

ARMY AVIATION

JULY 31, 1961



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*chip*nook

PROGRESS

NO. 2 CHINOOK



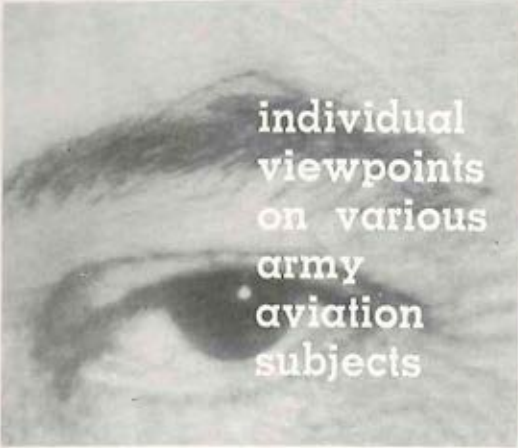
SUMMARY

IS ROLLED OUT

July, 1961



The second Chinook has been completed and is now being readied to commence the flight test program.



individual
viewpoints
on various
army
aviation
subjects

OPEN LINE

PRESTIGE SYMBOLS

Do you regard the Army Aviator Badge as a symbol of status within Army aviation? If you do you are in a rapidly dwindling minority.

As each new and larger aircraft enters the system, qualification in each becomes a new symbol of status.

I recall that at one point in our brief history the symbol of prestige was twin-engine qualification. Twin-engine training was reserved for the few, and entrance into this select group was jealously guarded. Time—and additional twin-engine aircraft—made it mandatory that more and more aviators be "twin qualified." The lustre here has dimmed.

It would seem that we could now do away with all "prestige symbols" and simply fly the aircraft required by the assignment or mission. But such is not the case. Today's Army aviator, with few exceptions, seeks to gain in status by becoming qualified in as many aircraft as is possible. Not that he intends to—or can—remain proficient in all of these aircraft, but the list looks good on the back of the 759.

Fortunately, we have been in the posi-

tion of having relatively inexpensive aircraft that develop very low impact forces in a crash. This is not true of the new generation of Army aircraft. Can we afford to wait for fatalities and mounting costs before we make some needed changes in the regulations?

In examining three recent accidents, we learned that the three aviators involved were qualified in the following number of aircraft: Number One—9; Number Two—9; Number Three—8.

Number One aviator had flown but 4.1 hours during the preceding six months in the type of aircraft involved in the accident, with qualification in June, 1959.

Number Two aviator had flown no hours in the preceding six months in the type of aircraft involved in the accident. Qualification, December, 1956.

Number Three aviator had flown 4.6 hours in the preceding six months in the type of aircraft involved in the accident, with qualification in June, 1954.

The total cost of the above accidents—\$46,775.79. Could it have been that they were not proficient?



THE
ARMY AVIATION ASSOCIATION
OF AMERICA, INC.

**1961
ANNUAL
MEETING**

COMMEMORATING THE
100TH ANNIVERSARY
OF AIRBORNE OBSERVATION
BY THE U. S. ARMY

SEPTEMBER 4-5, 1961

SHERATON-PARK HOTEL

WASHINGTON, D. C.

PRESTIGE/Continued

Paragraph 12d, Section III, AR 95-1 requires that commanders of aviation units or elements be qualified as first pilots in each type of aircraft organic to the unit or element. In compliance, commanders of Division Aviation Companies are required to be qualified in the L-19, L-19D, L-20, H-13, H-19 or H-34, and the L-23 (SLAR). One cannot question that the commander does pursue "qualification," but whether or not he achieves and then maintains proficiency in all models is debatable.

The exercise of command in itself is a full-time job. Most aviation companies have as much paperwork as a battalion, and in most cases, have more equipment than many specialized battalions. Yet we expect this commander, as a first pilot, to be qualified in all of these aircraft—and, that's not all, he must maintain an instrument certificate at the same time.

The commander faces this dilemma: he must either command the company and let his proficiency suffer, or he must maintain his proficiency and rely upon others to exercise some of his command responsibilities. It is time someone took a hard look at this rather useless regulation.

The primary objective of the aviator rotated to ground duty is to increase his branch proficiency. Primary duties, especially when performed in competition with other officers who have performed these ground duties for years, demand maximum effort and do not leave sufficient time for the extensive flying required for a rotated aviator to maintain his proficiency in several aircraft. Under these circumstances, it is logical to restrict rotated aviators to one aircraft—or, at the most, one rotary-wing and one fixed-wing aircraft.

If Army aviators are to bring credit upon themselves and upon Army aviation while they are serving in a ground assignment, they must be free to devote virtually all of their time to their primary job—their ground assignment. The requirement that these rotated aviators meet the same minimum requirements as those on full-time flying assignments doesn't help.

There is certain to be some disagreement with the stated position that aviators maintain both aviation and branch qualifications. The acceptance of the aviator as a specialist within his own branch is not far fetched, or "way out." Why isn't this considered?

As the more complex equipment programmed for Army aviation enters the system, the increased passenger loads and the increased costs of the aircraft will demand an increased proficiency by all concerned. Although we do not like but tolerate L-19 accidents involving two men and some \$12,000 in aircraft, can we tolerate *Caribou* and *Chinook* accidents involving dozens of men and unit aircraft costs involving several hundred thousand dollars?

Under these circumstances, a new line of thought must be taken concerning qualification and proficiency. We must realize that "qualified to fly" does not imply "proficient to fly." We should revise our regulations to place new emphasis on checkouts, qualification, and proficiency.

Who are we trying to impress? Certainly not ourselves. The only people we should try to impress are the people we support.

ARCHIE W. SUMMERS

Major, Infantry

Seventh Army Aviation Safety Officer

APO 46, N.Y., N.Y.

PLAN AHEAD!

Commemorating the 100th Anniversary of Aerial Observation in the U.S. Army, the Third Annual Meeting of the AAAA will be held September 3-5, 1961, at the Sheraton-Park Hotel, Washington, D.C. The meeting will be followed by the AUSA Annual Meeting on September 6-8. Plan to be at the Sheraton-Park for both meetings!

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These Aircraft will provide primary and crew training, survey, ambulance, supply drop, passenger and cargo transportation into remote areas.



DE HAVILLAND AIRCRAFT OF CANADA
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FY '61 FUNDS UNDERWRITE 'COPTER ARMAMENT

I am happy to report that a recent series of conferences between CONARC and the Army staff have given much needed guidance and impetus to our helicopter armament program. A five-year program has been established and, as a beginning, machine gun kits and SS-11 missile kits have been purchased out of FY '61 funds. I know that all of you in the field have waited for a long time to see production of standard items, as opposed to "bread board" models born of expediency.

We hope that the period when Army pilots were a familiar sight in the graveyard of World War II aircraft, reclaiming guns, mounts, sights--anything that might conceivably work on a helicopter--is a part of history.

The early pioneers of the armed helicopter have demonstrated and proven their concept. The program now is aimed at standardizing and procuring the best hardware immediately available while we continue a strong R&D effort to keep pace with the other developments in ground combat. This next year will see additional efforts of all interested agencies being focused on the armament program. In a later letter I hope to go into greater detail on this important subject.

THE PATH OF PROGRESS

It seems that the path of progress is always strewn with new problems. The L-19 pilot seldom had to consider runway temperature seriously, and I know of no case where his gear wasn't "down and locked." As we move toward more sophisticated and complex aircraft, there are many factors that must be taken into account as a mark of the professional.

A recent major accident, caused by premature gear retraction during the take-off roll, points to a need for greater consideration of load factors, runway temperature, and density altitude.

The aircraft was a fully serviced (14,000

BY
BRIGADIER GENERAL
CLIFTON F. VON KANN
DIRECTOR OF ARMY AVIATION
ODCSOPS

pounds gross weight) AO-1 Mohawk. Runway temperature was approximately 95 degrees and density altitude was 1,700 feet. Intending a normal (as opposed to maximum performance) take-off, the pilot rotated the aircraft to climb attitude at 70 knots and immediately retracted the landing gear. The aircraft settled to the runway on its belly and slid to a stop. Fire did not occur, although the right pylon tank was scrubbed through on its bottom and leaked considerable fuel.

A check of the Dash One reveals that the aircraft, in its load configuration, would have required a ground roll of approximately 2,200 feet and an air speed of approximately 100 knots for take-off under the existing altitude, wind, and temperature conditions. The point at which the landing gear was retracted and the aircraft began scraping the runway was approximately 900 feet from where the take-off roll was started.

The so-called "hot" pilot may get away with snatching up his gear in a lightly loaded aircraft on a cool runway. Put the same pilot in a heavily loaded aircraft and the results will be written about in accident reports. (FY '61/Continued on the Next Page)

dent statistics. Prevention of this type of accident rests with "cool" pilots with the patience to wait until their aircraft are definitely flying before retracting the gear.

THE CASE FOR THE 80/20 AVIATOR

There is a related issue which is raised from time to time in connection with the newer and more complex aircraft. "Can the Army afford a 50-50 aviator with the complex equipment now coming into the system?"

The career program, on which many have worked hard and long, provides that the aviator get 15 to 20 per cent of his service with ground troops, meanwhile maintaining his proficiency. At the very worst, this should mean we have 85-15 or 80-20 aviator and, at best, means a well-rounded officer of wide experience--experience including staff and command--and one who has the wisdom and insight necessary to guide a growing program to the advantage of the Army as a whole.

There is no doubt that we will be able to use a large number of aviators who devote practically their entire career to flying. The Warrant Officer program has recognized this need. But, I think the goal of the majority of our commissioned aviators must be a career pattern which should make them acceptable in the highest jobs the Army has to offer. We can use 100 per cent pilots to make the AIRPLANES go, but we need others of broad experience and imaginative vision to make ARMY AVIATION go.

I know there are many problems associated with our present career pattern and personnel policies. We are making every effort to improve the general well-being of the rated officer--especially the company grade officer. But I do not believe the answer lies in 100 per cent cockpit jobs for every aviator for the rest of his career. Pilot technique alone is not enough to develop an air-minded Army.

'THIS CAUSED A FEW RAISED EYEBROWS ...'

Putting program philosophy aside for the moment, I think I can lay claim to one "first" in Army aviation without violating the proper image of dignified modesty which all Army aviators possess.

Therefore, with quiet pride, I claim to be the first Army aviator to take his annual written examination while flying in a jet--and pass it. While this record isn't in a category presently recognized by the National Aeronautic Association, nor do I expect an engraved silver plaque, I thought you might be (yawn!) interested.

On a recent trip to the west coast I was booked on a Boeing 707, and since I had procrastinated as long as possible on the exam, I decided to tackle this Herculean task en route.

Fortunately, the tourist section was not overly crowded, so I spread my paraphernalia over several seats -- maps, charts, computer, Jeppesen, regulations, score card, ruler, etc. This caused a few raised eyebrows from the nearby passengers, who assumed I didn't trust the navigator forward.

A nice old lady asked me to tell her when we passed over Akron because she had 3 grandchildren who lived there. Slightly disconcerted, I marked "Akron" as an answer to question 11. At this point my Jeppesen ruler dropped into a coffee cup and acquired a permanent five degree twist.

The hostesses, who must be used to odd characters, decided to avoid me as much as possible and reluctantly served me dinner at the very moment I thought I had a map problem almost solved. Later it took me about thirty minutes to read myself back into the problem and solve it (with a "K" factor for the twist in the ruler.)

There were many other incidents, but
(FY '61/Continued on Page 448)

ASSIGNMENT: STRIKE-AND-FLEE

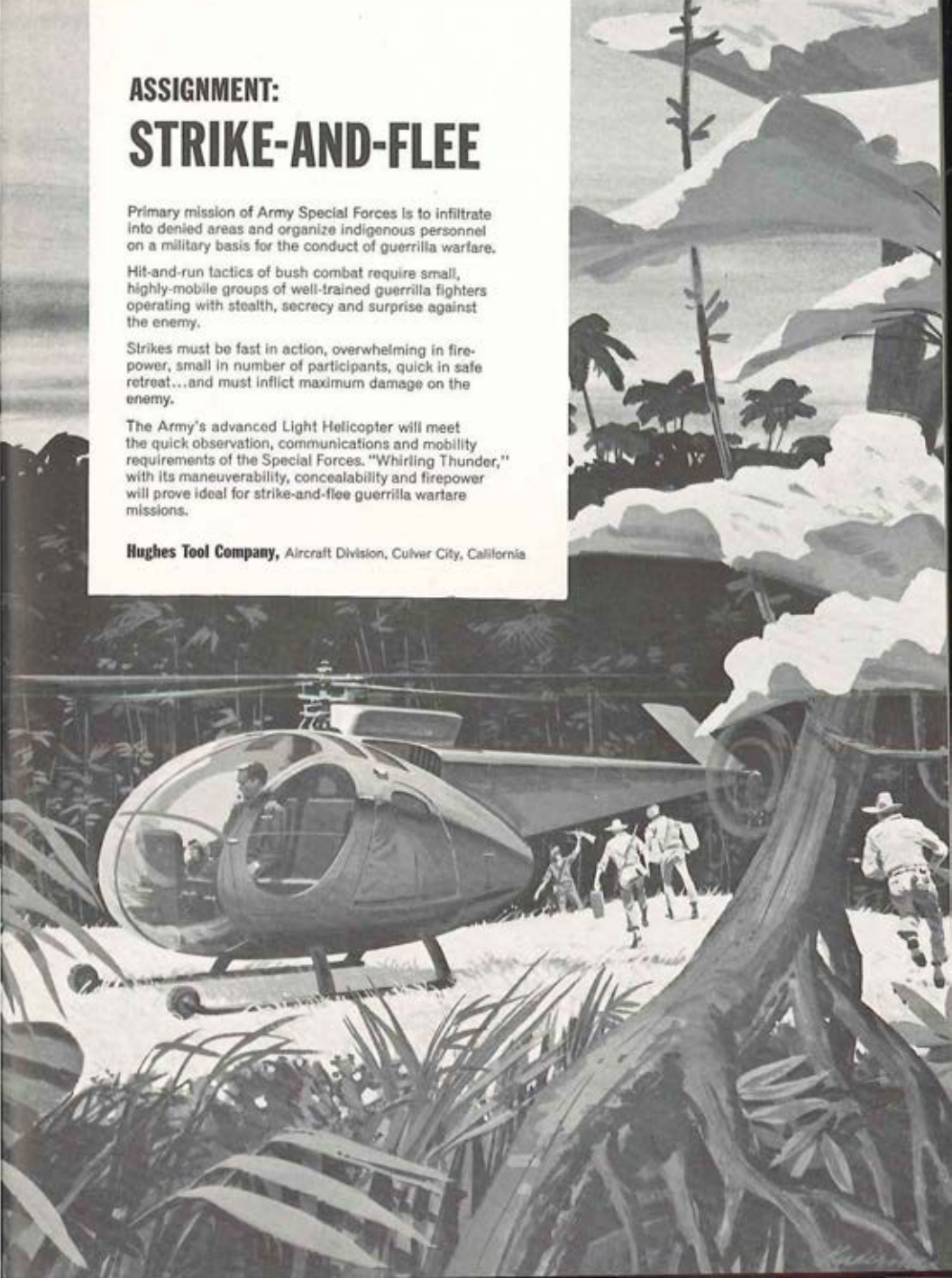
Primary mission of Army Special Forces is to infiltrate into denied areas and organize indigenous personnel on a military basis for the conduct of guerrilla warfare.

Hit-and-run tactics of bush combat require small, highly-mobile groups of well-trained guerrilla fighters operating with stealth, secrecy and surprise against the enemy.

Strikes must be fast in action, overwhelming in fire-power, small in number of participants, quick in safe retreat...and must inflict maximum damage on the enemy.

The Army's advanced Light Helicopter will meet the quick observation, communications and mobility requirements of the Special Forces. "Whirling Thunder," with its maneuverability, concealability and firepower will prove ideal for strike-and-flee guerrilla warfare missions.

Hughes Tool Company, Aircraft Division, Culver City, California



LOOK TO **BELL** FOR LEADERSHIP, TODAY AND TOMORROW, IN



Turbine-powered Sioux, 1954



T-53 turbine-powered UH-1, 1956



T-63 turbine-powered UH-1M, January, 1961

TURBINE-POWER DEVELOPMENT...IN CONTRACT PERFORMANCE..



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Bell's proven production leadership has provided helicopters of greater reliability, dependability and economy. And consistent achievement of schedules, contract prices and mission-suitability has kept Bell a part of the Army's tactical helicopter plan. The Army's superior front-line aviation capabilities are evidence of this successful Army-industry relationship.



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FT. RUCKER REPORT



By

MAJOR GENERAL ERNEST F. EASTERBROOK

*Commanding General, U.S. Army Aviation Center
Commandant, U.S. Army Aviation School*

June was a month of significant birth-days for Army aviation - the 19th anniversary of Army aviation itself, the eighth birthday of the U.S. Army Aviation School, and the seventh anniversary of the School here at the Army Aviation Center.

While officially recognized as having been born June 6, 1942 - the date organic aircraft were first authorized in the Field Artillery for air observation - Army aviation can trace its history back to the Civil War. In 1862, Professor Thaddeus S.C. Lowe rode a basket beneath a gas-filled balloon over Confederate Army lines to become America's first aerial artillery observer.

Lowe Army Airfield, where hundreds of future Army aviators receive their primary fixed-wing training every year at the home of Army aviation, is named in honor of this aviation pioneer.

After the Wright Brothers' famous flight in 1903, the airplane soon replaced the balloon, and by World War I, most aerial reconnaissance missions were done by airplane. In the years between World Wars I and II, there was an increasing demand for better observation of artillery fire than the standard Air Corps observation could provide.

One of the most prominent voices raised for this cause was that of Brig. Gen. William W. Ford, now retired. Then a major with several years piloting experience, he advanced the idea of using light aircraft and urged that such aircraft and their pilots be a part of the units they would serve.

He interested Maj. Gen. R.M. Danford in his project and in 1941, Gen. Danford saw the service such aircraft could perform for the Army when some light aircraft manufacturers provided small planes, flown by civilian pilots, for use in the Louisiana maneuvers then taking place.

General Danford conducted tests, and as a result of these tests, a directive was issued which established organic air observation for Field Artillery by the War Department June 6, 1942. The rest is history.

During World War II, the ground forces took their Cubs with them through the African desert, the rugged hills of Italy, into the jungles of the Pacific Islands, and over the beaches of Normandy. The small, unarmed aircraft directed artillery fire, flew patrols, evacuated wounded, supplied units surrounded by the enemy, and flew administrative missions.

FT. RUCKER/CONTINUED

Army aviation - having proven itself during World War II - continued growing even after hostilities ceased and was permanently adopted as organic equipment in artillery, infantry, armor, engineer, ordnance, signal, transportation, and medical services.

In Korea, the versatile helicopter soon found a place for itself in the Army Aviation Program - an ever-growing place that has now become indispensable. From the Piper Cub, Army aviation has grown to a fleet of different aircraft, each designed for a special job. And here at the home of Army aviation, the future looks brighter with each new aircraft development as Army aviation continues to mature.

PROFILE: COL. W.R. WILLIAMS

Col. Warren R. Williams, Jr., the new Assistant Commandant here at the School, brings to his assignment an impressive background in aviation. Col. Williams, who was Deputy Assistant Commandant prior to the departure of Col. Delk M. Oden, learned to fly before World War II when he was stationed in Hawaii with the 19th Infantry Regiment. He obtained a private license there.

In January, 1947, Col. Williams went to San Marcos, Texas, to enter Aviation Flight Training. Upon receiving his pilot's rating at Fort Sill, Okla., he was assigned to head the Flight Department of the Air Training Department at that post. His next assignment was as Army Aviation Officer, Second U.S. Army, Fort Meade, where he served until July, 1950, at which time he attended the Air Command and Staff School at Maxwell Field, Ala.

In Korea he served as the G-2 Air Officer in Joint Operations Center until the latter part of April, 1952. In July, 1954, Col. Williams was assigned as Chief, Army

Aviation Section, O & T Branch, G-3 Division, Department of the Army. When that division became a separate directorate under the Deputy Chief of Staff for Military Operations, he served as Deputy to Maj. Gen. Hamilton H. Howze.

In Europe he was Army Aviation Officer under G-3 USAREUR from September, 1956, to May, 1959. He then served through April, 1960 as Chief, O&T Branch, G-3 Division, Hq, USAREUR.

Col. Williams returned to the U.S. in August of 1960 and was assigned to the School as Deputy Assistant Commandant. He is helicopter, instrument, and twin-engine qualified and holds the DFC for service in Korea.

TATSA ENDS MOHAWK TEST

Shortly after Army aviation celebrated its birthday, the U.S. Army Transportation Aircraft Test and Support Activity here observed its fifth anniversary. First organized July 1, 1956, USATATSA provides Army aviation with an organization for conducting logistical evaluations on new model and currently operational Army aircraft, as well as testing and evaluating aircraft tools, ground handling equipment, and other allied products.

On its birthday, the unit completed a 1,000-hour test on the AO-1 MOHAWK, the Army's new twin-engine fixed-wing observation aircraft. The tests were made to remedy any deficiencies, to standardize maintenance techniques and equipment, and to provide the necessary data for the publication of handbooks on the operation of the aircraft.

Captains John Selfe and Paul Flanders, who flew the 1,000th hour, were congratulated by Lt. Colonel A.J. McDermott, TATSA's commanding officer and several representatives of the Army Transportation Material Command.

(FT. RUCKER/Continued on the next page)

JULY
1961



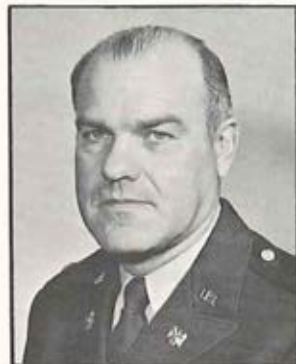
TATSA COMPLETES MOHAWK LOGISTICAL TEST



COLONEL WARREN R. WILLIAMS



AIRBORNE FIRE SUPPRESSION DEMONSTRATION



LT. COLONEL WAYNE N. PHILLIPS



BLOOD DONATION RECORD ESTABLISHED

FT. RUCKER/CONTINUED

RED CROSS RECORD

Army Aviation Center personnel chalked up some new records when they rolled up their sleeves and gave 1,152 pints of blood to the Birmingham Red Cross Bloodmobile which visited here in June. It was the largest number of donations in any one day at a military reservation in the Birmingham district, and was also a record for the southeastern U.S. Red Cross area, which includes eight states.

The installation record had previously been held by Fort McClellan, Ala., with 1,059 pints given and Fort Campbell, Ky., held the southeast record for a two-day drive that collected 1,124 pints.

PRECISION TEAM RETURNS

The Aviation Center's U.S. Army Helicopter Precision Flight Demonstration Team returned from the International Air Show in Paris where they were among top aviators from all over the world who took part in the show held at Le Bourget Airport in Paris.

Members of the now world-famed team were Captains Eugene S. Pedrick and Billy L. Hill, 1st Lt. James R. Beck, and CWOs Frank Smith, Richard S. Seefeldt, and Paul J. Murphy.

'PREMEDITATED SUICIDE'

Two members of the Aviation Center's

U.S. Army Board for Aviation Accident Research - Maj. Raymond P. Johnson and Mr. William Christian - packed their bags and left for a speaking tour of Alaskan Command units in June. While in Alaska the USABAAR team also visited the U.S. Army Aviation Board's Arctic Test Center.

Maj. Johnson chose as his subject, "Premeditated Suicide," concerning accidents with flights so poorly planned that mission success was improbable. Mr. Christian spoke on maintenance subjects with particular reference to the HU-1A and the common maintenance problems now encountered with the new aircraft in the system. Maj. Johnson is Chief of the Board's Analysis and Research Division.

NEW R/W DIRECTOR

Lt. Colonel Wayne N. Phillips recently took over a key position when he assumed the directorship of the U.S. Army Aviation School's Department of Rotary Wing Training. He replaced Colonel Oliver J. Helmuth who became Director of Instruction for the School.

A veteran of 27 years Army service, Colonel Phillips wears the Master Army Aviator Badge and was the 13th master aviator in the Army. He has been associated with Army aviation since 1943.

ERNEST F. EASTERBROOK
Major General, GS
Commanding General
U.S. Army Aviation Center

EUSTIS H-21 UNIT DEPARTS FOR ALASKA

FORT EUSTIS, VA. -- The 65th Transportation Company (Light Helicopter) and the supporting 18th Transportation Detachment (CHFM) are departing Fort Eustis for assignment to Fort Wainwright, Alaska. Nearly 200 officers and men and twenty H-21 "Shawnee" helicopters organic to the 65th are involved in the move. Major Samuel J. Cockerham, Company Commander, reported that the units are to complete the 3,700-mile move by mid-August and have engaged in lengthy preparations involving the specialized training of personnel and the winterization of equipment. ■■

ONE MILLION!

One million student training practice touchdown autorotations! The one million mark was reached at the USAPHS the afternoon of July 5 when Warrant Officer Candidate Dudley D. Moss of Class 61-2W-A successfully completed a solo touchdown autorotation at Stagefield No. 2, Camp Wolters, Texas.

WOC Moss, a Reserve Master Sergeant from Alexandria, Virginia, is on active duty at the USAPHS for training as a helicopter pilot and the coveted wings of an Army aviator.

In civilian life he is a postal carrier in Alexandria, in which capacity he has been employed for the past ten years. Pictured at the right is WOC Moss and the H-23 "Raven", one of a fleet of 156 such aircraft used for training at Camp Wolters, in which the one millionth autorotation was accomplished.



ANOTHER MILESTONE

This occasion marks another milestone in the history of the USAPHS. In over four and one-half years of operation, the school has graduated 3,497 helicopter pilots. Of this total, 1,190 were in "Aviator" classes, i.e., students without prior military flying experience, such as recent ROTC and OCS graduates and Warrant Officer Candidates.

The other 2,307 graduates were in the

By COLONEL JOHN L. INSKEEP
Commandant, U.S. Army
Primary Helicopter School

"Qualification" courses, i.e., rated Army aviators who were already fixed-wing qualified and who were further schooled in rotary-wing aircraft as an additional qualification.

Currently, Warrant Officer Candidate classes receive 111 hours of flight instruction over a 20-week period, including four weeks of intensive OCS-type pre-flight training. Aviator classes also receive 111 hours of flight instruction, and are assigned to the school for 16 weeks.

Both the WOC and the Aviator classes proceed from Camp Wolters to Ft. Rucker, Alabama, for an additional 14 weeks of training in Phase II. There the students are transitioned into cargo and utility type helicopters, are introduced to radio



THE CANADIAN DEPARTMENT OF DEFENCE PRODUCTION HAS ANNOUNCED PLACEMENT OF A PROCUREMENT ORDER FOR TWENTY-FOUR, PERFORMANCE-PROVEN, LIGHT OBSERVATION HELICOPTERS. □ THE SAME ROTORCRAFT HAS BEEN THE CHOICE FOR GOVERNMENTAL AND COMMERCIAL USE IN MEXICO...COLOMBIA...ETHIOPIA...CHILE...AUSTRALIA...PUERTO RICO...ECUADOR...MOROCCO...ARGENTINA...RHODESIA...INDIA. THE HELICOPTER—THE MOST POWERFUL IN ITS CLASS—IS THE 12E. THE MANUFACTURER:

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MILLION/CONTINUED

navigation and instrument flight procedures, and study the tactical employment of helicopters before being graduated as full-fledged Army aviators.

The Qualification classes are of 10 weeks' duration, and include approximately 80 hours of flying time. These aviators are assigned to the USAPHS on a TDY status, and return to their parent units upon graduation from Camp Wolters.

BASIC SCHOOL MANEUVER

In all classes, the autorotation maneuver is an integral part of the flight training. Graduating students are soloed in the techniques of hovering, straight-in and 180 degree type autorotations at the several stagefields available to the school.

A high degree of proficiency in sod touchdown area autorotations is a "must" before graduation.

In amassing 1,000,000 student training autorotations, the USAPHS has flown over 365,000 helicopter hours. Currently, approximately 900 autorotations are being accomplished at Camp Wolters each training day.

The value of the touchdown autorotation as a training vehicle has long been a point of contention, and the pros and cons generate equally verbose arguments.

RECORD JUSTIFIES USE

This statistic from USAPHS records and experience is offered for consideration:

Of the 96 major and minor helicopter



accidents experienced by the school, 37 were the result of practice touchdown autorotations, and 15 were actual forced landings. THIS AMOUNTS TO A PERCENTILE FIGURE THAT IS QUITE IMPRESSIVE - 0.000052 OF THE NUMBER OF AUTOROTATIONS PERFORMED.

A chipped vertebra is the only injury received. We of the USAPHS feel these figures substantiate our firm belief that the maneuver more than justifies its retention in the training program.

Today, the Army is increasingly interested in air mobility and the tactical possibilities of sky cavalry. Every change in combat division TO&E's reflects this added interest with continued additions of helicopters and their airborne capabilities.

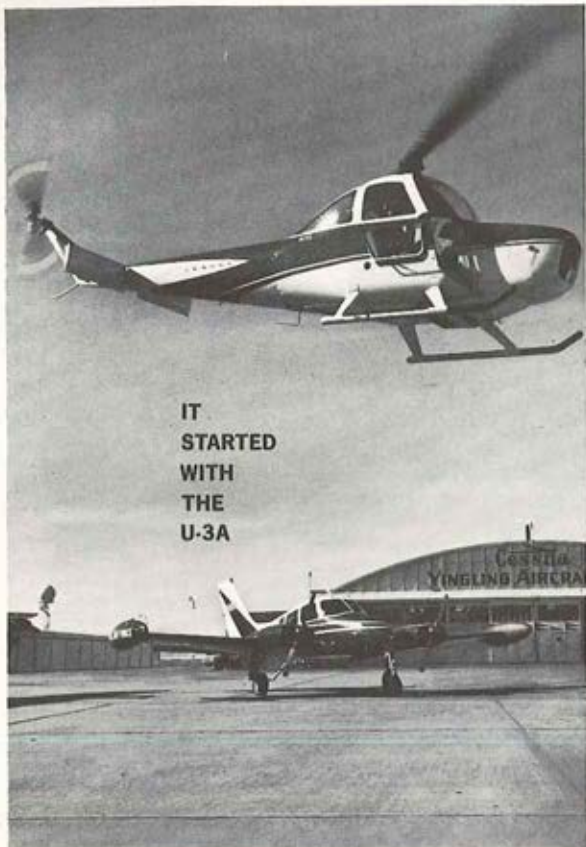
The expanding field of Army aviation requires a continuous program of in-

struction for qualified applicants. The requirements are high, but there will always be a need for those who can qualify. AR 611-85 and AR 611-110 set forth the qualifications and requirements for entry into Aviator training, and the necessary forms and assistance for processing may be obtained from all unit personnel officers.

PROUD OF ROLE

We of the United States Army Primary Helicopter School are proud of our role in Army aviation - the training of aviators who take their place in the Army ABOVE THE BEST!

Colonel John L. Inskeep
Commandant
USAPHS
Camp Wolters, Texas



IT
STARTED
WITH
THE
U-3A

Now: a complete nationwide support program for the Cessna CH-1C.

Furthering an idea pioneered by Cessna for its U-3A, the CH-1C now becomes the first rotary-wing aircraft in history to offer the military the proved economies of complete off-the-shelf logistics support. As with the U-3A, support of the CH-1C can tie in with world-wide support of its commercial counterpart (Skyhook) and be carried out by designated Cessna dealers across America. Now the Cessna CH-1C can make rotary-wing flight for the military practical as never before.

CESSNA

Military
Division
WICHITA, KANSAS



World's most experienced makers of utility military aircraft

COMBAT DEVELOPMENTS

By LT. COLONEL MORRIS G. RAWLINGS

COMBAT DEVELOPMENTS OFFICE, USAAVNS

A MAN once described the Combat Developments System as an ant-covered log, drifting down an uncharted stream . . . THE MAN CAN'T BE SUED FOR LIBEL! NO GROUNDS!

In case you've forgotten the Combat Development and Research and Development Systems of the Army, you will find a chart here to remind you. (Next page)

The agencies shown are responsible for the conception, research, development, test, and integration of new doctrine, organization, and material into completed systems placed in the hands of trained troops.

USAAVNS ANALYZED

Let us isolate a single agency - that of the United States Army Aviation School. This study group of some 15-20 Army officer/aviators brings together the men who attempt to view the future of Army aviation through the eyes of the user. Its organization for combat allows one branch to devote itself to the writing of TOE's and the initial drafts of field manuals, another to develop qualitative material requirements, and the third to keep representatives from industry and other CD agencies informed.

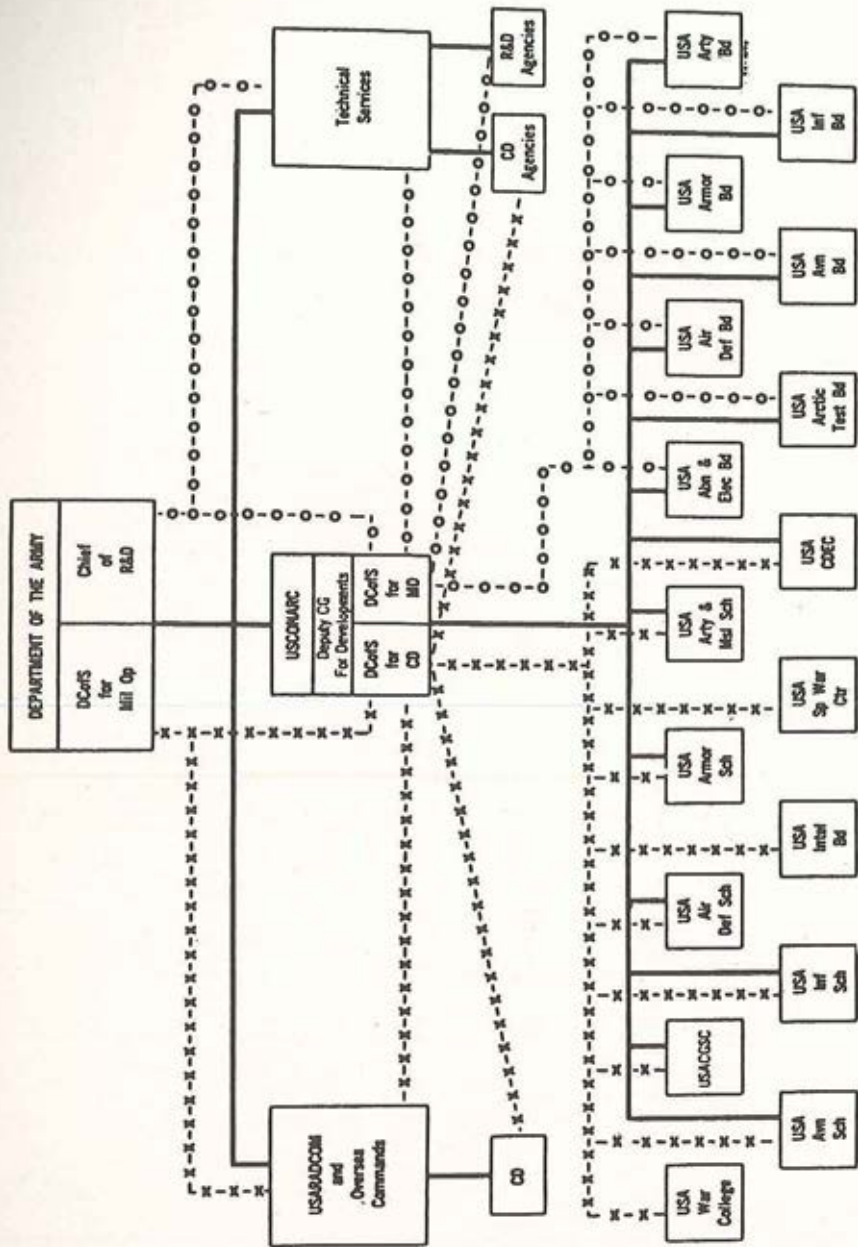
The administrative branch is required to maintain meticulous and massive files of informational matter on subjects of interest to those who view the future.



RAWLINGS

Since the men of the study group are neither clairvoyant nor particularly gifted with apperception, it follows that their particular value lies in their ability to wade through thousands of words to find the few which are important to the study. Reading research, complemented with visits to and from other CD agencies and augmented by talks with representatives from industry, are generally adequate to determine the requirement, the methods by which it can be met, and a recommendation which uses the most appropriate solution.

A paragraph back, the study group was described as being composed of officer/aviators. This was not intended to imply a difference between these men and the rest



LEGEND

- Command
- Coordination and direction of CD
- Coordination and direction of R&D

COMBAT/CONTINUED

of the world; it was intended, rather, to indicate the relative value placed upon their specialty insofar as their duty is concerned. Unfortunately, in the eyes of many, they are considered to be aviator/officers, and the reversed status has an adverse effect upon the results of their labors.

Because any effort produced by an aviator is viewed with such suspicion, it requires a study which betters all branches, requires no money to implement, and uses no personnel, to receive favorable comment from all concerned. YOU JUST CAIN'T FIND NONE LIKE THAT NO MORE!

Seriously, the fact that Army aviation, having no resources of its own, can grow only at the expense of others, is a limiting factor. Despite the bickering between the branches and services, it should be well known to all aviators that without the time, effort, and money expended by the service which handles life preservers, we would still be adjusting artillery fire from paper-backed Cubs.

There are those, of course, who imply that many of the dollars expended could have been better spent on those spare parts needed to obtain a higher availability rate for the present inventory. EVERYONE THINKS HE'S DRIVING!

It is commonly accepted that the future Army will require greater use of the aerial highways. It is equally well documented that the vehicles which are to perform in this medium are to be organic to the units which have a continuing requirement for their use. So far, the solution appears simple. Allow every branch and every service to estimate their requirements, divide the available assets by a mathematical formula, and give each at least a portion of their request. This, a compromise, may well be done.

It has an immediate appeal in that it

WHAT'S NEW?

'ARMY AVIATION' welcomes articles on any subject. Your audience? Well over 6,000 persons directly concerned with this field. Articles should be brief - under 1,200 words - and where possible should be accompanied by appropriate illustrative or photographic material.

would so disperse the aviation effort as to dispel any fears of a resurgent Army Air Corps. Bluntly, there can be no better way to ensure the formation of a new branch than to place infiltrating cells of aircraft throughout the field army area. The ground commander who is forced to devote a major effort to supply, to maintenance, to pioneer work, to communications, and to control, all for the benefits to be derived from one small section - that commander is ready to give away his equipment in exchange for support.

Ask the Artillery how they picked up the Cannon Company and the Tank Destroyer unit from the beleaguered Infantry.

Army aviation needs to take a new look at old problems and it urgently requires those coordinated solutions which can easily be accepted by commanders.

WE NEED - AND NEED NOW:

- A method by which aircraft may be economically utilized without centralization.

- A method by which the skies may be kept open without compromising our own security.

- A system by which low and high-speed aircraft can exchange information and use common facilities for control.

These three we get soon, or the job will be given to others.

LESS URGENT, AND IN THE FIELD OF MATERIAL:

- We need to see - through clouds and in the dark - not to be taught blind flying. (COMBAT/Continued on Page 448)

CONGRATULATIONS TO

TATSA!



Recently, TATSA personnel successfully completed a 1000-hour test program on the new Grumman AO-1 Mohawk—the first prop-jet powered aircraft to enter Army service.

The new Mohawk is designed to “live” in the field with tactical troops and provide all-weather day and night observation by means of electronic surveillance.

STOL capabilities are outstanding: The Mohawk has repeatedly demonstrated its ability to operate out of 600-foot dirt fields.

The Mohawk is the newest Grumman aircraft to enter Army aviation. We're proud of it. And mindful, too, of the proficiency displayed by TATSA personnel in helping usher it in. Congratulations!

GRUMMAN

AIRCRAFT ENGINEERING CORPORATION

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LET'S TAKE A LOOK AT...

QUALITY CONTROL IN HELICOPTER TRAINING

BY

LT. COLONEL ARNE H. ELIASSEN
Chief, HRU, Ft. Rucker, Alabama

Constantly changing weather conditions of temperature, pressure, and wind, when added to the complexities and moods of the human pilot and the variability of machines, make the check pilot's job seem almost impossible. And yet, even with all of the above variables present, check pilots have had to evaluate the proficiency of student and fellow aviators since flying instruction began.

To search for methods to eliminate or control some of the variables present in each flight, a close look at the flight training conducted by the U. S. Army Primary Helicopter School at Camp Wolters, Texas, was initially made early in 1957 by research scientists of the U. S. Army Aviation Human Research Unit's *Task LIFT*.

LACK OF STANDARDIZATION

One aspect of the flight training was soon apparent to the scientists. This was the lack of any real standardization among helicopter check pilots.

For example, where Check Pilot Jones ranked a group of students in a 1 - 2 - 3 - 4 - 5 order, Check Pilot Smith might rank the same students in a 5 - 2 - 4 - 1 - 3 order. Perhaps Jones has a "get tough" attitude from having had an uncomfortable night's sleep so he is just as liable to fail some "above average" students as Smith,

who happens to be in a jubilant mood, is liable to let "unsatisfactory" students pass.

Or, taking another case, the student who performs the first maneuver well may be given a higher grade than he deserves on subsequent maneuvers because of what have been called "halo effects." Halo effects, of course, work both ways. As an example, the student who botches the take-off may be judged too critically for the remainder of the flight.

MANY SUCCESSFUL PRODUCTS

To combat this apparent lack of standardization among check pilots and in delving for ways to improve helicopter aviator training, *Task LIFT* produced a number of successful products. Such things as instructional manuals, aviation survey reports, a system for automatic data processing of flight training progress, and objective proficiency flight checks that go a long way toward cancelling out some of the effects of the variables always present on each aircraft flight, are some of the most outstanding results of *Task LIFT*.

One of the first products of Research *Task LIFT* was a "Patter Booklet" describing, in sequential detail, each action and maneuver used in learning to fly the H-23 helicopter. These booklets, which have been adopted by Southern Airways, the contract-

HUMAN RESOURCES RESEARCH OFFICE

H-23 PRIMARY PILOT PERFORMANCE DESCRIPTION RECORDS

STUDENT'S NAME		RANK	CLASS AND FLIGHT
CHECK PILOT		MISSION - - - - FLYING TIME	AIRCRAFT TYPE AND MODEL
DATE	INSTRUCTOR	INSTRUCTOR EVAL.	CHECK GRADE

Weather at Stage Field:

At beginning of check flight:

WIND: ☐ Headwind ☐ Slight Crosswind ☐ Direct Crosswind
Velocity: _____ under 10 Kn _____ 10-20 Kn _____ over 20 Kn

TURBULENCE: ☐ Calm ☐ Moderate ☐ Rough

At end of flight: Unchanged ☐ or:

WIND: ☐ Headwind ☐ Slight Crosswind ☐ Direct Crosswind
Velocity: _____ under 10 Kn _____ 10-20 Kn _____ over 20 Kn

TURBULENCE: ☐ Calm ☐ Moderate ☐ Rough

COCKPIT PROCEDURE

Comments and Notes:

Minor Errors



Major Errors

REVISED-1 NOV 60

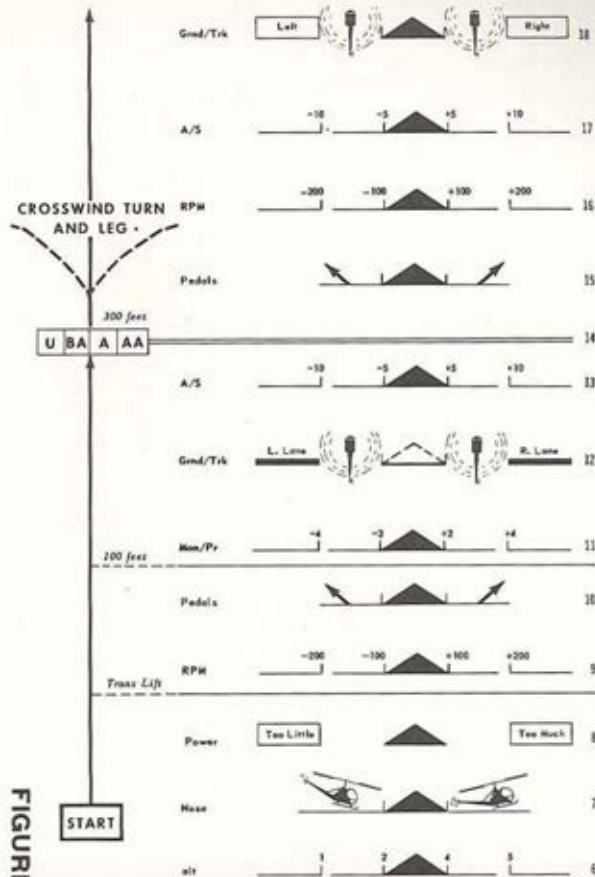


FIGURE 1

NORMAL TAKE-OFF (thru NORMAL APPROACH)

3

QUALITY/Continued

or conducting the primary flight training, are issued under the title, "Standardized Maneuvers for H-23 Helicopter Training," to each new student at Camp Wolters. By studying the booklet, a beginner can more quickly learn the special jargon used by helicopter aviators.

CHECK PADS DEVELOPED

"Pilot Performance Description Records" were developed next by the *LIFT* staff. These records are in the form of a small pad with pages that can be easily flipped and which can be used by a check pilot to indicate quickly the performance of the student. The pages are so constructed that the administrative information can be filled in prior to the flight and the performance of the student recorded during the flight by just a few quick pencil marks.

The check pilot is thus left free to observe the student, the aircraft, and for safety reasons, the surrounding area. One typical page of the 24-page booklet, is shown in Figure 1. These new student proficiency flight checks have proved to be more reliable and objective than the traditional method. They provide much more specific information on the student's performance.

'58-'59 SURVEY RECALLED

Army aviation on duty in Europe, the Far East, and in the United States, during the period October 1958-May 1959, will remember completing a lengthy questionnaire concerning aviation operations and training or being interviewed by a research psychologist of *Task LIFT*. These questionnaires and interviews were part of a world-wide survey conducted by the Aviation Human Research Unit to obtain information on the operational requirements and unit training of Army aviators.

The HumRRO reports resulting from the survey, which contain information on the operational demands placed on graduates

of flight training courses, assist school supervisory personnel to include in training those essential elements required by aviators in the field. Unit training personnel will also find the reports useful in developing a well-rounded unit training program by determining where the Aviation School and other units place emphasis in aviator training.

DATA PROCESSING INSTALLED

A system for automatic data processing (ADPS) of information relating to student daily progress and flight check grades is the latest innovation introduced at Camp Wolters by the *Task LIFT* staff.

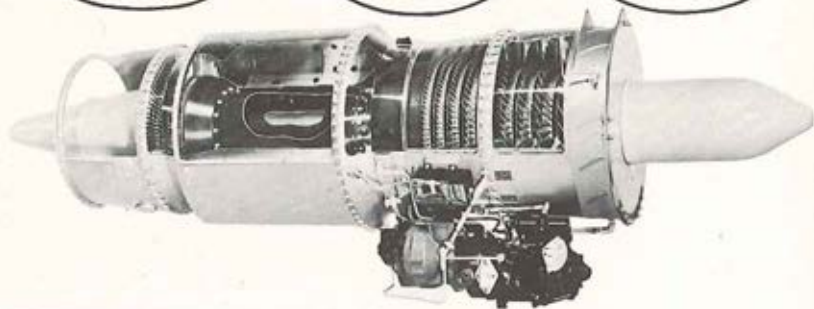
ADPS, while it eliminates tedious recording that heretofore had to be done by hand, does not replace the judgment and decisions of flight training personnel. Dr. Carroll M. Colgan, Task Leader of *LIFT*, points out that while ADPS speeds up the processing of student grades and measures of performance so that this information can be in the hands of instructors, check pilots, and supervisory personnel for corrective action within hours, it will never in any sense eliminate the continual use of their experience and judgment.

However, with the efficiency and speed of machine processing, the quality of instruction and students can be controlled with greater ease and accuracy than ever before.

ONE OF FOUR TASKS

Task LIFT is one of four research tasks in which the U. S. Army Aviation Human Research Unit, Fort Rucker, Alabama, is presently engaged. *Task INTACT*, attempting to improve flight training through the application of the integrated contact/instrument training concept, was described in last month's issue of *ARMY AVIATION*. Future articles dealing with such things as aerial observation and training for low-altitude navigation are planned. Taken together or separately, the research tasks spell greater effectiveness for tomorrow's Army aviator.

J60



WHAT WILL THIS VERSATILE TURBOJET DO NEXT?

Pratt & Whitney Aircraft's J60(JT12) jet engine, which weighs only 436 pounds yet produces 3,000 pounds of thrust, has demonstrated its versatility in a broad range of applications.

For the United States military forces, it powers the T-39 twin-engine trainer, the C-140 four-engine utility transport, and the SD-5 reconnaissance drone. It supplies power for the Canadian Air Force CL-41 single-engine trainer. The world's fastest executive transport uses the J60 which also has been ordered for a West German high altitude research glider.

Add a free turbine, and the J60 becomes a turboshaft engine, developing 4,050 shaft horsepower. Two of these turboshaft engines will give advanced helicopters power to lift nine tons. This version of the J60 is also projected for VTOL aircraft.

A modified J60 for industrial uses will supply power for pumps, compressors, electric generators—and can be adapted for use in ships and heavy earth-moving vehicles.

Whatever its application, the J60's simple, rugged design ensures high reliability and easy maintenance.

Pratt & Whitney Aircraft

Division of UNITED AIRCRAFT CORPORATION
East Hartford, Connecticut



USAREUR REPORT



By LT. COLONEL J. ELMORE SWENSON
Operations Division, Hq, USAREUR

The time comes when the inevitable happens and the undersigned assumes authorship of the USAREUR REPORT. Maj. Mertel, a genuinely spirited aviator, departs for the States for aviation duty at CONARC. Best wishes, Mert, for first, an enjoyable leave, and then an interesting assignment. All of us appreciate your fine performance at USAREUR Headquarters.

Other key aviator personnel changes in USAREUR take place this month. Lt. Col. Richard L. Long moves to Executive Officer, Seventh Army Aviation Group, after a long successful tour as CO of the 54th Transportation Battalion.

Lt. Col. Roy E. Creek has been assigned

from V Corps to the Aviation Section, Seventh Army, while Lt. Col. James H. Lee has just departed to cross the Atlantic for duty as Aviation Officer, Second Army.

MOHAWK TOURS THEATER

Shifting to the subject of equipment, the introductory MOHAWK has been touring the Theater and from the demonstrations thus far, we have gleaned a terrific amount of beneficial information. Our plans are set for the arrival of the first shipments, provided that certain maintenance support can be assured from the Department of the Army.

Another aircraft, the HU-1B, is getting

USAREUR/CONTINUED

ready for its European debut. Arrival in quantity is expected within a few weeks. The transition training school for this aircraft is in readiness at the Seventh Army Aviation Training Center. The scheme is to train several potential instructor pilots for all units during a six month period. Checkout time will normally require about two weeks. The maintenance course for enlisted personnel, established at Sandhofen, Germany, will take approximately 3 weeks.

The IP's, in turn, can impart transition training within their respective units concurrently with the receipt of the new aircraft. This old tried and true system was used successfully in both World War II and Korea whenever new type aircraft were introduced.

AI TIME SHOWS INCREASE

Maj. A.C. Shaw and Capt. Thomas N. Hurst from the U.S. Army Aviation School recently completed their informative tour of the command. Their report revealed that the USAREUR instrument flying program to be really on top. Most enlightening were the helicopter hours flown under actual instrument conditions.

The record indicates the gradual trend of Army aviation towards an all-weather capability and away from the not-too-old era when each instrument flight was considered "a major event in itself." Also enlightening is the substantial number of aviators who are taking advantage of the opportunity to build up their actual weather time while stationed in the most favorable spot in the world - Germany.

Of course, the old "bug-a-boo" is still with us whereby our aircraft availability cannot fully support our instrument proficiency requirements. Nevertheless, this gap is narrowing. With the HU-1B in the Theater, the opportunities for helicopter

instrument qualification will be greatly increased. Moreover, the eventual procurement of the LOH type aircraft will provide a fully instrumented aircraft at the lowest echelons, thereby making a 100 per cent weather capability for the Army a reality.

Speaking of weather qualifications, one of the discussion points with the Ft. Rucker team was the questionable annual weather time requirement for the special instrument ticket renewal. Meeting the annual weather requirement naturally poses no problem here in Europe, but in the El Paso area and in similar areas back home the opposite is true.

Actually, once weather experience has been attained, does one need proficiency in it? Proficiency on the gauges is what counts, and that proficiency can be sustained by hood time if the old AI stuff is not around.

One agreed point is the need for continual maintenance of top instrument sharpness so essential to the special ticket holder. He has greater leeway in clearances; hence, it is expected that he will have attained certain precision and refinement in his instrument flying technique, especially in the aspects of planning and procedures. A return to the tougher annual check of the special ticket holder, rather than leaning on annual actual weather minimums, appears to be the more logical and realistic approach.

CAREER PICTURE BRIGHTENS

The forthcoming reorganization of the Army divisions brings the long-awaited improvement in the aviation career field for the Combat Arms aviator. He will soon have afforded him a structure for tactical command duty up to the grade of Lieutenant Colonel. Not only will he be able to take advantage of his branch material command opportunities, but he will also benefit from the elevated aviation command grade (USAREUR/Continued on Page 448)

PCS

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bility for a wide range of uses at a fraction of the cost of operating larger planes. Quickly and easily adaptable to the installation of ground surveillance radar, the L-23F can also be converted quickly for liaison and cargo missions. Its versatility is further demonstrated by its rapidly growing popularity as a multi-engine instrument trainer.

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 MARIANO, FRANK A., 32 SHERWOOD ROAD, STAMFORD, CONNECTICUT.
 MARTIN, DALE S., 24 GRANT DRIVE, NEWPORT NEWS, VIRGINIA.
 MAYSE, HARVEY C., 110TH TRANSPORTATION COMPANY, USA SETAF, APO 168, N.Y., N.Y.
 McKELLIPS, JOHN L., 2d ARMORED DIVISION, FT. HOOD, TEXAS.
 McMILLON, DON, 21 WILSON, COLUMBUS, GEORGIA.
 MICHEL, ROBERT W., 16TH SKY CAV REGT, 2D USA MSL COMD (MED), FT. CARSON, COLORADO.
 MILLER, CHARLES H., 105 COBB STREET, ITHACA, NEW YORK.
 MOONEY, CHARLES W., 2D AVIATION DETACHMENT, WEST POINT, NEW YORK.
 MOORE, JIMMY N., 1720 LINCOLN ROAD, APARTMENT 4, CHAMPAIGN, ILLINOIS.
 MORRIS, ARNOLD C., 504TH AVIATION COMPANY, 4TH ARMORED DIVISION, APO 696, N.Y., N.Y.
 MURPHREY, RAYMOND E., 173-A ARROWHEAD ROAD, FORT BENNING, GEORGIA.
 NOEDING, JOHN P., USA GARRISON (PROV), FORT CHAFFEE, ARKANSAS.

(CONTINUED ON PAGE 443)

PERMANENT CHANGE OF STATION/ADDRESS



MASTER ARMY AVIATOR

MAJ. CLIFFORD S. ATHEY (LEFT), ASST AO, XVIII ABN CORPS, IS SHOWN RECEIVING MASTER ARMY AVIATOR WINGS FROM LT. COLONEL RAYMOND G. JONES, AVIATION OFFICER, XVIII ABN CORPS, THE FORT BRAGG OFFICER IS A VETERAN OF OVER 16 YEARS AS AN ARMY AVIATOR. (USA PHOTO)

LAST HU-1A

THE LAST HU-1A WAS DELIVERED TO THE U.S. ARMY RECENTLY BY BELL HELICOPTER, A CREW FROM DAVISON ARMY AIRFIELD, FORT BELVOIR, VA., FLYING THE TURBINE-POWERED IROQUOIS FROM FORT WORTH TO VIRGINIA. FROM L. TO R. ARE SP/5 W.L. TERRY, CWO T.W. BARNES, AND CAPT. B.R. HAWKINS. (USA PHOTO)



A BALL AT BRAGG

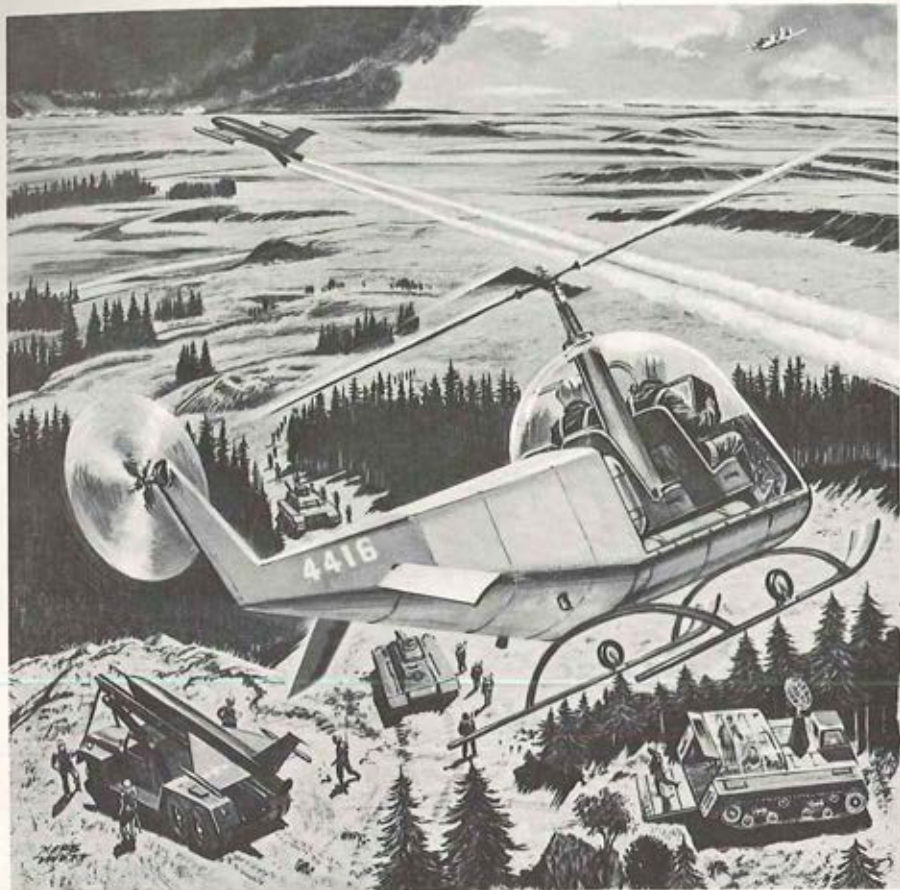
SHOWN CHATTING DURING THE 3RD ANNUAL FORT BRAGG ARMY AVIATORS' BALL ARE, L. TO R., GEN. GEORGE S. SPEIDEL, JR., CG, XVIII AIRBORNE CORPS ARTILLERY; LT. COL. ROBERT R. COREY, CO, 82D AVN BN; COL. DELBERT L. BRISTOL, THIRD U.S. ARMY AVIATION OFFICER; AND LT. COL. RAYMOND G. JONES, XVIII ABN CORPS AVIATION OFFICER. (USA PHOTO)



HIGH-PERFORMANCE

AN ARTIST'S SKETCH SHOWS THE HIGH-PERFORMANCE HELICOPTER PROPOSED IN A DESIGN STUDY SUBMITTED BY SIKORSKY AIRCRAFT TO TRECOM. THE TWIN-TURBINE CRAFT, FEATURING A LOW-DRAG FUSELAGE WITH RETRACTABLE GEAR, IS CAPABLE OF SPEEDS TO 224 MPH, A 7,000-LB. PAYLOAD, AND A FERRY RANGE OF 2,400 MILES.





TACTICAL Combat Surveillance

The modern Army's new skills and advanced weaponry have created new requirements in combat surveillance—new needs for accurate, invulnerable, detection-free and above all high-speed intelligence gathering and transmission under fast-changing combat conditions.

Target location, damage assessment and other surveillance missions demand the most advanced techniques in guidance, data links, and data processing if they are to give the field commander the intelligence he needs in time for him to put it to tactical purpose.

Sperry is meeting difficult assignments of this nature in many defense areas now. No organization has more experience—in greater depth—in guidance, control and complete avionic systems for surveillance drones or manned aircraft. And with the breadth of its experience in associated technologies, Sperry is ready *now* to meet the toughest objectives in combat surveillance—*tactical combat surveillance* for today and the immediate future.

SPERRY



A POSSIBILITY ...

AN ARTICLE appearing in the December, 1959 issue of "ARMY AVIATION" posed the question as to the advisability of painting Army aircraft. Painting of Army aircraft is one of the many problems confronting the maintenance officer.

IN PREPARING the budget, the maintenance officer is plagued with the questions, "How much should I allot for periodic repainting of the aircraft for which I am responsible?" and "How many planes will require complete or partial repainting in the next year?"

THESE PROBLEMS are of particular importance in the Caribbean Command. Aircraft operating in Central and South America encounter salt water spray, sand storms, tropical rains, winds of vary-

in this area were felt to be ideal for such a test.

APPROVAL WAS GRANTED to perform the test, using one L-23D Seminole and two L-19A Bird Dog aircraft. Stripping of the L-23D started in July, 1960, and was completed on 10 August 1960. The stripping of one L-19A was started in September and completed on 10 November 1960. The other L-19A is being prepared for the test and testing should begin approximately at this time.

SINCE THE BEGINNING of the test on the above two aircraft, that is from the date of completion of the stripping por-

... UNPAINTED AIRCRAFT

ing intensities, and weather conditions of various types and degrees, making corrosion a problem of paramount importance.

IN MARCH, 1960, the Caribbean Command submitted a request to the Office of the Chief of Transportation for authority to conduct a test covering the operation of unpainted aircraft. Climatic conditions

tion, the following information has been accumulated:

Time Flown:

L-23D S/N 56-3696 199:30
L-19A S/N 51-12437 30:30

Corrosion Encountered:

L-23D - Corrosion on left wing behind engine nacelle, believed to have



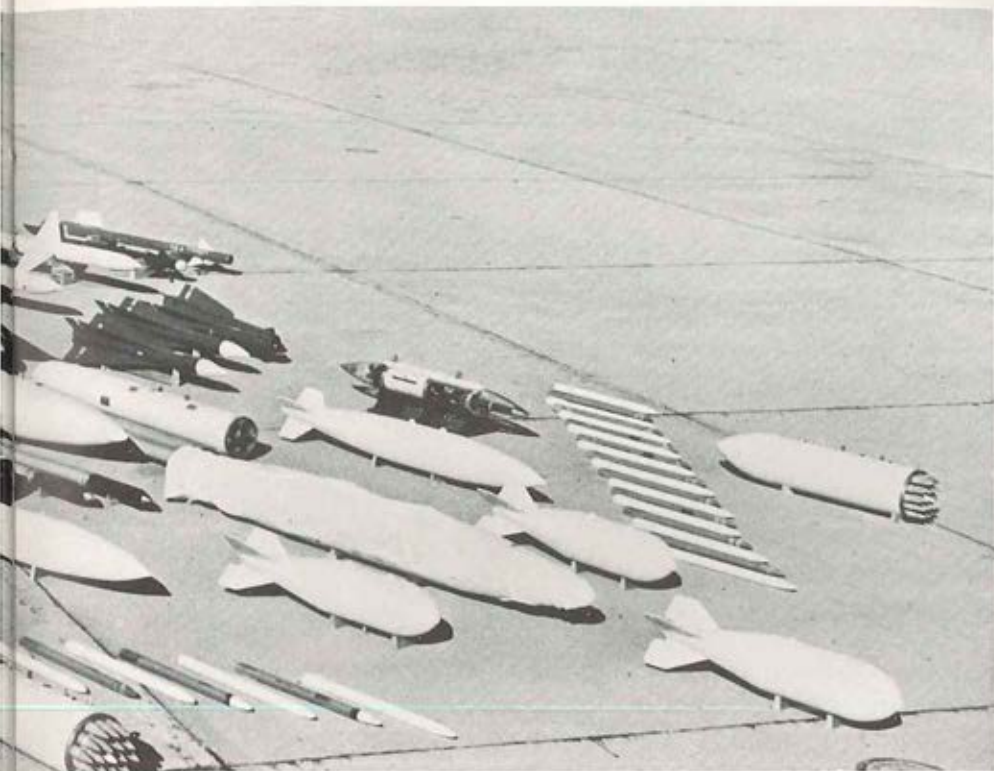
LIGHTWEIGHT FIGHTER WITH

Here is the Northrop N-156... a bold new concept in fighter weapon systems

The twin-jet supersonic Northrop N-156 is more than an aircraft; it is a complete family of lightweight fighter weapon systems designed to fulfill the many air support roles of limited war: close support of ground forces, reconnaissance and surveillance, interdiction, air defense and air superiority. The N-156 can be deployed from the United States zone of interior to any point in the world within 24 to 48 hours. It can then be dispersed throughout the theater of operations, utilize advance bases with short, unimproved runways, and operate with minimum

logistic support, fast turnaround and extremely low maintenance downtime.

Its high performance, extreme maneuverability and ease of handling have won the Northrop N-156 unanimous acclaim as a "pilot's airplane." An exceptionally safe and reliable aircraft with unusual aerodynamic stability, it can accomplish its mission, return and land safely with one engine out. Very low fuel consumption eases the storage and resupply problems likely to plague advance areas. Maintenance and service can be easily accomplished from ground level without



A HEAVYWEIGHT PUNCH

designed specifically for limited warfare...ready now.

crew stands. In short, from both a tactical and logistic point of view, the N-156 is ideally suited to the mission requirements and problems of limited warfare.

The economics of the Northrop N-156 are also highly favorable for limited warfare. Low initial cost plus exceptionally low operating and maintenance costs make it possible to greatly increase the number of units in the field for the same budget dollar. Simplicity of maintenance also reduces the number of trained personnel, the amount and complexity of ground support equipment needed in

the field. The result is an extremely flexible force, able to respond effectively to pressures anywhere in the world in the shortest possible time, and with minimum dependence on the difficult supply posture likely to prevail in remote areas.

The Northrop N-156 has been flying since July 1959. It is a developed weapon system, ready for immediate production. Deliveries can commence in just 14 months.

NORTHROP

NORTHROP CORPORATION, BEVERLY HILLS, CALIFORNIA

resulted from kick up of foam particles when landing on runway on which foam had been sprayed previously.

L-19A - Only minor corrosion. Type found was the same as that which occurs during normal operations.

Time Spent in Detecting Corrosion:

L-23D 7 manhours

L-19A 3 manhours

Time Spent in Removing Corrosion:

L-23D 11 manhours

L-19A 4 manhours

THE AIR FORCE has been experimenting with unpainted aircraft for some time and have encountered minimum amounts of corrosion over a considerable period of time. The test results, so far, have proven that unpainted aircraft are practical and can be expected to result in substantial savings in appropriated funds.

ESTIMATED COSTS for repainting fixed wing aircraft at a contract facility are as follows:

L-19 \$1,200.00

L-20 \$1,400.00

L-23 \$1,900.00

U-1A \$1,900.00

THE ABOVE FIGURES are based on a labor rate of approximately \$2.85 per hour. Savings in this respect would be greater for aircraft based within the Continental limits of the United States, due to higher labor costs.

PRIME REASONS in the past for painting Army aircraft have been that painting serves as a protection for the metal surfaces and for camouflage. The test now in process refutes the first factor. The metal surfaces of the present-day aircraft is adequately protected and the painting only serves to give additional protection.

PRESENT-DAY means of detection, such as radar, make camouflage of aircraft in flight useless and practically im-

possible. Camouflage of aircraft on the ground can be accomplished by the use of nets and other methods.

UNPAINTED AIRCRAFT in flight are better camouflaged than those that are painted OD or white. For purposes of locating downed aircraft, an unpainted aircraft is located easier than one that is painted in accordance with the provisions of TB AVN 7 since bare metal will reflect as well, if not better, than OD or white paint. The red, or florescent markings, should remain as an additional aid in identification and to comply with FAA Regulations.

ADDITIONAL ADVANTAGES, as pointed out in the original article, would be increased payload capabilities as well as improved flying qualities. This latter factor has been proven, insofar as the L-23D is concerned, in that since the removal of the paint the cruising speed of the aircraft has been increased approximately 10 knots per hour at no increase in fuel consumption.

THE QUESTION NOW remaining is, "Will the tests continue to prove that unpainted aircraft are both practical and feasible?" Only time will tell.

RESULTS TO DATE on aircraft undergoing the test leave no doubt in the mind of the writer that unpainted Army aircraft will be seen in the skies in all corners of the earth.

THE USAF has determined that the necessity for painting aircraft no longer exists. Why shouldn't the Army take advantage of their experience and do likewise?

ROBERT N. CRESSY
Captain, TC
Transportation Office
U.S. Army, Caribbean

■ The opinions expressed in this article are those of the author and do not necessarily reflect the views of the Department of the Army.

FIGHT OR REPAIR?



Man has been fascinated by the arts and science of war throughout the course of history - even earlier, judging from the evidence of neolithic scratching which picture battles in the dim past.

CIVILIZATIONS HAVE risen on the crest of military power and, in turn, have fallen before the onslaught of new weapons and tactics. Each advance has followed either an extension of weapons range, or a better capability to employ weapons faster and more effectively.

THE MOBILITY SUPERIORITY of the Assyrian war chariot over foot soldiers, of Mongol light cavalry over the ponderous armor of medieval Europe, the German mechanized "end run" around the Maginot Line - all are but a few examples of the ancient and proven principle of mobility - the simplest principle of combat tactics.

YET, because of mechanization, application of this principle has become one of the most complex problems of ground warfare. It has created a host of contradictory actions and concepts in which the problems of Army aviation are thoroughly enmeshed today.

THE PLIGHT of Army aviation is neither new nor unique. It is, however, rather

more susceptible to the worst features of the combined arms approach than to a system serving all ground combat equipment.

THE AIRCRAFT in its many configurations is the most mobile of all Army carriers, but the price of that mobility is high. It is the peculiar price demanded by the law of gravity, a condition which requires lightness to the point of fragility combined with enduring strength.

THESE TWO REQUIREMENTS are inherently opposed. The necessary compromise of physical sciences has given us a complex machine, in which the degree of complexity occurs in direct ratio to the need for performance.

PERHAPS the issue of contradiction begins with our desire for bigger and better aircraft. It is continued by our desire to use the aircraft in the most utilitarian role possible. It is compounded by our desire to move both the aircraft and its maintenance equipment and personnel into a front line foxhole.

WE ARE HOIST with our own petard, for the issue is now thoroughly confused.

Current concepts for operation of Army aircraft extend the doctrine of organic assignment down to the lowest level of habitual aircraft use. This arrangement is designed to keep the aircraft instantly available in the hands of dispersed forces.

THERE IS NO DOUBT about the Army aircraft's ability to fly in and out of dispersed and difficult locations - they are designed to fly that way! There is considerable reason to doubt that our present methods of maintenance will work in the same places. But in the fever of our desire to keep our aircraft mobile in those dispersed locations, we have insisted on carting along the maintenance paraphernalia suited to the Army doctrine of maintenance in central pools.

APPARENTLY we have so fully accepted the basic concepts of mobility constructed around the limiting 10-mile-an-hour rate of vehicular movement that we have forgotten the compensating 100-mile-an-hour speeds of our own aircraft. We have ignored the fact that the old doctrine did not require high unit mobility, or that the equipment and methodology we have inherited does not lend itself to the mobility now needed for continuous and rapid displacement.

YET, in the face of all of this we are now moving even less flexible field maintenance into the Division organization. We are creating a logistic tail which drags organizational mobility down to a crawl. This aspect alone exposes Army aviation to ridicule.

YET, sadly, this is not the main point. In practice and experience, the cumbersome maintenance gear lugged up front will not significantly increase aircraft availability. We have been deceived by an almost mystical belief in a repair philosophy which, tolerated by past environmental conditions, has grown into a conglomeration of detailed repairs which contribute but little to the real airworthiness of our aircraft.

THE CURRENT ECHELONMENT of organizational maintenance is the strongest case in point; a point which may be demonstrated by a rational examination of any Army aircraft organizational supply catalogue. Use as criteria only the question: "Will this item prevent safe flight operation during the times between higher maintenance?" The "yes" answers fall into a minor category of whole component assemblies. Then what value are the remainder? Certainly this is sufficient to question our intent - **FIGHT OR REPAIR?**

Further reason for question is illustrated by the findings of some recent soul-searching by planners of the Transportation Material Command. Two test studies were undertaken to find a satisfactory answer to the question: "How long could a unit of aircraft operate isolated from supporting field maintenance?" The H-21 Helicopter Company was selected as a test indicator, since it has equipment and organization characteristics common to most aircraft and units. Each study

■ The article, "Fight or Repair", was prepared by the Operations Research Group, Logistic Operations Plans Division, Plans and Programs Office, U.S. Army Transportation Material Command. This group is composed of commissioned officer personnel and technically trained civilians. Officers are experienced in field operations involving aircraft and support systems and in the military arts and sciences. Civilians are experienced in a variety of career fields from which they bring scientific and technical training. In this Operations Research Group, the military and civilian talents are combined into a coordinated team. Each individual complements the others and supplements his knowledge by his association with the others. At present, the Operations Research Group is engaged in long-range comprehensive concept studies of aircraft maintenance systems for the future Army. This article is one of several which has evolved in the comparison of present with future maintenance methods and the required logistic support as it can be visualized. The article is the personal submission of the authors and does not necessarily represent the views of the Department of the Army.

expressed the answer "How long" in flying hours and days of operation.

25 DAYS — 780 HOURS

STUDY NR. 1 employed an operations research technique to determine the inherent reliability of the aircraft itself, by which means the probability of flying an attainable number of hours could be established.

THE RESEARCHERS examined the mean times between failures of all components in combination, and found that the dynamic components (engines, transmissions, gear boxes, etc.) ruled the problem; and that organizational repairs (excluding systems adjustment) were of small consequence.

BECAUSE of the effect of component failure times, twenty H-21 helicopters in isolation have an 80 per cent probability of reaching 780 total flying hours, and remain operational for 25 days at combat rates, before the last aircraft becomes unavailable for reason of one or more component losses.

30 DAYS — 1,000 HOURS

STUDY NR. 2 set a target of 1,000 hours and 30 days. Examination of functional experience led to the conclusion that the target could be reached, but only if a field maintenance detachment and some 21,000 pounds of equipment were hauled along just to swap components around.

THE CONCLUSIONS of both studies were derived from valid data. They show a small gain in availability which is bought at considerable cost in mobility. Both studies showed that second echelon maintenance was nice to have around from a preventive standpoint, but had no overriding effect on aircraft flyability. Both studies recognized that aircraft availability pivots around component operating time, and that field maintenance is in-

effective when separated from continuous resupply.

What price repairs? What price, if tomorrow's battlefield denies continuous resupply of things less urgent than ammunition, gas, and rations? Certainly, maintenance service could be provided as far forward as possible, but how far forward is a question of prudence, taking into account both limitations and advantages.

THE MAIN POINTS here which should be given practical consideration are simply these:

1. The repair which is not essential to the operation of Army aircraft detracts from combat effectiveness when performed during and at the time and place of combat. Conversely, there is no question, but that the essential repair must be made, and that combat resources should be devoted to certain essential repairs which cannot be made elsewhere.
2. Each repair allocation results in additional back-up requirements. If they are not closely controlled they tend to defeat our bid for freedom of action.
3. The aircraft is its own speediest form of transportation. It can accomplish maintenance turn-around well rearward within the same time a ground vehicle can move to the rear of the division area.

ALL POINTS OF LOGIC taken together argue against a system of operational maintenance which fails to exploit the natural advantages of Army aviation or which restricts an otherwise good equipment to an environment unsuited to its maintenance needs.

(FIGHT/Continued)

THE ISSUE of contradiction is now clearly localized in the popular "Maintenance Forward" concept. It is contradictory because it has imposed an obsolete, unproductive repair doctrine upon an otherwise feasible tactical concept.

IT IS A SITUATION that can be corrected only by clear, unfettered, objective thinking, and prompt action on the part of both operator and logistician to cut away the fat of garrison convenience.

WE MUST recognize mechanical limitations for what they are; we must select for the battlefield only practical, worthwhile repairs; we must maximize the advantageous mobility of the aircraft for

NOTE

A word or two on the distribution of ARMY AVIATION MAGAZINE. The magazine is printed during the LAST week of each month and is placed in the mails in the first week of the subsequent month. Hence, you should receive this "July 31, 1961" edition sometime during the first 10 days of August, assuming you have a ZI address.

its own support; and finally, we must arrange a system of maintenance for Army aircraft which is tailored to the peculiar requirements of Army aviation.

OBITUARIES

BROWN, ROBERT D.

Captain Robert D. Brown, assigned to the 101st Aviation Battalion, Fort Campbell, Ky., sustained fatal injuries on June 16, 1961, when the HU-1A helicopter of which he was pilot crashed at Fort Campbell, Ky., during the course of an official service mission. He is survived by his wife, Mrs. Frances E. Brown, of 1421-B Werner Park, Fort Campbell, Ky.

CONDON, DAVID E.

Lt. Colonel David E. Condon, Headquarters, Transportation Training Command, Fort Eustis, Va., sustained fatal injuries on July 5, 1961, when the civilian helicopter of which he was pilot hit power lines and crashed near Eagle Rock, Va. Col. Condon was on an official 20-day leave at the time of the accident. He is survived by his wife, Mrs. Mildred Clarke Condon, of 8 Barron Drive, Stoneybrook Estates, Denbigh, Va. (See page 445.)

MARTIN, WILLIAM G.

First Lieutenant William G. Martin, Headquarters Company, 2d USA Missile Command (Med), Fort Carson, Colorado, sustained fatal injuries on June 20, 1961, when his L-19E aircraft crashed in a mountainous area near Fort Carson during the conduct of an official service mission. He is survived by his parents, Mr. and Mrs. William Martin, of Martin, Ky.

YATES, JESSE C.

Captain Jesse C. Yates, 101st Aviation Battalion, Fort Campbell, Ky., was killed in the crash of an HU-1A helicopter at Fort Campbell, Ky., on June 16, 1961. Capt. Yates was serving as co-pilot during the course of an official service mission, and was killed along with Captain Robert D. Brown, the pilot. He is survived by his wife, Mrs. Kathryn A. Yates, of 1307-B Werner Park, Fort Campbell, Ky.

MIKE BUTTON

MAINTENANCE TIPS USATMC, ST. LOUIS, MO.



ATTENTION ALL PILOTS!

Old "Mike" was running through a bunch of recent publications the other day and I came upon something which looked a wee bit odd, to say the least.

This here business of putting out TB55's as a "Safety of Flight" supplement to the TM55's, specifically the dash 10, "Pilot and Crew Member" handbooks (Officially known as "Operators & Crew Members.")

But one thing somebody forgot was that the "Operators" are two separate and distinct individuals; Pilots AND those who are cleared only for operating the kite on the ground, not fly it. Of course, the Pilots operate it on the ground; that's understood. So when anything involves a "Safety of Flight" feature and is not tagged as such, it's for the Boids. It could be a matter I should take up with the printers; maybe they ran out of red ink.

Each one of these supplements must be identified separately from other types of TB's when it's the Pilot's neck they have in the palms of their hands (publication-wise, that is).

If they continue to put out "Safety of Flight" data in the form of TB's, I hope they'll identify them with red flashing lights, red streamers, or the like.

The main point I want to make is - how does a straight operational safety of flight instruction, only directed towards flying, get into a Pilot's hands so that he can put it into the dash 10 until the dash 10 gets revised? Any answers, fellows? Are

you getting them on distribution? Could involve your neck, you know.

Seems as though a couple of AR's (310 & 310-3), under what TB's are, their purpose, and how to process them, can't get together. One says TB's are used when it concerns "professional techniques" and the latter say they're not to be used for professional techniques. Now, if flying a kite is not a professional technique, what is?

I have talked to the Tech Pubs people and they are carrying the ball for you as of now. We'll get the decision before you read this. Wouldn't be a bit surprised that you'll be seeing real shortly a new type of publication for DA similar to the one you're used to seeing like when we "converted" AFTOS S/F to TM1 S/F; so stand by, this R/T transmission isn't finished yet.

In the interim, "Mike" would like to put out his own "Safety of Flight Supplement" and it goes like this . . .

Until this thing is resolved, I suggest that every pilot flying a particular bird (or birds) get with the publications people and check over all TB55's for the particular airplane which end like dash 10/1; dash 10/2; etc., so that you'll be up-to-date on new S/F supplements to your dash 10's.

Most of all, get yourself a copy of it and stick it into your dash 10 until the dash 10's are revised to include the info. Some of these are real Lulus.

SUPPLY INFO

"Mike" got some more data from the Directorate of CDSA here at TMC, just like I promised. This one is on logistic transfers and logistic support.

This is a subject of interest to all concerned with support of Army aviation. But before that, let's make a point and then begin with the main part of the discussion.

Supporting Army aircraft is not done by the TC alone; only about 60 per cent of the items required for maintenance & support come from the TC. The other 40 per cent come from the other technical services such as Signal, Ordnance, Medical, Engineers, and Quartermaster Corps.

With this firmly fixed in your minds, let's move to logistics and take it by easy steps.

STEP 1

What is LOGISTICS? It is the mission of supply, and boy, it covers more things than you and I can shake a stick at... so let's call these out chronologically.

- ◆ Research and development.
- ◆ Specifications and standardization.
- ◆ Cataloging.
- ◆ Requirements and funds.
- ◆ Purchase and inspection.
- ◆ Stock control and accountability.
- ◆ Depot storage and issue.
- ◆ Maintenance.

Now you see this is really the whole run of the supply picture.

STEP 2

OK, now for Step 2... Why transfer to, and between, technical services? Well, I'll give you a quick answer... it's "to create a more efficient, more economically operated Army supply system in peace and war."

STEP 3

How does transfer from one service to

another affect costs, and how does it help supply when we don't know where to go to get it?

Actually, following the dope in the technical service catalogs and supply manuals and keeping informed on the regulations in the AR 701 series will help a great deal. But here are the reasons for transfer and assignment - what the regulations call the objectives:

- ◆ Stop duplication by giving the items to one service.
- ◆ Reduce inventories through centralizing of functions.
- ◆ Cut down on the types of items carried.
- ◆ Cut out paperwork.
- ◆ Make it easy to submit requisitions.
- ◆ Use the Federal Catalog Class System.

All of these things are to improve the capabilities of the Army to meet mobilization needs and to support forces in combat.

Now, how much of this affects you? ... When you look at the scope of these transfer actions, you'll find that they cover all items of personal property. Now there's one for the book. These supply guys are now with THEIR hands in your pocket! Hold it a minute! In supply language, all this means is all items the Army uses with the exception of real estate.

THE GROUND RULES

There are a couple of ground rules for the technical services and you should know them, too...

No technical service will keep, or pick up, any function of logistics on any item that has been assigned in the AR 701 series to another technical service.

All stocks of items assigned, not on hand at general depots, will be moved as directed by the gaining service.

All stocks will be transferred by documents so accountability is transferred.

That's the so-called "Big Picture" of the technical service action. So what happens to you?

FIRST, if in doubt, look in the AR 701 series covering the types of items you are getting ready to requisition.

SECOND, if you can't find out where to go - either in a catalog or a manual, and you can't find it in the AR 701 series, or it's a completely new item - go to the service that has the responsibility for the end item you are fixing.

THIRD, don't get put out when the service you sent the requisition to, returns your paperwork and says to go to some other tech service. Remember, he can't buy, stock, store, or issue the item, but should tell you:

- ◆ Where to get it.
- ◆ Who to get it from.
- ◆ What FSN to call it.

FOURTH. Why does he send it back? Easy! . . . Maybe, just maybe, at your post, camp, or station other people use the same item and the technical service already has it on hand for your needs. Of course, if he doesn't, he must get it from the area distribution depot which supports your station.

Remember though, all supply is based upon demand, and stocks are on hand because the requests received support the "on hand" position. So, to get it, stock it and keep it on hand for your future use; give your technical service supply people the help they need to help you.

This may seem like a lot of yak, but if you take it slow, you will find we tried to tell you the story of logistic transfers in terms of "why, how, when, and how it affects you." Thanks for listening.

TWX IN BETWEEN

Remember when you were getting interim maintenance instructions (TMI's) in the form of TMC TWX's with a follow-up, formalized printed publication, and on the pub it stated that the TWX by message

MAINTENANCE TIPS

number was out and that the pub in your hand was in?

Well, from now on, you won't be tipped off that way anymore.

In the NEW SYSTEM, the last sentence of all such TWX's coming to you from TAG, containing TMC data, will say that these TAG TWX's are "out" when you receive the published copy.

The new system TIP is now in the first part of the body of the TAG TWX. It states the publication number; such as MWO55-1520-***-20/6, 31 February 1961. So all you gotta do when you get the printed published copy of the MWO is marry up the numbers in the previous TAG TWX. Then, put the MWO in and pull the TAG TWX and pitch it.

However, should you not get a formalized copy of the TMI or the MWO within 30 days after the receipt of the TAG TWX with the same TMI or MWO number, please let me know.

THE 'OUTS'

Anyone interested in knowing which TMC TWX's on air equipment are still good and which ones are "out," or if they have been formalized into a TMI or MWO? Sure, I knew you would . . .

Now you should have on file - and that covers a multitude of places - only TWX's which start like this:

TCSMC-E
TSMC-E
TMC-E
A00-05-12345
TCMAC-E
TCMAC-Q

or any that seem to have been originated here at TMC, regarding DA aircraft, come on in to me and I'll check the status for you.

Lots of TWX's have been thrown out and are now going under the title of TMI (including time compliance TM's) or MWO.

MIKE/CONTINUED

So, if you don't know what's what, come on in.

Also, should you be a little confused about the new TAG TWX's, which references our TCMAC-APE (our people acting as command AG & control point) TWX number and also the MWO or TMI printed in the message, come on in with the referenced TCMAC-APE number, not the TAG number citing the publication number in the particular TWX for the answer.

You should get a TMC letter down to your shop real soon with all the necessary dope, with numbers yet, telling you all about the old TWX's on which you probably have questions right now.

But if, after you read this and you still have questions, don't hesitate . . . Come on in to "Mike" and I'll drum up some kind of answer for you. OK? OK!

THOUGHT FOR THE MONTH

Seems there's a difference of opinion floating around in pilot circles, reference using Take-Off and Landing Crosswind Charts.

When you refer to this chart in the dash 1 or the dash 10 book for your particular plane - and you know that on landing or taking off you'll have a crosswind component - and you've heard the wind velocity from the tower go something like this: "Surface wind: variable, E to SE, 15 knots, gusts to 25," be sure - POSITIVE - you use the 25 knots to base your computations on, NOT the 15 knots. OK?

So, make a rule - base all computations, when using Crosswind Charts, on maximum gust velocities (Direction and Speed).

Informationally yours,

MIKE BUTTON

(William D. Bickham)

ERRATA

■ "MIKE" hastens to point out that a wee error crept into the May, 1961, copy originating from his office. The readers are advised that the FSN as published for the Cylinder, Piston and Ring Assembly, should read: FSN 2810-775-0568 and NOT FSN 2814-775-0568 as it appears on line 11, paragraph 4, column 1, page 290 of the May, 1961, edition.

■ Col. Delbert L. Bristol, Aviation Officer, Third U.S. Army, Fort McPherson, Ga., was the first of many of our readers to call our attention to an omission in the Master Army Aviator list appearing on pages 309-310 of the May, 1961, issue.

Anticipating further "Letters to the Editor," we will explain by saying that the list - as published - is an official list provided to the publication by CMD sources.

The official list does not carry the name of Brig. Gen. W.W. Ford, Ret., who received the initial Master AA rating as an honorary award. We goofed in not boxing a NOTAM to the effect that General Ford had received the rating in June, 1957, at Fort Rucker, Ala., award ceremonies held during the course of the 15th anniversary of Army aviation.

■ With this issue, we've instituted a major overhaul of the typography of the publication, our first such change in several years. Your comments on the legibility of the new type are welcomed.

The Editor

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PERMANENT CHANGE OF STATION/ADDRESS

COLONEL DAVID E. CONDON KILLED IN HELICOPTER CRASH IN NORTHERN VIRGINIA

Lt. Colonel David E. Condon, an 18-year veteran in Army aviation serving as the Assistant Transportation Officer for Aviation at Fort Eustis, Va., died July 5 in a civilian helicopter crash 165 miles north-Fort Eustis, near Eagle Rock, Va.

According to Virginia State Police, Col. Condon was demonstrating a new type of aerial spraying to a U.S. Forest Ranger when the helicopter hit power lines in a heavily wooded area and crashed, killing both men.

A native of Yorktown, Va., Col. Condon, 42, had 20 years active service and had just begun a 20-day leave two days prior to the accident.

Funeral services were held at Fort Eustis on July 10 at the Memorial Chapel. Col. Robert F. Cassidy, CWO Eugene Moser, and Majors Walter S. Trapp, Olva B. Butler, Richard E. Bywaters, and James H. House served as pallbearers. Military honors were rendered at the chapel site at the close of services. Interment was at Arlington National Cemetery.

COMMISSIONED IN 1942

Col. Condon entered the Army in 1941 and was commissioned in the Artillery in 1942 through OCS. He served as Aviation Officer of the 4th Infantry Division during the Normandy invasion in WW II.

The colonel later became CO of the Aviation Mechanics School at Bad Reichenhall, Germany, during 1947-1948, later serving as Aviation Officer of the 1st Infantry Division. During 1954-1960 he was special assistant to the CO, 10th Transportation Group in Germany.

Col. Condon received his Master Army Aviator rating in 1958, the 6th person in the Army to receive the coveted wings. He was a graduate of the Advanced Artil-



Armed Forces Staff College in 1957. lery Course in 1950, the Command and General Staff College in 1953, and the

He held the Air Medal with six oak leaf clusters, the Legion of Merit, the Silver Star, the Bronze Star, and the Army Commendation Medal.

A RECOGNIZED LEADER

A recognized leader in all activities, the always congenial officer was serving in his second term as president of the Fort Eustis Chapter of the Army Aviation Association at the time of his death.

He is survived by his wife, Mrs. Mildred Clarke Condon, three daughters, Cary, 15, Linda, 13, and Mildred, 3, and sons, David, 11, and James, 7 months old. His widow and family reside at 8 Barron Drive, Stoneybrook Estates, Denbigh, Va.



Seven pilots in the Infantry School's associate officer career class No. 5 at Fort Benning recently gave 15 Allied students in the 94-man class airplane rides and official U.S. Army flying caps. Guests at the AA briefing are, l. to r., Capt. at the AA briefing are, front row, l-r, Capt. Mohammed Hamid Haraga and Ali Ahmed Mariam (Libya); Capt. Spyridon Skellariou, Maj George Papakonstantinou, Maj Nikolaos Moutousis, and Lt. Col. John Ladas (Greece); Lt. Col. Lin-Lai Tang,

Lt. Col. Sung-Pan Pai, and Lt. Col. Yuts'ai Chang (Republic of China); Maj Hans Rapold (Switzerland), Maj Ekrem Unalan (Turkey), Maj Mangaradja L.H. Pandjaitan and Capt Gusti Sjamsir Alam (Indonesia); Capt. Sigurd Amundsen (Norway); and Lt. Alfred L. Bonner (Liberia). The host pilots (back row) are, l-r, Lt Marvin H. Ebaugh, Cpts Wayne C. Hogan and Martin C. Sprague; Maj Robert F. Creson; and Cpts Don McMillon, T.J. Clark, Jr., and Charles D. James. (U.S. Army photo)



Capt. Robert D. Haley, Ret., liaison officer for TMC, discusses present-day aviation supply and maintenance with WW I pilots at a convention held at Wright-Patterson AFB, Ohio. Capt. Haley (left) is shown with Lt Col H.J. McKee (Lafayette Escadrille), Col L.G. Irving (103d Aero Sqdn), Lt B.M. Doolin (22d Pursuit Sqdn), Col D.M. Reeves (9th Aero Sqdn), and Capt. G.M. Pike (90th Aero Pursuit Sqdn).



Up a Captain - down a major! That's the way it was for Army test pilot Emil E. Kluever. He is shown being congratulated and told of his promotion to major by Maj. John Geary. Orders promoting Kluever were received in the mail while he was airborne on a test flight in the Army HU-1B Iroquois helicopter and the "call went out." The testing is being performed at Edwards AFB, Calif. (U.S. Army photo)

FIFTH ARMY PLAYS HOST TO AIRSPACE MEETING

The Army's position on mass paradrop exercises, the operation of drone aircraft, and intrusions within the Army's restricted airspace were some of the topics discussed at an Army airspace meeting held at Hq, Fifth U.S. Army, in Chicago, June 20 through 22.

Also on the agenda at the three-day meeting was a discussion of requirements for revision of AR 95-50, the Army's regulation dealing with airspace responsibilities and procedures.

Lt. Col. Richard G. Marriott, Airspace Officer, Department of the Army, who conducted the sessions, remarked that the meeting served to create a mutual understanding of critical airspace matters, both present and pending, between Army and Federal agencies represented.

Delegates to the session included Maj. L.G. Hedgpeth (FAA Region 4), Maj. John F. Roberts (First Army), Capt. J.A. Jones, (Second Army), Capt. Theodore S. Perry (FAA Region 3), Maj. H.E. Woolf (Third



Army), Maj. Floyd C. Wilson (Fourth Army), Lt. Col. Robert L. Cody (Fifth Army), Maj. Stanley O. Nelson (FAA Region 2), and Maj. Bruce Fusner (Sixth Army).

In the photo above the meeting delegates are shown just prior to the opening of a day's session.

BAMC DEDICATES HELIPORT

The Brooke Army Medical Center Heliport (right), the Army's first heliport designed as a base for helicopter ambulances, was dedicated in a special ceremony in mid-June.

The recently completed \$400,000 installation is located on the east side of Fort Sam Houston and has been under construction for a year. It will be a base for about 12 helicopters assigned to the Aviation Branch, BAMC, and the 82d Helicopter Ambulance Detachment. Serving as a base of operations for the evacuation of patients to Brooke General Hospital and for the training of students at the Medical Field Service School, the new heliport will be equipped with both fixed wing and rotary



wing Link trainers for the maintenance of pilot proficiency.

COMBAT/CONTINUED

■ We need a single electronic navigational system by which aircraft, tanks, trucks, and the individual soldier may all locate themselves and their targets.

■ We need such simplicity of design by two-thirds.

It is said that all the Army's aviation brains are not in Alabama, but the majority of them were trained here. PROVE IT!

Share your ideas by sending them to the Combat Developments Office here. Don't expect a citation or cash!

You'll have one big consolation, however . . . YOU'LL BE DRIVING!

USAREUR/CONTINUED

structure as well. This creates a pleasant landscape view of the overall career picture, rather than the drab prison scene of an Aviation branch.

And for those young aviators who feel discouraged at times with the seemingly slow progress of Army aviation, let me impart a bit of information selected at random from my musty old footlocker.

A memorandum - with a faded Army Ground Forces letterhead - and dated way back in July 1942 (date of month unreadable) - says, in brief, that "Volunteers for Air OP training will not be above the grade of Captain; they will not wear wings; and they will not receive flight pay." Hidden in the depths of the print was the inference that the program would have definite limitations for the future.

Yep, things are looking up - and then some!

J. Elmore Swenson
Lt Col GS
Operations Division
Hq USAREUR

NEXT MONTH

■ Lt. Colonel Arne H. Eliasson discusses the "Problem of Low Level Navigation" in the third of a series of articles dealing with the activities of the Human Research Unit at Ft. Rucker, Ala.

■ A close look at Transportation Research Command (USATRECOM) projects is provided in an August article by Maj. Leonard T. Bolton, TC liaison officer with the Airborne and Electronics Board at Ft. Bragg, N.C.

FISCAL/CONTINUED

we did make Los Angeles on time and several of my fellow passengers complimented me on the way I handled the navigation. However, I did forget to point out Akron to the little old lady.

(I'll probably be sorry I mentioned this "first", for I can see a whole series of claims flooding the mails from people who took the exam at the top of a loop -- in a skin-diving rig at 10 fathoms -- riding a bicycle, etc. If other quasi recordholders will desist, I'll try to be more serious in the future.

SEE YOU IN SEPTEMBER!

Once more I urge everyone who can possibly do so to plan on attending the AAAA and AUSA Annual Meetings in September. I'll look forward to seeing you then.

Sincerely,

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



AAAA ORGANIZATIONAL NEWS

REPORT OF NATIONAL BOARD MEETING

The National Executive Board of AAAA held its "Summer" quarterly meeting at the South Gate Motel, Arlington, Va., on July 14-15, 1961. During the course of the two-day meeting, the National Nominations Committee and the National Awards Committee held separate Committee meetings to transact their affairs.

National Executive Board members in attendance included Bryce Wilson, Pres.; Col. O. Glenn Goodhand, Exec VP; Arthur H. Kesten, Exec Sec'y; Col. Alexander J. Rankin, VP, Army Aff; Howard E. Haugerud, VP, ARNG Aff; Joseph E. McDonald, VP, Industrial Aff; and Col. I.B. Washburn, Ret., VP, Public Aff.

Also present were Board Members Lt. Col. Robert K. Moore, VP, Natl Functions; and Members-at-Large Col. Robert M. Leich, Col. Robert R. Williams, and James N. Davis.

SUMMARY OF ACTIONS TAKEN

A report of the actions taken by the National Executive Board follows:

1) APPROVED the report of Annual Audit covering the period April 1, 1960 to March 31, 1961 as submitted by the Executive Secretary and as prepared by the accounting firm of Bergen & Willvonseder.

2) APPROVED of the expenditure of an additional \$200.00 per year to pay for quarterly auditing action necessitated by

the increased fiscal activities of the Association, principally in connection with enlarged Chapter fiscal activities.

3) APPROVED of the proposal by Col. Goodhand to place \$10,000.00 of Association funds in a Savings and Loan institution offering current interest rates.

4) APPROVED of the proposal of Col. Goodhand to increase the amount of bond on the National Treasurer and the Executive Secretary from the present limit of \$10,000.00 each to \$20,000.00 each.

5) APPROVED of the Presidential appointment of an Agenda Items Committee composed of Col. Williams, Col. Rankin, and Mr. McDonald to review the Agenda Item proposals submitted by the Chapter Presidents for discussion at the 1961 Annual Meeting.

6) DIRECTED the Agenda Items Committee to recommend Association policy with regard to each Agenda Item and to report their findings to the Board at its July 15 session.

7) DIRECTED the National Nominations Committee composed of Mr. Wilson, the president of AAAA; Col. Leich, the past president of AAAA; and Mr. Kesten, the Executive Secretary, to convene upon the termination of the Board meeting and to report their nominations to the Board at its July 15 session.

8) SET the time and place for the next session of the full Executive Board at 9:30 a.m., Saturday, July 15, at the South Gate Motel. Adjourned the Friday, July 14 meeting.

MEETING/CONTINUED

SATURDAY, JUNE 15 SESSION

1) APPROVED of the report of the Agenda Items Committee, directing the Executive Secretary to prepare a list of the agenda items to be discussed at the 1961 Annual Meeting and to submit this list to the Chapter Presidents. Those Chapters submitting proposals on the list are to be encouraged by formal letter to have their Delegates prepared to discuss their Chapter's proposals and to familiarize themselves with the proposals of other Chapters.

2) APPROVED of the report of Mr. Warren T. Rockwell, Vice-Chairman, 1961 Annual Meeting, on the progress of Annual Meeting planning. Authorized the transfer of the Awards Luncheon from the Cotillion Room to the Sheraton-Park Main Ballroom in the event Luncheon table sales are in excess of the table capacity of the Cotillion Room. Authorized the purchase and use of separate identification ribbons for Chapter Delegates, Annual Meeting Committeemen, and National Board members to facilitate convention services. Authorized the service of National Executive Board members and their wives, the Chapter Delegates, and the Annual Meeting Committeemen and their wives as hosts and escorts for distinguished guests attending the Awards Luncheon, and directed the Executive Secretary to inform the Chapter Delegates of the reception for distinguished guests and the fact that they are to secure their reception tickets at the registration desk when registering. Authorized the expenditure of \$500.00 by the Annual Meeting Committee to underwrite an "Early Bird" Reception for those members registering on Sunday, September 3. Approved of the offer of the Washington, D.C. Chapter to serve as hosts at the Sunday, September 3, "Early Bird" Reception. Approved of the provision of a "dutch treat" bar in a suitable room for use by the members on Monday evening, September 4.

3) APPROVED of the Report of the National Nominations Committee composed of Col. Leich, Chairman; Col. Goodhand; Col. Rankin; Mr. Haugerud; and Mr. McDonald. Directed the Chairman to dispatch letters to the Awards recipients and to their commanders so as to insure their attendance at the Awards Luncheon.

4) EXPRESSED their unanimous appreciation to Col. Leich for the outstanding manner in which he, as Chairman of the National Awards Committee, facilitated the deliberations of the Committee.

5) APPROVED of the findings of the Award Design Committee composed of Mr. Wilson, Col. Leich, and Col. Goodhand and directed the Executive Secretary to order 150 Association medals in bronze from the Medallic Art Co., New York, N.Y.

6) APPROVED of the report of the Executive Secretary on the feasibility of an Association-endorsed life insurance program for members. Directed the Executive Secretary to complete the necessary coordination with the underwriters so as to have the final plan ready for National Board review at its September 2 meeting, or for mail review at an earlier date.

7) APPROVED of the report of the Executive Secretary on the Flight Pay Protection Plan endorsed by the AAAA. Tabled the proposal of Col. Goodhand to have the FPPP Program monitored by a National Board Committee of three members, rather than by one active Army member of the Board under the present system.

8) SET the time and place of the next National Executive Board meeting at 9:30 a.m., Saturday, September 2, 1961, at the Sheraton-Park Hotel, Washington, D.C.

For the President:

Arthur H. Kesten
Executive Secretary
AAAA

PLAN TO ATTEND

The 1961 Annual Meeting of the Army Aviation Association of America will be held September 3-5 at the Sheraton-Park Hotel in Washington, D. C. This will be the third National Get-Together and it promises to be even bigger and better than the first two meetings.

The dates for our Association meeting have been scheduled to coincide with the annual meeting of the Association of the United States Army which is September 6-8. We think this arrangement will be beneficial to both organizations.

REGISTRATION: Registration will open at noon on Sunday, September 3rd in the lobby of the Sheraton-Park Hotel. All who attend the sessions of the 1961 Annual Meeting will be expected to register. The registration fee for military personnel is \$2.00 per person and for civilian members \$3.00 per person. Advance registrations may be made by forwarding the following registration slip with your check to P.O. Box 1528, Washington 13, D. C. Checks should be made payable to AAAA Annual Meeting.

ADVANCE GET-TOGETHER: An informal, Dutch Treat, "milling mob" affair—roughly titled, not for "drys," and guaranteed to place all of those members reporting early in close touch with their friends—has been scheduled for Sunday afternoon and evening. The exact Sheraton Hotel room will be announced at a later date, a big room to be sure.

BUSINESS SESSIONS: The National Executive Board and Chapter Delegates will conduct business meetings on Monday, September 4th. All members are invited to attend these meetings.

RECEPTION: An AAAA-Industry Co-Sponsored Reception for all registrants will be held on Tuesday evening, September 5th from 6:30-8:30 P.M. Your registration badge is your ticket for admittance. Dress will be informal and ladies are invited. It is expected that many persons attending the AUSA Annual Meeting will also register for the AAAA meeting and will attend the reception. This will be an excellent place to renew acquaintances with old friends. Besides, in this age of inflation where can you get a better bargain for \$2.00-\$3.00?

The Reception is the closest thing to a "Who's Who in Army Aviation," Plan to attend.

HONORS LUNCHEON: The Annual Honors Luncheon will be held on September 5th. During the luncheon the following awards will be presented:

James H. McClellan Safety Award

Hughes Award to an Outstanding Aviation Unit

AAAA Award for the "Army Aviator of 1960"

Hiller Award for the Aviation Soldier of 1960."

The principal speaker for this occasion will be *Mr. Najeeb Halaby*, Administrator, Federal Aviation Agency.

Tickets for the *Honors Luncheon* are \$5.50 each. Chapter tables seating 10 persons each may be reserved prior to August 1st by forwarding a check for \$55 for each table to *AAAA Annual Meeting, P.O. Box 1528, Washington 13, D. C.* Chapter and Delegate Tables will be interspersed with Industry Tables. Assignment of table locations will be made in the order in which requests are received.

Single tickets for the *Honors Luncheon* may be obtained from the Registration Desk if reservations are still available. Refunds for luncheon tickets cannot be made for cancellations received after August 25th.

AAAA cannot accept or handle any hotel reservations. Requests for hotel reservations

should be directed to the Sheraton-Park Hotel or to the Billeting Officer, Ft. Myer, Va., if you desire to utilize government facilities. Any additional queries concerning hotel accommodations should be addressed to the Sheraton-Park Hotel.

The attendance at AUSA functions on Wednesday can be anticipated to be very large. Many of the AUSA members will desire to attend our *Honors Luncheon*. Since the capacity of the hall is limited to about 900, we want to make certain that our AAAA members attending have first chance at the tickets for the Luncheon. This can only be accomplished through your cooperation. Please send in your advance registration with request for luncheon tickets early. This should be mailed to P.O. Box 1528, Washington 13, D. C.

RICHARD D. MEYER
Chairman
Annual Meeting Committee

REGISTRATION COUPON
AAAA ANNUAL MEETING
P.O. Box 1528
Washington 13, D.C.

Enclosed please find \$..... in payment of my registration for the AAAA Annual Meeting and tickets indicated below:

FUNCTION	QUANTITY DESIRED	UNIT PRICE		AMOUNT
		MIL	CIV	
Registration (Includes Reception)	\$2.00	\$3.00
Honors Luncheon	\$5.50	\$5.50

Name
(Print or type) (Rank or Title or Position)

Address
(Street) (City or Station)

FULL PAYMENT MUST ACCOMPANY THIS REGISTRATION

THIRD ANNUAL MEETING Army Aviation Association

SHERATON-PARK HOTEL, WASHINGTON, D.C.

PROGRAM

SUNDAY, SEPTEMBER 3

1200-1800

AAAA Registration Desk Open

1730-1900

AAAA-Sponsored Informal 'Early Arrival'
Get-Together and Reception
Host: Washington, D.C. Chapter

MONDAY, SEPTEMBER 4

0800-1700

AAAA Registration Desk Open

1000-1200

Opening Membership Business Session
President's Report
Election of National Executive Board
Members
General Discussion of Agenda Items

1300-1400

Press Briefing, AAAA President

1400-1630

Afternoon Membership Business Session

1630-1730

National Executive Board Meeting

1730-1900

Informal Reception

TUESDAY, SEPTEMBER 5

0800-1200

AAAA Registration Desk Open

0900-1100

Final Membership Business Session
Committee Reports

1200-1345

Annual AAAA Honors Luncheon

Opening Remarks, President of AAAA

Invocation

Introduction of Head Table Guests

Fife and Drum Corps

Presentation of AAAA National Awards

James H. McClellan Safety Award

AAAA Award to the Army Aviator
for 1960

Hughes Award to an Outstanding Aviation
Unit for 1960

Hiller Award to the Aviation Soldier
for 1960

Address by Honorable Najeeb E. Halaby
Administrator, Federal Aviation Agency

Benediction

1445-1730

Panel Discussion
Senior Army Personnel
"The Army Looks at its Aviation Future"

1730-1830

National Executive Board Meeting

1830-2030

AAAA-Industry Co-Sponsored Reception
Introduction of the new National President
and National Executive Board Officers

Application for Coverage

I have inclosed a check or money order made payable to the **FLIGHT PAY PROTECTION PLAN** for my annual premium of \$ PREMIUM

I understand that my coverage under this Plan will commence upon the first day of the month after the postmark month in which I apply for the coverage.

A check or money order in the amount of your annual premium should be made payable to **FLIGHT PAY PROTECTION PLAN** and submitted with your application form to **AAAA, Westport, Conn.** Be certain to refer to the reverse side of this application form. This form may be used for quarterly or semi-annual premium payment plans.

Rank or Grade	Name	ASN	Annual Flight Pay
Address Post Office Box Number, Residence or Quarters Address is desired			
City	Zone	State	Years of Service for Pay Purposes

I certify that I am currently on flying status with a U. S. Army unit; that I am in good health at the time of making this application; that I am entitled to receive incentive pay; that no condition is known to me at this time that could result in my loss of flying status for physical reasons; and

that no action is pending to remove me from flying status for failure to meet required physical standards. I authorize the Company, or Company-designated representatives, to examine all official medical records that may be pertinent to any claim that I may submit.

SIGNATURE **DATE**

Failure to sign above invalidates this application.

This coverage is limited to **AAAA** Members. ☐ I am an **AAAA** Member.

☐ **INITIATION FEE . . . \$3.00**

First Year Membership Only. Includes Lapel Pin and Decal.

ANNUAL OR PRO-RATED AAAA DUES

Membership Year Terminates Each March 31st

- ☐ \$6.00 (Applications submitted April 1 - June 30)
- ☐ \$4.50 (Applications submitted July 1 - September 30)
- ☐ \$3.00 (Applications submitted October 1 - December 31)
- ☐ \$1.50 (Applications submitted January 1 - March 31)

IMPORTANT: Your Dues should be paid by separate check made payable to **AAAA**. Your premium check should be made payable to **FLIGHT PAY PROTECTION PLAN**.

CATEGORY OF AAAA MEMBERSHIP

- | | |
|---|--|
| <input type="checkbox"/> Active U.S. Army establishment | <input type="checkbox"/> U.S. Army Reserve Component |
| <input type="checkbox"/> U.S. Army National Guard | <input type="checkbox"/> Other. Describe below. |
- component

**Flight Pay Protection Plan
Premium Table**

IF MONTHLY FLIGHT PAY IS:	YOUR ANNUAL FLIGHT PAY IS:	YOUR ANNUAL PREMIUM RATE IS:	YOUR SEMI- ANNUAL PREMIUM IS:	YOUR QUAR- TERLY PREMIUM IS:
\$245	\$2,940	\$44.10	\$23.05	\$12.05
240	2,880	43.20	22.60	11.80
230	2,760	41.40	21.70	11.35
225	2,700	40.50	21.25	11.15
220	2,640	39.60	20.80	10.90
215	2,580	38.70	20.35	10.70
210	2,520	37.80	19.90	10.45
205	2,460	36.90	19.45	10.25
200	2,400	36.00	19.00	10.00
195	2,340	35.10	18.55	9.80
190	2,280	34.20	18.10	9.55
185	2,220	33.30	17.65	9.35
180	2,160	32.40	17.20	9.10
175	2,100	31.50	16.75	8.90
170	2,040	30.60	16.30	8.65
165	1,980	29.70	15.85	8.45
160	1,920	28.80	15.40	8.20
155	1,860	27.90	14.85	8.00
150	1,800	27.00	14.50	7.75
145	1,740	26.10	14.05	7.55
140	1,680	25.20	13.60	7.30
135	1,620	24.30	13.15	7.10
130	1,560	23.40	12.70	6.85
125	1,500	22.50	12.25	6.65
120	1,440	21.60	11.80	6.40
115	1,380	20.70	11.35	6.20
110	1,320	19.80	10.80	5.95
105	1,260	18.90	10.45	5.75
100	1,200	18.00	10.00	5.50
95	1,140	17.10	9.55	5.30
90	1,080	16.20	9.10	5.05
85	1,020	15.30	8.65	4.85
80	960	14.40	8.20	4.60
75	900	13.50	7.75	4.40
70	840	12.60	7.30	4.15
65	780	11.70	6.85	3.95
60	720	10.80	6.40	3.70
55	660	9.90	5.95	3.50
50	600	9.00	5.50	3.25

Don't Jeopardize Your Flight Pay!

FLIGHT PAY PROTECTION PLAN



Endorsed by the
Army Aviation Association



DAVIS



HAUGERUD



LEONARD

AAAA NOMINEES FOR '61-'63

AAAA's National Nominating Committee met in Washington, D.C., July 14, to select a slate of three candidates to replace outgoing National Executive Board members Bryce Wilson, Col. O. Glenn Goodhand, and Howard E. Haugerud.

Nominated for National Executive Board office for 1961-1963 terms of office were James N. Davis, Deputy Assistant Secretary of Defense for Production Management; Howard E. Haugerud, Deputy Under Secretary of the Army - International Affairs; and Jack E. Leonard, Manager of Military Requirements, Cessna Aircraft Company, Wichita, Kan.

A National Board Member-at-Large for the past two years, Mr. Davis has had experience in government and industry, including three years as Special Assistant for Research and Development to the Under Secretary of the Army during 1951-1954. A later consultant to the Operations Research Office of Johns Hopkins, he served as Vice President for Government Operations at the Vertol Division of The Boeing Company from 1957 to 1960 before joining the Bell Aerosystems Company in 1960 as Vice President.

An Army National Guard instrument qualified senior Army Aviator, Howard E. Haugerud has served on the National

Executive Board of AAAA as Vice President for Public Affairs and Vice President for National Guard Affairs. He has served as Assistant to Senator Hubert H. Humphrey (1956-1958) and for the past two years has been a professional staff member on Senator McClellan's Government Operations Committee, assigned to the Subcommittee on International Organization, and more recently, to the Subcommittee on National Policy Machinery. He is president of the James H. McClellan Memorial Foundation.

Jack E. Leonard, the Committee's third nominee for National Executive Board office, is a past chairman and vice-chairman of the Aerospace Industries Association's Helicopter Council and a past Vice-President of the American Helicopter Society. A civilian flight instructor for the Army Air Corps from 1941 to 1944, he holds most known fixed-wing and rotary-wing ratings. Prior to joining Cessna Aircraft Company's Helicopter Division in 1953, he served in sales and executive positions with the Aviation Products Division of the Goodyear Tire and Rubber Company during 1944-1953. He is a charter member of the National Pilots Association and a member of the Quiet Birdmen, IAS, and American Ordnance Association.

SPHERE OF INFLUENCE



...of the PHANTOM II

The unrefueled range of the Phantom II operating from carriers or existing suitable friendly land bases allows this twin mission aircraft to carry a multi-ton load of conventional or nuclear ground strike weapons over 92% of

the earth's surface. As an air superiority fighter, its combat range extends over 96% of the earth's surface. Much of the small area outside the influence of the Phantom II is in the Transpolar Arctic.



MCDONNELL

*Phantom II and F-101 Fighter and Attack Aircraft •
Project Mercury and Aeroballistic Spacecraft • Talos Airframes and Propulsion Systems •
Quail Decoy Missiles • Rotorcraft • Electronic Systems • Automation*

MCDONNELL AIRCRAFT • ST. LOUIS



JET RESEARCH AIRCRAFT

An artist's conception of a vertical take-off and landing jet research aircraft which Lockheed's Georgia Division is developing for the U.S. Army. The Army's Transportation Research Command, Fort Eustis, Virginia, will use the aircraft, called the "Hummingbird," in various research flight programs to test the jet ejector lift principle. Heart of the proposed aircraft is a system of ejector mixing chambers buried in the fuselage, which is fed by high velocity exhaust diverted from the two jet engines mounted in pods along either side of the fuselage. The mixing chambers are, in turn, enclosed at the top and bottom by bomb bay type flush doors. For vertical takeoff, the flush doors are opened and hot exhaust gases are diverted from the engine and fed to the mixing chambers. Here they are directed downward through jet nozzles for vertical lift. Once aloft, engine diverter valves and fuselage doors are closed, directing the jet flow rearward for conventional forward flight.