ARMY AVIATION

March ★ 1961

COMBAT OPERATION:

"CRISS-CROSS CRAZY QUILT"

Three Flight Operations Centers unravel the crowded airspace over USAREUR's Exercise Wintershield II

Planning and controlling traffic in the air space above the modern battlefield presents perplexing and unprecedented problems.

Jets swoop through the air corridor at speeds of 500 mph. *Drone surveillance craft* slice through the skies on reconnaissance. *Missiles* need plenty of elbow room when they blast toward their target. *Helicopters* and *fixed wing planes* move troops and equipment through battlefield air space. *Aerial supply craft* head for pinpoint parachute drops, and *cargoes of wounded* dash through the air to the hands of medics.

Criss-cross, crazy-quilt, a hundred different speeds, a score of altitudes and countless specific needs—that was the ever-changing sky picture presented to three US Army *Flight Operation Centers* during *Winter Shield II*.

Each *Flight Operation Center* (*FOC*) managed a sector of the 6,500 square acres of air space turned over to exclusive Seventh Army control by the West German government. From January 25—February 10 this air space became combat space, and

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- *More than 75,000 miles-plus, without major ground support*
- *3,500 take-offs, from sea level to 19,700 feet*
- *750 hours of punishing demonstration flight*
- *Only minutes of daily flight-line maintenance*
- *More than 13,000 passengers, plus cargo, in 15 countries*

There's a lot more than meets the eye in claiming helicopter maintenance dependability. You must prove your claim, and Bell helicopters have done just that during these world-wide demonstration tours . . . mostly in areas devoid of helicopter support facilities. The statistics compiled by Bell's Models 204B, 47J-2 and 47G-3 during this extensive flight program tell a story of maintenance dependability and scope of operation unequaled in helicopter flight.

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MISSION BELL ACCOMPLISHED

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CRISS-CROSS/*Continued*

every plane aloft cleared its route, speed, altitude, and destination with FOC traffic managers.

Routes for heliborne battle groups, aerial attackers, drone photo flights, combat and medical suppliers—all battlefield aviation missions were reported to Flight Operations Crews and tracked on up-to-the-minute charts. When jet or missile routes had to be cleared in a hurry, when simulated atomic blasts turned nearby air space into a no-man's land, FOC staffs put their radio "finger" on each plane affected and cleared the danger area.

Winter Shield II was the first time Seventh Army had total control of air space in a simulated combat situation. This is a big change from the single provisional *FOC* that helped the Air Force air controllers in last year's winter maneuver. This time, Seventh Army air traffic control was ready for everything from jet strikes to atomic detonations above its battle area.

At Grafenwoehr, Bayreuth, and Regensburg, Flight Operations Centers operating on a 24 hour basis directed visual and instrument flights all over the front in every kind of weather. German staffers were on hand too, to help direct Bundeswehr air traffic.

The *Flight Operations Center* (*FOC*) at Grafenwoehr is believed to be the only one of its kind in the world. It is housed in two mobile vans and can be rolling toward a new position in 30 minutes. The three operating centers materialized in the 22 days preceding Seventh Army assumption of air space control. During this period, 105 men from 24 Seventh Army units and four men from the German III Corps trained at Grafenwoehr.

As planes approached their landing site *FOC* control was passed to *Approach Control Towers* (*ACT*) for terminal direction. Markedly different from familiar tower control adjacent to an air strip, each ACT radio-directed landings and take-offs for many different landing sites within its sector. When a *Winter Shield II* aviator took off in clear weather, he often was airborne before receiving central clearance, getting routing information from his *FOC* while in the air.

Assured of clear approach lanes by *ACT*, aviators either landed visually, homed in on radio beacons, or received guidance from Ground Control Approach (GCA) radar. Each plane was so accurately plotted by *FOC* staffs that the Air Defense Command Post used *FOC* data to clarify its air defense radar blips.

As traffic techniques undergo refinement *FOC's*, *ACTs* and *GCAs* will be as mobile as the *Flight Operations Center* at Grafenwoehr. In its final form the entire operation will be able to move with the battle. The air traffic control network of *Winter Shield II* is ready now for the increased air loads of the future. *"We'll run out of physical air space before we exhaust our traffic handling capability,"* stated *Capt. Garland B. King*, Grafenwoehr FOC chief. *"Our present system is not final by any means, but it has met every challenge so far. In just two days after our crews finished their course of instruction they handled a flight emergency perfectly."*

Future planning has the control network primed for the highest performance aircraft yet to come. *"With our Air Force support coming more and more in the form of jets and with the advent of missiles and atomics we must clear key routes on a split second schedule. To do this we must know the location of every aircraft in our area at all times. We did this in Winter Shield II,"* declared *Lt. Col. Jerome B. Feldt*, Commander, Seventh Army Aviation Company (Provisional).

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DOD CEILING LIFTED

by
Brig. Gen. Clifton F. von Kann
DIRECTOR OF ARMY AVIATION, ODCSOPS

One of the most important problems facing Army aviation since early fall has been the ceiling on the Army aviator strength. I have discussed this at some length in my previous Newsletters, and I know every aviator is vitally interested in this development.

Recently the Office of the Secretary of Defense raised this ceiling to 6,538, an increase of 100. This is most gratifying because it has permitted the Army to keep on flying status those officers whom we otherwise would have been forced to drop for *quantitative* reasons. Every Army aviator is rejoicing with those of you who were notified previously that you would be removed from flight status but whose orders have now been rescinded.

The many actions and reactions connected both directly and indirectly with the ceiling controversy indicate that perhaps all of us should re-examine our 201 files on one hand and ARs 600-105, 600-106 and 600-107 on the other. Such a re-examination might well point out explicit ways that we can make ourselves better Army aviators and Army officers and hence less vulnerable to future Review Board actions.

The regulations mentioned above emphasize the longstanding Army policy that the Army wants more than personnel skilled in flying. It wants well-rounded officers, firmly grounded in their branch. *Flight Status Review Boards* look at the man as a whole and not just his flying ability. Here are some of the questions they might ask:

What is his OEI?

If low, does his OEI indicate a better trend?

How much civilian schooling does he have?

If substandard in formal education, what is he doing toward general educational development?

Is he abreast of his contemporaries in military schooling?

Has he had a variety of assignments—staff and command, aviation and non-aviation?

Has he been in any serious or repetitive trouble?

What uncomplimentary things do his raters and indorsers say about him?

Has there been any trend to correct such traits?.

Does he show a true interest in improving himself in the aviation profession?

Does he maintain his instrument ticket?

Does he stay on the safe side of minimums?

Is he accident prone?

Many of these rather subjective questions must go into the *Board's* consideration of the potential worth of every individual.

While the relief granted by the Office of the Secretary of Defense has solved our immediate problem in this area, we are making every effort to explain our future requirements at the DoD and Congressional levels in the hope that this will forestall a future ceiling.

The *Mohawk* will soon be distributed to units throughout the world, and I know every aviator is looking forward to seeing this new capability in action. I would like to remind you of the philosophy behind the development of this aircraft and caution everyone concerned that we must not forget the basic mission of the *Mohawk* as the aircraft is phased into the hands of the troops.

Many years ago, the Army recognized that its firepower capability greatly outstripped its capability to apply this firepower with discrimination and accuracy. The concept of a new surveillance aircraft to fill this target acquisition requirement at all levels, especially the division level, resulted in the *Mohawk*. Tremendous design engineering and expense went into this aircraft to produce a rugged, easy-to-maintain aircraft that could live and operate at *division* level.

It would be unfortunate if the problems inherent in the operation of the interim *RL*-23*s* and *RL*-26*s* cast a shadow of doubt over the employment of the *Mohawk* at the lower echelons. All of our testing indicates we have a sound, versatile aircraft, well suited to the forward area. The concept that this aircraft must be operated under division control, as well as corps and Army, has been stressed repeatedly by the Chief of Staff. Army aviation has a treasured tradition of being responsive to the small unit commander—the *Mohawk* was built with this tradition in mind.

Another tradition of Army aviation is on the pride of Army aviators in their ability to navigate at very low altitudes, with a high degree of precision. The ability to follow a large scale map and pinpoint accurate coordinates has been essential to the basic mission of the aerial OP. In this age of electronics and OMNI stations, we must not neglect our practice of this basic art.

In this conjunction, it is interesting to note that the U.S. Air Force, which produces aeronautical approach charts for all three Services, has proposed the discontinuance of the 1/250,000 series on the basis that there is little Air Force use for such a chart. The U.S. Navy and the U.S. Army desire to continue the 1/250,000 chart and to make certain basic improvements which will make the aeronautical chart more compatible with the present 1/250,000 Army-produced topographic map used by ground forces. The Air Force will continue to reproduce and distribute aeronautical charts.

As a result of recent inter-Service meetings, the production and distribution of a revised 1/250,000 tactical air chart have been agreed upon among the Services and will be based upon the current topographic series. It is estimated that the updating of this chart, through the Army-proposed utilization of the same basic data and sheet line used to make topographical maps, will effect a considerable savings over the updating of the old aeronautical charts.

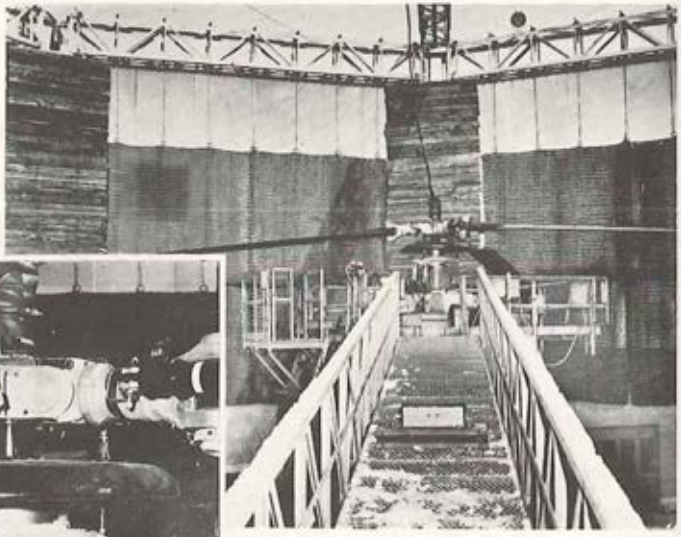
There are approximately 1,000 aeronautical charts, covering different land areas of the world, which need to be updated. It is anticipated that revision and production of approximately 165 charts can begin immediately within existing funds. It is further estimated that at least five years will be necessary to complete the new series of aeronautical charts in areas of primary tactical interest in Europe, the Middle East, and the Far East.

Without waiting for this new series of

Chinook PROGRESS

110-HOUR WHIRL TEST COMPLETED

During February, the 110-hour accelerated whirl testing of the Chinook rotor assembly was completed satisfactorily on the whirl tower at the Wright Air Development Division. Teardown inspection after completion of the testing revealed no significant discrepancies.

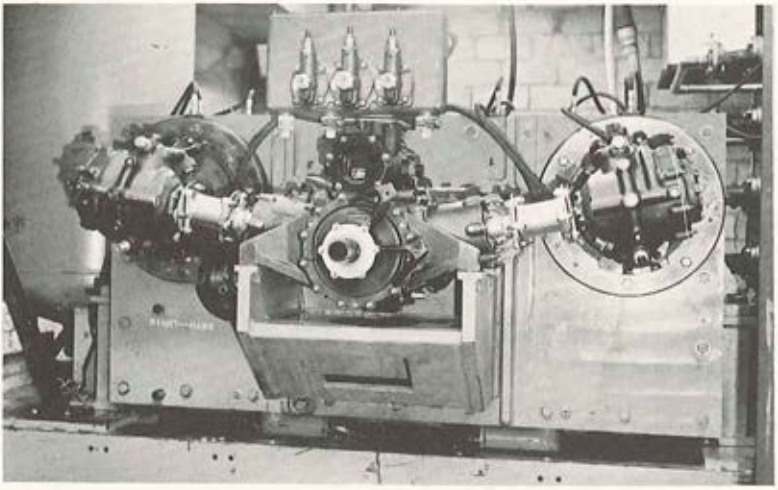


Chinook Rotor on Whirl Tower

Close-up of Chinook Hub & Upper Controls on Whirl Tower

SUMMARY

March, 1961



Engine Nose Gear Boxes & Combining Gear Box on Test Stand

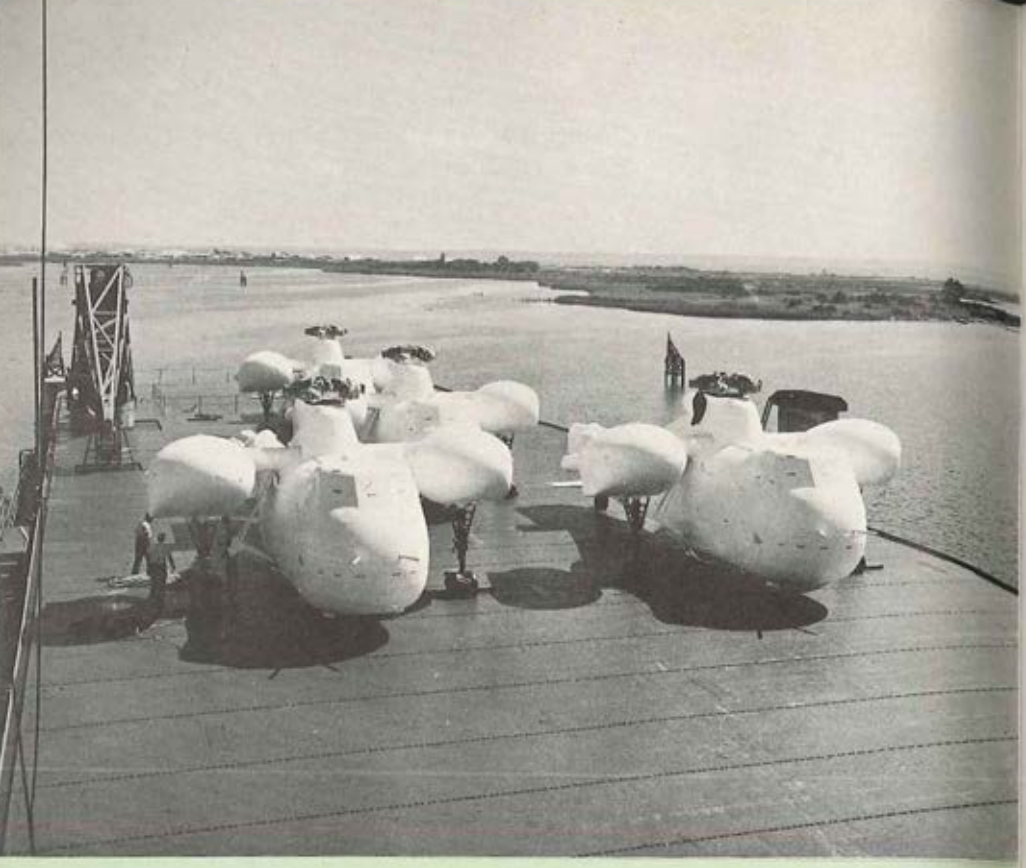
TRANSMISSIONS UNDERGOING TEST

Also during February, endurance testing of the engine nose gear boxes and the combining gear box was started.

ADDITIONAL CHINOOKS ORDERED

The USAF Air Materiel Command, acting on behalf of the U. S. Army, has given Vertol Division an order for 18 additional HC-1B Chinook helicopters, bringing the total number now on contract to 28 aircraft.

VERTOL DIVISION
MORTON PENNSYLVANIA
BOEING



Barely recognizable, four Army H-37 Mojaves sit atop the deck of a flat-top prior to their trans-Atlantic shipment to Europe. This '60 photograph of 4th Trans Co-MH choppers depicts the unique Sea Spray process wherein Brookley AFB, Ala. technicians completely "cocoon" the aircraft with a plastic coating to preserve them against the salt spray of an ocean voyage. (USAF photo).

charts, it might be well for all of us to pick up the current aeronautical charts for some VFR missions, keep the Jeppesen case closed, and see if we can still get from here to there *without* the benefit of radio aids.

Army aviation is very proud of the recent announcement that *Colonel Jack Tolson* has been selected for the rank of Brigadier General. This office, of course, has some mixed emotions because, unfortunately, promotion means *Jack's* transfer from the Aviation Directorate. I haven't seen any written orders as to his next assignment, but don't be too surprised if you see a tremendous surge of interest in Army aviation in the vicinity of Addis Ababa.

Sincerely,
Clifton F. Von Kann
Brigadier General, GS
Director of Army Aviation, ODCSOPS

USAAC REPORT

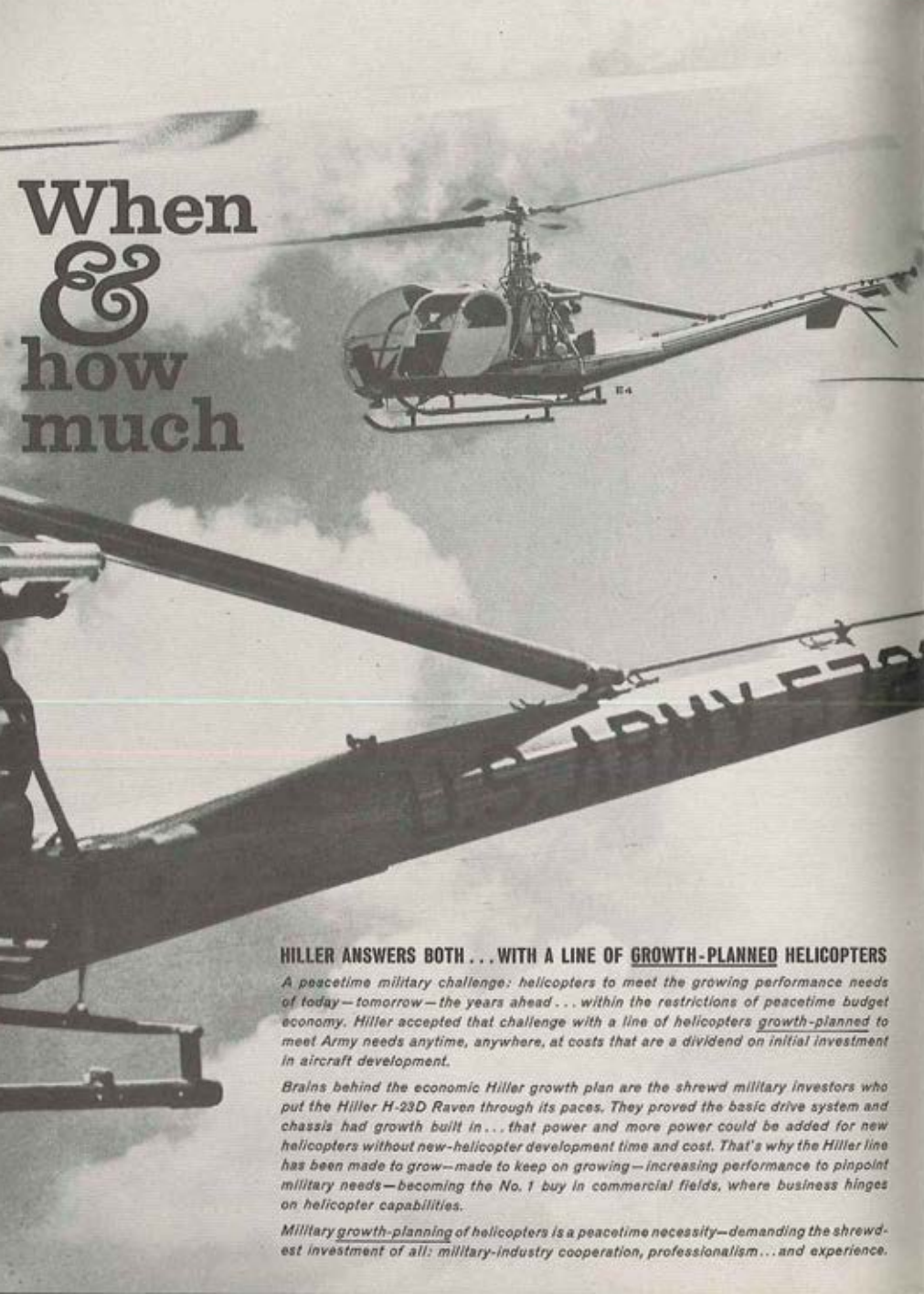
By
Maj. Gen. Ernest F. Easterbrook
Commanding General
U.S. Army Aviation Center

Years of imaginative planning and hard work on the development of the Army helicopter were recognized in January when the *Grover E. Bell Award* was presented to our Combat Developments Office. I had the pleasure of accepting a certificate and medal in behalf of the CDO at the annual honors night dinner of the *Institute of Aerospace Sciences* in New York.

The Bell Award was established by the late *Lawrence D. Bell*, founder of the Bell Aircraft Corp., in memory of his older brother, a pioneer aviator who died in a plane crash in 1913.

The certificate cited the Fort Rucker Office for the development of the helicopter as a reconnaissance and suppressive fire vehicle and said that the development *"significantly increased the helicopter's effectiveness."*

Although this successful arming of helicopters with machine guns and rockets



HILLER ANSWERS BOTH . . . WITH A LINE OF GROWTH-PLANNED HELICOPTERS

A peacetime military challenge: helicopters to meet the growing performance needs of today—tomorrow—the years ahead . . . within the restrictions of peacetime budget economy. Hiller accepted that challenge with a line of helicopters growth-planned to meet Army needs anytime, anywhere, at costs that are a dividend on initial investment in aircraft development.

Brains behind the economic Hiller growth plan are the shrewd military investors who put the Hiller H-23D Raven through its paces. They proved the basic drive system and chassis had growth built in . . . that power and more power could be added for new helicopters without new-helicopter development time and cost. That's why the Hiller line has been made to grow—made to keep on growing—increasing performance to pinpoint military needs—becoming the No. 1 buy in commercial fields, where business hinges on helicopter capabilities.

Military growth-planning of helicopters is a peacetime necessity—demanding the shrewdest investment of all: military-industry cooperation, professionalism . . . and experience.

H-23D Raven—250 hp: *First helicopter ever granted 1,000 flight hours by U. S. Army between major overhauls... highest in air availability with maintenance hours less than half the all-Army average... currently logging more than 7,000 hours monthly at Camp Wolters—with lowest-cost-per-flight hour of any copter.*

12 E—305 hp: *Next in the growing line with the same dynamic components as the Raven stepped up in hp and performance...No. 1 buy in the fiercely competitive commercial field, where the man who does the job fastest and safest gets the business, and the profits... powered the way for light helicopters in 5 major industries.*

E4—320 hp: *The next step forward in power—size—and Hiller's traditional long-range total economy... the lowest cost 4-place helicopter in the air today, in both original and operating cost... the only U. S. rotorcraft in its class with power to climb straight up fully loaded and at 820 feet per minute.*

Super E—340 hp: *Here's the next step in Hiller's growth-planned line... the power-packed new E increases hp to 340, lifts sea level performance to 3,400 ft. And... there's more up and coming—Hiller helicopters with growth built in—keeping pace with the military needs of the sixties!*

Designs are one thing. Deliveries another. Both come from

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A POWERFUL INDUSTRIAL AID TO DEFENCE

The Royal Canadian Air Force wanted Caribou aircraft in a hurry for service Overseas. The de Havilland Downsview facility was shut down for two weeks summer vacation. A skeleton staff was hurriedly recalled, two demonstrator aircraft were completely overhauled, engines changed, special radio equipment, interior furnishings, and long range fuel tanks for the overseas ferry flight installed, and the aircraft painted in U.N. colours — ALL IN THE RECORD ELAPSED TIME OF 12 DAYS.

THE STOL CARIBOU

DESIGNED AND BUILT BY

DE HAVILLAND AIRCRAFT OF CANADA

DOWNSVIEW MEMBER COMPANY OF THE HAWKER SIDDELEY GROUP ONTARIO

WASHINGTON REPRESENTATIVE: J. E. McDONALD - 319 TOWER BUILDING - 14th AND K. Sts. N. W.

USAAC/*Continued*

earned the award for CDO, another Fort Rucker unit played an equal part in the development of the armed helicopter. While the CDO took care of the "idea" part of the concept, the 8305th Aerial Combat Reconnaissance Company, Experimental, must be singled out for its major contribution of converting into hardware the ideas generated by the Combat Developments Office.

Flight coordination for Fort Rucker aviators was taken over by the Dothan office of the Federal Aviation Agency on Feb. 15. *Mr. Claude Stewart*, chief of the local station, spoke to our fliers in detail about the changeover from the old Military Flight Service.

All of the information which pilots used to get from the MFS will now be furnished by the FAA, but the individual pilot will not be aware of any radical changes. The important differences will be "behind the scenes," where better coordination will make the service more efficient and economical.

Before the change-over began on Jan. 1, flight coordination and control was handled by the MFS under the Military Air Transport Service. Earlier, each military branch had maintained its own flight coordination and control. The consolidation of all the branches into the MFS improved the efficiency of the operation, but when the FAA begins handling all domestic military and civilian flights, the operation will be even more efficient.

Dothan, Ala., the nearest FAA "tie-in" station for the nationwide FAA teletype network, will serve Fort Rucker aviators.

TOP: The Grover E. Bell Award presented to the Combat Developments Office. CENTER: Gen. Easterbrook bids farewell to Maj. Bethouart as Lt. Col. de Jerthanion looks on. BOTTOM: B. G. Dykes of the FAA office at Dothan explains the new flight following procedures to Lt. R. W. Sheathelm. (US Army photos).

AVIATION OFFICERS FROM THE SIX REGIONAL COMMANDS AND THE U.S. ARMY AIR DEFENSE COMMAND ARE SHOWN DURING A RECENT 2-DAY CONFERENCE HELD AT THE COMMAND'S HEADQUARTERS IN COLORADO SPRINGS, COLO. FRONT ROW, L-R, ARE: MAJ. H. W. JOHNSON (7TH REGION); CAPT. I. T. BRUESTLE (5TH REGION); BRIG. GEN. F. M. McGOLDRICK, ACofS, G-3, USARADCOM; LT. COL. G. L. KINLEY (AO, USARADCOM); CAPT. H. E. ZIEGLER (2ND REGION); AND MAJ. J. H. LEFLER (OPNS OFF, USARADCOM). BACK ROW, L-R, CAPT. E. C. ELLIOTT (1ST REGION); MAJ. NEIL REESE (SAFETY OFF, USARADCOM); CAPT. J. W. FORD (6TH REGION); CAPT. R. D. LAUTZENHEISER (4TH REGION); CAPT. D. M. BEADLE (4TH REGION); CAPT. D. J. PALCZYNSKI (7TH REGION); R. G. ROBBINS (SAFETY DIR, USARADCOM); CAPT. W. C. PARKER (2ND REGION); MAJ. T. C. SALT AND MAJ. A. W. BARR (USARADCOM). (U.S. ARMY PHOTO).

The entire transition from MFS to FAA is expected to be completed by April 1.

In retrospect, the local Chapter of the *Army Aviation Association of America* had the largest meeting of its history in January, when more than 400 members and guests attended a shrimp dinner at the Fort Rucker's Officers' Club.

Lt. Col. John Oswalt, director of the Dept. of Advanced Fixed Wing Training, and *Col. Jack L. Marinelli,* president of the U.S. Army Aviation Board, narrated two new color movies on the L-19 *Bird Dog* and the AO-1 *Mohawk.*

Many civilians and enlisted men attended the dinner, since it was also part of a drive to enlist new AAAA members, particularly civilians and enlisted men. I'm happy to report the results of the dinner were very gratifying.

The *Silver Star* was awarded to an officer of the Aviation School on Jan. 20, for heroism in combat near Inje, Korea, in the spring of 1951. *Maj. Robert F. Creson,* then an Infantry first lieutenant, led an attack against a communist machine gun emplacement which had been inflicting heavy casualties upon his company. Disregarding his own safety, the young officer plunged alone toward the machine gun, destroyed it, and killed six enemy soldiers by hurling hand grenades into their midst. In spite of painful wounds, he then organized and led a detail to secure medical supplies and ammunition for his trapped comrades. Finding the company commander wounded, he assumed command and led the survivors in an attack until reinforcements arrived. *Maj. Creson's* gallantry saved the lives of many soldiers in his unit.

Hughes Model 269A Helicopter now in production!

Complete facilities and unique experience in research, engineering, manufacturing and testing. These have made the Hughes Tool Company, Aircraft Division, an important factor in advanced light helicopter development and production.

Hughes Tool Company • Aircraft Division • Culver City, California

Five foreign officers figured in Fort Rucker's news last month. *Lieutenants Jung M. Lee* and *Soon Kack Kwon* of the 1st Marine Brigade, Korea, received diplomas from *Capt. Richard L. Speedman*, Fixed Wing Branch Chief, upon the successful completion of the Single Engine Observation and Utility Aircraft Maintenance Course. Both of the lieutenants were promoted from the rank of master sergeant shortly after receiving their diplomas.

Maj. Hilaire R. Bethouart was replaced by *Lt. Col. Georges F. de Jerthanion* as French Liaison Officer. *Maj. Bethouart* will be missed by all of us who had the pleasure of working with him during his two years here. He made many friends here among Army aviators and we wish him the "best of luck" in his new assignment in Paris.

Retirement ceremonies were held during a late January retreat parade for two high-level Center officers, *Lt. Col. Walter J. Borden*, G-3; and *Lt. Col. Eugene F. Bacon*, Inspector General. Both will resume college studies and *Col. Bacon* will enter the teaching profession as soon as he completes his education. Both of them will settle in warm climates, *Col. Borden* selecting California and *Col. Bacon* prefering Sarasota, Fla.

Lt. Col. Bill G. Smith, who served with the Department of the Army in Washington before coming here in 1959, took *Col. Borden's* place and *Col. Bacon* was replaced by *Lt. Col. L. W. Billings* of the IG Section.

Howell

Bacon

Former President Dwight D. Eisenhower's personal helicopter pilot, *Lt. Col. William A. Howell*, was assigned to Fort Rucker in the closing days of January. The Colonel had served as senior Army Presidential helicopter pilot and commanding officer of the Executive Flight Detachment at Fort Belvoir, Va., since 1957. The eight H-34 "Choctaw" helicopters in the detachment carried such dignitaries as England's *Harold Macmillan*, *Lopez Mateos* of Mexico, and *Nehru* of India. The primary mission of the unit, however, is to evacuate the President, his family, and key White House officials in the event of a national emergency.

Number, Please!

A recent survey by the Vertol Division of Boeing Airplane Company summed up the world-wide utilization of Vertol helicopters. In addition to those in service in the United States—and they number more than 850—the breakdown showed that the French Army has 98 H-21s; its Navy 10 H-21s and 19 HUPs. Other countries utilizing Vertol equipment include Germany (Army, 32 Vertol 44s); Japan (Army, 2 Vertol 44s); Canada (Navy, 3 HUPs), Air Force (15 H-21s, 5 Vertol 44s); and Sweden (Navy, 8 Vertol 44s). ■

AT FORT EUSTIS:

SOAALC
ENCOURAGES PROFESSIONALISM

By MAJOR JOHN J. MARTIN

No, it's not a "far-away place" but it is "a strange sounding name!"

SOAALC is the *Senior Officer Army Aviation Logistics Course,* held at the Transportation School of the USA Transportation Training Command, Fort Eustis, Va. It is the *solid* answer to TC's never-ending efforts to maintain the professionalism of its officers and officers of the combat arms assigned to or working with Army aviation activities throughout the Army.

The five-day course is packed with subject matter designed specifically not only to broaden knowledge but also to provide students with a comprehensive and logical progression into aviation areas essential to the Army. Replete with top-flight guest speakers, the course of instruction ranges from the elementary *"Role of the TC Officer"* to *"Aircraft Systems Management";* it is interspersed with such things as the provisioning, testing, support, maintenance, allocation, utilization, reassignment, and disposition of Army aircraft—just to name a few.

The Army, oldest, yet today's youngest aircraft "user," now takes to the air with the employment of aircraft necessary for its internal requirements in the conduct of land operations. The Transportation Corps with a mission of moving people and things is the natural "keeper of the keys" of Army aviation. *SOAALC* clearly defines TC's missions, reserach, development, and multiple operations.

Highlights of the five-day course are: *two-hour student tours* of the Transportation School's Technical Training Shop areas at Fort Eustis and of the Aircraft Service Center #1, which incorporates the latest automatic data processing methods in its daily operations; *case studies* based on actual problem areas in both CONUS and overseas areas; and a *panel discussion* on problems in support of Army aviation. Panel members are the "who's who" of Army aviation in the Transportation Corps —for example, among others, *Col. Dick A. King,* Director of Materiel, OCT; *Col. Jack O. Cromwell,* New Cumberland General Depot; *Maj. John J. Martin,* USATSCH; *Maj. A. V. Juliano,* Army Maintenance Board; *Maj. Thomas Hall,* Office of Technical Assistance, TMC.

Chief problem of *SOAALC,* a five-times-a-year course, has been the unavailability of students. The problem has been compounded by the Army's curtailment of TDY funds, an apparent reluctance of commanders to release officers to attend, and an interpretation that only TC, or aviation-

SOAALC/*Continued*

assigned officers should attend. *Quite the contrary is true in the latter assumption.*

For example, the last course was attended by a WAC lieutenant colonel scheduled for assignment as Information Officer at a TC installation. This particular instance points up the flexibility of the course and its adaptability to other professional areas of the service.

Aviation in the Army is a rapidly growing activity, an essential ingredient of the modern Army mobility. Its intricacies and the vast effort that must go into maintaining and supporting the use of aircraft emphasize the importance of a "need-to-know," at least. Army officers now and in the future will be only "half-pro's" without some knowledge of the fundamental role and operation of Army aviation.

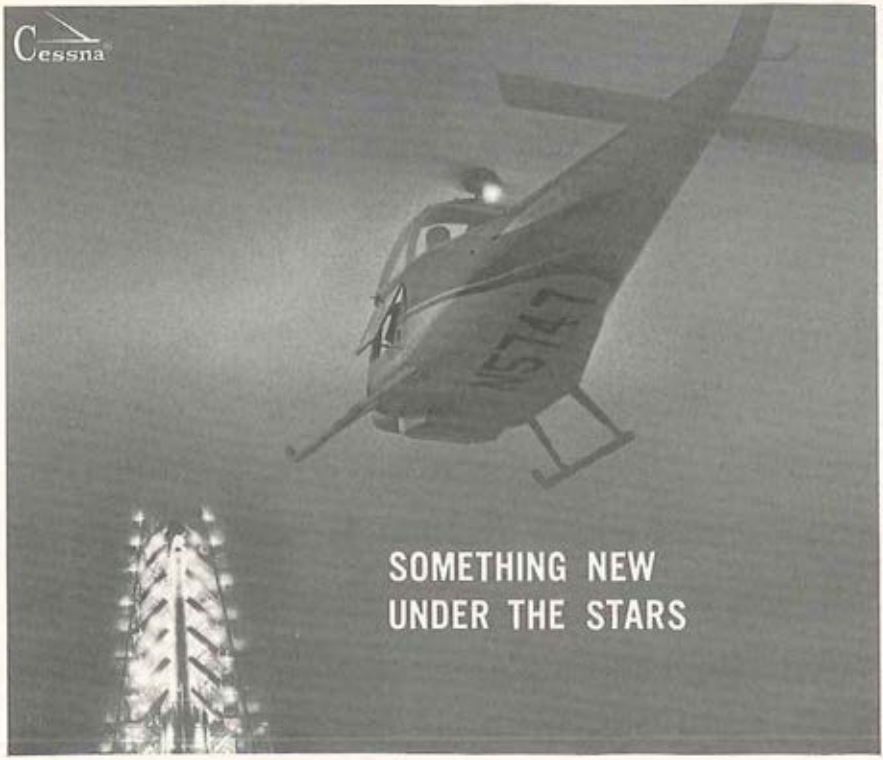
The logistics of Army aviation is a veritable "heart-beat" amidst the bone and muscle of the activity—*SOAALC* can be likened to the stethascope through which we get the "beat."

ABOUT THE AUTHOR

Presently the Acting Chief of the Aviation Branch, Organization, Plans, and Employment Division, USATSCH, Ft. Eustis, Va., Major John J. Martin has been associated with Army aviation since 1943. Serving as an artillery pilot in WW II, he earned the silver star and the air medal with 4 clusters. Later duties included tours as Asst AO for Third Army in Europe, service with the Infantry Board, and as a maintenance officer with the Ordnance Corps. One of the first senior AA's to transfer to TC in 1951, Maj. Martin served three years at USATSCH, Ft. Eustis, Va., prior to Far East duty in '55. His most recent assignment was as a member of MAAG-Japan, where he acted as transportation as well as aviation advisor.

Howard to Chair NASA Committee

Beverly E. (Bevo) Howard, president of the Hawthorne School of Aeronautics, has been named Chairman of a Technical Committee on Army Aviation established recently by the National Aeronautical Services Association. Formed by the Association upon the recommendation of Maj. Gen. Richard D. Meyer, Principal Assistant for Aviation, OCT, the Committee will offer technical assistance in studying specific aircraft maintenance problems. One of its initial studies will encompass standards for the preparation of bids. ■



The one helicopter FAA-certificated for instrument flight: Cessna CH-1C First helicopter to meet the exacting IFR requirements of FAA, the CH-1C is practical not only for what it does but for how it does it. Through clean configuration—plus its simple mechanical stabilization—the CH-1C combines low initial cost, low upkeep cost, ease of operation. Now helicopter instrument training and all-visibility liaison at last can be considered economical.

CESSNA
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World's most experienced makers of utility military aircraft

THE LIFT FAN

V/STOL—SPEED—MOBILITY

General Electric is developing a tip-turbine lift fan for the Army. Designed to bring added mobility and speed to Army jet-aircraft, G.E.'s lift fan can be horizontally mounted in wings or fuselage or can be used as a vertical cruise fan for increased range. This fan is already on test and has completed more than 100 hours of running time. 110-01

Progress Is Our Most Important Product

GENERAL ELECTRIC

FLIGHT PROPULSION DIVISION

the DALTO

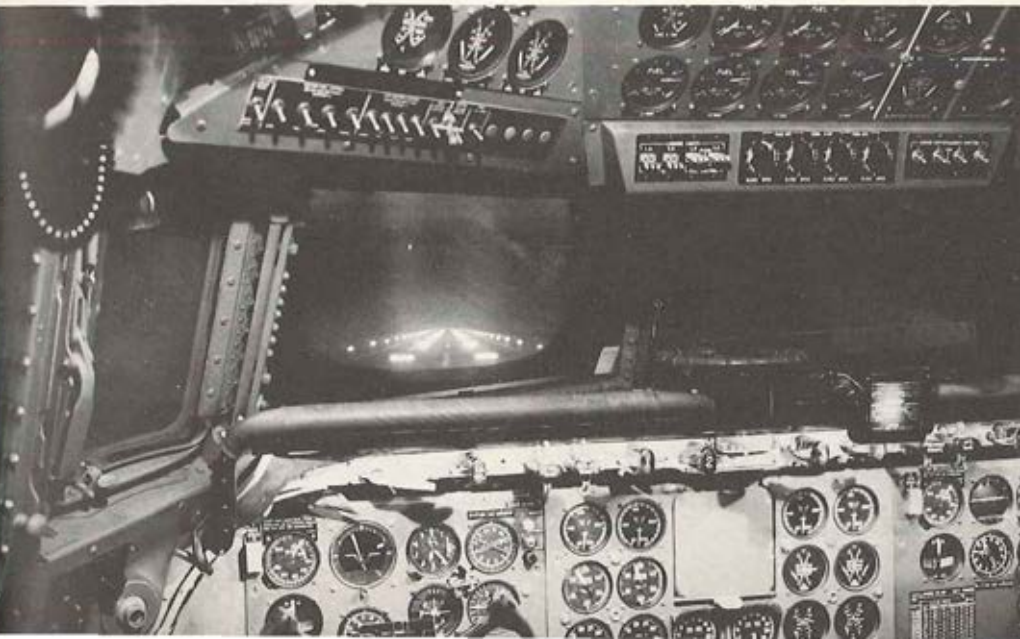
by Major John W. Elliott
Bureau of Research and Development Center, Atlantic City, N.J.

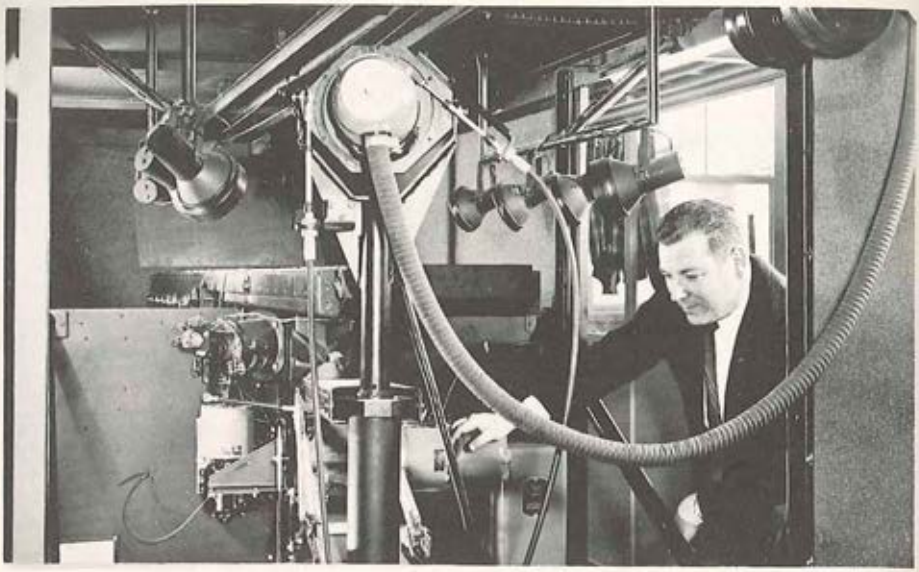
Early in my assignment to the *Federal Aviation Agency,* I participated in an inspection and demonstration of a new simulation and training device, the *Dalto Simulator.* It is sufficient to note at this time that the demonstrated abilities of the device and its obvious potentials in the research and development field were such that, upon the party's return to Washington, the necessary actions were taken to procure the device for use in the simulation program planned for the *Bureau of Research and Development Experimental Center* at Atlantic City, New Jersey.

Manufactured by Dalto Electronics Corp. of Norwood, N. J., the *Dalto Simulator* is a device that may be used with *any* electronic instrument trainer, requiring only minor modification or the installation of a compatability kit. The simulator was designed to resolve the problems of visual simulation of low visibility for take-off, approach, and landing in order to provide a realistic training capability.

Briefly described, the *Dalto* is an enclosed unit, 13' x 5' x 5.5', containing scale models (scale 300 to 1) of approach and runway lighting and runway marking and configuration which are mounted on a neoprene endless belt affixed on a magazine framework. "Lights" are fluorescent paint-

THE RUNWAY PROJECTION AS IT APPEARS TO THE PILOT WITH THE DALTO SIMULATOR.





Interior of the Dalto Simulator showing the television camera focused on the belt representing the runway. Dalto Vice Presidnt Arthur R. Tucker is shown demonstrating the ease of access important for changing runway configurations.

ed posts glued to the belts in desired configuration and activated by overhead ultraviolet lamps. Sequence flashing strobe lights can also be simulated. The "runway" is viewed by a closed circuit projection system which transmits onto a screen located about 15 feet in front of the simulator or into a pilot monitor located forward of the pilot inside of the simulator.

The camera inside the unit corresponds to the airplane, and is "flown" by the pilot as he flies the flight simulator. The camera moves in five degrees of freedom; pitch, roll, heading, transverse and vertical, corresponding to the simulated motion of the flight simulator. The sixth degree of freedom—fore and aft—is provided by the moving belt, which, like the camera, is servo-driven in a rate proportional to the ground speed of the instrument trainer. The entire visual picture presented to the pilot is thus responsive to his control movements.

The single "runway" belt can be augmented by a second belt installation permitting two usable configurations which can be alternated for take-off and landing or used as single units.

Used at the Center as a research tool, the *Dalto Simulator* has proven to be a realistic and reliable adjunct to a Curtiss-Wright P-3 aircraft simulator. The *Dalto* has provided quick response capability to many problem requirements at considerable savings in both time and money. Primarily the *Dalto* has been used by the *Bureau of Research and Development* on the Simulator Analysis of Airport Marking and Lighting systems, although it has made significant contributions to other projects during its operational period.

The unique capability of the *Dalto Simulator* has enabled the Center to study many configurations of lighting systems to determine characteristics of pilot guidance from the various patterns. Project pilots

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.

have "flown" the simulator against the installed systems and pilot response to the systems have indicated certain desirable features. As a result, only selected systems are installed in the test runway and real time flights made against the systems in all-weather flight conditions.

The pilot conditioning and training effected through the *Dalto Simulator* has been of inestimable value in preparing the pilots for the below-minimum flight test of the insstalled systems. The ultimate aim of the test program is to further reduce landing weather minimums.

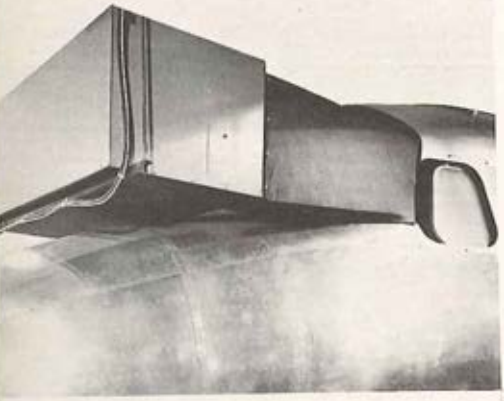
The Dalto Simulator has an *additional* capability that is of prime interest to me—that of a training device in the instrument flight training program. The simulator has a demonstrated capability of bridging the gap between blind instrument trainers or hooded flight and the actual aircraft instrument approach. My personal opinion is that the most crucial phase of an instrument approach is at that point where the pilot must shift his attention from solid instruments to a visual search to determine if he has sufficient guidance to go visual and complete the approach and landing or whether he cannot do so and must return to instruments and execute a missed approach.

The "go visual" or transfer of attention phase of the instrument approach, is particularly critical in any aircraft in which a single pilot must make a low ceiling and visibility approach and remains the most critical part of the approach in a two-pilot aircraft. It is interesting to note that during experimental approaches in below minimum weather conditions, the Human Factors research team detected a sudden increase in the pulse rate of the experimental pilots as they reached the "go visual" stage of the approach.

In the present state of instrument flight training, the trainee is subjected to three situations. He receives a certain amount of blind simulator/trainer time, a certain quantity of "hooded" flight time and a lesser period of actual weather time under a controlled situation.

In the case of the blind trainer, the trainee completes his problem, opens the trainer, steps out, and then discusses the flight with the trainer operator based on the recording he has just made. In the hooded flight situation, the trainee completes his flight program and, at the appropriate time, the instructor pilot permits him to raise the hood and observe, with sudden startling clarity, the panoramic view of the airfield and surrounding landscape. Then, ultimately, the pilot trainee gets his feet wet for the first time—but with an instructor pilot to assist him and coach him through the procedures. The *Dalto Simulator* bridges the gap between training phases by adding to the simulator/trainer the capability of ceiling and visibility simulation. The equipment provides excellent duplication of what a runway and approach light system looks like when making an approach

EXTERIOR "VIEWING INSTALLATION" AS SHOWN MOUNTED ON A UNITED AIRLINES FLIGHT SIMULATOR



DALTO/*Continued*

through a low overcast in most conditions of restricted visibilities.

The lighting system, runway markings, and characteristics of any approach system can be duplicated on the moving belts by the operator with a minimum of effort and less than ten dollars worth of supplies. The range of simulated ceilings and visibilities extends from a 400' ceiling and ½ mile forward visibility down through all variables to the so called zero-zero condition and are simulated by adjusting the position of a translucent screen to obscure more or less of the runway belt for RVR (Runway Visual Range) settings and the cutting in of the camera video at a selected, and preset altitude.

The net result of the device is that the pilot of the trainer, after completing his navigation work and entered on a LFR, OMNI, ILS, TACAN, or GCA approach, can complete a realistic approach by "going visual" on the *Dalto Simulator* and completing the approach to a landing, observing the same visual clues that he will experience when he really gets his feet wet.

The Dalto Simulator represents a much needed improvement to the simulated instrument training capability. I share the opinion that, in the final analysis, the best training of all is that received under actual circumstances. But, as a training device, I believe the simulator will improve the caliber of the final result, an instrument qualified Army Aviator. The simulator is an economical method of demonstrating the many approach light systems installed in the U.S., of providing the added realism of the final approach when training under simulated conditions and of adding the capability of training the instrument pilot to respond to strange and unusual approaches and runway configurations.

Major John W. Elliott, of the U.S. Army element of the Federal Aviation Agency, is a Transportation Corps Senior Army aviator on duty at the Bureau of Research and Development Center, Atlantic City, New Jersey. Major Elliott was an Air Force pilot with the 3d Foreign Transport Group in the Asiatic-Pacific theatre during WW II. Transferred to the Department of the Army in 1950, he was recalled to active duty in the Korean emergency and subsequently served as executive officer and commanding officer of the 49th Ordnance Bn (AAM) and Army Aviation Maintenance Officer for 8th Army forward in Korea; later as executive officer of the Army Aviation Maintenance and Supply Depot, Chofu, Japan. Since his return to CONUS, he has served as a liaison officer to Headquarters, Air Research and Development Command, a member of the Airways Modernization Board and is now in flight operations at the Experimental Center. A graduate of Oklahoma State University, Major Elliott was an associate instructor at Northeastern Oklahoma A & M College in civilian life.

It's Not Too Early!

Commemorating the 100th Anniversary of Aerial Observation in the U.S. Army, the Third Annual Meeting of the AAAA will be held September 4-5, 1961, at the Sheraton-Park Hotel in Washington, D.C. and will be followed by the AUSA Annual Meeting on September 6-8. Plan now to attend both meetings!

USAREUR REPORT

BY MAJOR KENNETH D. MERTEL

"*Each officer will instruct the non-commissioned officer and his crew to watch his machine as long as it is in sight. In case the machine is seen to descend, the non-commissioned officer will immediately notify the Commanding Officer and the Officer of the Day.*"

This is the closing statement of an old maintenance check-list alleged to have been found in the IG files at Wright-Patterson Air Force Base. It is dated May 8, 1913 and is entitled "*Instructions Regarding Care and Inspection of Aeroplanes.*" To quote further, here is an interesting bit on air traffic control.

"*As a general rule, all operators will keep a sharp look-out in all directions to avoid danger of a collision in mid-air. The rear machine will be responsible and it should keep the proper distance and interval from the machine in front. Machines passing each other going in the same direction will pass 150 feet above or below, or 100 feet to the left. Machines passing each other going in the opposite direction will pass 150 feet above or below, or 100 feet to the right. Before landing, the operator will see that*

no machine is in mid-air or is preparing to rise or land. He will remain in the air until a clear field is available.

"Experienced fliers will always give way in case of emergencies in landing and approaching each other in the air, to the less experienced fliers, and should operate their machines in such a way as to cause the latter as little inconvenience as possible.

"All operators about to start on a flight will make a careful observation in order to avoid interfering with a machine in the air which may be making a forced landing due to motor or other trouble.

"Normally, machines with students will have the right of way."

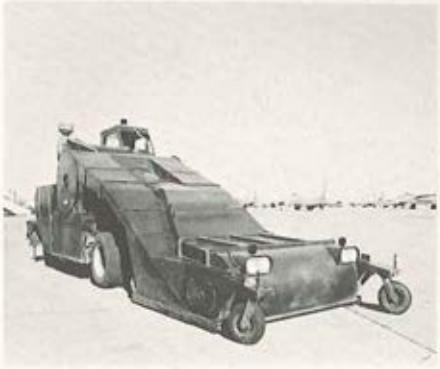
Does it sound familiar to you? Not a whole lot different than nowadays, or is it?

One item that has *not* changed, *"Examine engine to see if there is suffiicent oil, gasoline, and water."* This part on the gasoline was not checked very carefully by two helicopter pilots recently. One H-19 ran out of gas while executing an approach. A bit abrupt on the auutorotation and now no tail boom. No injuries to personnel. Of interest, an IP was aboard along with another experienced aviator.

Another case resulted when an H-13 developed "engine failure." A pretty good autorotation and little damage, no injuries. The engine failure was the result of "Lack of gasoline." A maintenance officer "test pilot" was flying this one. Maybe we had better look at that old check list again or for that matter, any check list.

A short note on violations. All European countries require that permission be obtained prior to entering a control zone when flying VFR. If you remember this you will save yourself a violation and your unit a lot of paperwork.

When is the last time that you flew an L-19, short field takeoff and landing? How about an H-13, in and out of field locations under varying conditions? When did you last make a VFR night cross country flight in an L-19? Or is most of your flying conducted off hard surface runways,



REVAMPED SHERMAN? No, it's one of 180 nine-ton giant vacuum cleaners ordered by the AF for use in keeping AF jet runways free of harmful debris. Roughage diet? Bars and bolts, dead birds, small tools, baseball-size rocks, according to the International Fermont Machinery Co., the makers.

with instrument navigation from point to point under the best conditions?

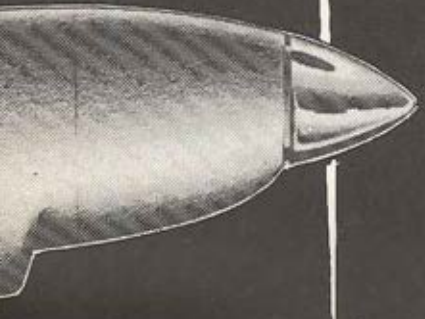
In short, are you becoming an "airline pilot" in both practice and thinking? If so, better take another look at the mission of Army aviation. Our only reason for existence is *to support the ground combat units.* If we are not doing that to the best of our ability and capability, we had best turn in our wings. There is no room for the "airline pilot" attitude in today's Army aviation.

Col. Robert Schulz, Director of Instruction at the Army Aviation School, Fort Rucker, visited USAREUR 1-10 February. Most of his time was spent with Seventh Army observing *Exercise Wintershield.* Happy to have had you with us, *Col. Schulz* . . . Congratulations are in order to *Lt. Col. William G. Black,* COMZ Aviation Officer, on his recent promotion.

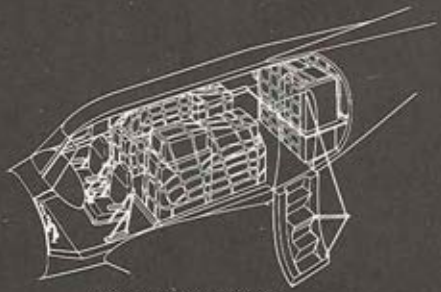
Recent changes in command assignments were made in SETAF, with *Maj. James H. Nix* as the new Aviation Officer. *Maj. John E. Gilroy* commands the recently organized provisional Composite Aviation

BEECH "IMAGINUITY" IN *Air Mobility*

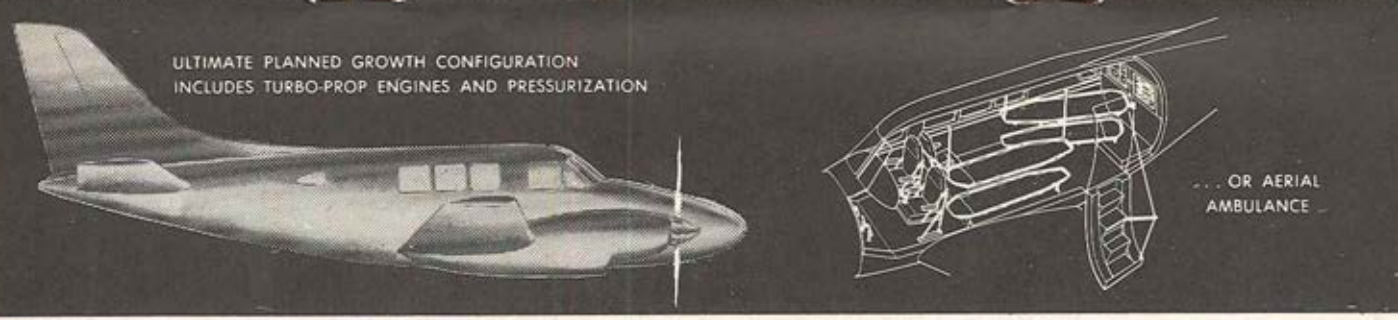
POTENTIAL FOR
FUTURE DEVELOPMENT
ALREADY DESIGNED IN



COMMAND LIAISON
TRANSPORT



CONVERTS QUICKLY
FOR HIGH-PRIORITY
CARGO



The new Beechcraft L-23F . . .

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

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

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

Beech Aerospace Division

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

USAREUR/*Continued*

Company. *Maj. Donald E. Duncan* is the new V Corps Aviation Officer, replacing *Lt. Col. Morris G. Rawlings* who rotated home. Another new arrival in USAREUR Headquarters is *Maj. James E. Smith,* now assigned as a staff aviator in the Operations Division. *Welcome aboard!*

The *USAREUR Region* of the AAAA assembled at Garmisch in Southern Bavaria for the weekend 24-26 February for a most successful meeting. This was the second USAREUR-wide annual social and business gathering hosted by the 8th Transportation Battalion, commanded by *Lt. Col. Henry H. McKee.*

A good time was enjoyed by all, thanks to the officers and men of the 8th and the excellent participation by several of our industrial members. Our special thanks and appreciation to *Lt. Col. Rowan P. Alexander,* former Regional President, and to *Capt. John McKinney,* the primary "organizer" and "doer" for the festivities.

Col. Russel E. Whetstone, Commanding Officer of the Seventh Army Aviation Group (parent organization of the 8th), as well as newly-elected Regional President, "volunteered" the 8th to again host the 1962 celebrations. If you missed out this year, try to make it in 1962. A detailed report of the entire proceedings, both business and social, will be forthcoming as a separate article by the Regional scribe.

Major Kenneth D. Mertel
Opns Div, Hq, USAREUR
APO 403, New York, N.Y.

Take Me to Your Reader!

Lip reading, Indian sign language, or even the jungle drum tom-tom code may have to be man's emergency languages when he gets to the moon.

Advanced research experts at Aerojet-General Corporation say there will be no normal conversation on the moon. With no "atmosphere" like the earth's, there will be nothing in the completely clear void to convey sound waves.

As a result, radio will be the only answer, and if that konks out—no more communication, unless they use lip reading, sign language, or written messages. And because it is smaller than the earth, the "horizon" on the moon will be three miles away. Beyond that horizon, even the radio will not work.

The Aerojet researchers cite the frightening prospect of a man wandering three miles away and getting hurt. Without an earth-like atmosphere, his shouts for help couldn't be heard, a balloon could not rise to signal his distress, neither could smoke signals.

That's where the tom-tom signal system might work. Using the surface of the moon itself as a drum, he could "beat" it by firing a series of pistol shots into it as a prearranged SOS distress signal. Then seismograph equipment, like that used to record earthquakes, could pick up the SOS and rescuers could be sent. And just as they couldn't hear him cry help, neither could they hear him say thanks in the atmosphere-less void.

But, on the other hand, when he finally got back to his moon home, he would not have to listen to his wife's scolding either, which is a notable example of a silver lining in a place without even a cloud to go with it. ■

INSPECTION

LT. GEN. ROBERT J. WOOD, CENTER, CG, US ARMY AIR DEFENSE COMMAND, INSPECTS A HILLER E-4, THE 4-PLACE VERSION OF THE ARMY'S H-23D, AT PETERSON FIELD, COLORADO, AS CAPT. J. G. CAMPBELL, AIDE-DE-CAMP, LEFT, AND R. L. CHANEY, HILLER REQUIREMENTS ENGINEER, LOOK ON. THE HILLER 12E-4 IS BEING DEMONSTRATED AT ARMY INSTALLATIONS THROUGHOUT THE COUNTRY. (US ARMY PHOTO).

REUNION

MEETING AS STUDENTS AT USAPHS FOR THE FIRST TIME IN 18 YEARS, MAJ. BILL SAMPSON, LEFT, FLORIDA RESERVIST, AND SQUADRON LEADER (MAJ.) KEN McLAUGHLIN OF THE ROYAL AUSTRALIAN AIR FORCE TALK OF WW II DAYS WHEN BOTH SERVED IN THE SOUTHWEST PACIFIC AS MEMBERS OF THE 374TH TROOP CARRIER WING, US ARMY AIR CORPS, IN 1943. (US ARMY PHOTO).

ON DUTY

PERFORMING A FULL RANGE OF MISSIONS IN SUPPORT OF THE U.S. MILITARY ACADEMY'S TRAINING AND POST ACTIVITIES, AN ARMY HU-1A IROQUOIS IS SHOWN ON CLINTON FIELD WITH "THE PLAIN" IN THE BACKGROUND. THE SHIP IS ASSIGNED TO THE 2D AVIATION DETACHMENT AT WEST POINT, COMMANDED BY MAJ. ROBERT R. DOBSON.

PINNING

PRIOR TO HIS TRANSFER TO USAAVNS AFTER NEARLY 4 YEARS OF SERVICE AS A MEMBER OF USCONARC'S FLIGHT DETACHMENT, RECENTLY PROMOTED CAPT. ROBERT C. ADAMS, A MASTER ARMY AVIATOR, HAS MAJORS' LEAVES PINNED ON BY THE ARMY'S TOP-RANKING QUALIFIED PILOT, GENERAL HERBERT B. POWELL, COMMANDING GENERAL, USCONARC. (US ARMY PHOTO).

By

MAJ. GEN. RICHARD D. MEYER

Principal Assistant for Aviation

Office, Chief of Transportation

Very heartening news for Army aviation was the recent Defense Department announcement of plans for the Army to establish facilities for the overhaul and repair of its aircraft and major components—work which, until recently, had to be accomplished almost entirely by contract with industry.

The lack of an "in house" capability in this area had long been a source of worry to logisticians who feared the dangers inherent in any failure to acquire at least a minimum capability to rely upon in the event of an emergency. It was also felt to be essential to provide a facility for the technical training of Army personnel required in aircraft repair units overseas.

Defense has authorized the reopening of the former Navy Overhaul and Repair Facility at Naval Air Station, Corpus Christi, Texas where we will have adequate facilities without the need for new construction. In fact, a major portion of the tools and heavy equipment required for operation of the Army facility is either available at the site or can be provided from Defense Department reserves.

The Corpus Christi Army facility will be operated by the Army Chief of Transportation as a field installation of the U.S. Army Transportation Materiel Command, St. Louis, Missouri. By the end of the first year of operation it is anticipated that the Corpus Christi shops will have a small military staff which will employ some 1200 civilian personnel, some of whom are ex-

'IN HOUSE' CAPABILITY

pected to be recruited from among former Navy O&R employees in the area. An orderly build-up and assimilation of skilled personnel is planned. Eventually, the shop is expected to provide back-up service to Army aircraft assigned to both CONUS and overseas commands.

Because of the planned future increase in the dollar value and complexity of Army aircraft, private industry performance of this work should continue to rise during and after establishment of the new facility.

The Transportation Corps is now supporting research into a uniquely interesting concept known as the *Paraglider* to determine its possible feasibility for Army use.

Developed by NASA, it is a flexible wing lifting device, similar in some respects to a parachute, but shaped like a delta wing. It can glide or can be used as a wing to create lift for a number of logistical purposes. Experimental data to date show the paraglider to have excellent stability characteristics through large angles of attack and over an extremely wide speed range from as little as 20 mph to supersonic.

Moving along quite well is the Light Observation Helicopter program about which I reported to you in my November 1960 column. The proposals received from twelve different companies are currently being evaluated by a joint Army-Navy group with a decision expected about 15 May. CONARC is concurrently conducting an operational evaluation of the proposals. We expect to award the contract by 1 July.

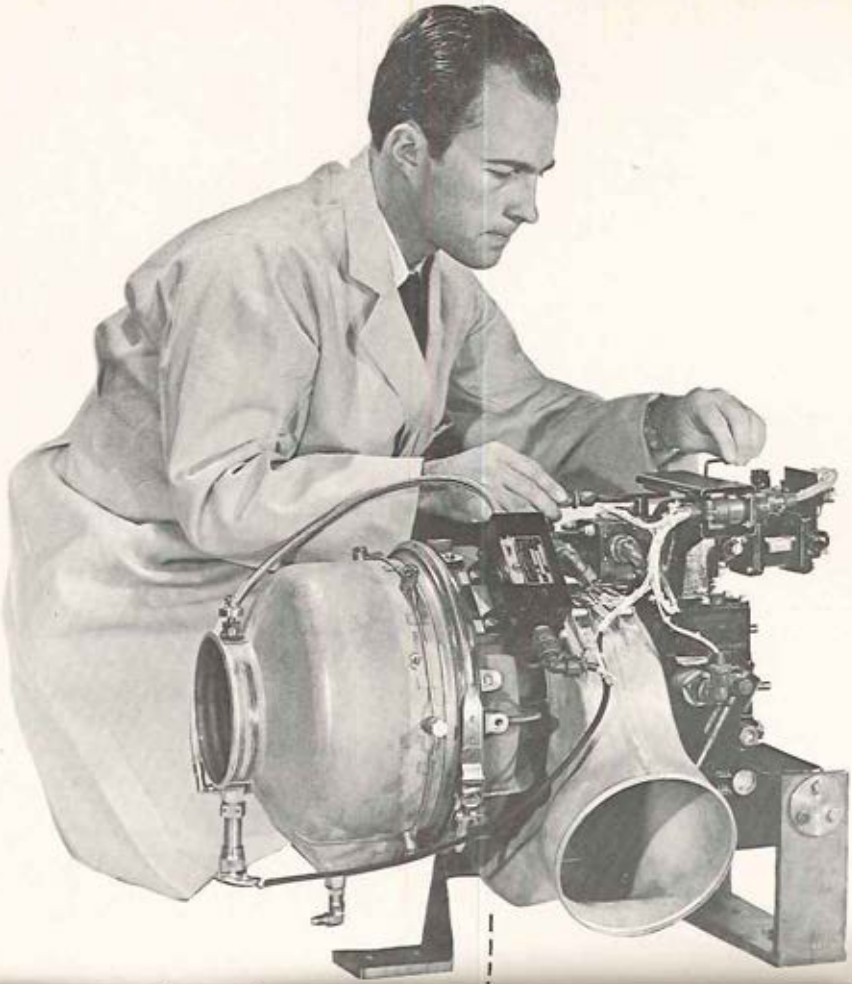
Procurement of Army aircraft has been quite dynamic in recent months with contracts being awarded for a number of modern aircraft. Included are contracts for 54 Grumman AO-1 *Mohawks;* 24 AC-1 *Caribou* STOL transports, and 18 HC-1B *Chinook* turbine powered transport helicopters.

Funds for the purchase of these three aircraft as well as the HU-1 *Iroquois* helicopter have been requested in the '62 Budget. About 157 HU-1A's have already been delivered and deliveries are just starting on the 192 B models on order. Eight of the slightly enlarged D model are on contract with first flight expected about August 1961.

Congratulations to the following TC aviators who have been selected for attendance at senior service schools for classes commencing in August 1961:

INDUSTRIAL COLLEGE OF THE ARMED FORCES: *Lt. Col. Thomas E. Haynes.*

COMMAND AND GENERAL STAFF COLLEGE: *Majors Alfred J. Reese* and *Wallace G. Reid; Captains Darwin D. Beauchamp, John W. Campbell, George A. Dalusky, Paul R. Ewing, William T. Kaser, Richard D. Kisling, George Komar, James E. Martin,* and *William A. Rathbone.*



Compact airborne support

MORE PAYLOAD ROOM—The Solar energizer kit that is expected to provide the Army's new Caribou cargo transport with extreme Arctic capability is packed into less than four cubic feet of space within the aircraft. Powered by Solar's Titan 80 hp gas turbine engine, the energizer kit starts the Caribou's twin R2000 engines, and provides auxiliary electric power and cabin heating for certain ground operations when the Caribou's main engines are shut down. With the lightweight energizer, the de Havilland STOL aircraft is less dependent upon conventional ground support facilities and its versatility and mobility are further increased. For further information about Solar's Titan engine-powered generator, hydraulic and airbleed units and its complete line of gas turbine engines, write to Dept. H-217, Solar Aircraft Company, San Diego 12, California.

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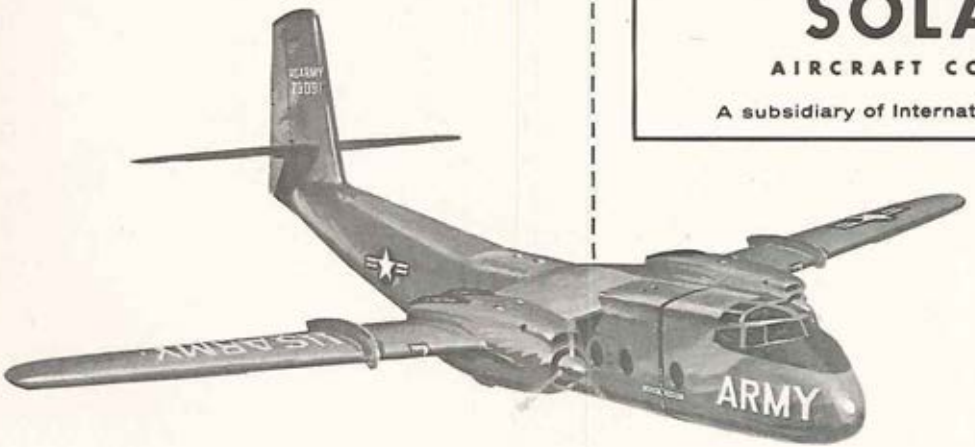
AIRCRAFT COMPANY
A subsidiary of International Harvester Company



CHECK THE

LITTLE THINGS

The other day a 2nd Lt. stopped in at my office. He was the surveying officer for some unit in Europe and was looking for some information about an item lost in an Army aircraft, but since I could not figure out just what it was I couldn't help him very much. I guess it was some *little thing* that didn't amount to much.

Many Army aviators who have been in this flying business from the beginning or the early stages have watched its growth from the simple L-4, L-5, and L-16 aircraft to our present excellent, but rather complicated machines. We see in the future larger, more complex aircraft, some already in production and some only on the engineering drawing boards, or just ideas in the minds of our chiefs.

With each new model we have been able to do the job better with the machine designed for us. Along with each new machine we have realized the requirements for new skills and trades and a higher degree of proficiency of the aviator. We now have the equipment to fly in all types of weather and over or in any types of terrain. We fly across the ocean and land on mountain peaks which 10 years back could not have been done. With all our advancement and better equipment it becomes much more important to watch *the little things.*

Now, just what do I mean by *little things?* Here are a few you all are familiar with.

Red lines, those small red marks you see on the instruments. They mark the top operating limits of everything. Oh, yes, but I just exceeded that red line a little bit, you say to yourself, so there's no sense in reporting it or placing an entry in the DD 781-2.

That little *red line* is not like the edge of a cliff, which, if you stepped beyond, even just a little bit, you would fall, yet the results may be the same. If over several hours of flying several pilots exceed those *red lines* just a little, sooner or later something will let go and some one is going to go over the cliff, so to speak, and come down.

Know the limitations of your equipment as well as its capabilities. These limitations are your safety valves and must *not* be exceeded. If by chance a *red line* is exceeded, don't fail to write it up so that proper inspections can be made to insure that everything is still all right.

Or what about that *small screw* or *cotter pin* the mechanic dropped the other day while he was working on top of your engine? *Do you know where it went?*

No? Well, it's only a *little thing* so why worry. Many an aviator now has "permanent wings" because that cotter pin or screw was not found until the pieces were picked up. Can't happen, you say? Well, take a good close look inside your aircraft and then remember the number of times you were at 10,000 ft. on the gauges in rough turbulent air. Those loose screws, cotter pins, safety wire ends start to play

on your conscience and have been known to be the primary cause of aircraft failures.

These *little things* have a place, but not laying around loose inside the aircraft. Sometimes the items that are dropped are not small; recently, a Maintenance Unit found a 14" crescent wrench inside an H-34 fuel cell. How it ever fell into the cell is unknown but I guess some mechanic would rather pay for the wrench than admit that he let it slip into the tank. *Yet it was very possible that some pilot and passengers may have paid with their lives for his error.*

It takes time to go after some of these things but believe me the time is well spent. A good mechanic will never stop until he has found what he is looking for, or is positive it has not stopped some place in the aircraft where it could do damage at a later date.

Here are a few other *little things* that will help you and your mechanics to prolong the life of your equipment, and maybe your life.

Read and use the *correct procedures* for all operations as listed in the aircraft handbooks. It has been proved time and time again that most internal and mechanical engine failures result from *improper starting and operating procedures.* These procedures have been developed over many years by other people who made the same little mistakes we do. As these mistakes and errors were corrected these procedures were developed so that the same mistakes would *not* be repeated. Check the latest—1 on the aircraft you fly and see if you have been going by the book. While you are at it take a close look at those emergency procedures. The only time you use them is when the bell rings and then it's important that you do them right.

When something goes wrong quickly scan all your instruments and make a mental note of *unusual vibrations, noise, exhaust,* etc. Record all of these as soon as you have time, so that when you prepare your write-up in the DD 781-2 you can give a complete picture of what happened. Many times the only clue to what was wrong was a different sound of the engine or a puff of smoke or a slight vibration in one or more of the controls. Above all don't just pass it off until you are sure.

Our aircraft are built to fly smoothly and fairly vibration free. If something goes wrong, and you are able to get the aircraft safely on the ground, *stay right there until you find the trouble.* Let the experts look it over and decide what to do. It could well be that a test flight will be required to try to reproduce the trouble you experienced. Then all those *little things* that you noted will help the test pilot find the trouble quickly.

Get to *know the ground personnel* who maintain the aircraft for you. Between you and them you can improve the performance of your equipment and keep it at its best condition. If you have not been reaching full time on your engine or other time components, talk it over with the mechanics; perhaps you can discover some *little thing* that you have been doing that may be causing your trouble.

I could name many more *little things* that each of us do whenever we fly, or work on aircraft. The main point is that we recognize them for what they are. It could well be that they have no effect whatever; then again they may. As I have said before our equipment will operate perfectly if we give it a chance. It was designed this way and with just a little help

BY
MAJ. RALPH L. SANDBERG, USATDS, SANDOFEN, GERMANY

LITTLE THINGS/*Continued*

from all of us it will. Our rewards will be better equipment which we all can depend upon to get our job done and the self satisfaction that we have helped to make it that way.

This aviation game we are playing is one that demands from all of us teamwork and honesty with the other pilots, and mechanics or operations personnel who are in the same game. We all must watch the *LITTLE THINGS.*

ABOUT THE AUTHOR

Major Ralph L. Sandberg, presently assigned to the U.S. Army Transportation Depot, Sandofen, completed Army aviation training in November, 1952, after extensive WW II service with the Air Force in the Southwest Pacific as an Ordnance Officer. Rotary-wing qualified in '57, the Illinois guardsman served in Korea as C.O. of the 71st Transportation Depot, and with the 40th Transportation Company. His last CONUS assignment was at Davison Army Airfield, Ft. Belvoir, Va.

Technica

Mark IV Assistance

By
COLONEL CARL G. SCHONE
Chief, Off. of Technical Assistance
TMC

In the October 1960 issue of *Army Aviation*, an article appeared entitled *"The Technical Assistance Program"* which generally outlined the Transportation Corps' Technical Assistance Program. Since that time, however, refinements in the program have evolved which should be of interest to everyone concerned with Army aviation.

First, the governing regulation which describes the TC Technical Assistance Program is Army Regulation 750-707, 19 August 1960. As outlined in this regulation, the Transportation Corps Technical Assistance Program is accomplished by the Office of Technical Assistance, U. S. Army Transportation Materiel Command, St. Louis 66, Missouri (TMC), utilizing the following kinds of personnel:

Transportation Corps National Maintenance Representatives
Contract Field Technicians
Manufacturers Representatives
Army Aircraft Mobile Technical Assistance Program (AAMTAP) Teams

The Transportation Corps national maintenance representatives form the keystone

of the TC technical assistance program. To insure that all areas are served equitably, these personnel are organized into teams with specific geographical areas of responsibility assigned to each team. Teams are assigned as follow:

Team I—First and Second Armies, MDW, and USARCARIB

Team II—Third Army, and USAREUR

Team III—Fourth and Fifth Armies, and USARAL

Team IV—Sixth Army, and USARPAC

Each team consists of one Army officer (field grade) and five Department of the Army civilian specialists.

Normally, these personnel maintain a most rigid schedule. For instance, in CONUS they visit most Army installations on a semiannual basis, while overseas commands are visited annually; however, services are available at any time problems arise. Regardless of where you are, these specialists are as near as your telephone, TWX machine or mail room.

MEMBERS OF TEAM 4, responsible for Sixth U.S. Army and USARPAC, include, l-r, Raymond Daggett, Dean Tracy, Maj. Carl Pieper, Martin Cummings, Fred Spencer, and Bernard Mitchell. (U.S. Army photo).

It must be emphasized that personnel from the Office of Technical Assistance are not inspectors, but are, in reality, people provided to resolve your technical problems and make your job easier. Basically, the mission of the national maintenance representative is to assist you in improving logistics and to disseminate logistical information and techniques.

They advise and assist in reporting unsatisfactory performances of TC materiel and materiel design deficiencies. They assist maneuver directors, as requested, prior to, during, and after maneuvers. These personnel also assist units preparing for overseas movement. They familiarize activities operating or maintaining newly introduced Transportation Corps equipment on the peculiarities, operational techniques, and capabilities of the equipment.

In order to provide the highest quality of assistance during all scheduled visits, these schedules are coordinated with the various senior commands. This allows for representation at times when major decisions outside the control of Transportation Corps responsibilities are required.

The technical assistance teams have the capability to resolve most technical problems on site. In an operation like this, there are always instances where problems arise which have no apparent solution. Problems such as these are returned to USATMC to the element directly responsible for that particular function and a solution is provided. In some instances, the problem returned sets a precedent, or is so unique that many manhours of research are required to provide a good sound answer. In this case, a date is provided which indicates the approximate date a solution of the problem will be provided.

Similar to any Government operation, a trip summary is written by these technical assistance teams upon their return to USATMC. These trip summaries are writ-

ten to provide the activities visited with solutions of problems they had encountered and passed on to the technical assistance teams. In each trip summary, it is clearly stated that the trip summary is informational and should not be treated as an inspection report. This is a very important point and most Army commanders treat the trip summaries of USATMC technical assistance teams as just that—information and solutions of problems being encountered by their installations.

On the other side of the ledger, USATMC is responsible for accomplishing supply liaison visits to all CONUS Army installations maintaining a TC supply account. In an effort to preclude harassment of installations through too many visits, and to provide as comprehensive a technical assistance visit as possible, USATMC has combined its technical assistance visits and supply liaison visits when possible. The supply liaison personnel are required by *AR* 711-16 to submit a liaison report. The installation commander is required, by the same regulation, to indorse this liaison report through command channels to USATMC. These indorsements are extremely helpful to USATMC since it points up areas that were possibly overlooked, or erroneously stated, or that could possibly be of assistance to commanders of other installations.

The technical assistance teams' trip summaries are information from USATMC. Take advantage of them, glean from them the consolidated knowledge which, when properly used, will make your job less frustrating.

Another type of technical assistance is provided by USATMC through contract field technicians and manufacturers' representatives. These personnel are employed by the Transportation Corps to provide advice and assistance on new and complex

ARMY AVIATION welcomes exclusive articles on any subject relating to this field. Articles so marked that bear the photo and personal profile of the author will receive preferental treatment and are reimbursible upon publication.

equipment until such time as Department of the Army Activities attain self sufficiency. This type of contractual assistance has to be efficiently managed to ensure the maximum utilization of the manufacturers' representatives within the budget limitations.

Requests for this assistance in CONUS should be forwarded through the Transportation Maintenance Shop supporting that area. It might be the Fourth Echelon Shop can provide the assistance you require. Requests for contractual technical assistance from overseas theaters are forwarded through command channels. Contractual personnel advise, instruct, and assist in training Army personnel in the use, assembly, operation, maintenance, repair, and modification of Transportation Corps equipment.

It must be emphasized, however, that these personnel have no authority to modify equipment, nor perform repairs on equipment beyond that authorized by U.S. Army Transportation Materiel Command, regardless of their evident competency. These personnel are also prohibited from circumventing the TC supply system by such actions as contacting the prime manufacturers to obtain repair parts. Experience has shown that when contractual personnel attempt this type action, it is generally prompted by the criticality of certain components. Since USATMC is responsible for world-wide support of TC equipment, and since the contractual personnel are generally familiar with only one station's requirements, such practices must be prohibited. Used properly, contract technical personnel are valuable—use them intelligently.

Also provided through this program is the *Army Aircraft Mobile Technical Assistance*

SHOWN DURING A STAFF MEETING, COL. CARL G. SCHONE, CHIEF, OFFICE OF TECHNICAL ASSISTANCE, TMC, COVERS A PROGRAM POINT WITH, L-R, FRED SPENCER, DEAN TRACY, RAY DAGGETT, LARRY GEPPERT, MARTIN CUMMINGS, MAJ. HARRY A. PASCH, LT. COL. THOMAS E. HALL (DEPUTY CHIEF), AND EILEEN NEUPORT, RECORDER. (U.S. ARMY PHOTO).

Program, or, as it is generally referred to, *"AAMTAP."* An *AAMTAP* unit consists of two manufacturers' representatives, in most cases a vehicle, and various components and cutaways, schematics, charts, handout literature, and other training apparatus. Each *AAMTAP* unit provides refresher training to otherwise qualified aircraft mechanics on a *specific type and model aircraft*. This method keeps the mechanic up to date on the State-of-the-Art in maintenance of Army aircraft. To accomplish this mission effectively, three curriculums have been established and are as follows:

Curriculum I: Organizational maintenance, first and second echelons

Curriculum II: Field maintenance, third echelon

Curriculum III: Field maintenance, fourth echelon

AAMTAP units are scheduled into Army installations throughout the world, based on technical requirements and aircraft population. Itineraries and schedules are maintained and controlled by U.S. Army Transportation Materiel Command. Commanders are asked to assign 10 to 25 aircraft mechanics (optimum 18-20) to attend the entire curriculum presentation. These personnel should be in a position to utilize the training received on the aircraft represented.

The U.S. Army Transportation Materiel Command has, with the implementation of this program, attempted to make the Transportation Corps Technical Assistance Program the most complete and comprehensive in the Army. If you have problems, please do *not* keep them to yourself. Very few problems can resolve themselves. Allow the rest of the Army to benefit from your problems, solutions, and experiences. Your knowledge is beneficial to the National Maintenance and Supply Point; namely, the Transportation Materiel Command, St. Louis, Missouri, under the command of Brigadier General William B. Bunker, USA.

MIKE BUTTON

Maintenance Tips

In last month's column under *"TIME'S UP," Mike* told all eager "Beavers" that S/L 2-60, 13 Jan 60 published by TMC had been cancelled and that no more unmodified L-20 engine mounts should be shipped to de Havilland.

But as suspected, there are a few DA, L-20s which have not been worked over and TM1-1L-20A-1004 has not been thoroughly complied with and you can't get the job completed until the mounts have been modified and installed.

So, the following is for your info and it applies to CONUS and overseas activities, as well as National Guard Units when they install modified *Beaver* (L-20) engine mounts.

Now to get the job accomplished, which you should have done long ago, requisition FSN 1560-670-1663 (P/N 1AGE-C2EM181A), modified engine mounts through normal supply channels.

Next, when you get those mounts, after requisitioning, they should be installed on the aircraft (L-20) within 10 days (working days) after receiving them; then ship the old ones back to the US Army aircraft maintenance shop at the general depot serving you within 48 hours after removal.

The next important point I should like to call your attention to is that immediately after installation a DA Form 1987 (*"Modification of Aircraft Modification"*) should be filled in to show the aircrafts' serial numbers and forward the form to *CG USATMC, P.O. Box 209, Main Office, St. Louis 66, Missouri, Attention, TCMAC-EL-20.*

For all overseas installations check out paragraph 2, page 2 of TM1-1L-20A-1004 for disposition.

QUESTIONS AND ANSWERS

Dear Mike,

I am interested in obtaining some information. My problem has to do with Pilot's Compass Correction Cards. Does the Army Publications have these cards? If so, could I be furnished the correct card number, title, and date? I have not been able to find it in DA 310-2.

I have been and still are using AFTO Form 76, but have run out. I borrowed these last ones from Air Force buddies.

SFC Ronald D. Bluthardt
Shop Foreman, Kan-ARNG
Topeka, Kansas

Dear Sergeant Bluthardt:

Two problems in a week? Same man, same station. Only kidding, glad old *Mike* is here to help and can offer this service.

First off, I got your request for the drawings mailed to you first because I got the information first. So now to answer your second letter, the one which I received first. Did I confuse you?—Boy, I am—1st, last; second, first, Humph!

You did not state in your letter what type of aircraft you have there in Topeka, but be that as it may, this info you're after should be in the -34Ps of the aircraft's manual. Take the

MIKE BUTTON/*Continued*

Raven (H-23), for instance. If you'll look under FSN 1560-628-5316 you will find Pilot's Compass Correction Card listed there as P/N AF 57. Well, this form has been replaced by FSN 6605-584-4227, "*Pilot's Compass Correction Card*," AFTO Form 76, 1 May 1956, which will eventually show up in your "P" manuals.

But don't fret, regardless of whether you come in for the cards under FSN 1560-628-5316 or FSN 6605-584-4227, you'll get an adequate compass correction card. Too, remember, TC deals with FSNs, not P/N in their machine processing of requisitions. So, get the requisition off to your supply people using the above FSNs and I am sure you'll get the cards to get the job accomplished.

Might make a note and go through the other aircraft's "P" manuals to see if this card is listed; if not, get with the paper work and UR it! It's an air item so consult AR 700-41. This will tip off the guys who run the show for the respective DA aircraft that the manuals are not adequate in this area.

Mike

TUBE TROUBLE

Dear Mike,

We are interested in obtaining information on the TR tube BL-651 and BL-651-H used in S.C.A. Radar Set AN/FPN-40. The power output of the transmitter has been raised from 50KW to 200 KW. We have bad TR tube trouble since this MWO and we would like to know if this failure may be due to defective TR tubes, or the power rating of the tube too low for 200KW energy.

SFC John Rosema
Commo Sect, USAARMC Avn Comd
Ft. Knox, Kentucky

Dear Sergeant Rosema,

Thanks for the confidence that old *Mike* could come up with the answer to your tube problem. Since your difficulty is strictly a Signal Corps problem rather than a TC one, I collaborated with the Chief of the Signal Avionics Field Office, which is also located here in St. Louis. He has assured me that the problem you have at hand will be called to the attention of the proper people within the Signal Corps. However, you must do your part in the interim. That is, get out AR 700-38 and submit a *UER Form 468*, telling the Signal people the whole scoop about what has happened since this set has been modified to AN/FPN-40.

By the time your UER arrives at the Signal Corps, they'll have the dope pretty well researched to see if anyone else has had the same trouble. However, you know that even the Signal Corps with all their modern electronic devices cannot do anything about a problem of this type unless they are aware of its existence.

On the surface *Mike's* opinion is that the BL-651 and the BL-651-H can't take the added RF energy; but let the experts take care of it. They have the knowledge, and it's their responsibility to get it straightened out. So, get with the 468 and forward it yesterday.

Mike

QUESTIONS FOR THIS COLUMN SHOULD BE DIRECTED TO: MIKE BUTTON, BOX 209, MAIN OFFICE, ST. LOUIS 66, MO.

FIRE EXTINGUISHERS

Dear Mike:

Would you please send us the plans for the "Bird Dog" (L-19) fix which you discussed in January issue of ARMY AVIATION? You stated in your article that it would be about 4 months before the TCTM graphic for fabricating the mount would be distributed. We would appreciate receiving the plans at your convenience.

Capt. Jack M. Plemons
Army Avn Maint Supervisor, Tex-ARNG
Grand Prairie, Texas

Dear Captain Plemons,

Here you are in dupe. Should anything go wrong don't forget to UR it on DD Form 1275 as it says in AR 700-41, OK?

These plans were developed by the Project Engineers here at TMC and will be included in th TM when it's printed.

Mike

. . . AND MORE

Dear Mike,

Your article in January '61 issue of ARMY AVIATION on replacement of the A-20 Fire Extinguishers is a real welcome sight to us. We of the Kansas National Guard Aviation Maintenance Shop at Topeka, Kan., are happy indeed to find that the fix for the L-19 extinguisher has been finalized.

We have several A-20 extinguishers due for replacement and the new CF3Br extinguishers to install. We sure would appreciate getting the plans for this installation in the L-19. Also, if the plans are available for the new fire extinguisher installation in the L-20 & the H-23B & C, could you send these along also?

SFC Ronald D. Bluthardt
Shop Foreman, Kan-ARNG
Topeka, Kansas

Dear Sergeant Bluthardt:

Glad to hear that you were helped by Mike's informational column. The graphics for fabricating that bracket at 4th echelon are inclosed as you requested.

For any further information you may need in addition to that tip you saw in the column and these graphics when you install the CBrF3* extinguisher which replaces the A-20, please feel free to contact TCMAC-EL-19, the Bird Dog Project Officer here at TMC, by utilizing DD Form 1275 in accordance with good old AR 700-41.

The installation instructions for your *Beavers* (L-20) and your *Ravens* (H-23s) can be found complete in TM1-1L-20A-1019 and TM1-1H-23-1017, respectively.

P.S. Somebody got a different chemical symbol for monobromotrifluoromethane (Freon 13B1); CF3Br is the chemical symbol for monotrifluorobromomethane, which is the same thing; however, since the DuPont people express it in their technical bulletins as CBrF3, old Mike goes along with them for standardization purposes. Anyway you write it CF3Br or CBrF3 it's the same ingredient regardless of how you spell it—monotrifluoro or monobromotrifluoro, OK?

Mike

BY
WILLIAM D.
BICKHAM

THOUGHT FOR THE MONTH

"Church Keys" (Beer Can Openers) or Oil Can Openers can get you in "Dutch" if you don't watch out. Old *Mike* just finished reading an AA Maintenance Letter which was published in the *Flight Safety Foundation magazine*, telling about the pitfalls a maintenance man can get in should he not be read in on just a simple little device like an oil can opener.

In this article it called out that the openers need checking frequently. You ask why? Well, they are nickel plated, you know, to prevent rust, and what, with the best of materials being used in the process, you'd expect no trouble. However, when you use this gadget to puncture the oil cans, the plating peels off the tip. What happens to the flake? Yep, right into the oil, oil into the engine, engine into the scrap pile!

These openers are cheap when you think of the cost of any aircraft engine going out, due to oil contamination. So, take a look at that "Church Key" and pitch them when they show the slightest trace of chipping or peeling. Don't take the chance; it's not worth it!

One last transmission—Don't under any circumstances use a beer can opener which is the original "Church Key." It's chromium and that's the worst of the lot.

Informationally yours,
Mike Button

LETTERS

Word of Advice

Sirs:

I haven't taken any Army aviators to task, and how they handle their personal finances is none of my business, *but* I do have a word or two of advice to all of them that do not have some sort of flight pay insurance.

There is no man flying today that was healthier, happier, or straighter of teeth than I was on 6 November 1958.

On the morning of the 7th I stepped from my house into the beautiful, sunny Fall atmosphere. As my eyes adjusted themselves to the bright glare, I became aware of tiny, black spots in front of my right eye. I thought about the non-alcoholic evening the night before, shrugged, and climbed into my car. However, the "spots" persisted and I wasted little time in getting to the flight surgeon.

When the expected *"hmmmmmmmms"* and *"ahhhhhhhs"* had ended, including a *"wellllll"* from the optholmologist and a *"You're really seeing those spots; it's not just in your mind"* from the neurologist, I was told that I would be admitted to the hospital post haste for observation. Anticipating a short, pleasant vacation, I agreed and donned a pair of those hospital blue GI pajamas.

I slept well that first night, that is, until 0500. At that time I awoke with a severe pain, but the spots were gone, completely gone. I was blind in my right eye.

Since that time, and following nearly two and a half years of treatments, tests, and exasperation, I have regained partial vision—light and shadows—but I am, of course, permanently grounded.

Although I'll never be pleased about not flying, the whole situation could have been worse if I did not have flight pay insurance at the time. Tapering down on one's take home pay is rough at best; uninsured, it would have been tragic.

Now don't get me wrong. This is an unsolicited endorsement of the FPPP Plan and I have not received any recompense from the AAAA, other than the indemnity checks they hastened to me for my monthly flight pay loss. I simply wish to state—emphatically—that *any* man flying today who does not have this insurance is either mighty foolish or mighty rich. I seriously doubt if you will find a more reasonable plan that that offered by the FPPP, and I definitely vouch for its speedy "no sweat" payoffs.

Think it over, then. You'll find, as I did, that the annual premium amounted to

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THE LONG ARM OF THE LAW ADDED A NEW DIMENSION DURING THE RECENT 30-DAY TEST OF A HILLER 12-E BY THE CALIFORNIA HIGHWAY PATROL. OFTEN ASSISTING IN "CHAIN REACTION" SMASHUPS (ABOVE), THE AIRBORNE POLICE ALSO SPOTTED SPEEDERS, RECKLESS DRIVERS, BOTTLENECKS, AND WOMEN NEEDING HELP IN CHANGING TIRES. (OAKLAND TRIBUNE PHOTO).

slightly more than the cost of an evening newspaper. And please, regardless of your thoughts about insurance, don't get the false notion that *"it can't happen to me."* Everytime I climb into a tank instead of an airplane here at Knox, I very vividly remember that it can happen to *anyone.*

Capt. Robert W. Koepp
Assoc Adv Crs, USAARMS
Fort Knox, Kentucky

OBITUARIES

CWO Nicholas W. Nickas, assigned to the 45th Artillery Brigade (AD), Arlington Heights, Illinois, sustained fatal injuries on January 30, 1961, when his H-23D helicopter crashed into an open field shortly after takeoff near Arlington Heights. He is survived by his wife, *Mrs. Argyro D. Nickas* of 1429 North Wilke Road, Arlington Heights, Ill.

Major Willis L. Lukowicz, assigned to JUSMAAG, Athens, Greece, was reported missing while flying an L-23D ferry flight from Germany to his duty station, December 22, 1960. Although the pilot and aircraft have not been found, the pilot has been declared legally dead. Mrs. Evelyn Kathlene Lukowicz, wife of Major Lukowicz, resides at 6238 21st Street, North, Arlington, Va.

Cessna Unveils the Skymaster

A new look in twin-engine transportation, Cessna Aircraft Company's *Skymaster* features a unique engine placement to assure greater safety for single-engine operation. The 4-place business plane utilizes one engine in the normal position ahead of the cabin section exerting a pulling force, and a second engine behind the cabing pushing the airplane.

Delbert L. Roskam, Cessna vice president, stated that the engine arrangement was selected for several reasons, but chiefly to assure safe single-engine operations.

"If for any reason one engine operation is necessary, the Skymaster stays on the center of thrust making it safe and simple to fly and eliminating special single-engine procedures necessary in conventional twin-engine aircraft," Roskam pointed out.

To permit the engine arrangement, the *Skymaster* has twin cantilever tail cones extending back from each wing which support individual rudders and a stabilizer.

TAKEOFFS

COLONELS

DALE, JR, Ret., 2906 Larkwood, San Antonio, Tex.

LT COLONELS

BLACK, WG, Hqs, USAREUR COMZ, Rear, APO 58, NY, NY
ELIASSON, AH, 12 Ferguson St., Ft. Rucker, Ala.
GARRISON, R, 1400 S. Joyce St, Arlington, Va.
GUDE, JL, Hq, Sp Trs, SETAF, APO 168, NY, NY
HOLDEN, FW, Jr., Qtrs 2942-B, Ft. Eustis, Va.
LUTZ, GA, 52d Trans Bn, Ft. Ord, Calif.
LUTZ, HA, 285 Shoemaker, Huntington Valley, Pa.
MATHEWS, WR, 525 W. Magnolia, San Antonio, Tex.
MOBLEY, EN, 1345 W. Brown Ave, Fresno 5, Calif.
PODWORNY, EC, 131 Iliamna, APO 949, Seattle, Wash.
RAWLINGS, MG, 118 Truesdell Hall, Ft. Leavnworth, Kan.
SCHMDIT, WT, 19 Ferguson Street, Ft. Rucker, Ala.
SMITH, BG, Quarters 8816-A, Ft. Rucker, Ala.
SWENSON, JE, Opns Div, Hq, USAREUR, APO 403, NY, NY

MAJORS

ABBETT, JW, 1308 N. 21st St, Lawton, Okla.
ANDERSON, AV, 116 Atwood Ave, Newtonville 60, Mass.
BARNES, HE, 121 Red Cloud Rd, Ft. Rucker, Ala.
BEARDEN, WA, 7 USAATC-3752, APO 46, NY, NY
BLACK, CS, DOI, USA Trans School, Ft. Eustis, Va.
CARROLL, DS, Box 153, Cusseta, Georgia
CLARKE, AM, 5001 Forest Haven Dr, Alexandria, Va.
CRAWFORD, GD, 110 Trans Co-LH, APO 29, NY, NY
CROZIER, TA, 468 Turner Loop, Ft. Campbell, Ky.
DARROUGH, GE, Arctic Test Bd, APO 733, Seattle, Wash.
DUELL, RH, 545-B Marshall Rd, Ft. Belvoir, Va.
DYER, WC, 516th Sig Gp, APO 164, NY, NY
FITZGERALD, AE, Hq LAAFC, Ft. Benning, Ga.
FLANAGAN, LM, LAAFC, Ft. Benning, Ga.
GADDIS, HD, USA Aviation Board, Ft. Rucker, Ala.
GOODWIN, NW, Ret., 737 W. Gage, Fullerton, Cal.

MAJORS (Continued)

GWYN, HV, 15-A Lambeth Circle, Ellenwood, Ga.
HALE, RS, OCSIGO Sig RD-5, Wash 25, D.C.
JACKSON, PV, 10 Duncan Drive, Hampton, Va.
JARRARD, FC, 407 Hensley Ave, Olympia, Wash.
JOHSTON, JR, 90 Red Cloud Rd, Ft. Rucker, Ala.
KISLING, RD, 472-B Gulick Dr, Ft. Monroe, Va.
LAWRENCE, JP, Army Adv, GA-NG Cochran Fld, Macon, Ga.
LOWE, JV, 41st Trans Bn, APO 185, NY, NY
LYSNE, PO, Flt Det, MAAG-Japan, APO 900, SF, Cal.
MAHONE, WM, 244 Ardennes Circle, Ft. Ord, Cal.
MAKUCH, WS, 11th Trans Co-LH, APO 46, NY, NY
McFADDEN, JG, 8th Avn Co, APO 111, NY, NY
McNAMARA, TF, Hqs, USA Sig Ser Bn, APO 403, NY, NY
POST, AG, 5443 Frederick St, Omaha 6, Nebr.
PUMPHREY, AT, 3d MTB, 35th Armor, APO 28, NY, NY
QUINBY, UB, PO Box 52, Clarksboro, NJ
SIDNEY, WA, Hq Co, USALS, Pres Monterey, Cal.
SINGLEY, GT, Jr., 210 Bacon Ave, New Castle, Del.
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STERLING, J., 5931 Dupas, Killeen, Texas
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TAMPLIN, JD, 646 8th St, Yuma, Ariz.

CAPTAINS

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GRIBBLE, EG, 12th Avn Co, Ft. Sill, Okla.

PRIVATES

STEINHAUER, JL, 3303 E. Dakota Ave, Fresno, Calif.

FRIENDS

BRINTNALL, OD, 218 Flores Ave, Manteca, Cal.
COLLIER, VL, 417 Bush Dr, Ballwin, Mo.
COWARD, KS, 5942 Avenida Chamnez, La Jolla, Cal.
LEBEL, GL, 8 Chapel St, Augusta, Maine
SALTER, T, 305 Morningside, Wichita, Kan.
STOWELL, MA, General Delivery, Tabb, Va.
THOMAS, Mrs. J., 19 Parkinson St, Needham 92, Mass.
WILLARD, LH, Mrs., Rt 2, Box 96, Mineral Wells, Tex.
WOLFF, Miss CJ, 808 Bella Lane, St. Louis 37, Mo.
WYDLER, K, 7717 Royston St, Annandale, Va.

NATIONAL BOARD MEETING

The AAAA's *National Executive Board* will hold its "second quarter" metting at the Sheraton-Park Hotel, Washington, D.C., April 13-14. High on the agenda are a review of Annual Meeting planning and initial preparations for its business meetings, consideration of revised By-Laws, the '61-'62 membership program and budget, National Awards, and Chapter activations.

ANNUAL MEETING THEME

The Winter Meeting of the *USAREUR Region* at Garmisch, Germany, was most successful, according to Regional officials. More than 660 members and their wives attended the AAAA Ball, hosted by the *Munich Chapter* (8th Transportation Battalion). Elected as USAREUR Region officers for the '61-'62 year were *Col. Russell E. Whetstone* (Pres.), *Lt. Col. Richard D. Long* (ExVP), *Lt. Col. Henry H. McKee* (Sec), and *Maj. Orman E. Hicks* (Treas). The business meeting pointed up the possibility of a *Verona Chapter* (SETAF) and a *Straubing Chapter* (Germany).

WINTER MEETING, USAREUR REGION

Commemorating the 100*th Anniversary of Aerial Observation in the U.S. Army,* the 1961 Annual Meeting Committee has selected the Anniversary Celebration as its theme. Although no "ascensions" are planned during the September 4-5 *AAAA Annual Meeting,* the Committee promises many evidences and "tie-ins" with the 1861 fete.

LINDBERGH CHAPTER HEARS COL. MARINELLI

Growing in membership and activity with each passing month, the *Lindbergh Chapter* (St. Louis) continued its top level programming, having *Col. Jack L. Marinelli,* President of the U.S. Army Aviation Board, as its March 2nd guest speaker. *Col. Marinelli,* present *Alabama Region* president of AAAA, addressed the members on the *"Role of the U.S. Army Aviation Board in the R & D Field."*

NEW APPLICATION FORMS

Effective April 1, 1961, new *Membership Application Forms,* and new *FPPP Application Forms* (see pages 188-189) replaced old forms in use. Members having the old forms in their possession are asked to destroy them and to postcard the National Office for the prompt dispatch of the new forms.

THE AAAA WELCOMES YOUR NOMINATIONS FOR NATIONAL

AAAA AWARDS

DEADLINE: MAY 1, 1961

DESCRIPTION

The JAMES H. McCLELLAN SAFETY AWARD is a annual award sponsored by the many friends of James H. McClellan, a former Army Aviator who was killed in a civilian aircraft accident in 1958. This Award will be presented under the auspices of the AAAA to a person who has made an outstanding individual contribution to Army aviation safety for the 1960 calendar year.

Because of the wishes of the donors, this Award will continue to be based on "an individual contribution to Army aviation safety, such as a broad technical achievement, an operating procedure, an aircraft or equipment modification with broad safety implications."

This Award is not intended to be given for competitions between units for safe flying, etc.

It is recognized by both the donors and the National Awards Committee that some safety achievement may result from the development, planning, and implementation activities undertaken by several individuals, or by several agencies. Every effort should be made —in documenting a nomination—to pin-point the single individual primarily responsble for such an improvement, since only one award will be given to one individual, in accordance with the original intent of the donors who have established this Award.

The HUGHES AWARD, sponsored by the *Hughes Tool Company—Aircraft Division*, is a unit award to be presented to the unit "for a 1960 outstanding contribution to or *innovation . in the employment of Army aviation* OVER AND BEYOND THE NORMAL MISSION ASSIGNED TO THE UNIT."

The National Awards Committee will place considerable weight on those nominations that exemplify innovation and unit initiative.

Sponsored by the AAAA, the AWARD TO THE ARMY AVIATOR FOR 1960 will be presented to the Army Aviator who has made an outstanding contribution to U.S. Army Aviation during the 1960 calendar year. It has not been considered necessary to establish criteria for this Award, aside from the following eligibility requirements. The National Awards Committee, after reviewing all nominations received, may recommend that no award be made n a given calendar year if it appears that an outstanding contribution has not been made.

The AWARD TO THE ARMY AVIATION SOLDIER OF 1960, sponsored by the *Hiller Aircraft Corporation*, is a new award given to the enlisted man serving in an Army aviation assignment, who has made an outstanding contribution to Army aviation during the calendar year 1960.

Since this is a new award, an outline of the required documentation follows for your guidance:

Documentation should include the soldier's duty assignment in the unit; a description of the outstanding contribution or contributions he has made to Army aviation; his years of service; his number of years in the aviation program; his attendance at service schools; and his character, disciplinary, and proficiency ratings.

ELIGIBILITY

All individuals—military and civilian —are eligible as nominees for the JAMES H. McCLELLAN SAFETY AWARD. Candidates for the AWARD TO THE ARMY AVIATOR FOR 1960 and the HILLER AWARD TO THE ARMY AVIATION SOLDIER FOR 1960 must serve in the active U.S. Army or one of the Army Reserve Components.

Any organized aviation unit is eligible as a nominee for the HUGHES AWARD.

DOCUMENTATION

The Association welcomes nominations from all sources, to include individual members, AAAA Chapters, military units, Army areas, and industry and civilian persons. Nominations submitted for consideration should include the name and current address of the nominee, his unit, where applicable; a detailed description of his qualifications for the particular award and such other supportng data as is necessary; and the name (of the person or unit) making the nomination. Nominations for the *unit* award should also be documented by detailed, conclusive data that will serve to assist the Awards Committee in their decision.

Nominations and documentation should be typed, tabbed where necessary, and forwarded promptly to:

Colonel Robert M. Leich
Chairman, National Awards Committee
P.O. Box 869
Evansville, Indiana

SUSPENSE DATE

Nominations should be submitted so as to reach the Chairman on or before MAY 1ST, 1961.

PRESENTATION

The four Awards will be presented at the *AAAA Awards Luncheon* to be held during the *AAAA Annual Meeting* in Washington, D.C. on September 4-6, 1961. Every effort will be made to insure the personal attendance of the Awardees and unit representatives at the award ceremonies.

SIGNIFICANCE

The four Awards have broad significance to Army aviation in particular, and to the U.S. Army in general. Every effort should be made at local levels to publicize these Awards among persons directly concerned with Army aviation.

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

- ☐ Active U.S. Army establishment
- ☐ U.S. Army National Guard component
- ☐ U.S. Army Reserve Component
- ☐ Other. Describe below.

_____

_____

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 QUARTERLY 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

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BRIEFS

AUSA SYMPOSIUM

■ Briefing its sustaining members on present and future Army aviation plans, the *Association of the U.S. Army* held a most informative three-day *Army Aviation Symposium* at Fort Rucker, Ala., March 22-24. The classified sessions and panel discussions were augmented by field demonstrations provided by personnel and units assigned to USAAC and USAAVNS.

IAS MEETING

■ Covering four general subject areas for the presentation of papers—Firepower for Army Aircraft, Reconnaissance, Intra-Theater Transport, and V/STOL Concepts, the *Institute of Aeronautical Sciences* will hold a *National Army Aviation Meeting* at the Sheraton-Park Hotel, Washington, D.C., April 13-14. The classified meeting, hosted by the Washington Section of IAS, is limited to the IAS membership.

FLEX WING CONTRACT

■ A contract for flight testing and engineering application of a new *"Flex Wing"* powered test vehicle, designed and built by the *Aerospace Division* of the *Ryan Aeronautical Company*, has been awarded by USATRECOM. A manned test vehicle, the *"Flex Wing"* has a wing membrane consisting of flexible material which can be used with rigid or inflatable edges, a design concept that is expected to provide greater lift per unit of weight than conventional wings.

A "FIRST"

■ Another milestone went winging when an 80th Transportation Company Shawnee completed the first actual instrument helicopter flight in Alaska. Capt. Ralph W. Merritt, Flight Examiner; and pilots Lt. Leo E. Schmitz and CWO George F. Beaston participated in the "first."

ARMY AVIATION MAGAZINE
Westport, Connecticut