

ARMY AVIATION

JUNE 56

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An address by Maj. Gen. Hamilton H. Howze
to the Twelfth Annual Forum of the
American Helicopter Society, May 4, 1956 . . .

The Army's Stake in the Helicopter

The Army is much interested in the efforts of your society in the development of rotary wing aircraft; your organization is to a large degree responsible for the eminent position which the United States enjoys in this field. It is therefore with pleasure that I address the Twelfth Annual Forum. I shall take the occasion to express, as plainly as I can, the Army's stake in that temperamental, unpredictable, extravagant—and yet, withal, versatile and fascinating—lady, the helicopter.

Much has been said in the past and is being said now about the nature of the next war. These statements have much conjecture in them, and many of the most confidently uttered are probably the least accurate. One should bear in mind the caution of the acutely observant, late departed Mr. Mencken: "For every human problem there is a simple solution, neat, plausible and wrong."

The possibility of error in any forecast as to how the war shall be fought becomes obvious when one ponders on the political situations which exist in several of the key areas of the world, and the fact that certain of them will become very unstable in the face of imminent hostilities; when one considers the effect of fear and hysteria and indecision and vacillation; when we look realistically on the not unselfish but nevertheless understandable pressures of neutrals and allies, on the state of readiness and equipment and loyalties of military forces in the area or areas of hostilities, and, indeed, on the initial calculated actions and possible threats and declarations of intent by the aggressor. All these and many other variables will have a profound influence on the nature of the next war, to such an extent that the character of that war is, in fact, flatly unpredictable. The next struggle may vary all the way from total war of the most devastating possible nature to a conflict restricted by all sorts of rules and conventions and geographical limitations. World War II and Korea provide the plainest sort of precedent for war encompassed by certain restrictions, observed by both sides.

It would therefore appear that to base our military policy on any one hypothesis as to the nature of war, to the exclusion of all other possible hypotheses, is to invite disaster. The intelligence systems of the great powers are now very highly developed. The structure of U.S. military forces is hardly an unknown, and the exploitation of weakness is a basic military principle well understood by the military professional everywhere.

I presume that what I have just said probably did not need to be said, to this

audience. Nevertheless, the idea that our military problems can inevitably be neatly solved simply by the therapeutic application of atomic and hydrogen bombs keeps bobbing up, and should, as frequently, be batted down.

Although nothing about the problem is at all certain, it nevertheless appears probable to the Army that one of its greatest requirements in the next war, in any of the forms which we foresee that it might take, is that of mobility. The two basic ingredients of military tactics are in fact firepower and mobility. The development of advanced forms of firepower is proceeding rapidly in the Army; the development of mobility on a broad base (by which I mean for a proper proportion of our troop strength) is, in my opinion, lagging behind.

The helicopter will in the foreseeable future play an essential part in providing mobility to combat troops, purely by reason of the fact that it possesses one quality to an extent not enjoyed by any other type of aircraft. The quality is agility, which is manifested in the most important way by the ability of the helicopter to rise vertically, but which also includes the ability to hover, efficiently and safely, both aloft and near the ground; to fly about, oblivious of the nature of the surface, a few feet off the ground; to fly the contours of the terrain, twisting about among the hills and trees; to fly sideways and backwards. The Army has sought to demonstrate this agility by its square dance team, of which I presume most of you have heard. It is difficult to visualize the performance of the square dance by any other gadget, whatever the application of tilt wings, slots, deflected slip streams, boundary layer control, or anything else. Now, of course, perhaps some day I will have to eat my words—perhaps some day I will look out of my Pentagon window and see a quartet of four-engine fixed wing transports doing the do-ce-do, but there will at least be a little delay before this comes about.

And the quality of agility, once it has been introduced into aviation, is one that can never be foregone.

Most of us, military and civilian, understand mobility simply as the process of getting about with desirable rapidity. Very few persons understand, however, the implications of mobility. I quote from a German general named von Bechtolsheim: "Mobility means quick decisions, quick movements, surprise attacks with concentrated force; to do always what the enemy does not expect, and to constantly change both the means and the

(Continued on Page 33)



ARMY PIONEERS DEVELOPMENT OF TIP PROPULSION WITH THE YH-32

Limited in range and carrying capacity only by its few years of development, the Army is ushering in a new era in simplified rotary wing aircraft design.

Paralleling major improvements of jet propulsion during the past, the YH-32—with improving performance and operational characteristics—is ushering in an

entirely new concept of simplified rotary wing aircraft design: tip propulsion, in which power is applied where it is required.

The YH-32 is another development of Hiller Helicopters made possible through the constant cooperation and guidance of the United States Army:

HILLER HELICOPTERS • PALO ALTO, CALIFORNIA

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BEEHCRAFT SERVICE IS WORLD WIDE



The photograph shows Beech Representative W. P. "Bill" Peay (pronounced "P") in his working clothes demonstrating the proper technique of magneto repair to an L-23 crew at Yanggu, North Korea. Typical of the Beech Technical Representatives, Bill has had years of training and experience. Before joining Beech, Bill was an aircraft mechanic in the Navy, 6 years, serving both stateside and overseas. He

is a licensed A & E mechanic and has approximately 5 years' experience at Beech. Prior to coming to work at Beech, he spent a short time working on B-47s. He has been an L-23 instructor at the Army School at Fort Eustis and spent a short time at Fort Sill when it was the Army Aviation School. Bill has been on his present assignment with the Army as a Tech Rep assigned to the Far East since August 20, 1954.

**BEEHCRAFTS AND BEEHCRAFTERS CONTINUE TO
SERVE THE U. S. ARMY WITH THE BEST.**

**BEECH AIRCRAFT CORPORATION
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Cessna L-19's Help Army "Spread the Word"

Helping Army units maintain radio communications is another of the many vital jobs performed by versatile Cessna L-19's. Other jobs: control of military highway traffic, fast transportation for field commanders, evacuating wounded, pilot training, courier work, flare dropping, airborne radio relay. During civil emergencies, L-19's are used by Army National Guard units.

The rugged, all-metal L-19's can do all these jobs because they're designed to be versatile. They offer



Cessna Aircraft Company, Wichita, Kansas



high-wing visibility, short take-offs and landings, outstanding load-carrying and slow-flight characteristics. Also, L-19's are easy to service, require less maintenance than any other Army airplane!

Cessna has delivered every L-19 to U.S. Armed Forces on schedule since 1951!

VERTOL

Aircraft Corporation



Gentlemen:

You may have read recent announcements concerning the tilt-wing test bed which we are developing for the Army under contract with the Office of Naval Research.

We have been proponents of the test bed approach in the development of basically new aircraft types, because their characteristics can be explored in this manner with a relatively inexpensive airframe in a matter of months. By contrast, years are usually required to design and construct a costly prototype.

The Vertol VTOL tilt-wing test bed will be equipped with a gas turbine power plant which will drive counter-rotating rotor/propellers - one located slightly inboard of each wing tip. During hovering and slow speed flight, the propeller axes and wing chord will be perpendicular to the ground. In cruise and high speed flight, the wing/propeller combination will be in the conventional fixed-wing attitude.

As we progress on this and other test bed projects which portend advancement of Army mobility objectives, we will report to you periodically through ARMY AVIATION magazine.

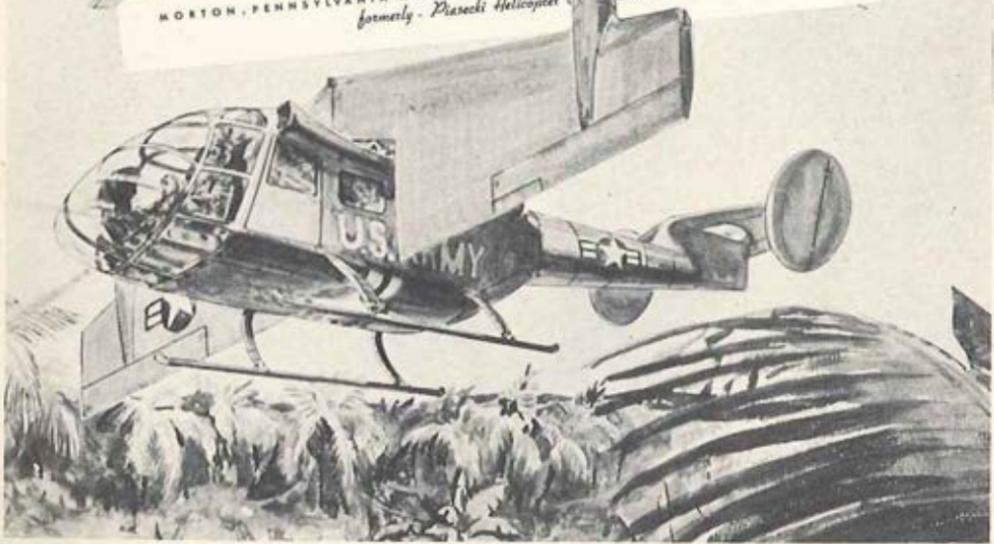
Sincerely,

W. Stepniwski

W. Stepniwski
Chief of Research & Development



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▶▶ GROUND DUTY

The early implementation of the Army Aviation Officer Career Program is foreseen in the light of satisfactory recruitment efforts to fill normal TD and TO&E requirements.

Reinstitution of periodic branch material ground duty for aviation officers is underway with major commands being authorized to assign aviation officers of all branches, except TC, to non-flying duty assignments.

Criteria to be followed include the following: The ground duty must be of a branch qualifying nature so as to further the individual career development of the aviation officer. Officers rotated will be in the grade of 1st Lt. and above and must be in excess of TO&E and TD aviation requirements.

The officer must have a minimum of 500 hours of first pilot time in Army aircraft and must have been assigned to primary aviation type duty for the past three years, exclusive of any student status in service schools.

While serving for not less than one year and not more than 18 months in a ground duty assignment the aviation officer will be retained on full flying status and is required to maintain his flying proficiency under current regulations. Commanders are instructed to provide aviation facilities and will designate units responsible to provide the facilities so as to insure the maintenance of the individual officer's aviation proficiency.

To increase the number of aviators available for branch material non-flying duties, Army aviators may still be utilized in TO&E and TD positions one grade above their present rank. Priority will be given to the selection of the officer with the highest overall potential to the Army.

▶▶ AHS FORUM

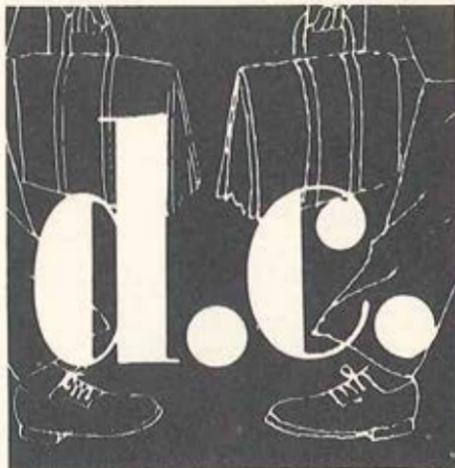
WASHINGTON, D.C.—A huge success in every way, the Twelfth Annual Forum of the American Helicopter Society held in Washington, D.C. in early May ended with an impressive multi-craft Air Show at nearby Anacostia Naval Air Station.

Rotary wing aircraft from each military service performed in flight demonstrations and were then placed on static display for the many visitors attending the Air Show.

On display were an Army H-13, a YH-31, and a fly-by of eight H-34s. An H-21B, H-19B, and an H-34 represented the AF while the Navy presented its HSL, XRON-1 (Rotorcycle), HOK-1, HOE (YH-32 Ramjet), HSS (H-34), HTK (Twin-turbine Kaman), and HUP-4 (H-25).

The Marines displayed an HOK-1 and an HR2S while the commercial craft included a Vertol H-21, Sikorsky S-55, Hiller H-12B, Bell 3-place "Bellairus," and Bell 4-place "Ranger." The Coast Guard also took part in placing its HO4S on display.

During the three-day Forum technical



papers were presented by leading rotary-wing authorities of both the commercial and military spheres. Newly elected executive board members include: Pres., Charles M. Seibel (Cessna); Sec., Prof. Rene H. Miller (MIT); and Treas., Col. Robert R. Williams (Bd Nr 6, CONARC, Ft. Rucker). Col. William B. Bunker (Commandant, TSMC, St. Louis) served as Awards Chairman and was immediate Past President. Executive Secretary of the AHS is Harry M. Lounsbury.

Regional Vice-Presidents include: Bruce A. Goodale (Doman New England); H. Stever Tremper (Vertol) Mideast; Cmdr William G. Knapp (BuAer) Southeast; Marvin D. Marks (McDonnell) Midwest; Robert H. Wheelock (Bell) Southwest; and Herbert F. Mosely (Hiller) West Coast.

▶▶ YH-31 UNDER TEST

WASHINGTON, D.C.—Acceptance of the first of two model YH31 helicopters manufactured by Doman Helicopters, Inc., of Danbury, Conn. has been made by the Army the Department of the Army announced recently.

Captain Ellis D. Hill, accepted the C.A.A. certified 5200-pound single lifting rotor helicopter for the Army and flew the aircraft to Washington, D.C. where it was exhibited by the Army in the Air Show of the 12th Annual Forum of the American Helicopter Society at nearby Anacostia Naval Air Station.

Following the showing at Anacostia, the helicopter was flown to Fort Rucker where the YH31 will be subjected to service tests by the Army's Aviation Test Board to determine its operational, maintenance and safety suitability for use in the field. (DD Release.)

SUBMIT COPY BY THE 1st.

An informal report to the aviation officers of the major commands by Maj. Gen. Hamilton H. Howze stresses the underlying importance of adequate . . .

Personal Insurance

by Maj. Gen. Hamilton H. Howze

Gentlemen: The Chief of Staff has approved the Army Aviation Plan, which sets forth the guidelines for the development of our organic aviation during the period 1956-1960. The plan is expected to co-ordinate the efforts of the Army staff and the headquarters and units in the field in their common efforts to develop Army aviation as a contribution to our battle effectiveness. While the plan is not an inflexible instrument, it should be regarded as firm guidance. It will be revised once annually to keep it abreast of doctrine and technological progress.

Our Flight Safety Inspector, Colonel Wells, provided the following narrative, from which a moral may be drawn: Once upon a time I had a First Lieutenant whom I shall call Jones working for me as an instructor pilot. He was a very intelligent young man, had a very charming wife, two delightful children, a car not yet paid for, and \$50 in the bank. Jones was one of the most skilled flyers I have known. In fact, because of his skill I had selected him as the instructor for the Brodie Device, which as you may recall, was the cable rig we once used for landings and take-offs in L-4's.

Jones occasionally did show off his prowess by doing snap rolls at 500 feet, but everyone knew that Jones was skillful enough to be able to do snap rolls at 500 feet, even though it was in violation of regulations. One day Jones, with his Sergeant in the back seat, took off to fly out to his Brodie Device. When over the Brodie Device he deliberately entered a spin at about 1100 feet in order to reduce altitude to land on the cable. He only partially recovered from the spin, crashed, and killed himself and the Sergeant.

I am the villain in this case because, had I on the first instance of Jones' acrobatics, offered him punishment under the 104th Article of War, or if he so chose, trial by court martial, Jones would have been alive today.

There is a sad sequel to the story, also. Upon investigating we found that although he had been on flying status for four years he had

no insurance of any kind, not even GI insurance. It was necessary to take up a collection to return the widow and two children to her home. I have since made it a habit to check thoroughly the insurance coverage of any people working for me who are drawing flying pay.

The reason I go through this long recitation is that I am quite certain, from observation here and there, that negligence of the same sort as mine prevails in Army aviation today.

We recently received from Lt. Colonel Norman Walker of the War Office, London, England, a letter in which he stated:

"I should like to thank you very much indeed for the co-operation of yourself and of all the officers connected with Army aviation whom I met during my tour. I had a very enjoyable and an extremely useful series of visits, and everywhere I went I found the same standard of friendliness, hospitality and co-operation."

"There is no doubt that, as a result of my tour and the previous one by Major-General Bray, the British Army have learned a great deal about the organization and operation of Army aviation. I do hope you realize how extremely grateful we are to all of you for making our visits possible and so very profitable."

I know that you have heard of instances when pilots were requested to telephone Air Route Traffic Control Center upon landing. Frequently these requests have been generated as a result of a violation of regulations and Center personnel are attempting to bring

this to the attention of the pilot. I earnestly recommend that you advise your pilots to telephone "Center" as soon as possible after landing. Chances are "ATC" personnel are trying to help the pilot and by his being courteous perhaps he can avoid a written violation plus a lot of hard feelings.

If you are experiencing difficulty through non-receipt of publications, I offer this suggestion: have a repre-



Gen. Howze Report

(Continued)

sentative visit the Post Publications Stock Room regularly. The stock room personnel receive a weekly bulletin of new publications and a perusal of these bulletins may reveal forms and publications of importance to aviation units or sections. Requisitions for required publications may then be submitted at the proper time.

Procurement

Procurement action underway: ten Cessna CH-1 helicopters, military designation YH-41. The YH-41 seems to have good performance capabilities and maintainability. It has been approved as a four-seat helicopter with extended C.G. travel and with a weight limitation of 3,000 pounds. Contract to convert the USAF YH-16 to the YH-16B has been terminated; it's a question of money.

Research Aircraft

Perhaps you have heard that the Army has negotiated two contracts directly with industry for new research aircraft; one with Doak and the other with Fairchild. These contracts are a part of the "flying test bed program" in the conduct of applied research and are not for development of operational aircraft.

These new research aircraft will be used to investigate and establish advanced aerodynamic design principles for possible aircraft which will enhance the ability of all three military services to operate from extremely short landing fields. Configurations to be tested under these and other contracts with Ryan and Vertol include deflected slip stream, double ducted fan, and tilt wings.

Career Program

The Army Aviation Officer Career Program, recently implemented by AR 600-105, provides centralized monitorship of assignments, periodic rotation between flight and ground duty, and progressive development in the field of aviation by definitely planned school and job training. Aviation officers, first lieutenant and above, normally will be given a command or other branch material ground duty assignment of a minimum of one year's duration in each grade held. Ground duty should generally occur upon completion of branch or higher level schooling. It is considered that the aviator will be best qualified at these times to compete with other officers of his branch.

Senior Officers

Circular 621-14 which announced opening for twelve senior officers, in grade of Lt. Colonel and Colonel, met with most gratifying results. As of this date over 400 applications have been received. Process of selection is now under way and is slated for completion by 29 May. In view of the high selection ratio, it appears that the officers selected should be the best!

MOS Action

DA is taking corrective action to alleviate

the mechanic shortage in certain areas and MOS's. A portion of the problem is distribution; however, the basic problem is MOS 670.00. Root of the evil—no training course has existed to train personnel in this MOS. School training in MOS 670.00 is to commence on 1 July 1956 at Fort Rucker. Recommended action for aviation officers in the interim before graduates reach the unit level—arrange with your G-1 to have personnel records screened to determine individuals previously trained in rotary or fixed wing aircraft maintenance.

Medical Officers

A requirement for 67 Army Aviation Medical Officers has been established and at the present time we have 32 on active duty. A training program has been established with the AF and Navy to train a total of 38 each year. The Army quota for a nine week's course at Randolph AFB, Texas is 30 per year, with applicants required to have a minimum of eighteen months active duty remaining after completion of the course.

The quota for a 5 month's course at Pensacola NAS is 8 per year, with applicants required to have a minimum of two year's active duty remaining after completion of the course. Graduates of both courses must attend a four week's course at the Army Aviation School prior to assignment as qualified Army Aviation Medical Officer. DA Circular 621-17, "Aviation Medical Training", dated February 1956, establishes these criteria.

Letter Received

The following letter was received by this office and indicates the variety and breadth of operations in Washington:

"U.S. Government Helicopter Experiments, Washington, D.C., Gentlemen: We recently read of a Helicopter which has been improved for heavy weight lifting. We are wondering if you would consider moving our four room cottage as an experiment in a new field of house moving.

As a word of explanation: Our present foundation is very bad and needs a new one. Furthermore, the road in front of our house is going to be widened, leaving us just six foot of frontage. We cannot afford a new foundation—neither can we afford to have our house moved further back. Therefore, if the Government (or privately owned Helicopter Co.,) would supply us with a new foundation and take responsibility for unforeseen accidents, we would be willing to cooperate with them in permitting our home to be the first one moved by air.

Since Spring is the time for digging foundations, we would like to hear from you at your earliest convenience. We would be grateful for any consideration you can give us. Sincerely, Mrs. (name and address withheld)"

HAMILTON H. HOWZE

Major General, GS

Director of Army Aviation, ODCSOPS

NEW!

Last month, Maj. John T. Pierce, III, outlined the principal functions of Board Nr 6, CONARC, Ft. Rucker, Ala. Charged with the service testing of all Army aircraft and allied equipment for the field forces, Board Nr 6 has a wide variety of projects underway at any one given moment. Some of these projects are presented to you below in synopsis form so that you will be acquainted with current projects now under study. It is important to stress that until such time as the project conclusions and recommendations are approved by the Commanding General, CONARC, they represent only the opinion of Board Nr 6 as obtained through test results without consideration of other factors. The description of materiel will only be included on newly assigned projects:

YH-32 HELICOPTER (HILLER RAM-JET)—YH-32 aircraft has not as yet been received by the Board. (Capt. Jim Bowman, ex-Project pilot at Hiller, is monitoring YH-32 program.)

H-21C HELICOPTER (VERTOL)—Two aircraft under test; total hrs on each: 319 & 350. External auxiliary fuel cells will be installed on one to evaluate long-range ferry flight capability. Engr study is underway with other acft to determine service requirements for landing pads for this type.

H-13H HELICOPTER (BELL)—Two acft under test; total hrs on each: 354 & 256. One currently is at Climatic Hangar, Eglin AFB, for climatic testing. Pending 600 hrs total time on at least one engine, the engine will be shipped to WADC for tear down inspection & analysis.

QUADRADAR and SPAR RADAR—QUADRADAR evaluation has been completed; SPAR-S radar delivery to Board has not been made. Pending receipt of SPAR-S for comparative evaluation, QUADRADAR has been transferred to ARMAV.

HOMING ADAPTER AN/ARA-31—Service test completion expected 31 May. Effective homing for 5-15 mile ranges secured, distance depending on power of ground station transmissions. Test installations are on L-19 and H-13G craft.

H-21C & H-34A HELICOPTERS—Comparative testing of aircraft completed; expected final report 15 May.

MET-L-MATIC CONSTANT SPEED PROPELLER (MCCAULEY)—Successful testing to zero deg. Fahrenheit completed. Further testing to -30 and -65F. to be undertaken to determine suitability of propeller for cold weather operation.

H-13H HELICOPTER (BELL)—Successful testing of winterization kit to 0 deg. Fahrenheit. Further testing to -30 and -65F. to be undertaken to determine if the winterization kit for the production model is at a stage where Arctic test of aircraft may be taken. Handcrank starter under simultaneous climatic testing.

UNIVERSAL SKI-LIGHTING GEAR FOR L-19 (ALL-AMERICAN ENGINEERING)—Modified weld strut mount assembly installed on EL-19A, overcoming canted ski deficiency with previous installation. Proj officer has been checked out for water operation & dynamic testing with modified assembly will continue. (Ed. Water flotation is obtained by maintaining a taxi speed above the water speed of the ski, since the ski has no buoyancy characteristics. Reporter notes that the L-19 has been fished out of the lake twice.)

DE-ICER & ANTI-ICER EQUIPMENT FOR L-23—New set of de-icer boots installed at BF Goodrich facility in Akron. Spinners (incorporating slinger rings) failed on test stand at WPAFB. Spinners removed pending a fix by Beech Acft. Climatic testing completed. Proj testing 80% completed.

INDIVIDUAL LIFT DEVICE (DeLACKNER)—New project to determine mechanical reliability, logistical support requirements, and flight characteristics of DeLackner "Aerocycle." Device incorporates two 2-bladed counter-rotating 15 foot diameter rotors powered by a 43-hp engine with a V-belt transmission. Directional control is effected by turning device's handlebars which acts on an adjustable pulley, changing the V-belt ratio, which causes the rotors to operate at different speeds, resulting in a torque turn, while vertical control is effected by varying the RPM of the fixed pitch rotor blades. Draft plan of test has been prepared. Two devices are expected to undergo 90-day service test beginning 22 May.

AN/ARC 55 RADIO EQUIPMENT (UHF)—L-23 test aircraft at Beech for IRAN & installation of AN/ARC 55.

CARGO HOOK & SLING ASSEMBLY FOR H-34 HELICOPTER (EASTERN ROTORCRAFT)—5,000 lb. capacity. Opinion is divided as to the existence of a requirement for a hook and sling assembly of this capacity. Sikorsky Div requested to furnish modification data to accommodate 5000-lb capacity sling.

U-1A AIRPLANE (DeHAVILLAND)—Total time on acft: 138:25. Check out procedures utilizing AAs with varying degrees of experience being determined in conjunction with serv/test. Interim report to CONARC found acft suitable as light cargo carrying plane. Present seating arrangement unsuitable for transporting combat-equipped troops.

YH-31 HELICOPTER (DOMAN)—Proj/pilot has completed factory checkout and has ferried acft to Board.

KIT, RAIN REPELLANT—L-19 & L-20 tested with rain repellent applied to right half of windshields. Dearth of rain has caused slow progress. Limited testing has revealed that repellent appears to increase pilot's forward visibility.

H-23C HELICOPTER (HILLER)—Two acft under test; total time: 60 & 58 hrs. Recent test taken with doors removed and cockpit heater on to determine adverse effects. Negative results of carbon monoxide concentration were found after blood samples were taken at the takeoff and 5 hr. period of continuous flying. (Ed. Refueling was accomplished at a hover.)

TRICYCLE LANDING GEAR FOR L-19 AIRCRAFT—Preliminary inspection of equipment completed. Further comparative evaluation appears to be warranted. Board recommends that a Cessna Model 180 and 182 be considered suitable for further comparative evaluation of the conventional and tricycle landing gear.

SAFE FLIGHT LANDING SPEED INDICATOR—Following the installation of new equipment in an L-19 and L-20 and subsequent testing, ISI will be transferred to U-1A and L-23 acft and service tested.

HOK-1 HELICOPTER (KAMAN)—New project to determine the suitability of the HOK-1 Helicopter for Army use by service test and evaluation. HOK-1 is 4-place acft with twin-inter-meshing, counter-rotating, wooden rotors, Pratt & Whitney R-1340-48, 9-cylinder, radial, air-cooled engine, rated at 600 hp. 600 lb. fuel tank capacity. 47 foot overall length; max. height 15'6" (rotors turning). 4040 lbs empty; gross weight, 5800 lbs. Acft expected at Board on 28 May.

HELICOPTER EXTERNAL SLING NET (EASTERN ROTORCRAFT)—5000 lbs capacity. New project. 4-hook and drawing types; rectangular in shape; 5/32-inch steel cable construction. DA has initiated procurement action for 12 of each type. Shipment to following is expected to be completed by 1 August: Ten nets (5 & 5) to Benning; four nets (2 & 2) to Bd Nr 6; and ten nets (5 & 5) to Bragg.

(Continued on Page 20)

You are an Army Aviator of not too recent vintage assigned to an Artillery Battalion in West Germany. Your background in flying consists of the regular Army aviator schooling at San Marcos, Texas, and Fort Sill, Oklahoma, and some 1000 hours of first pilot time, to include 500 hours of combat time in Korea since your graduation. It's late fall and the day starts as hundreds of other days had in the past.

THE

A small traveler's type of alarm-clock bids you the time of day and you rise sleepily to vie with Johnie Jr., 7 years of age and June, 5 years young, for the use of the one small bathroom in your dependent quarters in Blankburg. Breakfast is uneventful and three quick kisses later, one for each of the family, you are away to work.

When you arrive at the airfield your mechanic greets you with a message that the old man is in Someburg, 30 air miles away, and wishes to be picked up "soonest" for a quick return to his duties at the battalion. A quick look through the office window paints a dismal picture weatherwise: Ceiling about 500 feet and visibility about 2 miles in light rain. You hurry to the phone to check the weather at Someburg, with slightly better results: Ceiling 700 feet and visibility 2 miles.

"Roll 623 out, Joe!" you yell to the mechanic as you rummage through your desk drawer for a chart of the area and grab two parachutes off the shelf near the door. Although knowing weather is below minimums and that you will be violating regulations, you decide to chance the flight intent on padding your efficiency index with perhaps another point, thereby practically assuring that there will be no passover when your name comes up for promotion next year.

At the end of the runway you run through your pre-take-off-check—very little drop on the mags—run up is smooth—carb heat working—switch thru all gas tanks, no sweat—trim for take-off—set flaps—clear yourself—take one more look at the grey clouds hovering some 500 to 700 feet above—look at the hills, they're clear—ease the throttle full on, leap ahead for a couple o'-hundred feet and you're airborne—smooth as silk.

Ease the nose down and retard throttle to

SWITCH

cruise as you near the clouds and head for a pass between the hills almost on course to Someburg. Twenty minutes from now you'll have the old man tucked aboard and winging your way back with - Hey! - after passing the hills, you see that wisps of the clouds are toying with tops of the tall evergreens in the flats ahead. You look to

the left and right for a break - none! Nothing to do but turn back and - "What the hell! - the ceiling has dropped masking the hills you just crossed.

You check the altimeter—two hundred feet and the clouds are pressing you lower—you turn right straining your eyes for a hole in some direction—clouds press you lower—"Gotta find a hole," you mumble as you level off on some heading - don't know - your eyes are trying to force their way past clouds that are now almost touching the trees - look out - that's a hill side - pull to the left - too late!

There's an earsplitting crash, a flash of flame, and a terrible searing pain as your torso tears itself from the straps and through the windshield leaving parts of what had been your war, living body, smashed and crammed into twisted wreckage that had been too hard to breakthrough; then - nothing - absolutely nothing - the dead is neither conscious of pain nor surroundings.

This story could have been lived through, "Where's the ceiling going?" you ask aloud even though the serious error of electing to fly in below minimum conditions had been committed. How? Let's turn the clock back those several minutes before the crash to the time when you first discovered that the ceiling was closing down on you from all sides. One more 180° turn and your fears

PANIC

are confirmed; no break - a decision must be made.

You select the course to Someburg, 185°, because you know the terrain in that direction to be flat. You push your throttle to climb, pull the nose up, and suddenly you are in the clouds. No sweat. You have all the necessary flight instruments, your airspeed indicator, attitude gyro, directional gyro, a recently swung magnetic compass, a turn and bank indicator and rate of climb, in addition to your engine instruments. You have an 8 channel VHF radio receiver and transmitter, and a low-freq receiver. You know how to use them and "you're in business."

The air inside the clouds is moderately turbulent but the plane is completely under your control; wings are level according to your attitude gyro and your directional gyro; airspeed 80 MPH; rate of climb steadily holding 500 feet per minute and you believe them all. Your altimeter indicates that you are now at 3,500 feet, 300 feet above any mountain within 30 minutes flying time from your present position. You continue to climb, meanwhile thinking out your next steps - no hurry - plenty of gas, the plane is now at 4,000 ft. indicated and you have plenty of margin.

You rummage thru the map compartment for the FAC chart and the frequency of Munich Control - "Ob hell - remember now;

I had it home to bone up for annual writ."

You look for the frequency on your map and it isn't there. Altitude now reads 5,500, you light up a cigarette, switch over to 121.5 the emergency frequency, and call DF station "Volleyball." No answer! Altitude 6200 - you plan on leveling off at 7000. You snuff out your cigarette in the ashtray, turn up your volume control and broadcast "May-day" three times followed by your identification and approximate position. You are now at 7000 and you notice the clouds have become bright above you.

You elect to continue climbing, at 7,500

you break out on top of a dazzling white bank of puffy clouds with nothing but the bluest of skies above. You level off and - DF Volleyball is calling, you answer, broadcast for a fix and Volleyball gives a course for an AF field at Munich and the frequency for contact for a GCA approach thru the clouds. Ceiling at Munich: 1,500, visibility 3 miles.

Sure, when you land you'll have questions to answer, reports to make, explanations to give, and disciplinary action to face, but the point is, *you will be alive to do it!*

—Lt. Col. Lloyd J. Swink

FT. WORTH, TEX.—Details recently released by the U.S. Navy indicate that Bell's tandem-rotor HSL is capable of towing a 300-ton derrick about the water. The demonstration tests of the modified Bell anti-sub helicopter model revealed great towing capabilities of the

HSL. The feat was performed as part of a program to evaluate the HSL's mine-sweeping ability.

The application of helicopters in mine-sweeping operations drastically reduces the element of danger to personnel and equipment. In the first issue of the Journal of the American Helicopter Society, Navy Cdr. William G. Knapp reported that "development of modifications to adapt the HSL to this unusual application (mine-sweeping) have been completed and tests indicate a great towing capacity of this machine. The Navy Department's Office of Information in an official publication had this to say: "The

pulling power of helicopters has even amazed those who are most familiar with them. Forty to 400-ton surface vessels have been towed from standing starts at speeds considerably in excess of that which they can produce under their own power." (Bell Release. (Ed. *A turbine-powered configuration of the HSL has been under Army consideration*).

WHEELER FIELD, OAHU—Aircraft under Operation "IRAN"—Inspected and Repaired As Needed—were delivered to Army aviation officials recently by the Hawaiian Airlines. Charles R. Gilmartin, HAL production control manager and Paul G. Phillips, foreman, represented Hawaiian Airlines and Lt. William Klim, Jr. and Sp-2 Jouis D. Willis, inspectors, accepted the planes for the Army. These two planes were first of the nine planes which were contracted to the Hawaiian Airlines under "IRAN".

The 571st Transportation Detachment (Army Aviation Repair) at Wheeler Field is responsible for the maintenance of these Army aircraft. The light aircraft are used by the 25th Division Air Section.

In the accompanying photo, the Army Personnel appear at the left. Mr. Phillips and Mr. Gilmartin appear at the right. (PIO Release).



Keeping pace with the growth of the Army Aviation Program, the Medical Corps plans to train additional aviation medical officers . . .

Care of the Flyer

Recognizing its increasing responsibilities for the selection and medical care of Army aviation personnel, the Army Medical Service has developed and established an effective Army Aviation Medicine Program. Basically, the program includes: medical examinations for proper selection of flying applicants, and to guide their subsequent utilization as pilots; clinical care of flying personnel, considering the specific problems inherent to such personnel; a "care of the flyer" program to preserve maximum individual and unit efficiency; advice to responsible commanders and boards of officers concerning medical aspects of aviation problems; and development, with other responsible agencies, of improved policies and procedures for utilization of flying personnel, of aircraft and equipment.

Within the Army, aviation medicine is practiced by the aviation medical officer. As available these officers are assigned to medical sections of headquarters of divisions, corps, and field armies; to transportation helicopter battalions and engineer topographic groups; to major aviation activities; and to station medical complements responsible for the care of 30 or more Army aviators.

There is no separate field organization for the practice of aviation medicine; aviation medical officers being responsible for the care of nonflying personnel as well as Army aviators. Technical assistance and guidance for the program is provided by senior surgeons, appropriate medical consultants, and published media. Aviation medical officers, actively engaged in the practice of aviation medicine, are required to participate in regular and frequent aerial flights, and are eligible

for noncrew member flying status and pay.

There is no Army school of aviation medicine. Formal aviation medicine training provided by the U.S. Air Force and U.S. Navy Schools of Aviation Medicine is adequate to meet Army requirements. Except in the field of rotary wing aircraft and development of psychological selection of criteria, research and scientific investigations in aviation medicine are, likewise, considered beyond the scope of the present Army aviation medicine program.

Comprehensive Training

Currently, Army aviation medical officers receive *nine weeks* of formal aviation medicine training at the *U.S. Air Force School of Aviation Medicine, Randolph Air Force Base, Texas*, followed by *four weeks of intensive applicatory training in Army aviation medicine at the Army Aviation Center, Fort Rucker, Alabama*. Arrangements have been made to utilize the *22-week course in aviation medicine* conducted by the *U.S. Navy School of Aviation Medicine, Pensacola, Florida*.

The Army aviation medicine program is considered an effective and realistic method for support of the rapidly growing Army aviation program. The future development of aviation medicine within the Army will be commensurate with the actual needs of Army aviation. Aviation medicine is integrated with other activities of the Army Medical Service in the same way that Army aviation is organic to existing branches of the Army (D/A Summary)



DFC AWARD

FORT SILL, OKLAHOMA—Lt. Col. Charles Ernest (right), Fort Sill Army Aviation Unit Training Command commander, congratulates Warrant Officer Luama W. Mays, after pinning the Distinguished Flying Cross, the nation's sixth ranking award for heroism, on the 23-year-old helicopter pilot.

The citation, accompanying the Distinguished Flying Cross, described how WO Mays, while on assignment in Thule, Greenland, 1st May, rescued a fellow pilot from an ice cap following a crash scene, despite "great personal danger." WO Mays is a native of McKees Rocks, Penna. (PIO Release, AA & GM Cen, Ft. Sill).



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(L 20)



THE *Otter*
(U 1-A)

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AABERG, QUENTIN J., Lt., Army Prim Flt Class 56-14, Gary Air Force Base, San Marcos, Texas.
AGUIRRE, CARLOS RAFAEL, Sgt., 7965th AU, Headquarters Advance Section, APO 122, New York, N.Y.
ARNET, ROBERT A., Lt., Hq, Combat Command A, 3rd Armored Division, APO 39, New York, New York.
BALDWIN, RICHARD D., Capt., JUSMAG, Philippines, APO 928, San Francisco, California.
BEIGHLE, JACKSON E., Mr., Sales Manager, Sikorsky Aircraft, Stratford, Connecticut.
BELL, FRANCIS R., WO-W1., 553rd Transportation Company (Light Helicopter), Fort Sill, Oklahoma.
BOOTH, MAYNARD B., Lt. Col., Hq, MAAG-Japan, APO 500, San Francisco, California.

KALMBACH, JACK R., Lt., Hq & Hq Company, 4th Infantry Regiment, (Advance Party), Fort Lewis, Washington.
KLINGENHAGEN, JOHN L., Lt. Col., 5941 Hatten Court, Alexandria, Virginia.
LENDRUM, J. T., Mr., 466 West Main Street, Apartment 4, Kent, Ohio.
LUKERT, BURDETTE R., Lt., Hq Battery, 593d FA Battalion, APO 39, New York, New York.
MCCLUSKEY, A. H. Lt., 2518 Cleveland, Caldwell, Idaho.
MADDEN, J. P., Lt., 29th Engineer (Construction) Battalion, Fort Devens, Massachusetts.
MAKUCH, WALTER S., Maj., 52d Transportation Bat-

The Month's Takeoffs!

BOWDEN, WALTER D., Lt. Col., Ward E4, Fitzsimmons Army Hospital, Denver, Colorado.
BOYDSTON, ARLAND D., Lt., 85 Osborne St. Keyport N.J.
BUTLER, ROBERT D., SP-3., 313 East Court, Waukon, Iowa.
CAMPBELL, JOHN, JR., Capt., 14th Army Aviation Company (FWTT), Fort Riley, Kansas.
CARPENTER, E. V., SFC., 36th Transportation Company (Helicopter), Fort Sill, Oklahoma.
CASTRILLO, J. A., Lt., Hq Detachment, 54th Transportation Battalion (Helicopter), Fort Sill, Oklahoma.
CLANCE, CHARLES L., Capt., 564 Mokena Drive, Miami Springs, Fla. (PO-Notice; unconfirmed by addressee)
DAVIS, EDWARD J., Lt., 323 Madison Avenue, Fort Eustis, Virginia.
DOW, EUGENE W., Capt., JAMMAT, Yulog - Det 4 Gagi-Air Section, APO 206-A, New York, New York.
DOWNES, THOMAS W., JR., Capt., The Infantry Center, Fort Benning, Georgia.
DUPONT, GEORGE J., Capt., 2nd Army Aviation Company (FWTT), Marshall AAF, Fort Riley, Kansas.
EASON, WILLIAM A., JR., 110th Transportation Company (Lt Hcptr), APO 29, New York, New York.
EVANS, WILTZ E., Sgt., 7704th Transportation Depot, APO 215, New York, New York.
FAUCHEUX, CLANCY J., Capt., 203 Cole Avenue, Walker Village, Killen, Texas.
FICKLIN, MARVIN D., WO-W1., 7099th SU, 1st Arctic Test Det, USA, Fort Churchill, Manitoba, Canada.
FINLEY, JOHN L., Lt., IAGS - Cuba Project, c/o US Army Attache, American Embassy, Havana, Cuba.
FOSTER, JOHN K., Lt., 30 Country Club Circle, DeRidder, Louisiana.
GARNER, JAMES A., WO-W1., 36th Transportation Company, Fort Sill, Oklahoma.
GRIFFIN, WILLIAM R., Lt., 733 North 17th Street, Lawton, Oklahoma.
HALE, CARSON W., PFC., c/o Mrs. Floyd Gothard, Rt No. 1, Box 669, Huntsville, Alabama.
HARRIS, TRUITT W., Capt., 7th Aviation Company, APO 7, San Francisco, California.
HENRY, DEWITT C., JR., Capt., Hq & Hq Battery, 532d FA Observation Battalion, APO 164, New York, New York.
HERRICKS, ROBERT N., Maj., Hq, Fifth Army, Transportation Sec, 1660 E. Hyde Park Boulevard, Chicago, Illinois.
HOFBERGER, JAMES J., Pvt-2., Headquarters Company, Transportation School, Fort Eustis, Virginia.
HUNTER, JOHN C., Capt., 110th Transportation Company (Helicopter), APO 29, New York, New York.
JACKSON, JAMES M., SP-3., 328 South Grand, Independence, Missouri.
JARVIS, RONALD J., Lt., 143rd Armored Signal Company, APO 39, New York, New York.
JERSEY, DONALD H., Capt., 307 Caroline Street, Fredericksburg, Virginia.
JONES, GLEN W., Capt., 37th Medical Detachment (Helicopter Ambulance), Fort Benning, Georgia.

talion (Helicopter), Fort Riley, Kansas.
MIALARET, GERARD J., Lt., 1207 Snow Road, Artillery Village, Fort Sill, Oklahoma.
MUKAEDA, RICHARD K., Lt., Aviation Section, Hq Company, 3d Armored Division, APO 39, New York, New York.
NEEDHAM, BILLY R., Lt., Hq, 1st Battalion, 3d Armored Cavalry Regiment, APO 114, New York, New York.
NICHOLS, HERCHEL R., Capt., Eighth Army Flight Detachment, APO 301, San Francisco, California.
NICHOLS, JAMES H., Lt., 322 Timberlane Drive, San Antonio, Texas.
NOLAND, CLIFTON M., Capt., 64th Transportation Company, (Light Helicopter), Fort Sill, Oklahoma.
NOVILLE, G. O. & ASSOCIATES, INC., 1666 Ninth Street, Santa Monica, California.
NORMAN, JAMES M., Lt., H & S Company, 20th Engineer Battalion (Construction), Fort Devens, Massachusetts.
POWELL, GEORGE E., Maj., c/o Mrs. C. A. Powell, RR No. 1, St. George, Kansas.
PRESCOTT, DANIEL C., Capt., Seventh Army Flight Detachment, Hq Company, APO 46, New York, New York.
ROBINSON, C. E., JR., Capt., 142 Edward Avenue, Watertown, Connecticut.
SCHOLZ, ALLEN E., Lt., 156 New Estate Road, Littleton, Massachusetts.
SERRANO, ADALBERTO C., Sp-2, 937th Engineer Company (Aviation), Fort Clayton, Canal Zone.
SLUMPF, CARL F., Maj., 587th Transportation Company (Helicopter), APO 29, New York, New York.
STEBBINS, JUNE H., Capt., 105 Alabama Street, Enterprise, Alabama.
STRANGE, LOREN C., Lt., 1512 White Avenue, Killen, Texas.
TARBOX, GEORGE E., LT., 368 Raymond Road, Apartment 12-F, Jackson 4, Mississippi.
TAYLOR, JAMES D., Capt., P.O. Box 2786, Fort Huachuca, Arizona.
TEMPLETON, WILLIAM M., Lt., Aviation Section, Fort Monmouth, New Jersey.
THOMPSON, KENNETH R., Lt., Flight Det Support Group, UNC MAC, APO 72, San Francisco, California.
THOMPSON, RUSSELL J., Capt., Box 21, St. Joseph, Ill.
THORNTON, DONALD E., Lt., Hq & Hq Company, 502d Engineer (Construction) Group, Fort Carson, Colorado.
VARNEY, GEORGE R., Lt., 416th Signal Aviation Company, Army Electronic Pvg Grounds, Ft Huachuca, Ariz.
WALLER, MASHALL, Maj., Board Nr 6, CONARC, Fort Rucker Alabama.
WHITNEY, EDWIN F., Lt. Col., 54th Transportation Battalion (Helicopter), APO 69, New York, New York.
YUNKER, JOHN L., Lt., 110 Third Street, Marumscu Village, Woodbridge, Virginia.

This Change of Address column enables a subscriber to place his change of residence before 4,700 other subscribers. In our behalf the column serves as a published acknowledgment that we have received the notice. To avail yourself of this listing simply remit your new address on a Post Office or Military Change of Address card. Home addresses, rather than unit addresses, are preferred.

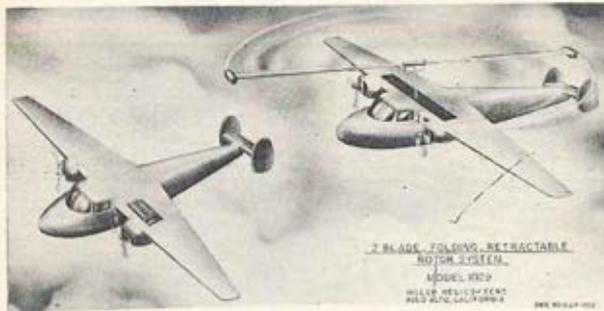


PHOTO STORY (Starting at Top Right on
Polk: Back row, L-R: Lts. C. J. Radu & H.
W. Smith & R. M. Carson. Kneeling: SP-3
Missing: Capt. H. L. Howell, SP-3 Land
Holte instructs Lt. John K. Ottley, III, in
SUPER-links. See story. (3) The recently
heliport at the Pentagon. (4) Working
Vertol tech-reps: Mr. John S. Coyne (far
L. Holmes, a veteran Marine Corps hel
M/Sgt Raymond A. Wilson, shop forem
MaintO, both of the 140th Trans Det (CH
YH-3) are Mr. Glidden S. Doman, Design
Maj. Gen. Hamilton H. Howze, Director of
Huntsberry, Commander of Sharpe Gene
a safety award to Specialist Bryan of the
Engineers 24,300 square foot hangar at St
facilities and competent personnel can re
views showing the fully retractable jet po
Hiller Helicopters. See story on following
Vertol H-21 of the 580th Hcptr Co is
during a recent demonstration at Ft. Br
place; Las Vegas; the aircraft: a Nav
private fliers and their families; the fra
cares? We've captured the essence of the
AAF, Ft. Bragg, home of the 580th Hcptr
modern 100-foot tower, admin bldgs,
bldgs, a heating plant, and provision
view of Beechcraft's XKDB-1 target plan
the medium performance class. First de
The XKDB-1 is an economical target veh
for surface-to-air and air-to-air armam
aircraft, the XKDB-1 can exceed 320 mph
of more than an hour.





and reading clockwise): (1) LORAC crew at
A. Johnson; Capt. M. D. Lord; and Lts. R.
3; Whitman, Tilley, Musselman, and Stoer.
ders, & Pfc Ruyle. (2) Pvt-2 Marshall W.
in one of the 7438th AU AA Det's two
accepted Doman YH-31 helicopter on the
hand-in-hand with Army personnel
er left), an ex-Navy pilot, and Mr. George
helicopter technician. Pictured at right are
man, and WO Melvin H. Caldwell, asst
HFM, Ft. Bragg. (5) Discussing the Doman
iner and VP, Doman Helicopter Corp., and
of Army Aviation, ODSOPS. (6) Col. W. A.
eral Depot, Lathrop, California, presenting
the 30th Engr Gp. (7) A view of the 30th
Stockton Field, Calif., proving that adequate
return high maintenance standards. (8) Two
lowered rotor system designed for the AF by
page. (9) Arriving at a landing site, a
shown carrying a sling load of supplies
ragg for cadets of the Citadel. (10) The
ion; the occasion: "Aviation Week" for
posting; two greeters; atop the nose? Who
the photo. (11) An aerial view of Simmons
r Co. New construction includes an ultra-
2 large hangars, a warehouse, storage
for underground fuel storage. (12) Aerial
ne, the Navy's newest all-metal drone in
deliveries will begin on schedule in June.
icle capable of out-of-sight remote control
ent systems training. A 600-lb, pilotless
; 30,000 feet; and mission time at altitude



►► MILESTONE

FORT RUCKER, ALA.—Army aviation helicopter instrument flying came of age recently when Brig. Gen. Carl I. Hutton, commanding general of The Army Aviation Center, awarded 13 helicopter standard instrument certificates to three officers, seven warrant officers, and three civilian flight instructors of The Army Aviation School.

The issuance of the certificates culminates an extensive research training program at The Army Aviation School which clearly demonstrated the feasibility of flying helicopters in actual weather conditions.

The first group of 13 qualified helicopter instrument pilots forms the nucleus for eventually training all Army cargo helicopter pilots in the art of instrument flying. Among those receiving the Certificates were Capt. George A. Dalusky, Lt. William A. Smith, Jr., CWO Clifford V. Turvey, and Mr. Phillip Gennuso. (PIO, Army Avn Cen).

►► PRIMARY SOURCE

MOULTRIE, GA.—The first class (56-7) of Army student pilots to complete primary pilot training at Spence Air Base, Moultrie, Ga., graduated on May 10. The Army program had started at Spence AB on Jan. 3 of this year using L-19 aircraft. The 25

members of Class 56-7 have reported to Fort Rucker where they will complete a 10-week course in Army Aviation Tactics.

As part of the graduation ceremony, the future Army pilots heard short talks by Lt. Col. Robert M. Levy, Commander, Pilot Training Group at Spence AB and Beverly E. Howard, President, Hawthorne School of Aeronautics. (Hawthorne Release). ◀◀

►► REALISM

FORT BELVOIR, Va.—Engineer troops at Fort Belvoir recently added helicopters to training in their secondary role as Infantry, when four Vertol H-21-C's joined a unit of the 79th Engineer Group (Construction) in a night combat training problem.

It was the first time that a 79th unit employed helicopters during a training problem and the Davison Army Airfield Command helicopters were deployed by the Aggressor commander to batter defensive emplacements and strategy in the mock battle.

The master battle plan had half of Headquarters Company, 79th Group, entrenched as a rear-guard resistance pocket on a large "paper" battlefield. The remaining half of the unit were the Aggressors with the mission of mopping up the pocket. The objective of the problem was to stress and illustrate offensive tactics. (PIO, Engr Cen). ◀◀

NEW PROJECTS

ELECTRIC WINDSHIELD WIPER (MARQUETTE METAL PRODUCTS)—D-18100 type. New project. Equipment uses variable speed electric motor. Rotary switch provides OFF, FULL, $\frac{3}{4}$, $\frac{1}{2}$, $\frac{1}{4}$ speeds. PARK position also provided. Wiper has rec'd approx 3½ hrs of flight test time in rain & no deficiencies have been noted. Inclement weather testing is to continue. Artificial precipitation is not contemplated.

METAL BLADES FOR H-13 HELICOPTER (BELL)—New project. Two sets to be tested; one obtained from WADC propeller laboratory; second from manufacturer. Bell Aircraft also provided one set of drag braces & one set of blade grips. Total time on test blades: 16:25. Small gouge appeared in leading edge of one blade at 5:20 time. After sanding & taping, testing resumed with no apparent adverse effects.

MISCELLANEOUS ARMY AIRCRAFT—New project to determine if sonic shock (sonic boom) has a detrimental effect upon Army aircraft and installed equipment. Army aircraft were dispersed over an instrumented area and subjected to sonic booms from F-100 aircraft. Results are classified and are not available for publication at this time. Final draft of a letter report is being coordinated informally with TAAC, Ft. Rucker, and with AFEDC, Eglin AFB, Fla.

KIT, ENGINE, QUICK CHANGE FOR L-23—New Project. Kit consisting of all replacement parts to accomplish an L-23 engine change requires 22 cu. feet of storage space and contains 159 component parts. Testing has been completed and early Board action is expected.

AN/ARN-21 TACAN RECEIVER—New Project involving an airborne navigation receiver which, when employed with ground transmitting stations, provides range and azimuth data to the pilot. Two units on 90-day loan from Navy have been inspected & inventoried with certain shortages. OCSOGO advised of shortages. Survey made of work involved in TACAN installation in EL-26 and U-1A aircraft. TACAN ground station data secured.

PHOTOS AT RIGHT

TOP LEFT

The aircraft is an Aero Commander; obviously some new feature is being pointed out.

TOP RIGHT

100% Unit - AMOC No. 14, Ft. Eustis, Va. - TOP ROW (L to R): WO John Brazili; Lt. Charles Schalch; WOs William Blystone & Jesse Cozart; Lt. Peter Zalopany; CWO Ralph Fitch; Capt. Richard Speedman; and WO Martin Knudsen. CENTER ROW: Lts. William White & Henry Paladino; Capt. George Swanson; Lt. Raymond Thompson; Capt. John Kean; Lts. Jerome Sullivan & James Graziani. BOTTOM ROW: WO William Gaines; Capt. Ben Durall; Lt. Daniel Butler; Capt. Allen Almqvist; Lt. Kevin Murphy; Capt. Theo Watkins; and Lt. James Phelps.

CENTER

100% Unit - 580th Helicopter Co, Ft. Bragg, N.C. - BACK ROW (L to R): WOs Joyce & Dixon; Lt. Ganevsky; CWO Aaron; WO Ritenour; CWO Potts; WO Kirkpatrick; CWO Irvine; WO Nelson; CWOs Savia and Nightingale; WO Parker; CWO Kelley; and Lt. Wolff. FRONT ROW: Lt. Moore; WOs Ruiz-Hernandez; McVay, Caldwell, & Hooks; CWO Dye; WO Revenboer; Capt. Stewart (CO); WOsartz, Kepner, Wallace & Bolton; CWOs King & Harwood. Not present but 100% for "Army Aviation" - Capt. Asbury; Lt. Rosenson; CWOs Holt, Kanode, & Youngblood; WOs Chambers, Crossan, Crowe, DeGeest, Everhart, Flohr, Hellums, Holder, Little, Patterson, Reynolds, Rogers, Simmons, and Tenney.

BOTTOM LEFT

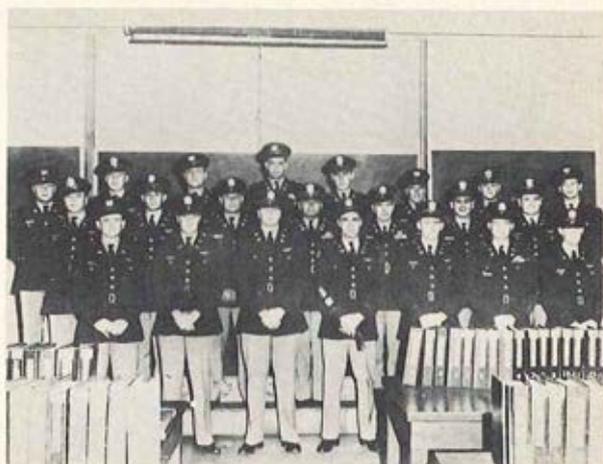
100% Unit - Hcplr Repairman Class No. 23, Ft. Eustis, Va. - BACK ROW (L to R): Sgt Richard Hadlock; Pvt Charles Parlin; SP-2 Clifford Gray; and Pvt Jimmy Ratliff. CENTER ROW: Pvs. Phillip Archer, Ralph John, Vincent Federa, & David Blythe. BOTTOM ROW: Cpl George Minter; Pvt Harry Heister; M/Sgt Ralph F. Malloy (Class Comdr); Pvt. Raymond Andres; & Sgt. Leon C. Beyer.

BOTTOM RIGHT

Shown immediately after successfully belly-landing their L-23 with only \$30 damage are two USARCIB AAs: Capt. Jack O. Ray (left) and Maj. George E. Bean, Jr. (center). With them is Sp-3 Thomas A. Kordes, crew chief of the \$85,000 aircraft.



Something New Has Been Added



All The Way



Whirly-Birds



100% Unit



Warm

LOCATOR FILE

NEW SUBSCRIBERS
WHO JOINED US
WITHIN RECENT WEEKS . . .

COLONELS

Wood, Lincoln
Wood, Horace M.
Edson, Hallett D.

LT. COLONELS

Lilly, Grady F.
Strok, Michael J.

MAJORS

Calhoun, Charles E.
Comstock, R. F.
Dickson, John B.
Casner, Lewis E.

CAPTAINS

Forbes, Jack R.
Hendershot, Donald L.
Pierson, William
Tyner, Robert R.
Van Der Vliet, A. M.
Veatch, Austin K.
Apple, William V.
Almqvist, Allen F., Jr.
Duell, Ronald
Holladay, Robert O.
Stapp, Joseph J.
Slott, Charles A.
Stewart, Walter N.
Breckons, Walter W.
Lee, Ransom F.
Armfield, William F.
Henry, Herman A.
Jones, James D.
Love, John A.
Hethcoat, Charles L., Jr.
Marlin, Perry S.
Treat, Donald E.

LIEUTENANTS

Carson, Ray M.
Greer, James E.
Patton, Richard R.
Ritchie, Ralph D.
Betances, William C.
Betances, Julio R.
Kennedy, Richard C.
Votolato, Dante A.
Benjamin, William J.
Walker, Ronald T.
Tabor, Jack L.
Jacquay, Louis H.
Greenquist, James C.
Boger, LeRoy V.
Madden, J. P.
Burckes, Melvin S.
Carne, Norbert D.
Walker, John G.
Lofver, D. B., Jr.
Chedester, Robert
George, William D.
Smith, Richard E.
Wilson, Frank
Veatch, Chaucey
Brem, Homer L.
Farmer, Garry H.
Ganevsky, Walter J.
DuPree, Thomas E.
May, William T.
Trautman, L. A.
Fetter, Robert D.
Rogers, Richard W.
Pond, Robert J.
Bailey, Harold M.
Smith, William A.
Roach, Dick E.
Wilkinson, Charles M.
Carver, George O.
Briggs, Roy
Hawkins, William
Jordan, Donald R.

Wills, Lisle R.
Martin, John A.
Bechtel, Albert E.
Story, Billy L.
Lehman, Robert L.
Fisher, Robert D.
Gibson, Glen D.
Bastian, Richard
Cooper, James
Kuenning, Donald
Sternat, Robert
Wayt, Jerry S.
Traill, Charles B.
Kiernan, William E.
McWharten, James R.
Bagley, James R.
Coley, Thomas W.
Birk, Richard T.
Gleason, William R.
Whitman, Paul R.
Juve, Ernest H.
Merritt, Ralph W.
Lorenz, Walter C.
Scully, Whitney C.
Franzick, John R.
Searcy, Joseph L.
Bassett, James
Landry, Robert L.
LaForce, Andrew H.
Leonard, Robert W.
Livingston, Claudie G.
Logg, Charles P.
Matthews, John H.
McKinney, Boyce C.
McQuinn, Alvin E.
Moench, Lester K.
Moncrief, Ernest V.
Monroe, Eddie D.
Pesch, John T.
Pattengill, Robert P.
Price, Robert A.
Purchase, Collins J.
Quinn, Charles E.
Raper, Francis E.
Roberts, Donald E.
Sica, Carl G.
Soupe, Ames C.
Siegert, Robert W.
Tambakini, Athlio J.
Thornton, Donald C.
Westrich, Ralph L.
Williams, Eric A.
Sullivan, William F.
McHenry, Douglas B.
Mialaret, Gerard J.
Doyle, Francis
Nicholson, Rowland J.
Patnode, C. A., Jr.
Weaver, John L.
Jones, Robert C.
Castrillo, Jose A.
Fouts, Mickey E.
Wood, Gordon F.
Merryman, James A.
Hardin, William R.
Harrison, Casby, Jr.
Cady, William F.
Butler, David L.
Fralick, Lawrence R.
Graziani, James C.
Paladino, Henry A.
Schalch, Charles F.
Sullivan, Jerome J.
Watkins, Theo C.
Zalopany, Peter E.
Sparks, Homer G.
Vacek, William E.
Hewett, Bobby J.
McSpadden, Waight E.
Shaw, Edward L.
Solomayor, Jorge F.

WOs

Shirpo, Leonard P.
Jones, Colver H.
Grossman, William
Dion, Richard P.
Davis, Jethro J.
Craw, Cleatis M.
Knight, Emmett F.
Kennedy, Carlton C.
Russian, John L.
Carter, Robert O.
Burroughs, Donald R.
Jeffreys, James L.
Rallens, Larry D.
Stapleton, John P.
Stewart, Kendall L.
Willey, Eddie E.
Kerfoot, Lester R.
Trappnell, Joe A.
Bell, William R.
Read, William H.
Hornak, R. L.
Ainslie, Robert
Mathes, William R.
Williamson, Willy T.
Howard, Lonnie T.
Ayers, Robert C.
Boggs, Joseph C.
Goodall, Billie R.
Corley, William L.
Blevins, B. B.
Guthrie, Richard E.
Allan, James R.
Brier, James R.
Bindrup, LaVere
Brown, Archie J.
Stefanowich, Daniel R.
Hurlbert, Richard J.
Young, William E.
Wilkes, Donald D.
MacMillan, R. H., Jr.
McMillan, Don
Woodhull, William C.
Welch, Murray M.
Corser, Lawrence E.
Schwarz, Harry E.
Morris, William I.
West, Arthur H.
Florko, Theodore W.
Frizzell, Harry P.
Black, Hugh M.
Hendrickson, Elmer C.
Young, Clyde L., Jr.
Bhannon, Johnnie L.
Holladay, Lewis G.
Keel, Darrell E.
Lumpkins, William J.
Allen, Marvin
Brewer, Don E.
Richardson, John H.
McDonald, William L.
Eshbaugh, Kenneth L.
McGregor, Harold W.
West, Thomas C.
Stern, Wynne B., Jr.
De Gunther, Richard N.
Maddox, Chesley B.
Pierce, Samuel
Stern, Peter
Russell, Dan
McDonald, Gerald
Schulte, Ray F.
Watson, Shelly

CWOs

Aaron, Lawrence T.
Birchfield, James W.
Molden, Daniel E., Jr.
Whitaker, Jack F.
Dye, Charles J.
Kirkpatrick, W. R.

WOs

Hellums, James W.
Dixon, Robert E.
Bunnell, Harold R.
Nelson, Huey R.
Little, Marvin C.
Patterson, John W.
Heape, Artie A.
Blystone, William P.
Bolton, Custer J.
Kepner, Alva W.
DeGeest, Gordon E.
Crosson, Phillip E.
Revenboer, Johannes F.
Martz, Alvey, Jr.
Anderson, Charles W.
Bell, Francis R.
Bryant, Harry G.
Corson, Clarence D., Jr.
Cowan, Sidney C.
Cox, Noel D. J.
Gifford, Winford D.
Gunn, William E.
Holloway, Charles E.
Ingram, William B.
Kenney, Michael A.
Knight, Howard L.
Lamar, Richard E.
Larkin, Charles E.
Leonard, Loren W.
Mantooth, Glen W.
Miner, Duane S.
Music, Marion R.
Quann, Charles O.
Ralston, William A.
Rhoads, Elmer L.
Wayne, Jerry K.
Williams, Charles J., Jr.
McLean, Neil
Richardson, Rodney K.
McEntee, Jerome A.
Rogers, Don G.
Wallace, Gino O.
Crowe, Hubert L.
Irvine, Jan C.

M/SGTs

Cornell, Mark W.
Rollins, Robert L.
Munger, J. B. G.

SFCs

Kozora, Thomas D.
Giles, John H.
Taylor, Lee R.
Burkhart, James R.
Avery, Loren E.

SGTs

Clark, Stanley C.
Miklas, Richard D.
Shirk, Warren
Swape, Ralph
Welch, Raymond
Beger, Leon C., Jr.
Hadlock, Richard B.
Cox, Arthur R.
Harrison, George
Limbrick, Harvey W., Jr.
Mickelson, Harold E.

SP-3s

Smith, Levi I.
Spivey, John H.
Leyko, Robert J.
Dalton, Harvey
Grysiar, Edward A.

SP-2s

Couch, James R.
Gray, Clifford D.
Carlton, David S.
Pyatte, Lonnie D.
Ozment, Joe M.

LeMay, Melvin E.

Wiley, Heron M.

CORPORALS

Wilhelm, Edgar E.
PFCs
Sistrunk, Henry B.
Smith, Eugene W. P.
Joyce, R. M. (A1/c)
Lewis, Ronnie G.
Uagawachi, Kenneth

PRIVATES

Shanks, Howard N.
Blaine, John R.
Lundy, Raymond S.
Eisenstadt, Lewis D.
Tragove, Barry
Shanks, Howard N.
Forrester, David R.
Wamble, James R.
Kambourian, John E., Jr.
David, Larry L.
Komro, James
Kettinger, Charles W.
Stevens, Bryan L. E.
Grasso, William
Douglas, Wesley O.
Stanger, Raymond L.
Glidden, Duanne B.
Blythe, David L.
De Wolfe, Richard B.
Fodero, Vincent A.
Heister, Harry E.
Ratliff, Jimmy P.
Holden, Joel M.
Shnars, Leslie A.
Palmer, Morris V., Jr.
PVTs-1
Banks, Bobby F.
Dunn, Harris B.
Vorney, Murray P.
Leibald, Philip
PVTs-2
Gipson, Gerald C.
Wood, Hubert L.

FRIENDS

Townley, Hugh K.
Michels, J. L.
Reininger, Donald L.
Hammett, R. E.
Keenan, Thad M.
Luckett, Link
Lynch, Joseph T.
Morgan, Donald L.
Murphy, Harry V.
Poplock, Peter
Rosmussen, Arnold
Skahill, Francis J.
Yorke, Walter
Buffington, W. D.
Darsey, George E.
Westlake, K. G. Mr. & Mrs.
Hill, Stanley R.
Clark, John B.
Snyder, Mike N.
Fields, Victor E.
Budge, Fred
Glick, Weldon E.
Witze, Claud
Campbell, Lawrence A.

ORGs

Eastern Rotorcraft Corp.
General Electric Co.
French Mill Attache
Transcendental Acft

And We Have Their
Current Addresses
If You Want Them!

PRO'S SAY

Informal, voluntary articles on current Army aviation happenings as they occur in the line outfits scattered throughout the world . . .

►► SUCCESSFUL FLY-IN

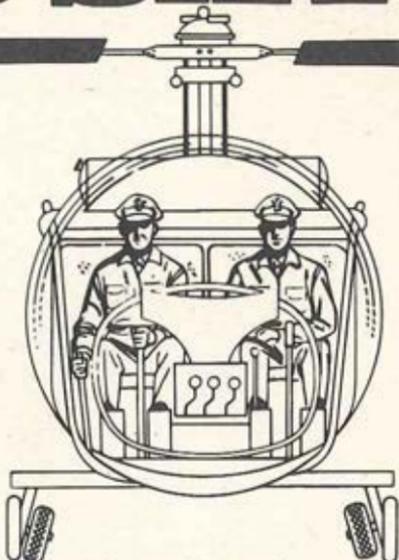
FORT SAM HOUSTON, TEXAS—The Headquarters Fourth Army Aviation Section recently sponsored a "Fly-in" for reserve AAs in the Army area for the purpose of acquainting the reserves with the people at Hq and also with each other. Approximately 20 aviators "Flew-in" with the longest trip being from Shreveport, La. A dut-h treat lunch was served and informal talks were made by Major Blair and Major Roy of the Aviation Section. The meeting was such a success that the section and the reserve aviators plan another "Fly-in" in July in the DAL-FTW area . . . Of considerable news to USAR pilots is the fact that the first USAR Aviation Company to be activated in the U.S. will be organized in the DAL-FTW area. Designated as the 300th Avn Co, it will eventually be equipped with U-1's with delivery anticipated in FY 58.

We've had a few personnel changes since our last report. Lt. Col. Raymond E. Johnson is once again 4th Army AO, having completed almost nine months TDY as 9th Field Army's AO and attending helicopter school at Ft. Rucker. Then too, Hq., 4th Army has qualified two more aviators for Special Instrument Certificates, Major R. T. Blair and Capt. F. N. Till. This brings the total number of #1 tickets in 4th Army area to three. Capt. P. E. Griffin, also of Hq., 4th Army, is the other Special ticket holder.

The Aviation Section Flight Branch, located at Brooks AFB, flew 543 passenger hours last month. For passenger missions we have assigned 3 L-23's and 1 L-20. Just as one L-23 is returned from IRAN another becomes due. CEST LA GUERRE! YC. (Lt.) John M. Wallace. ◀◀

►► NO EMPIRE!

FT. HOLABIRD, MD.—Yes, the Army Intelligence School *has* an aviation section. It consists of but three AAs, all of whom transferred from Riley last June. We have an L-23A (which may surprise many considering our un-empire-like structure) and two L-19s. We anticipate a Beaver, too. Due to the non-availability of office and hangar space here at Ft. Holabird, (Maj.) Bill Graul and his 29th Inf National Guard boys were kind enough to let us move in with them at Harbor Field in Baltimore . . . and I've got to hand it to our brothers in the



Guard; they're sure hep on Army aviation. Capt. Glenn Ebaugh, our AO, recently completed instrument & twin-schools and anticipates our fifth member soon so that we can go 100%. The coffee pot stews steadily so drop by when you are in the Baltimore vicinity. YC. (Lt.) Pat McDermott.

►► LOADED!

STUTTGART, GERMANY—(7th Army Avn Sec)—About our only claim to fame this past month was the visit of the Duke of Edinburgh. He didn't visit *us* really, but we did entertain his group of pilots while he was here. They are a fine group of people and also had one mighty fine airplane. Actually, they had two - a *Dove* and a *Heron*. That *Heron* is as slick as goose-grease and twice as good looking. About the best way to describe it would be to say that it was *loaded*—de-icers on the props, Goodrich boots on the wings, and *every* method of navigation known to man. Incidentally, the Duke flies it himself and holds a Special Card. From now on our trips to England should be well taken care of.

Capt. Blue Barron just returned from a junket to Turkey and points south. He accompanied Maj. Sullivan and his L-23 back. For a spell there, we were afraid we'd need a replacement for he had a great deal of trouble getting back, and finally had to use commercial. At present, we have one of our 23s in Italy for a re-paint job so that will mean another trip to the land of sunshine and . . . sunshine.

Col (Raymond H.) Murphy has departed Germany and as far as we know will be Post AO at Benning, so switch his "AA" there. YC. (Capt.) Ed Ziegler.

Low and Slow

LAFAYETTE, LA.—The leapfrog players of the 30th Engr Group have jumped again, landing this time in Lafayette, La. with 3 *Otters*, 6 pilots, and 19 EM (6 mechanics and 13 surveyors).

In flying over the well known Louisiana *swamp area* and as far as 40 miles out over the Gulf of Mexico on daily 4 to 6 hr. missions which require precise off-airway navigation and 30% of the flight time at 500 ft. MSL, the pilots wonder whether any kind hearted AA supply section has a few spare sets of *Feet, webbed, large, duck type* that they would like to swap for six *Otter* wheels.

Automatic rough notwithstanding, all of the missions have been flown without incident except for one precautionary landing at a sod strip on the coast to check a suspected oil leak.

This *detachment* departed the home field (Stockton, Calif.) on the 21st of Feb. for an estimated 90 day period and has now been away from home for over two months. Our mission here is to support an experiment being conducted under the auspices of the Engineer R & D Laboratories at Ft. Belvoir.

Essentially, the test involves a system of electronic distance measuring which is being considered for adoption to supplement and increase the effectiveness of existing survey methods. Since arrival, we have stacked up 500 hrs. in 81 missions with an aircraft availability record of 89.8% which we think is a pretty good record for a detachment of this size that is operating 2,000 miles from its home base.

A great deal of credit belongs to our crew chiefs. They are the best that Capt. Sam Boyer had and all are experienced on *Otter* maintenance. In mid-March, Col. W. E. Downing, our CO, paid us a visit and was briefed on the project. He carried a batch of goodies almost as interesting as *IT*.

(Cont. in Black; Opp. Page)



New Baby

FT. RILEY, KAN.—On the 2d of April, a new baby was born. The Second Army Aviation Company (FWTT) Appropriately, we've adopted the byword: *Second to None*. Activated under the command of C.pt. George Dupont, the fixed wing tactical transport company has 5 officer-pilots and 24 EM (and we badly need school-trained mechanics). We realize that inquiries have come from as far as Turkey asking: "*What is it?*" As far as we are concerned, the Second is *IT*, an Army aviation company that will receive 21 *Otters* (U-1A) from Canada by June or July. (Ed. We saw your fuselages on the assembly line at Toronto on our recent visit to DHC).

In a recent review held here at Marshall Army Air Field, the *Otter's* performance was said by all to be tops and believe me, there were many competent observers in attendance.

In addition to Capt. Dupont, our Company includes Capts. Dick Rusk, Willard Ratcliff, and yours truly, and Lt. Marvin Morgan. All of us, of course, have many duties during this embryonic period, and much of the work of setting up the supply, orderly, and day rooms has been done by the men themselves (with a fine job of landscaping included).

For those who'd like to fly the Big U-1A, we'd like to add that we are in need of experienced lieutenant pilots. You'll be quickly *Otter-qualified*. Local training is handled by Maj. Frederick Gauthier's fixed wing (*Otter*) Transition under the AAUTC. Operationally we're carried on a tentative TO&E by the 52d Trans Bn, commanded by Maj. Walter Makuch. We do have many problems but they are certainly interesting ones. YC, (Capt.) Edward P. Valaer.

Signal Honor

FORT HUACHUCA, ARIZ.—One of the newest units in Signal Corps aviation is found here at Ft. Huachuca. Activated Feb 7th, the 416th Sig Avn Co is the only Avn Co in the Signal Corps. Commanded by Capt. Fred C. Swabb, the 416th is authorized twelve *Beavers* and 18 H-19s. We have our allotted number of L-20s and expect the first 13 choppers within the next several weeks. Incidentally, our safety record stands at no reportable accidents since activation.

Our TO&E calls for one major, 5 captains, 42 lieutenants, and 40 EM, along with the above mentioned aircraft. Current strength

PROS' SAY

PROS' SAY



stands at 25 officers & 20 EM, but we're welcoming new personnel each month. Our mission includes aviation support of the Army Electronic Proving Grounds and support of the White Sands Signal Agency at White Sands Proving Grounds, N. Mex. Our own missions plus those of the Avn & Met Dept give the 416th AAs many hours in the air. Operating under the control of the Avn & Met Dept, we averaged 49:37 per acft for 17 acft in March with the high pilot at 90 plus and the low man logging 36 hours.

We'll soon be participating in large scale tests of navigational equipment for use in Army aircraft. Our knowledge of the project leads us to believe that Army aviation can look forward to many new, more accurate, and effective navigational aids, both VFR and IFR, in the ZI and in tactical situations.

Recently joining the 416th were Lts. Richard E. Shanks, Theodore W. Florko, and Clyde Young, YC, (Lt.) Ted Florko. ◀◀

Cleanup

FRANKFORT, GERMANY — Concurrent with the conclusion of *Operation Bear Claw* several changes in personnel have occurred among those asgd and responsible for matters aeronautical within V Corps Headquarters. In our Aviation Special Staff Section under the supervision of Lt. Col. James A McCord (Corps AO) are Maj. George Rogers (Opns-Tng) and Maj. Homer T. Montgomery (Supp-Maint) and your truly (Pers-Admin).

The flight det is under the direction of Capt. Leslie (Hoppy) Boyd with Capt. Jim Hancock behind the OpnO desk. Capts. Art Clarke, Jim Hill, & Lew Neville are among others on the detachment roster.

It must be spring for Capt. Boyd and Co. are going all out to achieve the airfield *beautiful* with an extensive cleanup and remodeling campaign, to include additional office and classroom space, new furniture for opns, etc. Lew Neville is in hearty accord with the new look, now sporting new captain insignia . . . Incidentally, we played host to Col. James F. Wells, the D/A Army Aviation Safety Inspector.

The airfield was also utilized as a base of operations by Mr. Walter B. Siegel, a representative of ESSO, during his performance of an aviation refueling and product quality survey of all Army Air Fields within the Corps Zone of responsibility. This survey was directed by the area petroleum officer, QM Division, Hq, USAREUR. I hope this item doesn't affect the stock market . . . YC, (Capt.) Robert B. Mowry. ◀◀

AAAs asgd here include among others: Capts M. D. Lord (OIC) and H. L. Howell; and Lts. R. M. Carson, C. J. Radu, and your writer. *New firsts for the 301b:* Continual single-engine, overwater operations for an extended period; Long line (beyond line of sight) electronic line measurement; and the highest individual *Outer time* (350 hours plus) . . . We'll be calling in again from the next frog pond. YC, (Lt.) Herbert A. Johnson. ◊

(Ed. Group photo in center-fold.)

Rumor

FECOM—I don't know if anyone has heard if the H-34s are to be sent to the Far East, but that is the rumor at present from the tech reps. All of us in the 13th Trans hope so, at any rate . . . Our roster has changed considerably in the last 6 weeks. We've picked up many *new* people; Franklin Cantwell and many WOs . . . I'll be heading for home shortly, Sill, I hope, since I have Sikorsky experience. The poop says Maj. L. W. Best is headed our way as our new CO . . . YC, (WO) Craig R. Burroughs.

Briefs

FROM THE NATIONAL GUARD BUREAU: All NG Army Aviators are required to complete the prescribed annual flying time requirements, including 15 hrs. of night time and 20 hrs. of instrument time for FY '56.

NG Army aviators delinquent in meeting the night time requirements for FY '55 are required to make up this requirement by 30 June '56.

GRAPEVINE—A reliable source forwards the information that all helicopter companies will shortly be redesignated starting with the 1st, 2nd, 3rd, etc. This will obviate the three-digit designations now in use.

THE RECORDS PAY OFF!

STOCKTON FIELD, CALIF.—In the 30th Engineer Group (Aviation) all kinds of speculations are rife about our next assignments. Some of them sound interesting—we'll let the readers know what they are as soon as we get something definite.

As for the present, we are completing our Yuma Training mission; beginning a mission in Thermal, Calif.; and continuing the mission in Louisiana. As was mentioned last month, the Yuma mission is in support of the 30th Engineer Training Program there and the Louisiana mission is in support of a test being conducted on new methods of surveying. The new mission near Thermal is in support of the 30th Engineers in surveying the area around Palm Springs.

In April, we participated in a *Stockton Field Day* by conducting an air show in conjunction with the Army National Guard, also based at Stockton Field. The air show included a static display of each type aircraft as well as barrier landings and takeoffs, troops landings, and medical evacuation . . . The severely critical enlisted personnel shortage was relieved somewhat by the assignment of 25 new enlisted men to us. Then too, we welcomed five more officers and this brings our total of pilots up to 91.

For the past year and a half our unit has recorded every item (including safety wire and grease) used on each aircraft. Recording this information was made possible by a "Part Consumption Data" form recommended by our maintenance officer, Capt. Boyer, and initiated by Col. Downing, 30th Engr Gp Commander. This form is kept in the form 781 of each aircraft and entries are made daily by the crew chief. Through the figures compiled from these forms the Army is able to get a much more accurate parts usage factor for use in purchasing spare aircraft parts for the future. We believe this is a big step in helping to keep a sufficient supply of critical items on hand, as well as helping to cut down excessive stock, in other items. Of course, this means less AOCF time and more flying time, and we're all for that.

Talking about keeping them in the air, here's a "tip of the hat" to our maintenance officer, Capt. Boyer, who does a terrific job. We're forced to admire him even though he is the only officer in our unit who doesn't wear the engineer castles. YC, Velvin R. Watson. ◀◀

WHO'S WHO

The '55 Who's Who Yearbook, redesignated as the '56 Who's Who, will be published in early November and mailed in late November. Do not mail duplicate listings; we have your original if you forwarded one.

TURN THAT HANDLE MARKED
"EMERGENCY EXIT", FOSBEY
AND HAND ME THAT ———
SHOVELI

SECOND TO NONE

FORT RILEY, KAN.—The 14th Aviation Company is on the move! We're to go TDY to Fort Huachuca and prior to this move will PCS to Fort Benning for a brief period. Presently, four of our *Otter* crews are at Benning having participated in the Joint Civilian Orientation Course #22 and the recent Dave Garroway show on 13 May. The unit is expected to remain at Huachuca until late September. Arriving in the midst of the move was our new AO, Major Feldt. The Arthur Murray twins, Lts. Kakuk and Paul, are on their way to Instrument School and we're certain they'll miss the coming summer in Arizona . . . Yeh . . . The De Havilland assembly line is rolling now and Lts. Ahern and Moran recently picked up another U-1A for ferrying to Riley. YC, (Lt.) James Greenquist.

FLY-BYS

HAWAII—(25th Inf Div)—Reviews and more reviews. We have been kept busy with a great many parades and reviews due to numerous changes of command. At the same time, we have been supporting the Division in the Battalion tests on the island of Hawaii. Two helicopters are based permanently at the training camp site which is at the 6,000 foot level. They perform missions which take them to all altitudes between sea level and 8,000 feet. These "staggering" choppers flew

about 100 hours in April and are expected to do the same in May and June.

The fixed wing aircraft have also been getting a workout with regular passenger runs to the training site and flying tactical missions on arrival there. These aircraft have put in some 500 hours overwater and no one has gotten wet feet yet. We have been ably assisted in our passenger runs by the USARPAC air section. Capt. Harold E. Lockhart is serving as our interim AO pending the arrival of a new DAO in the near future. YC, (Lt.) Robert S. Swinney. ◀◀

THE RW GETS FW

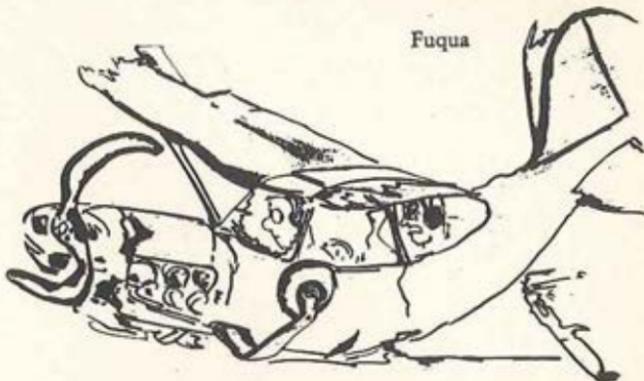
FT. RILEY, KAN.—A few quick amendments to last month's report from the 52d Trans Bn (Hcpr): Our new CO, Maj. Walter Makuch, former CO of the 93d Trans Co here at Riley, officially assumed command in late April. Maj. Pitts B. Dickens, former Bn Comdr, is now Exec with Capt. William E. Black as S-2. Don't address any letters to us as to how and where but we have an L-17 and are to receive two H-25s fairly soon. Fact of the matter is we'll have 'em when we read this report. YC, (WO) Harold R. Bunnell.

(Ed. Marshall Army Air Field must be tight on ramp space. Each of the many units based there are continually receiving new equipment. Riley will be pushing some of the more publicized posts soon.)

QUICKIE

TAIWAN, FORMOSA—(Delayed)—Just a short quickie to brief the readers on this sector. Presently assigned in Taiwan (and probably on the 100 Most Wanted List) are Major Allen S. Mou and Capts. Frank Sutor, Leo Bergeron, and a new arrival, Capt. Tamplin. I recently replaced the Army Section AO, Maj. Dale Taylor. Our section mainly supports the MAAG Hq here. More I'm not allowed to sav. Sincerely, Maj. George G. Tillery.

Fuqua



You realize, of course, that this means a pink slip!

... NO! ... IT'S SUPERLINK

FORT KOBBE, CANAL ZONE—In this age of Supersabres, et al the 7438th Avn Det has spawned the *Superlink*. It is the only idiot box in the world to have both ADF and VOR. Thus speaketh Sfc. Earl W. Christiansen who masterminded the breeding of our two-headed pet.

"Why did you do it?" we asked. "Because . . . because, sir, it was there," he answered with modestly downcast eyes (He was actually looking for butts).

With actual cooperation from AF three-striper Gilbert B. Brooks the good sergeant grafted an extra ADF transmitter and receiver into an Army X-663 and X-485. "These plus a four-pole single-throw switch puts you in business," he sez. Attn: M/Sgt. Garrettson, Ft. Rucker—IT CAN BE DONE. HEH!

"If any of you link operators want the conversion poop, parts list, and wiring diagram, write or cable Sfc. Christiansen, 7438th AU Army Avn Det, Ft. Kobbe, CZ," speaks the venerable Sfc. C.

Our two Kobbe S-links keep whirring nearly all the day long under the red-lined eyes of Pfc. Don L. Pike and Pvt.-2 Marshall W. Holte, as gravel-throated a pair of ATC clearance quoters as you'll find.

Gauge gazers come from far and wide to do homage to the S-link. One reason is that there ain't hardly any other'n around. We accommodate aviators from our own 33rd Inf Regt and 7438th AU as well as 937th Engineer (IAGS) Avn Co, TC maintenance, and other stations in South and Central America. Admittedly, some come merely to luxuriate in the air-conditioned link room which is geared for extra drying of our tropic breezes.

Capt. Jack O. Ray, our Instrument Examiner and OpnsO (also assistant pool table honcho to Capt. Sigurd A. Lund) keeps vigilant scrutiny over all the aforesaid hooded hoorah. He and Sfc. Christiansen even had the S-links painted red and white for easy recognition if they crash in the boosh.

Notam: Maj. George E. Bean is leaving his USARCARIB Air Officer job and Capt. William S. Hawkins becomes OIC of the 7438th.

After we began sending our aviators to an AF jungle survival school (one monthly), a momentous discovery was made. In long-forgotten, niter-walled caves in the supply room we found that we too had survival kits, Mie Wests, and life rafts. Showing aside the casks of aging wine,

(Continued on the Next Page)

we made (as if) to inspect the stuff. There came quite a clatter and we could tell by the yellowed TO's just what was the matter.

So we're on the verge of being able to survive if we clank in the jungle. Not a bad idea for all Army a/c to carry basic signalling and survival items on ALL flights. AF has just the thing in handy seat kits for any climate you can name. This is a climate? Man, this here is the tropics where gay gypsies gyrate to rollicking calypso rhythms—if you got the *dinero*.

TV soon comes to the isthmus and with it all the cultural and intellectual frills of CONUS—Howdy Doody and Roy Rogers. But we CZ AA's can overlook such trivia if only we can once again catch up on the doings of Capt. Video. YC, Lt. John K. Ottley, III. ◀◀

INCENTIVE AWARD

LATHROP, CALIF.—Arnold H. Lawson of the 6th Army Transportation Activities at the Field Annex of Sharpe General Depot, Lathrop, Calif., can claim the distinction of receiving one of the highest cash awards presented at the Depot for an incentive suggestion for doing the job in a more efficient manner.

Lawson received the Army Incentive Award for his suggestion of improving the main rotor head balance stand used in the maintenance and overhaul of Army helicopters. The improved method of production and operating conditions and constructive thinking by Lawson will save the Army an estimated \$19,000.00 per year. The presentation of the \$320.00 check and Certificate of Merit was made by Col. W. A. Huntsberry Commander of Sharpe General Depot. (PIO, Sharpe Gen Dep).

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EDITORIALS WANTED

(Dear Editor): Just a few comments from a longtime reader. I believe AA should have an editorial page and take occasional stands on various items that arise. Right now I think that a few plugs for a separate branch for Army aviation are in order. Then too, I would work hard for an Aviation Company structure in every Division.

More accident reports (similar to the *Otter* report recently) would make interesting and useful information. You cannot deny that these reports are educational for all.

Last, how about realizing that we reservists can't keep up with all of the assorted abbreviations. Spell them out more often. Some of the poop in the magazine is like trying to decipher a foreign language, i.e., CONARC, AEPG, TRADCOM, etc. Sincerely, Samuel Freeman, Arty-USAR, AO, 78th Inf Div (USAR).

(Ed. Good point! As a non-Greek, some of the Greek throws us too! We'll spell out the verbiage from now on . . . As for an editorial policy for AA, we must first know that top-level opinion favors certain policies. We cannot honestly say at this point that there is a general knowledge of or agreement on long-term AA structure. If it exists, we are not aware of it.)

WHY?

(Dear Editor): I'd like to see a sort of *Why* column in *Army Aviation* where AAs and mechanics can throw a few questions they have been wondering about and give the people in the know a chance to answer them. I have in mind questions like these:

Why does TO&E 7-12R, Feb 55, Sec 3, under Aviation include a tank, PH-185? There just doesn't seem to be any reason to include this item in aviation equipment.

Secondly, why does the same TO&E list vest radio carrier E-1? I know this piece of equipment is part of the AN/URC-4 radio set - but the set isn't listed. Why?

I could ask a lot of questions along these lines that must puzzle the AA in the field and concerning which he never seems to get the answer. Hope you can see your way clear to include such a column in the limited space available. Sincerely, Maj. Julian A. Hawkins, Advisor, Vt-NG.

JUST AIN'T HEARD

(Dear Editor): We in the tropics really appreciate what you and the mag are up to. Besides providing us with the names of those friends long-departed, the mag provides a steady stream of helpful poop. And let's face it, if the *Digest* turns our "swap notes" down and we get a rejection slip from Westport, it just ain't heard. It's a shame there is a space problem in both publications for each editor obviously must have to unwillingly turn

A Many Sided Thing

Letters to the Editor

Letters from all sources are welcomed. All letters for publication must bear the signature of the writer. The writer's name will be withheld upon his personal request.

down a great deal of useful information for lack of funds. We hope you get the advertising to cover the needed expansion. Sincerely, JKO, Canal Zone.

(Ed. A long and most fervent Amen.)

WORTH THE TRY

(Dear Editor:) I noted Arthur Godfrey's name in a recent subscriber list. If he'd plug Army aviation the way that he plugs the AF, I think a good part of the civilian confusion about the two would dissipate. Sincerely, (WO) Don R. Joyce, Ft. Bragg.

(Ed. Mr. Godfrey's gift subscription was submitted by 30th Engineer pilots through Lt. William F. Gurley. With his weekly sacks of mail we sincerely doubt if either Army aviation (the field) or "Army Aviation" (the magazine) comes to his attention. It is worth the effort, however, for he is an accepted aviation booster.)

BETTER LEFT UNSAID

(Dear Editor): I particularly enjoyed the Question and Answer pages in which AAs answered a *shop talk* question. I hope you'll make this a permanent feature of the magazine. For possible use, I submit the following question: Is a pilotless guided missile (range immaterial) that is fired from a ground base along a given trajectory an aircraft or is it an artillery projectile? Lt. JC, Benning.

(Ed. If you desire a permanent column and a permanent magazine we suggest you turn your back on this question just as many other Army people have done. Offhand, your description seems to indicate it would be a projectile.)

As of May 1st, our New York mailing address and phone number were discontinued. Please send ALL correspondence directly to our Westport, Conn. address. Our Westport phone number remains as Clearwater 9-4752. For explanation, see Page 35.

Round Table

DAVID BISSET, JR.

Lieutenant Colonel
Transportation Research &
Development Command
Fort Eustis, Virginia



An informal voluntary column in which widespread members of the Army Aviation Team accept our invitation and hash over a given question.

This Month's Question

Alone and over water in an L-19 with a dead engine and no shore within reach, would you bail out or ride the ship down?

"No single solution can be made or anticipated. If the prevailing wind and weather conditions produced a fairly calm surface condition, I'd probably ride

it down. My initial reaction would be to set up a long glide & try to contact some installation by radio while attempting emergency starting procedures. However, under unfavorable conditions & no re-start, I'd bail at about 1,000 feet & chance the harness-chute fouling in the water."

GARALD L. WALDRON

First Lieutenant
Hq, 101st Airborne Division
Fort Campbell, Kentucky



"Geronimo . . . Having just graduated from the 101st Abn Div Jump School I feel I now understand a little more about the hazards of each choice. Assuming

proper preparation for over water flight (Mae West, etc.) & no dependence on the L-19 for water survival, I'd definitely jump. I honestly feel that prior to my additional qualification, my unconscious reluctance to jump would have made me sit tight in that seat all the way."

ARTHUR J. ANDERSON

Colonel
Headquarters, Third Army
Fort McPherson, Georgia



"So I'm over the water in an L-19 with a dead engine and no shoreline within reach. If I were so foolish as to find myself in such a predicament without a

sea survival kit or the necessary survival equipment, I deserve to drown . . . If a'l of my attempts to start the clunker failed. I'd yell for help by radio communication and then hit the silk rather than flip (over on my back) upon hitting the water in the aircraft."

WILLIAM H. GRAUL

Major
29th Inf Div (Md-NG)
Baltimore, Maryland



"I'd jump . . . If there isn't anything to be gained by riding the ship down, why do it? And in my opinion there is nothing to be gained in riding an

L-19 into the water. It's almost certain that you'll go over on your back, increasing the chances of personal injury. If there weren't any lifesaving gear aboard and the shoreline was within easy reach, I believe that's another story."

CARL I. SODERGREN

Lieutenant Colonel
Director, Fixed-Wing Trng
Army Aviation School
Fort Rucker, Alabama



"The correct decision is dependent upon the availability of the quick-release parachutes. An L-19 can be ditched with a good possibility of not flipping over if

a stall attitude is attained before entry into the water. Quick release parachutes, if properly used, provide the only good assurance that the user will not become entangled in the shroud lines (upon water contact) and subsequently drown."

EUGENE W. DOW



Captain
JAMMAT, Tuslog, Det No. 4
APO 206-A, New York, N.Y.

"Two principal features are presented in this situation. First, to successfully separate oneself from the aircraft and second, to survive after the separation. The

chances of separating oneself by ditching or bailing, providing proper methods are utilized seem about equal. However, to enhance survival in the water, I believe I would ride the ship all the way down to the water screaming *Mayday, Mayday, Mayday*, all the way."

BERNARD D. THOMPSON, JR.



Captain
2nd Inf Div Aviation Co
Fort Lewis, Washington

"If the situation occurred during the daylight hours I would ride the ship down (not that I'm adverse to jumping, being a rated senior parachutist). I

feel that I could safely ditch the aircraft in the water. During the hours of darkness, however, I would not hesitate to bail out. It is difficult enough to judge depth perception when over low water in the daylight hours. Judging depth perception is a hazard that doubles at night."

WARREN R. WILLIAMS



Colonel
Dep Director of Army Avn
ODCSOPS, DA
Washington 25, D.C.

"I do not know just how long an L-19 floats, but I do know there would be some hard surfaces near the head if you ditched. I would

(not hesitate) to bail out. Smooth water below would make a ditching more tempting but also would make it more difficult to judge the height of a stall . . . and a stall at the wrong height over the water would almost certainly mean the end . . ."

JOHN P. WESTPHAL



Captain
4th Armored Division
Fort Hood, Texas

"Since existing conditions would have a bearing, it would depend on the situation. Unless conditions were favorable to a successful ditching; daylight hours,

smooth seas, wind, visibility, and ceiling, it would be advisable to join the *Caterpillar Club* and be prepared to utilize available survival gear on contact with the water—assuming that emergency radio contact had been made to facilitate rescue."

Next Month's Question

As you strap on your shoulder harness in an L-20, a Code 4 passenger in a rear seat asks: "Where's my harness?"

What is your answer?

Invited to hash over the above question are Col. Robert R. Williams; Lt. Col. Delbert L. Bristol and Charles P. Damon; Majors Russell T. Blair, Horace E. Beam, and Langston H. Caldwell; Captains Story C. Stevens, Fred Hiatt, and Jerry L. Teague; Lt. Dean R. Paquette; and Mr. Russell Bannock of De Havilland.

INVITATION

Good questions are hard to come by . . . If you have an interesting question that you would like to have placed before an Army aviation panel of various ranks and sectors, send it along to us for possible use . . . A credit line will be given along with the use of your question . . . We'd like to stress at this point that the views presented by the Round Table participants are their personal views and are not to be regarded as the pure solution, the school solution, or what have you . . .

FORT BELVOIR, VA.—The flying activity at Davison Army Air Field is on the upswing again with the coming of spring and summer weather. As an indicator, approximately 1560 landings were made during the month of April. It is expected that as the summer progresses, the number of landings per month will exceed 2000; about 60 percent of these landings are made by helicopters.

Assigned pilots (21 including staff personnel) flew 838 hours during April, while available assigned aircraft flew an average of 59 hours each, for a total of 1014 hours. Attached proficiency pilots flew 582 hours. These figures do not include any statistics for the 509th helicopter company which is stationed at Davison Field. They fly their twenty-one H-21's about 350 hours per month.

Work on the new heliport site is progressing, but is still in the earth work stage. It will be several months before the heliport is completed and ready for use. The heliport site is located on the east side of the airstrip.

The Davison Army Air Field Command has been involved in a number of "Fly-Bys" at various parades and ceremonies and it appears that many more are in the offing. Most of these are over Fort Meyer near the Pentagon. Main purpose of these "Fly-Bys" is to increase interest in Army Aviation and

make people aviation conscious. Personnel-wise, Lt. John L. Yunker has recently been assigned to our happy little home. Some of the old-timers at the Command include Captains Raymond C. Chapman, Fred Hiatt, and James Y. Sheppard and WO Ray A. Daugherty. PIO, Davison Army Air Field Command. ◀◀

►► SUMMER CRUISE

FORT SILL, OKLA.—Currently completing a ten week Army Training Program in preparation for overseas assignment to Illenheim, Germany, the 54th Trans Bn (Hcptr) looks forward to its Ready Date early this summer.

Activated at Ft. Sill in August, '55, the 54th, consisting of a Headquarters Det and two light helicopter companies, is presently assigned to Fourth Army and attached to the AAUTC at Ft. Sill.

Included among the 54th personnel are: Maj. Carl A. Pieper, CO of the 64th Trans Co; Maj. Harold J. Bieber, CO of the 553rd Trans Co; Lt. Jose Castrillo, OpnsO. 54th; and WO Charles O. Quann, Asst Adjutant, 54th. Prior to September, '55, Major Isidro S. Valdez, Jr. served as the first CO upon activation of the unit. PIO, 54th Trans Bn. ◀◀

HAVE YOU A NOMINEE?

Crew Chief of the Month

Specialist 3rd Class William J. Morschhauser has been selected "Crew-Chief of the Month", for the month of June, by the 140th Trans Det (Cargo Helicopter Field Maintenance), Fort Bragg, N.C. The 140th provides field maintenance support for the 21 Vertol H-21's assigned to the 580th Helicopter Co. at Simmons Army Airfield. Sp-3 Morschhauser is considered to be one of the best mechanics in the 140th and his specialty is the rigging of the engine and flight controls of the giant H-21's.

He received his maintenance training at the Helicopter Repairmen's Course at Fort Eustis, Va. and has been adding to his knowledge while being assigned to the 140th Trans. Det.

A native of Erie, Pennsylvania, Sp-3 Morschhauser attended the General Electric Apprentice School after finishing high school and upon separation from the service this Fall, he will return to GE to complete additional training in the Locomotive Division. At night, he intends to work towards a degree in Mechanical Engineering at Gannon College in Erie.

Army aviation dislikes losing trained maintenance personnel such as Sp-3 Mor-



schhauser but we wish him success in his future career. WO Donald R. Joyce.

we take off one hat!

We'd like to briefly comment upon a publication staff change that indirectly affects you as the reader. *Army Aviation* has survived with a staff of one and a half, your editor being the half who dragged anchor.

The Publisher has logged a 40-hour administrative week all along while a part-time editor commuted and won his share of *Ry-Krisp*, cap pistols, and 80 denier in the commercial world. Editorially, the magazine for three years remained a night-owl project with full weekends thrown in.

Over this period your personal support of the publication has been most encouraging. And—as we received your growing support additional demands were made upon the two-hatted existence of the editor.

One hat has since been shelved; the 1½ now becomes 2; and we can now devote all of our combined time and efforts to the magazine.

This should mean several things to you. You should receive and can demand an increasingly larger and better publication for your staff has no excuse now. Then too, we can do a better job of answering your mail, your inquiries, your complaints, and personally acknowledge your editorial contributions, a failing of which we have long been aware but with which we just could not cope in the past.

Most important of all, your editor now has the time to travel during the early part of each month and will make a sincere effort to visit and meet you personally, to see your accomplishments, and attempt to grasp your problems. This close contact should pay editorial dividends for few people hesitate to *talk shop* but many dislike writing about it.

The fact that over 400 colonels and lieutenant colonels in the active Army recently applied for twelve Senior Officer vacancies in AA would seem to indicate that Army aviation is rapidly growing in general acceptance. It's certain to grow in size. We realize that if we are to parallel its growth as a publication we must consistently produce for you and faithfully serve you needs. We'll both do our very best . . . on a full-time basis.

Your staff, Dorothy and Art Kesten.

The Army's Stake in the Helicopter by Maj. Gen. Hamilton H. Howze (Continued from Page 2)

methods and to do the most improbable things whenever the situation permits; it means to be free of all set rules and preconceived ideas. We believe that no leader who thinks or acts by stereotyped rules can ever do anything great, because he is bound by such rules. War is not normal. Situations in war change rapidly, and changing situations cannot be solved by rules. We do not want therefore any stereotyped solutions for battle, but an understanding of the nature of war."

I shall try now to describe how the Army intends to use the helicopter, now and in the foreseeable future. Note that the quality of agility is the essential element of its utility. Note also that we consider the helicopter as a short range vehicle; hence its moderate speed is not a disability. If one has but twenty or thirty miles to go, a hundred miles an hour will suffice to get there.

The most spectacular and perhaps the most important use of the helicopter is in attack and counterattack. The existence of vertical lift which can move troops locally on a battlefield with speed (speed as compared to the movement of troops on foot or by vehicle over rough ground) opens tremendous possibilities to the commander who desires to move offensively against the enemy. It widens greatly his choice of points of thrust, permitting him in most cases to avoid altogether the areas of enemy strength in favor of attack at points of weakness and vulnerability. All of you who had experience with the ground forces in the last war can bring to mind many instances wherein bloodily expensive actions could have been skipped completely had the local commander had the ability to lift his troops over or around the enemy defenses to tactical dominating terrain on the enemy's flank or rear. I am talking, remember, of short range tactical actions, not of deeply penetrating joint airborne operations for which the Air Force must continue to supply the lift by large fixed wing transports.

Naturally we would seek to place our troops on dominating ground either lightly defended or undefended by the enemy, and with the wide choice of point of application available to the attacking commander, this will be possible in the majority of cases. The use of the nuclear weapon tactically would of course make the selection of an "undefended" area easy, for one could render an area harmless by the simple process of atomizing everybody in it.

However, if only to indicate the faith I have personally in the efficiency of the helicopter as an attack vehicle, I will say that it is possible to use that machine to bring assault troops directly onto a heavily defended enemy position, which I would do, of course, only if no better alternative was possible.

To swallow this idea, one must recognize

the advantages of surprise, and understand the suppressive effect of supporting fire—fire by fighter-bombers, by artillery, mortars, rockets and missiles, and by such direct fire weapons as tanks and machine guns. An enemy defensive position or complex can be kept under fire quite sufficient to neutralize it completely for a short period of time—a time quite long enough for the flight of helicopters directly into the heart of the position. Whatever might be the danger of this scheme of action, it should be contemplated in the light of terrible danger of conventional attack, wherein assault troops must walk through the enemy's mines and barbed wire, through his supporting artillery, mortar, missile and rocket fires, and through his tank and machine gun and small arms fires.

So far I have spoken of the offensive use of helicopters only in the terms of daylight attack. What we need to develop is the capability of making these attacks at night or in inclement weather. When we achieve this capability, the tactical possibilities are simply unlimited.

One of the familiar patterns of earlier conflicts is the river crossing operation. Withdrawing armies normally retreat from one terrain obstacle to the next, taking advantage of the obstacle for the breathing spell necessary to prepare their defenses. Up 'til now opposing advancing armies have had to conform, because the crossing of the obstacle demanded elaborate preparations including the gathering up of heavy engineer elements and major combat forces, and the establishment of an infantry bridgehead to protect the engineers in their laborious efforts to construct a crossing. This assembly of forces, and necessary reconnaissances and plans, took weeks and sometimes months to prepare and arrange.

Think now of the possibilities opened by the helicopter: in anticipation of arriving at an obstacle (whether it be a river, lake, swamp, escarpment or anything else) the initial crossing forces can be assembled and loaded far beyond the range of view of the enemy, and substantial attacking forces can be placed on the far side of the river actually before the leading elements of the surface-moving troops reach the obstacle, and before the enemy is prepared to resist. The effect of this is to reduce greatly the defensive value of the natural obstacle, an effect which could modify greatly the strategy of an entire campaign.

Further, of course, the helicopter will for at least many years to come be of tremendous value in the movement of tactical reserves about the battlefield, and the realignment of units to meet an enemy offensive threat. The helicopter will provide true battlefield mobility to what we have long called the mobile reserve. This in turn means that it will be possible to hold certain large areas very lightly merely by providing in these areas observation posts or light delaying detachments. The utility of this system of de-

fense in a nuclear war is obvious: we can spread our forces sufficiently to provide relatively unprofitable targets for the enemy's area weapons, and at the same time retain the capability of meeting him with force should the occasion demand.

I will deal in a very few words with several other functions of the helicopter in the Army.

One of the most important is reconnaissance. The light helicopter, by reason of its speed and agility and the range of vision it provides for its occupants, will be able to execute efficiently the role of reconnaissance in a fluid, rapidly moving operation. While it cannot supplant the ground vehicle, it can complement it with great efficacy. If this be considered a dangerous function to perform in a helicopter, let me reply that reconnaissance in the forefront of battle is a dangerous function no matter by what means it is performed, and the helicopter would appear to have at least as much chance of survival as a ground vehicle poking along a road. Of course, we need a capability of doing the job by helicopter at night and in bad weather; for this we will need an assist from detectors of some sort.

The next is command. The system of training and training supervision in the Army has in the last three years undergone a radical change. In the Seventh Army in Germany, in which I recently served, senior commanders spend a large proportion of their time in the air, from which it is easy to see the whole panorama of the training exercise or maneuver, and to control it. This use of the helicopter has led junior officers and noncommissioned officers of the Army to observe somewhat bitterly that there is no privacy for anybody, anywhere, anymore.

And finally, the evacuation of wounded by helicopter is a proven device of very great importance in the saving of human life and thereby is important to morale of the fighting forces. The effect of this, I am told, on the troops in Korea is hard to exaggerate.

As a supply vehicle the helicopter has obvious utility, but by virtue of the expense of the aircraft and the cost in keeping it running, it is a long way from a substitute for the ground vehicle. Nevertheless for the movement of critically needed supplies on an occasional basis of great urgency, it has obvious application, and may indeed be able in some cases to bring about success where the engagement might otherwise be lost.

At some time in the future the air LOC may indeed become a reality. In this case the helicopter may play a part in the distribution of supplies to small units, but before this can come about on a practical and economic basis, there must be some economies made in the helicopter itself.

There is so much to be said about all this that I have found myself hastening from one subject to the next. Let me sum up the possible effect of the helicopter on ground warfare by saying that in my personal opinion

it will make us rewrite our tactical manuals. The injection of a greatly increased mobility must inevitably have revolutionary effect on tactical doctrine. This is not to say that the helicopter has outmoded the more familiar types of mobility for ground forces; indeed, the combination of rapidly moving tanks on the ground in conjunction with helicopters in the air is so appealing to the tactician that new techniques are inevitable.

I turn now to the matter of improvement of the article, which of course has direct connection with the relations of the Army with industry.

Whenever this subject comes up, I am reminded of the common habit to characterize the helicopter industry as a captive industry. I must say that I often wonder who has captured whom. In point of fact, the military and the helicopter industry are each beholden to the other: you because a substantial proportion of your profits must come from military purchases, and we because we are so dependent tactically on your output. This then allows us to sit at the same table as free and equal negotiators and participants. The Army finds this to be a very satisfactory relationship, and we would not have it otherwise.

I am therefore presumably allowed to tell you what industry must, in my opinion, do. Somewhat earlier I stated that mobility, as compared to firepower, was lagging behind. I mean, of course, mobility on a broad basis—not mobility merely for an insignificant fraction of our ground forces, but for such a proportion of them as to have important influence on our overall battle competence. This we don't have yet, and indeed it appears as though we will have trouble getting it in the next several years.

Now these are troubles for which we must ultimately find solution.

First, the helicopter is a terribly expensive gadget. Realistically, we must recognize that it will always be comparatively expensive, but as it is now it is unacceptably so.

Second, the aircraft is unacceptably complex, and the life of its component parts is unacceptably short. Although progress has been made in this area, the problem of maintenance of a helicopter fleet remains simply flabbergasting. A decrease in complexity (and longer life for rotors and transmissions and gear boxes should continue to be one of the paramount goals of the industry. I hope you understand that a low availability rate for helicopters does not by any means react towards increasing the requirement for the number of them. Its effect is quite the opposite: low availability and high initial and continuing expense make the article too rich in terms of cost per ton-mile for the military to stand, and decreases the quantities of our purchase.

Next I come to the essential requirement that helicopters must be capable of safe and efficient flight in periods of low visibility. As I indicated earlier, helicopter action at

POSTMASTER: AFFIX FORM 3579
IF COPY IS UNDELIVERABLE.**The Army's Stake in the Helicopter**
by Maj. Gen. Hamilton H. Howze

night and in bad weather will have a revolutionary effect on ground tactics. For this we need guidance systems, and as well, instrument systems which will give the helicopter pilot a far better understanding of the attitude and behavior of his aircraft. And most important, I think, to this group: there must be built into the helicopter itself a greatly increased stability. I am not a helicopter pilot, but I am told that an hour's flight under the hood of a helicopter, as they are now built, is a very exhausting experience, so exhausting as to make it a dangerous procedure if it is conducted, say, at low level in even mildly turbulent conditions.

So those are the great problems: expense, maintenance, stability, and guidance and flight instrument systems. I have mentioned them very briefly—but they are of absolutely critical importance.

I have tried to give you some idea of the Army's stake in the helicopter—it could hardly be a larger one. As the state of the art, under your guidance, advances, so will our tactical competence advance. The two are closely intertwined. Selfishly, then, we wish you the very ultimate of success in your endeavors to make the helicopter an increasingly better and better tool for combat.

It has been an honor to address you .

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