D. Hilbert, ably assisted by Maj. W.C. Britton. Under these two capable officers, the aviation elements carry an extensive load despite having only 14 aircraft on hand.

Anyone who passes by Fort Bragg will find it both beneficial and enlightening to stop by and observe the pioneering taking place in this comparatively new area of Army aviation operations.

### SHERMAN AAF

Major John P. Westphal and Maj. Thomas C. Roberson, are the only two officers (7 authorized) assigned to operate this busy Army airfield. Fortunately, there are approximately 60 enlisted personnel which help to maintain 24-hour operations.

In addition to providing command & staff transportation for the C&GSC Sherman Army Airfield supports more than 115 other AA's who are students, staff and faculty, or assigned to nearby units without aircraft. This large 'proficiency' load is handled by 20 assigned aircraft, to in-



clude 2 U-8's, 6 U-6's, 9 O-1's, and 3 OH-13's.

A Fifth Army field maintenance shop is also stationed at Sherman Army Airfield and is commanded by Maj. O'Donald. This shop supports some 20 outlying aviation units.

Sherman Army Airfield has an excellent 5,000-foot runway and an approved ADF approach. Maj. Westphal hopes to add GCA facilities by the first of the year.

### **AERIAL ARTILLERY**

On the 16th of November, the U.S. Army Artillery and Missile School, Fort Sill, Oklahoma, conducted their quarterly artillery firepower demonstration. Although the majority of the demonstration was confined to the firing of conventional artillery weapons, of particular interest was the demonstration of aerial artillery fire conducted by the 1st Aerial Artillery Battery (Prov), located at Fort Sill. They employed three H-34 helicopters mounting twenty 4.75-inch rockets and fired on an area target with remarkable accuracy as well as devastating effect.

Major Wallace R. Dieterich, the Commanding Officer of the battery, and Maj. Thomas R. Smith, assigned to the aerial fire support section of the Gunnery Department at Fort Sill, are to be complimented for their progress in the development of both direct and indirect aerial artillery fire. This program commenced in March of this year and has produced some very tangible results with regard to new tactics and techniques in the employment of aerial artillery. Weapons systems as an inte-

gral part of the helicopter and capable of being employed for direct and indirect fires merit further consideration and study.

### **72d AATRI**

Major Richard A. Humes, Signal Corps, has been assigned as the commander of the newly re-organized 72nd Army air Traffic Regulation and Identification Company (AATRI) at Fort Benning, Georgia. The 72nd AATRI Company, organized under TOE 1-207E, has the mission to provide enroute air traffic regulation and identification, navigation aids, air warnings, other assistance to in-flight aircraft and assistance to divisions in regulating air traffic in the forward areas. At the authorized strength of 222 officers and enlisted personnel, this unit can perform its mission in support of a field army, separate corps, or communications zone.

Concurrent with the activation of this unit on 24 June 1963, the 70th Aviation Operating Detachment (AOD) was inactivated at Fort Benning to provide a nucleus of personnel for the Company Headquarters plus 1st and 2nd Flight Regulation Platoons; the 58th AOD at Fort Hood became the 3rd Flight Regulation Platoon; and the 6th AOD at Fort Bragg became the 4th Flight Regulation Platoon. The new unit will provide enroute air traffic control facilities for Project TEAM at Fort Benning and concurrently air traffic control support to the III U.S. Corps and the XVIII Airborne Corps, and other major units.

Based on performance in Joint Exercise SWIFT STRIKE III and the



previous exercises, DA directed the consolidation of this unit at Fort Benning to further develop and refine Army concepts of air traffic control. This consolidation was completed early in November when the 3rd Flight Regulation Platoon completed a PCS from Fort Hood to its present station at Fort Benning.

### **MAINTENANCE CONCEPTS**

We have received recently a number of inquiries concerning the progress and establishment of the A-B-C levels of maintenance which are supporting the air assault units undergoing training and tests at Fort Benning, Georgia. Here are some definitions which may provide a better understanding of what each level of maintenance consists:

"A" Level Maintenance (User) provides the unit the capability of performing, on site, that maintenance essential to mission performance. It consists of daily, safety and minor inspections, servicing, corrective maintenance, calibration of systems, and removal or replacement of components.

"B" Level Maintenance (Support) is accomplished by separate maintenance units performing inspection, maintenance, and necessary supply to reconstitute aircraft and components not requiring extensive fabrication of parts or not requiring acute environmental tolerance. These units may be organized in one of three types: fixed-wing support, rotary-wing support, or composite. Each type is capable of operating a maintenance facility, airstrip, and/or heliport as required.

"C" Level Maintenance (Depot) is that maintenance performed on materiel requiring overhaul or rebuild of parts, assemblies, sub-assemblies, and end items, including the manufacture, modification, testing, and reclamation of parts as required.

"A" and "B" levels are authorized and have been established within the 11th Air Assault Division and 10th Air Transport Brigade at Fort Benning, Georgia.

The "C" level capability is being provided by the 14th Aircraft Maintenance and Supply Battalion stationed in Atlanta, Georgia. The unit is commanded by Lt. Col. H.M. Tidmarsh.

### **LIBERTY AAF**

Those of you who have not visited Fort Stewart in recent years would be agreeably surprised by the present condition of Liberty Army Airfield. Runways 14-32 and 23-05 are now hard surfaced and there are ample taxi-ways. Both runways and taxi-ways are fully lighted for night operation and the field is open 24 hours a day throughout the year.

A great deal of credit for the state of operations goes to Capt. J.D. Brock, who is the only officer assigned to Liberty Army Airfield.

Although the field is home station to only five (5) permanently-assigned aircraft (1 U-6, 1 O-1, and 3 OH-13's), it is host to many reserve aviators during summer ANACDUTRA. In addition, more recently, Fort Stewart has been used as a training area for the airmobile test units, which increases the field activity about 3,000 per cent.





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**Aircraft Engineering Corporation**

**Bethpage, New York**





Liberty Army Airfield has an approved approach off the Hinesville NDB and can provide JP-4 and 115/145 fuel to transients. The Airfield operations have the full support of the Post Commander, Col. Walter G. Bare, himself an Army aviator.

#### DEMONSTRATION TEAM

It is with a note of sadness that the U.S. Army helicopter team has again passed into limbo. The pressure for personnel and materiel has dictated the inactivation of the team which was being organized at Fort Meade, Maryland under supervision of Col. Chris Hanburger, Second Army Aviation Officer.

We can console ourselves with the fact that while we do not have a designated demonstration team - every aviation unit in the Army has this function, and many have performed outstandingly.

#### UH-1A TRAINERS

To partially fill the requirement for instrument helicopters for the expanded USAAVNS helicopter instrument course, eleven additional UH-1A's are being modified by ARADMAC into instrument trainers.

These modified helicopters will have essentially the same configuration as the original fifteen instrument trainers built by Bell some two and one-half years ago. These aircraft, in addition to the original fifteen, will only temporarily fill the requirement. By fiscal year 1965, the Army Aviation School will require 136 instrument trainer helicopters. This quantity of helicopter instrument trainers at the Aviation School clearly indicates the emphasis being placed on the Army's helicopter instrument program.

### FORT RUCKER PAIR PUBLISH "AA STORY"

The "ARMY AVIATION STORY," a new book written by Richard K. Tierney and edited by Fred Montgomery, traces the development of Army aviation from the civil war period to the present. Illustrated with hundred of photographs, heretofore unpublished in book form, the new volume includes a comprehensive study of Army aviation doctrine and aircraft employed over the years.

Amplifying the need for aviation support of the ground forces "in an age when the mobility-firepower scale must be balanced," the 287-page book devotes chapters to "Balloons to Cubs" - "Academics and Training" - "The War Years, North Africa, Sicily, and Italy" - "The War Years, Europe, Pacific, and Korea" - "Army Aviation Medicine" - "Medical Evacuation" - and other subjects.

Tierney and Montgomery are well acquainted with Army aviation, serving on the editorial staff of USAAVNS' "Army Aviation Digest." Some 1,000 copies of the edition has been printed. Individual copies may be purchased from Colonial Press, Northport, Alabama, at \$5.00 per copy COD plus postage.



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**Q**UALITY Assurance, a fairly new ingrown thorn in the productive world, is spreading like an infectious plague. It has already placed the Supply and Materiel Readiness Concept back several years. Someone, somewhere, has developed the idiotic idea that the MODERN way to get an item expeditiously produced is to downgrade the responsibility of Quality Control. As a result, Quality Assurance was born.

Quality Assurance is a slide rule, statistical, analytical, and trusting method to conduct an inspection. Actually, it is a post-mortem, after-the-fact function. In essence, it is Russian roulette with the taxpayers' money and the lives of the men who fly the equipment.

Military Specification, MIL-Q-9858, has entrusted Quality Control to the producer of an item while the Government Quality Inspector sits

# WHAT'S HAPPENED TO QUALITY CONTROL?



in a room full of charts and graphs and "guesstimates" the outcome of the production record. The things that are missing from those wall charts are the little white crosses which indicate that a contractor had a production, materiel or personnel problem and Quality accidentally fell by the wayside.

AQL (Acceptable Quality Levels) referenced in the Supply and Logistics Handbook "Inspection H-105," as governed by Military Standard 105, predetermines the "allowable" percentages of defects on any given Government contract. It would seem that if the Government is spending 100 pennies for an item, they are content to receive \$.65, \$.75 or \$.80 worth of merchandise. The remainder of the pennies are considered as "allowable defects." It is high time Quality Assurance is scrapped with its slide rules, charts and graphs, and a realistic Quality Control be reinstated to assure that the Government gets a dollar's worth of merchandise for every dollar spent.

Recently, NASA released a report on their space program. It reflected that in one manned back-up support flight:

"A total of 720 system or component discrepancies were recorded of which 526 were directly attributed to a lack of satisfactory quality of workmanship. Of this number, 444 required specially scheduled time to correct."

This sort of discrepancy record is a black eye to the American Productive System and, yet, could

have been avoided for the most part. The waste, the cost for rework, the low-level safety factors, and the loss of time are all the fruits of Quality Assurance.

Under statistical and analytical Quality Assurance there are no stop signs on the road for a fast buck. From the aerospace program down to one O-1 "Bird Dog" on patrol, the quality of the machinery must be perfect. It is not the job of the astronaut or the aviator to prove that a quality assurance statistic was right or wrong - it is too late then.

If the Government Procurement function continues to follow its present acceptance of materiel by slide rule, charts, graphs and data processing, rather than actual Quality Control, Uncle Sam can soon open "The World's Largest Strategic Materiel Discount House." The materiel now being procured is not first class merchandise.

Final Quality Control cannot be entrusted to a contractor. "Quality" is only as good as the RESPECT afforded it by those who have charge of it. Quality and Production have never been the best of friends. "Quality" is always placed on the sacrificial altar when production runs into a snag.

There is no intent here to defame the outstanding product of this great country. In the early American production world, pride of workmanship was the guardian of quality. The wars and maximum efforts adopted Quality Control as the guardian of Quality. And now Quality Assurance



has been pitted against production and cost cutting operations - and it cannot succeed.

As one reads the NASA report, a glaring statement is encountered. It clearly states, "Approximately 50 per cent of component spares were rejected after testing." This raises three questions:

1. Where was the pride of workmanship?
2. Where was Quality Control?
3. Where was Final Procurement Quality Control?

The answer lies in the fact that those items were probably procured by using a data processing machine as an inspector.

#### **NO SHORT CUTS**

Inspectors are not an ordinary group of people. They are a dedicated lot who have a sincere sense of pride for the items they accept. They, too, are experienced folks who know their job and, moreover, they know the equipment they are inspecting. "Quality" does not need slide rule jockeys. It needs Control and it needs Inspectors. There is no manpower shortage. There are no savings to short-cut quality. For every reject, there is rework; rework is throwing good money after bad. Statistically, the cost of rework costs more than the cost of Quality.

It would be most interesting to see a Quality Assurance Statistician buy

a new automobile for his own personal use. Of course, the AQL (Acceptance Quality Level) will be low, based on the per units produced. As such, a missing door handle, an inoperative generator, a dead battery, etc., would be "allowable" acceptable defects. This would never do for a personal vehicle, but what would be the AQL for a similar Government-procured vehicle? It is sound business for each individual in this country to want a dollar's worth of merchandise for every dollar spent. It is just as sound a business for Uncle Sam to get a full dollar's value for every dollar spent.

#### **"SAMPLING" REJECTED**

The sampling of Variable Acceptable Quality and Approved Nonconformance to specifications may be fine for staff cars, refrigerators and swivel chairs. There is no room for such Quality Assurance terms for CH-37 Clutches, U-1A Propellers, Aircraft Engines and Components, or any other AIR ITEM.

Military merchandise must be operational and functional before it is used. It cannot be found faulty when it is needed. This country has no right to ask its aviators and soldiers to make a final procurement acceptance inspection on the field of battle, for there a final acceptance reject is a final sacrifice.

#### **BEECH RECEIVES ORDER FOR BOMB DISPENSERS**

The U.S. Army has awarded the Beech Aircraft Corporation a follow-on contract for \$3,277,711 to produce bomb dispensers and containers. The new order is the third received by Beech on the articles. The military application of the completed items remains classified for security reasons.

# Hercules can haul almost



*U.S. Air Force C-130B takes off from jungle clearing between Amazon and Andes for one-hour flight to Lima, Peru. Heavy freight must otherwise be hauled 7,000 roundabout miles by river, sea, and rail.*

**Trucks, tractors, troops.** Jet engines, jet fuel, jet pilots. Missiles, rockets, guidance systems. Air Force, Army, Navy, Marines, Coast Guard. Whatever, whoever, wherever—Hercules has what it takes to get the job done.

Destination may be a crude landing strip freshly hacked out of the jungle. Or a snow field

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Hercules is the true airlifter—built for the big work. Its huge rear doors swallow tons of freight

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# anything—almost anywhere



in seconds—straight onto the truck-bed height cargo floor. And these doors can be opened in flight to permit king-size paradrops.

Five hundred of the big propjets, eighteen different versions, are now in service, for the U.S. Air Force, Navy, Marines, and Coast Guard—and for the air forces of many free world nations.

## **LOCKHEED GEORGIA COMPANY**

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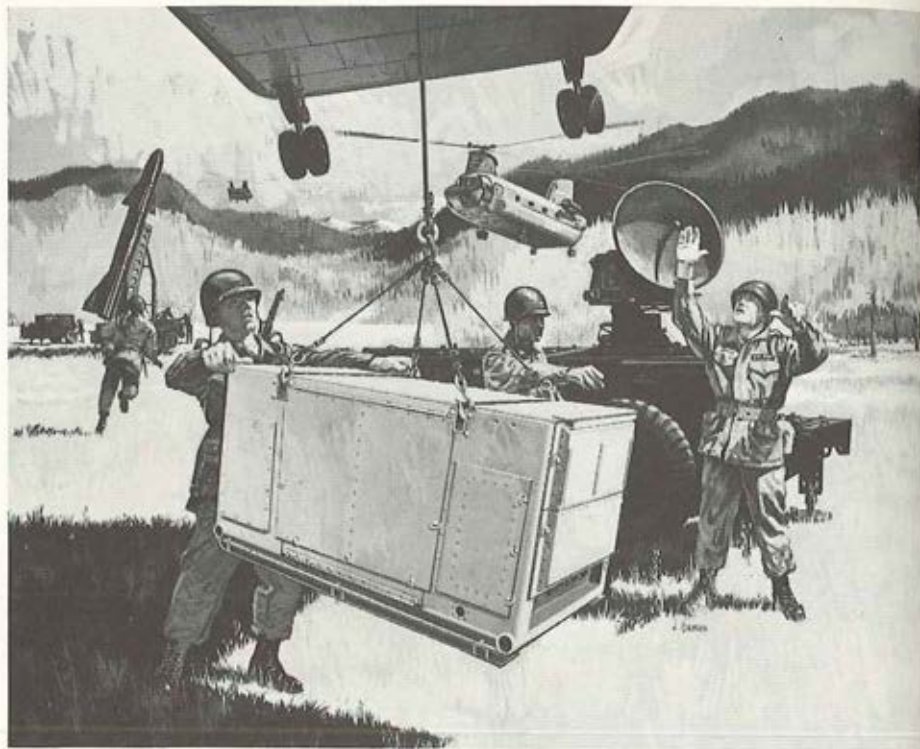


**Launches target drones**



**Lands on snow & ice**





## Solar portable 100 kw gas turbine generator set has advanced solid state frequency control

Solar has developed a new portable 100 kw gas turbine-driven generator set with the Army's Engineering Research and Development Laboratories. Steady state and transient frequency control is significantly better than conventional hydro-mechanical governors available.

Prime mover for the new set is Solar's 350 hp T-350 gas turbine engine. The T-350 is a light, compact, simple cycle gas turbine designed especially for rugged military and industrial applications. It will operate without vibration on any liquid fuel, including diesel fuel, kerosene and combat gasoline. The engine starts instantly and accepts full load without warmup.

The unit's solid state governor

maintains frequency within very narrow limits despite wide variations in load, ambient temperature, altitude or engine temperature. The set will provide power for an advanced mobile battlefield radar system being developed by the Signal Corps. It is suitable for any application requiring a portable power supply with precise frequency control, such as missile ground support, checkout and launching equipment.

The entire unit, including engine, generator controls and intake and exhaust silencers, is completely self contained. It weighs 1300 lbs. and measures 90 inches in length by 36 inches in width and height. Parallel operation is provided.

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family of gas turbine-powered generator sets from 15 kw to 800 kw. All are efficient, lightweight, portable units that have earned a reputation for dependability in hundreds of applications. Gas turbine air transportable generator sets give the armed forces increased mobility for today's military strategy.

For more information about Solar gas turbine generator sets, write Dept. L-159, Solar, San Diego, California 92112.





# VIETNAM

## REPORT

**T**HIS is my final report on progress of Army aviation in the Republic of Vietnam. As eventually happens to all, Big "R" has almost arrived. I, too, am beginning to count the last days and think more of CONUS, family and friends. I have mixed reactions on leaving, glad in many respects that my tour is up, but also sad to leave the many friends and associates and to no longer be part of "Army aviation" in Vietnam; proud to have been a small part of it for the past year.

The Army Aviation Team in Vietnam is an effective, efficient and thoroughly outstanding professional group of officers and men. The progress and the improvements shown in all fields since the arrival of the first Army aviation units in January 1962 is almost beyond comprehension. All in the U.S. Army, be they in aviation or not, can be justly proud of this outstanding group and what they have accomplished.

The lessons learned and the techniques developed or rediscovered,



assisting the Vietnamese in their war against the Viet Cong have probably advanced the mobility of our own Army by at least 10 years. The large reservoir of trained aviators, crew chiefs and aircraft maintenance men within Army aviation, all with combat experience, cannot help but enhance all of the Army. I am sure this is particularly true in the 11th Air Assault Division as well as other aviation units in CONUS, USAREUR, and USARPAC.

Individually and also collectively, Army aviation has developed a "can do" attitude. This has been amply demonstrated to our non-aviator brethren and to the Vietnamese on hundreds of occasions. Performance of difficult and hazardous missions under adverse weather conditions and terrain and in the face of the enemy are commonplace. When asked if a mission can be accomplished the typical answer is "I'll try, Sir."

The Air Medal with three silver and four gold oak leaf clusters was recently awarded to Staff Sergeant

---

BY

LT. COLONEL

KENNETH D. MERTEL

---

Donald A. MacNevin from the UTT Helicopter Company, along with the promotion to E-6. This is the highest number of air medals yet to be won by any one individual in the Republic of Vietnam. It represents one year of flying as crew chief and gunner in an armed UH-1 helicopter and a total of over 500 combat assault missions flown against the Viet Cong. All, I might add, without receiving a purple heart, although his ship was hit many times. Sergeant MacNevin flew as gunner and crew chief with the Company Commander of the UTT Helicopter Company, originally with Major Ivan Slavich, and then with the present Company Commander, Major Robert Reuter.

#### **OFFICIAL RECOGNITION**

Sergeant MacNevin represents the dedicated crew chief and gunner here in this counterinsurgency action against the Viet Cong that is so typified by the hundreds of other outstanding enlisted men serving in our Army aviation units over here. Without their devotion to duty and unrelenting efforts and skill, the splendid job accomplished by Army aviation in the Republic of Vietnam could not be.

The best of luck in your new assignment to the 3rd Armored Division in Europe, Sergeant MacNevin. Keep up the good work.

#### **MOUNTAIN MISSION**

The 119th Aviation Company commanded by Major Donald A. Smith, recently accomplished another AA first. An assault mission was flown into a landing zone in II ARVN Corps having an elevation of 4,700 feet

above MSL. This heliborne combat assault mission against Viet Cong forces is believed to be the first such mission flown by the U.S. Army Helicopters at so high an elevation. Any one else top it?

The mission consisted of moving a company of Vietnamese Army Rangers from Kontum to a landing zone in the rugged mountainous terrain near Mang Buk. A pre-strike was flown by the Vietnamese Air Force followed by the UH-1B transports escorted by armed helicopters to the landing zone. The mission was accomplished without incident and the objective was seized. Congratulations on a difficult job, well done.

#### **FLYING HOUR PROGRAM**

A few indications pertaining to the scope of hours flown over here. Probably the aviator flying the most time in any one month is Lieutenant Norman D. Carter of the 118th Aviation Company who flew 132 hours in a UH-1B helicopter during the month of October. All of this was combat support time. Any one beat that?

Most of the UH-1B equipped aviation companies are averaging 1,300 to 1,500 hours per month. CH-21 equipped aviation companies average 650-750 hours per month, although on occasions they have topped 1,000 hours. TO-1D aircraft of the 73rd Reconnaissance and Surveillance Company averaged 100 hours each for the month of October for a total of over 3,200 hours.

Crew chiefs, mechanics and other maintenance personnel are performing an outstanding job in keeping the aircraft flying to support the



combat flying hours program indicated. Majority of this work must be accomplished under field conditions, for not all units are equipped with adequate hangars and lighted facilities. Work must be accomplished largely in the late afternoon and evening after completion of the assault missions in order that the ships are ready to go again tomorrow.

During maximum efforts on a repeated daily basis, the only way to keep the required aircraft flying is to conduct maintenance on a 24-hour day basis. Personnel responsible for the aircraft spare parts supply are to be congratulated for having the parts when needed. Without this excellent support, effective maintenance could not be accomplished. The exceptional efforts of both maintenance and aircraft supply personnel are amplified by the availability rates of an average 90 per cent for the UH-1B fleet and 80 per cent for the CH-21 fleets in recent weeks. These rates are the highest ever attained under combat conditions, world wide; and are high above Department of the Army averages. Keep up the outstanding record.

### **FLIGHT FOLLOWING**

A U.S. Army tactical flight following system has been established in most Vietnamese Army Corps areas to supplement the flight following provided on a limited basis by the U.S. Air Force.

As an example, the system in III ARVN Corps operated by the 145th Aviation Battalion employs four FM radio stations including a master station. These four stations spread

throughout the Corps zone provide accurate flight following that will monitor the flight of each aircraft. This is particularly important for the single ship missions flown by helicopters and the TO-1D. In the event of forced landings, aircraft damage by enemy fire, etc., rescue services can be secured quickly. This is most reassuring, especially to those flying over the rough mountains and jungle growth in the northern part of the zone.

### **CHANGE OF ASSIGNMENT**

There have been a number of changes of assignment of key personnel. First in the 145th Aviation Battalion, Major Francis J. Lopes, departs as Battalion Executive Officer to be replaced by Major John Brosnan, a recent arrival. Major Lopes has performed an outstanding job as Adjutant and Battalion Executive Officer during his tour. At the same time as an additional duty he has managed to become qualified in both the CH-21 and the UH-1B and to fly numerous combat assault missions in both types of units. Lieutenant Colonel Crawford Buchanan recently joined the 145th Avn. Battalion as Deputy Commander.

The Delta Aviation Battalion recently received a new arrival, Major John Roberts who assumed duties as Assistant Battalion Executive Officer. Major Edward Seymour turned over command of the 121st Aviation Company to Captain John Anderson who will now provide direction and guidance for the "Soc Trang Tigers."

Major Morgan Mathews departed for CONUS, relinquishing command

# Hughes makes news in air mobility!

Hardly more than a generation ago, practical rotary wing flight was largely a promise.

Since just after World War II, when the Hughes Tool Company/Aircraft Division embarked on helicopter development, the industry has grown more capable of meeting the need for new and better craft.

However, the contributions the rotary wing industry can make are just beginning. These examples of Hughes Tool accomplishments, and its plans for the future, demonstrate this fact. For, today, rotary wing flight holds the promise of revolutionizing man's transportation patterns.

The Hughes Tool Company/Aircraft Division is putting all of the ingenuity, skill and resources at its command into making that promise a reality.



**The Hughes XH-17 — First Large Pressure-Jet Flying Crane.** Flying at a gross weight of 47,500 lbs., the XH-17 proved the feasibility and the advantages of jet power for rotary wing craft. Built and demonstrated at the Hughes Tool Company/Aircraft Division facilities in Culver City, California, the XH-17 flew numerous tests from 1952 through 1955. This invaluable experience—in the techniques of jet engine installation, in the design of complex ducting, in the development of pressurized structures—has led to several new Hughes advancements in turbine powered craft.

**The HO-2 Met or Exceeded All Guarantees.** Designed specifically to meet the Army's need for a low-cost, light two-place helicopter, the HO-2 prototypes were outstanding demonstrations of Hughes Tool Company capabilities. With a high power to weight ratio, small rotor diameter, rugged structure and over-all simplicity and integrity of design, the HO-2 easily met or exceeded all guarantees.



**The Hughes 269A Cuts Commercial Helicopter Costs in Half.** In volume production at Culver City, the Hughes 269A has met with immediate commercial success. At the low cost of \$22,890 and delivering top performance at a 13¢ per mile cost, the 269A fills an important civilian transportation need. Owners praise the 269A's 360° visibility, its very high maneuverability, responsive controls, unusual stability and ability to get in and out of small areas.





**The OH-6A—4-Place LOH for the U.S. Army.** Winner of a development contract in the Army's Light Observation Helicopter program, Hughes Tool will deliver five OH-6A prototypes for evaluation. The OH-6A will have forward speeds in the 140 m.p.h. class. Its payload will exceed 1,000 lbs. Its compact size, small rotor diameter and folding blade features will enable it to operate from tight quarters and provide for easy concealment. Taken together, the OH-6A's capabilities promise exceptional performance over the mission spectrum, from combat recon through logistic support.



**Hughes 4-Place, Turbine-Powered 369 Civilian Helicopter.** Adapted from the Hughes Tool Company's OH-6A design for the Army, the 369 would fill the important need for a low-cost 4-place helicopter for civilian use. It would offer the same high speeds and high load capacities as the OH-6A. And compact size would allow more efficient operation for all types of applications.



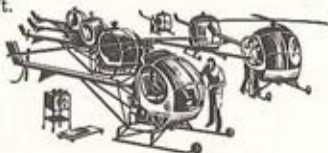
**Revolutionary Hot Cycle Rotor System.** The Hughes Hot Cycle Rotor system promises a major breakthrough in vertical lift economy. Fuselage-mounted turbojets supply high energy gas through ducts to the blade tips to drive the rotor. Light ducting is substituted for heavy, complex power turbines, gear boxes, shafting, tail rotor. Under Army contract, work is progressing on design and construction of the XV-9A Hot Cycle Research Aircraft, below.



**Hughes Hot Cycle-Powered "Flying Crane."** The simplicity and light weight of the Hot Cycle Rotor System promises to provide heavy lift helicopters with economy and performance greatly surpassing existing systems. The 20-ton payload flying crane design illustrated above is an example of such an application.



**The Hughes Military Compound Jet VTOL Transport.** This advanced VTOL concept utilizes the efficiencies of the Hughes Hot Cycle Rotor System to their fullest advantage. For vertical lift, the high energy gases drive the rotor. For cruise flight, the gases are used to drive ducted fan propulsion units. This compound configuration provides a 5-ton payload, 500 nautical mile radius capability with an aircraft empty weight of just 13,000 pounds. Advantages of such a military VTOL would include: self-deployment with a ferry range of 2,500 nautical miles, high cruise speed of 250 knots, multimission flexibility and low maintenance. The Hughes Compound Jet VTOL promises a major breakthrough in operating economy — offering costs less than half those of existing VTOL aircraft.



**Outstanding Design and Production Capability.** At Culver City, California, the Hughes Tool Company/Aircraft Division has one of the industry's most complete rotary wing facilities — now producing Model 269A helicopters at a one per day rate in its over 400,000 square foot manufacturing complex. The Hughes Tool Company/Aircraft Division has the imagination, the experience, and the production capabilities which will help keep it a leader in the rotary wing world of tomorrow.

**Hughes Tool Company**  
Aircraft Division, Culver City, California



of the 1st Aviation Co. to Captain Kenneth Blake. Captain Samuel Conley departed for a reassignment to CONUS, releasing command of the 611th Field Maintenance Company (DS) to Captain Charles Nickolls. The 330th Heavy Maintenance and Supply Company received a new commander with Major George Sullivan assuming command. The 339th Field Maintenance Company (DS) is also in the news with Captain Robert Lawrence going home, replaced by Captain Wayne Barker, fresh from the U.S. The UTT Helicopter Co. received a new commander, as Major Robert Reuter departed, replaced by Captain Calvin Bean.

Best of luck to all you "departees."

#### NEW CORRESPONDENT

I have asked Colonel John Klingenhagen, the Deputy Commander of the U.S. Army Support Group, to continue to write this column and spread

#### EQUIPMENT ISSUE

The March, 1964 issue of "ARMY AVIATION" will be a special issue of the magazine covering all operational and experimental aircraft utilized within Army aviation during the 1942-1963 period.

The "Equipment Issue," last published in September, 1960, will list approximately 80 fixed and rotary wing aircraft in its 80 to 96 pages.

Subscribers will receive a copy of this special issue as one of the regular 12 issues of an annual subscription.

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the word about Army aviation in Vietnam. He has assured me that he will "carry on."

It has indeed been a pleasure and a privilege to know the many fine officers and men over here and to have been associated with all of you for the past year. My new assignment is Fort Rucker, Alabama, so if down there or passing through, give me a call. I plan on taking a bit of leave throughout the Far East and CONUS prior to reporting to duty about 1 February. See you then.

A very Merry Xmas and Happy New Year to all of you remaining in the Republic of Vietnam. Your rotation date will be here before you know it. Until then, all I can say is "Sorry about that." Good luck.



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THE ARMY LOOKS AT THE FUTURE OF . . .

# MANNED AIRCRAFT



By

BRIGADIER GENERAL JOHN J. TOLSON

*Director of Army Aviation, OACSFOR*

*Department of the Army*



**A**RMY aviation differs substantially in scope and concept from the air elements of the other Services. Its sole purpose is to assist the ground soldier in the accomplishment of his mission.

Army aviation does this by improving tactical mobility. Improvement has advanced to the degree that air mobile operations are no longer considered a special operation but are within the capability of each division using its own assigned aircraft.

In addition, another function of Army aviation is the original use of all military aircraft as the eyes of the Army. Battlefield surveillance by air is of vital importance in all types of operations. It is as important to be able to locate dissidents in counterinsurgency warfare as it is to locate lucrative targets on a nuclear battlefield. In both cases, instantaneous action is required or the targets will quickly vanish. Army aircraft operating in the environment of the front line troops and under the command of the ground commander have proved to represent the best means of achieving instantaneous response against targets developed from battlefield surveillance.

To accomplish the missions of mobility and surveillance, manned aircraft are the principal aerial

vehicles. The role of Army aviation dictates that manned aircraft will comprise the bulk of our aircraft inventory. For the surveillance mission the Army currently employs, and plans to continue to employ, drones to assist in obtaining combat information. But the drones are used only to complement manned surveillance aircraft.

The aircraft inventory of the Army has increased to the point where the Army now has 6,000 aircraft, half of which are rotary wing. To operate these aircraft we have more than 7,000 rated pilots, both officers and warrant officers. As the Army continues to find new ways to improve combat effectiveness through the use of aviation, there is little doubt that the number of aircraft and the number of Army aviators will increase. Of course, in planning for an increase in aircraft for future Army units, the important problem to resolve is the determination of the monetary and personnel effort to be devoted to aircraft in relation to other requirements. Air mobility and aerial surveillance cannot and should not be discussed as entities; aviation must be approached from the over-all Army operational concepts contemplated for the future.

Accordingly, we have continually pointed out to the aircraft industry that the number of aircraft we re-

quire is severely hampered by the high costs. Unless a major breakthrough in the cost of aircraft occurs, our air mobile operations and our surveillance efforts will not advance as rapidly as they should. In this connection, the Army Chief of Staff, General Earle G. Wheeler, has stated that the spiraling of procurement costs bear heavily on the future of air mobility.

### AIR MOBILITY

There are many problems inherent in the growing aviation activities in the Army. One of these is the control of the diverse elements comprising the Army aviation posture. The Aviation Program is presently diffused throughout the Army in a horizontal structure instead of a vertical one. Whether this system is the most effective is currently under study. This is another example in a long history of investigations to determine the organization, tactical doctrine, and hardware required for Army aviation.

A military force today cannot achieve maximum mobility if it is ground bound. The terrain in a large portion of the world prohibits the employment of tanks, armored personnel carriers and, in many cases, even wheeled vehicles. A tremendous engineering effort is required in mountainous and jungle country to prepare even a primitive road. The Pacific campaigns during

World War II, Korea, and now Vietnam point out that only an air mobile force in such terrain can have true mobility. The terrain in other potential trouble spots substantiates this conclusion.

Several prerequisites for a successful military force are its ability to move, to see, to shoot, and to communicate. Movement is a critical factor, as evidenced by the common thread running through the successes of military history which indicates that the force getting to a key position first with the most troops gains the upper hand. If you can move your force to a dominating position on the battlefield quicker than the enemy, and quicker than he believes you are capable of moving, your chances of winning are good. If you can react to the enemy's thrust in the same fashion, he may fail in his attack or place himself in a vulnerable position susceptible to a counter-attack. On the rolling plains of Europe, mechanized forces, tank-heavy but augmented by air mobile units, offer the greatest opportunity for success. In some other parts of the world, the desired mobility can be achieved only by air.

Army aviation, as we know it today, began in 1942 with the employment of Piper Cubs for Artillery air observation. These aircraft were organic to field artillery units. These Cubs saw their first combat in the North African campaign. Aviation tactics and techniques were quickly developed and proved highly effective. A pattern for the employment of the Cubs was well formed by the end of the African campaign, and commanders understood the value

This article has been reprinted in "Army Aviation Magazine" through the courtesy of Grumman "HORIZONS."





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of the light plane in combat as an excellent information gathering source as well as an aerial artillery observation post.

### **ORGANIC AIRCRAFT VITAL**

The Army continued the development of organic aircraft after World War II and Korea. In the Korean War helicopters proved to be highly efficient for medical evacuation purposes, with literally thousands of lives saved by rapid movement from forward areas to mobile hospitals. After Korea, the helicopter program was rapidly accelerated and air mobile assault tactics were formulated. Doctrine was developed which since has undergone continuous review and has been tested in war games, in field exercises, and in combat in South Vietnam. The tests and our air mobile support operations in Vietnam have confirmed that air movement contributes a significant tactical advantage to the ground unit employing it in counter-insurgency operations. The tests so far have also validated the principle that just as the Army needs organic personnel carriers for movement on the ground and its own bridging and assault boats for river crossings, so does it need organic aircraft for optimum tactical movement on almost any battlefield.

The performance of the early helicopters in Korea and the advances made since in rotary-wing aerodynamics gave an impetus and a new look to the Army aviation program. The helicopter rapidly developed into the backbone of Army aviation. This is evident in the new divisional organization adopted by

the Army; in each type of division, there is a total of 101 aircraft authorized. Of these, 97 are helicopters.

The Army's aircraft inventory contains many CH-21 and CH-34 helicopters. These aircraft models are being replaced in our combat units as fast as the newer turbine-powered Bell "Iroquois" come off the production line. The UH-1 "Iroquois" replaces the UH-19, U-6 (de Havilland Beaver), and the CH-34s and CH-21s. The "Iroquois" is significant in that it was the first helicopter designed for service in the Army combat zone and is also the first turbine-powered Army helicopter.

The models are currently being produced: the B, a utility helicopter capable of being armed with machine guns and/or rockets; the newer, larger D model, which can carry a rifle squad plus crew.

### **LOH TO REPLACE THREE**

Another new model helicopter is the CH-47 Chinook, which will replace the CH-37 medium helicopter. The Chinook is a tandem rotor aircraft which can transport 33 combat troops and a crew of three. It is powered by two turbine engines. A company of Chinooks will comprise part of the Transport Brigade with the 11th Air Assault Division at Fort Benning, Georgia.

Currently being developed by Bell, Hughes, and Hiller is the light observation helicopter (LOH). The LOH will ultimately replace the Bell OH-13, the Hiller OH-23 and the fixed wing Cessna O-1 (L-19). The three manufacturers will deliver



aircraft in the near future for evaluation tests to be conducted at Fort Rucker, Alabama. After the evaluation, a decision will be made as to the best design. It is anticipated that the decision will be made in the summer of 1964. The LOH will offer substantial performance advantages over the present light observation helicopters and fixed-wing airplanes. It will be a four-place aircraft powered with a 250-hp turbine engine.

While the helicopter was proved to be the workhorse vehicle for air mobile operations, the Army has continued to improve its fixed-wing battlefield surveillance capability. Korea showed that an observation aircraft with increased performance characteristics was required. The demand for such an aircraft became urgent with the development of tactical small yield atomic weapons and accurate means of delivery. Prompt surveillance with instantaneous response has become a key to success on the modern, dispersed battlefield.

#### **FIELD TESTED**

Grumman was the winner of the design competition for an improved Army fixed-wing observation aircraft. An evaluation by a Joint Army-Navy Board favored the versatile, highly successful Mohawk. The Mohawk, capable of operating from short fields and sod runways, fulfilled the Army's post-Korea requirement for short-range visual observation, day and night photography, electronic surveillance, and target acquisition missions under the majority of flight weather con-

ditions. The Army, of course, still looks to the Air Force for support in the deep-penetration, high-performance flight regimes.

Mohawks evolved in three models, all of which have both visual and photographic observation capabilities. The B model has the additional capability of electronic surveillance using side-looking airborne radar (SLAR), while the C model has an infrared capability. Mohawks have been employed with the Seventh U.S. Army in Europe at the division level since early 1962.

#### **VERSATILE AND FLEXIBLE**

Our assistance to the Republic of Vietnam led to the use of Mohawks to gain the information required for air mobile helicopter assaults against the Communist Viet Cong. Experience dictated that there was a requirement to arm the Mohawks for these operations, so they could locate and fire on the enemy simultaneously. While the Mohawk is capable of delivering machine gun fire, rockets, bombs, smoke and missiles, only machine gun fire and rockets have been used extensively in Vietnam.

A Special Warfare Aviation Detachment, equipped with Mohawks, was deployed to Vietnam in September, 1962. The record of this organization and its aircraft has shown that the Mohawk is an excellent counterinsurgency aircraft. It can get to an area quickly, is adapted to forward area basing and maintenance, and has accomplished its surveillance mission with optimum effectiveness at low levels.

The lessons we are learning in

Vietnam appear equally applicable to other areas of the world and tend to confirm our doctrine. In modern warfare - regardless of whether it is a nuclear war on the plains of Europe, a Korea-type struggle in frozen mountains, or a counterinsurgency struggle in the jungles of Vietnam - accurate and timely information must be immediately available to the ground commander.

One of the Army's major efforts is the development and test of the 11th Air Assault Division at Fort Benning, Georgia. This division is the outgrowth of the U.S. Army Tactical Mobility Requirements Board (Howze Board). This report sets forth a dynamic new approach to the battlefield mobility problem. The study proposed a new division built around aerial assault. It emphasized that aircraft for such a unit could be procured only with a corresponding diminution in other Army equipment which has been used historically in the ground battle. The concepts undergoing test by the 11th Air Assault Division are different from those of the past in both equipment and in tactical doctrine.

The test of the new Air Assault concepts at Fort Benning is under observation by all services and by many nations. If the test results prove the efficacy of air mobile assaults on a large scale, subsequent close analysis will be required to determine what traditional ground elements will be supplemented or replaced by air elements.

There are numerous goals that

we strive to attain in Army aviation. For the future we must increase our air mobility potential, and we must concentrate on decreasing the vulnerability of our equipment. Aircraft must be equipped with self-sealing fuel cells and sufficient armor to withstand hostile fire. Vulnerability may also be reduced by increasing the speed of the aircraft (consistent with its capability of accomplishing the mission) and by developing effective tactics and techniques to include treetop navigational techniques when necessary.

We must strive to reduce further the numbers of aircraft types in our inventory. While our programmed procurement calls for seven basic types of aircraft in the immediate future, careful planning and state-of-the-art developments may make possible even greater reductions. This will facilitate training and maintenance and ease the spare parts supply problem.

We are continuing to test Army air mobility concepts and are learning daily lessons from combat in Vietnam. We have learned much from the experiences of others, such as the extensive air mobile operations of the French in Algeria. Our capability to implement increased Army air mobility and air assault concepts is affected not only by the experience we are continuing to achieve, but also by technical advances in aircraft and associated equipment. As our capabilities, doctrine and hardware continue to be improved, our Army combat forces will be less influenced by the natural





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and man-made obstacles of the modern, dispersed battlefield.

By considering possible developments in doctrine and aircraft, we might visualize a normal Army aerial assault on tomorrow's battlefield as commencing with rapid acquisition of enemy information by organic surveillance aircraft. Aided by this information, the commander and his staff would select objectives and plan the attack. Objectives would be attacked and softened by appropriate weapons. Simultaneously, the air mobile forces would embark for the objective areas in transport aircraft, accompanied by armed escorts. As the transports arrived in or near the objective areas, the armed escort aircraft would continue to provide suppressive fire during troop deployment as well as appropriate supporting fire during assaults on the final objectives. Subsequent deployment of reinforcements, evacuation of battle casualties, and resupply of critically needed items would be accomplished by organic Army aircraft. Depending on the status of enemy air, the Air Force would provide air cover for the operations.

The use of air assault tactics and equipment would enable the ground combat force to rapidly seize selected objectives necessary to the

#### NOTE

The current issue of Grumman "Horizons" carries this article.

conduct of the land battle. These tactics would be must more costly in terms of lives, time, and equipment lost if air mobile tactics were not employed. Such future employment would merely evolve from our present rather limited capabilities.

Improvements in these capabilities will depend principally on development of advanced aerial vehicles and the training of air assault teams into cohesive combat elements. There are no radically new principles involved. Armies have continually strived for mobility advantages over their enemies. Air mobile concepts have been developed to gain certain mobility advantages offered by modern technology. We cannot afford not to accept the promise of tomorrow which we are being offered today.

The Army is on the threshold of a new era in mobility. Whether engaged in counterinsurgency operations or in nuclear warfare, aviation in the Army will function as an integral part of the Army bound firmly to the ground soldier, oriented toward and specifically trained for the conduct of the land battle.

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### TOM HARRIS TO RUN FOR U.S. SENATE

Well known throughout Army aviation circles, Thomas J. Harris has resigned as Vice President and General Manager of the Aero Commander Division of the Rockwell-Standard Corporation and has announced his candidacy for the Republican nomination to the United States Senate from the State of Oklahoma.

---



**COLONELS**

NORRIS, JACK K.  
1907 Felton Lane  
Alexandria, Virginia  
WELLS, JAMES F.  
c/o Greenway, 500 26th St., S.  
Arlington, Virginia  
WILSON, ALBERT A.  
Quarters 2929  
Fort Eustis, Virginia

**LT. COLONELS**

BOYD, DONN T.  
1206 Highland Drive  
McAllen, Texas

**MAJORS (CONT.)**

CARROLL, ANTHONY  
508 Bjornstad Street  
Fort Benning, Georgia 31905  
CHRISTY, DERYCK G.  
211 Bonn Road  
Fort Ord, California 93941  
CLAY, WILLIAM M.  
611th AAC Maintenance Battalion  
Fort Benning, Georgia  
COFFMAN, JACK C.  
USAAMAC  
APO 28, New York, New York  
DEMORY, RICHARD S.  
7 McGillivray  
Rexdale, Ontario, Canada

**MAJORS (CONT.)**

POOLER, JOSEPH H.  
25 Ames Street  
Fort Rucker, Alabama  
POTTS, RICHARD H.  
509 Cedar Drive  
Enterprise, Alabama 36330  
QUINT, ALVIN M.  
203 Dial Street  
Fort Benning, Georgia 31905  
SALTEE, LAWRENCE T.  
80 Endl Avenue  
Fort Rucker, Alabama 36362  
SARGENT, WAYNE B.  
117 Dial Street  
Fort Benning, Georgia

# TAKEOFFS

## CHANGES OF ADDRESS AND RESIDENCE

**LT. COLONELS (CONT.)**

FRANCIS, ERNEST H.  
2934 Peyton Drive  
Columbus, Georgia  
FUTRELL, ALVIN F.  
USA T-Agency, 1222 22nd St., N.W.  
Washington, D.C.  
GRANDELLI, CHARLES L.  
Delta Aviation Battalion  
APO 15, San Francisco, Calif.  
MARR, JOHN W.  
1618 South 22nd Street  
Arlington 2, Virginia  
MERTEL, KENNETH D.  
Hqs., 2nd BG, 31st Infantry  
Fort Rucker, Alabama  
SHAW, FRANK L.  
Hqs., 44th Air Transportation Bn.  
Fort Benning, Georgia  
SIBERT, WILLIAM C.  
52nd Aviation Battalion  
APO 95, San Francisco, Calif.  
WILLIAMS, LOUIS A.  
1st Aviation Company  
Fort Riley, Kansas  
WILLIAMS, ROBERT H.  
The Aviation School  
Fort Rucker, Alabama

**MAJORS**

BLAIR, JOHN M.  
U.S. Army Garrison  
Fort Leavenworth, Kansas  
BURHOE, JOHN M.  
Hqs. & Hqs. Company (PMD)  
APO 69, New York, New York  
CANADAY, WILLIS L.  
USATAD, Building 5, NAS  
Corpus Christi, Texas  
CARRILLO, ARNOLD H.  
618 Calle Castile  
Tucson, Arizona

**MAJORS (CONT.)**

GARNER, KERMIT C.  
4th Transportation Company  
APO 165, New York, New York  
GILBERT, LESLIE H.  
504-A Perkins Street  
Fort Benning, Georgia  
GRAVES, THEODORE J.  
NG Bureau, AROTB, Pentagon  
Washington 25, D.C. 20301  
HATCH, JAMES B.  
2084 Laurinda Place  
San Diego, California  
HEISEL, BILL R.  
G-3 Section, Hqs. Seventh Army  
APO 46, New York, New York  
JERSEY, DONALD H.  
Company A, 504th Aviation Bn.  
APO 29, New York, New York  
JOHNSON, WALTER A., JR.  
121-A Zuckerman  
Fort Benning, Georgia  
JOHNSON, RICHARD A.  
Standards Division, DOI  
Fort Rucker, Alabama 36362  
LANEY, IRA L.  
109 Azalea Drive  
Enterprise, Alabama 36330  
LOVE, JOHN A.  
66 Peconic Street  
Seiden, Long Island, New York  
McFEETERS, ROBERT B.  
123-B Butts Street  
Fort Benning, Georgia  
OTERSEN, VINCENT  
149 Hughes  
Fort Huachuca, Arizona  
PAULSON, NORMAN W.  
46th Transportation Group  
APO 20, San Francisco, Calif.  
PETTY, FLOYD E.  
205 Dodge Hall  
Fort Leavenworth, Kansas 66027

**MAJORS (CONT.)**

SPURLOCK, WILLIAM W.  
228th Assault Support Hel. Bn.  
Fort Benning, Georgia 31905  
STANFIELD, JOHN T.  
313-2 First Street  
Fort Leavenworth, Kansas  
TOURTELLOTT, RAYMOND J.  
758 Santa Louisa  
Tucson, Arizona  
VANDYKEN, HAROLD B.  
Quarters 8818  
Fort Rucker, Alabama  
WINTERS, WILLIAM F.  
25th Infantry Division  
APO 25, San Francisco, Calif.  
YOUNG, ARNOLD R.  
U.S. Army Aviation Test Board  
Fort Rucker, Alabama

**CAPTAINS**

ARCHULETA, JAMES M.  
Hqs. S-3, Aviation Command  
Fort Ord, California  
AYERS, ROBERT C.  
45th Transportation Battalion  
APO 143, San Francisco, Calif.  
BALLENGER, THOMAS H.  
2323 30th Court  
LaCrosse, Wisconsin  
BANG, ARNE J.  
45th Transportation Company  
APO 143, San Francisco, Calif.  
BENNETT, FRANCIS C., JR.  
Hqs., 23rd Artillery Group  
Fort Lewis, Washington  
BERDUX, SYLVESTER C.  
AAOC #2, School Regt., USAARMS  
Fort Knox, Kentucky  
BERNSTEIN, DONALD  
Company B, 8th Aviation Bn.  
APO 111, New York, New York

## CAPTAINS (CONT.)

BIZER, JAMES E.  
830 Lovera  
San Antonio, Texas 78201

BROOKER, CLARENCE B.  
12617 Jackson  
Grandview, Missouri

BROWN, LEWELLYN A.  
1st Aviation Co., 1st Infantry Div.  
Fort Riley, Kansas

BROWN, PATTY E.  
P. O. Box 1114  
Fort Eustis, Virginia

BUECHNER, WILLIAM E.  
1105 22nd Street, S.W.  
Austin, Minnesota

BURGESS, ROBERT C.  
467-D Craig Drive  
Fort Benning, Georgia

BUSBY, LEMAN O.  
Hqs., 1st Recon. Sqdn., 14th ACR  
APO 26, New York, New York

CALHOUN, GEORGE B.  
491 Craig Drive  
Fort Benning, Georgia 31905

CASTLE, EDWARD R., JR.  
18th Aviation Company (FW)  
APO 40, San Francisco, Calif.

CHAMPAGNE, EDWARD  
501-B Perkins Street  
Fort Benning, Georgia

COPELAND, ROBERT W.  
5645 Gilkey Street  
Fort Knox, Kentucky

CREAMER, EDMUND J., JR.  
Company B, 24th Aviation Bn.  
APO 112, New York, New York

CREDEUR, JOHN L.  
Headquarters, 2nd Brigade  
APO 34, New York, New York

CROWL, RONALD C.  
USAIS  
Fort Benning, Georgia

CROWELL, GEORGE A.  
501-A Perkins Street  
Fort Benning, Georgia 31905

DEMM, PAUL W.  
539th Transportation Company  
New Cumberland, Pa. 17070

DENNISON, GARY V.  
215-B Christian Lane  
Fort Benning, Georgia

DILLINGER, DAVID R.  
539-B North Valdez Street  
Fort Benning, Georgia

DUPREE, THOMAS E.  
3420 Melrose Drive  
Columbus, Georgia

ESHBAUGH, KENNETH L.  
USAASMC, 12th & Spruce Streets  
St. Louis, Missouri

FERGUSON, WILLIAM H., JR.  
741 W. Iyton Street  
Lancaster, California

FERRARO, ANTHONY  
Headquarters, II U.S.A. Corps  
Ft. Wadsworth, Staten Island, N.Y.

FLEMING, BLAINE T.  
504th Aviation Battalion  
APO 696, New York, New York

FRYE, WILLIAM H.  
29 Walnut Street  
Carlisle, Pennsylvania

## CAPTAINS (CONT.)

FULLER, CHRISTOPHER L.  
2903 Euclid Avenue  
Lawton, Oklahoma

GORDON, JOHN E.  
3017 Peyton Drive  
Columbus, Georgia

GUENTZ, DOUGLAS V., JR.  
226th A/S & Attack Bn., 11th AA  
Fort Benning, Georgia

HACKETT, GERALD R.  
1113-C Thompson Circle  
Fort Eustis, Virginia 23604

HARPER, DENVER C.  
115 Caran Road  
Williamsburg, Virginia

HEFFNER, GARY R.  
121st Aviation Company  
APO 96, San Francisco, Calif.

HENDERSON, BERRY H.  
Company A, 503rd Aviation Bn.  
APO 165, New York, New York

HOOD, LEON L., JR.  
USAASVNS Regiment  
Fort Rucker, Alabama

HOPPER, VERNON A.  
541 Fair Oaks Drive  
Columbus, Georgia 31909

HUMPHREY, MARVIN E.  
406 Catalina Drive  
Colorado Springs, Colorado

JACKSON, GEORGE F., JR.  
328 Glynn Drive  
Birmingham, Alabama 35206

JARVIS, WILLIAM H.  
504th Aviation Battalion  
APO 326, New York, New York

JOBE, JOE D.  
2564 Bonnybrook Drive, S.W.  
Atlanta 11, Georgia

JOHANSEN, JOHN M.  
14th ATC  
APO 46, New York, New York

JOHNSON, DAREL S.  
2309 North 41st Street  
Lawton, Oklahoma

JOHNSON, JAMES C.  
1st Brigade, 4th AD  
APO 35, New York, New York

JOHNSON, JOHN P.  
317-2 Early Street  
Fort Riley, Kansas 66442

JONES, ISAAC R.  
1527 Cunard Road  
Columbus 27, Ohio

JONES, JAMES M.  
202-B Christian Lane  
Fort Benning, Georgia

JONES, RONALD A.  
AOC 2-64, 1st Off. Stu. Btry.  
Fort Sill, Oklahoma

JONES, WILLIAM S.  
504th Aviation Battalion  
APO 696, New York, New York

JORDAN, RICHARD K.  
2070 Woodley Road  
Montgomery, Alabama

KASER, WILLIAM T.  
955 Radcliffe Drive  
Alexandria, Virginia 22307

KENDALL, MARK C.  
1901 Howe Avenue  
Columbus, Georgia

## CAPTAINS (CONT.)

KESLER, PAT  
19 Culepper Street  
Daleville, Alabama

KIDWELL, WALTER E.  
13 Crain Street  
Fort Rucker, Alabama

KLEIN, FRANK J., JR.  
35 Duke Street  
Fort Rucker, Alabama

KRACHT, PETER M.  
4906 North 60th Street  
Omaha, Nebraska

LAMPKIN, ALBERT L.  
5842-1 Dupas  
Fort Hood, Texas

LAWRENCE, WILLIAM A.  
Aviation Sect., 504th Aviation Bn.  
APO 326, New York, New York

LAWSON, ROBERT A.  
Aspen Road, Route #2  
Starkville, Mississippi

LUNDIN, K.E.  
Ord Unit, TUSAE JUSMMAT  
APO 254, New York, New York

LUST, ROBERT A.  
13 W. Genesee Street  
Hornell, New York

MASON, MAURICE D.  
D Troop, 2nd Sqdn., 4th Cavalry  
APO 696, New York, New York

MATTISON, CHARLES H.  
4444 Timothy Street  
Columbus, Georgia

McDONALD, FRANK A.  
2216 N.W. 40th Street  
Lawton, Oklahoma

McGEE, WILLIAM E.  
117th Aviation Company  
APO 38, San Francisco, Calif.

MENDENHALL, THOMAS D.  
Aviation Company, 2nd AC  
APO 696, New York, New York

MICHEL, ROBERT W.  
13 Ames Lane  
Fort Rucker, Alabama

MILLER, FREDERICK T.  
4th Aviation Battalion  
Fort Lewis, Washington

MILLER, NORMAN H.  
613 Bjornstad Avenue  
Fort Benning, Georgia 31905

MILLER, ORAL D.  
59th Aviation Company (Corps)  
APO 358, San Francisco, Calif.

MITCHELL, JAMES L., JR.  
49 Sterling Street  
Fairfield, Connecticut 06432

NEWMAN, FRANK C.  
226th A/S & Attack Bn., 11th AA  
Fort Benning, Georgia

NEWTON, GEORGE F.  
883-A Birch Circle  
Fort Devens, Mass. 01433

NICKOLLS, CHARLES E.  
1st Aviation Company  
APO 91, San Francisco, Calif.

NIEBRUEGGE, LYLE H.  
620 Gibson Court  
Fort Benning, Georgia 31905

O'DAY, NAT R.  
142-B Arrowhead Road  
Fort Benning, Georgia





**LEFT:** It's a small world! UH-1A Iroquois No. 683, once assigned to the 53rd Transportation Company in Vietnam, came to Fort Rucker where it was stationed with Staff Sergeant Perce Harvey as its crew chief. The sergeant had "crewed" the same ship in Vietnam and recalls vividly the bullet-hole in the plexi-glass front window of the 'copter. The craft and its crew were on a routine mission, when the Viet Cong began firing at them. The slug that tore through the window was stopped by the bullet-proof vest the pilot was wearing. **BELOW:** The Piasecki 16H compound helicopter recently reached a speed of 170 mph, exceeding the world speed record for rotary wing aircraft in its weight class. A streamlined disk housing the rotor hub and retractable gear are several design features that enabled the 16H to exceed the existing 107 mph record.



**ABOVE:** Prior to his departure from Hqs, First U.S. Army, Major John S. Auffill (right), commander of the First U.S. Army Flight Detachment at Floyd Bennett Field, Brooklyn, N.Y., received an "Aviator Plaque" from the personnel with whom he has served. Presenting the award is Lt. Col. Arthur F. Hammarstrom, Chief of the Aviation Division of First U.S. Army, Governors Island, N.Y. **RIGHT:** Brig. General Gemal Savasen of Turkey is shown in the cockpit of a UH-1B Iroquois helicopter prior to being taken on an orientation flight at the U.S. Army Aviation Center, Fort Rucker, Ala. General Savasen, commanding general of the 2nd Army Artillery, Ground Forces Command, was accompanied by seven other Turkish officers at the orientation on Army aviation training policies and procedures conducted at USAAVNS. (US Army photo)



## CAPTAINS (CONT.)

PETERSON, DARWIN A.  
Aviation Det., Hqs., USAREUR  
APO 403, New York, New York

PETERSON, FRANKLIN G.  
Box 155  
Las Cruces, New Mexico

POHLMAN, WILLIAM F.  
19th Transportation Co. (Med Hel)  
APO 71, San Francisco, Calif.

POLCENE, ELLIOTT W., JR.  
Flight Detachment, USCONARC  
Fort Monroe, Virginia 23351

POPE, JOHN B.  
HHC 1/15th Infantry  
APO 36, New York, New York

RACKLEY, ROBERT L.  
Company B, 8th Aviation Bn.  
APO 185, New York, New York

REDDILL, EUGENE B.  
Co. B (Gen Spd) 501th Avn. Bn.  
Fort Hood, Texas

RUTKOWSKI, JOSEPH F.  
1001-B Kessler Court  
Fort Benning, Georgia

SANDS, THOMAS A.  
3807 Oaklawn Street  
Bryson, Texas

SCOTT, NORMAN E.  
7108 Connell Drive  
Jonesboro, Georgia

SHORT, FRISCO W.  
204-4 Third Street  
Fort Leavenworth, Kansas 66027

SIMS, BILLY G.  
1136-B Mgruder  
Fort Sill, Oklahoma

SMITH, ANDREW J.  
211 South Lee Street  
Falls Church, Virginia

SMITH, ELDON L., JR.  
5553-2 Lockridge Loop  
Killeen, Texas 76540

SNAVELY, CHARLES C.  
55th Aviation Company  
APO 301, San Francisco, Calif.

SOUPENE, JAMES C., JR.  
2379-D Roberts Circle  
Fort Eustis, Virginia

SPAULDING, GLENN E.  
P. O. Box 51  
Fort Belvoir, Virginia

SPEISER, ROBERT G., JR.  
108 Zuckerman Avenue  
Fort Benning, Georgia 31905

STANSELL, HAROLD D.  
USSTRICOM  
MacDill AFB, Florida

STEIN, HENRY J., JR.  
Hqs., USA Aviation Section  
APO 301, San Francisco, Calif.

STENGLE, ROBERT E., JR.  
Hqs., 3rd Aviation Battalion  
APO 36, New York, New York

STOKAN, DONALD  
7th Infantry Div. Arty., Avn. Sec.  
APO 7, San Francisco, Calif.

STOUTAMIRE, DAVID F.  
Third U.S. Army Flight Det.  
Fort McPherson, Georgia

TAYLOR, BILLY H.  
Valley Forge General Hospital  
Phoenixville, Pennsylvania

## CAPTAINS (CONT.)

THERIAULT, BERNARD R.  
160 Harris Drive  
Fort Rucker, Alabama

THIRING, FLORIAN A.  
Hqs., 7th Army Aviation Group  
APO 154, New York, New York

TOLFA, EDWARD, JR.  
1st Aviation Company  
Fort Riley, Kansas

VAN METER, HAROLD C.  
110-A Kessler Drive  
Fort Benning, Georgia

WALKER, JAMES M.  
906 Patricia Drive  
Columbus, Georgia

WALKER, RONALD T.  
CGSC, Associate Course  
Fort Leavenworth, Kansas

WARD, FELKER W., JR.  
2nd Battalion, 7th Infantry  
APO 162, New York, New York

WELSCH, HANNO F., JR.  
2nd Infantry Division  
Fort Benning, Georgia

WHETZEL, HARRY T.  
3720 18th Avenue  
Columbus, Georgia

WILLIAMS, B.G.  
D Troop, 2nd Sqdn., 4th Cavalry  
APO 696, New York, New York

WILLIAMS, NORVAL K., JR.  
7500 Holly Street  
Fort Smith, Arkansas

WILLIAMS, FORREST H., JR.  
3740 Robin Road  
Columbus, Georgia

WILLIS, BROWDER A.  
6621-A Lucas Street  
Fort Sill, Oklahoma

WINKELMAN, BARRY A.  
1st Battalion, 7th Inf., Hqs. Co.  
APO 162, New York, New York

WOLD, CHRISTIAN D.  
2632 Wise  
Columbus, Georgia 31903

WOODARD, HARRY L.  
440-B Craig Drive  
Fort Benning, Georgia 31905

## LIEUTENANTS

ADAMS, JOHN B.  
54th Transportation Company  
Fort Sill, Oklahoma

AKRE, RICHARD D.  
503rd Aviation Battalion  
APO 165, New York, New York

BAILEY, DWAYNE S.  
954 Captain Shreve Drive  
Shreveport, Louisiana

BEARD, WAYNE H., JR.  
Department of R/W, USAAVNS  
Fort Rucker, Alabama

BENNETT, ALLISON C.  
3rd Platoon, 337th Medical Co.  
APO 24, San Francisco, Calif.

BISCHOF, DONALD G.  
B Company, 4th Aviation Bn.  
Fort Lewis, Washington

BOHL, MICHAEL F.  
1914 Euclid Street  
Lawton, Oklahoma

## LIEUTENANTS (CONT.)

BOLAND, DENNIS M.  
607 Bradley  
Laramie, Wyoming 82070

BOYD, DONALD G.  
709 N. East L Street  
Ardmore, Oklahoma

BUTCHER, KARL E.  
Co. B, 227th Hel. Assault Bn.  
Fort Benning, Georgia

CAPFS, EUGENE S.  
2nd Infantry Division  
Fort Benning, Georgia

CHANDLER, HARRY S.  
D Troop, 2/4th Cavalry  
APO 696, New York, New York

CLEMENTE, ANTHONY  
2514 Broadmoor Drive  
Columbus, Georgia

COLLINS, RAYMOND E.  
2nd Infantry Brigade  
Fort Devens, Massachusetts

CONE, LESTER W.  
80th Transportation Company  
APO 949, Seattle, Washington

CONWAY, BRIAN J.  
57th Medical Station  
APO 143, San Francisco, Calif.

COX, JAMES R.  
11th Air Assault Division  
Fort Benning, Georgia

CRAFT, THOMAS H.  
4th Aviation Company  
Fort Lewis, Washington

CROWELL, MARK H.  
20 Edwards Street  
Fort Rucker, Alabama

CUNNINGHAM, DAVID E.  
9322 N.E. 6th Avenue  
Miami, Florida

DAILY, JOHN N.  
45th Transportation Battalion  
APO 143, San Francisco, Calif.

DANIELSON, DANNY O.  
25th Aviation Battalion  
APO 25, San Francisco, Calif.

DAVIS, CLAYTON L., JR.  
2027 Woodlane Drive  
Flint, Michigan 48503

DIGIOVANNA, CHARLES F.  
1050 Pratt  
Chicago, Illinois

DUBOIS, JOHN G.  
Headquarters MAAG  
APO 143, San Francisco, Calif.

DUCKWORTH, ROBERT G.  
FWQC #64-2, Officer Student Co.  
Fort Rucker, Alabama

DUNN, CARLE E.  
AOC #6-A-22, Class #64-3  
Fort Sill, Oklahoma

DYROFF, EDMOND, JR.  
72nd Air Traffic Company  
Fort Benning, Georgia

ELLIS, KENT G.  
2428 Stutz Drive  
Dallas, Texas

ELLIOTT, TOMMIE E.  
11th Air Assault Division  
Fort Benning, Georgia

FINKBEINER, ROBERT E.  
419 Thornton Street  
Middleville, Michigan 49333



## NOVEMBER-DECEMBER PHOTOS

LEFT: Demonstrating its lifting capacity, a Hughes 300, the three-passenger second generation model of the 269A, hoists an airframe of its sister ship, the two-place 269A, with ease. The new 'copter made its debut in early December at the first annual international Hughes dealers' conference held near Palm Springs, Cal. BELOW: U.S. and German Army officers who participated in the Joint U.S. Army/Federal Republic of Germany (FRG) OV-1 Mohawk evaluation. Left to right are Maj. Roeper, senior German OIC; Maj. James R. Barkley, U.S. Army OIC of Joint Evaluation; Capt. George Mikula, Evaluation Pilot; Maj. Francis Dull, OIC of Intelligence Gathering & Imagery Interpretation; and Capt. Schenk, German Army OIC, Test Scheduling.



ABOVE: Col. William B. Dyer (4th from left) and his staff officers and unit commanders listen to Staff Section Reports during the 7th U.S. Army Aviation Group Commanders' Conference held in late November at Ludwigsburg, Germany. The Conference covers the aircraft maintenance program, security and CBR procedures, safety, reenlistment problems, and other areas requiring coordination between Group Headquarters and its subordinate units. RIGHT: Lockheed-Georgia's Hummingbird, the first VTOL jet airplane designed and built for the U.S. Army, is shown during the flight in which it made the transition from vertical to horizontal flight. The two-place, mid-wing monoplane is 32' long and is being built under a \$2-1/2-million fixed price contract from the U.S. Army Transportation Research Command (USATRECOM), Ft. Eustis, Va.



## LIEUTENANTS (CONT.)

FLAUGH, JAMES J.W.  
18th Aviation Company (FW)  
APO 143, San Francisco, Calif.

FORD, JIMMIE S., SR.  
500 W. End Boulevard  
Marshall, Texas

GASS, HENRY B.  
45th Transportation Battalion  
APO 143, San Francisco, Calif.

GOLDING, WILLARD E.  
MAAG, Army Aviation  
APO 143, San Francisco, Calif.

GORDON, ROBERT S.  
4631 Atoll Avenue  
Sherman Oaks, California

GRINNEWALD, CARLH.  
4861 Buchanan, S.W.  
Grand Rapids, Michigan

HADARITS, PHILIP S.  
45th Transportation Battalion  
APO 143, San Francisco, Calif.

HALL, ARTHUR J.  
55th Transportation Bn. (AMS)  
APO 20, San Francisco, Calif.

HARNDEN, LYNN H.  
7th Aviation Battalion  
APO 7, San Francisco, Calif.

HARRIS, PETER R.  
1st Aviation Company  
Fort Riley, Kansas

HARRISON, ULYSSES  
176th Replacement Company  
APO 20, San Francisco, Calif.

HARVEY, JIMMY R.  
5426-A Gilkey  
Fort Knox, Kentucky

HEAD, WILLIAM J.  
1022 North Sixth Street  
Garden City, Kansas

HOPKINS, RONALD F.  
Aviation Section, 7th Infantry Div.  
APO 7, San Francisco, Calif.

HORN, GEORGE A.  
45th Transportation Battalion  
APO 143, San Francisco, Calif.

KARPINIA, WALTER  
27 Olson Lane  
Fort Rucker, Alabama

KOBYLARZ, JAMES M.  
24th Engineer Group  
APO 227, New York, New York

LaGRASSA, JOSEPH E.  
USAAVN Test Board  
Fort Rucker, Alabama

LYSSY, FRED E.  
Route 3, Box 183  
Edinburg, Texas

MARSH, CARYL G.  
3214 Military Road, N.W.  
Washington 15, D.C.

MATOCHA, ALFRED E.  
Box 335  
Jourdan, Texas

MEDAILLEU, JOHN A.  
3rd Aviation Battalion  
APO 36, New York, New York

MONAGHAN, EDWARD  
176th Replacement Company  
APO 20, San Francisco, Calif.

MURAKAMI, ROY K.  
Detachment A, KMAG  
APO 301, San Francisco, Calif.

## LIEUTENANTS (CONT.)

O'BRIEN, ROBERT M., JR.  
504th Aviation Company  
APO 696, New York, New York

PETRIC, JOHN A.  
206 Slagle Street  
Fort Bragg, North Carolina

RILEY, ROBERT P.  
176th Replacement Company  
APO 20, San Francisco, Calif.

ROBINSON, JAMES E.  
Regency Apartments, Apt. #67  
Texas City, Texas

RUNK, ADAM E.  
5th Infantry Division (M)  
Fort Carson, Colorado

SCOTT, DAVID I.  
11th Air Assault Division  
Fort Benning, Georgia

SHOCKLEY, DAVID R.  
Hqs., 30th Engineer Battalion  
Fort Belvoir, Virginia

SHUDTZ, CHARLES L.  
45th Transportation Battalion  
APO 143, San Francisco, Calif.

SILVA, CHARLES E.  
18th Transportation Company  
APO 29, New York, New York

SIMPKINS, CHARLES M.  
176th Replacement Company  
APO 20, San Francisco, Calif.

STEPHENS, DOUGLAS K.  
712 E. 7th Street  
Stuttgart, Arkansas

STEPHENS, DOUGLAS K.  
1001 Dvall Drive  
Killeen, Texas

STEWART, WILLIAM C.  
76 Harris Drive  
Fort Rucker, Alabama 36362

SUNDBERG, DAVID C.  
3rd AC Regiment, Aviation Co.  
APO 34, New York, New York

TELFAR, WILLIAM D.  
Troop D, 2nd-4th Cavalry  
APO 696, New York, New York

THOMAS, JAMES I.  
1st Aviation Company  
Fort Riley, Kansas

THORSON, MILAN J.  
504th Aviation Battalion  
APO 696, New York, New York

TOEBES, ROYAL K.  
118th Aviation Company  
APO 27, San Francisco, Calif.

TRENT, FRANKLIN O.  
2815 Jackson Avenue  
Point Pleasant, West Virginia

WALL, JOSEPH H.  
Box 283  
Ocean Springs, Mississippi

WHETZEL, HARRY T.  
Headquarters Detachment LAAC  
Fort Benning, Georgia

WHITCHER, GLENN W.  
428 Broadway B-1  
Columbus, Georgia

WHITEHEAD, JOSEPH D.  
428 B-Way, Apartment 3-A  
Columbus, Georgia

WILHELM, DAVID P.  
B Company, 8th Avn. Bn., Inf. Div.  
APO 111, New York, New York

## LIEUTENANTS (CONT.)

WILLIAMS, JAMES S.  
Aviation Company, 11th AC  
APO 305, New York, New York

WINTERHOLLER, DAVID  
3702 S.W. Evelyn Street  
Portland, Oregon

WYLIE, JOHN A.  
5450 Bowen Road  
Fowlerville, Michigan

### CWO'S

AINSWORTH, WALTER J.  
3314 Boone Trail  
Fayetteville, North Carolina

BELL, FRED O.  
516th Airplane Transportation Co.  
Fort Benning, Georgia

BRAZIL, JOHN E.  
230 N. Lowe  
Hobart, Oklahoma

COLLETT, BENSON M.  
847 Cascade Drive  
Newport News, Virginia

COOK, CHESTER L.  
269 Nightingale Drive  
Columbus, Georgia 31906

COX, NOEL D.G.  
1308 Madison Avenue  
Denver 6, Colorado

DAVIS, GERALD W.  
Hqs., 42nd Artillery Group  
APO 757, New York, New York

DICKEY, KENNETH E.  
Co. A, 228th Assault Support Bn.  
Fort Benning, Georgia

EBROM, JOE J.  
1019 Rosewood  
Columbus, Georgia

ERVI, JAMES R.  
501st Aviation Battalion, 1st AD  
Fort Hood, Texas

FARMER, MARVIN A., JR.  
11st Air Assault Division  
Fort Benning, Georgia

FOSTER, LOREN N.  
Hqs., 8th Transportation Bn.  
APO 29, New York, New York

FOSTER, MARSHALL P.  
516th Trans. Airplane Company  
Fort Benning, Georgia

HAVENS, ORIN D.  
323-1 Early Street  
Fort Riley, Kansas 66442

HODGES, FERMAN B.  
Route 1, Box 46  
Gardendale, Alabama

HOLMES, THOMAS K.  
54th Trans. Company (Med. Hel.)  
Fort Sill, Oklahoma

HOOKS, CHARLES D.  
516th Trans. Airplane Co. (T)  
Fort Benning, Georgia

ISENMANN, LESTER G.  
P. O. Box 276  
Daleville, Alabama 36322

KAUL, LLOYD K.  
87th Transportation Detachment  
APO 122, New York, New York

KIRTLEY, ROBERT D.  
20th Transportation Company  
Fort Campbell, Kentucky



**CWO'S (CONT.)**

KOEHLER, WALTER H.  
4th Aviation Company, Inf. Div.  
Fort Lewis, Washington

NIX, HENRY E.  
651st Transportation Company  
APO 46, New York, New York

SCOTT, HAROLD H.  
241 Nightingale Drive  
Columbus, Georgia

SCOTT, LLOYD D.  
188th Trans. Helicopter Co. (T)  
Fort Benning, Georgia

WILLIAMS, JOHN F.  
Quarters 2506-C  
Fort Lewis, Washington 98433

YOCKEY, DONALD W.  
2007 Westminster Way  
Columbus, Georgia

YORK, JOHN, JR.  
52nd Artillery Brigade  
Pedricktown, New Jersey

**WARRANT OFFICERS**

AUER, MARK E.  
A Co, 7th Aviation Bn  
APO 358, San Francisco, Calif.

AULT, THOMAS E.  
11th Air Assault Division  
Fort Benning, Georgia

AZBILL, ROY G.  
120th Aviation Company  
APO 143, San Francisco, Calif.

BAKER, ROGER A.  
17th Replacement Company  
APO 20, San Francisco, Calif.

BALKEMA, JOHN B.  
Route #1  
Bozeman, Montana

BOZEK, STANLEY R.  
119th Aviation Company  
APO 95, San Francisco, Calif.

BROZ, VLADIMIR R.  
Company A, 504th Aviation Bn.  
APO 177, New York, New York

BUDNY, BILLY C.  
120th Aviation Company  
APO 143, San Francisco, Calif.

CHAPMAN, GERALD E.  
P. O. Box 3008  
Mather AFB, California

CHERRY, JACK M.  
120th Aviation Company  
APO 143, San Francisco, Calif.

CLOSSON, WILLIAM H.  
119th Aviation Company  
APO 95, San Francisco, Calif.

CLOUD, ROBERT D.  
2611 South K Street  
Oxnard, California

CRUSE, CLARENCE A., JR.  
1st Aviation Company  
Fort Riley, Kansas

CURTIS, RAYMOND L.  
176th Replacement Company  
APO 20, San Francisco, Calif.

DIRENZO, JAMES J.  
11th Air Assault Division  
Fort Benning, Georgia

EHMANN, RONALD L.  
59th Aviation Company  
APO 165, New York, N.Y.

**WO'S (CONT.)**

EICHNER, WILLIAM J.  
503rd Aviation Company  
APO 165, New York, New York

EMERY, ELLIS B.  
119th Aviation Company  
APO 95, San Francisco, Calif.

EVANS, ELVIS J.  
838 Globe  
Houston 34, Texas

FARNHAM, ROBERT E.  
1st Aviation Company  
Fort Riley, Kansas

FOX, JOHN R.  
5620 Blueridge Drive  
Columbus, Georgia

GWALTNEY, PATRICK A.  
11th Air Assault Division  
Fort Benning, Georgia

HAMILTON, ROBERT M., JR.  
120th Aviation Company  
APO 143, San Francisco, Calif.

HARBOLD, EDWARD E., JR.  
3014 Hendrix Street  
Columbus, Georgia

HOBBY, JESSE L.  
11th Air Assault Division  
Fort Benning, Georgia

IRWIN, JERRY F.  
119th Aviation Company  
APO 95, San Francisco, Calif.

JOHNSON, CLIFFORD C.  
11th Air Assault Division  
Fort Benning, Georgia

JOHNSON, OSCAR, JR.  
Officer Student Co., USAAVNS  
Fort Rucker, Alabama

JONES, JERRY F.  
11th Air Assault Division  
Fort Benning, Georgia

JONES, PAT W.  
11th Medical Battalion, 11th AAD  
Fort Benning, Georgia

KARCHER, GEORGE C.  
11th Air Assault Division  
Fort Benning, Georgia

KING, CLIFFORD C.  
1112th Trans Co-Calif NG  
Fresno, California

KINKEADE, RONALD J.  
424 Longview Dr., Apt. 3  
Woodbridge, Virginia

LANGE, DEAN R.  
176th Replacement Company  
APO 20, San Francisco, Calif.

LATCH, BOBBY J.  
126 South Wirth Street  
Chicago, Illinois

**WO'S (CONT.)**

LAVENDER, WAYNE E.  
120th Aviation Company  
APO 143, San Francisco, Calif.

LECOQCQ, CHARLES R.  
121st Aviation Company  
APO 95, San Francisco, Calif.

METZGER, DONALD W.  
1614 West 15th  
Davenport, Iowa

OATES, JENE R.  
D Troop, 12th Cavalry  
APO 39, New York, New York

PFOUTZ, MYRON M.  
West Field Terrace, Mt. Route  
New Cumberland, Pennsylvania

POMEROY, DEANE A.  
117th Aviation Company  
APO 38, San Francisco, Calif.

POWELL, CLARENCE, JR.  
120th Aviation Company  
APO 143, San Francisco, Calif.

SALTER, KEITH A.  
Route 2, Box 788-B  
Bessemer, Alabama

STADULIS, LAWRENCE G.  
Company A, 15th Aviation Bn.  
APO 20, San Francisco, Calif.

VAN ETTEEN BENJAMIN A., JR.  
Headquarters USAREUR  
APO 403, New York, New York

WATERFIELD, HERBERT M.  
3419 Van Dyke Street  
Alexandria, Virginia

WOODROW, WALTER  
P. O. Box 431  
Cusseta, Georgia

**WO CANDIDATES**

PATTON, RONALD V.  
P. O. Box 427  
Bastrop, Texas

**SP/6'S**

CUNNUP, ROBERT M.  
423 Mellon Street, Apartment 6  
Columbus, Georgia

FRAZER, RICHARD L.  
1429 Stanley Lane  
Colorado Springs, Colorado

**SP/5'S**

RICH, LONZA O.  
478th Flying Crane Company  
Fort Benning, Georgia 31905

**OBITUARIES****FIRST LIEUTENANT EUGENE J. TAYLOR**

FIRST LIEUTENANT EUGENE J. TAYLOR, assigned to the 503rd Aviation Battalion, APO 165, New York, New York, sustained fatal injuries while the OV-1 Mohawk aircraft of which he was pilot crashed during the conduct of a training mission. The fatal Army aircraft accident occurred near Hannu, Germany, on November 7, 1963. Lieutenant Taylor is survived by his widow, Mrs. Kathleen M. Taylor, of Route 1, Bloomington, Indiana.

# AAAA IN PHOTOS



## CHAPTER ACTIVITIES

Top Left: Col. Albert Newton, CO, U.S. Army Aviation Maintenance Center, Garmisch, Germany, addressing the membership of the Rhine Valley Chapter during that Chapter's initial FY64 meeting. Shown seated are Lt. Col. William R. Mathews, Chapter president, and Mrs. Mathews. Top Right: Members of the newly-activated Cap St Jacques (Vietnam) Chapter are shown balloting during the Chapter's informal activation meeting held earlier this year. The Chapter is the Quad A's first membership activity in Southeast Asia. Below Left: Col. Daniel H. Heyne, former Assistant Commandant of USAPHS, is shown addressing the graduates of ORWAC Class 63-7AT at a Luncheon sponsored by the Fort Wolters Chapter of AAAA. Below Right: Col. Edward McMaken, Deputy Assistant Commandant and President of the Army Aviation Center Chapter, is shown presenting an "Association Membership Incentive Check" to Warrant Officer Candidate Wayne Lavender, the Class Leader representing Warrant Officer Rotary Wing Aviator Class 63-5W. The WORWAC class had achieved 100 per cent membership participation in AAAA while in an aviation student primary classification. (U.S. Army photos)





# AAAA FOUNDATION SOLICITS SCHOLARSHIP APPLICATIONS

The AAAA Scholarship Foundation announces the availability of \$1,500 in 1964 scholarship assistance funds for the sons and daughters of members of AAAA.

Application forms for the 1964 scholarships may be obtained by writing to the AAAA Scholarship Foundation, Inc., 1 Crestwood Road, Westport, Conn. 06882. The applications, together with a supporting financial statement, must be returned to the Foundation on or before 1 February 1964 to receive Awards Committee consideration.

## ELIGIBILITY

Eligibility requirements for the awards have been minimized. The applicant must be:

The son or daughter of a member or deceased member of AAAA.

A high school graduate or senior who has made application to an accredited college or university for Fall, 1964 entrance as a freshman, or who has been accepted for freshman enrollment in Fall, 1964.

Unmarried and a citizen of the United States.

## AREA INTERVIEWS

Following the receipt of the completed application form, the financial statement, and the required academic transcripts, the Foundation will notify the applicant to report to a group of interviewing officers selected from among the AAAA membership residing in the applicant's area. The "Report of

## SCHOLARSHIP AWARD



JOEL R. GRAFT (LEFT) RECEIVES THE 1963 AAAA SCHOLARSHIP AWARD OF \$1,500 FROM BRYCE WILSON, AAAA PAST PRESIDENT. THE '63 AWARD WAS THE CONTRIBUTION OF THE RYAN AERONAUTICAL FOUNDATION.

Interview" serves as an important part of the documentation required for awards consideration.

The final selection will be made by the AAAA National Awards Committee, a permanent standing committee of the National Executive Board of the AAAA that has been designated by the Foundation to serve as the Foundation's judging agency. The selection will be made during the 2-14 March 1964 period with the winners to be notified no later than 15 March 1964.

Incorporated on December 5, the AAAA Scholarship Foundation, Inc. is a separate, non-profit educational organization created to administer scholarship assistance to members.

100% AAAA

AVIATION PRIMARY  
STUDENT CLASSES





### OFFICER OBSERVATION HELICOPTER COURSE 63-5WT

FRONT ROW: WO's R. Thaxton, G. Toman, T. Thompson, D. Felder, H. Scoggins, G. Karcher, M. McClure, C. Smith, F. Freitas, K. Evans, D. Kinkeade. (Sitting on helicopter door (WO G. Newton). BACK ROW: H. Payne, T. Stout, G. McLachlan, D. Patton, V. Broz, E. Harbold, L. Storm, J. Porter, V. Martin, and J. Neal. (Class Graduation held on 18 October 1963). (U.S. Army photo)

### OFFICER OBSERVATION HELICOPTER COURSE 63-6T

FRONT ROW: Lts D. Mastrean, H. Stewart, E. Millholland, F. Ross, P. Silberger, H. Standfield, L. Story, R. Campbell, A. Synott, and R. Seaman; and CWO D. Scott. BACK ROW: Lts D. Riley, D. Shockley, and J. Moyer; CWO E. Weisenburger; Lts F. Stubbs, R. Lewis, R. Meeker, and M. Thoreson; WOC D. Byars; Lts M. Nutt and R. Rupcic; and Capt R. Brafford (Class Commander) (Graduation held on 20 Sept.)

### OFFICER OBSERVATION HELICOPTER COURSE 63-7T

FRONT ROW (left to right): Lts J. Byrd, R. Banning, K. Pelfrey, J. Eddy, A. Morison, V. York, J. Gomez, J. Thiels, V. Cessna, and M. Chalfant. BACK ROW: Capt. B. Sanders; Lts. T. Cassada, R. Kellum, J. Van Vleck, D. McGuire, P. Twomey, C. Fisher, G. Zeigler, G. Ramage, R. Lemay, and L. Wice. (Graduation on 15 November)

### NEW CHAPTER OFFICERS

#### DAVISON ARMY AIRFIELD CHAPTER

Exec VP.....Lt. Col. Carl A. Colozzi  
VP, Army Aff....Capt. Charles L. Calvert

#### FORT BENNING CHAPTER

President.....Major Paul B. Robison  
Exec VP.....Col. Curtis L. Hankins  
Secretary.....Maj. Lemuel M. Thomas  
VP, Army Aff.....Col. Gerald H. Shea

#### CAP ST. JACQUES (VIETNAM)

President.....Capt. Harry W. Chambers  
Exec VP.....Capt. Joseph D. White  
Secretary.....Capt. Arthur L. Winters  
Treasurer.....Capt. John W. Houser  
VP, Army Aff...Capt. Charles E. Nickolls  
VP, Indus Aff...Capt. Douglas L. Hutchens  
VP, Public Aff.....Lt. Jose R. Rodriguez

#### FORT RILEY CHAPTER

President.....Maj. Charles A. Licha  
Secretary.....Capt. D.F. Kockx  
Treasurer.....Lt. Peter R. Harris  
VP, Army Aff...CWO Fred'k C. Nicholson  
VP, Public Aff....CWO Walter C. Larson

#### JIMMIE L. HILTON CHAPTER

President.....Lt. Col. J.Y. Hammack



HAMMACK



CHAMBERS

#### GRAND CANYON CHAPTER

Exec VP.....Capt. William D. Phillips  
Secretary.....Capt. Willie L. Davis  
Treasurer.....Maj. John R. Brown  
VP, Public Aff.....Mr. H.J. Hemler

#### FORT HOOD CHAPTER

Exec VP.....Capt. Harry J. Zellmer  
Secretary.....Maj. Jack H. Dibrell  
Treasurer.....Capt. Harold Bristow, Jr.  
VP, Army Aff.....Capt. David J. Delany  
VP, Indus Aff.....WO Robert C. Crawford  
VP, Public Aff....CWO James A. Bartley



■ Brig. Gen. John J. Tolson, Director of Army Aviation, OACSFOR, is shown addressing a 12 November Luncheon of the Davison Army Airfield Chapter. Maj. Lawrence F. McKay, Chapter president, is shown to his right. Col. Robert H. Schulz, Deputy Director; Col. Edgar C. Wood, Davison CO; and Col. Hoover, MDW Chief of Staff; and representatives of industry attended the professional luncheon.

#### **NEW CHAPTER OFFICERS (CONT.)**

##### **FULDA CHAPTER**

Secretary.....Capt. Orous L. Ellis, Jr.  
 VP, Army Aff.....Capt. Wm. A. Geer, Jr.  
 VP, Public Aff....Capt. Jos. P. Gallagher

##### **ILLESHEIM CHAPTER**

Secretary.....Capt. Philip G. Wolf  
 Treasurer.....Capt. Gene L. Moeller  
 VP, Army Aff.....Capt. Clyde L. Klick

##### **LINDBERGH CHAPTER**

Exec VP.....Col. Earl H. Hauschultz

##### **MONTEREY CHAPTER**

President.....Maj. Marvin M. Morgan  
 Exec VP.....Capt. Robert F. O'Kane  
 Secretary.....Capt. Frederick R. Cunha  
 Treasurer.....CWO John L. Lawlor  
 VP, Army Aff.....Capt. James E. Miller  
 VP, Res Aff.....Capt. Jack B. MacDougall  
 VP, Indus Aff..Capt. Clover H. Jones, Jr.  
 VP, Public Aff....Capt. Jack R. Barnhisel

##### **MUNICH CHAPTER**

President.....Maj. Lloyd A. Watland  
 Exec VP.....CWO Clifford V. Turvey  
 Secretary..Capt. William W. Redman, Jr.  
 Treasurer.....Sp/6 Jarvis E. Peele  
 VP, Army Aff...CWO James D. Ferguson  
 VP, Indus Aff.....CWO Loren N. Foster

##### **STUTTGART CHAPTER**

Secretary.....Capt. Donald J. Austin

##### **PIKES PEAK CHAPTER**

President.....Maj. Albert A. Fern  
 Exec VP.....Capt. James H. Paul  
 Secretary.....Maj. Robert E. Lemon  
 Treasurer.....Capt. Clarold F. Morgan  
 VP, Army Aff.....Capt. Bruce J. Hoppe  
 VP, Res Aff.....Lt Col Harry G. Jennings  
 VP, Indus Aff.....Maj. Max E. Young  
 VP, Public Aff.....Maj. Harry E. Ziegler

##### **ATLANTA CHAPTER**

VP, Public Aff....Capt. John G. Matthews



# NEW MEMBERS JOINING A A A A

Captain Frank C. Adams  
 Lieutenant John B. Adams  
 Lieutenant John S. Adler  
 Lieutenant Richard D. Akre  
 Lieutenant Ronald D. Aljets  
 Lieutenant Frank B. Allen  
 Lieutenant Charles E. Anderson  
 CWO Leonard G. Anderson, Jr.  
 Lieutenant Walter E. Anderson  
 WOC Darrell D. Armbruster  
 Lieutenant Bobby N. Arnold  
 Lieutenant James E. Arnold, Jr.  
 Lieutenant Gordon R. Asburg  
 Mr. James E. Ashworth  
 WOC Herman R. Atkinson  
 Mr. Stuart A. Atkins, Jr.  
 Lieutenant Alfred L. Auger  
 WO Thomas E. Ault  
 WOC Roy G. Azbill  
 SP/6 Harvey W. Baker  
 Lieutenant Joseph T. Baker  
 CWO Raymond E. Baker  
 WO Roger A. Baker  
 Lieutenant Robert J. Baker  
 Captain William W. Baker  
 Lieutenant Richard B. Banning  
 Captain Louie A. Barber  
 Captain Lewis B. Barksdale  
 Lieutenant James T. Bartlett  
 Lieutenant Robert M. Baugh  
 Lieutenant John J. Becker, Jr.  
 Lieutenant Earl H. Behrens  
 Captain Robert A. Belew  
 Lieutenant Carroll W. Bell  
 SFC Edward J. Bell  
 Lieutenant Mark L. Bellamy  
 Captain William R. Benoit  
 Lieutenant Ronald E. Berner  
 Lieutenant Charles T. Borres  
 Mr. Gene Bishop  
 Lieutenant Paul E. Bishop  
 Lieutenant Rodney D. Bither  
 Captain Charles R. Bledsoe  
 Lieutenant Michael F. Bohf  
 Captain Paul F. Bolam  
 Lieutenant Harold L. Bowen  
 Lieutenant William Bowers  
 SP/5 David W. Bowers  
 Lieutenant James S. Bowers  
 Lieutenant Dan L. Boyd  
 Lieutenant John E. Boyd  
 Colonel Marzelle F. Boyd  
 WO Stanley R. Bozek  
 Lieutenant Marshall R. Bracey  
 Captain James F. Bradel  
 Captain Richard H. Brady  
 Lieutenant Robert T. Brafford  
 WOC Melvin O. Brewer  
 Lieutenant James D. Bridges, Jr.  
 Lieutenant Andrew J. Bringnel  
 Captain Harold Bristow, Jr.  
 Lieutenant Peter A. Brokaw  
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 Lieutenant Lewis L. Carter  
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 Lieutenant Thomas W. Cassada  
 Captain Alan B. Cayo  
 Lieutenant Vernice R. Cessna  
 Lieutenant Michael D. Chalfant  
 WO Gerald E. Chapman  
 WOC William J. Chapman  
 Lieutenant Lawrence A. Chappa  
 WO Jack M. Cherry  
 WO Richard S. Chilton  
 Mr. C.J. Christinsson  
 Lieutenant Homer L. Clark  
 WO Richard D. Clark  
 Lieutenant John W. Clayton  
 WOC William H. Closson  
 WO Robert D. Cloud  
 WO Clayton L. Coker  
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 Doctor H.M. Cole  
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 Lieutenant Richard H. Collins, Jr.  
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 Lieutenant Brian J. Conway  
 Lieutenant James R. Cox  
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 Lieutenant Richard L. Cox, Jr.  
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 Lieutenant Robert S. Creswell  
 Mr. John E. Crosthwait  
 Captain Ronald C. Crowth  
 Captain Clark H. Cummins  
 Lieutenant David E. Cunningham  
 WO Raymond L. Curtis  
 Lieutenant John N. Dailey  
 Colonel Ralph L. Dalton  
 Lieutenant Danny O. Danielson  
 Captain James M. Daniel  
 Lieutenant Robert G. Dassler  
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 Lieutenant Richard W. Daugherty  
 Miss B.A. Daughtry

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 Lieutenant John C. Dennison  
 Mr. Leonard J. Deon  
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 Captain Marion H. Dorr  
 Lieutenant Don M. Douglas  
 Lieutenant Gerard F. Dreiling  
 Lieutenant John G. Dubois  
 Lieutenant James S. Dunham  
 Captain George M. Dustin  
 Colonel William A. Dwight  
 Lieutenant David P. Easterling  
 Lieutenant William E. Ebel  
 Lieutenant John R. Eddy  
 Lieutenant Tommie E. Elliott  
 Lieutenant Kent G. Ellis  
 WO Ellis B. Emery  
 WO Carl F. Evans  
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 Lieutenant Delano S. Findlay  
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 Captain Ronald M. Fishburn  
 Lieutenant Charles M. Fisher  
 Captain Larry L. Flowers, Jr.  
 Captain Brian G. Foote  
 Mr. John J. Ford, Jr.  
 Lieutenant Jimmie S. Ford, Sr.  
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 Lieutenant Robert S. Frix  
 Major James G. Fry  
 Mr. Richard C. Fuller  
 Lieutenant Jon J. Funkhouser  
 Mr. Byron E. Gardner  
 Lieutenant Michael L. Garner  
 Lieutenant Samuel L. Garrard  
 WO William E. Garrison  
 Lieutenant Henry B. Gass  
 Lieutenant Roger A. Gellenbeck  
 Captain John N. Gillham, Jr.  
 Lieutenant Frank H. Gilliam, Jr.  
 Lieutenant Martin F. Glennon  
 Lieutenant Francis Gaiazdowski  
 Lieutenant Warner B. Goff

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Lieutenant Josue Gomez  
WOC Charles W. Gooding, Jr.  
Mr. Stanley L. Grabias  
Mr. Aaron V. Graham  
Captain Charles M. Graham  
Lieutenant Robert D. Graham  
Lieutenant Robert N. Grant  
Mr. John Grassi  
Lieutenant David L. Greis  
Lieutenant Hugh D. Griffiths, Jr.  
Lieutenant John R. Griffin  
Colonel Maurice B. Gullion  
Major Raymond M. Gunn  
Lieutenant Robert S. Gursky  
Lieutenant Leroy E. Guy  
WO Patrick A. Gwaltney  
Lieutenant Eugene B. Gwin, Jr.  
Lieutenant Philip S. Hadarits  
Captain David E. Hagler  
Lieutenant Henry M. Hagwood, Jr.  
Lieutenant Robert A. Halbman  
Lieutenant Dick Hale  
WOC Robert M. Hamilton, Jr.  
Captain Charles L. Haney  
Lieutenant Richard D. Hansen  
WOC Edward E. Harbold, Jr.  
WO Jerral D. Harckenko  
Lieutenant James C. Hargis  
WO Dallas H. Harper  
Captain Bryan D. Harris  
Captain Frank A. Hathaway  
WOC Charles J. Hawes  
Captain Harold J. Hayes  
Captain James B. Hayes, Jr.  
Lieutenant Paul R. Henderson  
WOC Michael E. Henley  
Captain William R. Hensley  
M/General Gerald J. Higgins, Ret.  
Lieutenant James L. Higginbotham  
Lieutenant Jerry L. Higgins  
SP/6 James E. Hill  
WO Jesse L. Hobby  
Lieutenant Bruce E. Hoeg  
Captain Jack W. Hoelscher  
Lieutenant Raymond T. Holmes  
Captain Robert B. Holt  
Lieutenant John H. Holtzer  
Lieutenant John D. Honaker  
Lieutenant John R. Hopkins  
Lieutenant George A. Horn

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Lieutenant Donald A. Hover  
Lieutenant James A. Howd, Jr.  
WO Charles J. Humphries  
Lieutenant Franklin L. Hunt  
Mr. H. Huntress  
Captain Richard L. Irons  
WOC Jerry F. Irwin  
Mr. Charles W. Jeffers  
CWO Teddy F. Jenkins  
Lieutenant Robert O. Jensen  
Lieutenant James S. Jewel  
Lieutenant Charles D. Jochetz  
WO Harold F. Johnson  
WO Clifford C. Johnson  
Captain Richard G. Johnson  
CWO Robert L. Johnson  
WO Jerry F. Jones  
Lt. Colonel Luther G. Jones, Jr.  
Lieutenant Homer R. Jordan  
Major Edwin Kalbfleisch, Jr.  
Mr. Arthur Kanis  
Mr. Robert L. Kaplan  
WOC George C. Karcher  
Lieutenant Robert S. Kay  
Lieutenant William J. Kohoe  
WO Patrick H. Kelley  
Lieutenant Ronald R. Kellim  
Lieutenant Paul W. Kiah  
Lieutenant Lorenzo Z. Kidder  
Captain Walter E. Kidwell  
Lieutenant Paul I. Kimball  
Lieutenant Kenneth E. Kimes  
Lieutenant Edward D. King  
Lieutenant Jacky L. King  
WOC Ronald J. Kinkadee  
Brig. General Harry W.O. Kinnard  
Lieutenant Joshua L. Kiser, Jr.  
Lieutenant Donald G. Kleiber  
Captain Emmett F. Knight  
Lieutenant Donald R. Knippers  
CWO Thomas E. Knoblett, Jr.  
Colonel Richard T. Knowles  
Lieutenant Frederick G. Koehnke  
Lieutenant Arnold J. Kraushaar  
Lieutenant J. Marshall Kune  
Mr. Herbert Kunzel  
Mr. Robert G. Kutzer  
Mr. Fred M. Kuykendall  
Lieutenant John D. LaCourse  
Lieutenant Samuel L. LaCour

Lieutenant Albert E. Laferte  
Lieutenant Druoy D. Lambert, Jr.  
Lt. Colonel Robert O. Lambert  
Captain Albert L. Lampkin  
Lieutenant Duane M. Lane  
WOC Dean R. Lange  
WOC Wayne E. Lavender  
Captain Marvin C. Layfield  
WO Charles R. LeCocq  
Lieutenant Kenneth W. Lee  
Captain Robert E. Lee, Jr.  
Lieutenant Richard D. Lemay, Jr.  
WOC Joe A. Leming  
Lieutenant John H. Lenox, Jr.  
Miss Rosalia M. Lesch  
Major Donald J. Lewis  
Lieutenant Richard I. Lewis  
Lieutenant Howard R. Linscott  
WO William D. Lionberger  
Lieutenant Gary G. Loban  
Lieutenant Thomas J. Long  
Lieutenant Leroy L. Lord, Jr.  
Captain Robert H. Louvorn  
WO Alfred M. Lowden, III  
Doctor P.H. Lowry  
Mr. Richard B. Loynd  
Captain William Lozana  
Lieutenant Gary L. Lynch  
Lieutenant Ellie E. Lynn  
Lieutenant Fred E. Lyssy  
Captain George A. MacDonald  
Lieutenant Oscar C. Mack  
Lieutenant Charles F. Magness  
WO Carl C. Mangogna, Jr.  
Captain Max G. Marks  
Lieutenant Caryl G. Marsh  
CWO James W. Marsh  
Captain Richard H. Marshall  
WO Ralph J. Marshall  
Lieutenant James W. Martin  
WOC Viri D. Martin  
Lieutenant Henry L. Masburg  
Lieutenant Daniel F. Mastrean  
Lieutenant Alfred E. Matocha  
Captain John G. Matthews  
Lieutenant Michael N. Matzko  
Lieutenant Dennis P. McBride  
S/Major Maurice B. McBride  
WOC Mike H. McClure  
Mr. Fenwick H. McCollum  
WOC Edward A. McCorvey

## DISTINCTIVE TIES AVAILABLE FOR AAAA MEMBERS

■ The Army Aviation Association has secured some 200 distinctive AAAAA ties for re-purchase by those individual members who desire an attractive organizational tie. This imported silk product, which can be utilized for everyday wear, has small red winged feet and thin subdued gold stripes interwoven throughout

its solid Navy blue background. (Yes, we said, "NAVY blue!") The ties are cut in the standard American pattern and cost \$3.50 each postpaid - which covers the cost of the tie, postage, and packaging. The ties may be ordered through AAAAA, Westport, Conn. Your check for the ties should be made payable to AAAAA.



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Lieutenant Clifford McDuffy  
Lieutenant Emmett D. McElwain  
Captain Louis P. McFadden  
Lieutenant George D. McFeely  
Mr. Robert C. McGee, Jr.  
CWO Harold W. McGrath  
Lieutenant Douglas A. McGuire  
WOC George W. McLachlan, Jr.  
Mr. William D. McLaren  
Lieutenant William P. McMonegal  
Lieutenant Kenneth S. McTiggart  
CWO Robert W. Meade  
Lieutenant John A. Medaille  
Lieutenant Harold F. Meek  
Lieutenant Ronald E. Meeker  
Lieutenant Burnum E. Melton, Jr.  
Mr. Donald N. Meyers  
Lieutenant Charles W. Miles  
WO Billy H. Miller  
Lieutenant Richard G. Miller  
Lieutenant Theodore C. Miller  
Lieutenant Emmett W. Millholland  
Lieutenant Charles A. Molenda  
Lieutenant Edward Monaghan  
Mr. Michael A. Mooney  
M/General Ned D. Moore  
WO Jack A. Mooring  
Lt. Colonel Berkeley D. More  
Lieutenant Allison P. Morrison, Jr.  
Lt. Colonel James M. Morris, Jr.  
Lieutenant James M. Morris  
Mr. M.R. Morris  
Lieutenant David H. Moss  
Lieutenant Jerry M. Moyer  
SP/6 Leon Mruzkowski, Jr.  
Lieutenant Dennis H. Murphy  
Captain John E. Murphy  
Lieutenant Richard E. Murphy  
Major John A. Murray  
Lieutenant Dennis G. Musseiman  
Lieutenant Dane P. Nash  
WOC James S. Neal  
Mr. Walter A. Nelson  
Lieutenant Edward A. Newton

WOC George R. Newton  
Captain Richard R. Noack  
Miss Cecilia M. Noll  
Lieutenant Merwyn L. Nutt  
Mr. David I. Nyquist  
Lieutenant Robert V. O'Donnell  
Lieutenant Floyd W. Olsen  
Mr. James A. O'Malley, Jr.  
Lieutenant Johnnie W. Orsak  
Lieutenant Charles R. Osborn  
Lieutenant Dean M. Owen  
Lieutenant Edgar L. Owens  
Mr. Frank A. Parker  
Lieutenant John R. Pasley  
Mr. C.R. Patterson  
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Mr. Stanley J. Pawlowski  
WOC Thomas H. Payne  
Lieutenant Harrell M. Pedigo, III  
Lieutenant Kenneth R. Peifrey  
Lieutenant Gaylord D. Peterson  
Mr. Jackson L. Philyay  
Mr. Frank N. Piasecki  
Lieutenant Francis D. Pierce, Jr.  
Captain Thomas J. Plott  
Lieutenant Alonzo J. Poindexter  
WOC James F. Porter  
Colonel Roy V. Porter, Ret.  
Captain Robert E. Poston  
Captain Benjamin B. Powell, Jr.  
WOC Clarence Powell, Jr.  
Lt. Colonel Herb D. Prather  
Captain James R. Rafferty  
Lieutenant Gary F. Ramage  
Major Willard A. Ratcliff, Jr.  
Lieutenant Richard D. Reeve  
Lieutenant Troy Reeves, Jr.  
Mr. John J. Rehm  
Lieutenant Don E. Reynolds  
Mr. Milford W. Rickard  
Lieutenant Terence E. Rieske  
Lieutenant David F. Riley  
Lieutenant Robert P. Riley  
Lieutenant William R. Rittenhouse

Captain Jerry M. Roberts  
Lieutenant William S. Roberts  
Captain George G. Rock  
Lieutenant Edward A. Rodrigues  
Lieutenant Jose R. Rodriguez  
CWO Don G. Rogers  
Captain David K. Rogers  
Captain Jack R. Rollinger  
Lieutenant George H. Roney, Jr.  
Major Harry McK. Roper, Jr.  
Lieutenant Robert D. Rose  
Lieutenant Frederick L. Ross  
Mr. Robert P. Royer  
CWO Edward H. Ruehling  
Lieutenant Adam E. Runk  
Lieutenant Raymond E. Ruppice  
Colonel George H. Russell  
Mr. Herman R. Salmon  
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Lieutenant James E. Saylor  
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Mr. Benjamin F. Schemmer  
Lieutenant Larry G. Schlotfeld  
Lieutenant Edgar H. Schneider  
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Lieutenant David I. Scott  
CWO Donald R. Scott  
Lieutenant James A. Scott, III  
Captain John S. Scott  
Lieutenant Richard A. Seaman  
Lieutenant George J. Senter  
WOC Aaron E. Shellenberger  
Lieutenant William H. Shippey  
Lieutenant David R. Shockey  
Lieutenant John B. Shoemaker  
Captain Robert E. Short  
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Mr. O. Morris Slevert  
Lieutenant Paul J. Silberberger  
Lieutenant Charles E. Silva  
Lieutenant Charles M. Simpkins  
Lt. Colonel Harry T. Sims

## AAAA TO SUPPORT 70 REGIONAL SCIENCE FAIRS

Initiating its participation in the Science Fair Program on a nationwide basis, the Army Aviation Association has received requests for "AAAA support" from well over seventy local and Regional Science Fairs scheduled to be held in early 1964.

Under the Science Awards Program adopted by the National Executive Board, the Association will provide a Certificate of Merit to the student whose local Science Fair exhibit is considered the most outstanding in the areas of aerodynamics, propulsion, or supporting techniques. Where feasible, and when requested by the local Science Fair, a judging team of AAAA members will judge the student exhibits at

at each local Fair. The Association will also support the 15th National Science Fair-International to be held at Baltimore, Md., in the Spring of 1964. Judges designated by the Army Aviation Association will attend the Fair, selecting five finalists in any of the categories previously mentioned. Each of the five award-winning students will receive a \$100.00 cash award and the Association Certificate of Merit.

The Science Awards Program of AAAA was initiated by the Washington, D.C. Chapter which conducted two highly successful "Awards Program" in '62 and '63. Following early '63 Board approval, the AAAA participated in the 14th NSF-I at Albuquerque, New Mexico.

# NEW MEMBERS JOINING AAAA

Lieutenant John R. Slamka  
Lieutenant Murrell L. Sloan  
WOC Charles L. Smith  
Lieutenant Danny R. Smith  
WO David M. Smith  
Captain Duane N. Smith  
Lieutenant Freeman W. Smith  
SP/5 Ivan J. Smith  
Mr. John C. Smith  
Lieutenant John E. Smith  
Lieutenant John N. Smith  
Captain John R. Smith  
Captain Lee C. Smith, Jr.  
Lieutenant Marvin D. Smith  
CWO Ronald I. Smith  
Lieutenant Louis E. Sokowski  
Lt. Colonel Eduardo M. Soler  
Captain Alvin L. Solomon  
WOC George D. Somerville  
Lieutenant Richard A. Soncs  
Lieutenant Wayne R. Sorenson  
Major James F. Spaulding  
Captain Robin G. Speiser, Jr.  
Lieutenant Charlie C. Spellers  
Lieutenant Howard S. Stanfield  
Major Kenneth C. Stanley  
Lieutenant Douglas K. Stephens  
Lieutenant George J. Stephen  
WOC Robert C. Stephenson  
Major Thomas W. Stephens  
Captain Robert H. Stepp  
Lieutenant Henry L. Stewart  
S/Sergeant Burke C. Stillwell  
Captain Timothy D. Stoddard  
Lieutenant James E. Stone, Jr.  
WOC Larry E. Storm  
WO Lanny R. Story  
Lieutenant James L. Stotler  
WOC Tony J. Stout  
Lieutenant Frederic H. Stubbs  
Lieutenant Robert J. Swain  
Lieutenant Spencer A. Switzer, Jr.

Lieutenant Andrew J. Synnott  
Captain Robert S. Tamer  
Captain Linden O. Tanner  
Lieutenant Walter W. Taylor  
Captain John R. Telfer  
WOC Robert L. Thaxton  
Lieutenant Jerry M. Thiels  
Lieutenant James R. Thomas  
WOC Robert C. Thomas  
WOC Ronald A. Thomas  
Lieutenant Jerry L. Thompson  
Lieutenant Owen R. Thompson  
WOC Theodore T. Thompson  
Lieutenant Milan J. Thoreson  
Lieutenant Leon C. Thurgood  
Lieutenant Joe B. Thurston, Jr.  
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Captain James A. Tilmon, Sr.  
Captain William K. Toler  
WOC Gerald J. Toman  
Lieutenant William G. Tompkins  
Mr. Edward F. Trall  
S/Sergeant Sam Tripp, Jr.  
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WO Victor Turzanski  
WO Harry C. Tuttle  
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Lieutenant James E. Van Vleck  
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Lt. Colonel Dolman Vineyard  
Captain Eugene F. Voelzow  
Lieutenant Robert B. Wade, Jr.  
Lieutenant Jerry T. Wagner  
Lieutenant Joseph H. Wall  
Lieutenant Walton P. Waller  
Mr. William E. Walsh  
Mr. William W. Walton

Mr. George A. Waltham  
WOC Roderick G. Wamsley  
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Lieutenant Russell A. Waters  
Lieutenant Jessie W. Watson, Jr.  
Captain James H. Watts, Jr.  
Lieutenant John C. Weaver, Jr.  
WOC Phil A. Webb  
Captain Ralph P. Weber  
Mr. Charles O. Weir  
CWO Edward J. Weisenburger  
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Lieutenant Leonard P. Wice  
Lieutenant Leon D. Wickle  
Lieutenant Bobby G. Willey  
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Lieutenant Harold R. Williams  
Major Deanel B. Wilson, Ret.  
Lieutenant Thomas R. Wilson  
Lieutenant David Winterholler  
Lieutenant Wayne O. Witter  
Captain Francis E. Woith  
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Mr. Donald S. Wolfe  
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WO Walter Woodrow  
Lieutenant Gary L. Wright  
Lieutenant John A. Wylie  
WOC Leslie D. Wylie  
Lieutenant Junichi E. Yahiro  
Lieutenant Virgil L. Yarbrough  
WOC Matthew C. Yeck  
Lieutenant Val D. York  
Lieutenant Danny A. Young  
CWO Perry T. Yowell  
Lieutenant Ken R. Zagami  
Lieutenant Ian E. Zawacki  
Lieutenant George R. Zeigler  
Lieutenant Louis J. Zivic  
Captain John P. Zurita

## USAREUR ANNUAL MEETING TO BE HELD 4-8 MARCH

The United States Army, Europe, AAAA Annual Meeting will be held at the U.S. Army Recreation Center, Garmisch-Partenkirchen, Germany, during the period 4-8 March 1964. A large gathering of USAREUR members will attend the meeting for the purposes of exchanging professional information and electing a new slate of USAREUR Region officers.

Programming for the four-day meeting includes arrival and registration on 4 March; "ARMY DAY" - Chapter Presidents' Meeting and Luncheon and Army presentations throughout the afternoon on 5 March; "INDUSTRY DAY" - with industry presentations being conducted throughout 6 March; and an "HONORS AND AWARDS DAY" with an Honors Reception and social function scheduled for Saturday, 7 March.

Representatives of the Association's 12 USAREUR Chapter activities are expected to be briefed on Army aviation operations, logistics support, and safety programs during the course of "ARMY DAY" and are expected to hear 15-minute presentations from key industry leaders summarizing their firms' latest developments and projects applicable to Army aviation.

Colonel Claude L. Shepard, Jr., of Hqs, Seventh U.S. Army, serves as the current USAREUR Regional President of AAAA. The Fulda Chapter (Major Lucien C. Benton, President) has been designated the "host" unit for the 1964 Annual Meeting.

Activated in 1957, the USAREUR Region represents the largest concentration of AAAA membership in the world. The '64 meeting will be the Region's 6th meeting.





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