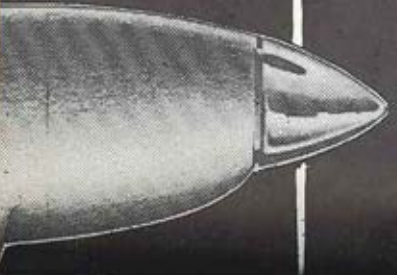
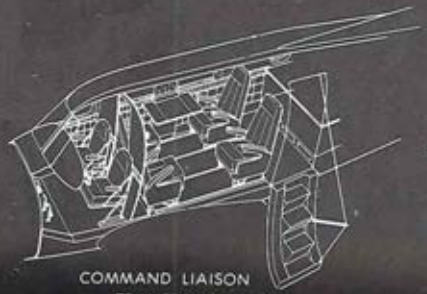
ARMY AVIATION

AUGUST ★ 1960

BEECH "IMAGINUITY" IN *Air Mobility*

POTENTIAL FOR
FUTURE DEVELOPMENT
ALREADY DESIGNED IN





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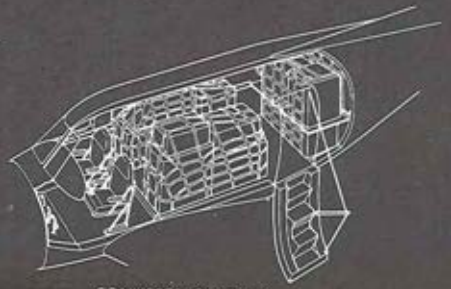
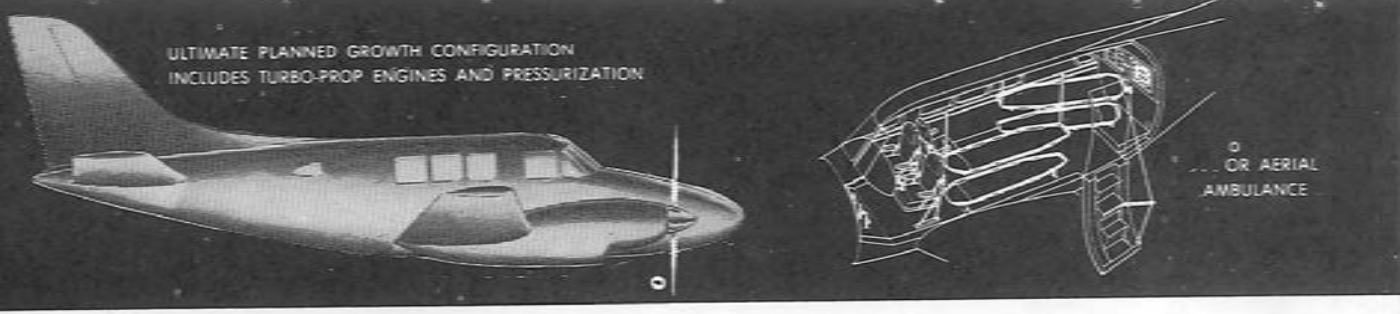


CONVERTS QUICKLY
FOR HIGH-PRIORITY



The new Beechcraft L-23F . . .

Meeting the U. S. Army's requirement for a modern high-performance, low-cost transportation system

Already serving the U. S. Army, the versatile new Beechcraft L-23F is the latest in a long line of high-performance training and utility aircraft which Beech Aircraft Corporation has designed, developed and produced for the military services since 1932.

With supercharged fuel injection engines, the L-23F combines high altitude cruise power with exceptional short field performance, rugged durability and low operating costs to meet a wide range of needs . . . as a command liaison or personnel transport, a carrier of high-priority cargo, an aerial ambulance, or a multi-engine instrument trainer with a "big plane" feel. Designed and engineered for future pressurization and turbo-prop modification.

Beech Aerospace Division

BEECH AIRCRAFT CORPORATION • WICHITA 1, KANSAS.

Beech Aerospace Division projects include R&D on manned aircraft; missile target and reconnaissance systems; complete missile systems; electronic guidance systems; programs pertaining to liquid hydrogen propellants and cryogenic tankage systems; environmental testing of missile systems and components; and GSE. May we help you? Write, wire, or phone Contract Administrator, Beech Aircraft Corp., Wichita 1, Kansas—or nearest Area Office.

ARMY AVIATION MAGAZINE

Volume 8 — Number 8

August 31, 1960

CHAIRMAN

■ Maj. Gen. Richard D. Meyer (above right), Deputy Chief of Transportation for Aviation, OCT, will serve as Chairman of the Annual Meeting Committee for the 1961 AAAA Annual Meeting to be held in Washington, D.C. Serving as Vice Chairmen will be Col. John J. Tolson, III (above right), Deputy Director of Army Aviation, ODCSOPS, and Warren T. Rockwell, Director of the Hiller Aircraft Corporation offices in Washington, D.C. The 1961 Annual Meeting dates are September 4-6.

TESTING

■ The T53-L-7 gas turbine engine in turboprop configuration and the T53-L-9 in helicopter configuration are currently in advanced stages of development testing and will be in production early next year, according to AVCO Lycoming authorities. Rated at 1,100 shp, the engines are to be used in the Grumman AO-1 Mohawk and Bell HU-1D aircraft.

Meyer

Tolson

ADVERTISERS IN THIS ISSUE

ARMY AVIATION MAGAZINE

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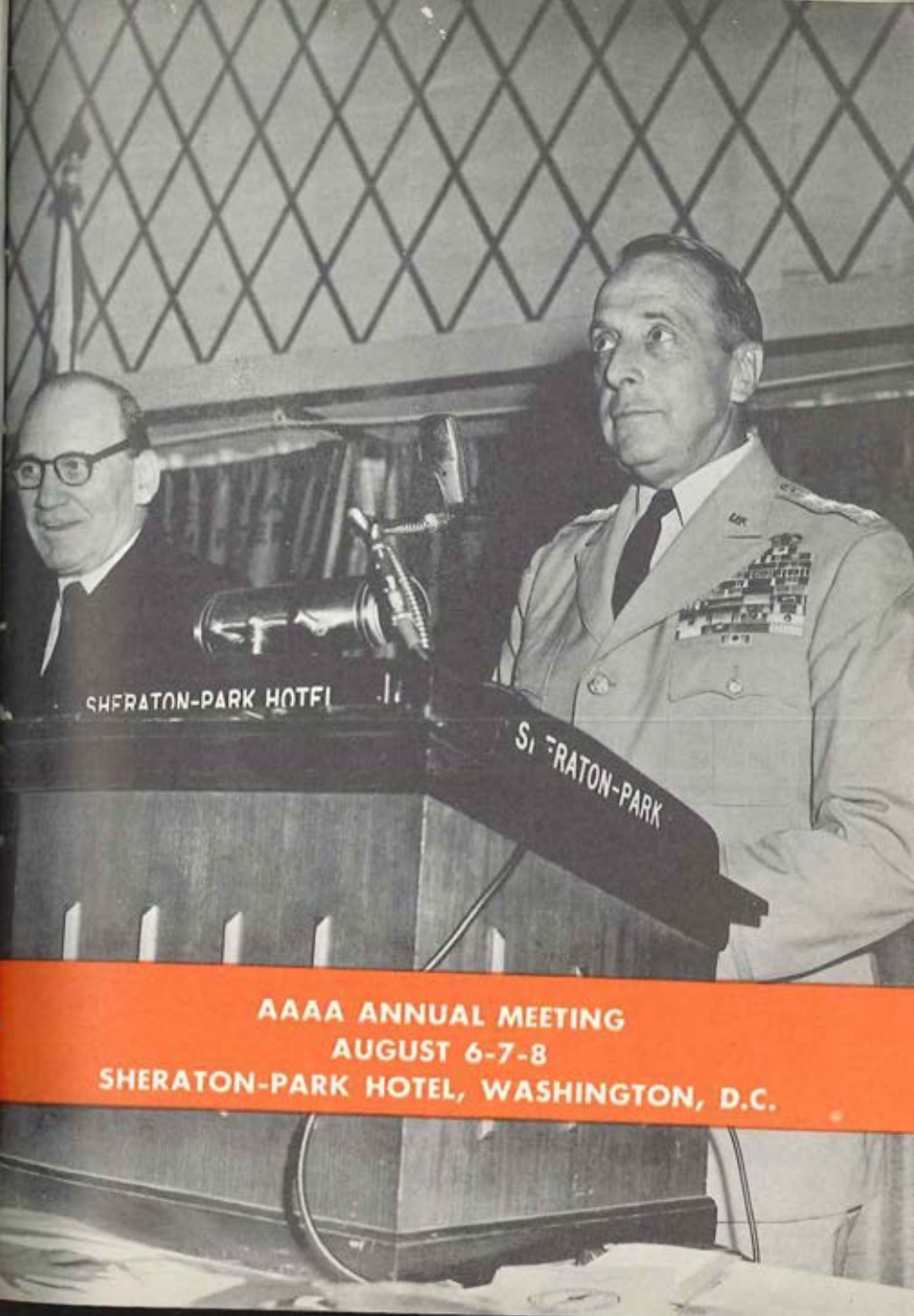

AAAA ANNUAL MEETING
AUGUST 6-7-8
SHERATON-PARK HOTEL, WASHINGTON, D.C.

'60 MEETING: "OUTSTANDING SUCCESS"

Brig. Gen. Clifton F. von Kann
Director of Army Aviation,
Office, Deputy C/S for Operations, D/A

Dear Army Aviator,

A very recent page of our history is the *1960 Annual Awards Luncheon* of the *Army Aviation Association,* and for those of you who could not be there in person I would like to give a first hand report, as I saw it.

The entire annual meeting was an outstanding success. However, the highlight of the affair was the *Awards Luncheon* and the awards that were presented there. *General Lemnitzer,* the Chief of Staff, took this occasion to announce that Army aviation had captured seven world helicopter records—three of them from the Soviets.

He then presented the Distinguished Flying Cross to *Colonel Jack L. Marinelli, Major Garrison J. Boyle, III,* and *CWO Clifford V. Turvey* for their accomplishments, utilizing the Bell HU-1 *Iroquois.* (For *Colonel Marinelli* the award was his first Oak Leaf Cluster to the DFC).

In making this presentation the Chief of Staff took special notice of the utilization of this helicopter in Chile. *"This is the same type of helicopter,"* said General Lemnitzer, *"which performed so notably in the recent Chilean disaster relief expedition. Nine of these helicopters flew over* 23,000 *miles in delivering* 101,000 *lbs. of food, clothing, and medical supplies to homeless victims within the earthquake-stricken area. This is a vivid example of the usefulness of our Army aviation as an instrument for peace as well as an instrument of war."*

"The Army is proud of its flying soldiers and of its new family of aircraft. They typify our keen interest in air-mobility for the Army of today and of the future."

While adding my own congratulations to the Army Aviation Board, and to its three distinguished aviators, I would like to emphasize the efforts of the *Bell Helicopter Company* which made these record attempts possible. It takes a great deal of technical effort and experience before any official records can be certified by the *Federation Aeronautique Internationale.* The many people from *Bell Helicopter Company* and the *National Aeronautic Association* also deserve congratulations for their part in this achievement.

Mr. Turvey received additional recognition by being nominated the *Army Aviator for 1959. Mr. Bryce Wilson,* President of the AAAA, presented him with this award as part of the deserved recognition for his many accomplishments.

Lt. General John C. Oakes presented the *Hughes Army Aviation Trophy* for the first time. This imposing trophy, which has been donated by the *Hughes Tool Company,* has as its purpose recognition of the

PREVIOUS PAGE

General Lyman L. Lemnitzer, Chief of Staff, USA, receives a standing ovation prior to addressing attendees at the 1960 AAAA Awards Luncheon.

most outstanding Army Aviation Unit—the Unit which has done the most to further the mission of Army aviation.

This year the *First Reconnaissance Squadron (Sky Cavalry), 16th Cavalry, Second USA Missile Command,* Fort Carson, Colorado, was selected to receive this award.

I think that a small quote from *General Oakes* will point up the problem facing the Awards Committee. *"I would like to preface my remarks with the comment that specific selection of the most outstanding Aviation Unit was a most difficult task—which, in itself, is a tribute to our entire aviation program. I would like all of the nominated units to appreciate the difficulty of this selection and may I extend my congratulations to all of them."* *General Oakes* then presented the trophy to *Lt. Colonel Robert F. Tugman,* the squadron commander.

General Oakes also made an interesting remark that eighteen years ago when he was in the Pentagon, a single small folder was presented to him containing all the reference material of an additional responsibility assigned to his office. This little folder was the complete file of the Army Aviation Program. He pointed out that it is easy to see how fast our aviation program has grown by just looking around the crowded banquet hall.

Senator McClellan then made many complimentary remarks to the entire Army Aviation Safety Program as he presented the *James H. McClellan Safety Award* to *Colonel John L. Inskeep,* Commander of Camp Wolters, and *Mr. Raymond L. Thomas,* General Manager of Southern Airways Company. These two men were selected because of their primary responsibility for the outstanding safety record of our Primary Helicopter School.

Senator McClellan was followed by the distinguished Administrator of the F.A.A., *Mr. E. R. (Pete) Quesada,* who, as the principal speaker, gave a forceful address which stressed the military need of air mobility and the need to practice this movement constantly. He also added the thanks of the Federal Aviation Agency for the many efforts put forth by the US Army to assist his agency.

I would like to add my own congratulations not only to those singled out for special awards, but to the many aviators who worked untiringly to make this annual meeting such a success. Those who have been involved in this type of affair know that they don't just happen—it takes weeks and months of strenuous preparation to make a smooth event of which we can be proud. I hope all of you who were not able to attend this year will begin to plan for next year right now. Tentative plans indicate that the next meeting may be around 5 September 1961.

The *Army Aviation Association* timed its annual meeting to mesh with that of the *Association of the United States Army* and from my viewpoint this worked extremely well. I do not think that we diluted our goals or efforts, and think the *AUSA* feels that we added to their program.

On the second day's session of the AUSA Program, mobility was emphasized as one of our prime requisites. *General Oakes* began the session with an address which pointed out the many conflicting requirements of our future battlefield. One of his most significant statements was, *"Reaction time will largely determine the victor in future wars."* I believe this points up our belief in the necessity for more and more air mobility.

General Oakes continued by saying, *"Strategic mobility gains us little if the Army has no tactical mobility upon arrival at the action; therefore, tactical mobility means must be in place or easily made strategically mobile."*

This latter point is one of our recognized problem areas in the deployment of Army aviation. Helicopters like the HU-1, which

are easily air-transportable, are one direction we are taking toward the solution of this problem.

After presentations by *General Rogers* and me, a panel headed by *General Gavin* had a stimulating discussion of the future Army needs. I hope you will be able to read a complete report of this in the *"Army"* Magazine. I am extremely pleased with the attention that Army aviation and its air mobility goals have received in these important meetings. This attention in itself is indicative of the Army's strong intention to move forward realistically in the coming years with a significant growth in its aviation capability.

I'd be the first to admit that speeches, meetings, and discussions at a convention are not in themselves measures of progress, but I am convinced these announced goals will crystalize into actual hardware and organizations. *General Oakes* stated that one of the greatest futures that the Army foresees in its aviation program is the "air cavalry" organizations, and that those units which are actually in being already have given proof that this concept is indisputably sound. With these and similar completely air mobile units, I think we can see the shape of the future.

I hope that our recent successful meeting represents an inspiration to all of you to redouble your efforts for the coming year.

A final word—and a very important one. There is one area which urgently requires the attention of every Army aviator, and that is recruiting every possible candidate who is qualified for Army aviation. By the end of FY 61, we must meet our projected quota of trained aviators or we're certain to lose rated spaces in the entire DOD level.

Unfortunately, our input of new students has recently fallen off due to the lack of qualified applicants. There is a great future in Army aviation for these young officers but they need to be told about the opportunities. I earnestly ask that each of you take on this additional duty. It will avail us little to have our increased pilot needs recognized if we cannot find volunteers to fill the requirements.

Sincerely,

CLIFTON F. VON KANN
Brigadier General, GS
Director of Army Aviation, ODCSOPS

1960 AAAA Awards Luncheon.

Which way is down in Space?

GUIDANCE IN SPACE for manned and unmanned vehicles is one of the most challenging projects underway at Ryan Electronics today. Through advanced research and development, Ryan Electronics is solving the problems of missile and space guidance systems.

Some of the areas being explored include rendezvous terminal guidance, anti-satellite guidance, space vehicle landing aids, satellite communications, and mid-course guidance.

Ryan Electronics is also studying applications of continuous-wave doppler techniques to the terminal phases of space missions.

Ryan Electronics is the pioneer and recognized leader in continuous-wave doppler navigation systems—the most advanced, proved means of aerial navigation yet developed for modern flight. Automatic Ryan navigators, in wide use throughout the world, guide all types of aircraft—ranging from helicopters and slow flying reconnaissance aircraft to high altitude supersonic jets.

Now, through a major research and development program, Ryan is working to provide the best guidance for America's ventures in Space tomorrow.

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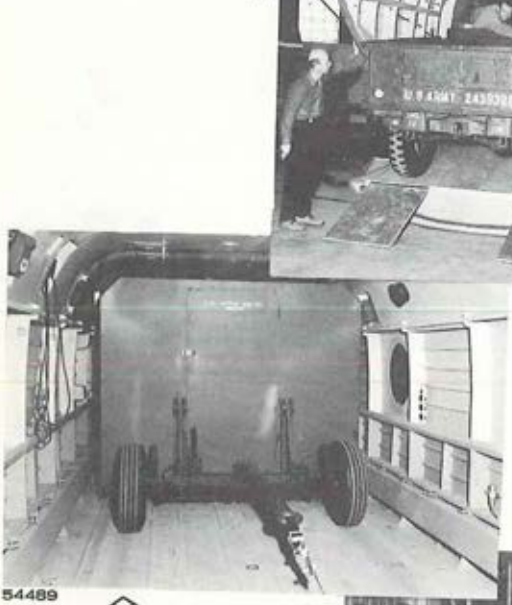

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SHELTER,
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SUMMARY

August, 1960

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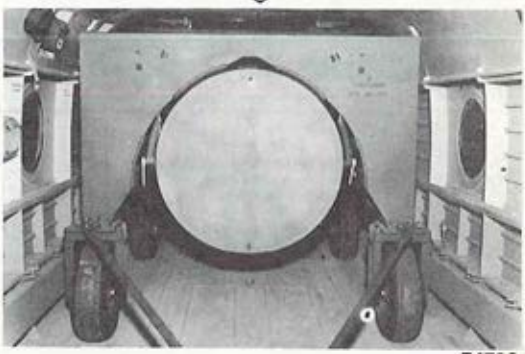

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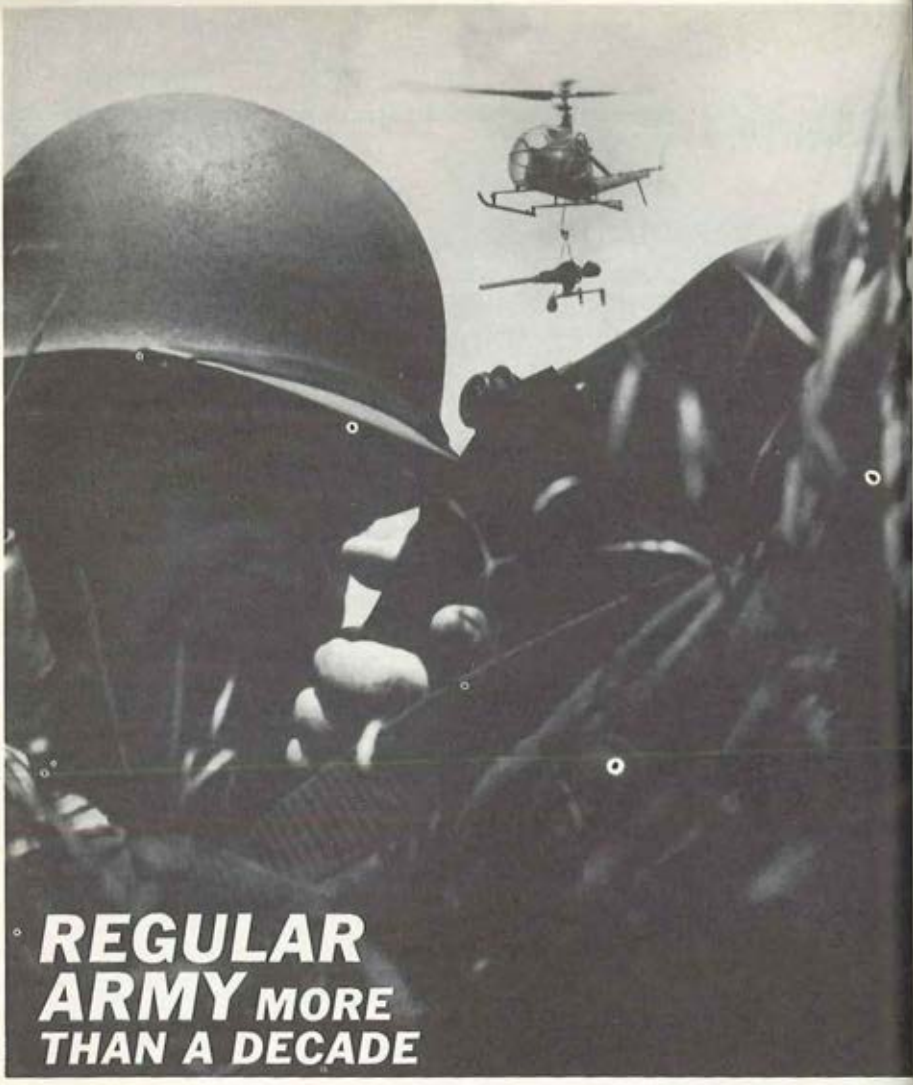
NSPORTER/ERECTOR/LAUNCHER

VERTOL DIVISION
MORTON PENNSYLVANIA
BOEING



REGULAR ARMY MORE THAN A DECADE

The Army has a valuable investment in the experience of the professional soldier.

Hiller has the same mark of a professional soldier — experience.

Since 1944 when our first spindly Model XH-44 flew, Hiller engineers and the men who run our lathes, drill presses and rivet guns have accumulated the know-how to build the most dependable helicopters in the world.

Designs are one thing. Deliveries another. Both come from HILLER AIRCRAFT CORPORATION

PALO ALTO, CALIFORNIA · WASHINGTON, D.C.
Adhesive Engineering Division · San Carlos, Calif.

THE FACE OF MOBILITY

Lt. General John C. Oakes
Deputy Chief of Staff for Operations, Department of the Army

Around the turn of the century man required only a few basic tools to accomplish the majority of the tasks which he would be faced with in a lifetime. The axe, the hoe, the plow, pick, shovel, hammer, and saw formed the nucleus of his hardware. The horse provided local mobility.

As man moved into the automobile age, he began to need more specialized equipment and knowledge. At first he was able to keep ahead of it. For example, he was issued a small kit with his Model "T" which allowed him to completely tear down and put back together his vehicle—which he frequently did.

Specialization, however, has increased logarithmically to match our technology, and, we find that instead of using a horse, plow, and hoe, our modern farmer is head of a complex organization requiring expensive, extensive mechanization and the background knowledge of a competent mechanic, economist, soil expert, and government lawyer.

There has been a parallel change in the tools of war, where every aspect of the military machine has felt the impact of complexity and cost. But unlike our farmer friend—the soldier cannot afford extreme specialization. The soldier cannot gear his future to one type of product and concentrate his entire effort upon it, for he cannot forecast exactly what requirement will be placed on tomorrow's Army—from a show of force to a thermonuclear exchange.

LT. GENERAL JOHN C. OAKES

This is the dilemma that faces the military planner as he picks his tools and the means to move them. Every item in the Army inventory must be judged in light of its potential value under every conceivable situation—whether this be against a few guerrillas in a jungle or a massive attack in Europe. The best balance or mix of weapons systems and vehicles is one of the knottiest problems facing your Army. This problem would be difficult enough in isolation, but it is further complicated by dollar and personnel limitations. Today it is our purpose to examine a few of the related problems with special emphasis on the mobility necessary for a modern Army.

Mobility is not a military virtue in itself. A man falling down a mountain precipice has a great deal of mobility, but he lacks a certain amount of control. Useful mobility, therefore, depends upon *control* and *purpose*.

Also, mobility is not just speed. Mobility has many facets, not all of which are concerned with means of transportation. A soldier carrying a 15 lb load is intrinsically more mobile than his buddy carrying 60 lbs. The same principle applies to a unit. Trimming down to our best fighting weight is a key factor to mobility, strategic, and

tactical. The unit that has lighter equipment—equipment that does not require excessive maintenance, supply parts, and POL —is free to move further and more often than one tied to a heavy logistics tail.

There is little reason to lighten our load and double our speed if we don't know where we are going. To move with purpose and to fire with purpose, we must have more immediate knowledge of the enemy, his intentions, and his movement. To acquire such information we will need faster means of observing the enemy and translating this information into useful intelligence available immediately to the combat commander who requires it.

Mobility, then, poses many questions some of which appear conflicting, if not contradictory.

"How can you attain strategic air mobility if you insist on items like the tank and self-propelled artillery in your weapons system?", yet conversely—*"Can you expect to survive an onslaught of a Soviet mechanized division without heavy armored forces?"*

"Can we afford an extensive air mobile force with the attending complication, maintenance, and POL requirements?", yet —*"Can we afford to be without the responsiveness and flexibility that air mobility offers the ground commander? What other means offers such a quantum jump in the combat soldier's speed?"*

"We need the most sophisticated equi ment possible to improve our surveillan capability," yet—*"Is not this requirement direct contrast to our desire for simplici and low cost?"*

"Where does strategic mobility end a tactical mobility begin? Is it a matter miles, of time, or service responsibility?"

Obviously there is no black and whi solution to these problems; it is n a simple "either-or" choice betwe the atomic bomb and the bayonet; the he copter or the jeep. It is the degree that t Army plans to meet the various threats th will determine the character of our futu Army. This involves many hard decisio about issues which are not clear cut.

Fortunately there are a few guidelin which we can use to keep our *decisions* focus:

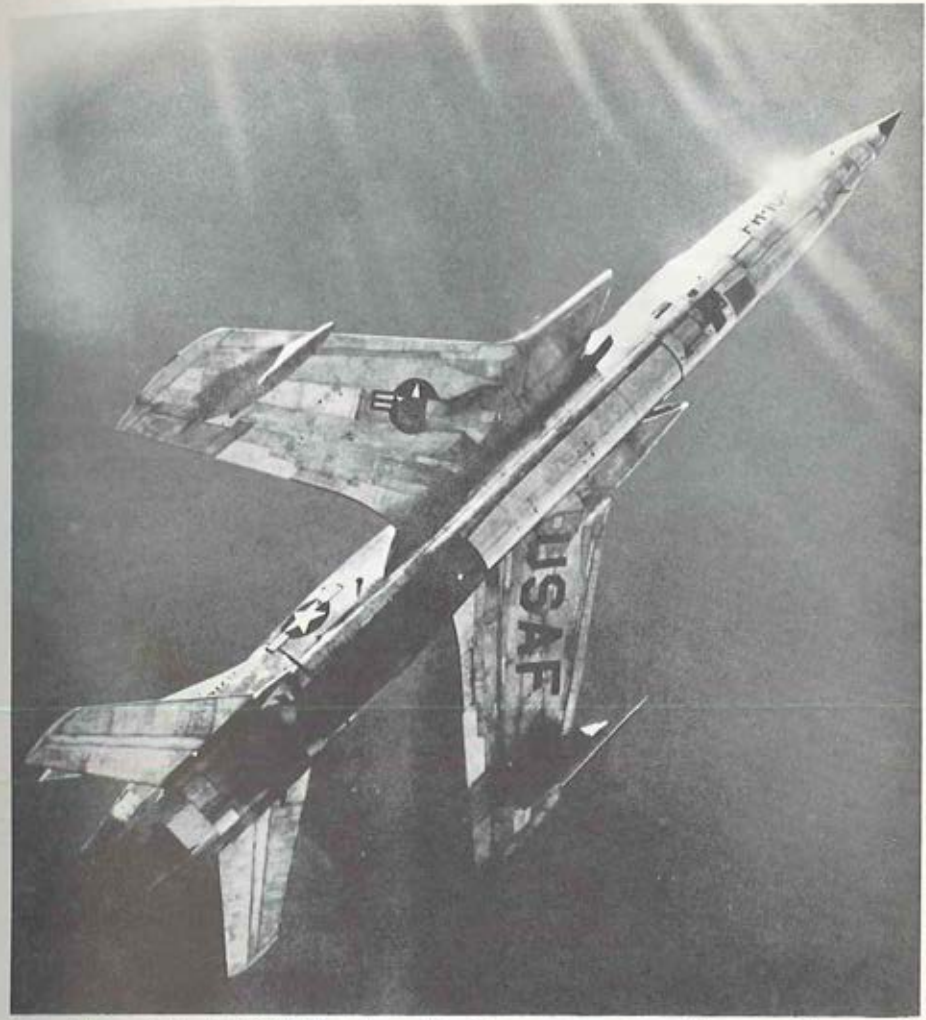
— *Our primary weapon system is the i dividual soldier and we must first consid how we can multiply his effectiveness.*

— *We may be forced to suffer some los on the objective, but there is no point accepting avoidable losses while going the objective.*

— *Reaction time will largely determi the victor in future wars.*

— *The Army can afford no expensive n systems which offer only marginal gains capabilities. It must look to systems th offer a significant advantage.*

Elwood R. Quesada, Administrator the Federal Aviation Agency and pri cipal speaker at the 1960 AAA Awards Luncheon, receives a war welcome from the attendees at th 1960 Awards Luncheon.



The Republic F-105D streaks to a new world speed record . .

powered by a Pratt & Whitney Aircraft J-75 jet engine

On December 11, 1959, the Republic F-105D fighter-bomber raced over the Mojave Desert at 38,000 feet. The course was a 62.4 mile circle. With a temperature of 63 degrees below zero, the Air Force F-105D whipped through the closed-course flight to establish a new world's record of 1,216.48 mph.

Its highly advanced electronics, radar, and associated equipment, enable the F-105D to perform missions at twice the speed of sound regardless of visibility, ceilings, or target area conditions. Its speed and power make it one of the most versatile aircraft in history.

The jet engine that powers the F-105D is the Pratt & Whitney Aircraft J-75. This same engine also powers Convair's F-106 all-weather interceptor which recently set a new world's straight-away record. Over the years, the Pratt & Whitney Aircraft J-57 and J-75 jet engines have broken virtually every major flight record.

PRATT & WHITNEY AIRCRAFT

East Hartford, Connecticut

A DIVISION OF UNITED AIRCRAFT CORPORATION

— Strategic mobility gains us little if the Army has no tactical mobility upon arrival at the action; therefore, tactical mobility means must be in place or easily made strategically mobile. This will have a direct relationship to our staying power.

— Every item in our inventory must be designed to operate in the environment of the combat soldier.

— The Army has the continuing responsibility of being ready to fight any sort of a war in any part of the world.

I'd like to expand upon that last guidepost a bit. There are those who see the future of the Army as limited to a sort of fire brigade designed specifically to put out brush fires. This has little realism. Your insurance rates would skyrocket if your local fire company were only capable of dealing with a pile of burning autumn leaves. Your insurance company would be equally unhappy if the only way to put out your house fire involved dynamiting the entire block.

No, the insurance your Army offers this country *must* be graduated to the various risks and (must) give the best possible protection at the most reasonable rates. We must have a military program that is responsive to the threat of a Soviet multi-megaton missile attack as well as the threat of any aggressive erosion of the free world in whatever form and whenever it may occur. A lack of choice can only result in an impotent force unable to react unless the enemy adopts a course of action suited to our own preconceptions.

AN ADDRESS BY LT. GENERAL JOHN C. OAKES, DCSOPS, D/A, TO THE ASSOCIATION OF THE U.S. ARMY ON AUGUST 9, 1960.

Having touched on some of the problem areas and some of the guidelines, I would like to give you some of the trends we see for this decade.

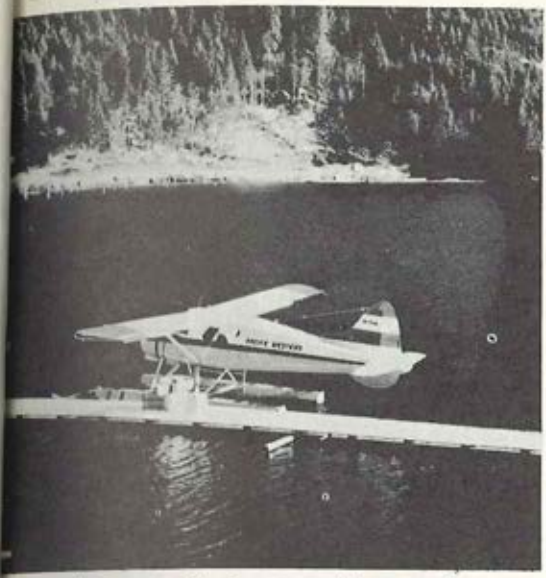
First, it is important that all of the weapons and equipment, as well as the organizations themselves be dual capable. We have moved positively in this direction already and most of the equipment now in R&D promises to be of significant value in both nuclear and non-nuclear war.

Second, the Army must strike a balance between its deployed forces and truly mobile strategic reserves, and must pre-position certain key items throughout the world.

Thirdly, the answer to the dilemma of "dispersion to avoid massive nuclear attack versus the need for a degree of concentration to accomplish a mission," lies in greater tactical mobility. There will always be times when the soldier must dismount to fight, but our ultimate goal is 100%

A part of the head table of the AAAA Awards Luncheon.

THE



TEST

OF TIME

BEAVER SERIAL NO. 1 – DELIVERED IN 1948 – IS STILL PERFORMING DEPENDABLE DAILY SERVICE OVER THE ROUTES SERVED BY PACIFIC WESTERN AIRLINES.

CF-FHB, the original Beaver prototype, has flown almost a hundred thousand miles in the service of Pacific Western and in that time has earned gross operating revenues in excess of half a million dollars.

Much of the service performed by this venerable Eager Beaver has been along the mountainous Pacific Coast, operating from salt water – as a seaplane landing on glacial ice – and from mountain lakes at 5,000 feet elevation (from which take-offs with full gross load are regularly accomplished by PWA pilots in 16 seconds).

SINCE SERIAL NO. 1, NEARLY 1,500 BEAVERS HAVE ROLLED OFF D.H. CANADA'S ASSEMBLY LINES.

Today's Beaver is virtually identical to CF-FHB. No major modifications have been necessary since the first prototype was originally built.

DE HAVILLAND AIRCRAFT OF CANADA

DOWNSVIEW ONTARIO

SEVEN NEW WORLD RECORDS CLAIMED BY ARMY'S HU-1 IROQUOIS

ARMY'S NEWEST OPERATIONAL HELICOPTER CLAIMS NEW SPEED, DISTANCE AND CLIMB MARKS!

*The new records.**

1. Climb to 3,000 meters (9,843 feet), Class E-1:
   Current record: 5:30.6 minutes—held by French Alouette
   HU-1 record claim: 3:22.4 minutes—Pilot, Maj. Boyle

2. Climb to 6,000 meters (19,686 feet), Class E-1:
   Current record: 11:0.1 minutes—held by French Alouette
   HU-1 record claim: 8:10.2 minutes—Pilot, Maj. Boyle

3. Non-Stop Distance, Closed Circuit, Class E-1d:
   Current record: 345.1 miles—held by Russian MIL-1
   HU-1 record claim: 441.74 miles—Pilot, Maj. Boyle

4. Speed Run, 3 kilometers (1.864 miles), Class E-1d:
   Current record: none
   HU-1 record claim: 158.05 mph—Pilot, CWO Turvey

5. Speed Run, 100 kilometers (62.14 miles), Class E-1d:
   Current record: 130.8 mph—held by Russian MIL-1
   HU-1 record claim: 142.2 mph—Pilot, CWO Turvey

6. Speed Run, 500 kilometers (310.69 miles), Class E-1:
   Current record: 136.02 mph—held by US Army H-34 (Sikorsky)
   HU-1 record claim: 148.45 mph—Pilot, Col. Marinelli; Co-Pilot, CWO Turvey

7. Speed Run, 500 kilometers (310.69 miles), Class E-1d:
   Current record: 122.07 mph—held by Russian MIL-1
   HU-1 record claim: 148.45 mph—Pilot, Col. Marinelli; Co-Pilot, CWO Turvey

**Note:* All flights were under supervision of the National Aeronautical Association, and the HU-1's record claims have been submitted to the Federation Aeronautique Internationale and the N.A.A. for official recognition. Class E-1 is for all helicopters, irrespective of weight. Class E-1d is for helicopters between 3858 and 6614 pounds gross take-off weight.

THE MACHINE — *The turbine-powered Bell HU-1 Iroquois* is the first helicopter to be designed and built to Army specifications. It has a useful load of almost two tons and is capable of high speed flight carrying nine fully-equipped men, or performing tactical field maneuvers from suppressive fire missions to medical evacuation. The versatile HU-1 is now operational with 17 Army units, four of which are STRAC divisions. It will join 5 more commands before the year's end.

The "X" mid-side of the HU-1 marks the spot which N.A.A. observers used to make photo records and set timers during test runs.

THE MEN — Pilots for the new HU-1 during its record shattering flights were three veteran Army airmen, members of Fort Rucker's Army Aviation Board: Colonel Jack L. Marinelli, board president and the holder of two 500 kilometer speed records; Major Garrison J. Boyle, project officer and holder of records for 3,000 and 6,000 meter climbs, and the closed course distance record; and Chief Warrant Officer Clifford V. Turvey, project officer and holder of the 3 and 100 kilometer speed marks.

CWO Turvey and Maj. Boyle check course maps prior to speed record trials.

THE METHOD — The record breaking flights were made in a demanding eight-day series of tests at Fort Worth, Texas, home of Bell Helicopter, manufacturer of the new HU-1. During the flight periods, sealed instruments aboard the ship and timing stations manned by N.A.A. personnel at points on the measured courses, kept official data of the record attempts.

Col. Jack Marinelli returns from the 500 kilometer course after averaging 148.45 mph. Ground temperature during this phase of the record attempts reached a high of 98 degrees. Gusty winds also were encountered.

vehicular mobility, ground or air, for all of our combat and combat support units. We are making progress in this direction, as witness the growth of the Army's organic aviation and its ground mobility means.

Fourth, our ultimate goal in logistics has an item of supply leave the U.S. and not stop until it reaches the user. Needless to say, this goal is far from being attained, yet the trend is moving in this direction. We now consider that for the 1965-70 period as much as 25% of the dry cargo and personnel movement for the combat zone will be delivered directly by air from the port or a remote base complex. Other items are coming into being to enhance the ground mobility of our logistics system.

And last, our organizations are going through a period of evolution, each step of which is designed to add greater flexibility, mobility and combat power to the various units, and allow us to effectively tailor a force to do a specific mission.

The basic mission of the Army is not likely to change. The means to do this mission have always been mobility and firepower. The balance between these elements of combat power has swung back and forth throughout the ages. After the violent shift following the explosion of the atomic bomb, the pendulum is now on the mobility swing again.

Where the optimum balance might be, no one can tell, but it has become increasingly obvious that one of the best tools of the soldier in this nuclear age, is greater and greater mobility. His only alternative is to hide in a very deep hole—hardly conducive to positive offensive action and not very likely to accomplish the assigned mission.

We see no point in time or no possible situation where the essentiality of your Army will be diminished. The U. S. Army is the basic ground arm capable of, and responsible for, sustained ground combat in any type war. Therefore, our national security requirements dictate that the Army must be strategically and tactically mobile, dual capable, well trained, well equipped, eternally vigilant, and always ready.

This morning I have only touched on some of our problem areas—particularly mobility—to give you a feeling of the magnitude of various consideaations that face the Army staff in planning the tools necessary for a modern Army. I hope I have provided the *Association of the United States Army* with some of the trends, as I see them, as to the nature of our future Army and where all of us must concentrate our effort to achieve the Army's vital goals.

We can boil these goals down to simply this: To move into combat more quickly; to increase our staying power; and add to our ability to apply our firepower with precision, discrimination, and accuracy.

Looking back we can be proud of our progress; looking at today we can recognize our current limitations; looking forward we have confidence in our Army's future—a future which offers this country one of its most effective means of implementing national policy for world peace.

AAAA-Industry Reception

CELERITY IN THE SIXTIES

Brig. Gen. Clifton F. von Kann
Director of Army Aviation,
Office, Deputy C/S for Operations, D/A

Several months ago, while addressing the Armed Forces Staff College, I referred to the phrase attributed to *General Nathan Bedford Forest, "Git thar fustest with the mostest,"* as an example of the historical need for mobility throughout military encounters of the past.

I was followed by an eminent speaker who talked on an entirely different subject, but used the same quote to illustrate a different point, after which he parenthetically added: *"but of course General Forest never said that."* This led, naturally, to a search of the records which indicates that Forest's exact words were *"Get there first with the most men."*

To obviate the need of being caught in a similar embarrassing position, I will quote today from another distinguished Confederate Army leader, *General Daniel Harvey Hill,* who said *"Promptness is the greatest of military virtues, evincing, as it does, zeal, energy, and discipline. The success of arms depends more upon celerity than any one thing else."* The real point, then, is that military history centers upon the successes or failures of military leaders in their attempts to move men and equipment to decisive points in the battle zone.

To put it another way, we might say that a recurring, if not constant, theme throughout military history is the search by commanders for mobility breakthroughs which could be applied decisively on the battlefield. These breakthroughs might allow them to appear at a decisive location much sooner than the enemy had thought possible or to react to a battlefield situation with similar celerity.

BRIG. GENERAL CLIFTON F. VON KANN

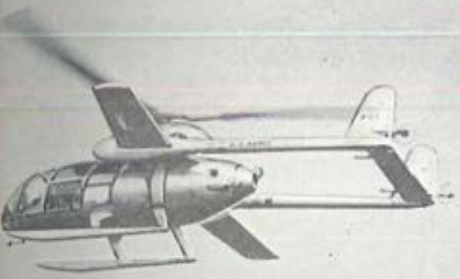
This was the secret of Napoleon's early victories in Italy; it was also well illustrated by Stonewall Jackson's forced marches during the Shenandoah Valley campaign; and the German Army exemplified it during the early days of the Blitzkrieg when they enjoyed the fruits of a great breakthrough in mobility.

Ever since man's first flight, it was evident to many that if ground forces could move through the air, rather than on the ground, and appear ready to fight, at critical places on the battlefield, this would be an even better solution to the age-old problem of mobility. The development of airborne techniques was a logical development of this thought and a rather remarkable adaptation of then existing equipment to achieve this goal of moving ground units into combat through the air.

However, the aircraft which have been used in conjunction with airborne operations were not built to stay with the ground units and live on the battlefield so airborne operations have tended to be something of a one shot affair. In addition,

McDonnell XHJD-1 (Navy). The world's first twin-engine helicopter. This 5½-ton vehicle, with reciprocating engines driving the rotors through shafts, became a flying helicopter laboratory.

McDonnell XH-20 (Air Force). The world's first ramjet helicopter. A pioneering helicopter development, this flying test-stand had a McDonnell ramjet in each rotor tip. The tip-driven rotor eliminated the need for a torque-compensating tail rotor.



McDonnell XV-1 (Army). The world's first successful convertiplane. This research vehicle was an unloaded-rotor, compound helicopter combining hovering capability with a speed of 200 mph. The rotor was powered by McDonnell-designed blade-tip-mounted pressure jets.

McDonnell Model 120. A "flying crane" of diminutive size but unusual lift capabilities. Powered with McDonnell rotor-tip-mounted pressure-jets, it can carry a useful load exceeding its empty weight. Military evaluation has shown outstanding hover and dynamic longitudinal stability for this experimental craft.

the range of the aircraft gave this type of operation as much of a strategic as a tactical significance. And, it would appear that Air Force transport aircraft will be quite vulnerable in the sophisticated war of tomorrow.

For these and other reasons, during World War II and the subsequent trend toward a separate Air Force dedicated principally to air supremacy, there was little development of suitable hardware which could give ground units an organic air movement capability—one which could be used on a continuing basis for a tactical maneuver in and around the battlefield. However, following the separation of the Air Force, stimulated by unexpectedly successful helicopter operations at Korea, and now further facilitated by the turbine powered helicopter and excellent STOL fixed wing aircraft, these capabilities are at last coming within our grasp.

It is most significant that this development should come right now. As a matter of fact it is virtually essential for the future success of ground operations that the Army should achieve a true degree of air mobility at this time. Even forgetting the lessons of history, which I have just outlined, air mobility is a necessary outgrowth of many factors impinging upon the military outlook for the '60's and possibly for many decades to come.

First, since 1945 the application of military power has been oriented largely on the nuclear weapon. This fixation on nuclear capability has had two important effects on our tactical thinking. Its destructive magnitude has dictated dispersion as a key factor in any future war. More importantly, the application of nuclear weapons has increased the tempo of warfare by an almost incalculable amount, so that speed is the factor which will determine which side is better able to apply this great combat power.

Secondly, we are rapidly reaching, if we have not already reached, the limit of speed which can be derived by ground mobility. Whether or not ground mobility is subject to the law of friction, it is nevertheless true that if the battlefield of tomorrow is the crazy quilt of obstacles which it is generally forecast to be, this will present commanders with a situation where their movement around the ground will be at least severely hampered. We must therefore hurdle the obstacles by going to the air.

Many of our more conservative thinkers have cited the logistical problems attending the use of Army aviation on a so-called atomic battlefield. No one is more aware of these problems than the aviator himself,

The Honorable Hugh M. Milton II, Under Secretary of the Army, delivers an address during the AAAA Awards Luncheon.

but however difficult they may be, the problems which would beset a commander *without* the use of aviation in atomic war are virtually insoluble.

Thirdly, we see for the first time the prospect of a military situation in which we are out-numbered by the enemy and the need for greatly multiplying the combat potential of our own people. It is interesting to note here that our airborne operations in Normandy provided one of the most dramatic examples in military history of the greatly augmented combat power of a few well-trained, aggressive, alert, and highly motivated soldiers. For in Normandy our paratroopers, although scattered and dispersed and often unsure of their exact location, paralyzed enemy forces many times their size simply because they knew what was going on and were willing to play the game against great odds while the enemy did not know what was happening.

If we extrapolate a bit from this picture and think of small, highly spirited and motivated forces like these—forces who can move by air in the enemy's rear—we can visualize any number of situations which would allow small forces to disrupt, deceive, demoralize, and defeat much larger numbers of enemy. This might be called the rebirth of cavalry—or cavalry projected to the 3d, the 4th or even the 10th power of military potential. We must also remember that air mobile forces can operate with far fewer reserves than can ground mobile forces; and this, too, will allow more to be done with less manpower.

A fourth factor is the marriage of the helicopter with some of our newer weapons. For example, the application of the guided missile to the helicopter gives us a current capability which in many battlefield situations will offer the answer to enemy armor.

Finally, there is an unfortunate defense aspect to the need for the rapid development of our own mobility because our principal enemy is an air mobile enemy and has already shown his willingness to use helicopters and STOL aircraft to move troops around the battlefield in large numbers. He, too, is developing suppressive fire capabilities, so it is not a matter of our pioneering in this area, but rather developing our capabilities at a greater rate and in a more effective manner than can he.

This, then, is the challenge to Army aviation—to provide our commanders with the ability to move three dimensionally at a speed at least four times as great as our troops have been able to move in the past. This challenge implies an around-the-clock capability without being anchored to a logistics tail. It further implies a reliabi-

Shown during the AAAA-Industry Reception are, left to right, James A. Cormack, Jr., of Lockheed, Russell Bannock of De Havilland Aircraft, Mrs. Bannock, and Maj. Gen. Ernest F. Easterbrook, Commandant of the U.S. Army Aviation Center.

lity and dependability equivalent, at least, to our current ground modes of transportation.

Really, our overriding requirement is for aircraft that are ready to fly when the soldiers whom they serve are ready to fight. This aircraft must live in the environment of the soldier, and have the ruggedness required of any equipment in the combat zone. And it must fly at minimum altitudes to stay out of sight in the so-called nap of the earth and below the radar screen. Hardware such as this will give commanders undreamed of new capabilities. The only limitation in application will be their own imagination.

The characteristics I have mentioned pose real problems to research and development. General Oakes mentioned earlier that in many cases the Army's requirements are conflicting, if not contradictory. This is particularly true of our aircraft. We ask for simplicity and ruggedness yet we desire the most sophisticated of surveillance means and the capability for all-weather flying. We want to work out of short, unimproved airfields, or no airfields at all, yet we do not want excessive complication or fuel consumption to gain this capability. We would like to assign these aircraft to the lowest echelon, yet maintenance and logistics considerations tend to pool aircraft at a higher headquarters.

I believe we are moving in a direction to solve some of these problems, if not all. With turbine power, longer life components, and a reduced family of aircraft designed specifically for the combat environment, we hope that some of our air mobility goals may soon be reached.

Now there is a much more subjective part to the problem of air mobility which I have chosen to group under the loose title of "The state of mind." For example, we can observe, communicate, navigate, and shoot from the air—as well as move through it. But our present organization does not lend itself to maximum exploitation of these capabilities for each branch tends to think of its own needs.

Fortunately, units are being developed which combine these capabilities into air reconnaissance and air fighting units in the form of Air Cavalry. Such a unit, where every man has a seat in a helicopter which carries its own support weapons and air vehicles, epitomizes the very essence of responsiveness. I believe it is safe to say that this organization will be the forerunner of many similar type units as the Army moves toward greater air mobility.

No Longer A Luxury

If we are to be really responsive, to move to the decisive battle point through the air, we can no longer afford to think of Army aviation as a handy tool for observation and limited taxi work. We must begin to integrate aviation and combat organizations completely. We must stop regarding aviation as a luxury item in the Army's equipment category, but rather view it as a basic means of maneuver and movement.

The state of mind problem is not new. All innovations in military history have been received with opposition or indifference; and air mobility is no exception. It is easy for those determined to maintain the "status quo" to bring up reasons why aviation is too expensive, too complicated, too limited, and too difficult to use in large numbers in a combat situation.

It is also true that in a large organization like the Army, many changes are resisted automatically. Only the most determined efforts to test new concepts can hope to bring new changes. Witness the effort it took the Armored Corps to sell the capabilities of the tank. Look back at the opposi-

Cessna

BIRD DOG:

PLANE WITH A HISTORY IN A DOZEN LANGUAGES

It's Cessna's scrappy little L-19, and what a history it has.

It began in Korea, where the all-metal mite first came to be called "Bird Dog." So well —so reliably and economically—did it perform its work (artillery spotting, supply dropping, wire laying, aerial photography, liaison, flare dropping, insect spraying), it soon became known and wanted throughout the free world. Since, it has flown under the flags of France, Pakistan, Spain, Iraq, Taiwan, Thailand, Norway, Canada, Italy, Japan, Alaska, Germany, Lebanon, Indo China and throughout Central and South America.

The L-19's history points up well its versatile utility. Pilots of more than 20 countries testify to its outstanding performance under every conceivable type of conditions. When it comes to designing and delivering planes that pay their own way—Cessna's know-how is evident.

Military Division, Wichita, Kansas

CESSNA

tion to the early airborne troops. However, it has been heartening to see the trend in our service schools and in many of our units to more and more use of even our limited current aircraft.

For example, last fall we saw the activation of the *Aerial Reconnaissance and Security Troop* and the successful test program which followed. USAREUR has employed similar experimental units in many recent maneuvers. Thus, Air Cavalry is becoming a reality. Serious efforts to develop complete weapons systems for the helicopter have been initiated. The mating of the guided missile and the helicopter have given a point-to-point capability for the first time. The 1959 Worldwide Combat Arms Conference at Fort Sill also recognized the importance of air mobility and stressed that during the 1960-1970 decade the Army must greatly increase its capabilities in this area.

Review Board Urges Growth

Finally, the Army Aircraft Requirements Review Board has recommended a substantial growth in the entire aviation program. All these are indications that the Army state of the mind is moving to a recognition of the essentiality of the air vehicle in Army operations.

We still have a long way to go and many problems to solve along its way. These problems involve hardware, personnel, logistics, and above all, acceptance of the basic premise of air mobility. It will not be solved entirely in the next ten years, but it will never be solved if we do not move ahead this year and every succeeding year with an ever expanding but balanced growth in our aviation program. It is not enough to set our sights on 1970 if we have not set intermediate goals to stimulate the necessary day-to-day decisions.

AN ADDRESS BY BRIG. GENERAL CLIFTON F. VON KANN, DIRECTOR OF ARMY AVIATION, ODCSOPS, D/A, TO THE ASSOCIATION OF THE U.S. ARMY ON AUGUST 9, 1960.

No amount of optimistic studies will aid in these goals unless practical implementation is intended and actually put into practice. We need celerity in this phase of our planning if we hope to have celerity in our future units. There is a tendency to put long-range plans in the dream category without especially worrying about how such plans might reach reality. If we let air mobility fall in this category because of the lack of an ideal flying carpet to meet our aircraft requirement, we are in danger of failing in our basic purpose—to give our commanders the tools for a thrilling new breakthrough in mobility.

There is an intricate Oriental game called *"GO."* I do not profess to be an authority on this, but basically the game is distinguished from chess or checkers in that a player may move his pieces unrestricted anywhere on the board—he does not have to move on a straight line or stop when an opposing piece blocks his path. In other words, complete freedom of maneuver is available.

Army aviation is changing tactics to a game as varied and intricate as *"GO."* New and untried maneuvers of great flexibility will call for the greatest of concentration, cunning, and imagination if tomorrow's tactician is to achieve success. It is not difficult to believe that the side which restricts itself to the dogmatic rules of checkers will be the loser in this new game. It is the bold commander using this unprecedented challenge of hyper-mobility to his advantage who will taste the fruits of victory.

JAMES H. McCLELLAN SAFETY AWARD PRESENTED TO "WOLTERS TEAM"

ADDRESS BY THE HONORABLE JOHN L. McCLELLAN, U.S. SENATOR, ARKANSAS, UPON THE PRESENTATION OF THE JAMES H. McCLELLAN SAFETY AWARD AT THE AAAA AWARDS LUNCHEON.

Senator John L. McClellan (left) presents the James H. McClellan Safety Award to Mr. Raymond L. Thomas (center) and Col. John L. Inskeep.

I am pleased to have this part on your program. To be accorded the privilege of again making the presentation of your Association's *James H. McClellan Safety Award* to those whom you have selected to receive it is indeed an honor of which I am duly proud and grateful.

Your Association deserves the approbation and applause of all of our citizens for having promoted safety programs in the field of aviation. I most heartily congratulate you for having initiated the idea and for having established this appropriate annual recognition of those who contribute the most each year to the safety of aviation.

By giving these awards in recognition and in commendation of those who make outstanding contributions to the saving of lives and preventing the loss of property, you constantly stimulate interest in and encourage the adoption of measures and the pursuit of practices that prevent a multitude of avoidable accidents—serious accidents—which, had they been permitted to occur, would have resulted in heavy property damage and serious injury to and the loss of life of many human beings.

We all know there can never be perfection. One of the greatest hazards in aviation—the human factor—can never be completely eliminated. But by constant attention—the human factor—can never be comimprovement.

We have a marked example of this in the record of the *Primary Helicopter School* at Camp Wolters, Texas.

By competent and vigilant supervision and administration, by thorough instruction, attention to and observance of safety programs and measures, this installation has compiled a record, I am advised, that encompassed 200,000 hours of primary helicopter flight training without having incurred any fatality or casualty, or serious accident.

During this (three-year) period the *Primary Helicopter School* has trained more than 1,700 rotary-wing pilots. This is a remarkable attainment—one in which we can all take immense pride and be justly proud.

The *Army Aviation Association* is, of course, aware that the entire organization deserves credit for this enviable record, but the *National Awards Committee* has properly selected the two people who had

Inskeep

Thomas

the major responsibility and to whom the greater credit is due for this splendid achievement.

It should be noted, I think, in passing, that *Camp Wolters* is a unique example of the military partnership with a civilian contractor, and thus the two people selected for this award today represent both the military and civilian interest in this partnership.

They are *Colonel John L. Inskeep, Commandant of Camp Wolters,* and *Mr. Raymond L. Thomas, General Manager of Southern Airways Company,* the civilian contractor agency.

Both of these gentlemen have had distinguished careers in aviation, culminating in their present important assignments.

THE JAMES H. McCLELLAN SAFETY AWARD IS AWARDED ANNUALLY TO AN INDIVIDUAL WHO HAS MADE AN OUTSTANDING CONTRIBUTION TO ARMY AVIATION SAFETY. NAMED IN HONOR OF JAMES H. McCLELLAN, A FORMER ARMY AVIATOR WHO WAS KILLED IN A CIVILIAN AVIATION ACCIDENT IN 1957, THE INITIAL AWARD WAS WON BY LT. COL. ARNE H. ELIASSON (1958.)

Colonel Inskeep has been with the military since 1931 and has had a great variety of assignments connected with aviation, although he himself, I understand, is a relatively new aviator. He has commanded *Camp Wolters* since July 1, 1956. This record of safety attainment to which I have referred was made under his supervision.

Mr. Thomas started flying in 1932 and has logged more than 19,000 flying hours. His broad experience in flight training and his ability to select, train, and manage flight instructors has been one of the major contributory factors to the safety record made by the *Primary Helicopter School.*

I am indeed highly pleased that they have been chosen for this distinguished award."

De Havilland Honors Initial Members

In a special ceremony conducted during the course of the recent AAAA Annual Meeting, De Havilland Aircraft officials honored the initial one hundred and fifty members of the Army Aviation Association by presenting each with a distinct Association tie. Selected members received written invitations to a private reception and were more than surprised and pleased by the attractive, emblematic neckware.

The thought of adopting a distinct AAAA tie originated with Russ Bannock of De Havilland, who had long been impressed by the British custom of regimental ties. He contacted Lt. Colonel Alexander J. Rankin, National Board member, received an enthusiastic "Go ahead," and airmailed a quick production order to London. Plans are currently being developed to make the ties available to additional members.

1ST RECON SQUADRON AWARDED INITIAL HUGHES AA TROPHY

ADDRESS BY MR. ALBERT W. BAYER, HUGHES TOOL COMPANY—AIRCRAFT DIVISION, UPON THE INITIAL PRESENTATION OF THE HUGHES ARMY AVIATION TROPHY AT THE 1960 AAAA AWARDS LUNCHEON

Army aviation is developing many new and unique capabilities. It is rapidly unshackling ground units from their traditional bonds. Employment of aircraft in the mission of the Army is providing command mobility. As a result, this greatly increases the effectiveness of all Army Commanders. It is my opinion that the future of manned aircraft is with the Army.

The President of the Hughes Tool Company, Mr. Howard Hughes, has, throughout his lifetime, been intensely interested in the development and application of all types of manned aircraft. The basic purpose of the Aircraft Division of the Hughes Tool Company is the continued effort to provide better and more effective manned aircraft.

As an incentive to continued advancement of manned aircraft and its use in the Army, the *Hughes Army Aviation Trophy* has been created for the unit which has done the most to further the mission of Army aviation. We sincerely hope that this trophy as it is passed on from unit to unit throughout the years will generate esprit de corps and imaginative application of aircraft in the Army.

I now would like to ask Lt. General John C. Oakes, Deputy Chief of Staff for Military Operations, Department of the Army, to present the *Hughes Army Aviation Trophy* for the first time."

The Hughes Army Aviation Trophy

ADDRESS BY LT. GENERAL JOHN C. OAKES, DCSOPS, D/A, UPON THE INITIAL PRESENTATION OF THE HUGHES ARMY AVIATION TROPHY AT THE 1960 AAAA AWARDS LUNCHEON

I would like to preface my remarks with the comment that specific selection of the most outstanding aviation unit was a most difficult task—which, in itself, is a tribute to our entire aviation program. I would like all of the nominated units to appreciate the difficulty of this selection and may I extend my congratulations to all of them. The *Army Aviation Association* is honored that Industry has felt the need to recognize the efforts of Army aviation through the means of this impressive trophy.

The unit that has been selected typifies one of the greatest futures the Army foresees in its aviation program. The "Air Cavalry" concept is being crystalized into

actual TO&E units, the first of which are those assigned to our Missile Commands. These units have given additional proof that this concept is indisputably sound.

Selected to be the first recipient of the *Hughes Army Aviation Trophy* is the *First Reconnaissance Squadron (Sky Cavalry), 16th Cavalry, Second USA Missile Command, Fort Carson, Colorado.* Their present commander is *Lt. Colonel Robert F. Tugman,* whom I ask to step forward to receive this award.

This unit has operated continually under the most adverse flight conditions—over mountainous terrain and at extremely high altitudes. The unit has distinguished itself not only in its normal role, but also in a wide range of rescue efforts and civilian aid. The Army can be proud of this organization and of each individual in the organization.

Colonel Tugman, please accept this award on behalf of the *First Reconnaissance Squadron.* May I extend the congratulations of the *Army Aviation Association,* the *Hughes Tool Company,* and my own to you and your men for this deserved recognition."

Photos at Left

TOP: Lt. Gen. John C. Oakes, Deputy Chief of Staff for Operations, D/A, (at rostrum) presents the Hughes Army Aviation Trophy for Outstanding Unit Achievement to Lt.. Col. Robert F. Tugman, who accepted the award for the 1st Reconnaissance Squadron (Sky Cav) 16th Cav, 2d USA Missile Cmd, Ft. Carson, Colo.

CENTER: Proud of their achievement, members of the 1st Reconnaissance Squadron join with Col. Tugman in a reception held just after the award presentation. Host Rea Hopper (right), Vice President of the Hughes Tool Company—Aircraft Division, toasted the unit and its accomplishments.

BOTTOM: Col. Jack L. Marinelli (right) President of the U.S. Army Aviation Board, Ft. Rucker, Ala., congratulates the unit and Col. Tugman as Al Bayer, Hughes co-host, looks on.

ACTIVITY STRUCTURE

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217th Trans. Bn (TA) Chapter
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1960 ANNUAL MEETING

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DAVISON ARMY AIRFIELD CHAP.
Captain Daniel O'Hara
Captain James A. Maschmann

FORT MEADE CHAPTER
Major William H. Graul
Captain Harry E. Ziegler
Captain Donald C. Blatt

FORT EUSTIS CHAPTER
Lt. Colonel David E. Condon
Major Henry S. Wann
Major James H. House

FORT MONROE CHAPTER
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Captain Arthur B. Wood
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Capt Myron R. Wilson, Holloman AFB, N. Mex.
Maj Arthur H. Westburg, Glendale, Calif.
Capt Floyd R. Wirthlin, Ft Riley, Calif.
Capt Arthur B. Wood, Ft Benning, Ga.
Mr H. Glen Wood, Baltimore, Md.
Lt Col Lyle A. Wright, Arlington, Va.
Lt Emilio B. Zamora, Ft Eustis, Va.
Maj & Mrs Bernard M. Zeppenfeld, Alexandria, Va.
Capt & Mrs H. E. Ziegler, Ft Meade, Md.

CWO TURVEY WINS "ARMY AVIATOR FOR 1959" AWARD

Chief Warrant Officer Clifford V. Turvey, a veteran of twelve years service with the Army and one of the Army's expert test pilots in the field of all-weather instrument flying in helicopters, was named *"Army Aviator for 1959"* by the Army Aviation Association.

A project officer assigned to the U.S. Army Aviation Board, *CWO Turvey*, accepted the AAAA Award to the *"Army Aviator for 1959"* in ceremonies held at the Awards Luncheon. *Bryce Wilson*, President of AAAA, made the presentation to the Fort Rucker pilot who has represented the U.S. Army in many panels and conferences of national and international scope in the field of aircraft instrumentation.

A 5,000 hour, dual rated veteran, *Turvey* is married and is the father of three children.

Bryce Wilson, President of the Army Aviation Association, presents the AAAA Award to the Army Aviator for 1959 to CWO Clifford V. Turvey, a propect officer with the U.S. Army Aviation Board, Fort Rucker, Ala.

New Chapters Activated

During the weeks immediately before and just after the *Annual Meeting*, three new Chapters of AAAA were organized. Space restrictions do not permit us to report in detail on the activation meetings or the full slates of the *Lindbergh Chapter* (St. Louis, Mo.), the *82d Aviation Battalion Chapter* (Fort Bragg, N.C.), and the *217th Transportation Battalion (TA) Chapter* (California).

Detailed reports on these Chapters will appear with general August AAAA news in a special insert in the forthcoming September "Hardware Issue" of *ARMY AVIATION MAGAZINE*.

Lt. Col. William G. Kilmer (standing, right), Chapter Delegate of the Fort Monroe Chapter, comments from the floor during the course of the open Business Session held during the AAAA Annual Meeting.

"Point of Order"

Maj. Norman W. Goodwin, a Chapter Delegate of the Lawton-Fort Sill Chapter, emphasizes a point during the open business session held during the Annual Meeting.

Presentation

Senator John L. McClellan is shown delivering the presentation address for the James L. McClellan Safety Award (Additional details are found on page 417.).

Number One

Col. Robert M. Leich, first president and a founder of AAAA, and "Millie" Leich are "surprised" upon Bob's being presented with the first "AAAA tie" by De Havilland Aircraft sponsors. Many of the first 150 members of AAAA also received a similar award at the ceremony. (See details on page 418).

Apprenhensive

The first "outsider" to attain membership in the Army Aviation Board's Bear Club, Bryce Wilson (center) wonders about the "initiation requirements" that will follow at a later date. Present and past Presidents of the Board, Cols. Jack L. Marinelli (l.) and Robert R. Williams (r.), are certain to make him earn that exclusive blazer and patch.

ARC DOES IT AGAIN!

FAMOUS ARC COURSE DIRECTOR SYSTEM NOW EXPANDED TO RECEIVE ADF (LF) SIGNALS

The original ARC Course Director (CD-1) was designed to provide "on" or "off course" steering information for enroute navigation and precise VOR-ILS approaches.

Now ARC has developed the Course Director concept to include "omni-like" presentation of "low frequency" signals. The Course Director systems were expanded to receive standard ADF (AN/ARN-59) inputs and display them visually on track deviation or cross pointer indicators. In addition to "left-right" needle indication the course director also provides ADF steering information for proper interception of selected track. The VOR course selector and cross pointer type indicator are used making it possible to standardize ADF-VOR flight techniques.

In effect, the Course Director provides a low frequency" battlefield omni" capability.

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AVIATION BOARD TRIO AWARDED DFC'S FOR RECORD FLIGHTS

ADDRESS BY GENERAL LYMAN L. LEMNITZER, CHIEF OF STAFF, USA, UPON HIS PRESENTATION OF DISTINGUISHED FLYING CROSSES DURING THE 1960 AAAA AWARDS LUNCHEON.

It gives me a great deal of pleasure to announce to you that the United States Army can now claim seven new world helicopter records. Three of these records were wrested from the Soviet Union.

Three Army aviators have established these records flying the Army's new turbine-powered helicopter, the *Iroquois*. These records in the categories of speed, time-to-climb, and distance over a closed course were set by *Colonel Jack L. Marinelli, Major Garrison J. Boyle, III,* and *Chief Warrant Officer Clifford V. Turvey.*

The variety of the records established and the fact that they were set under adverse summer conditions demonstrate the skill of these Army aviators and the versatility of the *Iroquois*. It is not a one-purpose machine, but was designed to accomplish a multitude of Army missions.

This is the same type of helicopter which performed so notably in the recent Chilean disaster relief expedition. Nine of these helicopters flew over 23,000 miles in delivering 101,000 pounds of food, clothing, and medical supplies to homeless victims within the earthquake-stricken areas. This was a vivid example of the usefulness of our Army aviation as an instrument for peace as well as an instrument of war.

Boyle

Turvey

Colonel Jack L. Marinelli, President of the U.S. Army Aviation Board, Ft. Rucker, Ala., is awarded the Distinguished Flying Cross by General Lyman L. Lemnitzer, Chief of Staff, USA, during the AAAA Awards Luncheon.

The Army is proud of its flying soldiers and of its new family of aircraft. They typify our keen interest in air-mobility for the Army of today and of the future.

In order that I may extend the recognition and congratulations of the entire Army, as well as my own, I now ask *Colonel Marinelli, Major Boyle,* and *Chief Warrant Officer Turvey* to come forward, please.

At this time, as a mark of your outstanding accomplishments in setting these new world records, it is my privilege to present to each of you the Distinguished Flying Cross."

THE RECORDS:

The record accomplishments, as revealed by *General Lemnitzer* during ceremonies held at the Army Aviation Association Annual Meeting, were:

- Non-stop distance flight in a closed circuit for helicopters with a take-off gross weight between 3,860 and 6,615 lbs.—441.74 miles. (The old record of 345.1 miles was held by a Russian MIL-1 helicopter).
- Five hundred kilometer speed for helicopters with a take-off gross weight between 3,860 and 6,615 lbs.—148.45 miles an hour. (The old record of 122.2 miles an hour was held by a Russian MIL-1).
- One hundred kilometer speed for helicopters with a take-off gross weight between 3,860 and 6.615 lbs.—142.2 miles an hour. (The old record of 130.8 miles an hour was held by a Russian MIL-1).
- Time-to-climb to 3,000 meters (9,843 feet) —3 minutes 22.4 seconds. (The old record of 5 minutes 30.6 seconds was held by a French Alouette).
- Time-to-climb to 6,000 meters (19,685 feet) —8 minutes 10.2 seconds. (The old record of 11 minutes 0.1 seconds was held by a French Alouette).
- Five hundred kilometer speed for any helicopter regardless of weight—148.45 miles an hour. (The old record of 136.02 miles an hour was held by an Army Sikorsky H-34).
- Three kilometer speed for helicopters with a take-off gross weight between 3,860 and 6,615 lbs.—158.05 miles an hour. (New category of competition, making the mark an automatic record).

The record-making Bell HU-1 *Iroquois* flights were made near Fort Worth, Texas during an eight-day span ending July 26, 1960. The records, although surpassing the official marks set by the Russians and the French, will remain unofficial until certified by the Federation Aeronautique Internationale of Paris, France, the official certifying body for aviation records.

Advance Planning

Ready to Roll

Mission Accomplished!

BRITISH and CANADIAN AA LEADERS RECEIVE LIFE MEMBERSHIPS

The AAAA presented its first *Honorary Life Memberships* to two British and two Canadian Army officers during a pre-Awards Luncheon *Reception* held during the course of the Annual Meeting.

Recipients of the memberships, presented by *Bryce Wilson*, AAAA president, included *Maj. Gen. G. P. L. Weston*, CBE, DSO, Director of Air/Land Warfare of the British Staff; *Brig. Gen. R. A. Fyffe*, DSO, OBE, MC, Commandant of the British Air Corps Centre; *Lt. Col. David R. Ely*, RCA, MBE, CD, Director of Land/Air Warfare, Canadian Army; and *Maj. R. E. R. Borland*, RCA, CD, Commander, Light Aircraft School of the Royal Canadian Army.

General Fyffe and *Major Borland* were present to accept their memberships and to acknowledge those awarded their fellow officers.

General Fyffe is on an extended tour of military installations in the U.S. *Major Borland*, now stationed in Canada, was the first Canadian Liaison Officer assigned to the U.S. Army Aviation Board at Fort Rucker and has been closely associated with the development of Army aviation.

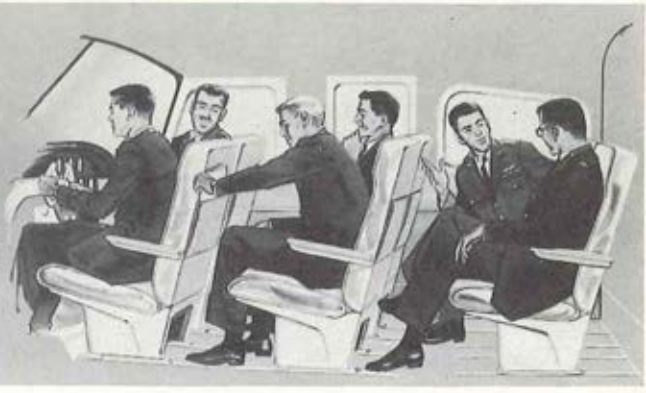
Bryce Wilson is shown presenting AAAA Honorary Life Membership tokens to Maj. Gen. G. P. L. Weston, CBE, DSO, Director of Air-Land Warfare of the British General Staff, and Maj. R. E. R. Borland, RCA, CD, Commander, Light Aircraft School of the Royal Canadian Army.

Major R. E. R. Borland (right) RCA, CD, Commander of the Light Aircraft School of the Canadian Army, is congratulated by General Lyman L. Lemnitzer and Mr. Richard S. Morse, Director of Research and Development, USA, on being made an Honorary Life Member of AAAA.

SRO

A dubious honor, that of hosting approximately three-quarters of the attendees in their suite (and at one time), fell with a swoop once again on Derby Frye and Jack Leonard of Cessna. Some malcontent counterfeited (and distributed) several hundred invitation cards. All were used.

From V.I.P. transport



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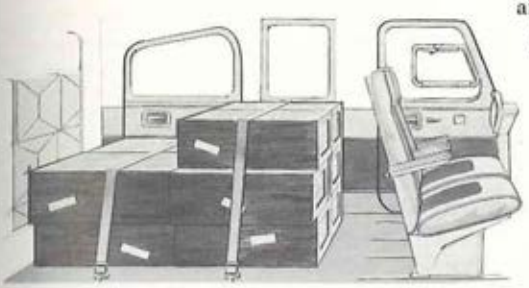

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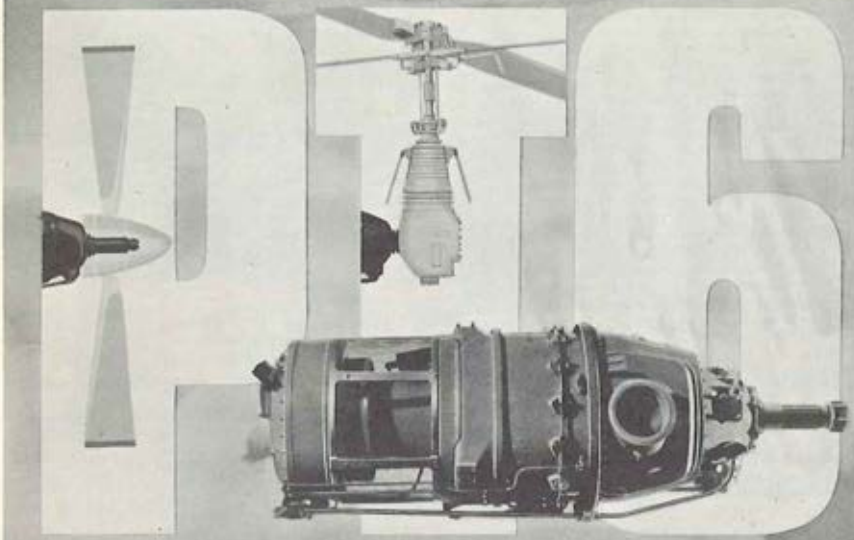

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The Goal of the Army Engine Development Program is the Complete Changeover to . . .

TURBINE POWER

By
Maj. Gen. Richard D. Meyer
Deputy Chief of Transportation for Aviation, OCT

If all goes according to the plan developed by the *Army Aircraft Requirements Review Board* (*AARRB*) headed by *Lt. Gen. Gordon Rogers*, Deputy CG, USCONARC, many Army aviators in the next 5 to 10 years will be flying turbine powered aircraft.

Reciprocating engine aircraft are going to be phased out of the active Army inventory as replacement turbine-powered aircraft come in. Turbine-driven aircraft which will replace them are either in development or in the early stages of production.

The advent of turbine power is, in fact, already well underway. The twin-turbine powered *AO-1 Mohawk* is now just beginning to enter the system and the *HU-1 Iroquois* is in quantity production as our major utility/tactical transport helicopter. Vertol's HC-1B tandem rotor *Chinook*, powered by two turbine engines, is now under development as our transport helicopter.

Another big step in this direction will be taken with the development of the new turbine powered light observation helicopter scheduled to replace the L-19, H-13, and H-23 in tactical units by the end of this decade. A design competition is expected to be held this year with production and procurement contemplated for 1964 or 1965. Although no engine has yet been selected for this helicopter, its operational characteristics will undoubtedly place it in the 250 SHP range. This makes the tiny *T-63*, now under development, a major contender.

Army operational requirements are sufficiently unique as to place us in a class of our own so far as turbine engine development is concerned. For example, since we operate almost exclusively light weight, low speed aircraft (as compared to strategic mission aircraft) our power requirements are not great. This has forced the Army to take the lead in developing engines in this low range of the power spectrum. Current turbines in the Army program range from 250 Shaft HP to 2,200 Shaft HP.

Being mentioned as a possible contender for application to the new light observation helicopter, the *T-63* is moving along on schedule and bench testing of hardware is now underway. The 50 hour test is scheduled for about September of this year and the 150 hour qualification test for September 1961.

The *T-53-L-3* turbo-prop, being used in the *AO-1 Mohawk*, completed its 50 hour preliminary flight rating tests in June 1958 and should complete the 150 hour qualification testing shortly.

The *T-53-L-5* helicopter engine which completed the 150 hour qualification last December 1959 is now in production. It powers the *HU-1 Iroquois*, now entering the Army inventory in quantity.

The largest engine in the program, the 2,200 Shaft HP *T-55-L-5* is slated for completion of its 150 hour qualification by September 1960 and is to be utilized in the *HC-1B Chinook* which is now under development by the Vertol Division of Boeing Airplane Company.

What are the reasons behind this move move to turbine power?

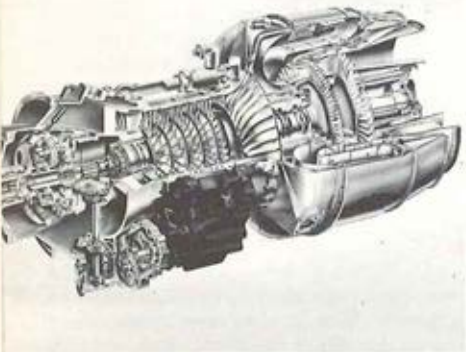
Actually, there are many. The turbine offers high performance with light weight plus the added advantages of simplicity, and ease of maintenance. Also, our limited service experience with turbines to date indicates that we can expect greater reliability and eventually even longer life expectancy than from comparable reciprocating engines. There is a major bonus in the life of other dynamic components. This seems to be amply borne out by the experience of commercial airlines which have been averaging about one in-flight failure every 3,500 to 4,000 flight hours with the best reciprocating engines as against one in every 12 to 15,000 flight hours for the best turbines.

Still another important factor is the engine's ready adaptability to either helicopter or fixed wing usage, thus offering the Army the best chance in years to achieve standardization and consequently to lighten the heavy maintenance and supply support requirements which have long plagued Army aviation.

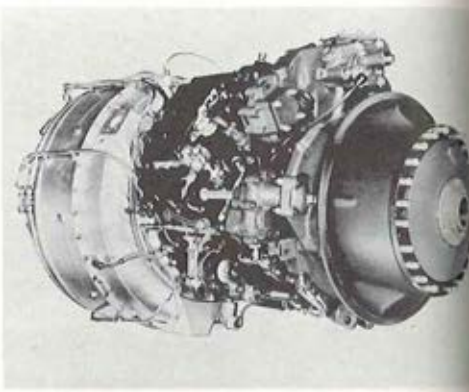
The Army has pursued these promised advantages with vigor. To achieve ruggedness, simplicity, and ease of maintenance we are willingly trading off sophistication, low fuel consumption, and complexity. That this has been a worthwhile sacrifice is perhaps proven by the rugged test recently given an H-40 turbine helicopter.

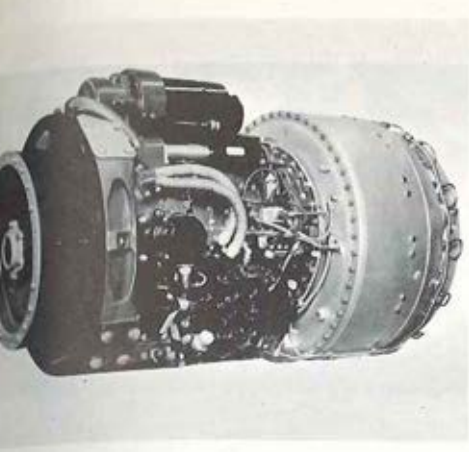
It was hovered for 50 hours under the most severe sand and dust conditions that could be found in the desert at Yuma, Arizona with negligible damage to the engine, an 860 SHP *T-53*. Besides the sand and dust, there was also the extreme temperature to be reckoned with and the necessity of operating a good deal of the time at high power settings in order to maintain hovering attitude. While the turbine is at a slight disadvantage to reciprocating engines in hot weather and high altitude opera-

T-53 Gas Turbine (Cutaway)

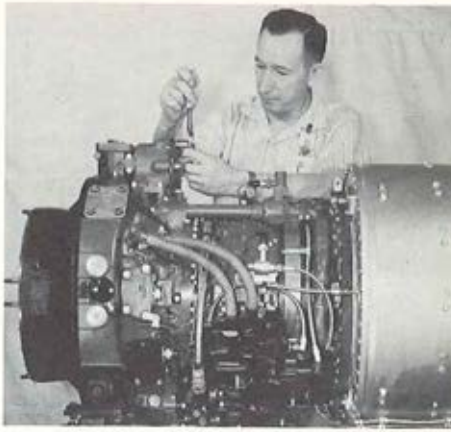


T-53-L-1 Gas Turbine





T-53-L-3 Gas Turbine



T-55-L-5 Gas Turbine

tions, the turbine is noted for its superior performance at high power settings normal to most helicopter operations.

Unlike the reciprocating engine, the turbine gives best specific fuel consumption at high or rated power settings. This seeming paradox, while a boon to helicopter operations, has been pointed up as a disadvantage to fixed wing flying where high power is usually needed only for take-off.

The turbine is especially adept at meeting Army requirements for operating at extremely low temperatures. In fact, the turbine is one of the few engines of any type which will start and operate satisfactorily at the required −65°F. *And there is little danger of icing up.* The only real danger area is the compressor inlet and this is easily taken care of by bleeding off heated air from the compressor and running it through the inlet struts to prevent ice from forming.

Turbines have been widely criticized as being fuel hogs. The statement is true only when taken at face value. When their high performance and light weight is considered, we have found that a given mission can be performed by turbine engine aircraft with equal or less fuel consumption than would be required for the piston powered airplane. Also, the JP-4 fuel, burned by turbines, costs only roughly half as much as standard aviation gasoline.

The turbine may offer another important advantage, that of *multi-fuel capability.* Based upon tests conducted to date, this may be achieved with only minor variations to the hot engine section (combuster, fuel nozzles, etc.).

In fact, the *T-53* has been operated for 50 hours on grade 115/145 aviation gas with only minor malfunction and we feel that the difficulties encountered are not serious. We want to expand this later to find out if the engine can also be made to operate satisfactorily on automotive gas and perhaps standard Diesel fuels. This is not to say that we anticipate operating on alternate fuels as standard practice but we do want to establish a capability for doing so under emergency conditions, at least for limited periods. Presently, the experiments are aimed at finding out what, if any, damage will result to the engine and what it would take to repair the damage after a pilot was forced to utilize alternate fuels in

a combat emergency situation when JP-4 was unavailable.

I mentioned earlier that the turbine seems to offer the best opportunity in years to achieve engine standardization. In the Army, this is known as the *"universal engine concept"* and involves taking the same horsepower class of engine and quickly converting it for either turbo-prop for fixed wing or turbo-shaft for helicopters.

The *T-63*, for example, has been designed so that a single power unit can operate as either turbo-prop or turbo-shaft by a simple change of the power reduction gearing. The *T-53* is already being utilized as a turbo-shaft in the *HU-1 Iroquois* and as a turbo-prop in the *AO-1 Mohawk*. This puts the Army well on the way toward its overall goal of developing a family with a minimum number of engines to satisfy all its power requirements.

Another example of the Army's forward looking turbine engine development program are the studies being conducted on the feasibility of using energy present in the exhaust gases as a means of reducing fuel consumption. The concept visualizes recovering these hot gases by installing a heat exchanger between the turbine exhaust and compressor discharge, thereby introducing otherwise lost heat or energy back into the cycle.

The new turbine engines are beginning to enter the supply system in respectable quantities when you consider the very short time that the Army has been in this development field.

Development of the *T-63* is moving along rapidly. The contract was awarded only two years ago, and two engines are to be delivered after passing 50-hour preliminary flight rating tests scheduled for completion in September 1960. The 150 hour qualification will follow about a year later.

RICHARD D. MEYER
Major General, GS
Deputy Chief of Transportation for Aviation, OCT

USA

BY
MAJ. GEN. ERNEST F. EASTERBROOK
COMMANDING GENERAL, USAAC

Lt. Gen. Arthur G. Trudeau, Chief of Research and Development for the Army, visited the Army Aviation School recently to view demonstrations of airmobile operations, armed helicopter tactics, and other Army aviation missions. After a performance by the *8305th Aerial Combat Reconnaissance Company*, the general gratified members of the Army Aviation Instructors Conference with an expression of his convictions.

He lauded the achievements of Army aviation and cited its future importance in terms of mobility, firepower, and communications. He said that he had been impressed by the uses of Army aircraft since his days in command of the 1st Constabulary Brigade in Germany. In fact, he said he could have saved 600 casualties of the 7th Division in Korea by employing a properly armed helicopter.

Tracing the Army's progress in mobility

C REPORT

PHOTOS (L-R): GEN. EASTERBROOK AND COL. JAMES F. WELLS, DIRECTOR, USABAAR, GREET GENERAL WALTER UPON HIS ARRIVAL; GEN. TRUDEAU ADDRESSING INSTRUCTORS' CONFERENCE; SOUTHERN ALABAMA LAW ENFORCEMENT OFFICERS WHO WERE GIVEN ORIENTATION RIDES IN NEW HILLER H-12E.

from horses and mules to jeeps, trucks, personnel carriers, and tanks, he related how some people lamented increasing costs of new developments. But, he emphasized, we cannot be deterred by cost for right here in the field of helicopters is the potential we need.

General Trudeau stated that communications are developing to permit dispersed troops and aircraft to operate effectively. Speaking of vulnerability, he said the helicopter is only four times as vulnerable as a horse, yet can move 10 times faster and in three dimensions.

Concluding, the general declared that aviators must think positively, develop their ideas, then get out and sell them courageously.

Another distinguished visitor recently was *Major General Mercer Walter*, the Deputy Commanding General of the Third U. S. Army. *General Walter* inspected the 305th Field Hospital Detachment of Gulfport, Miss., as well as other units.

The 305th was the first of various Army Reserve units, totalling a strength of 850, to arrive for annual summer training at Fort Rucker. Within a few hours the 305th was effectively integrated with the regular complement of *Col. Charles C. Canada*, CO of the Army Hospital at Fort Rucker.

By the schedule, nine units from Alabama, Mississippi, and Florida will arrive in four increments for two weeks training. I am particularly impressed by the caliber of personnel in reserve training here. Their morale is high.

General Bruce C. Clarke, commanding general of the Continental Army Command, visited the Army Aviation Center in July for a progress report on con-

PHOTOS (L-R): Hawthorne School of Aeronautics' officials, Bevo Howard (left) and Leo Carver (center) review a new contract award of approximately $1,646,000 with Maj. Gen. Easterbrook. The contract was awarded recently to enable Hawthorne to continue primary flight instruction at the Fort Rucker facility. RIGHT: At Fort Rucker to address OFWAC Class 60-4, Brig. Gen. Benjamin H. Pochyla, CG of the Signal Training Center at Fort Gordon, Ga., starts a tour with CWO Keith Glascow. (US Army photos).

struction, training, equipment, manpower, and funding. After viewing new developments in the armed helicopter company, *General Clarke* rode with *Lt. Eugene S. Pedrick* in an armed H-13.

Col. Delk M. Oden, who served with *General Clarke* in Europe during World War II, gave the briefing for the Army Aviation School. Following *Colonel Oden*, *Colonel Jack L. Marinelli* reviewed the test activities of the U. S. Army Aviation Board, which is directly subordinate to *Gen. Clarke's* USCONARC.

Posted prominently in the Aviation Center headquarters is a fine plaque from the West Point Class of '62. This plaque, and some letters, expressed appreciation to Fort Rucker personnel for their hospitality during the visit of this class of almost 600 cadets. We hope that many of this class will elect training in Army aviation.

An interesting familiarization with Hiller's new *Model 12E* was coordinated recently by *Col. William A. Watkins*, Provost Marshal of the Center, and *Lt. Col. J. D. Neumann*, Deputy Director of the Combat Developments Office of the School. For Alabama highway patrolmen, sheriffs, and police chiefs, the demonstration rides explored the helicopter's characteristics. Special equipment included a 305-horsepower engine, a soundproofed cabin, a siren and public address system, and a walkie talkie to supplement the regular radio. Also installed were a cargo hook and facilities for two litters.

A new flight surgeon, known to many aviators, has been assigned to the hospital here. He is *Lt. Col. Spurgeon Neal*, author of many articles on aviation medicine and a former commander of the 30th Medical Group which is credited with the air evacuation of many thousands of casualties in Korea. A paratrooper also, he originated the Air Ambulance Company, the first of which is to be activated this year, I understand.

Brigadier General Benjamin H. Pochyla reviewed some very interesting historical events during the graduation ceremonies of OFWAC 60-4. *General Pochyla* is the CG of the Signal Training Center

MEMO TO MICHAEL:

Your recent letter to the company has been brought to my attention. I am particularly interested in this paragraph,

I am in the fifth grade at Braun School and am very interested in aviation. When I grow up I want to be a aeronautical Engineer if my mother will let me.

Michael, I certainly hope you keep your desire to make a career in aviation. In my opinion it is one of the most challenging opportunitie for the young men of America. The helicopter industry, and aviation in general, is helping to keep our country strong and we look forward to the help that boys like you can give when your time comes The backbone of the aircraft industry is the engineer. We will always need good engineers wit imagination and vision. You have that vision now. Please keep it. I'm sure that you can count on your mother's support when you are ready to take your place among the other young men who are playing a vital role in a vital industry.

Sincerely,

Charles H Kaman

at Fort Gordon, Ga. He also outlined the current Signal objectives and plans for future advancements.

In June of 1862, the first air-ground communications was established when a Union Army observer reported aerial observation using a telegraph instrument aboard a captive balloon at the Battle of Fair Oaks, Va., during the Shenandoah Campaign. In 1908, the Signal Corps obtained its first "aeroplane" and its first military dirigible. In the same year, the first planned avionic *system* for air-ground communications was established. In 1942, the first radar equipment was installed and operated in an Army aircraft.

The general read a letter from *2nd Lt. H. H. Arnold*, 29th Inf., dated November 6, 1912, to the CO, Signal Corps Aviation School, Washington, D. C., Subject: *Report upon Test of Aeroplane in Connection with Artillery Fire. Lt. Arnold* described the use of a wireless, smoke signal device, and a card-dropping system for reporting where volleys landed about the target.

On 5 November 1912, the aeroplane was used for the first time with the battery actually firing at a target. The wireless observations put the guns on the target after about four volleys, and the card-dropping system had the battery hitting the target at the 3rd volley.

Lt. Arnold also described the effect upon his nervous system when he inadvertently entered a spin while spiralling down from a height of about 400 feet. He reported, *"The machine was out of control from the time it took its first turn of 360 degrees until the bottom of the drop when I pulled it up and landed."* Also, *"I, personally, do not care to get in any machine, either as passenger or pilot, for some time to come."*

As *General Pochyla* said, *"No matter how badly shaken up you may get at times, you can still reach the top of the ladder."*

100 ATTEND USAAVNS INSTRUCTORS CONFERENCE

In welcoming the 100 participants to Fort Rucker for the Army Aviation Instructors Conference last month, *Major General Ernest F. Easterbrook* said, *"It is most important that we all have a clear understanding of Army aviation today. If we are to promote Army aviation, it must be as a member of the Army team. Thus, this year, advisors to Reserve and National Guard units have been invited to this conference in addition to the service school instructors engaged in teaching Army aviation."*

He added, *"We at this School feel that our thinking must be directed to the future. We ask you while here at the conference to think with us about the future, particularly as you see the tactics demonstrations."*

Colonel Delk M. Oden introduced the department directors to members of the conference. Speaking of the School's mission and student loads, he said, *"In fiscal year 1960, we trained 1,033 fixed wing students, 513 rotary wing students, and 3,079 aircraft mechanics. In FY '61, we will train 1,024 in fixed wing, 790 in rotary wing, and 7,054 mechanics. Last year, we had 207 classes, and next year we will have 300 classes."*

Colonel Edward B. Bissell, ODCSOPS, Department of the Army, told the conferees, *"Aviation is the one real 'breakthrough' in mobility for the Army since World War II. By the helicopter, we have restored to*

the commander the ability to again 'command' his troops. Helicopters with armament can lift small forces to critical areas, thus exerting an unproportional force against larger units. We soon hope to see Air Cavalry in TO & E units."

Colonel Bissell mentioned that 60% of our aircraft inventory is in light observation aircraft, and that almost 50% is in helicopters. The *HU-1D* will be designed to carry 10-11 combat troops, and each division should have enough to lift a company of riflemen, according to the colonel.

"By FY '65, we should have the helicopter to replace over 3,000 observation aircraft now in the system," forecasted *Major Paul E. Killpack*, of Office of the Chief of Research and Development, Department of the Army. *"This LOA will carry a pilot and three passengers, will cruise at 110 knots, and will have a 250 hp gas turbine engine. The LOA will have an armament kit weighing 200 lbs for use as needed, but it will not be on the observation helicopters. For combat surveillance and target acquisition, the Mohawk will cruise at 200 knots and will be tactically operational from sod strips,"* he said, adding that *"it should be delivered to the Army Aviation Board by this Fall and to troop units by next Spring."*

Awaiting Chinook

The major informed the conference that by 1963 the Army will have an improved version of the *Iroquois* which will carry 2,000 lbs. at 100 knots for a distance of 75 miles. Also, he reported that the first flight of the *Chinook* is scheduled for January, 1961.

For the Department of P&NRI, *Capt. Charles L. Stevens* emphasized that the School is anxious to assist other service schools and troop units, and urged the conferees to request publications which are needed for their instruction.

In a discussion of *"The Tactical Employment of Army Aviation," Capt. Lucien Benton* prepared the conference members for the tactics demonstrations to follow. On the second conference day, the officers viewed an aviation equipment demonstration at Cairns AAF, which included the *Mohawk*, an L-23 equipped with SLAR, and an H-34 arranged as an aerial command post, as well as other equipment.

Discussing the merits of an H-34 as an aerial command post are Col. Robert M. Hamilton (right), of the Command and General Staff College, and Lt. Col. Ritchie Garrison, Director of the Department of Tactics, USAAVNS. The CP-equipped Choctaw was part of a display of equipment shown during the recent Instructors Conference at Fort Rucker. (US Army photo).

With a dramatic and convincing display of firepower, mobility, and communications effectively coordinated, the *armed helicopter demonstration* was easily the highlight of the conference. Besides picturing vividly the aerial combat reconnaissance helicopters for instructional purposes, the demonstration was an example of the way Army aviation is meeting its challenges.

The mobility demonstration given by the

Department of Tactics was in two phases at two tactical airstrips. Aerial reconnaissance methods included aerial photography by L-19 and drone and side-looking radar mounted on an L-23.

A radiological survey was run by an H-13, after which a *Mohawk* made a non-tactical display of flight and landing characteristics. Then, the H-34 Pathfinder Team, three *Caribou*, serials of H-34 troopships, and an H-37 showed the manner in which an airmobile operation should be executed. In general, the Department of Tactics demonstrated uses Army aviators and commanders should make of Army aircraft after pilots learn to fly them.

Problem Areas

On the third conference day, presentations were made by service school instructors of the methods used to teach Army aviation and some problem areas encountered. *Colonel Robert M. Hamilton*, of the Command and General Staff College, stated that the more important problem areas are associated with:

Planning for Airmobile Operations, Employment of Aerial Reconnaissance and Security Units, Employment of Aerial Surveillance Units, Staff Supervision of Army Aviation, Combat Support vs. Logistical Support, Aircraft Capabilities, Night Operations, and *Training of Army Aviators.*

Other discussions were given by representatives of the Armor, Infantry, and Artillery and Missile Schools. The problems of the Southeastern Signal School were stated as they apply to Army aviation.

Colonel James F. Wells discussed the Aviation Safety Program and the U. S. Army Board for Aviation Accident Research. *Lt. Col. Charles M. Neufeld* outlined the activities of the Army Aviation Board, and *Lt. Col. John W. Oswalt* described Combat Development Activities. The program director of the conference was *Col. Robert H. Schulz.*

USAREUR REPORT

BY MAJOR KENNETH D. MERTEL

Rotation is hitting many aviators here in USAREUR, so for the benefit of replacements who will arrive in the next few months, a few words on what to expect:

About 20 per cent of today's Army aviation is in Europe. The bulk of this is in Seventh US Army in Germany. If you go to COMZ, you had better polish up on your French, and if it is SETAF, how is your Italiano?

First, as far as assignments: if you are TC you will no doubt go to a unit of the Seventh US Army Aviation Group or a COMZ aviation unit. There you will find staff, maintenance, command, and aviator type jobs. Aircraft you fly will be primarily the U-1A, H-34, and H-37.

Combat arms personnel can expect assignments to division aviation companies, aviation companies of the armored cavalry regiments, and the aviation detachments of corps, groups, and separate battalions. You will be flying L-19, L-20, U-1A, H-13, H-19, and H-34 aircraft.

Staff aviation jobs in V and VII Corps, Seventh US Army, SETAF, COMZ, and USAREUR Headquarters are generally filled from personnel who have been in the theater about half of their tour.

We spend a great deal of time in the

field and do a lot of tactical flying with both fixed and rotary wing aircraft. The weather here is no better and no worse than much of the US. You will accomplish quite a bit of instrument flying, probably more than stateside due both to weather and national flight regulations. Study your ICAO regulations for they are subscribed to by almost all NATO nations.

Polish your instrument ticket on the *"Bird Dog"* for most of our airways and approaches are flown with the ADF. We have quite a bit of OMNI, but wherever it is used, there is always an ADF airway. In addition, we have many ILS and GCA equipped airfields. Don't worry about the low frequency ranges for there are very few. We do use the loop considerably for non-instrument aircraft.

Communications equipment is a bit different, all VHF using the Collins Radio including the ARC 73. Within the next few months all L-20 and H-34 aircraft will be equipped with the ARC 73. This will facilitate our instrument capability, particularly the helicopters. Only a few H-34's are equipped with ASE, including the H-37's. Almost all aircraft are equipped with the ARC 44, widely used by all units.

As far as training is concerned, Seventh US Army runs an aviation training center devoted to fixed and rotary wing instrument courses. All other training is conducted by your unit, including a ten-hour dual check, one hour to see if you can fly the aircraft, three-hours of flight orientation in the local area (be prepared to demonstrate that you can use the loop and execute a DF steer), three-hours of day cross-country flight which includes a tour of border check points in your area, and three-hours of night cross-country flight. You will then be operational.

A few rides as co-pilot on an instrument flight and you will be ready to exercise your instrument ticket. The controllers all speak English and this helps.

Checkouts in other aircraft are quite rapid. Those fresh out of instrument school and not checked out in the L-20 will not require too much time for transition. We have almost all H-model H-13's and if you have flown only the H-23, it should only take about ten hours for the transition. We expect the HU-1 and AO-1 aircraft before too long, so expect more transition.

You will do a lot of flying. One Infantry Division Combat Aviation Company, the 24th, at Augsburg, Germany flew over 7,000 hours during the period 1 Jan to 31 Mar this year during so-called bad weather. In fact, they flew almost twice as much as any other Division in USAREUR during this period. Your "Jep" will be issued by the Flight Information Detachment soon after arrival and covers all of Europe. Bring your AP-5 Helmet as it is required on all flights, and as you know, should accompany each aviator on PCS.

Can't tell you too much about housing. It depends on the area and ranges from "concurrent" to about 8 months delay. Economy housing is not too difficult to find in Germany. As for a car, one is definitely needed, so ship it over.

I mentioned you will work hard, but there is plenty of time for rest and relaxation. The recreation areas of Garmisch and Berchesgarten in Southern Bavaria, are very fine. Travel to all of the European countries is easy by automobile, train, or commercial air. Time and space factors are greatly reduced. From Heidelberg it's only one hour to France, about two hours to Luxembourg and Belgium, and a little more to Holland and Italy. Skiing is excellent in the Alps and the Mediterranean beaches are not far away.

All in all, I am certain you will have a very beneficial tour. You will gain much valuable professional experience. I am certain that we can use your varied experience to good advantage to keep USAREUR Aviation on top. See you soon.

month's takeoffs

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Divided

BY LT. COLONEL

Man, since the beginning of time, has cluttered his existence with nonessentials which, at the time, seemed extremely important. *Adam*, for example, when making his first major decision, considered that peace and quiet in his home life were far more important than any penalty which might come from disobedience.

Eve, on the other hand, considered it more important to have someone else share in the apple-eating decision, thus relieving her of responsibility. Neither household harmony nor the spreading of blame proved essential.

Man continues to deny that he is influenced by anything other than facts. He is continually putting acquired experience into convenient niches of his mind, and later calling upon them to explain or justify an action. To return to our first example, it is very doubtful that Adam ever again listened to his wife's advice. He could justify his refusal by reminding her of what happened with that first bite.

Mention the words, *"military man,"* to the average taxpayer and you conjure up an image which runs all the way from an heroic figure to that of a hog snuffling at the public trough. If however, you can wait for the succeeding mind-pictures, you will find one concept which is a common belief of all. The military man, all believe, is an unemotional monitor of right, who never allows anything to influence his decision but the cold, hard, uncompromising facts.

Nuts!

The *"military mind"* is a myth, and the idea that men are swayed by logic alone is as outdated as the bustle. More so. The bustle might return.

Not only are we influenced by that which we have seen and done, but we are swayed by the beliefs of those in whom we have trust. Not only will we vote the straight *Republocratic* ticket without knowing who is running, because we trust the organization, but we will do everything possible to cause others to do the same. That way we achieve the otherwise impossible: *ease of mind* and *a sharing of responsibility*.

Take Army aviation for example. It was formed in order that the artillery might locate, recognize, and fire upon enemy targets without having to erect a convenient hill each time it became necessary to shoot. Other branches of the service, recognizing the untapped capabilities of an aerial highway, placed their own requirements. Soon, aircraft and the personnel required to fly them became so numerous as to create a recognition problem. Are they professional aviators or are they "jacks-of-all-trades" and the corresponding, "master-of-none?"

Opinions are sharply divided. That is a fact. That is one of the few facts being considered by many who have definite opinions. The rest of their argument is composed from their individual experiences and their divided loyalties.

I am an artilleryman. I am also an Army aviator, and have been for many years. My branch has permitted this because of my earnest effort to remain qualified in my basic arm. Artillery made no attempt to become indispensable to Aviation, and in-

stead, in many cases, allowed its career officers to serve with and for other branches as aviators. Such an attitude deserves loyalty. From me, and from hundreds like me, it will continue to receive it.

My friend is an infantryman. He cannot forget that the only reason for the existence of Army aviation is to *assist* the infantry in getting on with the war. From me he learns that the artillery has gained no further support than it had seventeen years ago, while he, himself, sees that his commander has no aircraft.

He knows, better than any statistician, the difference between organic and supporting tools. Though he as an individual would enjoy rear-area airfield living, it would wrench his conscience and twist his loyalties to plug for a separate branch for aviators. Whether such a branch be called *Aviation, Transportation,* or *Gravitation* is unimportant, but it *is* important that nonessentials be subordinated to the common good.

Those aviators in the other, more technical branches, are equally affected by their acquired loyalties. Why would a flying electronics expert wish to supervise the resurrection of spark plugs or the counting of life preservers? The Transportation Corps, by judicious selection and careful indoctrination of its air-minded personnel, has built a wall of loyalty not only impregnable but practically unapproachable. My Engineer compatriot reminds me that his castled insignia will never tarnish from lack of use.

oyalties

RIS G. RAWLINGS

Are these loyalties—these attitudes—facts? Perhaps they are, maybe they are not. They have the full effect of facts since they have the power to influence decision and thus cause action. Let us, for the moment, consider them non-essential loyalties. This leaves us with the problem of finding those realities which are essential.

They are twofold: One, accomplish our assigned mission, and two, attain our basic objectives.

Since each is fully described in our field manual, *FM 1-100,* there is no need to reiterate them here. It is necessary only that we discard that which does not serve to accomplish the mission. Must we form an Aviation branch to do our job? If the

ABOUT THE AUTHOR

A frequent contributor to *ARMY AVIATION,* Lt. Col. Morris G. Rawlings is now assigned to Headquarters, V Corps in Germany after an earlier tour of duty with the 3rd Infantry Division. His "Divided Loyalties" adds to the range of his subject material, "How to Build an Army Airfield," "The Other Side of the Coin," etc.

answer is "No," then let's discard the idea and proceed to the essentials.

Look at that mission again. *How can it best be accomplished?* The answer is plain, though unpalatable. It can best be done by making aircraft as plentiful as ground vehicles, and as capable of carrying loads in any weather. Since each must be driven by someone, it follows that there will be a need for thousands of aviators. They need not be generals, or privates. They may be any grade in between.

Bluntly, we as specialists, will have done our best when we have succeeded in making ourselves unnecessary—when we have worked ourselves *out of a job.* Individuals in industry, who see automation as sounding the death knell for the worker, are quick to unionize, to form a branch within a branch, and thus protect their future. This is no solution for the military. It is certainly not necessary for the Army aviator who has already proven his capability and his willingness to do more than that required of his contemporaries. There will be, for him, many other challenging assignments.

This is not a suggestion that all aviators should immediately search for a new career. It is, however, a recommendation that they consider themselves and their equipment as the means to an end rather than the end itself.

No man can completely set aside the mass of contradictions—of divided loyalties—which influence his every action. He can consciously relegate them to a subordinate role by recognizing that there is but one over-riding loyalty required of him. Such a thought, expressed, becomes heretical in these cynical days when to be called a "flag-waver" is the equivalent of an insult to Mother. Such an attitude is asinine. There can be no higher praise for an individual than that of crediting him with the ability to set aside his personal desires in order to do more for the common good.

I believe, (and this is obviously a very personal belief):

- *Our work is a sufficient means of recognition. We need no separate branch.*
- *As our work increases in importance to the overall good, more and more people will perform it. When the aerial highway is properly utilized, there will be no requirement for specialization, since everyone will fly.*
- *When we allow personal desires to act against policy, we are spitting into the wind, and are but temporarily halting progress.*
- *Army aviators should consider themselves as professional military men, a portion of whose duty it is to fly. Research & Development should consider this limitation when computing the complexity of equipment; all policy should be so directed as to recognize the existence of divided loyalties, and all aviators should be prepared to step into non-flying military assignments.*

Obviously, beliefs and desires need *not* be synonymous. Who said they were?

WHY PUBLISHERS GROW GRAY DEPT: During this past month we received a renewal subscription to *ARMY AVIATION* calling for a new address for the renewal subscriber. The address was: Major Hans Drebing, *HAERES-FLIEGERTRANSPORTSTAFFEL,* Buckeburg—Flugplatz, Germany. Several of our D/A "alphabet soup" addresses have been the most difficult to compress for use in an address stencil, but Major Drebing's takes the cake. Now you KNOW why we plead with subscribers to provide us with their home or residence addresses for magazine use. Even a brauhaus delivery would make things easier . . .

'A Very High Price'

By
Lt. Col. Melvin C. Moore, Commander, Airfield Command
Fort Rucker, Alabama

Many STOL and VTOL devices are being tested to see if they are of practical use for the Army. The rotary wing aircraft, at present, seem to be the only practical devices for landing in rough, unimproved areas but remain in limited use due to cost and complexity. Our fixed wing aircraft have become larger and larger and less able to utilize unimproved landing areas.

I feel that some of this loss of versatility has been due to our desire to retain a fast cruise requirement. The desire to get out and cruise 100 knots or more has imposed a severe penalty on our basic requirement—that of being able to merely fly and land in unimproved areas. This desire to "get out and go" costs us the advantages of a truly high lift wing and a really suitable landing gear.

Let's look at each of the above for a moment.

High Lift Wing. Each wing is a compromise between high lift and high speed. We *can't* have both. A very high lift wing has so much drag that no amount of added horsepower is going to drag it through the air very fast. So, since we associate "speed" with aircraft, rather than "mobility," we end up with a nice, thin wing which has less drag and will go faster.

Of course, the wing we have selected has to travel faster to obtain any appreciable lift, so we no longer have a short-field airplane but one requiring several hundred

yards of smooth ground. We try to salvage something by adding flaps to the airplane and an extra engineer group to the field Army TO&E.

If we wanted lift primarily, we could build an overgrown *Cub* wing that would start flying at thirty miles per hour and carry off a house, but we settle for a smaller payload in order to get speed—even for aircraft that are operating over very short ranges. As a result, our organic airlift comes at a very high price.

Unimproved Field Capability. This means much more than just "short field" capability for it implies the ability to use desert, open prairies, or farm land as we find it. This capability is greatly affected by the type of landing gear we use. We are losing this capability with our fixed wing aircraft. Here again "drag" at high speeds is the villain that dictates our aircraft's landing gear. The size of the wheel is generally selected to fit the hole in the wing or nacelle where it retracts, rather than the size of the ditch across which it should be able to roll.

For years, farm machinery, logging trailers, earth-moving equipment, and even "swamp buggies" have been designed with wheels large enough to traverse the rocks, logs, ditches, or bumps over which they must operate. *Why can't we accept a high-speed drag penalty and design an airplane with a high-lift wing with large enough wheels to operate on really rough ground?* A slow-flying airplane designed to carry a five-ton payload might have wheels ten feet high. With good clearance for the propeller, such a machine could negotiate plowed and contoured fields, low underbrush, and even an occasional barbed-wire fence.

If our first and foremost consideration is to get the load into the air, we can achieve a large measure of mobility without a high cruising speed just by virtue of being free from muddy roads, damaged bridges, icy hills, enemy-held defiles, and the like.

It seems that we can therefore develop a family of "roll-on, roll-off" type aerial landing craft that would transport trucks, jeeps, missiles, and other weapons *without* the costly features of a rotary wing flying crane. Such machines wouldn't look sleek and fast like a jet, but might help us to do the job. I'd like to hear some expert opinion on the subject.

OBITUARIES

First Lieutenant Glen R. Judd, assigned to Hqs, 2d Howitzer Battalion, 37th Artillery, APO 108, N.Y., N.Y., sustained fatal injuries when his L-19 crashed and burned on August 12, 1960, while attempting to land at the Grafenwoehr (Germany) Airstrip. He is survived by his father, *Vernie L. Judd* of 318 East Lincoln Street, Lamont, Okla.

Captain Atillio J. Tambornini, Hqs, Fort Kobbe, Canal Zone, was killed in a military aircraft accident on July 11, 1960, near Camboa, Canal Zone. Captain Tambornini was interred in a family plot in Willimantic, Conn. He is survived by his wife, *Mrs. Mazell M. Tambornini,* and two sons, *Steven Alan* and *Jeffrey Lee,* who reside at the Jackson Motel, Murfreesboro, Tenn.

First Lieutenant Richard H. Weinhardt, assigned to the 1st Howitzer Battalion, 36th Artillery, APO 715, New York, N.Y., sustained fatal injuries when his L-19 aircraft stalled and crashed on August 6, 1960 near the Dolan Barracks, Schwaebisch Hall, Germany. He is survived by his wife, *Mrs. Marilyn Weinhardt* of 24 Major Appleby's Road, Ardsley, N.Y.

Shortly after taking off from the Bridgeport airport in a twin-engined Sikorsky S-56 helicopter one morning recently, *Lieutenant Anthony M. Cominos*, a 28-year-old Army Aviator, snapped a strange-looking hood onto his flight helmet. The hood resembled a welder's mask and restricted his vision solely to the aircraft's instrument panel.

Using only instruments to guide the craft, *Cominos* flew to Westchester County Airport. Not until he was ready to set the helicopter down did he lift the hood for a look at the ground. Then, after checking with the control tower, he took off again, readjusted the hood, and headed for *Idlewild International Airport*. After a five-minute stop at *Idlewild*, the S-56 took off for Atlantic City.

The flight was part of a scheduled all-weather helicopter service now being operated by the *Federal Aviation Agency* between *Bridgeport* and *Atlantic City*. The program is designed to determine the capabilities and limitations associated with rotary-wing instrument flight rules (IFR) operation and to provide the FAA with data on which to establish standards for airmen, navigation, and route structure.

The U.S. Army and Marine Corps have each loaned an S-56 to the program. The flying is being done by Army and Marine flight crews and by three FAA pilots assigned to the project. Sikorsky Aircraft is maintaining the two helicopters. The performance of the aircraft has been outstanding, with the down time for maintenance work being extremely low.

Round-trip flights over the 141-mile route are conducted every weekday, with

ARMY-USMC-INDUSTRY SUPPORT FAA ALL-WEATHER HELICOPTER PROGRAM

ABOVE: Closeup of the instrument panel of the Army version of the S-56 showing the integration of the Decca display head for the FAA all-weather flight program.

the Sikorsky hangar at the Bridgeport airport serving as the origin and termination point. The first test flight in the program took place last February 17 and at that time a 1,000-foot ceiling and two-mile visibility were required.

More recently, with over 100 successful instrument flights completed, the weather requirements have been lowered to 500 feet and one mile. In poor weather, this means a true instrument flight as the aircraft cruises at 1,000 feet. The goal of the program is to fly on schedule every day regardless of weather.

Cominos' flight was typical of the present operation. He pointed out that the pilots frequently take off with the hood on.

Each of the S-56s used in the program is equipped with a Decca navigation system. This is the only piece of equipment not classified as standard flight instrumentation for the Sikorsky helicopter. It was installed for study purposes. A stylus marks out the flight path of the helicopter with a solid line. If the S-56 is precisely on

Major
Ellis C. Langford

Lieutenant
Anthony M. Cominos

S/Sgt
James A. Cosden

Sergeant
Charles Smith

course, the solid line traces over a dotted line which indicates the designated route of the trip.

Shortly after completing the trip to Atlantic City, *Cominos* and his crew reported to the *National Aviation Facilities Experimental Center*, a division of the FAA's Bureau of Research and Development. *Frederick Freeman*, project manager for the helicopter operations program, was there to take their report and Decca log.

A veteran electronics expert, *Freeman* acknowledged that the program was producing a fund of valuable information.

"We have accomplished quite a number of things so far," he said. *"We are learning what the problems are to navigate and fly these machines and to train pilots for instrument work. There are still a number of navigation devices we plan to evaluate."*

Freeman pointed out that air traffic control problems, particularly in a high density air traffic area such as New York, will differ from city to city.

"Our goal," he said, *"is to come up with a navigation system which will allow the helicopter pilot to operate in a terminal area under IFR conditions the same as he does under VFR (visual flight rules)."*

Then, as if to testify that progress is being made, the S-56 taxied out to a distant runway, climbed back into the afternoon haze, and was quickly lost to view. The pilot was under the hood again for the flight to New York. But with poor visibility and a lowering ceiling, the co-pilot also would be more dependent upon instruments than upon his eyes.

BELOW: Logging in are members of the "All-Weather Team"—left to right, Maj. Langford, Lt. Cominos, Sgt. Smith, and S/Sgt. Cosden.

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