ARMY AVIATION

JULY 56

An address by Brig. Gen. Carl I. Hutton to the Aviation Writers Association at Palo Alto, California, May 28, 1956 . . .

Aviation is the Answer

Three or four days ago in my office at The Army Aviation Center at Fort Rucker, a British army officer observed that the United States Army has more airplanes than the Royal Air Force. Perhaps we are still at the stage where this seems paradoxical, but I mention it to you who are in the aviation writing business for the purpose of focusing your attention upon the fastest growing part of the United States Army. Army Aviation is just in its infancy and it is just beginning to pick up impetus under the vigorous leadership of such people as General Taylor, General Gavin, and General Howze.

Although in the inside of the business we sometimes feel that progress is not fast enough, a mere enumeration of some of the more important things which have happened in the past year or two shows partially the scope of the progress which has been made recently. Some examples are the move of the Army Aviation School to Fort Rucker and its establishment as a full command; the designation of The Army Aviation Center on the same level as The Infantry, Artillery and Armored Centers; the activation of Continental Army Command Board 6, the Army Aviation Board; the approval and adoption of an Army Aviation plan; the establishment of a Department of the Army agency in General Howze's shop for aviation matters; the recent graduation of the first Senior Officers Flying Course; and the assumption of primary training responsibility by the Army. This is quite an impressive list to me and it is a sure sign that aviation writers are going to find an increasing source of material in the Army Aviation program.

I would like to lay a few ghosts now before discussing the two important subdivisions of this talk, the first subdivision being Army Aviation now, and the second, where are we going in Army Aviation? The first ghost is, is the Army trying to create another Air Force? The answer to this is no. We are concerned with the land battle and with providing the soldier with the necessary equipment and weapons to win the land battle.

The next one I have seen published in some of the trade journals and it goes like this—that General Eisenhower when he was Chief of Staff of the Army or Chairman of the Joint Chiefs of Staff, said that the Army's place is on the ground. My answer to this is that that statement was made about ten years ago, before the implications of helicopters, convertiplanes, STOL and VTOL aircraft had been assessed. I am not sure that General Eisenhower would say the same today in view of recent developments if he were now Chief of Staff of the Army.

Photo: Underwood & Underwood

Another, is the theory that everything that walks belongs to the Army, that swims belongs to the Navy, and that flies belongs to the Air Force. This is an extremely shortsighted view. What we really need are land, sea and air forces organized, equipped and trained to fight together to win the war, and each of the forces should have whatever is necessary to make it capable of participating in the overall war campaign.

Finally, there is the statement usually made by old soldiers that in the last analysis wars are won by the infantryman with his bayonet, walking across the terrain. This is obviously not a true statement because how the soldier moves across the terrain is immaterial as long as he moves.

Army Aviation today is based upon the premise that aircraft can and should be included organically within Army formations. We have them in Artillery, Infantry, Armor, Signal, Engineer and Medical units and they are supported by a logistical organization in the Transportation Corps. There are those in Army Aviation who insist that the Army must have an Aviation Branch. There certainly may be a requirement for personnel

(Continued on Page 38, Column 1)

A rated Senior Army Aviator, Brigadier General Carl I. Hutton is Commanding General, The Army Aviation Center and Commandant, The Army Aviation School, Fort Rucker, Alabama.

ARMY FLIER

VOL. 2 NO. 16 FORT RUCKER, ALABAMA FRIDAY, JUNE 8, 1956

Board 6 Birdmen Break World's 'Copter Record'

'Point' Cadets To Get Look At Army Aviation

The 21st of June will find the Army Aviation Center standing tall when 604 Second classmen from the Military Academy at West Point, N. Y., arrive for two days military instruction in Army Aviation.

The cadets are scheduled to arrive by plane at 15 minutes intervals beginning at 11:20 on the morning of the 21st. Each plane will be met by officials of the Center and escorted to the area where they will be billeted. After an orientation by the escort officers, the entire group will assemble for a welcoming address by Brig. Gen. Carl L. Hutton, commanding general of the Center and commandant of the Army Aviation School.

In the afternoon a tactical demonstration designated to show the present mission of Army Aviation in support of combat troops will be staged or the visiting cadets. Mission includes troop l... radiological survey... ply, wire laying, and pick...

SHOWING LITTLE EVIDENCE of the strain of 30 hours continuous flight in a helicopter, Mr. Joseph E. Givens, DAC, and Capt. James E. Bowman are congratulated by Board 6 President, Col. Robert R. Williams. Unofficial world's record for endurance flight was established by the two fliers.

Two Test Pilots Fly 1,520 Miles In 30 Hour Grind

At 1400 hours on Friday, June 1, an H-23 C helicopter touched the ground for the first time since 0800 the previous morning and helicopter endurance history was unofficially recorded.

The two men at the controls, Joseph E. Givens, civilian test pilot and Captain James E. Bowman, both of Board 6, CONARC although tired and slightly hard of hearing were otherwise none the worse for wear after the record 30 hour grind.

While in the air the helicopter travelled 38 times around a planned circuit that went from Fort Rucker to Dothan to the beacon light south of Ozark. This amounted to 1,520 miles travelled and 325 gallons of gas and 19 quarts of oil consumed. The aircraft refueled from a hover in which five gallon gas cans were handed up from the ground along with food and other necessities. This process occurred 22 times during the test period. In flight the pilots took turns flying, but got practically ... rest over the 30 hour run.

... design...

Illustration of front page of Fort Rucker newspaper. In photograph are (L to R) Mr. Joseph E. Givens, Captain James E. Bowman, and Colonel Robert R. Williams, Board 6 President.

ANOTHER ARMY AVIATION MILESTONE: WORLD HELICOPTER ENDURANCE RECORD

Army Aviation again demonstrated its leadership in advancing rotary wing progress when two helicopter pilots established a helicopter world endurance record of 30 hours continuous flying at Fort Rucker, Alabama, June 1, 1956.

Using an H-23C, Captain James E. Bowman and Joseph E. Givens, Civilian Test Pilot, both of Board 6, flew 1,529 miles around a triangular course in setting a record intended to demonstrate the ruggedness and dependability of Army helicopters. The thirty-hour flight was completed with no operational or maintenance difficulties.

Hiller Helicopters is proud of the part it plays in cooperating with the Army to advance helicopter dependability and reliability.

HILLER HELICOPTERS · PALO ALTO, CALIFORNIA

ARMY AVIATION

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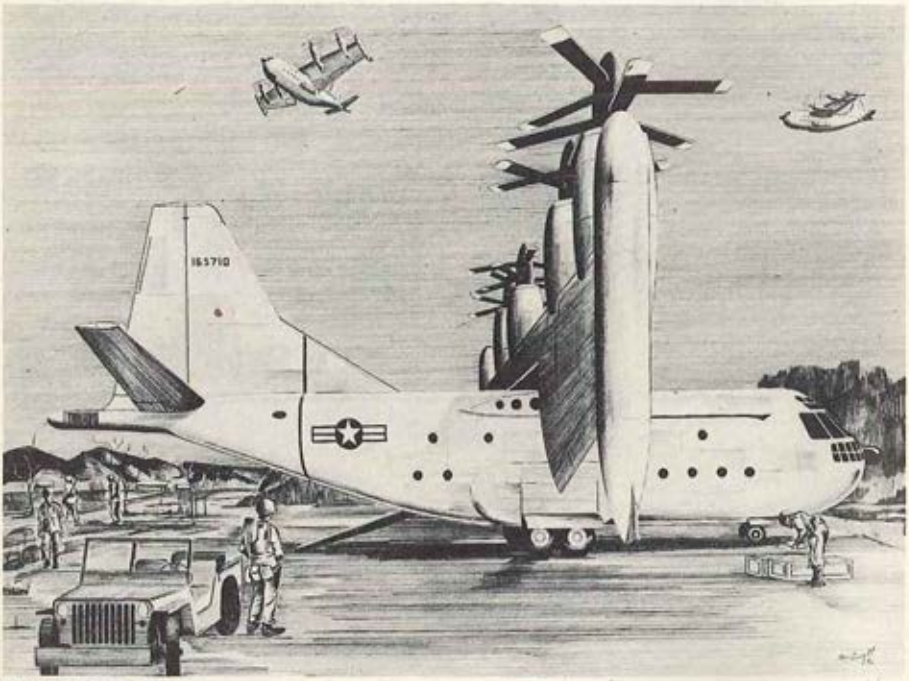

NEW CONCEPT OF FLIGHT ON THE HORIZON—Artist's drawing above shows design proposed by Hiller Helicopters for a large transport propelloplane, submitted as a result of a study made for the Army through the Office of Naval Research. It would use the principle of tilting wing and propeller units to eliminate the need for long runways, combining the recognized advantages of the helicopter for vertical take-off and landing, and hovering, with the high performance, superior flight characteristics of the airplane in directional movement.

A NEW STAR PERFORMER

BEECHCRAFTS NEW 300 MPH JET MENTOR, DESIGNED FOR SERVICEABILITY, IS MAKING NEW RECORDS IN THE AIRCRAFT SERVICE FIELD

- Average man hours of maintenance per flight hour is 0.12.
- Average oil consumption is 0.14 quarts per flight hour.
- Average fuel consumption during grueling test flying has been 74 gallons per hour.
- Has been dive tested over 440 mph.
- Has been subjected to 7.2 g pull-outs at 420 mph in flight tests.

BEECHCRAFT'S JET MENTOR IS DESIGNED FOR SAFETY AND LONG SERVICE

BEECH AIRCRAFT CORPORATION
Wichita 1, Kansas

For the Marines, a fast, versatile liaison plane

The 190 m.p.h. Cessna OE-2 is now serving with the Marine Air "Arm." Designed to meet highly specialized Marine requirements, the OE-2 brings greater versatility to the Corps' air operations.

A more powerful version of Cessna's famed L-19, the OE-2 is the first liaison airplane with built-in target-making capabilities. It also is used as an artillery spotter, to lay communications wire and to drop supplies to troop positions.

The OE-2's 220 m.p.h. dive-speed capability combines with its self-sealing fuel tanks, flak curtain and armored seats to

For the Marines, a fast flying "work horse"

give the Marine pilot maximum protection during combat operations, get him in and out of targets, fast!

The OE-2 meets a specific need. Cessna considers it a privilege to cooperate with the military in planning for today's air age. CESSNA AIRCRAFT COMPANY, Wichita, Kans.

MISSIONS DEFINED

The mission of Army Aviation is to augment the ability of the Army to conduct effective combat operations. By definition it is organic aviation, immediately responsive to the demands of the arms and services, employed to enhance the mobility and flexibility and battle efficiency of ground forces.

Combat and logistical support aviation has had and will continue to have a profound effect on the outcome of the land battle. Part of the air activity in the combat zone, however important to the success of the land battle, does not require close coordination with the action of ground units; much of it, however, does demand the most intimate coordination of effort. This, and the fact that the aircraft in certain of its forms has now developed to a point where it is capable of integration into the small unit tactics of ground elements, make it essential that certain types of aviation be under the unconditional command, during training and combat, of the field army commander. It is therefore the basic objective of the Army's organic aviation program to develop the capability of providing ground elements that part of aviation support demanding *intimate coordination of effort.*

Responsiveness to the requirements of the ground unit commander must be a primary characteristic of organic Army Aviation. Army aircraft must therefore be capable of *living* with the Army: this in turn demands that they must be capable of take-off from and landing in small unimproved areas—fields and pastures—and also be capable of maintenance and operation without benefit of elaborate ground handling facilities.

Responsiveness also demands that pilots must have a basic understanding of the nature of ground warfare, and of the tactics and techniques of the infantry, artillery, and tank forces; moreover, they must be firmly indoctrinated in, and devoted to, the mission of the Army. The Army's interest must be their interest, undivided by other allegiances.

Organic Army aviation will perform six functions in support of combat operations within the combat zone:

Observation
Rapid Troop Movement
Rapid Movement of Critical Supplies
Augmentation of Present Capability for Land Reconnaissance
Command, Liaison and Communications
Battlefield Casualty Evacuation

OBSERVATION by organic Army aviation amplifies and supplements other Army means of observation for the purposes of locating, verifying and evaluating targets for artillery and guided missiles; adjusting the fire of those weapons; and obtaining information on enemy forces not otherwise obtainable by air reconnaissance agencies of the other services.

The mission is performed by light fixed and rotary wing aircraft. Increased performance of ground support weapons dictates an Army requirement for a fixed wing aircraft of higher performance characteristics than those of the present L-19 and L-20. Such and aircraft would not replace the L-19 and L-20 altogether, but would enable the Army to maintain the capability to execute the mission of artillery and missile adjustment at the increased ranges of those weapons, and to maintain observation over the confused battlefield which is expected to be characteristic of a new fluid type of ground warfare.

RAPID TROOP MOVEMENT is the air movement of Army combat units and their equipment within the combat zone in the course of combat and logistical operations.

This function includes the requirement of units to execute small scale air landed operations, the movement of reserves, and the shifting or relocation of units or individuals within the combat zone as the situation may dictate. It does not, however, include the execution of joint airborne operations. There are tremendous possibilities in the use of aircraft to increase significantly the mobility of ground troops, not only in the rear areas but in the area of contact with the enemy. This type of mobility is essential in modern warfare, either nuclear or non-nuclear.

Cargo helicopters and light cargo airplanes are programmed for this function. The Army may also have a requirement for a relatively small fixed wing transport aircraft (3 to 5 ton payload) for the execution of this job; this matter is under study.

RAPID MOVEMENT OF CRITICAL SUPPLIES. For the present, aviation will only supplement, on an occasional

urgent need basis, the ground transportation system operating within a field army. At some time in the not too distant future, however, the air line of communication may become a reality. In this case large Air Force transport aircraft will deliver supplies and troops to a number of selected spots within the combat zone, Army aviation then undertaking further distribution to small units of the field army.

Helicopters used in troop movement will assist in this mission, but considerably greater dependence must ultimately be placed on the fixed wing cargo aircraft such as those mentioned above.

AUGMENTATION OF PRESENT CAPABILITY FOR LAND RECONNAISSANCE. The Army's ground reconnaissance forces have as their primary missions reconnaissance itself, screening, security of open flanks, seizure of critical areas in advance of heavier forces, pursuit, and to some extent exploitation. For these vital missions reconnaissance elements must have a mobility greater than that of other surface forces. Light fixed wing aircraft and helicopters, integrated into these units, will provide that essential mobility differential. Our new reconnaissance units will not engage in *tactical reconnaissance* as the Air Force uses that term, and neither will they be "airborne" forces designed to make penetrations deep in enemy territory. It is planned simply to modernize, by the use of light aircraft, our present Army type short range reconnaissance forces.

THE COMMAND, LIAISON AND COMMUNICATION function assists importantly in the direction, coordination and control of combat forces in the field. It is an old function made more urgent by the wide dispersal of units on the modern battlefield. Light aviation is already an indispensable means of exercising command. Present and future type observation fixed wing aircraft, and reconnaissance helicopters, will be adequate for this function.

BATTLEFIELD CASUALTY EVACUATION is aero-medical evacuation within the combat zone, to include battlefield pick up of casualties (except those from an airhead), air transport to initial points of treatment, and subsequent moves to hospital facilities within the combat zone. It is one of the best known and appreciated roles that Army aviation plays. The requirement for rapid medical evacuation extends to the lowest echelon of combat units. and the aircraft used to accomplish this mission in the forward combat zone are positioned there to be immediately responsive to the call of such units. Helicopter ambulance units which perform this function as a primary mission are authorized five H-19 standard utility type helicopters and are assigned to mobile army surgical hospitals. Fixed wing utility (L-20) and light cargo (U-1) type aircraft as well as all reconnaissance and cargo type helicopters are capable of emergency battlefield evacuation, and may be used to perform this mission in support of medical evacuation units on request.

Development of special aircraft designs for this function is not necessary, as the requirements of the evacuation mission are considered in the design characteristics of all utility and cargo aircraft.

In this era of rapid scientific development, new forms of fire power, communication and transportation have greatly altered the tactics and techniques of ground forces. The skillful employment of light fixed and rotary wing aircraft is essential if the Army is to meet the demands of modern ground warfare. The Army believes that organic aviation has the potential to provide our troops a margin of tactical mobility and flexibility that will hasten the defeat of the armies of an enemy, provided only that exploitation of its many possibilities is pursued with energy and imagination.

Conference

WASHINGTON, D. C.—A clearer outline of what helicopter operators want and what manufacturesrs can provide in order to give the world helicopter bus service at the earliest feasible moment has emerged from an international meeting of airlines, manufacturers, governments, and other interested agencies at San Remo, Italy.

Called by the International Air Transport Association (IATA), the meeting was designed to obtain the views of the aviation industry at large on the tentative positions reached by the airlines in a series of preparatory IATA meetings on priority helicopter problems.

ance of the helicopter is an established fact. Two multi-engine types needed—25 passenger craft and 40-50 passenger craft. Former to cruise at 100-125 mph in urban areas and 150 mph inter-city. Range should be at least 100 miles and direct operating cost should not exceed $0.10 per available seat mile. Larger craft should cruise at 150 mph; possess a 200-mile range; and have a seat mile cost of not more than 6-7 cents.

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SUBSIDIARY OF *Standard* COIL PRODUCTS CO. INC.

A new utilization providing instantaneous ground evaluation and a new design principle embodying the deflected slipstream are now . . .

In the Cards

WASHINGTON, D. C.—A television pick-up system utilizing an aerial drone and designed to aid combat commanders in obtaining immediate ground evaluation was publicly demonstrated by the Army at Bolling Air Force Base, Washington, D. C. in late May in connection with Armed Forces Day ceremonies.

Live TV shots can be made of strategic territory from the drone and then broadcast to a ground control station. The converted L-17 aircraft being used in the system is an experimental aircraft and initially will be flown with a safety pilot aboard to observe the results of remote control operation. After completion of tests with a safety pilot aboard, the aircraft will be flown as a pilotless system in further tests.

Remote control operation has currently been tested over a 25-mile area. However, the operational range will be governed by the range of the radar tracking system. Results will be *instantaneous ground evaluation* with broad potentialities, according to Army Signal Corps Engineering Laboratories' scientists.

The pilotless system consists of an L-17 aircraft modified for television photo-drone operation, an auto-pilot which provides effective remote control by means of on-off type radio signals, and a ground control station that can be carried in a jeep. The 250-pound ground station is weather-and shock-resistant. It includes radio links for commanding the drone and for communicating with the safety pilot.

Signals transmitted from the ground station to the airplane's 42-pound auto-pilot regulate stability, altitude and air speed. Complying with remote commands, the aircraft will maneuver, climb, or glide. Special control provisions prevent stalls, over-speeding, excessive loss of altitude and other hazardous conditions. Upon completion of the drone's mission, the ground controller flicks an "approach" switch which automatically positions landing gear, flaps, porpeller pitch and power in proper sequence for approach and landing. Still photos also may be made using this system.

SAN DIEGO, CALIF.—A new type aircraft called the *"Vertiplane"* which looks like a conventional light plane yet will be able to take off straight up and land without any ground run, will be built for the Army by the Ryan Aeronautical Company, T. Claude Ryan, president, announced recently. The contract will be administered for the Army by the Office of Naval Research.

That Ryan was developing a VTOL-type plane has been known in the industry since early last year when it was disclosed that the San Diego company had applied to the U. S. Patent Office for registration of the Vertiplane trade mark.

The new plane will be in distinct contrast to Ryan's other vertical takeoff aircraft, the all-jet delta wing fighter type research plane, the Vertijet, being developed for the U. S. Air Force. Ryan's Vertiplane type is best adapted to medium speed liaison, light passenger and cargo transportation, while the Vertijet is more adaptable to high performance combat missions.

The new craft will achieve vertical takeoff and landing by employing the deflected slipstream principle, using large propellers and double, retractable wing flaps which extend far below and to the rear of the wing trailing edge.

The Ryan Vertiplane will be capable of the same flight maneuvers now associated with helicopters, yet possess performance exceeding rotary winged aircraft in speed, range, altitude and endurance. Conventional in appearance and fuselage attitude, the

(*Continued on Page* 38)

VTOL or STOL; saucer, barrel, or platform; tilt wing, slotted wing, or deflected slip stream—the designer's dreams as pictured in today's news stories cannot help but intrigue you.

Should these dreams someday wear OD paint, they will eventually run the CONARC Board Nr 6 evaluation test gamut. It is here at this Fort Rucker installation that the requirements dictated by the field undergo project testing for possible Army usage.

We believe that these test reports—although in brief, synopsis format—are of interest to all Army aviation personnel. Your missions, your personal safety, and your welfare are all directly keyed to the equipment under current test.

Project Reports Board Nr 6, CONARC Fort Rucker, Alabama

LANDING SPEED INDICATOR (SAFE FLIGHT)—Presently installed equipment will be exchanged for newer, more appropriate LSI equipment. 1st installation set for 11 Jun in L-19 at White Plains plant of Safe Flight Corp.

H-21C HELICOPTER (VERTOL)—Two acrft under test; total hrs on each: 523 & 400. 17th periodic completed on one with tow kit installation underway. 2nd craft, utilized for familiarization on simulated instrument flight, grounded for 12th periodic inspection.

YH-13H HELICOPTER (BELL)—Two acrft under test; total hrs on each 395 & 275. Tactical suitability testing completed; draft report of project completed for June distribution to interested agencies. Four point sprag mount system being installed on both for evaluation.

H-34A HELICOPTER (SIKORSKY)—Two acrft under test; total time on each: 261 & 302. Continuation of study to determine check out procedures.

HELICOPTER CARGO HOOKS (EASTERN ROTORCRAFT)—The hook is still in the hands of the manufacturer for repair of a solenoid failure.

QUADRADAR AND SPAR RADAR—Further comparative evaluation contingent upon the receipt of the SPAR radar.

HOMING ADAPTER AN/ARA-31—Service testing completed; report prepared for Project Review Board consideration. Draft report to be mailed about 11 June.

H-21C and H-34A HELICOPTERS—Final report of comparative evaluation project was mailed to Hq, CONARC, 31 May.

CONSTANT SPEED PROPELLER (McCAULEY MET-L-MATIC) and YH-13H HELICOPTER (BELL)—Testing on both acrft & propeller completed 25 May as separate projects. Both were removed from Climatic Hangar and returned to Ft Rucker in late May. Climatic testing undertaken at 0 deg. F, -30 deg. F, and -65 deg. F. Cycling speeds of propeller at these temperatures were determined. Suitability of YH-13H winterization kit, heaters, oil dilution system, and priming system were investigated. Best starting procedures for each temperature were determined. Data compiled on engine temperatures and pressures, and cockpit and litter temperatures with various heater control settings. Oil dilution and boil-off survey undertaken. Locations & amounts of pre-heating necessary to accomplish a satisfactory start were accomplished. Data for both projects under test now being analyzed for inclusion in report of tests.

UNIVERSAL SKI ALIGHTING GEAR FOR L-19 (ALL-AMERICAN ENGINEERING)—Proj officer now checking out other Board pilots in water operation. Dynamic water operation testing with few interruptions. Manufacturer alerted to provide for check out of Arctic Test Branch pilots in water operation of the ski. ARMAV has initiated action on its phase of testing with a proj officer being appointed to install ski equipment on school L-19 acrft. Test will be conducted to determine transitional training requirements.

HSL HELICOPTER (BELL MODEL 61)— Coordination replies on the draft report being consolidated upon receipt. Final report to be mailed to Hq, CONARC about 15 Jun.

PERSONAL BODY ARMOR—USMC Development Cen suggested two add'l tests in coordination reply: 1) determine effects of wearing armor while performing parachute jumps; 2) determine flotation characteristics by immersion test. Both suggestions being considered prior to submission of final report.

GRIMES LIGHT—Testing will be resumed upon receipt of add'l Grimes lights.

Note: 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.

PROJECT REPORTS
Board Nr 6, CONARC

DE-ICER and ANTI-ICER EQUIPMENT FOR L-23 ACRFT—Conclusions reached: Surface Ply DE-Icer System, with properly installed boots, is suitable for Army use for flight into and through light to moderate icing conditions, and suitable for Army use for flight in heavy icing conditions for a limited period of time. Tests should be conducted to determine the feasibility of Army field maintenance installations of the de-icer systems.

AN/ARC 55 RADIO EQUIPMENT (UHF)—Draft plan of test completed and will be mailed to interested agencies about 1 Jun.

CARGO HOOK AND SLING ASSEMBLY, 5000-LB CAPACITY, FOR H-34 ACRFT (EASTERN ROTORCRAFT)—Findings: A-60 Cargo hook represents product improvement through increased capacity. Found to be a suitable replacement for present cargo hook & sling assembly on H-34. Board experience plus comments from using orgns and manufacturer indicate a requirement does exist to increase the external hook and sling capacity above 4000-lbs under certain conditions; requirement, however, is not sufficiently urgent to justify a retrofit program now

YH-31 HELICOPTER (DOMAN)—Total time on test acrft: 69 hrs. Part I of service test (1st 50 hrs) completed; draft report of this phase under preparation. Part II of service test underway with the pilot procedures and transitional trng requirements to be determined in conjunction with ARMAV. Cellular maintenance teams to be organized to determine at which organizational level this helicopter can be supported maintenance-wise.

KIT, RAIN REPELLANT—Testing expanded to include H-23 hcptr with rain repellant applied to the right half of the windshield. Limited rain has delayed testing, but repellant seems to increase pilot's forward visibility in the helicopter.

H-23C HELICOPTER (HILLER)—Two acrft under test; total time on each: 114 & 75. Testing completed; draft report prepared for Project Review Conference. Nr 55-4060 completed 30 hours of continuous flight with the crew being given physical examinations immediately following the flight. Results will be included in June report.

HOK-1 HELICOPTER (KAMAN)—Delivery of acrft indefinitely delayed and service testing will not begin until 30 June at the earliest.

HELICOPTER EXTERNAL SLING NET, 5000-LB CAPACITY (EASTERN ROTORCRAFT)—4-hook type & drawstring type. Equipment delivery expected by 1 Aug.

ELECTRIC WINDSHIELD WIPER (MARQUETTE METAL PRODUCTS, D-18100 TYPE)—With H-19 on ground, simulated rain was sprayed on windshield with hose. Wiper under operation for one hour; then allowed to cool for 45 minutes. It was then operated for 1½ hours, at which time it became inoperative. Although the motor showed excessive heat after 45 minutes of continuous operation, the cause of failure has not been determined at this time.

METAL BLADES FOR H-13 HELICOPTER—Total time on test blades: 52:30 hrs with no difficulties experienced at this stage.

NATURAL ATTITUDE FLIGHT INDICATOR (LEAR)—New project to evaluate the NAFLI under simulated instrument conditions in H-19 hcptrs. Lear NAFLI is a 3-in-1 gyro instrument combining in single presentation the information ordinarily presented by the Directional Gyro and the Gyro Horizon Indicator. Attitude is indicated by pointers representing the acrft in silhouette. Side view pointer indcates pitch; and the other, viewed as if looking forward from behind the acrft, indicates roll by the attitude of the wings. The bank and heading can be read together in turning; this info being derived from the vertical needle (roll pointer and heading card working in unison. Testing has been completed on this project; the draft report has been prepared for Review Board consideration.

U-1A AIRPLANE (De HAVILLAND)—Total time on test acrft: 170 hrs. First interim report mailed 4 May.

KIT, ENGINE, QUICK CHANGE, FOR L-23 ACRFT—Final report mailed to Hq, CONARC, 23 May. Recommendation made that kit be considered as suitable for Army use in support of L-23 acrft.

AN/ARN-21 TACAN RECEIVER—Equipment as rec'd is incomplete. Action taken to secure add'l items of hardware to effect installation in acrft. Request made for supervisory installation assistance from Sig C Eng Labs and/or manufacturer's tech rep. Installations are to be made in U-1A and L-23 acrft.

INDIVIDUAL LIFT DEVICE (DeLACKNER)—Draft plan of test mailed to interested agencies, 3 May. Delivery of two Aerocycles expected for service testing, 22 Jun.

QL-17 DRONE AIRCRAFT—New project to determine duration, characteristics, & intensity of wing tip vortices produced by specific high wing loaded aircraft and to determine the effect of wing tip vortices and of sonic shock on fixed wing Army acrft in flight. Various types of high wing loaded acrft will be equipped with smoke tanks to produce and mark wing tip vortices in the atmosphere. QL-17 drone will penetrate these vortices at various angles and at various time intervals after the vortices are created. If safe penetration is in-

(*Continued on Page* 38)

The procedures differ slightly, but cool and sharp pilots have proven you can bring them in virtually unscratched . . .

The Belly Landing

FORT KOBBE, CZ—Two AA's recently belly-landed an $85000 L-23 here with only $30 damage. The pilots, Maj. George E. Bean and Capt. Jack O. Ray devised some procedures that may contribute to known emergency data on the airplane.

After taking off from an improved strip they were told by ground observers that their nose gear was not fully retracted. The gear switch was in the *up* position but the mechanical indicator showed the gear only half-retracted. They placed the gear switch to *down* and ground personnel said the main gear seemed to extend fully and lock but the nose gear was only partially extended. It was swinging back and forth. The gear safe light failed to light and the gear warning horn blew when the throttles were retarded.

The pilots flew the plane here to the home field of the 7438th USARCARIB flight detachment and declared an emergency. They failed to drop the gear by diving and pulling up sharply. They were also unable to extend the nose gear manually and so elected to belly in.

The decision was made to fly the aircraft from the center seat, giving one man easy access to the switches and starter. The prop blades could then be feathered in the horizontal position without dividing the flying pilot's attention.

A pattern was set up for an estimated eight-mile final approach leg. No flaps were used lest they scrape on touch down. Airspeed was set up at 120 mph. Two miles out, Maj. Bean, sitting on the left, feathered the right engine with the props horizontal. One-quarter mile out, the left engine was feathered horizontally. Altitude was 350 feet. Airspeed was still 120 mph.

The touch down was gradual to let the nose gear streamline itself as it was pushed back into the wheel well. The aircraft rolled to a stop with little braking because the pilots had 7000 feet of runway and a ten-knot wind. Full braking was available, however. (*See left photo*) Both pilots thought the distance out and altitude for feathering the second engine would work on runways as short as 4000 feet.

The only landing damage was that inflicted to the low-frequency loop and antenna, marker beacon antenna, and tail skid. Careful towing into the hangar avoided damaging the venturi tube.

Later examination revealed that the trouble maker was the nose gear actuator assembly nut which had sheared loose from the actuator arm thus letting the nose gear swing free. The nut was UR'd.

In review the procedures suggested by the two pilots are these: (1) Fly the aircraft from the center seat leaving the man in the left seat free access to the switches and starter; (2) Set up extended final approach. No flaps and 120 mph airspeed; (3) Feather first engine horizontally two miles out; (4) Feather last engine ¼ mile out at 350 feet; and (5) Achieve gradual touch down. YC, John Ottley.

Invited Comment from ARMAV (Lt. Col. Carl I. Sodergren)

(Dear Editor:) In answer to your letter of 15 May 56, the Army Aviation School does not include within the scope of instruction specific procedures relative to landing the L-23 aircraft *"wheels up"*; however, instructors do bring it to the attention of the students enrolled.

The procedure used by Major Bean and Capt. Ray is a good one because it worked! —however, we feel the procedure could be improved upon. Initially, we are of the opinion that it is improper to make an attempt at manual extention if the three gears

are not in the same relative position and definitely teach this procedure. Points in which we differ and recommend as a more desirable procedure are as follows:

(1) If the pilot is sitting in the left seat, it is preferable to cut the right engine first, feather and level propeller prior to final approach.

(2) Turn fuel selector valve and magneto switches of dead engine to the off position.

(3) Make final approach shallow with no flaps at approximately 90-100 mph indicated air speed (maximum 100 mph).

(4) Cut left engine, feather and level propeller when approximately 200 yards from end of runway.

(5) Turn left fuel valve magneto and master switches to off position.

(6) Touch down in a level attitude using brakes after touch down as necessary for directional control.

(7) If desired, pilot may fly from center seat using co-pilot in left seat to level propellers, turn fuel selector valves and switches to off position.

Reasons for the difference of opinion are that the aircraft will have a definite tendency to float and overshooting is a definite problem if air speed in excess of 100 mph is maintained. At air speeds of 120 or greater, the propellers will turn in a reverse direction when feathered. Also, it is our opinion that the recommendation of feathering the last engine at an altitude of 350 feet is difficult for the average individual to estimate and it would be preferable if the feathering of the last engine be accomplished approximately 200 yards from the end of the runway. This amount of distance gives the pilot adequate time to accomplish leveling the propeller, turning the fuel valve and switches off without over crowding himself on the control of the aircraft for touch down.

Mr. Paul, one of our civilian flight instructors, has had two such experiences of landing the L-23 with gear up and accomplished very successful emergency landings using the school recommended procedure. The photograph on the right depicts Mr. Paul's most recent successful emergency landing. Sincerely, Lt. Col. Carl I. Sodergren; Director, Dept. of Fixed Wing Training, ARMAV, Ft. Rucker, Ala.

VTOL Test Bed

WASHINGTON, D. C.—Award of a contract for the design and development of a flying test bed, "tilt wing" turbine-powered vertical take-off and landing (VTOL) aircraft was recently announced by the Department of the Army. The $850,000 Army contract was awarded by the Office of Naval Reseach to the Vertol Aircraft Corporation, Morton, Pa.

In hovering flight the tiltable wing is in the vertical position and the rotor-propellors provide vertical thrust, as in a helicopter. In cruise and high speed flight the wing is in the normal horizontal position. The transition from vertical lift to forward flight is accomplished by tilting the wing-propeller combination forward. Thus, in forward flight the tiltable wing provides lift and the rotor propellors provide forward thrust, as in conventional aircraft.

Utilization of the flying test bed approach in designing the VTOL aircraft will permit the characteristics of the tilt wing aircraft design to be explored with a relatively inexpensive aircraft in a matter of months, rather than the years required to design and construct a costly prototype. Through these studies the Army hopes to eliminate the need for prepared landing fields and to achieve higher forward flight speeds. This development is part of the Army's program to increase the air mobility of its troops and supplies in the combat zone.

General research along these lines by the military services also will benefit small communities now unable to afford airports requiring long runways and expensive terminal facilities, since helicopter-type facilities will be adequate for the operation of VTOL aircraft.

Encountering revolutions, being jailed for supposedly stealing uranium, savoring goat meat for 14 days, and completing the longest L-19 sea voyage are part of an . . .

Engineer Pilot's Workday

by Captain Paul F. Hopkins

CANAL ZONE—Since the 937th last reported from Panama we have experienced nothing particularly unusual in our unusually unusual daily experiences. But to furnish all with copy that might be of interest to pilots looking forward to joining this outfit, here are some recent experiences and facts:

Lt. *Jungle Jim* Joiner had a forced landing in his L-19 on a river in SW Colombia; luckily, he was on floats and the natives had nothing against him. But his floats leaked and during the 130 mile tow back up the Pacific coast to Buenaventura, the airplane would sink each time they stopped so they either didn't stop or headed for shallow water when they had no other alternative. So, once again, the 937th make claim to fame. We have recorded *the longest sea voyage of any L-19 in the world.*

Capt. Leighton in a U-1 and Lt. Long in a *Beaver* finally made what is getting to be a milk run over the Andes. The milk soured on one trip, however. The minimum enroute altitude is way way up there and our low and slow airplanes just aren't made for it. Then too, they had a little mechanical trouble and of course, there's the weather, but that's a *nasty* word in those parts.

Speaking of nasty words—since we operate for thousands of miles on both sides of the equator, we are having summer problems here and winter problems down thataway. Then we have fall and spring problems in between here and there and then when the weather is good—either here or there—the native population burns off the jungle for new corn patches.

I recently returned from a 3 months sojourn in Brazil. Flew the same *Otter* down that I picked up in Canada in January. 'Twas over 4,000 miles of flying from the Canal Zone to get there and it took a little over 38 hours of flying. Went thru Colombia, Venezuela, Trinidad, British Guiana, Surinam, and over French Guiana. Encountered a revolution in Macapa, Brazil and spent two days trying to get out. The US Consul in Belem finally convinced the loyalists that we were *not* revolutionists.

Spent two wonderful weeks basking in the sun at Recife before I joined up with Capt. Lee Baker and Lt. George Dowdy in an H-19 and took off for the interior with a Geodemeter Team. During this phase of the trip we had goat meat, rice, and beans for a steady diet and dysentery as a steady pastime.

At last we hit the coast again—at Parnaiba—and were put under a very pleasant 10 day arrest by some local drip, for *"hauling contraband and stealing uranium, titanium and other valuable metals."* Our aircraft were impounded and our radios wouldn't work but as I said before, it was pleasant. The food was good—almost no goat meat—and the beds were comfortable. We all gained weight and took up new pastimes before the Brazilian Army came to our rescue and got us out of hock.

(*Continued on Page* 26)

Photo above: Jungle Jim Joiner's L-19 getting new floats in Panama.

"The body of a missing Army pilot was found today within one mile of Lunetta and eight miles from the wreckage of the light Army airplane in northwest Cherry Ranch. Coroner Willis of Lunetta said an autopsy revealed that the pilot died of fright. Investigating CAA and military authorities discovered that one gas tank of the aircraft was intact and that the pilot's parachute was found unopened in the wreckage."

Something's Missing!

The above news clip is fictional, of course, but just how long will it remain fictional for the lack of proper survival training?

A student crash at Gary AFB last summer involved some of the fictional pilot's mistakes. The student was returning from a routine night mission when a broken oil line forced him to bail out. Alighting near the wreckage of his plane he gathered up his chute and started walking. He was found the next morning some five miles away standing by his outspread chute.

Fine so far, but think of the rescue efforts involving many pilot hours that could have been saved had he been given *basic* survival instruction. How so? First, he should have tried to locate the wreckage since it is easier to plot the probable location of a crashed plane than a pilot who has chuted out. He should have immediately built a bright signal fire to guide planes that were searching the area all night. He might have remembered these and other things from survival classes—if he'd been given them.

I suggest that survival training be initiated in AA in one or all of the following methods: (1) Include survival orientations in the primary and advanced stages of initial flight training, (2) Attempt to send AA's to AF survival schools in the same temperate zone in which they are assigned, and (3) Have *tactical* units set up survival schools.

The 7438th AU Army Aviation Det and the 33rd RCT Air Section, Ft. Kobbe, CZ, have both adopted the second method. All AA's now assigned are scheduled to attend the AF jungle survival school at Albrook AFB, CZ. At this school they get orientation in survival gear, jungle lore, plants and animals, jungle navigation, and a practical exercise in the field during which students live off the land with those essentials provided in AF survival kits.

An ideal course should be at least *two* weeks long, the first week for the above items. The second week would be a week-long *trek-type* field exercise accompanied by instructors who would only maintain firearms discipline and keep the party from getting too far lost. Too long? It is difficult to overcome the panic of survival if you start out on your *exercise* in the morning and know you'll be on your fanny on your Simmons mattress that same evening.

I think the prime objectives of Army-wide survival training would be these: to instill confidence in flying over sparsely populated areas, to show the need for carrying some kind of survival gear in all a/c on all flights, to show the need for a knowledge and maintenance of survival gear, to give the individual AA a practical knowledge of woodcraft and survival procedures, and to enable the AA to take command of all persons in an a/c forced down and prevent panic while starting positive steps toward survival and being found.

What survival gear is needed for Army a/c? For training a/c a kit shoud be provided with emergency signalling smoke flares, one day's rations (AF survival or Army assault), signalling mirror, matches, two-star distress signal, water bottle and survival manual (AF #64-5).

For tactical and other a/c likely to be flying in the ZI, the AF "C" series seat survival kits would suffice. Whatever kit is drawn should be adequate for the extreme yearly climatic conditions.

Mae Wests and life rafts should be aboard on all over water and over lake flights. A regular inspection of these and the seat kits should be mandatory.

It all adds up to plenty of dough saved for Uncle Sugar (not to mention that fanny of yours) every time you successfully survive a crash in the toolies and walk out or be spotted by searching a/c. How does your unit stack up in survival know-how?

—Lt. John K. Ottley, III

The Beaver and the Otter on Civvy Street

There is a lot of geography between Cleveland and the Canal Zone and a lot more between Detroit and the Arctic slope of Mount Umiat. For this reason the boys who jockey the U1-A's and the L-20's in these far away places may be interested in this operation of the civil versions of their two famous aircraft. Pictured in the inset above is a moored U1-A (Otter) seaplane on an Arctic lake and a shot of the TAG Otter in flight over Detroit.

The inauguration by Taxi Air Group Inc., on April 26th of an Otter and Beaver seaplane service between Detroit and Cleveland makes it possible for business men to board a plane at the seaplane base in the Detroit River and be in Cleveland at the city's Lakeshore Airport *less* than sixty minutes later. The same trip, by train, bus, or automobile takes better than three hours. Existing airlines maintain services between the two cities, but because their planes are based at out-lying airports considerable time is lost in surface travel to and from the downtown business areas.

The service operates 4 daily round trips (except Saturday and Sunday) between the Detroit Seaplane base at the foot of St. Jean Street and the Lakefront Airport at the foot of East 9th Street, Cleveland. The block time is one hour. From St. Jean Street, Detroit, to the Square, via Jefferson Avenue, by cab takes 10 minutes. From Cleveland Lakefront Airport to the Square is a 3-minute taxi ride.

The airline time between Detroit and Cleveland is 44 minutes, plus one hour and ten minutes limousine time between the city and airport at Cleveland, and one hour and fifteen minutes between Detroit and Willowrun. Total airline time: 3 hours 9 minutes.

By bus, there is a fast express service between the two cities which does the trip in 4 hours 30 minutes. The normal bus time is 5 hours 30 minutes.

The train time is 4 hours with no morning train service available from Detroit to Cleveland. One train, the *Mercury*, does the run from Detroit to Cleveland in 3 hours, leaving Detroit at 5:15 p.m.

T.A.G. fare between the two cities is $14.00 one way, $25.00 round trip.

The airline fare, 1st class, including Limousine fares is $12.25 one way, $20.50 round trip.

Public reaction to the service has been favorable. Passengers particularly comment on the "smooth" ride. (The greater portion of the route lies over water, free from excessive turbulence). Passengers show great interest in the sea-plane landings, take-off and maneuvering on the water. They can talk to the pilot and in a sense participate

(*Continued on Page* 34)

In ferrying a giant Vertol H-21 from Long Beach, California to Fort Belvoir, Virginia one Army crew sat through their own 5-day . . .

Cinerama Holiday

We're off from Washington International Airport bound for Long Beach, California. We? CWO W-2 Harold E. Marks, SFC Clarence H. Ford, and the writer. As we took off at five minutes after midnight on 23 Jan., we were all wondering what kind of trip we'd have returning to Ft. Belvoir for we were going to ferry a Vertol H-21 from Edwards AFB, Calif., a long, tough haul for a helicopter. The AF had been using it for tests and now they were sending it to Belvoir as a maintenance "floater".

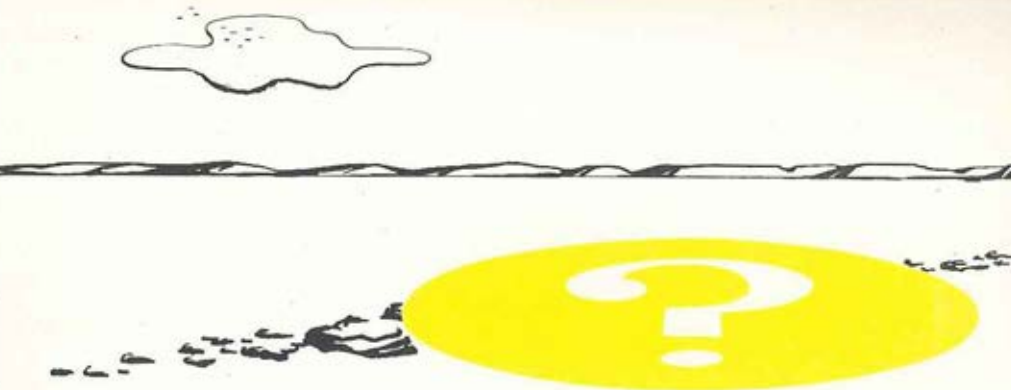
After a beautiful eight hour non-stop flight from Washington, we were greeted in California by—rain (What else!). We reported in to the CO of the 1738th Ferry Wing Comd at Long Beach AFB, Calif. for a briefing. Although we are Army aviation personnel, you fly under AF orders on a ferry mission such as this. We settled down to wait out the *unusual* weather, and as you may have read, they had 7½ inches of rain before our hosts could finally fly us over to Edwards and our aircraft.

"Oh no!" said WO Marks. *"Not me!"* said Sgt Ford. *"What* are you two talking about?" said I, but then I turned and saw the chopper we were expected to fly back across the continent. The Mohave Desert sun, wind, and sand had combined to make the ship look like a cocker spanial puppy caught in a rain storm. Needless to say, it received a very thorough checkover and to our surprise, the ship flew like a charm despite the gyrations we put it through. We found the gyro compass didn't work and the VHF radio only had one channel (126.18) but *it flew.* Tries at repairing these deficiencies were to no avail so we said our goodbys to our wonderful AF hosts and hit the blue in the late afternoon of 27 January for Palm Springs. We had a reported high ceiling all the way but when we reached Cajon Pass, we found the trains going through the pass on instruments and we decided that it was no place for a helicopter. We turned around and went to George AFB, Calif., our alternate.

The next day, 28 Jan., dawned bright and early and we set our course for Needles, Calif., our first gas stop on the way to Phoenix, Ariz. Using a combination of direct heading navigation, pilotage, and nerve, we found Needles and we were lucky, not in finding it, but in getting gas, for the airport no longer carries 100 octane and their last gallon on hand just satisfied our thirsty twin-rotored beast. We then headed south—down the Colorado River and through the Lake Parker Reservation—and it is mighty *rugged* terrain. We then swung east—going through Granite Pass and following the Eagle Tail Mountains until we picked up the Salt River and into Phoenix. As we were on final into the airport, it started pouring for we'd caught up with the same frontal weather that had given L. A. such a bad time. If we'd been a half hour later, I doubt if we could have found the place. The airport weatherman said that the front was moving east at about 5 miles an hour which didn't sound too encouraging.

The next morning was a beautiful one and the Arizona ANG, which had serviced our trusty H-21, reported that the front had gone the way of all good fronts, away from our flight path. We took off south winging our way (or should it be *"rotoring our way"*) down the Santa Cruz River to Tuscon, and then on to the Bisbee-Douglas Airport for another drink of 100-proof. We wasted no time in hitting the blue for El Paso, Texas, our next overnight stop. Mountains, mountains everywhere, so we stuck pretty close to Highway 80 for a softer landing if it became necesary. At this early stage—with an unfamiliar aircraft—we were still flying *"Old Greasy"* with our collective fingers crossed, even though Sgt Ford checked her at every stop as thoroughly as possible. Arriving early in El Paso, we decided to hike over to Juarez, Mexico for a shopping trip. (*Don't ride a taxi across the bridge, because they'll charge you a dollar extra and the toll charge is actually only two cents.*)

(*Continued on the Next Page*)



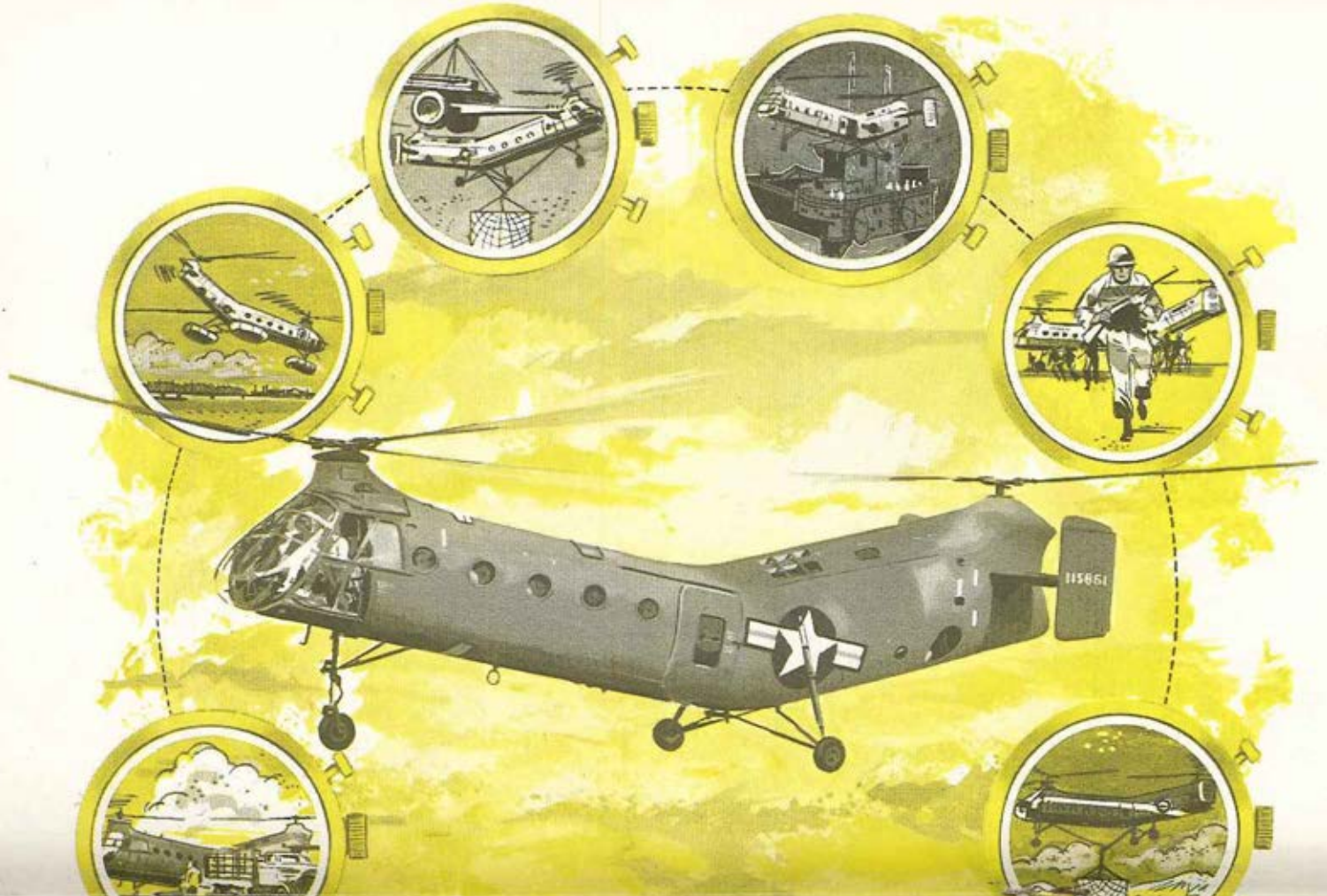
January 30th came all too soon and we headed for Carlsbad, N. Mex., our next oasis. As we were flying over the Hueco Mountain Range, we remarked about the absence of any really bad weather or mechanical difficulty. *But, we spoke too soon.* A stiff head wind sprang up, and then, as we flew over the CAA station at Salt Flats, Texas, the engine tachometer started fluctuating. We sat down, and found, to our relief, that there was just a short in the system. While the very capable SFC Ford made the necessary repairs, WO Marks and I went over to a small highway cafe for coffee. Being a friendly sort, the little old lady who owned the establishment started making small talk, and, upon learning that we were pilots (*purely a matter of opinion —ours*) asked if we were flying through Guadalupe Pass. When we answered in the affirmative, she volunteered the information that the winds in the pass were a reported 75 miles an hour that very morning. Evidently feeling that she should elaborate on this cold (*and windy*) statement, she further stated that only last week the county had lost their best doctor there trying to fly his own airplane through. Having fulfilled the requirements of western hospitality, she left us to our thoughts.

Leaving our correctly spelled names, ranks, and serial numbers with CAA, we started climbing, following the highway through the Guadalupe Mountains to the pass which is 5,288 feet. To our left was Guadalupe peak, the highest point in Texas at 8,751 feet. I had a death grip on the controls waiting for the winds to hit. We finally decided to pull up and over the range, forsaking emergency landing areas and hoping the turbulence would be less. Not only was it less, it was nil. We all breathed a sigh of relief and continued on to Carlsbad. The gas pump was broken so while they were hunting the repairman, the airport manager's brother drove us into town for a bite to eat (*at a speed far exceeding that of our helicopter*). Upon our return, we found the pump still broken and *no* repairman. A couple of us made some make-shift repairs and we were able to gas up (*it took* 45 *minutes to pump* 150 *gallons*). We were off again, headed for Odessa-Midland Airport, in Texas. It was on this lonely leg of our journey that I found that pilotage doesn't pay in that country for trying my hand at navigation, I found that although we were hitting our check points, they were only reasonable facsimilies for we were some 30 miles off course before I caught it. *Everything* looks the same. Also in this lonely stretch, every car we passed stopped to see just what was flapping around in the air up there.

January 31st found us on our way east from Odessa-Midland Airport to Abilene for gas and from there we went to Fort Worth, Texas, leaving the mountains behind us. Giving the Bell factory a hello as we passed by, we continued on to Texarkana where we were stopped, but good, for it proved to be our home for the next five days. The fifth day was beautiful, and we went out to the airport full of hope. We asked if we could fly and our answer was *"Yep, but you can't go no place."* Although Texarkana was clear as a bell, everything to the east and north of us was zero-zero. The weatherman gave us another fright for he told us that another front was building up in the Gulf and they expected it to hit that area the next day. Thank goodness it wasn't that bad; *we were broke, busted, flat!*

We had a very hard tail wind the morning we headed out to Greenville AFB, Miss, our next gas stop. The terrain under us was small broken hills, and that, together with the rough choppy wind on our tail, didn't make this day an especially nice one to fly *an eggbeater*. After flying for about 15 minutes, I would ask WO Marks to *pleeeese* take over, and then in about another fifteen minutes, Marks would ask me to take it back. I'm just glad there were two of us there to fly for it was pretty rough and tiring. Sgt Ford didn't have any work to do in the back at this time; I didn't envy him one bit. Of course, he said that it wasn't tooooo bad. Hah! On from Greenville to

(*Continued on Page* 34)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CAREFULLY WIPE with rag or waste, sample containers of aviation fuels, before touching with bare hands.

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USE SOAP & WATER OR AN EMETIC TO CAUSE VOMITING if any aviation fuel has been swallowed accidentally.

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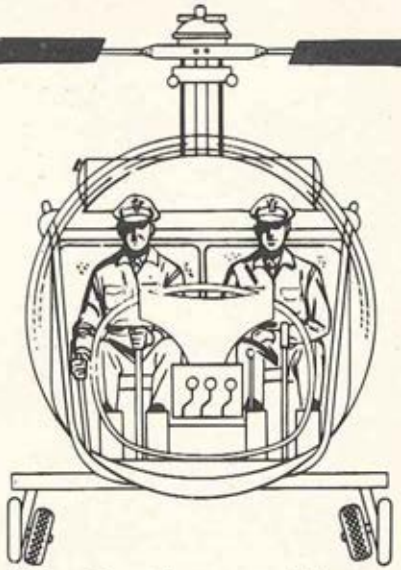
PRO'S SAY



Informal, voluntary articles on current Army aviation happenings

TRADCOM, FT. EUSTIS, VA.—A Transportation Research and Development Command project to improve the lighting systems of Army aircraft has been solved on the L-19 by installing bolt-lites adjacent to the face of all instruments, the fuel level gauges, the fuel selector valve, and the radio control panel. Ramrodded by Mr. Joe Melani, the project includes three rheostat switches which have been installed to provide control of the light intensity.

While analyzing the night lighting problem, the question of flight safety was raised. Results——high intensity navigation lights were installed.. These lights are larger and brighter and are readily distinguished from background lights. In addition, an anti-collision rotating beacon was installed on the lower fuselage between the landing gear struts. This beacon makes the aircraft look ilke a flying Christmas tree *but it does the job.*

TRADCOM has been informed that it will participate in the 1000-hour accelerated logistical and evaluation flight program to be conducted at Ft. Rucker, beginning about 1 Sept 56. This project will undoubtedly bring about the re-assignment of military and civilian personnel from Ft. Eustis. I suppose Capt. Dugger will cringe when he reads this—the only reason he ever departed Ft. Eustis was to be divorced from TRADCOM.

Personals: Maj. and Mrs. Hammack are eagerly awaiting the arrival of forecast twins. There surely has been a heap of Texas boasting around these Virginia woods in respect to Fatherhood! . . . Capts. Wolfe and Sundby are back from respective trips; Capt. Wolfe with a healthy glow acquired from 2-wks rests in the hills of Pa., and Capt. Sundby from Ft. Benning where he participated in Dave Garroway's *Wide, Wide World* TV Show in mid-May, exhibiting the *Aerocycle.* Three days of sunshine had its effect. With the exception of a shiny white forehead, Sam returned with the complexion of a *broiled lobster* . . . Maj. Tom Hall has picked up a new look; he's been alerted for re-assignment. Where? Unknown! YC. (Capt.) H. W. Huntzinger. ◄◄

No War Here

KARLSRUHE, GERMANY—*Birds of a feather flock together* or is it *opposites attract?* Either way, both sayings apply to the pilots of the 555th Engineer Combat Group stationed at Phillips Barracks here. The Group AO, Capt. George A. Crowell, is a resident of Wetumpka, Ala. while the AO of the 499th Engr Combat Bn is Capt. William P. Tomberlin of Camp Hill, Ala.

Their paths have crossed repeatedly since '49 when they attended the EOBC together at Ft. Belvoir. Since then, they've toured simultaneously in the Far East and through further aviation training at Ft. Sill in '53.

Contrasting these Johny Rebs are the Damyankees from New England, Lts. Warren R. Ross and Joseph P. Whelton. Ross hails from Newton, Mass. and Whelton is from neighboring Nashua, N. H. They too undertook primary together, graduated together, and now serve in the 555th.

Despite this odd mixture of similarities and differences, all four like to think of just one object in mind, to be good Engineer themselves as a smoothly working outfit with pilots on one hand and to be strong friends on the other. Therein is the tie that binds. (PIO, 555th Engineer Group). Photo on opposite page). ◄◄

On the Move

DOUGLAS, ARIZ.—TDY & PCS. The 14th Aviation Company completed its move from Ft. Riley to Bisbee Douglas Airport, Douglas, Ariz. on 1 June which was our original orrganization day (On 1 Jun 55 the 14th was formed at Ft. Riley, Kan.) This will be our *temporary* home for the next four months during which time we shall test signal navigational equipment.

PROS' SAY

After completion of these tests we'll move to Benning (our new *permanent* station). Lt Reed and WO Tiernan travelled the motor convoy (5 days) while the 21 *Otters* completed the trip in 2 days (RON at El Paso). Our hats are off to Lt Joe Parlas who successfully landed an *Otter* after engine failure 30 miles west of El Paso. YC, (Lt.) James Greenquist.

(Ed. A unit move such as this snafus most personal correspondence. Should you have a friend in the 14th, here's the complete roll call of the move: Maj Feldt, (CO); Capt. Woltz, Blauert, Campbell, Cleveland, Drummond, Lessard, McGaughey, and Vassey; Lts. Ahern, Anderson, Barber, Beach, Cross, Fewsimth, Hudson, Jones, Kakuk, Knight, Melton, Moran, Neiderbrach, Parlas, Reed, Smith, Steffanson, Strong, Williams, and Zellmer.)

Roundup

FORT EUSTIS, VA.—Officials of the Transportation School at Fort Eustis were quite shaken recently when about fifty star-decked National Guard aviators descended on them for a rip-roaring two weeks.

The occasion was a refresher course arranged by the *NGB* for *full-time* National Guard aircraft maintenance officers. The special course not only provided a review of half-forgotten maintenance techniques, but also served to bring the officers up to date on the newest Army forms, records, and modern supply and maintenance procedures.

A visit by Lt. Col. Wayne L. Phillips, Army Aviation Officer from the NGB, highlighted the course. Col. Phillips discussed plans and prospects for the future of National Guard Army Aviation.

The group of students in this unusual class included officers from nearly every state, Hawaii and Puerto Rico. These were, for the most part, the real old-timers of Army aviation. Over half wore stars above their wings and a glance at their DA 759's would reveal experience ranging to 9000 hours and covering, in many cases, nearly twenty years of flying. CAA instructor ratings were a dime a dozen and a few boasted ATR's and seaplane ratings. All are intensely proud of the high standards maintained by the Guard and jealous of its place in the over-all Army aviation picture.

Obviously, National Guard Aviation is in good hands. YC, (Lt.) Harold L. Burr.

Photo Below

NG AAs Convene at Eustis (Story in opp. column): SITTING (L. to R.): Lt. Betances (P.R.); Maj. Woody (Va); Capt Smith (Ore); Lt Col Stimson (Cal); Lt Col Guild (Okla); Maj Brocato (La); Maj Nicol (NJ); Capt Davis (SC); Capt Letostak (O); Lt Grimstead (NDak); and CWO Jimenez (Nebr).

KNEELING (L to R): Lt Flockhart (Calif); Lt Plemons (Tex); Maj Juhl (Iowa); Maj Aycock (Ark); Maj Falkenberry (Ky); Maj Bohannon (Pa); Capt McBride (Tex); Capt Barfknecht (Mont); Lt Hamric (WVa); Capt Rooney (NY); Lt Burr (Conn); and Capt Johnson (Wash).

THIRD ROW (L to R): Capt Davis (Ala); Lt Col Burpee (Mich); Capt Brown (Mass); Capt Carpenter (Colo); Capt Efinger (SDak); Capt O'Toole (Kans); Maj Grey (Ill); Maj Graul (Md); Maj Willis (Fla); Lt Tilton (NH); Capt Bass (NC); and Capt O'Keefe (Miss).

REAR ROW (L to R): Capt Roberts (Ind); Capt Garretson (Nev); Maj Dow (Ariz); Maj Baldwin (NY); Maj Sarko (Wisc); Maj Beseth (Tex); Maj McCory (Mo); Maj Maxwell (Wyo); Capt Abbott (Vt); and Capt Choning (NMex). Photo, caption, and adjoining story submitted by (Lt.) Harold L. Burr (Conn.)

The Dilemma

The aviation-minded youngster faces a dilemma today . . . His bureaus and bookshelves are adorned with plastic models of jet aircraft and his albums bulge with glossy photos depicting *The Decade of Security through Air Power.*

His desire to *grow up fast* is intense; his opportunity to crease the wild, blue yonder is fading with each passing day.

Talk to one of these teenagers. You'll be startled at the candidness with which they view a military aviation career. Somewhat alarmed by recent far fetched thoughts calling for absorption of the Army by the Air Force, I pursued our conversation to bring the problem clearly into focus.

Interceptors? Long-range bombers? Deep-penetrating tactical air? *I'll be lucky if they exist in '64 and I'm not interested in pushing a button and then counting down slowly from* 10 *to* 1. *I don't want to be an artilleryman.*

He thought that troop carrier and close support would offer the best possibilities for an Air Force flying career.

The most effective close support aircraft—the ones with propellers—are all obsolete and it will take the hue and the cry of one of the subservient services to bring something similar back, and if they pay to bring it back, they're going to keep it. Then too, the missileman may come up with the close support answer.

Perhaps I could be trained for troop carrier duty. Son, the existence of troop carrier aircraft presupposes that ground warfare will occur. For economy reasons—supersonic aircraft and the Big Bang are getting cheaper all the time—your Air Force proponents, in and out of Congress, may do away with the majority of the troops. What will you haul?

Sùppose they don't and do recognize that limited wars, the non-nuclear type, may occur. The *passengers* have a little education now—they're airminded—and in viewing past and recent performances with a more professional eye claim that the service is not all that it should be.

Then too, if we call and *you* haul— you ferry us to a transfer point to Army aircraft in or near the combat zone. Instead of securing the desired mobility and dispersion, you wind up dropping your ramps on a big, fat, rough-hewn airbase, a seven-letter word that can be condensed to six by any ground-bound or naval missileman, T-A-R-G-E-T.

The subservient service asea gives no succor on close-in airbases. *"They've got to find us; our bases our mobile."*

"Move the bases out." said the youngster. A remote transfer point accomplishes little except to increase the range of the pickup Army aircraft and the time for closure with the enemy.

What about MATS? They'll still operate. No doubt they'll continue to render their splendid service but at the rate military establishments—printing plants, et al—are being supplanted by commercial operations, the airlines' load factors had better remain high. If it's airline flying you crave, why not go direct to United or Pan-American? Everyone else is eventually pirated by higher-paying civilian enterprises; why wait to be pirated? Get in on the ground floor.

The youngster was somewhat demoralized at this point. He sat quietly—mulling over the thought of U.S.A.F., 1964 A.D. Perhaps the thought of a flying career in the Army or the Marine Corps occurred to him. If it didn't, it eventually would.

I then put the questions to him—the propaganda that is picking up momentum today: "Do you honestly believe that the Air Force will absorb the Army now?—Will we have *AF Commanders for Army Divisions?*

The bland look on his face gave me the answer: To absorb anything, you've first got to have a fairly permanent sponge.

Amiss

(Dear Editor:) After reading the *Pike's Peak or Bust* article in the May '56 issue it seems to me some memories should be refreshed—particularly, the PIO of Fort Carson.

In Feb of 1954 the 328th Trans Co (Hcptr) at Fort Riley, Kan. (Now the 11th (Hcptr) at Stuttgart, Germany) sent *three* H-19s to Camp Hale, Colorado. Enroute from Peterson Field to Camp Hale at least one H-19 flew *above* Pike's Peak.

During the month's stay at Hale we operated from 9,200 ft. to 13,600 ft. and one crew took an H-19 to 16,600 ft. Of course, it was unofficial and wasn't recognized at the time but aren't a lot of things? Seems the H-21 at White Sands, N. Mex., was a little behind the times. Sincerely, CWO Richard B. Ziegler.

(Ed. You forced us to read a back issue, something we dislike doing but the submitted does read: "It (the landing on Pike's Peak) was the first time in the long and colorful history of Army flight accomplishments that an Army helicopter had operated at such an altitude (14,110 *feet) . . . The highest previous mark for an Army helicopter was established by an H-21 at White Sands, N. Mex., when the ship rose to a height of approximately* 8,000 *feet."*

With all due credit to the 328th for their accomplishments, there is an object lesson above. The 93rd Trans (Hcptr) Co. the

second unit to make the altitude effort, DID have pictorial proof and pertinent news copy to substantiate their claim. Whether you hit a beachhead or break a flight record, it isn't necessary to have one in every five a photographer but it is important to get it down on paper. The widespread publicity of that 16,600 foot altitude in '54 by either the Army or the manufacturer could not have done Army aviation any harm. It is NOT a question of personal unit publicity any longer; Army aviation needs the publicity.)

Sentinels

FT. WADSWORTH, N. Y.—We're hoping to be the first of the newly formed AAA air sections to check in the *Army Aviation* net; in this case, we're the 52d AAA Brigade at Wadsworth (Staten Island), N. Y. We're organized herein as a three pilot, three helicopter unit with 5 EM. Our mission: to provide the commander and his staff with air support to the Guided Missile and Gun sites guarding the New York City area.

One copter (an H-13E) is being readied for us at First Army Field Maintenance; one is enroute from Second Army; and we're awaiting news on the third. Incidently, we're based right next door to First Army Field Maint on Miller Field, S. I. All pilots & crewman are accounted for, sufficient clobbers to make us 100% both ways: Lts. John E. Morel, John H. Downey, and James H. Nolan; line chief Sfc Samuel K. Newcomer; Sp-2 Edward Strachan; Sp-3 William Miller; Pfc Herbert Fowler; and Pvts Elmer Vogt and Richard Friedrich comprise our entire crew. Regards to our *Sagebrush* friends in the 14th Avn (*Otter*) Co. YC, (Lt.) John E. Morel. (*Ed. We're looking for the 100% Group photo.*) ◄◄

Lonesome

FT. LEONARD WOOD, MO.—Almost did not make the *Round Table* deadline . . . Rec'd the inquiry after I returned from participation in the terrain exercises at C&GSC at Leavenworth. Immediately upon my return here I had the task of inventory as Maj. Tyrrell rec'd orders to D/A, ODCSOPS. Being the ranking lieutenant, I inherited the job of Post AO and thus far, the results have been hectic: 4 pilots TDY to Huchuca; 3 AAs to McCoy; and one pilot to Riley for an H-25 checkout (the H-25 to become part of our equipment here when the checkout is completed). On top of this we had a Command Inspection . . . Yes, our UHF is operating again . . . Just got a call from Chicago (Hq, Fifth Army) . . . 6 pilots to leave tomorrow, TDY to Gary to pick up and ferry six L-21s to Camp McCoy, Wisconsin for USAR summer camp. At this rate I'll be Post AO and IT . . . YC, (Lt.) Dean R. Paquette ◄◄

Test No. 1

DOUGLAS, ARIZ.—(Additional) Now at Bisbee Douglas Sub-Post (Prov), the 14th Army Avn Co (Fixed Wing Tactical Transport) is currently participating in Army Electronics Systems Test #1, a project whose aim is to aid in the evolution of an air traffic control and navigation system for Army aviation serving the Army in the field . . . Our Riley-to-Douglas X-Country was accomplished in 3 increments: Motor Convoy (Lt Reed & WO Tiernan); 1st group of 14 *Otters* led by Maj. Feldt & Capt Lessard; and the tail group of 6 *Otters* handled by Capt. Woltz . . . As you know all flights RON'd at El Paso where courtesy & accommodations passed the *Duncan Hines* test . . . Capt. Vassey & Lt Beach (advance party) were on hand to welcome us (already tanned). *Personals*: Lts Ott & Kotzbacher left us to join the 2d *Otter* Company . . . Capts Cleveland & McGaughey & Lts Parlas, Reed, & Hudson are all back from I-School. Lts. Kakuk & Paul are now at Rucker (and missing scenic Arizona.) YC, (Lt.) James Greenquist ◄◄

Pot-Shot

COLUMBIA, S. A.—I've gone on inactive National Guard status as Hq Co AO with the 50th Armd Div and have taken a job flying for *Helicol* here in Colombia . . . Most of the boys with me here are ex-Army and ex-NG personnel and who knows—perhaps I can get a few subscribers . . . The pay is good; the food is excellent; and the flying in and out of these jungle holes really separates the men from the boys.

The only thing we really worry about is the war that is still going on down here. The rebels have raided our camp three separate times and have pot-shot at one pilot who tried to get away. The bullet went through the bubble canopy and just missed his neck. His name was Russell (and he took off for the States right after that incident.)

In this God forsaken country only *Army Aviation* can help to keep me informed on what is going on in aviation so please send it to my new address. YC, (Capt.) Anthony J. Taddeo, Petty Geophysical Party 34, Puerto Berrio, Antioquia, Colombia, S. A.

ENGINEER PILOT'S WORKDAY by Captain Paul F. Hopkins (Continued from Page 15)

Capt. Joe Balint came down just a month ago as my replacement and I started the long trek home. Took me 10 days—2 days on commercial *Constellations* getting to Rio, (lost an engine both days), 4 days resting with my original Brazilian pastime in Rio, and 4 days via MATS. I'm home and I'm glad.

Renew your subscription and read more about this Latin Living in next month's issue.

'Nother Pentagon

JAPAN—With due respect to other fine units and individual sentimentality in same, I must hereby go on record as saying that I am now a very proud member of what I believe to be one of the very finest units in Army aviation today, the AFFE Flight Detachment. I make that statement for two reasons:

First, I firmly believe it, and secondly, I feel there are probably many AAs who won't agree with me and will write letters to the contrary to me to tell me so (and I love to receive mail.)

Many AAs who have not served in the Far East will be amazed as I note the differences and those AAs who have been here can sit back and reminesce. Camp Zama is called the Pentagon of the Far East and the AFFE Flt Det performs the same duties as our counterparts at Ft. Belvoir, Va. Quite simply our task is to satisfy all of the flight desires of the Far East Commander and his subordinate commanders.

In addition, we are charged with preparing and giving instrument checks and the annual exam, as well as giving proficiency checks to L-19 and H-13 pilots. Although we're a busy group we are nevertheless a tightly knit organization that certainly does not disregard the *social* aspects of life. When we work, we work and when we play—*damn Sam!!*

Presently, we're in the midst of a large personnel turnover so I'll wait until next month to provide a rundown on who got lost in the shuffle. (*Ed. Remember those FREE change of address cards inserted in the June issue!*) Suffice it so say that we now have 19 pilots including 3 who are asgd to AFFE G-3. Bachelors are *in the minority* and all others, with the exception of the undersigned, have their families here (and mine will be along soon.)

Strange, new things are happening here daily and by next month I should be squared away enough to write a more comprehensive report . . . I have one request in closing. Despite a huge supply of rejection slips from various American tabloids I still hope someday to have something published. My present endeavor is a book about Army aviation. I have quite a file already but I require much more. The next time you get in a bull session take some notes and send them along to me. For what it is worth your contribution will be properly credited to you (if and) when I can find a publisher. YC, (Lt.) R. W. Koepp, AFFE Flt Det, APO 343, SF, Calif. ◄◄

Enchiladas

STOCKTON, CALIF.—Rumors! Rumors! *And more rumors!* The situation at Stockton Field is frantically static, at least for the present. The biggest project in the wind is the movement to a *censored* location. Hope to have more on this soon.

We're glad to welcome the LORAC crew back, headed by Capt. M. D. Lord. This crew worked in conjunction with the LORAC Corp. of Tulsa, Okla. and the Engineer R & D Lab at Ft. Belvoir, testing new electronic measuring devices. In 3 months, the crew compiled over 700 hours in the Army's new U-1 *Otter*. Naturally, the 30th Topo anxiously awaits the results of the tests as this could mean a relatively inexpensive and accurate method of measuring inaccessible areas.

Recently cited for heroism in effecting the helicopter rescue of many December flood victims were Maj. Phillip Melzer; Capt. Story C. Stevens; Lts. Donald Coggins and James Allen; and SP-3s Howard G. Kuni and James R. Hatcher. All received the *Winged S* and in addition SP-3s Kuni and Hatched were awarded the *Soldiers Medal*. (See photo in centerfold).

Notams: On the routine side, we participated in the Armed Forces Day display at McClellan AFB; the Army display being highlighted by a spectacular demonstration on the maneuverability of the helicopter by Lt. Brooks Homan . . . Late in May, one of our choppers piloted by Lt. Frank Wilson was employed to recover the body of a San Francisco engineer who drowned in a boating mishap at Yosemite National Park . . . Congrats to *Capt.* James E. Greer . . . *"Old Ben Cox,"* our De Havilland *Tech Wreck*, completed a recent inspection of our entire complement of *Beavers* and *Otters* . . . Coming and Going Dept: Inbound are 3 lieutenant-returnees from Chopper School and one 5 lb. 5½ oz. son, Michael Bradley, to Lt. and Mrs. James Cooper; outbound were a crew to the censored location including Lt. Seamon Molkenbuhr. That's it for now. YC, (Lt.) Robert E. Bishop.

Available

● A detailed and well-documented account of the part played by Army and AF Vertol H-21s in last year's *Exercise Sagebrush* is found in the 2-color brochure available from the Vertol Aircraft Corporation, Morton Pa. Amply illustrated with photographs, the brochure is available to interested parties and may be secured by writing Mr. Frank K. MacMahon, Military Liaison Administrator.

● Pacific Division, Bendix Aviation Corporation has made available a new 20-page, 4-color brochure concerning the Bendix-Decca Navigator system. The brochure explains how the Bendix-Decca system works, describes its component units, the technical side of the system, and explains its advantages in providing greater safety for passengers and aircraft. Copies of the brochure may be obtained by writing Mr. J. H. Overholser, Pacific Division, Bendix Aviation Corporation, 11600 Sherman Way, North Hollywood, California.

Navigation a Necessity

THE FAR NORTH—Greetings to all from the members of the Transportation Arctic Group Aviation Detachment. We boast that we are the *Northernmost Army aviation unit* in the world with our operations taking us to within 800 miles of the North Pole. (*Ed. Refutations will be compiled, indexed, and will appear in the August issue.*)

Within the Detachment we have two *Beavers*, two H-19s, and three H-13s, and the near future should see us with two additional H-19s. A large percentage of our missions involve flying over the Ice Cap transporting passengers, cargo, and mail. Each helicopter flight over the Ice Cap must be covered by a *Beaver* to aid in navigation, which consists of following the sled trails and the radar vectors provided by local AF installations. Navigation, as you can guess, can become quite difficult when your sole reference, a sled trail, has been covered by blowing snow.

Capt. H. A. Winter is the AO with Lt. R. E. Morris handling Opns and due to rotate to the 506th at Benning. Lts. G. O. Carver (Maint) and C. M. Priem (Supp) are augmented by the WOs, including P. E. Miller, C. J. Roberts, W. D. Austin, W. H. Holloman, III, W. L. Novick, and W. E. Oxford, all rotor-controllers and assistants to the above. M/Sgt. E. L. Phend (a recent arrival from Ft. Eustis) is the current Line Chief trying to avoid frost-bitten fingers while our on-location Tech Reps include John Barnard (*Bell*) and Wallace Monnett (*Sikorsky*).

We'd like to use this opportunity to say *"Hello"* to our nearest AA neighbor, only 1300 miles away in Iceland. To them we would like to say, *"Fly over and have a cup of coffee with us."* YC, (Lt.) Charles M. Priem. ◄◄

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.

. . . Sure it's trimmed all the way forward?

Checkouts

FT. BRAGG, N. C.—Ten Army Helicopter pilots were recently graduated from Ft. Riley, Kan., upon completion of the H-21 Pilots Transition Course. The rated AAs are now checked out in the Vertol H-21 *Workhorse*, the Army's largest cargo helicopter.

The 6-8 week course teaches the pilots to become proficient in all of the flight maneuvers of the giant, tandem-rotored machine, including practice in autorotations. While undergoing the course, the officers attend *ground school* to learn the inside of the H-21 and to study proper maintenance techniques.

Seven of the graduates are asgd to the 580th Hcptr Company at Ft. Bragg and since their return to the 580th they have taken part in several missions, including demonstrations for Armed Forces Day and for President Sukarno of Indonesia who recently visited the Post. The 7 include: Lt. Daniel P. Rosenson; CWO William R. Kirkpatrick; and WO's Hubert L. Crowe, Reeves A. Holder, Gene O. Wallace, Rex C. Flohr, and Joseph M. Reynolds. YC, (WO) Donald R. Joyce. ◄◄

Overlooked

STOCKTON, CALIF.—Let it hereby be known by all Army Aviators that *besides* the 30th Topo Group there is a little known outfit here at Stockton, California airfield. It is the 6th ATA (Army Transportation Activities). Our CO is Capt. Forrest Harris; Exec-Capt. Harlan Lucas; Maint-Capt. Walter D. Yenne, and yours truly as Asst Maint. We are kept darn busy trying our best to keep Field Maintenance up in the Sixth Army Area. I expect to give the magazine installation a visit in August when I attend the Sikorsky H-19 Maintenance School so you're forewarned. (*Ed. Labelling & bundling occur during the 5th-9th of each month and they who visit during this period, bun-*

dle. YOU are forewarned!) If any of our old buddies are out West for a visit, drop in for a visit at Stockton Field. Our Airfield Cafeteria has a ramp side dining patio. (Capt.) Edward J. Sumek ◄◄

Seats? Hard!

FT. BRAGG, N. C.—The longest cross-country flight in the history of the 580th Hcptr Co. was completed recently by two Warrant Officer pilots who flew a Vertol H-21 helicopter 3100 air-miles from Edwards AFB, Calif. to Fort Bragg, N. C.

WO Rex C. Flohr and CWO Robert H. Holt, along with their crew-chief, SFC William C. Dalton, made the coast to coast crossing in 33 flying hours, soaring over most of the Southern states, stopping only for fuel and rest. No flying was done at night due to regulations, so the crew had the chance to stop at several airports and motels along the route and were able to *"show-off"* the H-21 helicopter, the pride of Army aviation.

After flying over the Rocky Mountains, at times 8000 ft. high, the helicopter pilots began to encounter some adverse weather conditions. The wind velocity increased steadily and when they neared Fort Worth, Texas, the visibility became so poor that it was necessary to land the helicopter and wait for better weather.

The pilots decided to make use of the heli-port and facilities at the famous Western Hills Motel outside Fort Worth. To the amazement of the guests at the motel, the giant helicopter gently landed at the heli-port and the crew was welcomed by the management and received VIP treatment during their stay.

Arriving at Fort Bragg a few days later, CWO Holt and WO Flohr had many interesting tales to tell regarding the different types of flying conditions encountered on this exciting flight. YC, WO Donald R. Joyce ◄◄

C & GSC Aviation Support

FT. RILEY, KAN.—The 1st Inf Div Avn Section recently completed its support of the Command and General Staff School exercises at Ft. Leavenworth, Kan. For the operation which involved an Infantry and Armored Division in the attack, the 1st sent eleven aircraft (3 helicopters & 8 L-19s) and an equivalent number of pilots. The training served a two-fold purpose; the pilot receiving additional experience in observation, navigation, and simulated combat flight while the observer was given an ample opportunity to study critical terrain from the air.

1st Inf Aviation personnel participating were Capts. Wilford A. Baugh, Donald L. Hendershot, Austin K. Veatch, and John O. Cunningham; and Lts. Daniel A. Lenz, John E. Armstrong, Donald M. Campbell, Darrell E. Keele, Williams J. Lumpkins, Jr., John H. Richardson, Adalbert E. Toepel, Jr., and John T. Ralph. Personals: Lts. Roderick Dunfield and Dwight McSpadden left for Camp McCoy, Wis., where they will help support the USAR-NG aviation training program at summer camp. They'll be joined by Lts. Al Smith and James Terrell prior to the start of the civilian component training . . . Lts. Chesley Maddox, Jorge Sotomayor, Harorld McGregor, and Edward Shaw headed southwest to Huachuca where they will take on safety pilots' duties for the next 4 months in testing navigational aids now being developed for Army aircraft . . . Lts. Billy Branom & Ronald Jones went TDY in support of ROTC training at Ft. Riley this summer . . . Our observer course, involving 20 flying hours and extensive ground school work, was completed in late May with fine results. The course was conducted under the direction of Capt. James Watson, tngO of the 1st. YC, Lt. William J. Lumpkins, Jr. ◄◄

Submit Copy on the 1st of any Month for Publication in Next Issue

It's Been Said

● Digested report from *As I See It*, WGAY, 10 June, by Maj. Gen. George Horkan, Ret: "Army and AF are fighting hard to retain their positions in tactics, arganization, and mission . . . AF Public Relations Manual states AF must continue to be mightiest AF in world. To that we all say amen. We all admit AF is important but in its place and that place is as a working member of the Def team. What seems to frighten AF is future use of guided missiles . . . Since missiles will replace some manned aircraft what kind of aircraft will they replace? Should we not speed up production of the missiles and taper off on the aircraft? Publication of *"A Decade of Security Through Global Airpower"* by AF really started the fussing and feuding. Army has now come out with Army aviation fact sheet. It is a temperate document that sets forh Army's need for organic aviaion. AF stated air arm specializes in all kinds of area wpns for its assigned mission. If they insist on that they should not object to Army having organic aviation to carry out its assigned mission. Importance of Army's case is emphasized by fact Navy has its own aviation."

● Digested from report in *Chicago Tribune*, 11 June, by Lloyd Norman: "Army will take the brunt of a possible 610,000 man slash . . . as result of the technological displacement of foot soldiers . . . top def official said today . . . Mil chiefs in their planning for the '60s anticipate inevitable scaling down of mil forces. Most of the cuts will have to come from the Army which has not yet adapted itself to new wpns on any large scale, def offl said. Army operating costs, he said, in relation to its firepower & weapons are excessive. Estimated Army would be cut 100,000 by '58 from present strength of 1,050,000 men . . . He said some mil leaders have made 'fantastic' proposals that could bankrupt the nation in a few years. Cited an Army proposal to make all its divisions air transportable. Said the capital investment in acrft to lift 10 divs would be 40 billion & annual maint & opn of acrft would total 4 billion. He suggested it would be cheaper to maintain wpns and equipment for some divs in arsenals located strategically around the world and thus avoid air shipment . . ."

Photos at Right

Top

100%. Unit—The 9251st Trans Arctic Gp Avn Det—STANDING (L to R): Lt G. O. Carver, WO W. D. Austin, Bell Tech Rep John Barnard, Capt H. A. Winter, & Lt. C. M. Priem. KNEELING: WO C. J. Roberts, De Havilland Tech Rep Charley Mann, CWO W. H. Holloman, III, & WO P. E. Miller. Missing: CWO W. E. Oxford, WO W. L. Novick, & Sikorsky Tech Rep Wally Monnett.

Center Left

Aviation Writers obtaining a close view of the Hiller Flying Platform during their visit to the Hiller Palo Alto plant.

Center Right

Why hover when you can park and enjoy the view? Saves gas.

Bottom Left

Beechcraft's Model 73 Jet Mentor in a striking view.

Bottom Right

Brig. Gen. Carl I. Hutton, Stanley Hiller, and Col. Wayne E. Downing (r.) at the AWA tour of the Hiller facility. (Gen. Hutton's speech at this assembly is found on Page 2.)

CREDITS

2. Uuderwood & Underwood; 4. US Army; 10. US Army, Ryan Aeronautical Co. (r.); 13-14: US Army; 15. Capt. Paul F. Hopkins; 17. De Havilland Aircraft of Canada, Ltd. 22. Esso Corporation; 24. US Army; 28-29. Mr. Philip Joy, Philip S. Boone & Assoc.; 31. Top left, USAF; top right, center left, center right, & bottom right, Hiller Helicopters; bottom left, Beech Aircraft Corp.


KELLER


N348

Round Table

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

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?

BERNARD M. ZEPPENFELD

Major
Army Aviation Officer
Headquarters, First Army
Governors Island, N. Y.

The greater percentage of fatalities in aircraft, as well as autos, is to the forward occupants. Increased distances between the point of impact and the individual increases the chances of survival. To eliminate some of the hazards caused by sudden stoppage, a shoulder harness is provided the occupants of the front seats. Passengers in the rear are protected by the safety belt and the movable objects in their front. Additional precautions, such as utilizing the arms and legs to take up some of the shock, can also be taken by the passengers.

ROBERT R. WILLIAMS

Colonel
President
Board Nr 6, CONARC
Fort Rucker, Alabama

"The pilots ride the death seats. Their seats are well forward taking maximum shock in case of a crash and the crewmen's hands are occupied manipulating the controls preventing the use of their arms to protect their heads. The passenger seats are far enough back so that the structure of the aircraft will absorb some of the shock in a crash. A passenger in the rear seat with his safety belt tightly fastened has a better chance of surviving a crash than a pilot in his seat with shoulder harness fastened."

DEAN R. PAQUETTE

First Lieutenant
Post Aviation Officer
Fort Leonard Wood, Mo.

"I would explain to my passenger that in those circumstances where the shoulder harness is needed, the pilot must have some device that will enable him to keep his hands on the controls until the aircraft has come to a full and complete stop. This requirement is not true for the passengers in the rear seats of an L-20. They have no other responsibility than to place their hands on the seats in front of them, lean down and forward, and then hold on for dear life."

CHARLES P. DAMON

Lieutenant Colonel
Director
Dept. of Academics
ARMAV, Fort Rucker, Ala.

"The shoulder harness has been designed primarily to prevent the body from being thrown forward into some part of the aircraft structure, such as, the instrument panel, in an aircraft accident. This danger exists for passengers in the rear seats also but to a lesser degree; therefore, when a crash is inevitable, passengers should take steps to insure that their seat belts are fastened securely, lean forward and down, and protect their faces with their arms."

RUSSELL BANNOCK

Director of Military Sales
De Havilland Aircraft of Canada, Ltd.
Toronto, Canada

"Shoulder harness is usually only provided on aircraft seats located immediately behind obstructions which may cause injury or damage to the occupant of that seat should he be pitched forward during a takeoff or landing accident. This rule applies to the L-20 where shoulder harness is only provided on the two front seats. There is no more reason for providing shoulder harness on the passenger seats (of the L-20) than on any other commercial airliner."

AINSLIE, R. E., Lt., Army Primary Flight Training Course, Class No. 56, San Marcos, Texas.
ALLGOOD, CHARLES N., Capt., 15th Signal Battalion Air Section, Fort Huachuca, Arizona.
ANDERSON, ROBERT D., CWO, 4th Transportation Company, (Lt Hcptr) (H-34), Fort Benning, Georgia.
ALMQUIST, ALLEN F., JR., Capt. Headquarters, U.S. Army Training Center, Fort Chaffee, Arkansas.
AVANT, OSA J., Lt., Box 113, Forest, Mississippi.
BAKER, ELVIN G., Lt., Headquarters, VII Corps Artillery, APO 107, New York, New York.
BAKER, NED B., Maj. 22 Esquiline Drive, Columbus. Georgia.
BALWIERCZAK, RAYMOND C., Lt., 42nd Transportation Company, (AAM), APO 46, New York, New York.
FLEMING, E. P., JR., Lt Col, 4th Armored Division, Fort Hood, Texas.
FLINT, ROBERT W., Lt., 521st Engineer Company (Topo Avn), Stockton Field Annex, Lathrop, California.
FORCE, SAMUEL F., Pfc, 25th Transportation Army Aircraft Maint Company, Fort Bragg, North Carolina.
FOUB, MICKEY E., Lt., 13th Transportation Company (Helicopter), APO 358, San Francisco, California.
FRALICK, LAWRENCE R., Lt., 514 South Calhoun, Junction City, Kansas.
FRANDSEN, DONALD P., Capt., AFF Hcptr Trans Flt Crs (102102), Edward Gary AFB, San Marcos, Texas.
FREEMAN, ED W., Lt., 521st Engineer Company (Topo Avn), Sharpe General Depot, Lathrop, Cal.

The Month's Takeoffs!

BATES, ROBERT E., MRS., c/o Lt Col R. E. Bates, Stu Det AMSS BAMC, Crs 8-0-3, Cl No. 1, Ft Sam Houston.
BEDDINGFIELD, WALTER L., Capt., Decatur Signal Depot (9521), Decatur, Illinois.
BISHOP, DONALD H., SR., MR & MRS, 1240 Lorella Avenue, La Habra, California.
BLYSTONE, WILLIAM P., WO, 1st Combat Aviation Company, 1st Armored Division, Fort Polk, La.
BROWN, HAROLD F., CWO, 3126 Martha Custis Drive, Alexandria, Virginia.
BRAKE, WILLIAM P., Capt., Hunting Towers, Apt 431, Alexandria, Virginia.
BROWN, ROBERT L, JR., Maj. Aviation Section, Hq Co, Seventh Army, APO 46, New York, New York.
BUFFINGTON, DALE W., Lt., 6th Transportation Co., (Light Hcptr), APO 43, San Francisco, California.
BURGMAN, HERBERT A., Lt., 9470th TU, Fort Huachuca, Arizona.
BUTLER, DANIEL L., Lt. 319 73rd Street, Warwick, Virginia.
CARTER, ROBERT O., Lt., 3587th Training Squadron, Box 1003, Edward Gary AFB, San Marcos, Texas.
CASE, HAROLD R., JR., Sgt., 11 Eighth Street, Mansfield; Pennsylvania.
CHASE, RICHARD G., M/Sgt, 591st Transportation Army Avn Maint Company, APO 46, New York, N.Y.
CLAINCE, CHARLES L., Capt. 564 Mokena Drive, Miami Springs, Florida (PO Notice; unconfirmed).
COOK, CARROLL M., JR., Capt., 2914 Cherrywood, Dallas 19, Texas.
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By submitting your change of address to this publication you place your "Takeoff" before 4,700 other subscribers. This should facilitate your personal mail somewhat and keep you in close touch with your distant friends—the ones you forgot to tell about your move. If you're not at an APO, we'd appreciate your submitting a residence or quarters address, rather than a unit address.

THE BEAVER AND THE OTTER

(Continued from Page 17)

in the operation of the aircraft—an experience which they decidedly enjoy.

Mr. Knight, President of Taxi Air Group Inc., is a long time exponent of air transportation and airport facilities. He has written a number of articles on the subject for aviation magazines. One of his articles entitled *"Seaplane Bases for the Private Pilot"* appeared in the *Sportsman Pilot*—it was perhaps a portent of the air taxi service he is now establishing.

When Mr. Knight and TAG Vice President, Mr. Egner A. Eklund, decided on the Otter and the Beaver for "TAG" operations it was no *pig-in-the-poke* decision. Both men have impressive flying records. Mr. Knight began flying in 1928. During the war he served in the Pacific Theatre as operations officer, executive officer and commanding officer of Marine Transport Group #15. Mr. Eklund is a major in the United States Marine Corps reserve and has several thousand flying hours in ten different kinds of military and commercial aircraft to his credit. Men with this kind of experience are not likely to miss much in their appraisal of an aircraft.

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.

THE HOME TEAM

(Dear Editor): Enclosed find a $2 check for *our* renewal. (Note *our* is underscored because I read it before my husband, *if* I can get it first.) We both enjoy the magazine—George likes the technical unit information and such, and I like to scan the pages and lists to see if I can find lost friends. Since many AA wives apparently do the same, why couldn't we have a little chit-chat column for the gals?—or better yet, a whole page? Sincerely, Sue Holton, for: CWO George J. Holton, Enterprise, Ala.

(Ed. Since it is the Sues, and Bonitas, and Helens, et al who seem to renew the subscriptions, sign the checks, and most important of all, appear to submit ALL of the change of address notices, we cannot look unkindly upon any editorial submissions from our "silent" readers. We're very pleased, of course, to hear that parts of "ARMY AVIATION" appeal to the home team. Send the material in. There will be a few howls, no doubt, but we've been howled at before, and as you can guess, most of the howling comes from the free-loaders anyway.)

SHORTCUT

(Dear Editor:) I've got a few dollars wagered on the fact that the Army can now deal directly with the Navy, provided that the manufacturing facility is a Navy facility. My buddy says that the paperwork still follows the Army to AF to Navy to Manufacturer routine. Who pays off? *Bliss.*
(Ed. You pick up the marbles. A recent change dropped off one middleman. Where the facility is under the jurisdiction of the AF, it's Army to AF to Manufacturer, or two assists to make one putout.)

OVERSLIGHT

(Dear Editor:) The design for wings (appearing below) to be awarded to flying Enlisted Men on flight status as crew chiefs, line chiefs, etc. was drawn up locally and will shortly be sent through channels to DA, we hope. We'd like you to publish it and ask the readers for comments and suggestions from the field as to its adoption.

My name isn't important to the situation, but I'd like to say that the idea originated in the 580th Trans Co and the 140th Trans Det. It has the approval of the CO's of both units . . . As you know, the Army is the *only* service without wings for its EM crewmembers and men on flight status. Something like this, might help the *esprit* of our maintenance corps. A Fort Bragger.

HELP WANTED

(Dear Editor:) I've got a bet with a one star general that an L-4 fired an artillery mission *on D-Day.* He takes the negative view. Can you help me with any info on this? *Palo Alto.*
(Ed. Unless some D-Day Air Officer comes through with the facts, we're afraid to give you a yes or no on this one. It's been said that the extensive air effort on D-Day kept the L-planes close to home base. Now—who's going to bail the BOTH of us out?)

TRAINING FILM

(Dear Editor:) I've heard that there is a training film available that shows the 30th Topo's aerial survey operations in Alaska this past year, including scenes of their water-bombing of supplies. It this film available for training purposes? *Jack, Ft. Leonard Wood.*

(Ed. A lengthy color film was made by the amateur photographers in the 30th. It is not an official film although it shows everything from an Eskimo blubber party to mosquito-blackened tundra. We suggest you contact the 30th at the Presidio, San Francisco. A future issue of "AA" will carry a water-bombing feature.)

Have a problem, a plug, a gripe? Voice it here!

Contest Standings

It's almost time for the leaders to pick up the marbles! Our 6-month subscription contest ends on August 1st. You may not collar the first and second prizes but there's still time to earn a Jomalite for yourself. Give it a try!

FIRST PRIZE

Total Subscriptions*—A $25.00 U.S. Government Savings Bond

SECOND PRIZE

Total Subscriptions*—A genuine leather traveling kit, complete with all of the accessories ($16.95 value).

MINIMUM PRIZE

An all-chrome, GE sealed beam Jomalite to each contestant who reaches the twelve subscription mark, our low minimum. This utility light plugs into the cigar lighter outlet in your car, boat, or plane and needs no installation. Its 40,000 CP beam of concentrated light gives you light where you want it. Fishtail handle. 12½ foot electric cord so that you can reach any part of your car. Available in 6 or 12 volt models. Shipped postpaid to you. ($9.95 value).

No plastics—No fragile parts—Lasts a lifetime!

Standings

Leading the pack into the last month of the subscription contest is WO C. MacRae Hulett of Fort Eustis with 81 new clobbers. Not far off the pace are Capt. William F. Winters of ARMAV with 71 and WO Donald R. Joyce of Ft. Bragg with 54. Glance at the prizes to your left and you'll see that two of the above three persons will probably drag down the loot.

JOMALITERS

The JOMALITE recipients include Lt. Whitney C. Scully, Riley (30); CWO John E. Murphy, Sill (26); Lt. Billy R. Nunnelee, Rucker (21); Capt. John P. Westphal, Hood (18); M/Sgt Raymond Wilson, Bragg (16); Maj. Russell N. Dragoo, Monmouth (14); Lt. Col. Raymond E. Johnson (14); and Lt. Osa J. Avant, Rucker (13).

ELIGIBLE

Eligible for a JOMALITE with a minimum of blood-letting are: Maj. Lloyd O. Borgen, EUCOM (11); Col. Frank K. MacMahon, USAR (10); Capt. Jowarren B. Shively, Huachuca (10); Capt. John Bergner, C.Z. (9); Lt. Sumner C. Burns, Monmouth (9); Lts. William F. Gurley and Brooks Homan, Stockton (9); Capt. Samuel Tillery, Rucker (8); Maj. Charles V. Graft, Ohio (6); Maj. Herman E. Greer, EUCOM (6); Capt. Eugene P. Valaer, Riley (6); and Lt. Charles N. Allgood (6).

GRIST

If you try to pin down an Army man on the troop carrier mission, the chances are that you'll wind up with a vague, careful answer. But flip back to page 4 and take a peek at the impressive craft on the bottom of the page. Not exactly being scaled to meet the 5,000 lb. limit, we'd say . . . and bear in mind that proposals are costly affairs. Some of the other mockups makes the DOD decision on the weight limit rather pressing.

A commercial firm's representative gave us the *"Did You Hear the Latest?"* routine the other day. His *Did You Hear* pertained to the AF-Army discussions on aircraft. He said—and his utterance could be 2nd hand, 3rd hand, or no hand—that the AF would divest itself of its rotary-wing operations if the Army would relinquish its troop-carrier desires—and you can read anything you want into the word *desires.*

A civilian component reservist (AF) believes there is a good possibility that drill pay will be authorized for NG and USAR flying dates. He claims that 35 extra *drill pay* days will be authorized to cover the additional flying duty performed by Weekend Warriors. To which one Reservist (Army) commented: *"I've been flying weekends for seven years without pay; it's my guess the boys are dropping out like flies. It should help to increase interest."*

No verification on either of the above. About the only thing we can verify is that *we* cannot read our own Page 4 altimeter . . . Our paid circulation has brushed the 4,700 mark for the past few months and we've been setting the gizmo at 4,470 unknowingly . . . It took our non-rated Publisher to call this to our attention. Hope this doesn't mean that we'll have to re-take the Annual . . .

RANDOMS

Our first month of *full-time* operation paid immediate dividends. During the month we had the opportunity to visit the West Coast as a member of the Aviation Writers Association Convention.

Meeting Gen. Hutton was a privilege and we came away from our discussion with this firm thought: The man is 100% Army aviation round the clock—in his conversation, in his thoughts, and in his actions . . . and in this day when Army aviation must be *sold*, it's nice to see a practicing missionary.

Crissy Field at the Presidio reminded us a great deal of our overwater approach to the buildings at Governors Island on this coast. Coordinating through Col. Downing and Maj. Bellieu, we were able to make a flight to nearby Stockton and informally visit the 30th Engineer Group aviation component. Component is a poor word to describe the 30th's aviation arm. They are a unique unit and stand alone.

We expected—and found—an extremely large aviation unit with a wealth of equipment and facilities. A transient gets the distinct impression that the 30th is a going concern; one can't help but detect their keen interest in their jobs, their desire to show you what they have done and what they can do, and their intense unit pride. It's a shame that these things cannot be captured on the fourth and fifth carbons and spread around a bit.

Even managed to log some *P time* . . . Chris Erhardt pointed the *Beaver* east and let us stagger over to Stockton. (*Stagger* is the appropriate word for this rusty Reservist.) He played it cagey though . . . He had Stan Ballantyne in the back deck as an extra pair of eyes.

A 30th pilot, Bill Gurley, gave us our first ride in the H-19, the *Cadillac* as he called it, although until something better comes along, we reserve this appellation for the 4-place Bell *Ranger*.

It was a very pleasant ride, that is, *after* about 20 minutes of in-flight technical talk. *Bill* assumed we were chopper qualified and was really pouring forth with comparative evaluations. Being sociable, we just kept nodding our head in affirmation until he sensed our utter ignorance of rotary wing flight procedure. I believe it was then that the wringing out started.

We were somewhat surprised to find the similarity between the Sixth Army and First Army Aviation Sections: both undermanned and overmissioned . . . and Maj. Gillespie wears the same harassed look that Maj. Zeppenfeld wears here at GI-NY, a look that can only come after many months of servicing an Army Hq's demands with minimum flight personnel.

The trip was interesting in other respects, too. Stanley Hiller, Bryce Wilson, and Ralph Kummer are warm and friendly hosts as many Army aviation transients already know. They want you to know that they are working for *you* and are not ashamed to admit it. Mr. Hiller, in addressing the AWA assemblage at his plant, called a spade a spade and through his speech, considerably enhanced the prestige of Army aviation to the audience, a selling job that should be duplicated by other industry leaders.

There were other things; a Navy jet show; a Globemaster airlift to Castle AFB where we saw the 100 series streak by; the prodigious wind tunnel at Ames; and many other features beyond our sphere and ken, imponderables such as the Ames gas gun and Miss America, an imponderable only because of the distance between our tables.

Who addressed, bundled, and mailed your June issue while we were sunning ourselves out West? You guessed it . . . the Boss. You would have enjoyed hearing the din upon our arrival home. We were trying to legitimize our expense account *at the top of our voice* and she was itemizing her *labor* output a few decibels higher. Looks as if someone takes a raise at the expense of the other's cut. Your editor, Art Kesten.

Offbeats—You made us very *blue* this past month but this shade of blue is most encouraging. We refer to the *blue* change of address cards we inserted in the June, '56 issue. You literally snowed us under as attested by the lengthy *Month's Takeoffs* . . . Fine and dandy . . . Just as long as you keep submitting the change of address cards we know you *want* the magazine; when the cards start to dribble in it's time for the hair-dye and long couch . . . Incidently (and this will saves some people money) if you are located at a military APO or a U.S. Territory you can use these cards *and* the renewal postpaid envelopes *without* affixing postage. Just as soon as we use up our present supply, future postpaid envelopes and cards will have this fact imprinted upon the address label so that your mail orderly will see it in writing . . .

This is our first 40-page job and the 8-page increase in page content is directly attributable to the advertisers listed on Page 4. You can easily guess what their support means to us personally but we did want you to know that *they* are also responsible for the slick paper, the red ink, the 40-pages, in short—the works.

Although we're snowed under each month with public relations releases from many firms, *paid* advertising is hard to come by. Plenty of nibbles but no real bites. Should we land a few in the boat you can anticipate further increases in the size of the publication. The advertising pays off for all—for the advertiser, for us, and for *you*. Nice arrangement.

CINERAMA HOLIDAY
by WO Donald H. Bishop, Jr.
(Continued from Page 19)

Birmingham and a needed rest for the night. The 7th of Feb found us on our way to Atlanta, Ga, with more mountains in between—small ones—and then onto Shaw AFB, S. C. As we left Shaw, we started noticing familiar landmarks for all three of us were with our units when they were stationed at Fort Bragg, the next overnight stop on our agenda. We flew into Simmons AAF at Ft. Bragg, which is named after a former Warrant Officer pilot who was assigned to the 509th. There we met a great many very old friends and spent a very pleasant night.

Homeward bound! The last lap of our journey started off well as we headed for Richmond, our next gas stop, and then home. We ran into some low lying haze but because of the qualities of the helicopter, it was very easy to fly under it and on into Richmond, Va. airport. From there on, it was smooth sailing and easy flying and we had all flown this same route before. Before we knew it, Davison Army Air Field was in sight and a pretty sight it was. Although it was a good trip, we were all glad to be back. Eight flying hours out to the west coast and *eight flying days back*. But when you consider that the helicopter is designed for short haul transportation and has a range of about 300 miles together with the fact that it uses a gasoline which very few airports stock (100/-30 octane), I think we had a good trip and a *fine* experience. WO Donald H. Bishop Jr.

PROJECT REPORTS
(Continued from Page 12)

dicated, further penetration tests will be conducted utilizing piloted fixed and rotary wing Army acrft. Testing will be conducted at Eglin AFB, Fla. Draft plan mailed for comment on 16 May. Preliminary discussions of *the test program* have been held at Eglin.

BRITISH CENTRAL COLLECTIVE PITCH CONTROL —New project to determine the feasibility of a single, central collective pitch control in Army hcptrs. The British design CCPC was originally scheduled to be installed on an H-23C hcptr for evaluation tests. The very limited space between the pilot's seat and the co-pilot's seat made this impractical. The British CCPC is presently being installed in an H-13G hcptr following considerable modification to adapt the CCPC to the H-13 pitch and throttle control systems. Actual testing is expected to begin about 1 Jun.

IN THE CARDS
(Continued from Page 10)

plane will be a true VTOL aircraft designed to take off and land with no ground run. It will hover, make full transition from vertical to horizontal flight and fly forward, backward and sideways.

The new deflected slipstream aircraft will embody a conventional configuration with the exception that the wing incorporates large flaps located in such a way that the propeller slipstream can be deflected 90 degrees downward during takeoff, hovering and landing. For transition into horizontal flight, the flaps will retract as the plane picks up forward speed and the slipstream then will flow horizontally.

"AVIATION IS THE ANSWER"
by Brig. Gen. Carl I. Hutton
(Continued from Page 2)

who devote their entire careers to aviation matters.

In the longer view, however, just as we are arguing that the Air Force has no monopoly on flying machines just because they fly, it is also obvious that an Aviation Branch in the Army should have no monopoly on flying machines for any similar reason. In other words, the ideal toward which I believe we should move is maximum capitalization within Army units themselves upon the characteristics, capabilities and utility of flying machines in general. There is no need for the soldier to walk at a mile and a half an hour across country if there is a requirement for faster movement over greater distances.

I find, incidentally, that this concept is more readily accepted among civilians in and out of the aircraft industry than it is within the military services, or especially within the Army and the Air Force. The services tend to have loyalties and traditions which prevent their thinking clearly on the subject. On the other hand, within the aircraft industry I find that increasingly the people at the drawing boards are coming up with new designs and new combinations which indicate that they are clearly ahead of the military in this sort of thinking.

I am going to turn now to the future of aviation within the Army. In doing this I am giving you only my own opinion, based in a large part upon my own analysis and research. There is a feeling among air power enthusiasts that air power has completely revolutionized warfare.

I have come to feel that air power itself is not the primary revolutionary motive factor, but that industrialization and technology are the bases of the revolution and that air power in itself in its present sense is simply one step in the industrialization

(Continued on the Next Page)

process. The next steps may be inter-continental ballistic missiles, and then space ships, controlled satellites, or whatever your imaginations can contrive. Thinking of the problem in these terms helps keep our perspective, and to realize that the technological process is not stagnant.

Industrialization had begun to revolutionize warfare before airplanes had reached a stage of development sufficiently advanced to make their influence felt. In other words, machine guns and rapid fire artillery made movement impossible on the battlefields of Europe in World War I. It was only when industrialization was brought to bear upon the requirement for mobility in World War I, and of course I am referring to the development of tanks, that a method was found to overcome the firepower of machine guns and rapid fire artillery.

In the Army our tactical concepts are based upon a combination of firepower and movement. We use firepower to neutralize a target, and movement to capture the target. If we do not move to capture the target, then the need for firepower goes on and on.

A perfect example of this was the stalemated front in Korea. There movement was prohibited by governmental policy and the targets across the way were neutralized again and again and again. The movement element of warfare exploits firepower and furnishes a means for ending the need for firepower. In other words, naked firepower can only be exploited by more firepower.

It seems to me that the Army must be organized, trained and equipped to work in joint strategy with the Navy and the Air Force. We must be able to exploit the effects of the firepower which they put down. We cannot do this with soldiers moving a mile and a half an hour across country and we have long since found that while we can build vehicles to move on the ground at any speed we want, the limitation is the terrain itself. It is a sort of sound barrier which we cannot cross as long as we remain upon the surface of the earth.

The only vehicle I know of which can cope with jungles, swamps, rice paddies, mountains and rivers, is the flying machine. If we are going to exploit the firepower successes of all services, we must have a degree of mobility multiplied several hundred times over that which we have now.

In airborne-air transported operations, of course, we do give the soldier this increased mobility during the time when he is being moved into battle. However, at the crucial moment when he closes with the enemy, we put him on the ground where he moves at his traditional pace. Therefore, giving the soldier greatly increased mobility means extending in time the period during which he can move faster. The difference here is parallel to the infantry soldier who rides to battle in a truck and dismounts and fights on foot, and the soldier who rides to battle in a tank and then remains in the tank to do his fighting.

A former Secretary of the Air Force remarked that the only way to protect the United States from atomic attack was to prevent the launching of the missiles from the launching sites. I believe this is true, since I was a member of the force in France which occupied the sites from which London and Antwerp were being bombed by V weapons. When we occupied the sites, bombardment ceased. The only logical deduction from this is that some force must occupy the launching sites in order to protect ourselves and our allies.

It is characteristic of air power that it acts through firepower alone. In a recent article on air power in TIME magazine it pointed out that present day aircraft travel faster than 16 inch shells. This emphasizes the definition of air power as firepower. The same technology which has brought firepower to such a high state of development must also be used to increase the rate of movement in order to give us the capability of exploiting the firepower and thereby protecting our country.

It is possible to reach this same conclusion from another direction. Recently Russia announced that it is reducing its army by a million, two hundred thousand men. Since this announcement, articles have begun to appear in the press indicating that the pressures are already building up to force us and our allies to make corresponding reductions. Presumably our global commitments remain the same.

Thus, if our forces are to be reduced without reducing the commitments, we must multiply the efficiency of our forces in being. In other words, one soldier must be made to do the work of several, and one vehicle must be able to take the place of three or four. As I said before, we have already fairly well come up against the terrain barrier in increasing the capability of our vehicle. The only thing remaining is to provide the Army with vehicles which can move independently of the terrain.

We can arrive at the same conclusion by approaching from still another direction. We consider our strong point to be technology, while we acknowledge the enemy's strong point is manpower. In the earlier stages of the Korean conflict we saw many cases when a squad or platoon of American soldiers was called upon to sacrifice itself while defending against as much as a hundred times its number. The courage and the heroism which they displayed in this defense are certainly very heartwarming, but the real meaning of this is that we are meeting the enemy upon ground where he is strongest, that is manpower against manpower.

If our technology is to be exploited and

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in order to fight upon our own ground, then we must find a way to provide the soldier with weapons and transportation. There again we come up against the barrier that the terrain is the limiting factor in making any big technological advance.

As you know, the Sky-Cavalry concept was tried in Exercise Sagebrush. I am sure that it was not an unqualified success, but it was enough of a success to show that the development shoud be pursued farther and that instead of attempting to make existing types of helicopters and aircraft do a job for which they were not designed, there is very probably a requirement for special flying machines for this purpose. It is very logical to suppose that Sky-Cavalry, Sky-Infantry and Sky-Artillery are in the books for Army Aviation.

Therefore it seems to me that no matter how you approach the military problem as it exists today, you come up with the same answer. The Army must do something to increase its mobility and the only direction in development left is up off the ground. This may result in a new type of warfare, or it may actually return us to the practices which existed in the days when Jeb Stuart and his cavalry had superior mobility over anything else upon the battlefield. In any event movement is the problem and, in my opinion, *aviation* is the answer.

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