ARMY AVIATION

AUGUST ★ 1959

ARMY AVIATION

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HILLER X-18 AT EDWARDS AFB

Shown during engine tests at Moffett Field, Californinia, the Hiller X-18 research aircraft rotates its wings through the different configurations in which it will perform — as a conventional aircraft, a short take-off and landing (STOL) aircraft, and a vertical take-off and landing (VTOL) aircraft.

The ground test phase of the X-18 having been completed at Moffett Field, the 16½-ton flying laboratory has been moved to Edwards Air Force Base in Southern California, where it will undergo flight tests in late fall.

RUCKER GETS CRANE

Sikorsky's S-61 "Flying Crane" is now at Fort Rucker where it is currently undergoing service test and evaluation.

ADVERTISERS IN THIS ISSUE

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the STOL Caribou

The sand strip at Fort Benning Georgia (left) is 1,100 feet long. The photo was taken from the cockpit of the Caribou as the aircraft was about to touch down.

With a gentle 5-knot headwind, the Caribou came to rest 150 feet short of the dark spot in the middle foreground. ***By actual measurement —in less than 300 feet!***

RAPID MOBILITY is synonymous with quick turn-around time . . . short take-off and landing . . . relatively high cruise speed. These qualities are inherent in the design of the DHC-4 Caribou.

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The Caribou

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AIRSPACE UTILIZATION IN COMBAT

Two solid objects occupy the same position in space only if they are separated by time.

Flying saucers excepted, of course!

Aircraft which disobey this rule add to the "pilot error" statistics of the nation, but actually, such accidents are the direct result of *improper* airspace utilization. Notice that we are speaking of *"airspace utilization"* rather than "airspace control." One does not control the forces or resources of nature—*one utilizes them.* Until full utilization is accomplished, control is not needed.

We are still a long way from total utilization.

* * *

Consider.

The liaison pilot of World War II developed a healthy dislike for the proximity-fuzed artillery shells which shared his working area. To him, they represented solid objects measuring thirty feet in all directions, and should they intercept his flight path—well, it was unfortunate. Yet our losses were infinitesimal due to such causes.

The Army Air Corps of that day still had a close-support capability and often demonstrated it. They worried not at all about having artillery shells raining through the sector, and in fact, rarely used to ask for so called "Flak suppression" on each of their missions.

The airspace was still not fully utilized.

* * *

The liaison pilot in Korea, now more euphoniously known as an Army aviator, learned to fly in the narrow band between that airspace so low as to receive aimed ground fire, and so high as to be in the trajectory of those larger missiles directed by an all-seeing eye and an electronic brain.

The skies were no longer lonely. Traffic jams became more and more frequent, and a system of signals became desirable—in the minds of the administrative thinkers.

A small digression is in order. A tactical thinker is one who, when searching for a solution, sets each difficulty aside in order to get to the heart of the problem. An administrative thinker is one who becomes obsessed with solutions for each difficulty and never arrives at a final conclusion, having created a self-perpetuating empire enroute.

To return. Army aircraft and those of the sister services were, luckily, on the same radio frequency spectrum and when a Flight Leader suggested that it would be an excellent idea for Army aircraft to vacate the vicinity of Marilyn's Jugs, there was a concerted rush to get elsewhere.

Again, we learned to live with congestion, and still, the airspace was not fully utilized.

* * *

By 1955, we had not only lost contact with other aircraft due to a UHF-VHF squabble, but we had been forcibly introduced to a new theory proposed by those who live on the ground. This theory said in effect,

"Don't worry about what the enemy can do. You worry about me. Identify yourself within thirty seconds or die!"

Tactically, the problem remained simple. It was, and is, a requirement to avoid collision between objects working for us, and to ensure collision with objects working for the other guy. Administratively, the problems were immense. A system of controls were devised which, both restrictive and self-perpetuating, served to keep tally on those objects which we launched.

The Air Force required, as operating agencies, such things as an *Air Support Operations Center* to receive, approve and assign flights; a *Sector Control Center* to dispatch; and numerous *Control and Reporting Centers and Posts,* together with *Target Director Posts, Air Liaison Officers* and *Forward Air Controllers.*

* * *

The Army made it with an *Army Aviation Operating Detachment,* and an operating detachment for the *Operating Detachment,* known as the *Flight Operations Center.*

The *AAOD* attempted to set up its shop alongside the primary *United States Army Air Defense Command Post* (what a mouthful!), either physically or by liaison, so as to effect this thirty-second identification as demanded.

It didn't work.

* * *

The Air Force used UHF frequencies; the Army, VHF. The *only* time any aircraft could talk to anyone was when airborne, and this system defeated the tally-keepers who required prior knowledge.

Exercise King Cole passed into history with all concerned still talking—but megacycles apart. The only real accomplishments, so far as Army aviators were concerned,

by Lt. Col. Morris G. Rawlings

Sikorsky S-62 -a new look in helicopters

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AIRSPACE UTILIZATION

by Lt. Col. Morris G. Rawlings

were to further confuse and confound those whose job it is to fly the men who fight.

The *FOC*, much improved in technique, but unchanged in concept, functioned well in *Exercise Follow-Me* in 1958. It kept tally sheets on hundreds of missions, and successfully warned airfields of friendly fighter strikes of which they had prior knowledge.

The fact that additional hundreds of flights were made *without* their knowledge or that strikes planned for 0900 actually occurred at 1100, is not properly chargeable to the agency, but is rather, a fault of the system. Too, they had no harassment from the *United States Army Air Defense Command Post*, and the air was not considered full of seeing-eye missiles which eat "Bird-Dogs" before breakfast.

Had these missiles been flying—and had there been an active enemy—it can safely be assumed that the airspace would have been crowded. We would have neared the goal of utilization. So long as the birds and bees and enemy aircraft and missiles fail to file flight plans before entering our so-called control zones; and so long as there is time and/or space between flying objects, we have no reason to speak of airspace control.

* * *

Why do we need an *FOC* in VFR weather? We don't. The real problem, remember, is to avoid collisions between friendly objects and ensure collisions with enemy. *Does one avoid collision by filing a flight plan?* Of course not. Read the regulation. *Does one ensure interception by filing a flight plan? Nope.* The other guy failed to give us his proposal. *What, then, does the FOC do?* Well, it guarantees that:

(a) If a flight plan is filed, and,

(b) If it is followed, and,

(c) If someone is monitoring, and,

(d) If someone says he's going to shoot at an aircraft at these coordinates within thirty seconds, and,

(e) If these coordinates are accurate, then

(f) FOC will say, *"Please don't."*

Never happen!

* * *

Is there a better method? Yes. Let's expound on it few moments.

Our first goal is to avoid collisions between friendly objects. The present solution requires knowing where things are. An easier solution is one which tells where things are *not*. They are *not* over certain areas because we make them prohibited. They are *not* directly in front of the tube of the howitzer, and are *not* directly in front of the flying aircraft. The collision point is at destination; normally, a lucrative enemy target.

Who knows all supporting weapons hurrying to that point? *The Division Fire Support Coordination Center.* An Army aviator placed there can keep the entire aviation effort continually aware of his competition for airspace. For the individual aviator, it is only necessary that he monitor a single VHF frequency while airborne in order to remain abreast of the situation. Once apprized of the danger point, the urgency of his mission will determine his actions.

* * *

The second goal is to make certain that enemy flying objects are intercepted. This is *not* a function of Army Aviation, *nor* can any of its operating agencies have influence over its accomplishment.

Those whose job it is, cannot learn from any better source than themselves, that which is friendly and that which is not. Since we have been discussing operations during VFR weather, it would appear that there were no insurmountable barriers to the identification of an inoffensive Sioux or Bird Dog.

* * *

Why do we need an *FOC* in IFR weather? We don't. The alternate solution *again* is knowing where they are *not*. They are not observing for the artillery nor are they flying in batches of bunches for intelligence gatherings. They are, perhaps, in Sioux aircraft, making short hops at very low altitudes, and they may wish to make certain liaison trips in Beavers. Why then, doesn't the directing headquarters advise the lower that airspace between two altitudes is reserved for their use during given periods?

Again, the only true critical point is at destination where all concurrent flights converge. At this point each incoming aircraft will be at a known altitude and the risk of collision is nil.

Again, since our solution involves knowing where friendly aircraft are *not* flying, it is obvious that those outside a given airway or at other than assigned altitudes are to be intercepted. The exceptions will, of course, be the helicopters at tree-top level which should pose no problem in identification.

* * *

Now let's recapitulate:

(1) There is no such thing as airspace control; there may some day be total airspace utilization, but that day has not yet arrived.

(2) The operating agencies developed by those who launch aircraft do not accept responsibility for the safe conduct of a flight, nor do they minimize the risk of collision in VFR weather. In IFR weather, they are able to account only for those aircraft which file with them—*a service not accepted by the enemy.*

(3) All flights to a given point are on collision courses, and wrecks can be averted only by variations in time and space .

(4) To utilize airspace, it is not necessary to account for each flying object by location. It is easier to locate unused space.

(5) It is as feasible to ask those responsible for air defense to identify before shooting as it is to ask the doughboy to recognize his enemy. This is their responsibility.

If over-simplification is a misdemeanor, then over-specialization is a crime!

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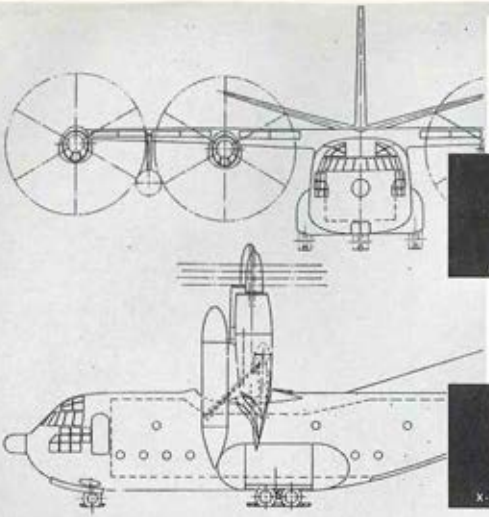

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Destined to provide the most comprehensive volume of flight test data is the U.S. Air Force X-18 (below)... world's largest VTOL project. Currently undergoing preflight testing at Moffett Field, California, the X-18 is scheduled for complete flight programs in the next few months.

Designs are one thing. Deliveries another. Both come from

HILLER AIRCRAFT CORPORATION

PALO ALTO, CALIFORNIA · WASHINGTON, D.C.

Dear Army Aviator,

When *General von Kann* assumed the position of The Director of Army Aviation on the 20th of July he asked that I prepare and publish the August letter from this Office. He will continue this program of publishing a monthly letter commencing with the September issue.

* * *

On the 7th of July, *Lieutenant General Arthur G. Trudeau*, the Army Chief of Research and Development, headed a party of approximately one hundred Army officers in a visit to the Grumman Aircraft Engineering Corporation on Long Island. *Colonel Tolson, Lieutenant Colonel Walker*, and I represented this Office on the visit. It was a beautiful day, and well it should have been, as it was the occasion of the first public demonstration for the new *Mohawk* medium observation airplane, the development of which was a major effort of cooperation of the Army, Navy, and Marine Corps. Two *Mohawks* were flown by Grumman test pilots.. The aircraft demonstrated exceptionally good maneuverability, rate of climb and single engine performance, and excellent short take-off and landing capability. In his remarks at the luncheon, *General Trudeau* strongly emphasized the important role this aircraft is expected to play in Army operations.

* * *

Lieutenant Colonel Edward G. Raff, formerly the Chief of the Research and Analysis Division of USABAAR, departed Fort Rucker in June for an assignment in Korea. Army aviation is most fortunate in having had *Colonel Raff* assigned to the Board in its initial organization, as he contributed through his skill and foresight a great deal toward the development of sound analytical and investigative procedures.

* * *

The Training Film titled *"What Caused The Crash"* has been completed and soon will be realeased. This very fine film develops in the first reel the concept of aircraft accident investigation, and continues in the second reel the procedures and general techniques required to assist the Aircraft Accident Investigation Board in the determination of accident causes, and the corrective and preventative actions necessary to avoid recurrence. It is one of the most professionally prepared training films I have had the pleasure to review. I strongly recommend its showing to all commanders and staff officers who have Army aircraft under their command or supervision. Above all, the audience should not be limited to rated personnel. I suggest you sell this concept to your boss.

Colonel Hallett D. Edson

* * *

As perhaps many of you have heard by now, my time in the Pentagon is getting short. After a course of four weeks at the Military Assistance Institute in Arlington I will depart for Korea arriving the latter part of October for assignment as the Senior Advisor to the Korean Army Training Command and the Second ROK Army, with station at Taegu. This is a two year tour with dependents, and it sounds extremely interesting and stimulating. Be sure to pay us a visit. We will welcome "the word" from the outside.

It is interesting to note that during the month of July, *Major General Hamilton H. Howze*, the first Director of Army Aviation, will arrive in Seoul, Korea to become the Chief of the Army Military Assistance Advisory Group and will be my immediate superior in my new assignment.

As I look back over the past three years, I realize that things move slowly here at the top echelon of the government. But, it is understandable, though, not always to our liking. Yet on the other hand with all this apparent lethargy, we must recognize that Army aviation has truly continued its phenomenal advancement. In these short three years we have trained more and better pilots, mechanics, and technicians, and received more and better aircraft. The concept of employment has broadened considerably, with a 100% increase of aircraft in the divisions, an acceptance of helicopter supressive fire, the development and receipt of new operationally designed Army aircraft, and an expanding knowledge of Army aviation usage by senior commanders throughout the service. In conclusion: *we are doing all right! Keep going!*

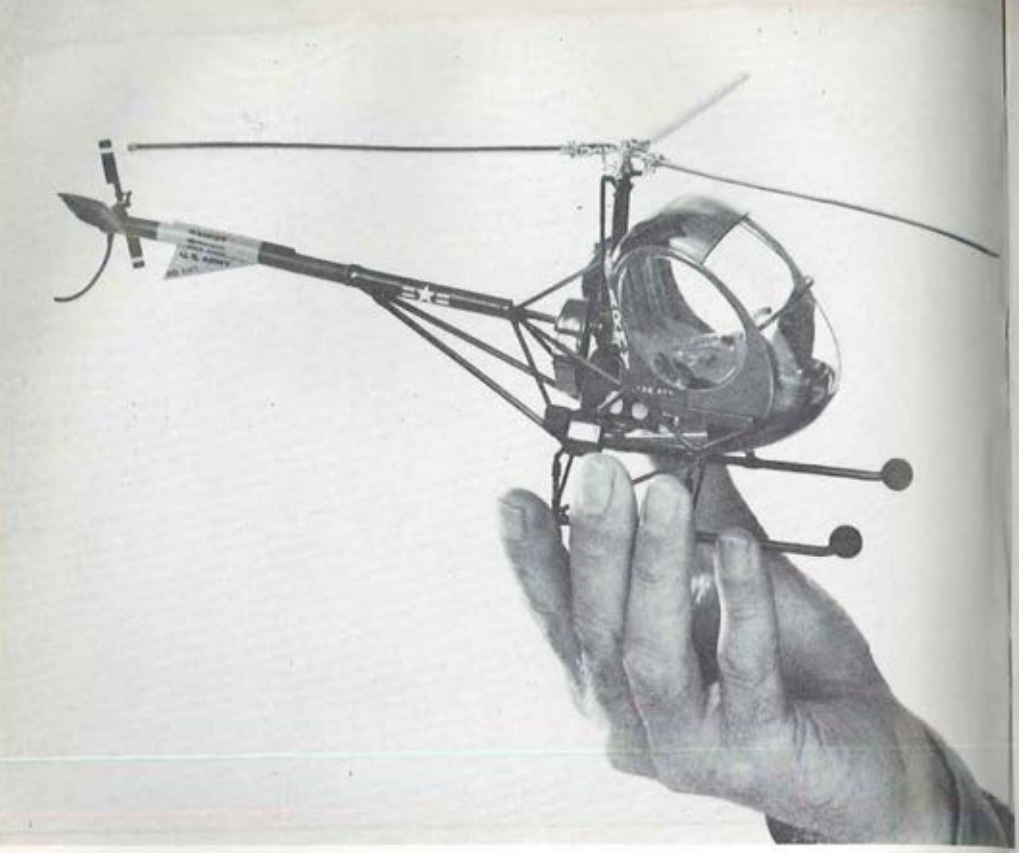
* * *

So as my final word,—this time—we have a good product; keep it good, make it better, and sell it!

With best wishes to you all. Thanks for the tremendous help you have given me.

MOHAWK DEMONSTRATES PERFORMANCE

COLONEL HALLETT D. EDSON
Acting Director of Army Aviation, ODCSOPS



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AVIATION RESEARCH and DEVELOPMENT

BRIG. GEN. RICHARD D. MEYER
Deputy Chief of Transportation for Aviation, OCT

The purpose of this article is to tell you something of how your aircraft are conceived, born, and matured through childhood to a useful adult life. More prosaically, my subject is how aviation research and development is carried out for the Army by the Transportation Corps.

What is R&D?

First, what is the "*R*," research, and of what use is it? Very generally, *research is the pursuit of fundamental knowledge;* it provides the climate and conditions needed for a development project to generate, grow, and come to bloom.

There are two recognized categories of research, namely, *basic* and *applied;* and there are many definitions of each. For our purpose it suffices to say that *basic research* is that research closest to pure skull work, technical studies, and evaluations. In aerodynamics, a large portion of our effort goes into finding the pure mathematical expressions of aircraft behavior. For example, we are working hard on finding the laws describing air loads on helicopter blades. If we succeed, we will be able to design future blades with precision, instead of by our current expensive cut-and-try technique.

Applied research usually involves "tin bending"—it includes the actual fabrication of models and components—hardware bits and pieces—and testing their behavior. Two extremes of applied research are the wind tunnel testing of a small wing section and the complete flight testing of a novel new research aircraft such as a tilt-wing.

The "*D*," development, is usually the deliberate efforts to create and perfect a specific useful product such as the AO-1, *Mohawk*, or the T-53 engine. Development, therefore, includes the design, fabrication, testing and all design changes which occur during the service life cycle of an end item of hardware.

Why have R&D?

Before any research or development is started there must be some goal established. This goal usually takes form as a statement of requirement, either as a *GOR* (general operational requirement) or a specific *QMR* (qualitative materiel requirement).

It is the role of research to determine the feasibility and best method or methods of meeting these requirements, either immediately or at some future time. The job of development is to engineer and build the actual items required, test them, and make them suitable for quantity production and the Army inventory.

Brig. Gen. Richard D. Meyer

Now that we have defined "R" and "D," let's put them to work on a typical requirement and see how they function.

The V/STOL Case

There is a long-standing Army requirement stated in the Combat Developments Objective Guide (CDOG) for a VTOL aircraft. This requirement is based on the need for an aircraft somewhere between the current airplane and helicopter; i.e., better at VTOL than the former and faster and longer range than the latter.

We know that since the Wright brothers' day, principal emphasis in airplane engineering has been *more* speed and *greater* altitude. As a result, the airplane's appetite for runways has increased and its endurance and controllability at low altitudes has decreased. Helicopters, as demonstrated in Korea, have some serious deficiencies in speed, range, and altitude, and their inherently complex design makes them costly to fly and maintain in combat.

The research people have been working diligently on the VTOL problem for several years. There have been countless paper studies made on this subject; this "wallpaper" is one of the important products of research—it enables us better to evaluate the good ideas on the subject, and to eliminate the bad ones.

* * *

About six years ago, convertiplanes began to appear on the scene. Convertiplanes appear as immediate solutions of the problem as they combine the helicopter and the airplane. Some designs have been fairly successful. The *Rotodyne*, for example, definitely shows the sort of performance we would expect for the future of VTOL machines, only it is of a low order of excellence.

We are confident because of research, that we can get high order V/STOL performance, before 1965, if we decide we want it and *are willing to pay for the development.* V/STOL is even more sophisticated than VTOL for it implies an aircraft with *both* characteristics. We are confident we can produce an aircraft optimized to its

best performance in a short take-off configuration, but which with a lesser load, can take-off or land on a point.

Our confidence in this future is based on some wonderful research work. During the past two years, a series of weird looking aircraft wearing U.S. Army markings have appeared on the scene. None of these craft have looked alike, and most have been ugly, but they did have one thing in common; they could rise abruptly in steep ascents which were vertical or near vertical. Strange phrases such as *ducted fan, deflected slip stream, tilt wing,* and *boundary layer control* were used by newsmen in describing how they worked. They were the pioneers in the family of short and vertical take off and landing aircraft. They resulted from a joint Army-ONR research program started in 1956, which had the objective of quickly and inexpensively investigating all promising VTOL schemes. The program was supplemented by Air Force projects with the same objective.

No attempt was made to build finished prototype aircraft; rather, emphasis was on investigation of the principle of the ducted fan, deflected slip stream, tilting wing, tilting rotor, deflected jet, and tail sitter. These flying test beds are *examples* of research tools from which a great deal has been learned about the best way to get VTOL and how to cope with its problems of control, stability, and configuration. The test bed program is nearing completion with, in general, phenomenal success, and serves as a remarkable example of research at work.

However, before any VTOL hardware can be made for troop use, other events must occur. The research element must establish design criteria for VTOL's; then the Army decision must be made whether or not the performance which now can be guaranteed would be useful on the battlefield, and thence whether a procurement shall be made for the Army's inventory. This "decision to buy" is the key to the division between "R" and "D" for until it is decided to *buy* an item and use it and stock it, the item does not cross over to the development side. Conversely, once the decision is made, an item must be weaned from "mother research" and stand on its own as a development item. Research is then free to turn attention to the requirements of the next generation, (except that applied research continues to indicate what minor improvements can be made to the basic design of the GI item).

In projecting our V/STOL case into the field of development, let us assume that an Army decision is made in 1960 to develop and buy a V/STOL machine for production inventory. The development side of the house now takes the spotlight. Military characteristics are translated, by extending the findings and theories of a scientific or technical nature which were developed by research, into practical technical characteristics.

Then, a design competion or source selection is gone through, usually quite rapidly, and the winning aircraft manufacturer builds experimental prototypes (X models). These are subjected to engineering tests and verification and a quantity of service test (Y models) are built. These are the craft which go through the Army Phase E and Phase F testing process to determine military suitability from the user viewpoint. Based on the results of user test, necessary design changes are made and production is started for troop issue. All of the above actions take about two years, and you couldn't expect to see a production article before 1963 or 1964. In spite of all this testing, the de-bugging process must continue throughout the service life cycle of the aircraft, and engineering effort continues in order to modify and improve the machine until it becomes obsolete. All of this type of engineering is done under the name of development.

TC Reorganization for R&D

From the foregoing, it can be seen that research and development is a major task for the TC. I am convinced that we must expand our efforts in this area, particularly in the research field of low-speed aerodynamics where the Army now has primary interest. Two areas of great importance are *low-speed stability* and *control and ground effect phenomenon*.

To provide a functional organization more responsive to the R&D needs of aviation in the Army, our Chief, General Besson, has directed a reorganization of Transportation Corps along the following guidelines.

First, the Office of the Assistant Chief of Transportation (R&D), who is responsible for staff supervision of all research and development within the Transportation Corps, will be strengthened. He will have a Transportation Research Office under his direct control, located somewhere in the Metropolitan Washington Area, to

TAKING TEN

Maj. Gen. Anthony J. Drexel Biddle (left), The Adjutant General, Commonwealth of Pennsylvania, and President of the Association of the U.S. Army, chats with Mr. Bryce Wilson, President of the Army Aviation Association, during the Fifth Annual Meeting of AUSA held at the Sheraton-Park Hotel, Washington, D.C. during 3-5 August. (U.S. Army photo).

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provide some of the very esoteric skills needed in aviation R&D.

Second, the mission of USA TRECOM, our Research and Engineering Command at Fort Eustis, has been directed toward expansion of both basic and applied research in the areas of TC responsibility, including, of course, construction of test beds for verification of theory and engineering investigations. You will note that this mission corresponds to the functions previously identified as "R," research.

Third, the mission of TSMC, the Supply and Maintenance Command at St. Louis, has been expanded to include all those functions identified as "D", development, for aviation items we intend to buy and use in quantity. Within a month or so, this organization will be re-titled the Transportation Materiel Command (TMC) for consistency.

All of this reorganization is based on the premise that there should be: (a) only one staff agency in the TC responsible for all aspects of R&D, (b) a field agency which can concentrate exclusively on research, and (c) another field agency devoted to execution of the development programs.

Conclusion

So ends our discussion of R&D in the TC. It has not been a comprehensive coverage and I have swept many of the facts under a carpet. It was my intention to assist you to better general understanding of how a new aircraft finally gets into your hands and to give you a nodding acquaintance with the TC organization needed to get this big job done.

Other Items of Interest

■ CHINOOK, YHC-1B—In the April issue of *ARMY AVIATION*, I mentioned the Army's negotiating with Vertol Aircraft Corporation for a new 2- to 3-ton transport helicopter. I am happy to report the Army went on contract with Vertol on 15 June 1959 for the development and construction of an initial quantity of five HC-1B (*Chinook*) helicopters. The *Chinook* is an advanced turbo-shaft helicopter to be capable of lifting from two tons, under the most extreme conditions, to six tons under the most favorable. It is planned to augment and eventually replace the current light and medium transport helicopters.

An additional five *Chinooks* will be purchased in FY 60 to round out the total number of required aircraft for test.

The *Chinook* Systems Management Program includes an exhaustive qualification phase during 1961 and 1962 prior to final commitment to full scale production. For comparison purposes, this qualification phase will be as thorough and comprehensive as that of the HU-1 *Iroquois* and will include over 3000 hours of engineering, user, logistic, and environmental tests.

The *Chinook* is the first Army helicopter which incorporates into its design the capability to carry a full missile sytsem. Transport of the *"Pershing"* Missile System has been established as one requirement for the *Chinook* and will represent about the most rigid requirement the contractor will be expected to meet.

■ ARCTIC OPERATIONS—U.S. Army Transportation Environmental Operations Group (TREOG) has been participating in exercises in Greenland since April 1959 that will lead to the improvement of transportation capabilities in polar regions. The TREOG aviation section has already accomplished two firsts since April which are: *longest icecap flight by Army aircraft* (520 *miles*), *and the furthermost northern landing by light Army aircraft* (83°3'N).

■ JOINT ELECTRONIC/AIRFRAME CONFIGURATION STUDY—A joint Transportation Corps/Signal Corps Electronic and Airframe Configuration Committee for Army aircraft has been established for the purpose of determining the optimum electronic/airframe configuration for each type of Army Aircraft by mission and geographical area.

The urgent reqirement to reduce the number of different aircraft configurations is readily apparent when you consider the H-34 alone has 21 different electronic configurations which cannot be readily identified as to a specific aircraft or geographical area.

When we consider the different types of aircraft in the current inventory, the problem is magnified to the extent that it becomes practically impossible to program for and provide adequate supply and maintenance support. The Committee is studying tthe feasibility of the assignment of designators to each specific aircraft which *completely* describes, for the supply manager, the aircraft/electronic configuration for each aircraft by geographical area. The joint configuration study will be completed and presented to the Deputy Chief of Staff for Logistics for approval during August 1959.

NEW FLIGHT CONTROL SYSTEM

A revolutionary flight control system to control any type of U.S. Army aircraft with precision was recently announced by the U.S. Army Signal Corps and the Sperry Phoenix Company. Providing a set of universal electronic "building blocks" which can be installed in varying combinations to achieve any desired degree of flight, the new system makes aircraft redesign and modification unnecessary. The system—capable of providing roll, pitch, yaw, and altitude control for fixed-wing planes and, in the case of helicopters, automatic five-axis control—will shortly be put through its paces in the H-19, H-21, H-34, and H-37 helicopters and in L-23, YAC-1, and YAO-1 aircraft. Weight of the universal equipment varies with the degree of automation desired, the fullest fixed-wing system totaling 41 pounds and the complete five-axis helicopter system weighing 54 pounds.

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FORT RUCKER INITIATES F-W TRAINING

BRIG. GEN. ERNEST F. EASTERBROOK
Commanding General, U.S. Army Aviation Center

This column, a new monthly feature of *ARMY AVIATION MAGAZINE*, is intended to keep readers informed of the significant activities at the U.S. Army Aviation Center. Through this column I plan to disseminate timely information that will assist in our common efforts, and at the same time I will encourage an occasional feature on certain aspects of the Aviation Center and School.

* * *

A milestone was passed in the Army Aviation School last month with the contract signing for primary fixed-wing training here. Our first primary fixed-wing students will begin training according to schedule on September 11. Training will start with one class and gradually increase to a maximum of four classes in residence.

The contract also provides for an additional class of warrant officers to undergo transition training into fixed-wing aircraft.

The training that begins this month will complete the movement of Army Fixed-Wing training from Camp Gary, Texas, to the Aviation Center .

Under the plan of operation, students will receive all phases of flight training from primary through graduation at Fort Rucker.

The Aviation Center will be host this month and next to some 800 *"Summer Soldiers"* of the U.S. Army Reserve. They will spend their two weeks' active duty here this year with the Army Aviation Center as the parent training organization. Some of the reserve units scheduled to train here are aviation companies.

* * *

One of our "high points" occurred last month when nearly 600 West Point cadets got their first real look at Army aviation during a visit here by the Class of 1961. They watched an armed helicopter firepower demonstration during their visit here and *Lt. General Garrison H. Davidson*, superintendent of the Academy, said it was a high point of the '61 class tour.

Oothers visiting included *Maj. Gen. J. A. Dabney* and *Maj. Gen. Robert H. Booth*, both of CONARC.

* * *

A word about housing. The permanent construction program at the Aviation Center is continuing, on a priority basis, and is geared to the immediate needs of the school and personnel.

The latest Capehart Housing, primarily for enlisted men, will bring the total Capehart and Military Construction units at Fort Rucker to 1,000. The 300 ranch type duplex homes, for both officer and enlisted personnel, will cost more than six million dollars.

Six three story barracks, permanent brick construction, and their related heating plant, motor pool and supporting supply houses, will be finished soon. The low bid on the new barracks was $1,443,492.

For the benefit of new students who may be transferring to the Army Aviation Centeer and the Army Aviation School to attend one or more of the 30 classes offered, I would like to say that the housing situation has brightened considerably with people in the area attempting to take care of the influx of Camp Gary trainees.

* * *

I think you will be interested to know that a new fixed-wing student instructor building at Lowe Army Airfield was dedicated here this month in honor of a former Dothan resident, *Capt. James W. Hancock*, who was killed in an airplane crash in Germany two years ago. *"Hancock Hall"* is one of a series of new buildings which will bear the names of deceased Army Aviators. The late *Captain Hancock* was killed when he diverted a twin-engine airplane (L-23) from a factory after it had a power failure. He elected to crash in a wooded area, rather than the factory where several hundred people were working.

Captain Hancock was graduated from the University of Virginia in 1936 and entered the Army as a private in 1942. After his commission, in 1943, he flew as an artillery liaison pilot in World War II and later served in Korea and Japan. A senior aviator, *Capt. Hancock* came to Fort Rucker from Fort Sill, Okla., when the Army Aviation School was moved here five years ago. He went to Germany in 1955 and was killed Aug. 19, 1957.

* * *

The Protocol Section tempo picked up from the routine during the month when 100 public school teachers from Tennessee visited here for three days for the annual *Tennessee Aviation Education Workshop*. They were flown here in two giant, four engine aircraft, from Sewart AFB in Tennessee. Each year a group of Tennessee teachers visits the Army Aviation Center for a study of new concepts and doctrines in Army aviation as a part of their Summer curriculum.

Brig. Gen. Ernest F. Easterbrook

CONTRACT

PRIMARY CONTRACT SIGNED—A new milestone in the development of Army aviation came last month when Brigadier General Ernest F. Easterbrook (right) commanding general of the Army Aviation Center and commandant of the Army Aviation School, signed a $1,368,442 contract with Bevo Howard, president of the Hawthorne School of Aeronautics, for the training of primary fixed-wing pilots. (U.S. ARMY PHOTO)

THE "BOX"

LINK TRAINER STUDY—West Point Cadets (standing, (l. to r.) J. J. Kilkenny, C. B. Sciple and Joseph Dahle watch the operation of a link trainer at the Army Aviation Center just before they "flew" the machine. Instructor is Pvt. A. H. Licon (seated). (U.S. ARMY PHOTO)

POWER PACK

ALL READY FOR THE FIRING LINE—Major General J. A. Dabney of the Continental Army Command prepares to try out an H-13 helicopter armed with machine guns at the Army Aviation Center. Pilot of the experimental craft is Captain T. M. Economos of the Aerial Combat Reconnaissance Company. (U.S. ARMY PHOTO)

CADETS

PARACHUTE FASTENED—First Lieutenant John L. Weaver (right) of the Fixed-Wing Department of the Army Aviation School buckles a parachute on Cadet Morris Hanson just before their flight at the Army Aviation Center. Cadet Hanson was at Fort Rucker with nearly 600 classmates from the United States Military Academy. (U.S. ARMY PHOTO)

PANEL

On Friday, June 5th, a classified session was held at Fort McNair, Virginia, in conjunction with the June 5-7 AAAA Annual Meeting. Questions for a distinguished panel of Army aviation officials were solicited through Aerospace Industries Association channels for open discussion at this classified session. The following report, derived from shorthand notes taken at the meeting as later declassified by appropriate authority, is presented for the information of AAAA members who were unable to attend this session:

PANEL

MODERATOR
GENERAL ORVAL R. COOK
President, Aerospace Industries Association

PANEL MEMBERS

BRIGADIER GENERAL FRANK H. BRITTON
Director of Developments, OCRD

BRIGADIER GENERAL WILLIAM B. BUNKER
Commanding General, TSMC

COLONEL ROBERT F. CASSIDY
Chief, Army Aviation & Airborne Division, USCONARC

BRIGADIER GENERAL ERNEST F. EASTERBROOK
Commandant, U.S. Army Aviation School

COLONEL HALLETT D. EDSON
Acting Director of Army Aviation, ODCSOPS

COLONEL ROBERT M. LEICH (USAR)
President, Army Aviation Association

COLONEL JACK L. MARINELLI
President, U.S. Army Aviation Board

BRIGADIER GENERAL RICHARD D. MEYER
Deputy Chief of Transportation for Aviation, OCT

MR. EUGENE VIDAL
Chairman, Air Mobility Subpanel, Army Scientific Advisory Panel

GENERAL COOK:
Gentleman, I'm not aware of orders for the conduct of a panel. Therefore, we will conduct this in as informal and expeditious a manner as possible. I am going to take advantage of my position to ask some initial questions. These have been furnished to *Colonel Marinelli*. He has been made aware that these questions are going to be asked. When I invite questions from the floor, I think it would be helpful if the individual who asks the question would identify himself and speak loudly enough for all to hear.

I'm going to start out by asking whether there is any prospect, immediate or future, of greater centralization within the Army for both technical and contract matters involving aviation?

COLONEL MARINELLI:
The problem is in the fact that up until now and for the immediate future, the Army does its procurement of aircraft through and depends for technical answers, to a large extent, on the Air Force or Navy. There is a plan in the near future to assign the Transportation Corps full responsibility for procurement of Army aircraft. We have already decided that the experiment will be in St. Louis under the command of *General Bunker*.

QUESTION FROM FLOOR:
When?

COLONEL MARINELLI:
I would rather not be any more definite than I have been.

GENERAL COOK:
What is being done to broaden the technical knowledge of design and operation of aircraft among the more senior echelons of the Army?

GENERAL EASTERBROOK:
A good deal is going on in the field in combat units and in the aviation school in an effort to give demonstrations so that Army officers as a whole can get a deeper appreciation of what aviation can do for the field Army. It is not easy to make the transition from the operations we have known in the past. We do it every day in our own lives. We see objectives that we would like, both we who are immediately affiliated with Army aviation and you in industry. But above that, there is the big broad user. He has to evaluate the tool or weapon, compare it with the other ones that he has on hand now—he has to do the job or fight tomorrow. So, gentlemen, these things don't come quickly. There is a process of education and understanding but I do think we are moving in that field quite rapidly and quite effectively.

COLONEL FREDERICK C. GOODWIN, FAA:
It appears to me that *General Trudeau* made a statement that implied an Army Aviation Corps in the Army. Is this coming up? *General Hutton* said that we need brigades, etc. in order to meet these requirements. By the same token, *Colonel Edson* made reference to Armor. Is this necessary and, if so, are we leaning toward this or did I misinterpret his speech?

GENERAL EASTERBROOK:
This is a very direct point and one that is of vital interest to everyone concerned. You know the evolution that Army aviation has come through; you know the background and the reasons why. I think the primary objective ahead of us and the job of Army aviation is to give the field commander the best possible utilization of equipment that Army aviation, as such, can provide. If it becomes a requirement, in order to insure the capabilities of Army aviation as a part of the field Army to do a

SESSION

better job as an individual branch or service, then I think automatically that is the way it will turn.

But at the present time, we are still moving ahead and quite well under the system we are operating. These are things that come along under checks and balances. It is a fact and a reality. It is all well and good to say we would have a better organization if we were to separate. Most of all we have to look ahead as to what our objective is and the problem of Army aviation. The problem is to serve the field commander and how we can do it best. I think the answer will come as we go along.

COLONEL GOODWIN:
I assumed that we needed to be separated.

COLONEL EDSON:
I didn't interpret it that way. Our position is that aviation will do a better job for the Army by being integrated in the Army as it is. I can go back to the 20's. We lost it by putting it separate. It is now integrated. I would like to keep it together. It depends on the specialization we require to fight the enemy. Armor forces got armor by becoming a force (Parallel).

GENERAL BRITTON:
There are several points I want you to realize. *General Hutton* said you have got to get people really working in that area. *General Adna Chaffee* had loads of troops but couldn't get equipment. He really didn't get started until he got reorganized into the old First Cavalry. That's when it began to move. If you set up two or three experimental units, it is not going to work. However, don't lose sight of the two sides of the coin. The Armor Force is not the only force that uses armor—for example, artillery uses it also.

QUESTION FROM FLOOR:
I grew up with the Army and I would like to make a point that covers a mistake that was made and covers the real reasons why the Army lost its aviation to the Air Force. It was not a question of making it a separate branch so much as it was lack of appreciation of the general value of aviation. So this is just a word of caution. I think that it is very important that all higher units of the Army thoroughly appreciate the importance of aviation. So that is one of your jobs.

GENERAL COOK:
I have always gone out for Army aviation and some time ago we were considered zealots. We were trying to demonstrate to the rest of the Army some of the advantages of the use of aircraft. In 1926 we had several highly successful demonstrations of dropping machine guns by parachute. We had in the then Army Air Corps an excellent master sergeant who believed in the parachute and several officers who believed in him, and they tried to get the rest of the Army interested. But they made a mistake—permission had been secured to drop men and guns by parachute. They had been trained so that they could do it very well. I saw it done one time with three guns and six men, which is a small group, in less than two minutes. *General Pershing*, the then Chief of Staff, was on a visit to the 8th Corps in San Antonio. The only time that he could see this demonstration was when the weather conditions were not good. There was a high wind. None of these drops had been performed under conditions of a high wind. The people in the then Army Air Corps were so anxious for *General Pershing* to see this that they didn't realize that they could kill it right then and there.

Anyhow, the six men and three guns were taken up and dropped. One man got hung up in the high tension wires, machine gun on the roof. The other two were scattered. The men and guns got down and were unable to fire the gun 10 minutes after they had reached the ground. *General Pershing* thought this was a lousy demonstration; thus, the project was dropped for a long time. So, my point is that you officers, when you want to demonstrate something, pick a time and place and don't become so enthusiastic that you ruin your show.

GENERAL COOK:
What action is the Army taking to improve anticipation of spare parts requirements and get adequate spare parts on contract early enough to insure their timely delivery?

GENERAL MEYER:
You can't buy spare parts without money. The United States Army gives out money but the Army has not had sufficient faith to divert sufficient money to it. *General Britton* has on his desk today a project request for something like thirteen and a half million dollars for parts that will be needed and no money to buy them. There is no sense in saying that we will give adequate support until we get adequate financial support. We must demonstrate a capability such that it will get the priority required to get the money. Something like twenty percent of the stock list—the highest priority—are in zero supply nationwide.

QUESTION FROM FLOOR:
Couldn't more be done along the line to provide off-the-shelf parts as needed? Our L-19s and L-20s are off-the-shelf items and industry very often has parts for these around. You could go to the Air Association and get the parts you need, whereas, otherwise, the plane is grounded for some time waiting for parts to come through. I wonder why this has not been done?

GENERAL BUNKER:
It is done. We make an average of approximately 3,000 purchases a week. However, it forces us to inflict upon the manufacturer 1-2-500 orders per week for the items we require. The cost of production becomes expensive so that you write a compromise between the purchases that you can get on a requirement basis. Staff cars are supported like this. We do it every day. Now, with no money, we are doing it progressively. Unless something is done, all of the requirements will be required after all Army aircraft become AOCP. Another problem that we are continually

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facing is the problem of making purchases of items that are not standard Army items. These cannot be replaced in the Army system and are a loss of money. There are limits as to how far it can be done.

GENERAL COOK:
In some areas there is a feeling or conviction, I should say, that maintenance responsibility for aircraft is not clearly defined in the Army. What action is contemplated to more clearly define this responsibility and to obtain and retain better qualified maintenance presonnel?

GENERAL BUNKER:
I couldn't agree more. It is not clearly defined. There are a number of people studying what we are doing at USCONARC, the Transportation School, and at Fort Rucker. The difficulty is that we are trying to find a good answer for the Army's requirement under war conditions during peacetime conditions. I think that part of our problem is to try to find a system that will not only work during peacetime but can be expanded during wartime to make the system work and keep the aircraft in the air, and do the extras that limited personnel and funds will allow. This is our main job .

MAJOR NORMAN W. GOODWIN, FORT SILL:
The people of industry now in this room love us to train mechanics and then they take them away from us. We give them good training and transfer them overseas without the extra pay. Then industry comes along and gets them. I think that your question had to do with the personnel in that respect.

GENERAL BUNKER:
I think you are correct. The basic question is pay. The basic element of the basic question is flight pay and the reason we lose qualified, and unqualified ones, is the flight pay proposition. Maybe the only answer is to give none or give everybody in the field flight pay.

GENERAL BRITTON:
This is not entirely peculiar to the Army aircraft industry. There is also a communications industry as well as some others.

GENERAL COOK:
Is there any plan under consideration to institute a system which will permit earlier review by all interested Army agencies of the entire estimated cost of prospective new aircraft programs which will permit comparison with the entire estimated cost of alternative mobility programs utilizing ground vehicles? (*General Cook* then restated the question in his own words).

GENERAL MEYER:
Dollar cost is not the important point. The important point is what can this mobility do for us. Many studies show the magnitude that you get from moving people faster. We know that if we put them in an airplane they can travel between 90 and 150 miles an hour. The guided missile area has gotten the major portion of the Army budget. They have done so because it has extended by tremendous magnitude the firepower of the artillery. The Redstone missile at a million dollars a crack is a good example. Nobody can say a Redstone has anything over any other except for the fact that the Redstone goes further. What we are talking about here is not to prove that the ton mile cost of moving a soldier by air is

A most distinguished Army aviation panel is shown just prior to the start of the Army-Industry classified session held at Fort McNair, Va., during the recent AAAA Annual Meeting. Left to right, Col. Robert F. Cassidy, Col. Jack L. Marinelli, Brig. Gen. Richard

cheaper than putting them in a truck; the question is what can you do with the resources that are available to you. Move them fast or slow. I say cost is inconsequential —even though I'm broke!

GENERAL BUNKER:
I think, unfortunately, that the answer to the question is yes, and we are preparing an estimated cradle to the grave cost of aircraft that have not been flown. Therefore, we get a figure that indicates that the cost is to great.

MR. FRANK K. MACMAHON, VERTOL:
Some of us attended the World-Wide Infantry Conference. During the Infantry Conference at Fort Benning, emphasis was given to battlefield mobility on tracks and wheels. Apparently, we are competing for the same dollars with aircraft. If the cost is not a problem we have a problem of convincing people in the Army that aircraft is the way to obtain battlefield mobility. That is what *General Trudeau* and *Colonel Edson* were talking about.

GENERAL COOK:
Will the results of Combat Development Evaluation Center (CDEC) helicopter vulnerability investigations be made available to industry for the purpose of improving this characteristic in future designs? Can any preliminary conclusions be given at this time?

COLONEL CASSIDY:
The first information scheduled by CDEC will be made available to industry through normal technical channels. They are not far enough along with any solid results to have any data available to contractors at this time.

GENERAL COOK:
Would it be possible, by revision of the present system

D. Meyer, Brig. Gen. William B. Bunker, Mr. Eugene L. Vidal, Gen. Orval R. Cook (Moderator), Brig. Gen. Frank H. Britton, Brig. Gen. Ernest F. Easterbrook, Col. Hallett D. Edson, and Col. Robert M. Leich. (U.S. Army photo).

of QMR, MC and specification processing in a manner which permits simultaneous consideration of operational, maintenance, reliability, and fiscal factors, to reduce greatly the elapsed time between the conceiving of a new aircraft requirement and the delivery of the useful article to operational activities?

COLONEL CASSIDY:

Military characteristics are my job and like all other things in the Army this is a subject that is covered by Army regulations. USCONARC is responsible for the development of Qualitative Materiel Requirements—result of combat conceptual studies. When these QMRs have been staffed and approved by Department of the Army General Staff, then the MCs are prepared, staffed and approved. This is done concurrently. Just recently a Board was established, the AdHoc Committee, OCRD, to shorten the research and development design and production cycle which runs 5-7 years usually, sometimes longer. This particular AdHoc Committee came up with recommendations that would eliminate the separate preparation of a QMR and then a separate MC for a piece of hardware. This would necessitate a revision of the AR. It would combine them in a document that would give a broader picture of the requirement that the piece of hardware would have to fill.

QUESTION FROM FLOOR:

Is there any plan to get fiscal people in on that?

GENERAL MEYER:

Yes, they already are. You can write the best plan in the world fiscally, based on the broad assumption of how much money you will get, but you don't always get it. So you generally start out at something less than an austere minimum, if we find that the QMR requires that the first time around you hit the moon and you would like to hit the sun. Case in point: We are working on a helicopter for which we have QMRs. One phase in the QMR is "all weather." "All weather" means tornados, which the phrase so states. One of the big items is deicing for the planes. This is a necessary and desirable characteristic, but first and most important is to get a plane that will fly most of the time. In ninety percent of its uses you do not have ice. Therefore, we are attempting to eliminate those phrases in the QMRs that state capabilities beyond actual needs. Make it clear as to what your requirements are but give us some levels of acceptable compromise because if you don't do it, we are going to have to do it. We are under-funded all the time.

GENERAL BRITTON:

On some of these stated requirements and some of the details, if we take literally certain requirements that are given to us, the successor to the L-19 would be about a $10,000 airplane and would only require a million dollars worth of electronic equipment to go on it. If you interpret some of these requirements literally, it can reach this stage. In this case, how many can we afford?

GENERAL COOK:

To give you an illustration of how literal interpretations of requirements can lead to serious results, during World War II the Army Air Corps had a bomber called the B-24. Several modification centers were set up to modify the bomber into the configuration which was desired in various theaters. The cost of modification continued to rise and *General Arnold* became curious as to how many versions of the B-24 had been sent out of the country. 42 different versions of that airplane had been sent out of the country. That is an example of trying too hard to please the people in the field. It can go too far.

GENERAL COOK:

Is there any Army Aviation agency studying geography, climatology and terrain surface characteristics for worldwide areas that are probable sites of future hostilities?

GENERAL MEYER:

There are about three operational research agencies—one by Cornell Aeronautical Laboratories, monitored by Chief of Research and Development, one at Fort Monroe and one at the Aviation School. I am sure that the Combat Research Group has studies in this area; the Aviation School is considering this, too.

MAJOR GEORGE F. MORRIS, SIXTH U.S. ARMY:

Is this study going to gives us some good information on when we can expect some de-icing weather conditions? The helicopter that you refer to— is it going to be a personnel carrier?

GENERAL MEYER:

A personnel carrier should have all of these exotic requirements. We can afford to lose trucks but not full loads of men. This should be one of the basic criteria in the initial design and plan so we don't have to modify them.

MR. BRYCE WILSON, PRESIDENT, AAAA:

I want to ask about money. Considerable conversation about funds and their shortage has taken place. I would like to ask the people if anybody has any ideas about what industry on one hand and the Association on the

other want to do to approach and possibly loosen up on funds. Who are the people who control the funds and what can we do? The AAAA must educate the people on what Army aviation is and what it does. The average American doesn't know what Army aviation is.

GENERAL BUNKER:

In the last several years we have been to a large degree our own enemy in this area. About six years ago I launched a campaign among manufacturers of helicopters about what an expensive machine they had made; that the helicopter was expensive to run and maintain. This was somewhat exaggerated in order to secure some response. I believe that many people have accepted our statement that the helicopter is an expensive vehicle when as a matter of fact when considering exactly what it does it is not an expensive way of doing that particular job. Thus, maybe if we are not so readily agreeable that we are expensive, that they cost so much money we might do ourselves a favor. This is a suggestion as to what people in this program can do.

COLONEL EDSON:

Six years ago, our Aviation Board sent people to North Carolina. It was the finest demonstration team the "Air Force" ever sent. No one is going to sell you if you don't sell yourself. Do a fine job and have *Army* written on it. Do the job well, dress neater, make your aircraft always ready on time and conduct the mission perfectly. I think selling is our number one job right now.

COL. JOHN J. TOLSON, ARMY AVIATION SCHOOL:

I think I should clarify something that has come up. First, before people charge out of here and write requirements—I have been writing requirements for 5 years and I think I have gotten one through the bottleneck. In 1955, I put in requirements for a suppressive fire weapon for helicopters and somehow that got through. Such things as ground handling equipment for this mobility. We can't camouflage them. I have put in requirements and asked for proposals from industry. There are some bottlenecks that have to be broken between the field and headquarters, particularly CONARC.

To get back to what *General Cook* was talking about, our new program represents about two year's work in the Combat Developments Offices of the Service Schools. We sent a study of aerial vehicle concepts of operation to support the field Army to CONARC for the period 1959-1970. This was worked out with our Combat Arms Schools and all users and is as near as possible to what they want. Of course, you could not get all of them to agree. A plan should be ready next Fall that came from the people in the field.

COLONEL EDSON:

Medium helicopters are going to carry personnel. The term cargo may be misunderstood—it means carrying personnel, equipment and supplies. It is not a truck that carries a box from here to yonder.

GENERAL MEYER:

Let me pick up the question of what is a requirement. We have a tendency in the Army to write TOs and the thing that we need in these times, other than money, is the use of people. *Colonel Edson* talked about concepts of the air mobility and air mobility task forces among other things. Just writing TOs and requiring large pieces of equipment is not a way to fill requirements. I think that is the thing that *General Hutton* was talking about. We are talking about concepts of operation which will only work if you have the air mobility equipment we are talking about. We have got to show that this air mobility unit will develop the kind of combat power that we have to have.

GENERAL COOK:

Is there any Army Aviation agency studying the most practicable chain of operations for airlifting of supplies from rear areas to the point of use on the battlefield?

GENERAL BUNKER:

There is a continuing series of studies by the traffic people. The current study is under contract. Usually they represent a series of compromises and progress is made in spite of them. We are in the air management of critical supplies so that in spite of general acceptance of broad studies our critical supplies in the Army are managed by air under the mission supply system.

GENERAL COOK:

What Army agency is responsible for developing new, vital missions for Army aviation?

GENERAL EASTERBROOK:

This requirement goes out through CONARC to the Schools. We have just completed at the Aviation School a study whih represents two years of work on a family of aircraft and employment of aircraft. Essentially, it is the School system of our Army that has the requirement. For example, they determine the use and employment of future missions.

GENERAL COOK:

I am going to bring to a close what today has been an extremely interesting discussion by summarizing some of the high points:

As I understand it, today there is a general agreement and emphasis that requirements must originate with the user but the user must have help in originating that requirement, so that requirements are readily being developed by collaboration and cooperation by many interested people. The problem of the requirement is to develop a weapon or device which will make it possible for the commander in the field to do a better job with the forces that he has at his disposal.

Another thing that I believe I picked up is that an effort must be made by the people who are interested in Army aviation in the Army to *demonstrate* the advantages in Army aviation when it is clear to them that aviation is the best way to perform a particular function. There is nothing as good as a good demonstration and nothing as bad as a poor demonstration.

There is apparently a feeling that industry hires qualified and unqualified maintenance personnel from the Army. I must say that industry hire qualified and unqualified personnel from each other also and from Air Force and Navy (*Mr. Vidal* reminded me) so that isn't a situation that is peculiar to the Army alone.

Last of all, I want to tell you that it has been a real pleasure to serve you in the capacity I have served you and it is for me, very thrilling to see a crowd of people such as you who are so interested in accomplishing what you are trying to accomplish.

A REPORT ON THE

NATIONAL EXECUTIVE BOARD MEETING

JULY 31ST-AUGUST 2ND

Some twenty-five separate actions were taken by members of the AAAA's National Executive Board during a recent 2½-day meeting held at the Sheraton-Park Hotel in Washington, D.C.

Attendees

National Executive Board members attending the 31 July-2 August second quarter meeting included *Bryce Wilson*, Pres.; *Col. O. Glenn Goodhand*, Exec VP; *Lt. Col. Alexander J. Rankin*, VP, Army Aff; *Joseph E. McDonald, Jr.*, VP, Indus Aff; *Col. I. B. Washburn (Ret.)*, VP, Public Aff; *Lt. Col. Charles E. Haydock, Jr.*, Trea.; *Lt. Col. Keith A. French*, Sec.; *Arthur H. Kesten*, Exec Sec; and *Col. Robert M. Leich*, Member-at-Large.

Actions Taken

The following summarizes the actions taken by the Board during its meeting:

1) Accepted the after action report of *Lt. Col. B. A. Bache* (Ret.), Annual Meeting Committee Printing & Publicity Chairman, directing this Report to the attention of the 1960 Annual Meeting Chairman.

2) Discussed the extent of enlisted membership within the AAAA, and adopted the position that enlisted membership and activity are within the province of the local Chapter activities.

3) Discussed the pro rated Annual Dues system, and approved the continuance of the membership year plan with pro rated membership "Quarters" and Dues.

4) Reviewed and accepted the Quarterly Reports as presented by the Executive Secretary. (See Table 1.)

5) Presented the after action reports of the various Annual Meeting Committee Chairmen to *Col. Robert R. Williams*, 1960 Annual Meeting Chairman.

6) Approved of the general concept of a concurrent Annual Meeting with the Association of the U.S. Army in 1960, and authorized the President to appoint a Committee to meet with the appropriate AUSA officials on general planning for such a concurrent meeting, said Committee to present a report on the planning to the National Executive Board for final approval.

7) Approved the Presidental appointment of *Col. Robert R. Williams*, 1960 Annual Meeting Chairman, and *Lt. Col. Alexander J. Rankin*, Nat'l VP, Army Affairs, as Committee members in regard to (6) above.

8) Accepted guidance on (2) above as presented in person by *Maj. Ralph S. Paxman*, Pres., and *Capt. Robert W. Koepp*, Sec., both of the DAVISON ARMY AIRFIELD CHAPTER.

9) Elected *Col. Robert R. Williams* and *Mr. James N. Davis* to the National Executive Board as the remaining two "Members-at-Large." (*Col. Robert M. Leich* had been elected as the first "Member-at-Large" at the June 7th Business Session.)

10) Reviewed the recommendations of the Annual Meeting Delegate Committees:

a. Recommendations on Regional Activity Structure: 1) Approved. 2) Approved, 3) Approved after re-phrasing to read: "The election of Regional Executive Board officers will be accomplished by the elected Chapter Executive Board officers from among their own number." 4) Approved after re-phrasing to read: "Any group of members numbering less than twenty-five (25) will be permitted to petition the National organization for recognition as a Chapter activity. The petitioning activity will be re-examined at six-month intervals as to membership gained."

b. Recommendations on the FPPP: 1) Approved; 2) Approved; 3) (a) Disapproved, (b) Approved, (c) Approved, (d) Now in effect following the earlier approval by the National Executive Board at its January 9th Meeting; 4) Disapproved, 5) Accepted as guidance; 6) Accepted as guidance; 7) Disapproved.

Wilson

Goodhand

Three-Year Staggered Elections

11) Approved the concept of a staggered 3-year election plan for National Board office so as to provide long-term continuity to the affairs of the AAAA, said plan to include the following provisions:

a. A National Nominating Committee will nominate ten (10) nominees to the National Executive Board. These nominees will be designated as nominees for one, two, and three year terms of office, but will not be nominated for a specific National Executive Board office.

b. The National organization will place the names of the ten nominees on a suitable ballot and provide write-in privileges for the 1960-1961 election.

c. The ten Board members elected will elect persons

from among their own number to fill the various offices of the National Executive Board.

d. Following this general 1960-1961 election, the National Nominating Committee will nominate three (3) nominees for National Executive Board office in the 1961-1962 membership year, three (3) nominees in the 1962-1963 membership year, and (4) nominees in the 1963-1964 membership year under the 3-year "staggered term of office" system.

e. Elections in the 1961-1962 membership year, and in all membership years thereafter will be by popular vote conducted at a general membership meeting held during the AAAA's Annual Meeting.

f. Regional Presidents will be elected to the National Executive Board as in (10) (a) (3) of this Report.

g. Three (3) Members-at-Large will be elected to the National Executive Board at the discretion of the Board then in office.

12) Approved an AAAA position in regard to the official policy of removing Army aviators from flight status without recourse or appeal. Approved of steps to place this position before the appropriate authorities.

Review USAR Conference Report

13) Accepted the Report of *Lt. Col. Sam Freeman*, Nat'l VP, Reserve Affairs, in conjunction with his recent Conference with USCONARC officials on pertinent USAR problem areas. Heard the TWX directed to USCONARC by *Col. Frank K. MacMahon*, '58-'59 VP, Res Aff. Directed the Executive Secretary to publish a Conference Report in a subsequent issue of the official publication.

14) Reviewed the Honorary Membership Program, and approved of the Presidential appointment of *Lt. Col. A. J. Rankin* as Chairman of a Committee to administer this Program. Approved as Honorary Members of AAAA the Directors of the United Kingdom and Canadian Army aviation programs.

15) Accepted the invitation of the Bell Helicopter Corporation to send official AAAA representatives to the 31 Aug-2 Sep ANIP Symposium at Dallas, Texas, and approved the Presidential appointment of *Col. O. Glenn Goodhand*, Exec VP, and *Col. Robert R. Williams*, Member-at-Large, as official AAAA representatives.

16) Approved of the Presidential appointment of *Col. Robert M. Leich, Col. Robert R. Williams, Col. O. Glenn Goodhand*, and *Arthur H. Kesten* to the National Nominating Committee.

17) Approved, at such time as Association funding permits, of the concept of reimbursing the President and the Executive Secretary of the Association for out-of-pocket *transportation* expenses incurred in attending National Executive Board meetings.

18) Reviewed the steps taken by the Executive Secretary in conjunction with securing a ruling from the Internal Revenue Service on the non-profit status of the AAAA.

19) Tabled the proposal to award a Three-Year Membership Lapel Insignia to the 900-odd, '57-'58 Members currently qualified under this proposal.

20) Tabled the proposal to have the Past National Presidents serve as Members of the National Nominating Committee.

Authorize USCONARC Liaison

21) Approved of the concept that ARNG-USAR news is a basic step in increasing overall ARNG-USAR membership in AAAA and directed the Executive Secretary to establish liaison with USCONARC for the provision of a regular news column on USAR Army aviation activities.

22) Heard the report of *Lt. Col. Keith A. French* that ARNG Army aviation news would be reinstated in the official publication on a regular basis.

23) Approved of the proposal to have a sustaining Finance Committee investigate additional means of increasing overall AAAA revenues, and approved of the Presidential appointment of *Lt. Col. Charles E. Haydock*, Trea., to chair this Committee.

24) Disapproved of National endorsement of Auxiliaries at this time, but approved of the action of the DAVISON ARMY AIRFIELD CHAPTER whereby this Chapter will activate a "test" Auxiliary.

25) Directed the Executive Secretary to place a follow-on order with the suppliers of the AAAA Scotchlite Car Trunk Emblems, said order to require specific guarantees from the supplier as to the quality of the Emblems.

TABLE 1

EXHIBIT "A"
Statement of Assets, Liabilities and Surplus
as at June 30, 1959

Total Assets	$20,180.93
Total Liabilities	8,578.62
Surplus (From EXHIBIT "B")	11,602.31
Total Liabilities and Surplus	$20,180.93

EXHIBIT "B"
Statement of Income and Expenses
for the period ending June 30, 1959

Income	$23,455.76
Expenses	13,106.36
Excess of Income	$10,367.04
Surplus as at April 1, 1959	1,235.27
Surplus as at June 30, 1959	$11,602.31

STATUS AS OF JULY 30, 1959

MEMBERSHIP

4,424 Members in good standing.

ACTIVITY

27 organized Chapter activities.
5 organized Regional activities.

FPPP

3,342 Members have current coverage.

CLAIMS

17 claimants receive monthly flight pay indemnities.
Monthly indemnities (Apr, '59) total $3,280.00.
9 members are in the initial 3-month suspension period.

REFUNDS

Non-renewal members received $630.00 in pro-rated premium refunds.

INDUSTRY MEMBERS

The AAAA has thirty current "Industry Members."

Members of the FORT CAMPBELL CHAPTER Executive Board chat with Col. Robert M. Leich (3rd from right), '58-'59 National President, during the course of a Chapter meeting held at Fort Campbell, Kentucky.

Fort Campbell Activates AAAA's 28th Chapter

The first Chapter to be organized in the six-State Central Region, the FORT CAMPBELL CHAPTER plans to hold meetings at least once each quarter following their recent auspicious activation.

The Chapter was fortunate in having the '58-'59 AAAA President, Col. Robert M. Leich of Evansville, Ind., present durin gits activation meeting. "Bob" made some extremely pertinent remarks with respect to the present status of the AAAA, including remarks as to how overall AAAA membership had exceeded original thoughts on possible membership strength. His brief informal talk further amplified the various advantages of membership in the AAAA.

Some 27 members attended the initial activation meeting, a substantial turnout considering that 28-30 other members were absent from Fort Campbell on TDY at the time of the meeting.

NEW CHAPTERS

FORT CAMPBELL CHAPTER
Central Region

President	Col. John D. Edmunds
Exec Vice Pres	Capt. Billy G. Wells
VP, Army Affairs	Capt. James R. Allen
VP, NG Affairs	Capt Richard D. Baldwin
VP, Res Affairs	Capt. Samuel W. Patellos
VP, Industrial Affairs	Capt. Earl K. Wooley
Treasurer	Lt. Lawrence Zittrain
Secretary	Capt. Harmon Howard

VP, Public Affairs to be elected.

Colonels
John D. Edmunds

Lt. Colonels
Russell P. Bonasso

Majors
Olva B. Butler

Captains
James R. Allen
Richard D. Baldwin
John M. Beebe
William L. Beck
Charles L. Calvert
Donald G. Curry
William C. Dalrymple
Wayne E. Dutton
Weldon F. Heneycutt
Harmon Howard
R. M. Moulthrop
Keith W. Oakes
Samuel W. Patellos
Howard J. Tuggey
Charles D. Utzman
Harold B. Van Dyken
Ed. E. Waldron, II
Billy G. Wells
Dean C. Wesner
Earl K. Wooley

Lieutenants
Charles W. Bagnal
Richard W. Boalter
James R. Brier
John R. Canklin
George R. Crane
Anthony O. Corak, Jr.
William J. Dimon
John F. Elder, III
William R. Ellis
Ralph H. Floyd
Charles D. Fountain
Robert L. Glazier
Alden G. Hannum
Kenneth E. Hebrank

Lieutenants (Cont.)
David F. Horton
Theodore C. Jasper
Williams H. McGee
Coy H. McKenzie
A. F. Martinez
Edward J. Miller
Gary W. Niles
Robert F. O'Kane
Robert Paredes
Robert E. Rawls
Gregory F. Roche, Jr.
Robert Semonisck
Roy D. Shanklin
Milton C. Sheridan
William F. Simpson, Jr.
John R. Stamps
Jessie E. Stewart
John B. Swift
Allen B. Taylor
Olen D. Thornton
Sands S. Weems, III
Albert R. Woodruff
James P. Woolnough
Lawrence O. Zittrain

CWOs
Charles H. Astrike, Jr.
Franky M. Donahoo
Paul A. Easton
Donald F. Frazier
William J. Gibbs
Henry E. Holmes
James F. McCune
Joe M. Probst

WOs
Lawrence J. Gutman, Jr.
Gwain L. Johnson
Frank T. Nyesewander
Victor H. Romain
William H. Ruffin
Walter J. Schramm
Robert D. Smith
Joseph A. Steffanci

AAAA CALENDAR, AUG.-SEPT.

■ SEOUL CHAPTER. Business and social meeting, Chosun Hotel, Seoul, Korea, August 22.

■ FORT CAMPBELL CHAPTER. Dinner-dance. Fort Campbell Officers Open Mess, Fort Campbell, Ky., August 30.

■ USARCARIB CHAPTER. Business-social meeting. Fort Kobbe Officers Club, Fort Kobbe, Canal Zone, September 4.

■ FORT RILEY CHAPTER. Dinner followed by industry presentation. Mr. K. L. Elpey, project officer, and Mr. R. Aleworth, project engineer, for the Beechcraft L-23F will be guest speakers. Fort Riley Officers' Open Mess, September 9.

■ STUTTGART CHAPTER. Business-Social meeting. Chiem-see, Germany, September 11-12-13.

SQUEEZE

Coverage given to the declassified report of the June 5th Panel Discussion (see pages 18, 19, and 22) limits AAAA news this month. The September insert shall list all '59-'60 Regional and Chapter officers and report on recent Chapter activities. The *WASHINGTON* and *USAFFE REGIONS* were reactivated in July-August; the Fort Knox Chapter will be profiled (as above) in being the AAAA's newest Chapter.

Page Aircraft Maintenance, Inc., North American Aviation, Inc., Boeing Airplane Company—Wichita Division, Cessna Aircraft Company, Collins Radio Company, and the General Electric Company have joined AAAA as Industry (*Corporate*) Members, bringing AAAA Industry Member support to thirty-one.

USAREUR REPORT

Colonel Warren R. Williams

■ Over 500 persons attended the *Army Aviation Birthday Party* on 6 June at Heidelberg. All reports received indicate this was our best gathering yet. *Mr. Igor Sikorsky* captivated the group with his interesting talk. He enjoyed the party and the opportunity to meet our pilots, and we were fortunate in having him as our guest.

* * *

■ *Capt. Carroll* and *CWO Pauli*, Army Aviation Board, toured USAREUR with the Bell *H-U1* and Hughes *YHO-2* for a week. Our thanks to them, as well as to the mechanics and tech reps who accompanied them, for their hard work to assure maximum demonstration of their helicopters in the time available. Their demonstration at the Paris Air Show on Helicopter day (18 June) was a feather in the cap of the Army.

* * *

■ After the break-up of the Army Aviation Branch of the G3 Division in May, we are beginning to get used to the new system. There will be more aviators in USAREUR Headquarters eventually under the new system. At the time of writing, G3 is undergoing annual change-over pains. The fact that new people haven't arrived to replace those leaving and the natural desire for leave when the children are out of school, combine to make it a painful time. With the job formerly held by two branch chiefs, I don't have much time to get aviation matters not concerned directly with my Organization and Training Branch.

My broadened responsibilities are interesting. Other aviators assigned to USAREUR Headquarters under the new system will receive valuable staff experience not only in aviation but also in other essential elements of this complicated Army. Good "staff qualified" Army aviators are a short commodity. If we don't train more, they will be even harder to find. By making more pilot positions on the staff, we provide the opportunity for additional aviators to receive necessary staff training. The responsibilities of USAREUR Headquarters under the existing organization permits dispersion of Army aviation matters without undue resultant problems. Aviation problems may sometimes be not as conveniently solved but their solution under this system makes more nonaviators aware of the problems. Also, doing other work makes aviators aware that all the big problems aren't in aviation.

* * *

■ We were happy to have Art and Dotty Kesten visit with us in Germany during 16-17 June. They had the chance to talk to a number of the pilots and staff sections in the Frankfurt, Stuttgart and Heidelburg areas. Sorry we didn't have time to get more AAAA's together but the notice was too short under the circumstances. They had the opportunity to see for themselves the differences in Europe which account for problems that are hard to understand stateside.

As I explained to Art, I will not have the time during the coming year to forward USAREUR aviation information to the magazine as previously. Since I am convinced that all Army aviators are interested in what goes on in USAREUR, I'm asking the rest of you USAREUR pilots to step up your contributions to *ARMY AVIATION MAGAZINE*. How about more thought provoking articles such as that of *Lt. Col. Rawlings* in the May issue? Let's see some ideas on the problems he outlined. If we staff officers knew the solution, there wouldn't be any problem. Perhaps some of you know of some workable solutions which haven't been considered.

LEFT: Capt. Kenneth C. Stanley, 16th Avn Opns Det, 7th US Army, explains a mobile flight operations van to Lt. Gen. Count Thord Bonde, Swedish Army Commander-in-Chief, during a recent visit. RIGHT: Sergei Sikorsky points out the special features of the H-62 amphibious helicopter to Col. Arthur W. Rice, CO, 7th Avn Gp, prior to a flight demonstration for Stuttgart area military personnel (U.S. Army photos).

USAPHS celebrates 200,000 fatality-free hours of instruction

PRESS DAY AT CAMP WOLTERS

Celebrating over 200,000 hours of primary helicopter flight training without fatality or serious injury, officials of the U.S. Army Primary Helicopter School at Camp Wolters, Texas, joined with members of the Southern Airways Company in commemorating the occasion at a well-attended Press Day on August 12.

The fifteen representatives of the press, all of whom were conducted on a full day tour of the School's facilities, were unanimous in their praise of the military-civilian contractor program that has trained some 1,700 rotary-wing aviators in the past three years.

* * *

Following an orientation on the mission and organizational structure of USAPHS by *Col. John L. Inskeep*, Commanding Officer, the aviation writers were briefed on the role of the civilian contractor by *Raymond L. Thomas*, General Manager of the Camp Wolters operation.

In subsequent briefings the press representatives heard Southern Airways officials detail the School's academic training and supply and maintenance facilities, each briefing being followed by a guided tour of the particular facility.

* * *

High spots in the "Press Day" programming were an orientation flight to Stage Field #3 where crack instructor pilots demonstrated basic maneuvers provided during primary helicopter flight training, and a parody on a student's "first solo flight."

Helicopter-borne to Stage Field #1 where they observed two classes engaged in student training, each writer was then given approximately 30 minutes of individual orientation in helicopter operation, a clincher in convincing all of the competence of the instructors and the basic safety of the rotary-wing machine.

Climaxing the Press Day was a banquet held in the Officers' Open Mess for all attending the day's program and including the mayors of Mineral Wells and Weatherford, and officers of the chambers of commerce and their military affairs committees.

During the banquet, *Col. Inskeep*, mindful of the complete spirit of cooperation of the citizens of Mineral Wells and Weatherford in assisting USAPHS in all areas of activity, presented letters of appreciation to the mayors of the nearby Texas communities.

The Camp Wolters Commanding Officer then presented a letter of appreciation to the Southern Airways Company for their outstanding record in assisting USAPHS to achieve the 200,000-hour fatality-free mark in primary helicopter flight instruction. The citation was accepted by *Mr. Thomas* on behalf of Southern Airways.

* * *

As a guest speaker, *Stanley Hiller, Jr.*, president of Hiller Aircraft Corporation, gave credit to the Army for being the primary motivating force behind the development of the helicopter industry. He stated that seventy per cent of the helicopter industry owes its existence to the development of the helicopter's use by the Army.

Frank Hulse, chairman of the board, Southern Airways Company and the evening's principal speaker, stressed the importance of the close military-civilian-community cooperation in achieving the noteworthy 200,000-hour record.

(Ed. Coordinated by Joseph Shields, director of training for Southern Airways, the "Aviation Press Day" represented a unique step in Army aviation and one that is certainly worthy of emulation as the occasion arises. Not content to sit back and expect publicity—and then bemoan the lack of it, USAPHS and Southern Airways recognized a "story," brought the press to the "story," and received extensive national coverage. Among the aviation press were representatives from the ARMY TIMES, FLIGHT MAGAZINE, ARMY-NAVY-AIR FORCE JOURNAL, ARMY MAGAZINE, AVIATION WEEK, CROSS-COUNTRY NEWS, ARMY AVIATION MAGAZINE, N.Y. DAILY NEWS, FORT WORTH PRESS, FORT WORTH STAR-TELEGRAM, and the MINERAL WELLS INDEX, as well as several nationally syndicated columnists. Leading official support were representatives from the Office of the Assistant Secretary of the Army; Office, Chief of Information; U.S. Army Aviation School; Hq, Fourth U.S. Army Information Office.)

The Bureau Drawer

MAJOR HARRISON A. MORLEY
Army Aviation Section, National Guard Bureau

Hello again. The smoke, dust and haze of getting settled behind the overflowing *IN* basket having subsided somewhat, and having a full crew aboard again, (Irene has been ill) we'll make an attempt at getting a line or two out to you on a monthly basis.

It's positively amazing to note the rapid and efficient re-organization that has been effected and is still going on, and the smooth transition into operations under the *Aviation Company concept*. A couple of visits to annual full-time training sites have convinced yours truly that many of the knotty problems foreseen prior to the re-organization were only needless worries, and our ARNG aviators have adjusted admirably. Of course, there are still many problems, of varying magnitude, but we hope they will not deter or delay us a great deal .

This period marks the anniversary of the *"Station Wagon Classroom"*— the ARC Avionics Technical Assistance Program for the Army National Guard. Our friends, *Holmes Bailey* and *LeRoy Johnson* of Aircraft Radio Corp., did an outstanding job last year, and a report follows which, I am ashamed to say, was given to me a long while ago. My apologies for not presenting it sooner.

* * *

Bureau representatives at the AAAA Annual Meeting in Washington in June were most happy to meet and talk with *Lt. Col. Frank O. Grey, Jr.*, Ill. ARNG, and with *Maj. William Graul* and *Lt. Murray Foster*, Md. ARNG. It was a fine large group of AA's, but the ARNG reps were somewhat less than anticipated. Let's have a real get-togther at the next one—most of us can certainly justify attendance for a meeting as informative and enjoyable as this one was, and the next will be bigger and better, I am sure.

* * *

NOTE FROM THE SURGEON: Beware the *"German Goiter"!* Those of us who have blissfully acquired a spare tire around the center section at great expense in local pubs and through years of doing all our work sitting down, must be careful to stay within the prescribed weight-for-height-and-age limits. Most of us have felt secure in staying under the limits outlined on the form chart in *Change* 3, *AR* 40-503, but someone also took a long look at *AR* 40-110 which says 200 pounds is the max limit for Army Aviators, regardless of height and age.

Works the other way, too—if your height and age call for less than 200 in *AR* 40-503, you must abide by that limit. Your unit C.O. must effect a suspension until you sweat off the excess, and that could mean a corresponding lightening of the hip pocket where the wallet goes. Special note on this: *NO WAIVERS!* Not even on routine Class II SRARAV annuals, etc. A word to the wise . . . ?

* * *

Remember the helicopter trailer pictures from Oregon that we submitted last year? We have another batch, this time from *Capt. O'Toole*, Maintenance Supervisor of the Kansas ARNG. If you like this version and desire further info, please contact him direct. Address: *Capt. Donald J. O'Toole, Army Aviation Maintenance Supervisor, Kan. ARNG, Municipal Airport, Topeka, Kan.* This trailer also has two configurations, one for short haul, and one for overland transport of recon helicopters.

* * *

A word about the *TOEs* for those of you who are organizing and staffing aviation companies. In the draft *TOEs* you are currently operating under, the prefix 6 in the MOS column for officers and warrant officers indicates the position must be filled by a rated aviator. Therefore, do *not* assign someone in the 64823 or 61204 slot (or any other with a 6 prefix) unless he can qualify, both branch and physically, for the training necessary to become rated. Check the MOS column of your *TOE*.

* * *

Visitors to our office in NGB have found that everything moved again since our last letter. We are now in *Room 2D267* of the Pentagon. (This is the third move in less than two years.) We seem to get buried deeper and deeper. Our girl Irene says it's like working in a coal mine now; one has to call home to find out what the weather is doing.

* * *

Many thanks to *Lt. Col. Don Beseth* and *Maj. Bill Graul* for the able assistance while YC was getting "eddicated." Just about the only unfinished business I found on my desk was a stack of personal bills. You could have taken care of those too, gents; I wouldn't have been a bit angry.

* * *

Well, it's &%'#"759 time again, which means another *Annual Review Board*, and the usual paper war over corrections, omissions, and deficiencies. Help us out by having them in on time and correct, please? We're still rassling paper over some of last year's laggards.

I seem to be out of ideas for the moment, so this is a good place to stop for this time. Hope you all had a successful annual full-time training period, and a safe one —then the aircraft accident review section (*Hey, that's ME!*) can take a happy break.

TRAINING AND TECHNICAL ASSISTANCE PROGRAM (AVIONICS EQUIPMENT)

The program title *"Training and Technical Assistance Program, Avionics Equipment"* was originated in January 1958. The National Guard Bureau sponsored the program with the P & D Division of the Office of the Chief Signal Officer. At the request of the NGB the *Aircraft Radio Corporation* provided a trained and experienced manufacturer's representative, bench test facilities kits, and a new station wagon.

Following the completion of all preliminary preparations, the first phase of the program was started with visits to the combined field maintenance shops and aviation installations of the Army National Guard. A second phase was originated in June 1958 with another ARC manufacturer's representative (with test equipment and ARNG L-20 aircraft) visiting the summer field training sites of the Army National Guard. Thus, a thorough coverage of all phases of the National Guard training program was effected.

Unanimous approval of this training and technical assistance program was expressed by the State Maintenance Officers, the signal radio repairmen in the Combined Field Maintenance Shops, the Army NG pilots, and the flight line crew members. The cooperation and support from NGB for this program were major factors in making possible the successful completion of this project.

The program continuously improved as suggestions were made and adopted at each new location visited. Thus, a flow of new technical information and maintenance procedure was provided to all Guardsmen contacted by this program's representatives.

With a complete set of bench test facility kits, visits were made to the Combined Field Maintenance Shops and at the summer field training sites. A concentrated effort was made to train the signal shop personnel whose responsibilities include the maintenance and repair of avionics equipment. Almost every state had sent one repairman to the Decatur Signal Depot's Aircraft Equipment Familiarization Course. These Decatur trained men became the focal point for the practical training during each state visit. They were taught actual repair techniques, routine maintenance procedures and test equipment operation, all of which supplemented the theoretical knowledge presented at the avionics school. In the event a shop had no Decatur-trained signalmen, then the Avionics Familiarization Course was reviewed (from actual Decatur Signal Depot Avionics Course lesson plans) before the practical training was started.

At the aviation section locations (airports), training in the operation and capabilities of each of the currently used avionics equipments was given to all available National Guard pilots. As in the case of the signalmen's training, question periods punctuated the classroom lectures and in-aircraft training. All normal and emergency procedures were discussed. One of the biggest problems weas the re-training of pilots who previously had been given incorrect instruction by well intentioned but misinformed individuals. The establishment of correct operating procedures among all pilots will result in a saving of many hours of unnecessary repair time since abuse of avionics equipment will be minimized.

* * *

Another part of the program was the performance of avionics equipment repair work in malfunctioning and inoperative aircraft systems. Pilots in each location visited were asked to list their avionics problems. A repair schedule was made from this list and each aircraft's problems solved in order. This provided an oppoetunity to the signalmen for gaining experience in actual trouble-shooting as well as additional experience in using the Bench Test Facilities Kits. The repair work gave the pilots the restored capability of full usage of their avionics equipment and provided a service which was otherwise unavailable within local organizations.

Each month recommendations were made to the NGB. The majority of these recommendations were aimed at improving the technical performance of avionics equip-

ment and making flying safer and easier in the years ahead.

Inspection and repair of hundreds of military aircraft revealed many installation errors and operating malfunctions for which corrective action was immediately necessary. These problems suggested preventative and corrective remedial maintenance work respectively. Following the successful repair of all avionics equipment, written recommendations were submitted to the program's sponsors. An effort was made to restrict these recommendations to technical subjects. Weak spots in the retrofit program (AN/ARC-44 and AN/ARC-60 installations) were "pinpointed" and corrective action was initiated by the NGB.

* * *

Efforts were made (a) to encourage standardization in this nationwide retrofit program, (b) to initiate additions and corrections to existing T.A.'s and T.O.'s, (c) to have every maintenance unit furnished with a graduate of the Avionics Familiarization Course taught at the Decatur Signal Depot, (d) to have every maintenance unit perform all outstanding MWO-SIG orders, (e) to have every N.G. aviation unit informed as to intelligent avionics equipment salvage precedures for wrecked aircraft, and (f) to suggest changes in existing avionics equipment installations which would result in safer operations of all aircraft with existing avionics equipment configurations.

These recommendations were in addition to the primary mission of the program, that of giving Training and Technical Assistance on avionics equipment to Army National Guard pilots and radio repairmen.

* * *

This program could be successfully expanded from its current scope of servicing the Army National Guard. The prbolme of Army aviation with this type of equipment are essentially identical to those experienced by the National Guard units. Serious consideration of further technical assistance of this type for the regular Army should be given within OCSigO. A program of assistance during which visits to Army Depots, aviation schools, training and operating units are made, would perform a much needed service to Army aviation and Signal Maintenance personnel.

Photos Above and Previous Page

MR. HOLMES BAILEY, FIELD ENGINEERING REPRESENTATIVE, OF THE AIRCRAFT RADIO CORPORATION, IS SHOWN WITH ARMY NATIONAL GUARD PERSONNEL AT SAN JUAN, PUETO RICO, DURING ONE PHASE OF THE MULTI-VISIT TOUR CONDUCTED UNDER THE TRAINING AND TECHNICAL ASSISTANCE PROGRAM.

Photos Below

TWO VIEWS OF THE HELICOPTER TRAILER CONSTRUCTED UNDER THE SUPERVISION OF CAPT. DONALD J. O'TOOLE, ARMY AVIATION MAINTENANCE SUPERVISOR, KANSAS-ARMY NATIONAL GUARD, TOPEKA, KAN. THE TRAILER HAS SHORT HAUL AND OVERLAND CONFIGURATIONS.

Space restrictions in the July, 1959 "AAAA Annual Meeting Issue" prevented the publication of the July, 1959 ODCSOPS Letter. It appears below.

Dear Army Aviator,

■ All of the contracts for FY 60 instrument training have been awarded and this program will again be in full swing next year. We will train 675 aviators through this medium, at 4 contract schools, located in Second, Third, Fourth and Sixth Army areas. A review of our progress toward instrument qualification for all aviators indicates we now have 3,000 instrument qualified aviators of 4,800 officer aviators in the active Army. This represents about 63% of our total number of officers. FY 60 will require each Army area to exercise great care in seeing that their quotas to instrument school are filled. With only 1800 non-instrument rated aviators now in the Army we may anticipate difficulty in having these officers available at the right time and the right place for instrument training.

In this connection the continuation of the contract instrument training concept should provide an increasing number of school spaces for our reserve component aviators. As the active Army requirement decreases, this is a golden opportunity to give instrument training to the reserve officer who has a high potential in the reserve unit. We can aid the program materially in this manner.

* * *

I was extremely pleased with the turn-out of aviators, industry representatives and Army aviation supporters at the First Annual Meeting of the *Army Aviation Association of America*. On the first afternoon, 5 June, *General Orval R. Cook*, President of the Aerospace Industries Association, opened the meeting with a keynote address. He was followed by *Lt. General Arthur G. Trudeau*, the Chief of Army Research and Development, who gave an excellent down to earth presentation on the Army's ambitions in the field of air mobility. The symposium that followed, monitored by *General Cook*, expanded on many facets of the air mobility concept. This was an auspicious beginning for our first meeting.

The following day the Seventeenth Anniversary of Army Aviation was the occasion for other speakers, including *Lt. General Herbert B. Powell* and *Mr. James T. Pyle*, the Deputy Administrator of the Federal Aviation Agency. At noon we had an exceptionally fine luncheon, over 350 in attendance, at which time *Captain James T. Kerr* was recipient of *"The Army Aviator of the Year"* award.

In the evening we had a banquet with over 650 in attendance, including thirteen members of Congress. The highlight of the banquet was a presentation by *Senator John L. McClellan* of *"The James H. McClellan Safety Award"* to *Major Arne H. Eliasson*, the Aviation Safety Officer of Seventh Army in Europe. This memorial award will be an annual presentation sponsored by the AAAA. There were many more events, both business and social. I suggest you talk it over with those who attended.

Prior to entering a four week course in August at the Military Assistance Institute in Arlington, Va., Colonel Hallett D. Edson was promoted to the rank of Brigadier General.

3,000 OFFICERS INSTRUMENT QUALIFIED

COLONEL HALLETT D. EDSON
Acting Director of Army Aviation, ODCSOPS

The First Annual Meeting of the AAAA clearly showed that Army aviation has taken its place as a mature, well developed activity within our combat and combat support forces. Considering a meeting of this magnitude as a major undertaking for any association, it was handled in a superior manner. Participation covered a wide field. The agenda was comprehensive and well executed.

* * *

■ For several months we have been reading and enjoying the *new U.S. ARMY AVIATION DIGEST*. The larger page size now puts our publication on an equal footing wtih other service and commercial publications devoted to aviation. The editors have additional room to feature our articles with more pictures and other suitable illustrations, but this increased size calls for an increase in the number of articles required to make up each issue and that is where we have a chance to show our appreciation for this improved magazine—by better and more frequent support. I urge all of you to take advantage of this opportunity to support our magazine by submitting timely and appropriate articles. The range of subject matter is as broad as the magazine's mission ,which is detailed on the inside front cover. You may communicate directly with the editor-in-chief of the *U.S. Army Aviation Digest* at Ft. Rucker, Alabama. The staff of the magazine stands ready at all times to provide assistance.

* * *

■ Progress in consolidating fixed wing flight training at Ft. Rucker is proceeding in an excellent manner and is on schedule in every respect. Most of the new construction projects are now underway and the remainder will be ready in time for the first class on 11 September 1959. The flying training contract was awarded to *Hawthorne School of Aeronautics* of Moultrie, Georgia. The flight training contractor, *Beverly "Bevo" Howard*, is an old timer in the aviation game, having learned to fly at the age of 16 and having participated in almost every phase of the growth of American aviation since 1930. We are fortunate in securing such an outstanding contractor for the continuation of our primary flight training. Credit for the expert processing of the contract goes to *General Easterbrook* and his entire staff at Ft. Rucker, Alabama.

■ Our last class of primary flight training as Camp Gary finished on 27 June 1959, thus closing a chapter in the history of Army aviation training. All of us owe our sincere appreciation to *Mr. William J. Graham* and his associates for the excellent manner in which they conducted the flight training program since its inception in January of 1957. Although we are parting ocmpany with *Mr. Graham* at this time, we sincerely hope he will maintain his interest in Army aviation and in training activities and that we may have the pleasure of associating with him sometime in the future.

* * *

■ On 24 June we were pleased to review the first reel of a two reel Training Film titled *"What Caused the Crash!"* This project was started over a year ago under the personal monitorship of *Colonel Jim Wells* and has been guided through its tortuous travels by *Mr. Jerry Andrews* of *USABAAR*. I personally feel that this first reel is of exceptionally high quality in both photography and presentation and I have every reason to believe that the second reel will be equally as good. We have needed this film for a long time. It should be shown to all personnel engaged in or responsible for aviation activities. This project is tops and I wish to publicly give credit to all those taking part in its production. The film is scheduled to be realeased for distribution in about forty-five days.

* * *

■ The *U.S. Army Board for Aviation Accident Research (USABAAR)* has assembled a brochure of short talks for *"Army Aviation Safety Officers"* designed to provide source material for conferences on operation, maintenance, weather, medical, supervision, training, personal equipment and materiel. The brochure contains fifty-three ten to fifteen minute presentations which can be condensed or combined to fit your local requirements. You may procure these brochures by direct request to the *Director, USABAAR, Ft. Rucker, Alabama.*

* * *

■ Let me bring you up to date on personnel changes in our office. On the 27th of July *Lt. Colonel Lyle H. Wright* will replace *Lt. Colonel E. Pierce Fleming*, who will join the staff of the Assistant Secretary of the Army, *Mr. George H. Roderick*. On the 15th of July *Lt. Colonel Robert L. Hoffman*, now assigned to the Transportation Corps staff at CONARC, will replace *Lt. Colonel Gerald H. Shea*, who will take command of TATSA at Ft. Rucker. On the 26th of August *Major John F. Aschoff, Jr.*, will arrive for duty, having served for several years in Combat Developments at Ft. Rucker.

I perhaps should also add that my orders to Paris were revoked one day prior to what was to have been my last day of duty in this office. Therefore, I shall see many of you at the AUSA meeting here in Washington in August.

Sincerely,
HALLETT D. EDSON
Colonel, GS
Acting Director of Army Aviation, ODCSOPS

Splinters

by CAPTAIN JAMES I. SCOTT
Test Division, US Army Aviation Board

■ This is the second in a series of articles written from the *Test Division of USAAB*. These articles are designed to keep *ARMY AVIATION* readers informed as to what is being service tested and some of the items programmed for testing in the future. Although the results of the tests cannot be discussed, it is felt that knowledge of what items are receiving Board consideration and their progress in testing will be of material benefit to the reader.

Items which are mentioned for the first time as "being tested" will be described in some detail. They will be referred to in later articles only as their testing is completed.

* * *

The projects listed below have been initiated since the last report:

The Board has received two *YHO-3BR* helicopters. This lightweight, two-place observation helicopter is under consideration together with two other new helicopters (*YHO-1DJ* and *YHO-2HU*) in the same class which were previously tested by the Board.

The *YHO-3BR* has a unique blade hinging design for the three-bladed metal rotor which incorporates a lag and flapping hinge at approximately 40 percent of the blade radius and a flapping hinge near the rotor hub. Cabin space has been held to a minimum by providing headroom in the form of two plexiglass bubbles.

The engine is designed to produce 172 BHP at 2900 r.p.m. with an induction cooling system which eliminates cooling fans and fan belts. At this writing, the aircraft

From the Board

has been grounded and testing suspended pending investigation of an accident incurred by the Navy.

New rotor blades have been recieved for the H-37A. These new blades have 6 degrees less twist and the chord length has been increased 2.15 inches. The addition of an abrasion strip to the leading edge is for protection from dust and adverse weather conditions. Based on these changes, the manufacturer has claimed reduced blade stresses and improved blade stall characteristics.

* * *

In the last report it was stated that *Automatic Stabilization Equipment* (*ASE*) for the *H-21C* was undergoing testing. Pilots of the largest heicopter in Army aviation, the *H-37*, will be happy to note that an electro-mechanical assist is also programmed for them. *ASE* made by two different manutfacturers are now undergoing comparative evaluation testing at the Board.

Tactical Air Navigation System (*TACAN*) has been receiving continued attention here. *TACAN* is presently a standard primary short-range navigation system of the Air Force and Navy and will be required in some form by all aircraft flying IFR on CONUS airways by 1963. The Army has a development program well underway, but service test models resulting from the development program are not yet available although engineering test models are being evaluated. In the interim, a *TACAN* similar in most respects to the development version, has been supplied by a manufacturer to the Board for test at no cost to the Government. It is a two-unit set operating from a 28-volt d.c. source using about 300 watts; 400 cps a.c. from a separate inverter is required for the indicators and cooling blowers. The weight of the installation less inverter is 48 pounds.

Once again the *Equipment Branch* has tackled a wide variety of projects. An evaluation of the Electronic Configuration in an *H-23D* was made to determine whether the production-installed radio sets and antenna group were suitable on a basis of the human engineering aspects and weight distribution. A *Radiac Set* weighing three pounds, installed in low-performance aircraft, is being tested for airborne radiological survey work; gamma dose rates are indicated for either inside or outside the aircraft and a visual warning device is provided to signal a preset dose rate.

Eight-ton skyhooks may be in the offing, but for the present ground anchors are here to stay. A possible replacement for our tie-down kit is being tested. A 4" aluminum spearpoint with a cast-in steel anchor pin is driven into the ground, carrying with it a looped guy wire. A steel rod is used to drive this assembly into the ground until just a loop of the guy wire remains above the ground as a tie-down fastening. The *Ground Anchor Kit* under test contains 50 anchors and 50 guy wires, driving rods, and holding handles.

* * *

Items which are service tested by more than one board are called *Multiple User Test items*. Such an item currently in testing the *Life Preserver*. Nine life preservers, furnished by the Army Transportation Corps, Air Force, and Navy are being tested for compatibility with aircraft, seats, parachutes, and pilot's control movements.

"Some Like It Hot" and particularly *Infrared Equipment*. For the first time the Board is testing an *Airborne Infrared Equipment* (and more are coming). New in Army application, "thermal photography" can reveal military targets under certain conditions with much better results than conventional methods now in use.

Since the last report, testing was completed on fourteen

projects. Two of these projects were aircraft: the *YH-40* (*HU-1*) turbine powered helicopter in the utility class; and the *YHO-2HU*, lightweight two-place helicopter in the observation class.

* * *

In the *Instrument Branch*, the *"SaFeather System"* (which provides an emergency feathering signal when an engine develops less power than required), a *Weather Avoidance Radar*, and a *TACAN Set* have been tested.

Since 1957 the Board has been engaged in an extensive *Helicopter Instrument Program*. This program was established to test instruments, ASE, and automatic control aids to determine instruments and equipment required and the optimum instrument presentation available, and to prove the capability and practicability of instrument operations.

Eight sub-projects and three separate projects covered testing of ten different instruments and systems in the H-21, H-34, H-37, and HU-1 for over 1400 hours of hood and actual instrument flying hours. This program is now accomplished with the completion of the Optimum Instrument Presentation and Panel Arrangement.

For the record, the following items of equipment were covered by this project: *Natural Flight Attitude Indicator, ARCON (automatic rudder control), Instantaneous Vertical Speed Indicator, ASE, Flight Director System, Attitude Indicator, All-Attitude and Heading Indicator, Radar-Navigation Set, Absolute Altimeter, and Electric Gyro Instruments with Engine-Driven Alternator.*

* * *

The remainder of the completed projects came out of the *Equipment Branch*: a 15-pound transistorized *Aircraft Intercommunication Set* installed in sets of from one to six interconnected stations and integrated into the radio equipment of the aircraft; a *Radio Set* designed to meet the requirement for a double sideband (AM) tactical high-frequency radio in Army aircraft; an *Electrically Heated Windshield* for the L-23D; a *Parapod* for the KA-20 Camera; the *KA-30 Camera System;* and the *Electronic Confifguration in the H-23D.*

* * *

Some of the projects programmed for Board testing are the *LONG TOM Configuration on the L-23C*, now declassified, which incorporates the principle of either one or two "floating wing panels" designed to carry fuel or other loads. The panel, attached by a hinge to the wing tip, is self-supported in flight and may be trimmed to fly in a predetermined position in relation to the airplane wing; the *S-60 Flying Crane*, designed to lift 12,000 pounds; the *YAC-1DH "Caribou"* (which has had some slippage in the original testing dates because of design changes in the empennage; however, Board personnel are preparing to leave for the factory to become checked out and pick up the aircraft this month); an *Electrical RPM Control* for the H-21 and H-34; and *Aircraft Orientation Instrument* to compensate and swing compasses; and an air conditioned portable *Air Traffic Control Set* consisting of a visual control shelter and a radar control shelter, each unit equipped with the necessary major components to conduct operations at major instrumented tactical Army air fields.

MAINTEN

Altimeter Error

■ Altimeters of the pressure actuated sensitive types, used in aircraft to weigh the volume of air over them—commonly known as altitude measurements—are subject to calibration changes like any other mechanically operated instruments. The accuracy of the altimeter is affected mainly due to aircraft vibration effects on the component parts and the shifting of the internal stresses of the aneroid (diaphragm), including hysteresis. Usually an appreciable difference, about 50 feet, between the indicated altitude for the field elevation and the barometric pressure setting is indicative of the calibration shift. A like amount, or even more, may become noticeable after prolonged high altitude flights, due to the expanded bellows failing to return to their original position. This is known as *Hysteresis* (metal lag).

It is recommended that altimeters be recalibrated by approved maintenance shops, when readjusting the barometric pressure setting scale becomes necessary, to within the instrument manufacturer's tolerances which, incidentally, coincide with applicable FAA (Federal Aviation Agency) and DA directives, e.g., pre-flight section of dash 6 handbook for *SIOUX* (H-13) helicopter—you'll see it shortly.

The present day accuracy required for maintaining a flight altitude and for terrain clearance, and executing take-off and landing procedures, makes it *imperative* that both the altimeter and the static pressure source be properly calibrated and maintained, respectively.

The investigation findings of a most recent "Clobber" at night, in which the aircraft was literally flown into the ground, point up the need for Operational Maintenance, and pilot personnel to take HEED. The reported calibration of the altimeter involved in the accident was as follows:

Test Point in feet	Altimeter Reading in feet	Error in feet
1000	150	-850
2000	1240	-760
3000	2300	-700
4000	3275	-725
5000	4300	-700
6000	5275	-725

In view of these facts, all aircraft maintenance people are strongly urged to take the necessary steps to have their altimeter calibration checked periodically, as well as the "little window" setting, and to properly maintain the static pressure source.

ICE TIPS . . .
. . Mike Button

"Not" not Noted

Old Mike hopes nobody was misled by the omission of the word "not" in the 7th line from the bottom of the article about *"BRAKE TROUBLES!"* in the column, May 59.

Seems as though the typesetter is not a negative person and he's thrown out all his negative adverbial particles, including not, nought, etc.

So, after inserting the word expressing negation, the line should come out something like this: "However, if this short service type does NOT exist in the field, then the high . . . "

Raven Cyclic Scissors

All D Model H-23 helicopters with cyclic scissors 34141 and 34141-5 installed have a new time limitation of 275 hours. *TM* 1-1*H*-23*D*-1009 establishes grounding of the helicopter after 275 hours flying time have accrued on these scissors, until replacement has been accomplished. This is of such an *URGENT ACTION* that if you cannot compute the hours on the scissors from available data but you do know that the aircraft's flying hours are above 275—ground it until you can replace those scissors, as their fatigue life is limited.

To do the job, you'll need:

2, FSN 1560-319-2953 (34141) Scissors, Lower Cyclic

2, FSN 1560-624-6149 (34141-5) Scissors, Lower Cyclic; and your current -2 Handbook.

Also, if you find your dash 6, under Section VI, System 3 with a figure of 2500 hours, or any other figure for that matter, change it to 275 hours and be sure you do not fly this bird over the new time limitation.

When this problem has been resolved and we can safely establish a higher time of life on these scissors, all organizations will be notified.

Need Oxygen?

Some *MACs* (*Maintenance Allocation Charts*) give out with a bit of erroneous poop, especially the dash 18 for the *Seminole*, which tells you that the replacement of oxygen cylinders is a 3d echelon responsibility. 'Taint true!

The responsibility for replacing oxygen cylinders is one placed upon organizational maintenance (1st and 2d); however, field maintenance (3d echelon) is responsible for replacing the components. Remember, the Engineers, not the Transportation Corps, are charged with the responsibility of actual servicing or refilling those empty oxygen cylinders.

Control Locks (Otter)

Anybody having trouble wtih the rudder control lock cable being too short? Well, the fix is found very nicely laid out in *TBAVN* 23-53, under Project 13.

As a parting shot—remember carburetor ice is more dangerous in helicopter operations than in fixed wing; however, carburetor ice can cause you an unscheduled autorotation or an emergency landing anytime; even with outside temps as high as 78°F.

Informationally yours,
MIKE

You Think You Have Troubles? Read This One!

A minor epic in the story of man vs. untamed nature has been embalmed—hopefully, forever—in a file of 3d Aviation company maintenance reports, with the laconic entry, *"Grounded on account of bees."*

The story began one afternoon last week when *Sp/5 Bruce E. Dyer*, a crew chief, inspected one of his two-man H-13 helicopters and found a swarm of bees clinging to the control console and radios. (The bees had been able to enter because the helicopters fly without doors during hot weather.)

Dyer made the appropriate entry on his maintenance report, and airstrip personnel—with a certain amount of good-natured banter—began trying to get rid of the swarm. *"We made several attempts,"* Dyer recalls. *"A lot of people were standing around, getting stung and giving advice, but it didn't do any good."*

In the evening a German beekeeper was called, and during the evening and the following morning he set up a hive in the helicopter bubble and tried to smoke the bees into it. This got rid of a few, but he didn't capture the queen bee so most of them stayed.

Wha't more, some of the ones that had been removed flew back into two other helicopters nearby where they holed up in the crannies of the controls and defied authority. Faced with the prospect of creeping immobilization, the aviators put the doors back on the helicopters and let matters rest for a day.

Interest in the problem was spreading by this time. *"We had the whole company down there working on it and coming up with suggestions—none of which worked,"* explains Sp/5 Ernest Kerskie.

Early Sunday morning *Specialist Dyer* and *Sgt. Jasper Floyd* advanced again on the swarm, armed this time with a CO_2 fire extinguisher. Success was promised briefly as *Dyer* and *Floyd* "froze" the swarm and scooped the bees out onto the ground. But as they picked up the last hangers-on out of the controls, the morning sun thawed the swarm and undid their efforts. The bees made a beeline to the 'copter.

The aviators gave up, sealed the three helicopters as tightly as possible, and waited for suffocation or starvation to break down resistance. On Monday night, the German beekeeper returned, finally trapped the queen bee and with her the rest of the swarm, took them far, far away.

months takeoffs

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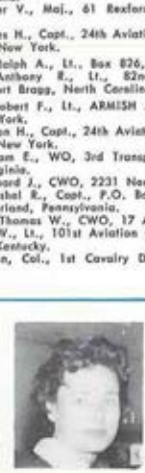

■ *You may have noticed the gradual change in the editorial contents of "AA"—more columns with detailed information in specific areas. This change coupled with a definite space problem have virtually halted the "unit report, C.O., Exec, etc." type of submission. We haven't lost sight of the individual—we simply haven't grown as fast as this field. Though not as "personal" as before, it is our hope that you find "Army Aviation" to be more informative.*

—Dorothy Kesten, Publisher

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