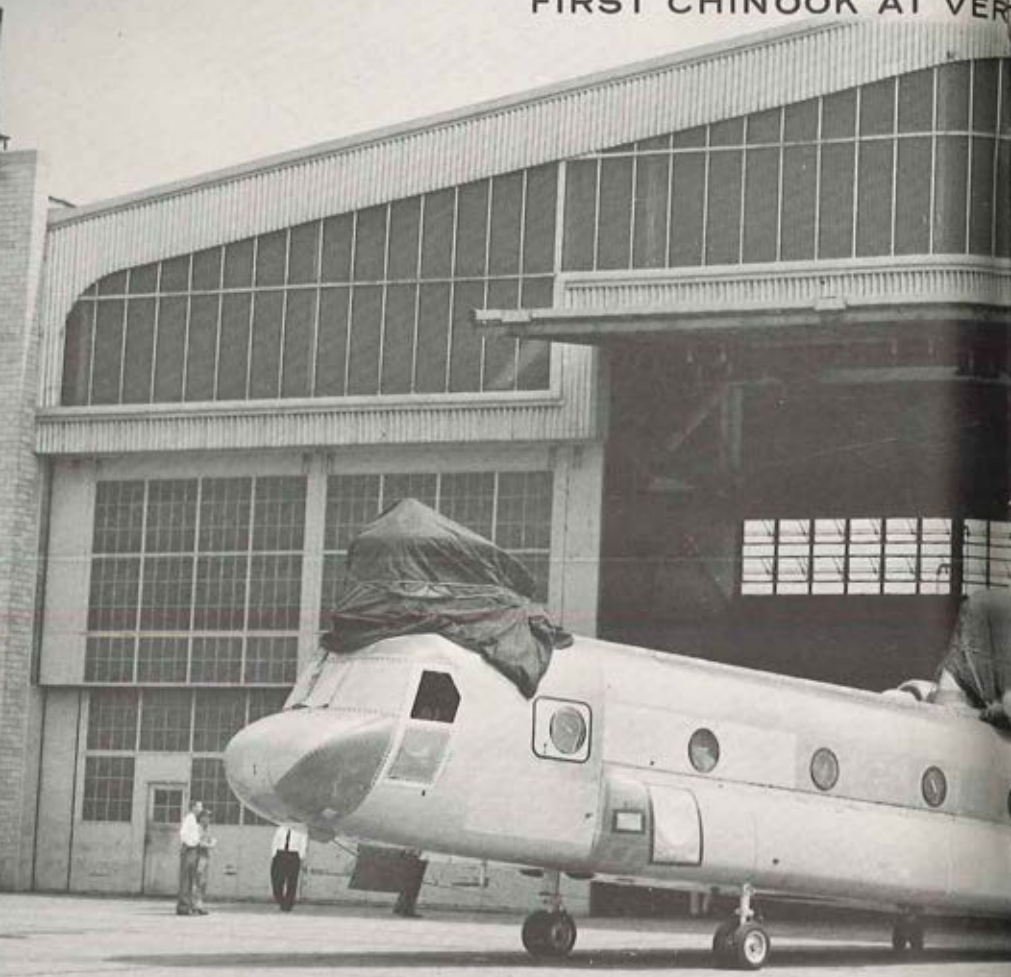
ARMY AVIATION

MAY, 1961

Chinook PROGRESS

FIRST CHINOOK AT VER



On 28 April 1961, fabrication of the first of the U. S. Army's new YHC-1B Chinook helicopters was completed at the Boeing-Vertol Plant, Morton, Pennsylvania. The aircraft was towed to the Vertol Division flight test facility at the Philadelphia International Airport where it is being readied for the start of the ground testing program.

SUMMARY

May, 1961

VERTOL DIVISION
MORTON PENNSYLVANIA
BOEING

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

Turbine-powered Sioux, 1954

T-53 turbine-powered XH-40, 1956

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

TURBINE-POWER DEVELOPMENT. . IN CONTRACT PERFORMANCE. .

Iroquois deliveries on schedule

USA-1960-204B . . no major ground support required

IN GLOBAL FLIGHT RELIABILITY. . IN WORLD FLIGHT RECORDS

Record-setting pilots

4-Place 47J on speed run

MISSION ACCOMPLISHED BELL

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

BELL HELICOPTER COMPANY FORT WORTH, TEXAS

A DIVISION OF BELL AEROSPACE CORPORATION

A textron COMPANY

BIRTHDAY MESSAGE

On behalf of all the men and women of the United States Army, I extend congratulations and best wishes on the occasion of the nineteenth anniversary of Army aviation.

The application of aircraft to military operations is a direct result of the Army's early pioneering efforts in the development of military aviation. The versatility of Army aviation has always been sustained by the vision and skill of Army pilots and the efficiency of the ground crewmen who keep them flying. These valuable qualities have contributed immeasurably to the successful accomplishment of the Army's missions in peace and war.

Now, integrated in virtually all of the Army's arms and services, Army aviation's ability to help units to move fast, to shoot straight, and to communicate dependably has greatly increased our fighting potential. The capability of Army aircraft to support the soldier on the battlefield of tomorrow will be vital.

It is a pleasure to join all members of the United States Army in expressing pride in the many accomplishments of Army aviation and confidence in its ability to perform increasingly important functions in the future.

G. H. DECKER
General, United States Army
Chief of Staff

Department of the Army announces winners of industry-wide competition

BELL, HILLER DESIGNS WIN LOH COMPETITION

Secretary of the Army Elvis J. Stahr, Jr., announced on May 19, 1961 the selection of the *Bell Helicopter Corp.*, Ft. Worth, Tex., and the *Hiller Aircraft Corp.*, Palo Alto, Calif., as the winners of the Army's Light Observation Helicopter (LOH) design competition participated in by twelve competing aircraft industries.

Secretary Stahr said that the design proposals submitted by the two winning firms were considered most suitable for meeting modern Army reconnaissance and mobility requirements. He added that the competitive spirit of the program will be continued, culminating at the U.S. Army Aviation Board at Fort Rucker, Ala., where the two prototypes will be evaluated through an extensive user test program.

The new LOH will be a lightweight, 4-place helicopter powered by a 250 hp gas turbine engine. Capable of carrying a 400 lb. payload, in addition to the pilot and fuel, the LOH will have a speed of 110 knots. Authorities expect the LOH to be as fast as an L-19 airplane, and faster than current H-13 and H-23 helicopters, while featuring simplicity in maintenance and operation.

The current inventory of the L-19 *Bird Dog*, the H-13 *Sioux*, and the H-23 *Raven*, which presently carry out the Army's missions of visual observation, target acquisition, reconnaissance, and command control, eventually will be replaced by the new LOH. The Army also indicated that the competition's termination will in no way lessen its aggressive R & D program to develop smaller, lighter, and more reliable helicopters and helicopter components.

Current planning envisions the winners of the competition producing models for evaluation with the objective of selecting one model of the two for ultimate production. Six test models of each manufacturer are expected to be ready for user service test in approximately 2-2½ years, with production commencing in 1965.

The decision to pursue the LOH may not appear to be an improvement on the surface, but the significance of the step is quite broad. The one LOH will replace three current models in the system; performance will not be sacrificed since the LOH, in the same size category, will do twice as much as the machines it replaces, i.e., it will carry twice the weight, and go 80% faster. The latter capability eliminates the speed advantage the L-19 had over the helicopter in a tactical mission, bringing to the same mission the VTOL employment advantages not possessed by the fixed-wing aircraft.

Continued on Page 292

Now, Fly Your Plane Anywhere . . .
Face Any Navigating Problem with Confidence

with the NEW ***Starflite I***

ARC CD-4

COURSE DIRECTOR

Steering Data from Four Methods of Navigation, Presented on ONE Indicator

For the advantages and specifications of the complete CD-4 System, see your ARC Dealer, or write for free brochure.

The ease with which ARC's CD-4 Course Director adapts itself to every area of operation adds a new dimension to your flying technique.

SELECT MODE, SET TRACK, CENTER NEEDLE

With the CD-4, you simply select the mode of operation . . . VOR, ILS, ADF, or Magnetic Heading . . . set in the desired track information, and steer the plane to center the vertical needle. Instantaneous steering information is then computed and continuously displayed on one indicator. All enroute flying, holding, and terminal approach procedures are identical.

NO MENTAL GYMNASTICS

Exacting mental calculations are no longer required. The CD-4 does it for you! It tells you how to intercept and maintain the desired course. Recalculation of headings to compensate for wind is not necessary. Your only requirement is to keep the needle on the cross pointer indicator centered.

And . . . the total added weight to the aircraft is only 8.5 pounds.

Engineered to the highest standards, ARC's CD-4 Course Director assures typical ARC reliability.

Aircraft Radio Corporation

BOONTON, NEW JERSEY

RESEARCH, DESIGN, DEVELOPMENT AND PRODUCTION OF ELECTRONIC EQUIPMENT SINCE 1928

9?

NO...FOURTEEN LIVES! The average "life" of a Ryan Firebee jet target is 14 full flight missions.* This means that one Firebee can do the work of 14 single-flight expendable drones. And, with a flight duration of up to 1 hour and 43 minutes **(Firebees have flown 1 hour and 17 minutes above 50,000 feet),** Firebees are "on range" long enough to serve an entire squadron of supersonic interceptors or several surface-to-air missile batteries. After missile firings are scored electronically, Firebees parachute to land or sea where they are recovered for use again and again. **Individual Firebees have flown up to 25 missions.** No other target compares with the recoverable Ryan Firebee for high-speed, high-altitude **reliability** and **low cost** per target mission. Newest of the Ryan Firebee family is the **transonic Q-2C,** now in volume production for the Air Force and Navy. Air or ground launched, Ryan Firebees keep more service teams combat ready than all other jet targets combined. And, reflecting Ryan's decade of design and operational experience in the jet target field, improved Firebees will continue to test the mettle of men and missiles well into the Age of Space.

**Based on Q-2C operations at Air Force Missile Development Center*

RYAN AERONAUTICAL COMPANY

SAN DIEGO • CALIFORNIA

Ryan Offers Challenging Opportunities to Engineers

THE IMPORTANCE OF THE . . .

ARMY-INDUSTRY TEAM

by
BRIG. GEN.
CLIFTON F.
VON KANN
Director of
Army Aviation,
ODCSOPS

Dear Army Aviator,

During a recent meeting of the *Institute of Aerospace Science* I was asked to summarize the important aspects of the *AUSA-Army Aviation* Symposium at Fort Rucker. For those of you who were unable to attend either of these sessions, I think it might be worthwhile to pass on essentially the same summary.

I do not intend to try to give you an hour-by-hour synopsis of this important event, even if the space were available. But there was one overriding feeling that I had from the symposium. This was the intangible playback I received from almost all of the industry representatives which said in substance, *"These fellows are really getting serious about Army aviation."*

We *are* serious. We believe aviation offers tremendous possibilities in mobility—vital capabilities in surveillance; we are still learning; and there is still much to be done. But I am convinced that the Army has reached a point in time where aviation is being recognized as an essential element of every future organization and of every future maneuver.

I think also that the Army is beginning to shed some of its former inhibitions that stemmed from the complexities and other problems that are inherent in operating a large fleet of aircraft. Remember, it was not too long ago that Army aviation was told that the L-5 was far too large an airplane for the Army to operate because it had over a hundred horsepower. The L-5 was further complicated by actually having flaps. We were told that such an aircraft in this category was obviously "too hot to handle"—far beyond the capability of the Army pilot.

Now I have said many times that the Army aviator has the capability of operating any machine in any category. But the fact is, the Army does not *want* or *need* any airplane that does not directly contribute to the Army's mission.

The second playback I had from the aviation symposium was the fact that Army

aviation and industry seem to be getting on the same communication channel. Industry in the past has been trying to tune in on the Army frequency but has complained that the signal is often distorted and the reception weak. With this lack of communication, industry had had a hard time determining where Army aviation was going and where industry could help the Army reach its goals.

Towards a Clearer Picture

Since the Rogers Board, and through the symposium, we hope that the picture has become somewhat clearer, more distinct, and that the sound is strong—even though there occasionally remains a bit of "snow." It would be impossible to overemphasize the importance of the Army-industry team talking the same language with the same meanings.

I would like to quote from the remarks General Eddleman made at the symposium: ". . . *I would like to stress that time is not on our side. The purpose of this meeting is to indicate our future goals; but, we must return to our jobs with a strong sense of urgency to meet those goals. R&D must be translated into operational equipment placed in the hands of troops, trained to use that equipment. This is the transition necessary before this country's technical competence becomes combat power. Victory—no matter where or what the challenge—is achieved when the capabilities of American industry are teamed with the boldness of the unit commander.*"

I do not need to tell you how desperately the aviator in the field waits for some of the progress that we mentioned in these meetings to be translated into hardware that he can get his hands on. He is doing a splendid job with the obsolescing hardware that he has, but he knows that much more can be done for his unit, for his organization, and for his personnel with our next generation of aircraft.

He reads the reports of meetings such as this and his reaction is, "*Fine, but when can I expect to see it?*" He is most discouraged when years go by full of promises but no results. We have a responsibility to this man to provide him with the best equipment possible as soon as possible.

I was very gratified by the impression of enthusiasm expressed by our industry friends at Fort Rucker. It seems to me that many of them believe as strongly, perhaps even more strongly, in the future of the Army aviation program as the Army aviators themselves. This confidence is vital to the future of our program.

Remember there are still many people who do not know that Army aviation exists and, if they did, couldn't care less. To many our program is a remnant of the old Army Air Corps that somehow got lost in the 1947 shuffle. To many cynics it is a new effort of the Army to move into the roles and missions of the tactical air command, for these people see the Services in a continual struggle where the Army wants its own air force, the Air Force wants its own soldiers, and where the Navy can sit back and smile because it already has its own army and air force. This image of inter-Service rivalry is detrimental to the entire military establishment, and we must be certain that we do nothing to add credence to it.

Armed 'Copters No Panacea

There is one impression that inadvertently might have been created at Fort Rucker that I would like to dispel. In our enthusiasm for the armed helicopter concept, we may have left some of you with the idea that Army aviation believes that a helicopter armed with machine guns, rockets, or missiles is a panacea for every combat requirement of the future—that the armed helicopter, by itself, can do all the jobs of the missiles, tanks, and close air support aircraft without any reference to the rest of the ground battle.

Now we strongly believe that the armed

THE FIRST OF 28 YHC-1B ARMY CHINOOK HELICOPTERS IS SHOWN BEING ROLLED FROM THE BOEING COMPANY'S VERTOL DIVISION PLANT IN MORTON, PA. IMMEDIATELY AFTER THE APRIL 28TH ROLL-OUT, THE FIRST PRODUCTION CHINOOK WAS TOWED TO THE VERTOL DIVISION FLIGHT CENTER AT PHILADELPHIA INTERNATIONAL AIRPORT WHERE IT WILL UNDERGO TESTING.

helicopter will fill a vital role in future warfare, especially as part of the air cavalry troop, but we do not believe it will be all things to all people. It is *not* going to replace any close support aircraft. We do not believe it is the ultimate weapons platform for every mission. We do not picture the future battlefield as a series of helicopter "dog fights."

These negative statements may sound strange coming from a man who has spent the last two years trying to build up a feeling of urgency on the armed helicopter requirement, but the fact is—this valid requirement can be seriously jeopardized by putting the machine in a false, even ridiculous role. The armed helicopter is part of a *team* concept and offers tremendous advantages when used with the proper tactics and techniques. It will require detailed planning and intensive training to properly employ this weapon system and, of course, we envision this employment integrated into our air-to-ground missiles system and the close air support system.

The environment and degree of sophistication of the enemy's defenses will largely determine how freely such a unit as air cavalry can operate. The vulnerability of the armed helicopter will be at a minimum if it is properly employed—the vulnerability would be excessive if it blundered blind-


CHANCE VOUGHT "ADAM"

THREE STRONG RECORDS COMBINED FOR

RYAN X-13 VERTIJET
AND VZ-3RY VERTIPLANE


HILLER X-18

VTOL

Chance Vought, Hiller and Ryan—three key names in the advancement of vertical flight—have joined forces to design a new Tri-Service, VTOL transport aircraft for the Department of Defense.

These companies already have devoted millions of engineering man-hours to solving the design and test problems that will be vital in the development of the new transport. The complementing strengths and balance of the three-company team can be counted on to meet the challenge in the development of an operational VTOL prototype for the Army, Navy and Air Force.

Chance Vought's Aeronautics Division—a veteran systems manager with an outstanding record in design innovation, weight control and responsive field service—has developed VTOL background in a high-speed turbofan concept known as ADAM. Hiller, producer of light utility helicopters, pioneered the tilt-wing VTOL concept and developed the Air Force X-18, world's largest V/STOL aircraft. Ryan's Aerospace Division designed and built the X-13 Vertijet—World's first jet VTOL—and pioneered the Ryan VZ-3RY deflected slipstream Vertiplane.

Here, then, is an available "first team" with advanced experience and demonstrated accomplishment in the whole spectrum of VTOL—three strong records combined under the prime management of Chance Vought to provide the capability and experience required to put the new VTOL Tri-Service transport aircraft in the air by mid-1963.

CHANCE VOUGHT

HILLER AIRCRAFT CORP.

RYAN AEROSPACE

ly into heavily defended areas. Remember, among the most important areas of employment will be the *flanks and the rear* of the supported force—areas either controlled by us or controlled by no one.

Therefore, I want to leave you with a picture of the armed helicopter in proper focus. It is a versatile, useful system that has unique capabilities—one that is useful in any imaginable conflict, but especially useful in those unconventional guerrilla activities where speed of reaction to a fleeting enemy is of primary importance. If the concept is to be turned into useful hardware, it must grow in the context of realistic tactics and methods of employment.

We have always said that no one has any business on the battlefield unless he is ready and able to fight. This applies to the helicopter pilot as well as the infantryman. However, I would much prefer you to compare our air cavalry to the troops of Jeb Stuart than to those involved in the "Charge of the Light Brigade!"

Proper Focus Essential

All of you recognize that we have a long way to go before Army aviation is put in its proper focus in the minds of the general public. This is why throughout the symposium we hammered at the fact that we must constantly picture our program in its relation to the combat soldier and the small unit commander.

This is why the Secretary of the Army said just last month: *"Army aviation really means aviation that is part and parcel of the Army combat team. As surely as a tank or artillery piece loses significance by itself, an aircraft is relatively unimportant to the Army if it cannot mesh with the Army's other vital elements to perform a common mission . . . I think the term 'flying soldiers,' which encompasses not only our aviators but also the commanders and troops who fly with them, indicates the framework in which Army aviation must grow, and it is expressive of the philosophy of an Army which must move through the air to an ever increasing degree if it is to accomplish its mission."*

It was no mistake or lack of coordination that this message appeared in practically every presentation. It was a deliberate effort to place our aviation future in perspective and in context. The future is bright and promising as long as we gear our program to the Army's most valuable asset—one that has a lead time of 21 years, our combat soldier.

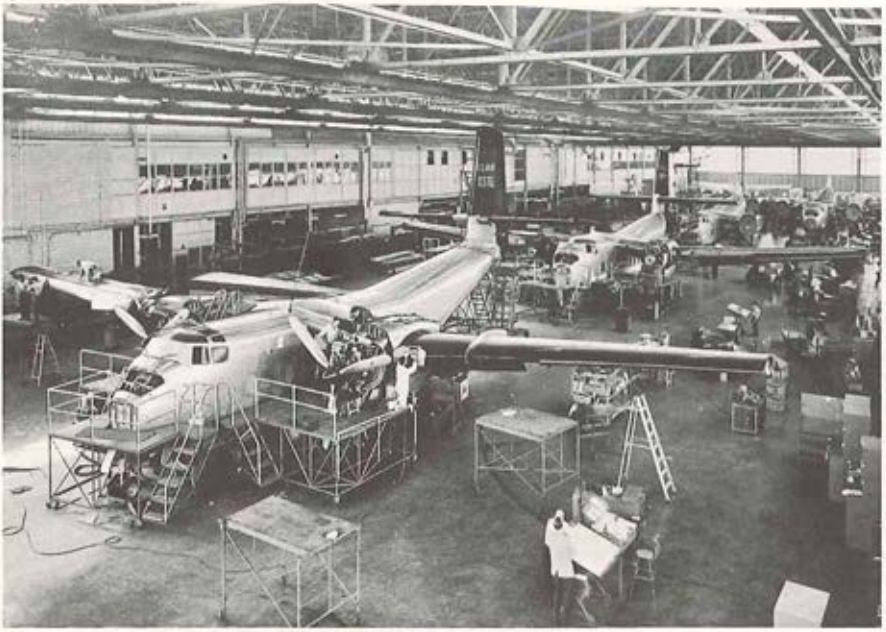
As we delve into some of the more technical aspects of the program, we should keep in the back of our minds the picture of the infantryman in Laos, or the Congo, or anywhere on this globe, and ask ourselves, *"How does this program help him?"* We dare not lose sight of this man.

Remember Our Origins!

We need not worry about justifying our program to the Department of Defense or Congress, if we can justify it to the infantry platoon leader, to the artillery battery commander, and to the other front line units. If these people believe in Army aviation and count on it as a vital part of their support, we need no other reason for being. Army aviation was born of a small unit requirement and grew upwards to its present level. We dare not stunt our future growth by forgetting our origins.

With this in mind, our future is one of imaginative challenge. Remember the Rogers Board deliberately set rather conservative goals—it did not say we were planning to move as fast as we would like or as fast as technology would allow. The Rogers plan is a guide (and we think a fairly good one), but it recognized that there were many imponderables in this coming decade. In the year since the original plan, there have been many new inputs. If I were to try to summarize the feelings expressed at the Rucker symposium in one sentence, it would be—we must move *faster* and *bolder!*

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



Caribou for the Army

ARE ROLLING OFF THE LINE AT DHC

Full scale production of the U.S. Army AC-1 Caribou is proceeding on schedule at our Downsview facility. Deliveries to the U.S. Army began in January 1961 and are flowing at a steady rate - uninterruptedly on target time.

THE STOL CARIBOU

DESIGNED AND BUILT BY

DE HAVILLAND AIRCRAFT OF CANADA

DOWNSVIEW MEMBER COMPANY of the HAWKER SIDDELEY GROUP ONTARIO

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

Hughes Model 269A Helicopter now in production!

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

Hughes Tool Company • Aircraft Division • Culver City, California

THE IMPACT OF FEDERAL RESEARCH PROGRAMS

by
RICHARD S. MORSE
Assistant Secretary of the Army (Research and Development)

". . . Sometimes I find that there is little appreciation for the degree to which military research and development—basic research and applied research and development—contributes to civilian techniques and products. Military research and development is concerned with the development of new knowledge, products, and techniques to meet military needs. Modern warfare is now really a vast complex of activities, most of which have civilian counterparts. So while the objectives of military and civilian research and development may differ, they frequently embody activities which are identical or very similar.

Through the years, many civilian products and techniques have been the direct result of military research and development programs. The earliest example which comes to mind concerns Eli Whitney.

In 1798, he became discouraged with problems related to the cotton gin, and accepted a contract to develop a system of manufacturing interchangeable parts for the production of firearms by the government arsenals. His success added to the continuing development of the industrial revolution, and we today accept mass production as fundamental. It is true that this contribution was inevitable, but the fact remains that it came sooner because of a military need—and society benefited accordingly.

Some other well-known contributions of military research and development to civilian life are: Yellow-fever eradication, chlorination of water, nuclear power, blood-plasma substitutes, the modern aircraft, new high-temperature alloys, and the modern automobile automatic transmission system.

RICHARD S. MORSE

Many Contributions Are Unknown

Some contributions of military-sponsored research and development not so well-known include: Better insecticides, flameproof fabrics, heat-resistant and fire-retarding paints, helicopters, advanced weather-prediction techniques, miniature electronic components, silicon transistors, new metals, and automatic electronic computers.

Let us review briefly some of the steps which led to the development of the automatic electronic computer. Early in World War II, the computations necessary to calculate trajectory and firing tables exceeded the work abilities of the Ballistic Research Laboratories of the U.S. Army. In 1942, these laboratories explored the possibilities of developing electronic computing devices to do the tasks. After preliminary study, a

contract was let with the Moore School of Engineering of the University of Pennsylvania to deevlop an appropriate electronic computer. The first modern electronic computer was thereafter produced at a cost of about $400,000.

The importance of the computer in terms of sales figures is hard to measure, but it has contributed to increased productivity in many fields. Work which was once considered infeasible now has become commonplace. The original Army investment of $400,000 has yielded dividends almost beyond imagination for the entire world. Many of the items mentioned in the impressive list given previously have enjoyed equal success.

In some cases, the transition from military to civilian application has been fairly direct. Civilian uses for synthetic rubber, developed out of military necessity in World War II, required little civilian research effort. In other instances, military research and development provides only a few of the building blocks needed for a product that finds a place in the civilian market.

Civil Aviation Enhanced

The entire civil aviation industry owes its present size to Defense funding. Our civilian airport system was developed prior to and during World War II to meet military requirements. After the war, these facilities, which are the backbone of the Civil Air Transportation network, were given to local communities. These communities could not have financed these large undertakings unassisted. Many of our existing airlines started with aircraft declared surplus to military needs after World War II.

In addition, these planes would never have been developed in a similar period without military support. The Boeing 707, our first jet airliner, was a modified Air Force aerial refueling-cargo vehicle. Other commercial aircraft have been developed from military aircraft. And of course, crews used on civil airlines are almost without exception Air Force-trained.

In fact, most military occupations today have their civilian counterparts, so that civilian economy and technology benefits directly from the transfer of skilled personnel who received their training in the Armed Forces. Our complex weapon systems require operating and maintenance skills which can be met only by training unskilled personnel in military schools. Upon completion of this training and minimum service required by law, many individuals re-enter civilian life as experienced technicians.

Army R&D Items Show Promise

You may be interested in some of the many items now in Army research and development which show promise for future application in some form for the civilian economy. Electronic parts have been reduced in size by modular concepts so that instead of 7,000 parts per cubic foot we can put 550,000 parts in the same space. Even this figure can be increased by the factor of 10 in some applications. The potential of solid circuit techniques is fantastic. So-called solid state devices such as the ruby maser, the parametric amplifier and the tunnel diode should have a great future in communications.

In materials, as you know, we are working in the fields of plastics, ceramics, cryogenics, pyrogenics and metallurgy. Since most of you are familiar with this work, just let me say that we feel that advanced metallurgy holds the key to many of our design problems. With the possibilities that the new alloys offer, many age-old problems may be solved in the next few years.

Our dependence uupon medical research is almost too obvious to mention. Our soldiers must be psychologically and phy-

EXCERPTED FROM AN ADDRESS BY DR. MORSE TO THE AMERICAN INSTITUTE OF CHEMISTS MEETING, WASHINGTON, D.C., MAY 12, 1961

BIRD DOG:

PLANE WITH A HISTORY IN A DOZEN LANGUAGES

It's Cessna's scrappy little L-19, and what a history it has.

It began in Korea, where the all-metal mite first came to be called "Bird Dog." So well—so reliably and economically—did it perform its work (artillery spotting, supply dropping, wire laying, aerial photography, liaison, flare dropping, insect spraying), it soon became known and wanted throughout the free world. Since, it has flown under the flags of France, Pakistan, Spain, Iraq, Taiwan, Thailand, Norway, Canada, Italy, Japan, Alaska, Germany, Lebanon, Indo China and throughout Central and South America.

The L-19's history points up well its versatile utility. Pilots of more than 20 countries testify to its outstanding performance under every conceivable type of conditions. When it comes to designing and delivering planes that pay their own way—Cessna's know-how is evident.

Military Division, Wichita, Kansas

CESSNA

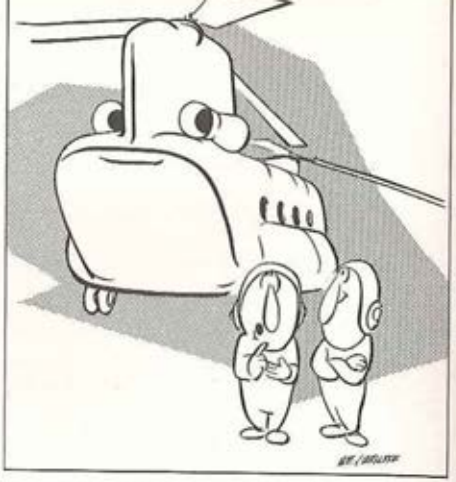
siologically prepared for combat in key parts of the world—the plains and mountains of Europe, the frozen wastes of the Arctic, deserts of the Middle East, and the jungles of Africa and the Orient. Most of this research is also useful for civilian application.

We also are continuing significant research in unusual power sources such as the nuclear reactor, the fuel cell thermionic converter and the magneto-hydrodynamic process.

The government has many agencies concerned with the space program. These include ARPA, DOD, NASA, FCC and Commerce. The Army has the principal research and development effort in the development of a communication satellite, and in my view the communication satellite offers for the entire world the most interesting space application for years to come. Satellites for military or civilian communications are almost indistinguishable in terms of research and development requirements and their design and operating characteristics. The NASA Rebound and Relay and the current Army ADVENT communication research and development programs are essentially in their early phases but neither fully reflects a truly feasible active operation communications satellite effort to fulfill needs for civilian use.

Non-Military Communications

As for the non-military communications, the use of world-wide communication satellites with wide band widths will have tremendous significance in terms of international relations and international cooperation and can do much to establish the United States as a leader in space. If the research and development programs in communications satellites being done by the government were combined with an equal effort from industry, we could develop a system that permits person-to-person dialing throughout the world and world-wide TV facsimile programs. This is just one of the many projects under research



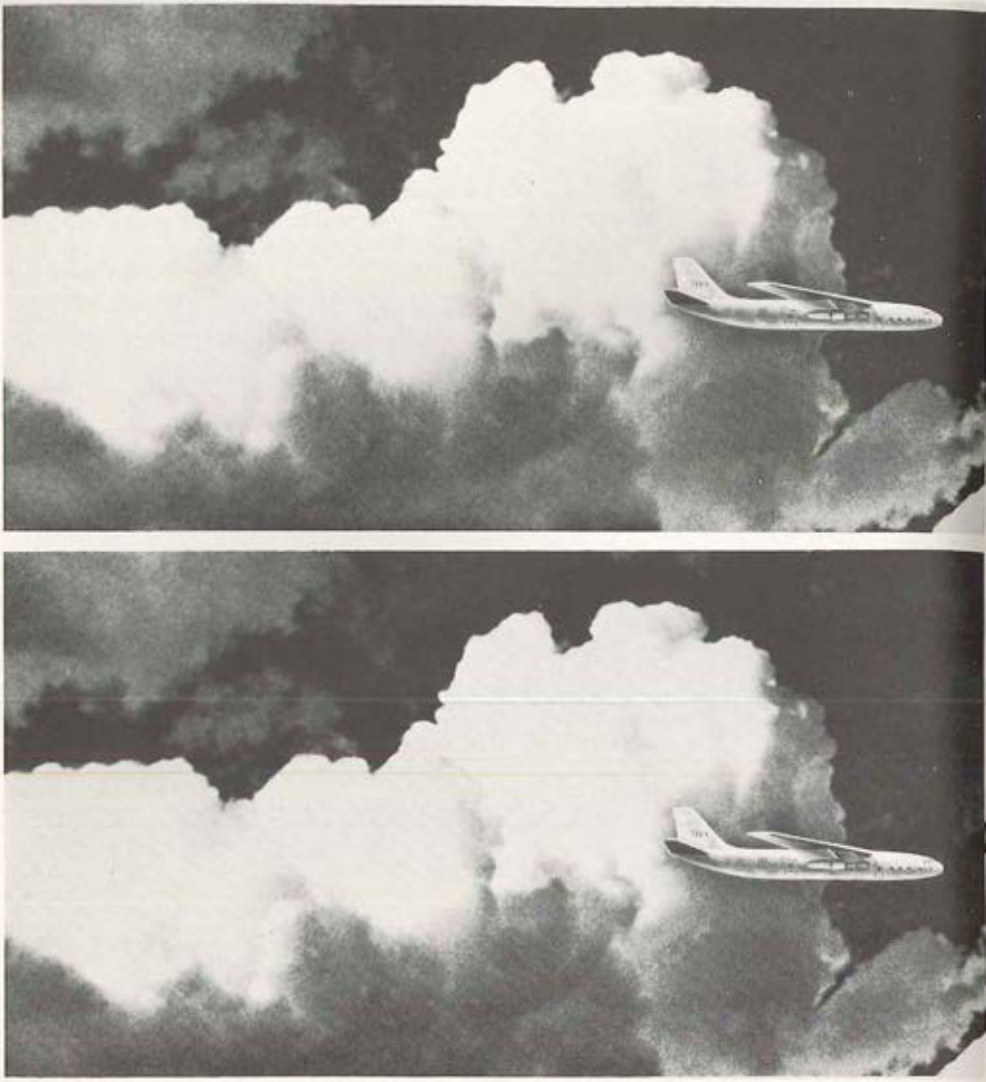
Did you ever have a feeling someone's watching you?

and development by the government which has great commercial potential and must evolve rapidly if we are to demonstrate the effectiveness of the free-enterprise system to the world.

In the time allotted to me I have given you but a brief insight into "the impact of federal scientific research programs on technological progress" and particularly the contribution which the Army is making in these programs. We view these contributions to our defense effort with pride, realizing that they are equally as important for the peaceful benefit of mankind.

I would like to point out that just this month a famous economist has stated that "30 *months from now,* 14 *cents of every dollar that you will spend for products manufactured by United States companies will be for things that are not being made today*". I would add to this that half, or 7 cents of every dollar that you spend, will be for products which were developed from research and development sponsored by the government.

I think it is important that we remember that in the fields of science and technology, we have significant advantages over the Communists. But we cannot rest on our laurels; we should strive to increase this advantage in the years to come.



Northrop's Laminar Flow Control will enable large aircraft to fly up to twice as far as they now can, and stay aloft proportionately longer, on the same amount of fuel. Or it will permit them to carry heavier payloads over a given distance. And it will accomplish this without increasing the airplane's size, weight, or engine power.

Laminar Flow Control is a revolutionary technique developed by Northrop for reducing friction drag on an airplane in flight. This drag is caused by the turbulence of the boundary layer of air as it flows over the surfaces of the plane. By drawing off this turbulent air through paper-thin slots in the aircraft skin with a suction system, and exhausting it in the direction of thrust, a smooth "laminar flow" of air is obtained.

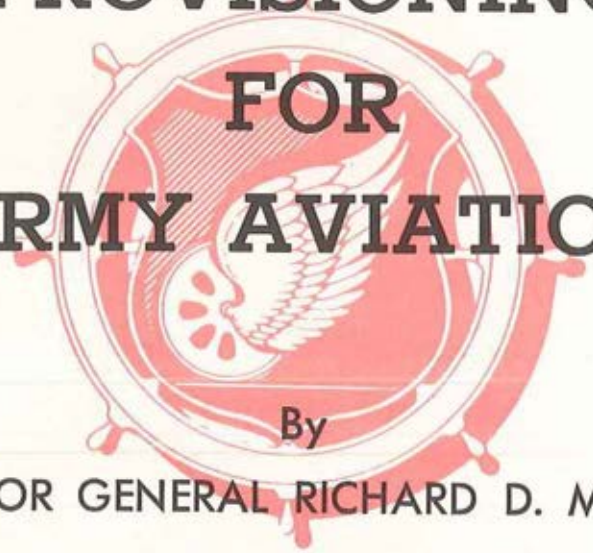
The implications of Laminar Flow Control are far-reaching. To commercial operators it can mean substantial cost savings on long distance flights, and make

possible non-stop flights over greatly increased distances. To the military, it will be immensely important for surveillance and airborne alert missions, or for any operation requiring aircraft to stay aloft over long periods. On logistic missions, planes can fly in and out of trouble spots without refueling. Dependence on overseas bases will be reduced.

Northrop is conducting a continuing research program for the U.S. Air Force to investigate the applications of Laminar Flow Control to many kinds and phases of flight. Two airplanes are now being modified under a separate Air Force contract to demonstrate the practicability of this new aerodynamic technique in day-to-day operation.

NORAIR
A DIVISION OF
NORTHROP

PROVISIONING FOR ARMY AVIATION



By

MAJOR GENERAL RICHARD D. MEYER

Principal Assistant for Aviation

OCT

The word *Provisioning* connotes foresight and thriftiness. To the mariner, it means the stocking of a vessel for a long voyage; to the military historian, it suggests a campaign in a strange land and the attendant planning for rations, forage, and equipage.

To the modern logistician charged with supply and maintenance support for Army aviation, it means the timely delivery of repair parts and support items required, at the correct echelon of maintenance, to keep a new aircraft system operable during an initial period of service. To this man it also connotes foresight and thriftiness, and some crystal-ball gazing, too.

The importance of provisioning cannot be overemphasized. The future of an aircraft system is often decided during the initial period of service. The success of this period is often directly related to the effectiveness of supply and maintenance support.

Provisioning for aircraft has been practiced since the first flight at Kittyhawk; the most important items of supply were probably fabric, dope, and baling wire. In 1939, the Navy established a formal procedure for provisioning aircraft. This primarily consisted of consulting with contractors to determine the items that would be required to support a new system.

During World War II, the policy was to supply every item of conceivable need in whatever quantity was sure to be enough. Subsequent to World War II, it was recognized by all departments of the military service that a system must be devised to provide adequate initial support at minimum procurement and maintenance costs.

In 1947, the three departments—Army, Navy, Air Force—in conjunction with members of the Aircraft Industries Association, under the guiding hand of the Munitions Board developed the original aircraft provisioning procedure, entitled *Case 30*.

Among other things, *Case 30* established the following—

Provisioning was defined as the step-by-step series of actions taken to select and procure the range and quantity of items re-

quired to support a new aircraft system from delivery until normal replenishment is established.

Contractors were assigned the responsibility of providing drawings, specifications, and identification documents.

Source coding was to be accomplished by the military, and was to determine the items to be selected and how they would be made available, e.g. by central procurement, local procurement, local manufacture.

Time periods were designated for the exchange of information between contractors and the military services.

Case 30, with appropriate specific additions, deletions, and/or amendments, was to be contained within, or appended to contracts for procurement of aircraft.

Case 30 remained the basic provisioning document of the military services until 1953. By that time, the Navy and the Air Force had developed individual procedures more appropriate to the respective service. Since 1952, the Army has participated with the Air Force, both in the development of new procedures and in provisioning for Army aircraft. On 1 July 1957, the Army assumed sole responsibility for provisioning its own aircraft.

Many Complex Problems

The provisioner is faced with a multitude of complex problems. He must provide continuous logistical support, under varied conditions of climate and operations, at a minimum cost for an aircraft that has had little or no field operational experience or background. For some long lead time items, he must decide range and quantity 18 months before delivery date. There is the ever-present possibility of engineering change proposals that may make some newly provisioned parts obsolete before they are delivered; these changes will also generate a requirement for other replacement items that must be procured.

For the high value items, most of which are Category A reparables, he has four factors to guide him—the number of end items; programmed flying hours; length of pipeline; time between overhaul (or estimated life expectancy). Any appreciable changes in one or more of these factors will result in inadequate support of the system or an unacceptable excess of items.

Design Concept Starts Process

Provisioning actually begins with conception of an aircraft. The designer, the developer, the contractor, the tester—each recognizes that an aircraft is only as good as its performance; its continued performance is only as good as its supply support and maintenance.

When an aircraft becomes a potential piece of equipment for use by the Army, R&D personnel study if for flight potential, for performance, for safety of flight, for practicality of supply and maintenance support.

When the aircraft has been accepted for production the engineering staff develops a Maintenance Allocation Chart containing all components and assemblies—not the bits and pieces. They also list the echelon of maintenance responsible for removal, repair if applicable, and replacement of the component listed.

The next step, and really the first step of provisioning, is the procedure of source coding. In order to reduce the necessity for reviewing an inordinate list of items, the contractor submits only items that are considered of maintenance significance, i.e. they can be removed and replaced on the aircraft or its supporting equipment. By this time there are usually sufficient experience data available to permit the provisioner to estimate, to a degree, the range and quantity of items desired.

The experience data consist of engineering estimates, contractor's recommendations, usage data compiled during test periods,

SPEED, MOBILITY FOR ARMY V/STOL

A General Electric tip-turbine lift fan that will enable Army pilots to climb vertically, transition to horizontal flight, and cruise at jet speeds has successfully run 150 hours of static and wind tunnel testing.

Developed under Army contract, G.E.'s advanced lift fan provides VTOL aircraft attitude control forces—a significant new job for a jet engine—as well as lift and propulsion thrust. Continuing tests in a wing section have demonstrated the lift fan's high performance and rapid throttle response. Exit louvers, controlling both lift and thrust, provide fast, positive control.

Designed to meet tomorrow's propulsion needs, the G-E lift fan offers a new range of capabilities to Army aviation. 110-03

FLIGHT PROPULSION DIVISION **GENERAL ELECTRIC**

engineering change proposals approved during the tests, and the common sense application of the provisioner who has had experience with like support items for like items of aircraft. All of this still adds up to a calculated risk—*calculated* in that all available data and statistics are used, *a risk* in that the provisioner is endeavoring to effect an economical qualitative and quantitative buy without jeopardizing operational effectiveness. There are many more steps and individual actions taken before support items are ordered, produced, and delivered. They are too numerous to cover here.

Three Major Questions

There are three questions of major concern to the provisioner—*What must I buy? When must I buy it? What will it cost?*

It is obviously more favorable to the contractor, and through the contract to the buyer, to order support items when ordering the end item. Production of the additional items can be accomplished at a fraction of the cost of an additional production run. A favorable contract is usually one that affords the contractor flexibility in commitments, especially delivery times.

Conversely, it is in the best interest of the Army to order only items, the need for which is known, as close to the required delivery date as lead time will permit. The provisioner usually compromises between economy and necessity.

Since 1957, the Army has come a long way in developing a sophisticated provisioning system. The *Transportation Materiel Command* (*TMC*) has conceived two new approaches that promise to become highly desirable innovations.

In January 1960, Commodity Managers at TMC were assigned to an aircraft system, with upper-level supervisory personnel to assist in managing reparables and non-reparables as separate categories. The Commodity Manager becomes responsible for a new aircraft when the Engineer has completed his task. He works with the Engineer before assuming responsibility to assure an orderly transition. The Commodity Manager now associates himself with a complete aircraft system and its support, not with a group of Federal Stock Numbers.

The TMC Provisioning Procedure (7 March 1960) now provides for progressive provisioning. This means that a contractor is permitted, and encouraged, to submit provisioning lists for each component, or assembly, as the list is developed. The obvious advantages to this system are that it provides more time to both contractor and TMC for consideration of each item, and it permits a leveling off of workload during the provisioning period.

Forbearance Is Asked

At this writing the Army operates about five thousand aircraft supported by approximately forty-five thousand support items, worth two hundred fifty million dollars. At some point in time, a majority of these items were provisioned by a provisioner who had to designate the range and quantity. Please bear with this much maligned man when your aircraft is grounded because of a support item that is not available, at the moment needed. An unprogrammed increase in flying hours or an unforeseen reduction in Time Between Overhaul may be the cause. It is also possible that for this particular item his crystal ball was ceiling zero, visibility zero at the time of provisioning.

Within the last six weeks, information from field commanders has shown significant increases in demand for certain parts for one of our important aircraft. These demands are specific examples of unforeseen, and possibly unforeseeable, failures. When this occurs we are immediately in a "buy" position, and extra-ordinary measures are required. They are being taken.

No one can buy back time. We are doing our best to shorten the wait.

TC Briefs

Brig. Gen. M. D. Losey Commands Corpus Christi Repair Facility

In February 1961 the Department of Defense approved the Army's plan to establish an aircraft overhaul and repair facility at Corpus Christi, Texas. Notice appeared in this column shortly thereafter.

Since that time, the Chief of Transportation has assigned *Brig. Gen. Melvin D. Losey,* as commander, charged first with bringing the facility to a fully operational status during FY 62. That work is now under way. *Bob Losey,* as Transportation Officer 8th Army toward the end of the War in 1953, learned his aviation logistics the hard way in the field.

The Army has taken over about 800,000 square feet of space at the Naval Air Station, including a multitude of shops suitable for handling all types of Army aircraft and related equipment. The Navy had specifically tailored this space to the needs of its own air maintenance operation.

Consequently, ceilings are the right height, overhead cranes are where they should be, and most of the arrangements for handling materials are practical and efficient. On hand are all types of shops and services ranging from basic cleaning and inspection through sheet metal fabrication and plating. And when special parts are needed which are not readily available, they can be manufactured on the spot.

Personnel to Number 2,000

Our cadre force of about fifteen personnel has now expanded to one hundred and twenty-eight as of 1 May 1961. They possess most of the requisite skills for opening such a large facility. This force will soon expand to about 500 and by July 1962, to more than 1,000. Within a few years we anticipate reaching a peacetime strength in excess of 2,000.

In time, the Corpus Christi facility may build up to a capability for handling about forty per cent of our total overhaul and repair workload with the remaining sixty per cent contracted out. Even so, the dollar value of the industry share of this business is expected to increase, rather than decrease. This is due in large part to the fact that our aircraft are becoming bigger and more complex and consequently will require more maintenance.

The major effort of the new facility will initially be the overhaul of engines, with a minor effort in the overhaul of both fixed wing aircraft and helicopters.

Navy Support Exemplary

Our thanks to the Navy and particularly the Bureau of Naval Weapons for their support from the top down. The Army has been made most welcome by the base commander, *Captain Howard Born, USN,* and by the city of Corpus Christi. To help get us started, Navy has assigned *Comdr Henry M. Murphey* to *Gen. Losey's* staff. *Comdr Murphey* (known now to his Navy and Marine colleagues as "Colonel") was Plant Manager of the Navy O&R facility just before it closed.

IAS Army Aviation Meeting Highly Productive to All

The recent *Institute of Aerospace Sciences* meeting in Washington proved to be one of the most productive of these technical symposiums to date so far as Army aviation is concerned. This was especially so since the sessions were devoted entirely to Army aviation matters.

This meeting, coupled with a recent *Society of Automotive Engineers* (*SAE*) aeronautical panel which devoted major attention to Army aviation, the *AUSA Symposium* at Rucker, and the just-completed *American Helicopter Society Forum*

COMPILING FIELD EMPLOYMENT DATA ON THE TSC-15 AIR-TRANSPORTABLE COMMUNICATION CENTER, THE ARMY AND USMC ARE FIELD TESTING THE COLLINS RADIO "6-FOOT-CUBE COMMUNICATION HUT" AT THE USAEPG, FORT HUACHUCA, ARIZ. FEATURING A FILTERED VENTILATING-COOLING SYSTEM, THE TSC-15 OFFERS VOICE, CW, AND TELETYPE COMMUNICATION.

DR. CLIFFORD C. FURNAS, CHAIRMAN OF THE ARMY SCIENTIFIC ADVISORY PANEL, PAUSES BEFORE INSPECTING AN ARMY IROQUOIS AT AN EXHIBIT PREPARED FOR THE ASAP SPRING MEETING AT FORT EUSTIS, VA. (U.S. ARMY PHOTO).

in Washington, attest to the growing impact of Army aviation on science and industry.

The *IAS* meeting was extremely well attended, especially by industry. The sessions of the 3-day symposium included panels on *Firepower for Army Aircraft, Intra-Theater Air Transport in the* 1970-80 *time frame, Reconnaissance,* and *V/STOL Concepts.*

All sessions were classified, thus providing conferees an excellent opportunity to thoroughly discuss some of the sticky problems now plaguing Army aviation in depth.

We are grateful to industry for their continued interest and support.

Ski-Equipped Caribous Support Arctic Ice Cap Research

Two AC-1 *Caribous,* fitted out with specially developed skis, will support the *Polar Research and Development Command's* Arctic Ice Cap research activities this summer.

For the Army, this represents the first operational use of skis on an aircraft of this size. The *Caribous* are to be used for making infrared soundings of Arctic surface temperatures, for gathering high altitude data for the *U.S. Army Signal Research Laboratory,* and for moving personnel and supplies between remote Ice Cap bases.

Much of the flying is expected to be done at altitudes over 20,000 feet. The pilots and crew chiefs have been undergoing a series of physiological safety training tests to prepare them for their mission. These tests are designed to show each individual's reactions to oxygen failure in a pressure charmber capable of simulating very high altitudes. Since the *Caribou* cabin is not pressurized, crews will have to be equipped with portable oxygen equipment.

RICHARD D. MEYER
Major General, GS
Principal Assistant for Aviation, OCT

MIKE BUTTON

Maintenance Tips

MOHAWK SWISH SEATS

Last week gotta BUWEPS Notice No. 8190 from the Dept. of Navy, Chief, Bureau of Naval Weapons, about Martin Baker ejection seats, FSN 1680-772-3418 (P/N MBEU-11628), which may be of interest to all *Mohawk* Monitors. It covered proper marking, identification, service and stowage life, and usage of ejection cartridges.

Away back when, a few cartridges were installed bearing various markings which made positive identification very difficult. At the present time, there are enough of the cartridges (correct ones) around to permit the withdrawal from service of all Martin Baker cartridges *not* marked as follows:

1. Primary cartridges should be stamped "No. 4 Mk2" (FSN 1375-790-8063) with a dab of "brown" on the primer end. If the manufacturer's drawing number is on it, part number that is, it should read, "MBEU/7840." So, if any primary cartridges are found to be marked differently, *they should be replaced.*

2. Auxiliary cartridges should be stamped "No. 4 Mk2" (FSN 1379-790-8048) with a little dab of "brown" on the primer end, too. If the manufacturer's drawing number (P/N) is on it, it will read "MBEU/5351." And if these don't shape up, *replace them also.*

So check your machine with these here Martin Baker pilot escape seats for proper ejection seat catapult cartridges installation and if they have the markings as above they're OK if they fall within the already established service and stowage life limitations.

As an added bit—All DROGUE gun cartridges, FSN 1375-793-6762 (P/N MBEU 7536), which meet service and stowage life limits are considered OK for use. However, DROGUE cartridges come in sets; so, you should replace all cartridges in a seat system when it becomes necessary to replace primary or auxiliary cartridges.

Further, service life for Martin Baker cartridges FSN 1375-790-8063, 1379-790-8048, and 1375-793-6762 is established at 5 years, starting from the date stamped on the cartridges and on their metal container. But not more than 2 years shall elapse if they're installed or if they have been removed from the hermetically sealed containers. Cartridges are NG if either limitation is exceeded. OK?

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

SEMI-KNOW POWER PLANTS?

I suspect that everybody knows what engine your L-23Fs have; but, did you know that the IGSO-480A1A6 commercial engine model has been redesignated as Military Model 0-480-3?

Well, it's true; the IGSO-480 A1A6 will be known as 0-480-3 on new production and remanufactured engines. To date there is only one 0-480-3 around, but you'll be seeing more and more of them as time goes on.

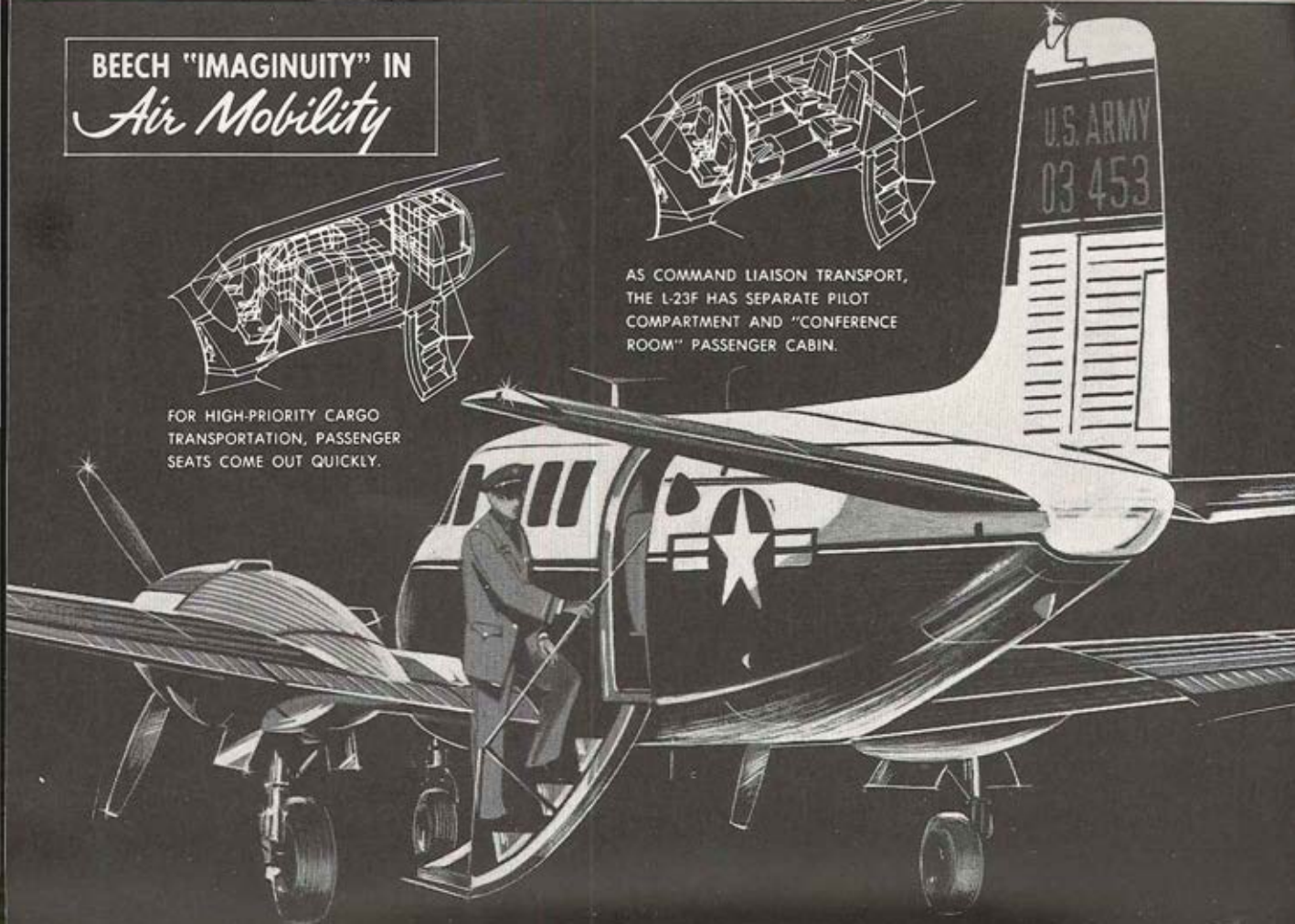
There are a few major differences between the commercial engine and the military model with *Mike* would like to pass on to you:

(*Continued on Page* 290)

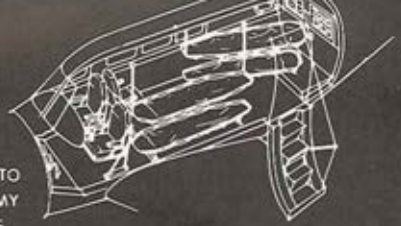
BEECH "IMAGINUITY" IN *Air Mobility*

FOR HIGH-PRIORITY CARGO TRANSPORTATION, PASSENGER SEATS COME OUT QUICKLY.

AS COMMAND LIAISON TRANSPORT, THE L-23F HAS SEPARATE PILOT COMPARTMENT AND "CONFERENCE ROOM" PASSENGER CABIN.



EASILY AND QUICKLY ADAPTABLE TO THE INSTALLATION OF GROUND SURVEILLANCE RADAR.



CONVERTS QUICKLY TO FAST, RUGGED, ROOMY AERIAL AMBULANCE.

The Beechcraft L-23F meets the need for . . .

Air mobility that combines versatility, high performance and low cost:

The new Beechcraft L-23F offers a combination of advantages found in no other aircraft. With its supercharged fuel injection engines, the L-23F provides fast, comfortable all-weather transportation that can span long distances in a hurry. Yet it is so ruggedly built that it can operate safely even from small, unimproved fields. The L-23F offers air mobility for a wide range of uses at a fraction of the cost of operating larger planes. Quickly and easily adaptable to the installation of ground surveillance radar, the L-23F can also be converted quickly for liaison and cargo missions. Its versatility is further demonstrated by its rapidly growing popularity as a multi-engine instrument trainer.

Beech *Aerospace Division*

BEECH AIRCRAFT CORPORATION • WICHITA 1, KANSAS

Beech Aerospace Division projects include R&D on manned aircraft; missile target and reconnaissance systems; complete missile systems; electronic guidance systems; programs pertaining to liquid hydrogen propellants and cryogenic tankage systems; environmental testing of missile systems and components; and GSE.

May we help you? Write, wire or phone Roy H. McGregor, Manager—Contract Administration, Beech Aircraft Corp., Wichita 1, Kansas—or nearest Area Office.

MIKE BUTTON/*Continued*

First, all IGSO's installed and spares currently used on the F Model have a 4 ring piston combination and the 0-480-3 has a 5 ring piston combination.

Secondly, all IGSO's (maybe a few still around) use the 6 plunger fuel injection pump, with the 0-480-3 using a redesigned 3 plunger fuel injection pump.

The punch line? It's real important to get this firmly fixed into the old "grey matter" when you are replacing cylinders with both these configurations around. You must be real cautious because the 5 ring piston combination must be used in complete engine sets, since they are of different weight than the 4 ring piston combination.

NEVER intermix a 5 ring combination with 4 ring combination in the same engine, or a 4 ring with a 5 ring. Part number 73114 stamped on the cylinder head assembly will be the same on either engine, but Cylinder, Piston and Ring Assembly; complete, P/N 73191 (no FSN as yet) identifies it as the one having the 5 ring piston as a part of the *Complete Assembly;* whereas, Cylinder, Piston and Ring Assembly; complete, P/N 71202 (FSN 2814-775-0568) identifies it as the one having the 4 ring piston as a part of the *Complete Assembly.*

So, tell all buddies and personnel concerned to be real diligent, assiduous, and all that sort of stuff when replacing those cylinders on any one engine configuration. Do *NOT* intermix these two cylinders because it will affect the balance of the engine.

The second punch? Or should I say plung—er? The point I would like to make here is that the redesigned 3 plunger fuel injection pump assembly, P/N 73229, is interchangeable with the 6 plunger fuel injection pump, and either one can be used on either engine *without any perceptible difference.* In other words, you can use the 6 plunger on one engine and the 3 plunger on the other one and never notice it.

While we're on the *Seminole,* here's another point that you probably haven't been read in on. There's a new barrel shaped Hydraulic Tappet Body (P/N 73061), and Plunger Assembly (P/N 72876) approved for these new production and remanufactured engines of the L-23D and L-23F aircraft (0-480-1, IGSO-480A1A6, and the 0-480-3).

You must be real cautious when replacing one or more plunger assemblies, because there's a difference between the old and the new. The new plunger assembly (P/N 71791) can be used in the old tappet body (P/N 69529); however, only the new plunger assembly (P/N 72876) can be used with the tappet body (P/N 73061).

To find which tappet body is installed in a particular engine, take the shank end of a *NEW* ½" drill and try to bottom it. Goes In—tappet body is the *new* design; No Goes In—tappet body is of the *original* design.

IROQUOIS LIMITS AND TEMPS

Just gotta look at a new MWO for this gas turbine power plant (T-53-L1 & 1A) which establishes limits of the exhaust gas temps and over speed limits of the N1 and N2 systems. It's going by 55-1520-207-34/8 and it spells out just what *you must do* when these limits are exceeded as far as inspection procedures, allowable repairs, repairable limits, and tells you what constitutes an engine change. So if you haven't had a look-see, *Mike* suggests that all 3rd people get a copy and dig into it, 'cause it's real important information on maintaining the turbine engine in the HU-1.

A $4,000,000 order from the Australian government for the Bell Helicopter Company's record-setting Iroquois was announced by Bell President E. J. Ducayet, shortly after Australian Defense Minister Athol Townley, in Canberra, released a statement on the order. The number of helicopters ordered was not disclosed, but Townley said the cost of the ships, including spare parts and ground-handling equipment, was anticipated at 1,860,000 Australian pounds. Ducayet said work on the Australian order would begin this year at Bell's Hurst plant and would be completed in 1962.

QUESTIONS AND ANSWERS

Dear Mike:

Have been following with interest your continuing articles on HALON type fire extinguisher mounting procedures and I sincerely hope that you continue these informative bits. They are very helpful as they arrive more expeditiously than the official word which seems to seep through slowly.

I am herewith taking you up on your offer to provide by hot line the TCTM graphic dealing with the fabrication of the bracket (9535-232-0398) for installation of the HALON in the L-19.

Should you have any other gems of info on changes in mounting procedures in either the L-20 or the H-19 please send them along. Please accept in payment our appreciation.

CWO James A. Garner
Ass't Maint Officer
3d Avn Co (Inf Div)
APO 36, N.Y., N.Y.

★

Dear CWO Garner:

I don't recall naming the fire extinguisher *HALON*. Did you coin it for the benefit of Army aviation from Halogen, because you know very well that bromine, fluorine, etc., are halogens? Nice going!

First off, the FSN 9535-232-0398 is *NOT* the bracket FSN: it's the FSN for the material which is to be used to fabricate the bracket at 4th echelon mainenance activity.

Inclosed are two graphics for making the bracket to install the CBrF3 fire extinguisher in the Bird Dog (L-19).

The fix for the Beaver (L-20) is spelled out in TM 1-1L-20A-1019; however, the Chickasaw (H-19) fix is not available as yet. I checked with the H-19 Project Engineer today, and he will send it to be published about the middle of the month. You don't have to be concerned with relocating the extinguisher, but from what I can learn about the fix, the only bind is making an additional bracket to fit the Engineer's bracket, which comes with the CBrF3.

MIKE BUTTON

Dear Mike,

Thanks for forwarding the plans on the L-19 fire extinguisher installation. Two things I forgot to ask.

1. Where do you install the extinguisher on the H-13G?

2. We have gun kits on our H-13G. Where do we carry the gun serial number, on the company property book or on the aircraft book? And what do we do with the guns when we transfer the aircraft?

SFC F. C. Haldeman
8th Avn Co.
APO 34, New York

Dear Sergeant Haldeman:

Nice to hear you got the plans ok and you are able to get your Bird Dogs up to snuff. Your Sioux fire extinguisher installation instructions are contained in MWO 55-1520-204-34/4, 14 Mar 1961, so order it from your publications people, as Mike doesn't have the room to give out with all the detailed instructions. However, if you can't get the MWO in a reasonable length of time get in touch and I'll see what I can do to accommodate you. OK?

The MWO 55-1520-204-34/4, 14 Mar 1961, kills two birds with a single blow, 'cause it also spells out just exactly what you gotta do to relocate your First Aid Kit in the Sioux so as to make the foot switch on the mike more convenient for the pilots to operate.

Old Mike can't do you much good on your gun kits problem, but as I see it I can advise you what you should do. Until the proper publications are put out by the DA covering your problem, you'll have to deal with your Commander as he is the authority to advise you as to what he wants. So, Mike's suggestion goes like this. Go thru channels and explain to your superiors your plight and I am sure they'll tell you just what the theater commander's policy is regarding how the accountability for the gun is to be handled.

Since this is under the exclusive control of your "boss", not TC, Mike can only advise you as to what course of action to take.

MIKE BUTTON

LOH/*Continued from P. 262*

With the integration of the LOH into the system, a new maintenance approach will be adopted, according to Colonel Alexander J. Rankin, Chief, Air Mobility Division, OCRD, D/A. Currently, logistic support revolves around the question, "How many hours of maintenance are required to assure one hour of flight operations?" With the LOH, Colonel Rankin pointed out that the ratio of flight hours per hour of maintenance will prevail.

In looking to the future, the replacement of the L-19 by the LOH would appear to have an impact upon the fixed-wing training program; however, the authorities stress that this impact will not be significant for at least ten years, at which time the Army may have a need for a new, lightweight "trainer" plane which would have no tactical mission. In ten years, flight training can be expected to be primarily concerned with rotary-wing training, with fixed-wing flight training being the exception at that time, rather than the rule.

With production starting in 1965, the present inventory of approximately 3,000 L-19's, H-13's, and H-23's will be fully utilized, until such time as production of the LOH is in full swing, which may not be until the 1970-1975 time frame. Authorities forecast a production of 40-odd LOH aircraft in the first year of production; a step-up to approximately 200 aircraft in the second year (1966); and a stabilized production of 300-500 aircraft per year thereafter.

At this rate of production, it would take until 1972 to reach the equivalent of the present inventory of 3,000 aircraft. If the reasonable growth of Army aviation continues throughout the Sixties, the 1965-1966 inventory may call for approximately 6,000 aircraft in this category. For this reason, it is apparent that the present inventory of L-19's, H-13's, and H-23's will be utilized within Army aviation for many years to come.

The twelve firms submitting design proposals in the Army LOH design competition included the Bell Helicopter Corporation, Fort Worth, Tex.; Boeing Airplane Company, Vertol Division, Morton, Pa.; Cessna Aircraft Company, Wichita, Kan.; Gyrodyne Company of America, Inc., St. James, L.I., N.Y.; Hiller Aircraft Corporation, Palo Alto, Calif.; and the Hughes Tool Company, Aircraft Division, Culver City, Calif.

The Kaiser Industries Corporation, Kaiser Aircraft and Electronics Division, Oakland, Calif.; Kaman Aircraft Corporation, Bloomfield, Conn.; Lockheed Aircraft Corporation, Burbank, Calif.; McDonnell Aircraft Corporation, St. Louis, Mo.; Republic Aviation Corporation, Farmingdale, L.I., N.Y.; and United Aircraft Corporation, Sikorsky Aircraft Division, Stratford, Conn.

MOCK-UPS AT LEFT.
THE BELL D-250 DESIGN (TOP) AND THE HILLER MODEL 1100. DESIGNED FOR TRANSPORT IN C-130 AIRCRAFT, UP TO FOUR LOH MAY BE AIRLIFTED IN A SINGLE PLANE AFTER MINOR DISASSEMBLY.

LET'S TAKE A LOOK AT...

HUMRRO ACTIVITIES

You might not be aware that, for a number of years now, there has been in existence in the Army an active program of scientific research on aviation training. It hasn't crept into all phases of training yet, by any means, as can be readily seen if you ask yourself how it was determined that instrument training should be taught much later than contact training or why chandelles and lazy-eights should be included in the primary flight training program.

Or one might ask:

Is sufficient training being spent on night flying or carrying maximum loads in helicopters?

Or, can aerial observers be trained to observe effectively when flying at tree-top level at about 200 knots?

What are the training requirements for low level navigation?

Is it possible to conduct worthwhile visual aerial observation missions at night?

What are the problems and the olution to the problem involved in training aerial gunnery from armed helicopters?

These are only a few of the questions concerning Army aviation to which we need scientific answers. To help get answers to these and other Army training problems, a number of Human Resources Research Office (HumRRo) Units have been established by the Department of the Army. This article and articles to be published will tell you about HumRRO, the various HumRRO Units, and some of the research that is being conducted by HumRRO.

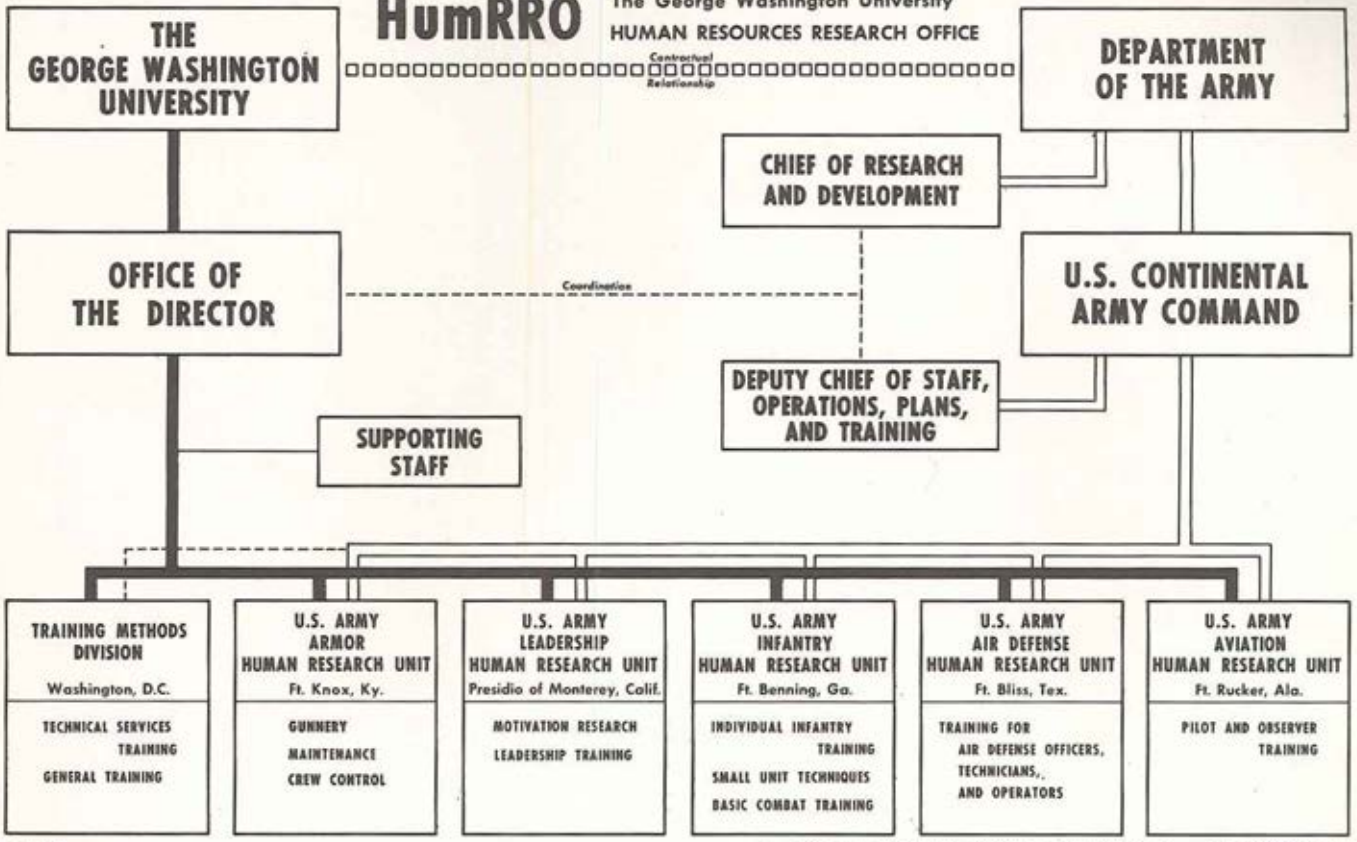
Department of the Army awarded the initial contract in 1951, and each subsequent contract since then, to the George Washington University. The contract established the Human Resources Research Office, for the purpose of conducting studies and research in the areas of training, motivation, leadership, and morale. Provisions for man-weapons systems analysis were included in later contracts.

Boiled down to the essential elements, this means that HumRRO, through scientific research, functions to help improve the ability of the individual who is handling the Army's hardware. The U.S. Continental Army Command is the principal sponsor of the HumRRO research and the Army service schools the chief users of the research product.

A look at the box inset (next page) will give you an idea of the scope of HumRRO, with Units extending from the Atlantic coast to the Pacific. Department of the Army has a direct link with HumRRO at the George Washington University and HumRRO, in turn, has a direct contact with USCONARC at Fort Monroe, Virginia.

The *Central Office* of HumRRO and the *Training Methods Division* are located on

HUMAN RESOURCES RESEARCH OFFICE


HumRRO
The George Washington University
HUMAN RESOURCES RESEARCH OFFICE
Contractual Relationship
THE GEORGE WASHINGTON UNIVERSITY
DEPARTMENT OF THE ARMY
CHIEF OF RESEARCH AND DEVELOPMENT
OFFICE OF THE DIRECTOR
Coordination
U.S. CONTINENTAL ARMY COMMAND
DEPUTY CHIEF OF STAFF, OPERATIONS, PLANS, AND TRAINING
SUPPORTING STAFF
TRAINING METHODS DIVISION
Washington, D.C.
TECHNICAL SERVICES TRAINING
GENERAL TRAINING
U.S. ARMY ARMOR HUMAN RESEARCH UNIT
Ft. Knox, Ky.
GUNNERY
MAINTENANCE
CREW CONTROL
U.S. ARMY LEADERSHIP HUMAN RESEARCH UNIT
Presidio of Monterey, Calif.
MOTIVATION RESEARCH
LEADERSHIP TRAINING
U.S. ARMY INFANTRY HUMAN RESEARCH UNIT
Ft. Benning, Ga.
INDIVIDUAL INFANTRY TRAINING
SMALL UNIT TECHNIQUES
BASIC COMBAT TRAINING
U.S. ARMY AIR DEFENSE HUMAN RESEARCH UNIT
Ft. Bliss, Tex.
TRAINING FOR AIR DEFENSE OFFICERS, TECHNICIANS, AND OPERATORS
U.S. ARMY AVIATION HUMAN RESEARCH UNIT
Ft. Rucker, Ala.
PILOT AND OBSERVER TRAINING
1 Sept 1959
ADMINISTRATIVE CONTROL AND TECHNICAL SUPERVISION
MILITARY COMMAND

the campus of the George Washington University, Washington, D. C. In the Central Office are situated the Director of HumRRO and his staff, including three deputies who concentrate respectively upon program development, research, and general operations and personnel; the latter is responsible for the work of specialists in fiscal, accounting, and security matters as well as reference librarians, statisticians, and a group concerned with the editing and printing of reports.

The *Training Methods Division* is an organization composed entirely of civilians who conduct research primarily for the technical services of the Army. As an example, Research Task *RAMP*, one of nine projects in this Division's 1961 Work Program, involved a field survey of activities of Army aircraft maintennace personnel stationed all over the world. Included among some of the other tasks are those that seek to identify human factors problems in training of electronics repairmen, in the acquisition of tactical information from non-English-speaking prisoners of war, and in operating under extreme cold weather conditions.

Moving down the Atlantic seaboard you come to the *Infantry Human Research Unit* located with the Infantry School at Fort Benning, Georgia. *TRAINFIRE*, a research task of the Infantry Unit, has been one of HumRRO's most publicized and important contributions to Army training; important because it affects a large number of personnel in the Army.

Through scientific research and testing, it was proved that rifle firing at silhouette pop-up targets under field conditions was much more effective combat training than firing at the circular bullseye target on known-distance ranges. Many of the conventional rifle firing ranges have given way to this new method of *initial* marksmanship training in the Army. Other research tasks of the Infantry HRU have been devoted primarily to individual combat skills and small combat group composition.

HumRRO Organization

HUMAN RESOURCES RESEARCH OFFICE
George Washington University, Washington, D.C.
AIR DEFENSE
Human Research Unit, Ft. Bliss, Texas
ARMOR
Human Research Unit, Ft., Ft. Knox, Ky.
AVIATION
Human Research Unit, Ft. Rucker, Ala.
INFANTRY
Human Research Unit, Ft. Benning, Ga.
LEADERSHIP
Human Research Unit, Presidio of Monterey, Calif.
TRAINING METHODS
Training Methods Division, Washington, D.C.

The *Aviation HumRRO Unit* is located at Fort Rucker, Alabama, and will be discussed in detail later in this article.

The *Armor Human Research Unit* at Fort Knox, Kentucky, has focused on perception and decision-making problems important for Armor operations. Their tasks include improvement of tank gunnery, operation and maintenance of Armor vehicles, and crew control. One task, called *SPANOCON*, deals with the problem of determining the span of control of a unit commander. A question which needs an answer is: *"How can we best train Armor officers to effectively control the number of tanks, or tank units, they are required to control?"*

Moving to the Southwest, you arrive at the *Air Defense Unit* at Fort Bliss, Texas. This Unit is concerning itself with human factors in the complex man-machine systems in the air defense field. It is concerned with the effectiveness of personnel in the air defense system and guided missile maintenance training.

Out on the Pacific Coast, in the beautiful Presidio of Monterey, California, the *Leadership HumRRO Unit* has been delving into the deeper problems of human

behavior. These include factors involved in leadership, motivation, group organization, and fighting spirit that lead to effective combat performance.

The relationship of HumRRO with the Department of the Army is shown on the Organizational Chart. Note the dotted line depicting a contractual connection between Department of the Army and the George Washington University.

At the heart of the HumRRO structure is the Office of the Director, who is *Dr. M. P. Crawford*. His office, as indicated by the dashes, has a direct line of coordination with the Chief of Research and Development and The Continental Army Command.

The Supporting Staff is under the Director's Office and a control line extends to the Training Methods Division and to each of the five Human Research Units. There are now some 260 civilians employed throughout HumRRO.

The Military Side

On the military side of the chart, *Col. G. J. Bayerle, Jr.*, Chief of the Human Factors Research Division of R & D, represents Department of the Army in HumRRO matters. In USCONARC, the person monitoring the HumRRO research is *Lt. Col. F. J. Michaelson*, Chief of the Research Branch, Training Division, Office of the Deputy Chief of Staff for Operations, Plans and Training.

The HumRRO structure is, in reality, two-headed for, in addition to the supervision and control extending from the Office of the Director of HumRRO, a military command line extends to each of the HumRRO Units from Headquarters, Department of the Army.

The same two-headed structure is carried over to the organization of each of the Units. The U. S. Army Aviation Human Research Unit, Fort Rucker, Alabama, which is similar in all important aspects to the organization of the other HumRRO Units, is composed of both civilian personnel, who hold University appointments, and military personnel.

THREE OF TEN HU-1A IROQUOIS DESTINED FOR USARAL DUTY UNDERGO ACCEPTANCE FLIGHT TESTS.

The civilian side of the Unit is headed by *Dr. J. D. Lyons*, the Director of Research, with an administration section, a library, and a statistical section for support. At the present time there are approximately 24 civilian personnel in the Unit including 14 research scientists and technicians directly involved in research tasks.

Lt. Col. A. H. Eliasson, the Unit Chief, commands the military side of the Unit. In addition to two enlisted men providing military administrative and supply support, there are two officers who are Research Coordinators and seven enlisted Personnel Psychology Specialists directly engaged in the research being conducted. Just as in the larger HumRRO—Department of the Army dual relationship, the Director of Research and the Unit Chief have a dual responsibility for the research being conducted by the Unit.

It is planned that the current research tasks, which comprise "a scientific approach to training", will be discussed in subsequent issues of *ARMY AVIATION*. Look for articles concerning a new approach to instrument training, improvements in methods of helicopter pilot training, a "do it yourself" aerial observer training packet, and methods used in training for low-altitude navigation. ■

LT. KILGORE'S

DILEMMA

GENERAL SITUATION:

Lt. Kilgore is a typical Army aviator assigned to the U.S. Army Aviation School, an Aviation Company, or to any other aviation space. He is conscientious, intelligent, reasonably neat, and very anxious to please.

SPECIAL SITUATION 1:

(The setting is an early summer—or winter—morning, sun rising, birds singing. A dapper Lt. Kilgore arrives at his office in the duty uniform, i.e., fresh pressed or starched khakis (abbreviated or conventional), or TW's with blouse, or Army greens, or fatigues.)

CO: *Say, Kilgore, take Major Smith on a recon flight over the Greeley impact area. He wants to look over the target damage.*

KILGORE: *What time does he want to go?*

CO: *Right now. He's waiting out front.*

KILGORE: *Yes, sir.*

(Lt. Kilgore picks up his chute and helmet, files a local, and goes out to meet Maj. Smith.)

THIRTY MINUTES LATER:

(Up in the blue—four angels—approximately halfway to the designated area.)

MAJ. SMITH: *Hey, Kilgore, you got a light?*

KILGORE: *Yes, sir. Just a minute, sir.*

(Kilgore struggles with his chute harness, his shoulder harness, and his seat belt, trying his best to get into his starched or pressed—and inaccessible—pockets.)

FIVE MINUTES LATER:

MAJ. SMITH: *Say, Kilgore, I thought you were going to give me a light.*

KILGORE: *Just a minute, sir. I got my hand caught in the &*%¢* harness and can't get to my pocket.*

FIVE MINUTES LATER:

MAJOR: *Where's that d--n light?*

KILGORE: *Just a minute, sir. I got my hand in my pocket and can't get it out.*

MAJOR: *To h--l with it. Forget it.*

ONE HOUR LATER:

(Lt. Kilgore, looking wrinkled, bedraggled, and with spots of grease and harness markings on his previously well-pressed, sharp uniform enters his office dragging his chute.)

CO: *What in the deuce happened to you? You look like the grapes of wrath. For God's sake, go home and put on a decent looking uniform!*

Fadeout.

SPECIAL SITUATION 2:

(Some time later. Flight suits, Air Force type, have been approved for the flight line only. Again it's an early summer—or winter—morning, sun rising, birds singing as a dapper looking Lt. Kilgore arrives at his office in the duty uniform.)

CO: *Kilgore, take Major Jones out to the 30th Battle Group strip and stay with him so that you can bring him back this afternoon. Keep your ears and eyes open out there; they have a good field exercise going and you can pick up some pointers.*

DILEMMA/*Continued*

(Lt. Kilgore hastens to the locker room, dons his brand new Air Force flight suit with name tag, USA patch, outfit patch, wings, regimental crest, etc., grabs his chute and his APH-5, fills out and files a local, and meets Maj. Jones at the aircraft. Maj. Jones, a 107% ground officer, mutters the amenities, and thinks to himself, *"These blankety-blank Army pilots and their blankety-blank equipment and uniforms. Why can't I have one of those faded blue coveralls with all those pockets?"*)

FIVE MINUTES LATER:

(Over the intercom.)
MAJ. JONES: *Say, Kilgore, do you have a light?*
KILGORE: *Yes, sir. Right here in my cigarette pocket on the left sleeve.*
MAJ. JONES: *Thanks a lot. That certainly was quick.* (And thinking to himself, *"Leave it to the Air Force to do the job. Sure would like to have one of those suits.*)

ONE HOUR LATER:

After landing at the 30th Battle Group's strip and shutting down, Lt. Kilgore walks toward the Battle Group CP (Ed. Note: anyone who walks TOWARD, rather than away from a CP is asking for it!), and he is stopped by a bullish roar vibrating through wood and field.

"What in h--l is that? Hey, you, come over here!"

ABOUT THE AUTHOR

CAPTAIN MICHAEL F. ROYSE, NOT UNLIKE THE FICTIONAL KILGORE, IS ASSIGNED TO THE U.S. ARMY AVIATION SCHOOL, AND, BY HIS OWN ADMISSION, FALLS INTO THE "TYPICAL ARMY AVIATOR" DEFINITION OUTLINED IN HIS OPENING PARAGRAPH. HE PREDICTS THAT THE READING OF HIS ARTICLE WILL BRING FORTH MANY LOUD UTTERANCES OF THE "AMEN, BROTHER" CATEGORY.

A stern-faced colonel—straight-legged and ramrod erect—corners Kilgore and after a lengthy deliberation on the proper field uniform to be worn by soldiers on this field exercise, lets go of Kilgore's ear.

Rather weakly, Lt. Kilgore tries to inform the colonel that this Air Force type uniform was authorized to wear by Army flying people, of which he is one.

At this point the colonel replies, each syllable etched in acid, *"I don't give a d--n what you were or were not doing, you are going to wear the PROPER Army field uniform doing it in the field!"*

Fadeout 2.

SUMMARY

Now these situations may seem somewhat far-fetched, but let's review, for a moment, the uniforms in which we presently fly.

The Summer Uniforms

First of all, there are khakis, long or short; the summer uniform; or TW's without blouse. This is a nice duty uniform for duty—but it just ain't made to fly in. When flying, you can't get to your pockets where you carry maps, computers, pencils, plotters, cigarettes, matches or lighter, handkerchief, comb, wallet, pocket knife, nail clippers, not to mention such possibilities as an inhaler or candy bars.

The Army Greens

Next, there's the winter uniform—those good ol' Army greens. Everybody likes them; they look sharp; but to fly in? Nope—same reasons as for the summer uniform. And did you ever look at the summer or winter uniform after it has been flown in? It looks like it was shot at and missed, spit at and hit! Grease marks, gasoline stains, wrinkled—ugh!—not a proper appearance, to say the least, not to mention that usual restricting feeling while flying.

Fatigues

Now, fatigues could be a decent type

uniform, *IF* the pockets were accessible while flying. In fact, they just might be a little more inaccessible. Did you ever try to get into a starched fatigue pocket under a parachute harness and seat belt while flying in just a little turbulence? Quite a job!

However, they are an acceptable duty uniform and jibe with those worn by other Army troops.

. . . And the Cast-Off

The next uniform in which one may fly is that cast-off uniform, the UP IN THE WILD BLUE YONDER Air Force faded blue flying coveralls. These are the best yet. They're *made* for flying; they're not supposed to be all starched up (we're still waiting); they have plenty of accessible pockets for tools of the trade; are fire-proof chemical impregnated and all that Jazz; BUT you stand out like a sore thumb on a fingerless fist standing next to other Army troops. In fact, they won't even claim kin to you! And try to go to the Club to eat in one! I won't even mention the camouflage capabilities of the Air Force blue coveralls.

A Matter of Coloration

The gist of this brief article is that aviators have a need for a flight type uniform to be worn for duty that would be the *same shade* as other Army troops. Why not? We're in the Army, aren't we? Why can't a uniform be issued similar to the fatigues that would have outside pockets easily accessible for the "tools of the trade" while flying?

It is felt that a uniform of this type—a duty uniform, a flying uniform, and a field uniform combined in one—would serve to dispel some of the animosity between Army Aviators and other Army troops. After all, we're all in the same boat!

ROCKS ON THE ROCKS!

"Throw a couple of rocks in the pot and let's have a drink!"

That could very well be the way a couple of Spacemen might greet each other in a chance meeting on the moon—and they'd mean it literally, not figuratively.

Dr. Roy G. Brereton, one of the Space Age thinkers at Aerojet-General, is convinced that while you may not be able to get blood from a stone, you can get water from it.

His studies convince him that certain kinds of rocks, known to contain as high as five per cent water, can be found on the moon.

To get the water out of the rock, for vital drinking needs, Dr. Brereton says the men on the moon will need a source of great heat to "cook" the stones.

The doctor says a mirror would focus the sun's heat to the needed temperature —1500 degrees centigrade or, roughly, about 5 or 6 times the temperature needed to bake a cake.

This heat would then be directed on a vat, or huge pan, in which the rocks were placed. When the water in the rocks got hot enough it would rise in the form of steam. A dome would catch the steam and let it condense and drip off as usable water.

Can there be much doubt that men on the moon will call the product of their do-it-yourself distillery—"Moonshine?"

ARC COURSE AIDS ARMY INSTRUCTION

By

MAJOR CLAUD E. SHORT, RET.

Representatives of each CONUS Army Area recently traveled to Boonton, N. J., home of the Aircraft Radio Corporation, to attend a 40-hour course in introduction, theory of operation, and maintenance of its newest navigational equipments.

The course, primarily targeted at providing a working knowledge of new equipment purchased for U. S. Army and other military aircraft, was conducted at no cost to the government. It provided, in addition to the study of new equipment, a review of all existing ARC equipment and discussions of general problems with all military communications/navigation equipments.

Instructors at the sessions were Aircraft Radio Corporation engineers who actively participated in the development and design of the systems. All equipment in the course was operational and a majority of the 30 men enrolled had an opportunity to disassemble the components and perform actual maintenance on all units.

Principal equipments studied were the AN/ARN 30D (civilian designation: Type 15F) VHF Navigation Equipment; the AN/ARN 59 (civilian designation: Type 21A) ADF and the B-18A RMI Converter. The AN/ARN 30D is ARC's new crystal controlled Omni system that was introduced last year. The AN/ARN 59 ADF is the automatic direction finder used exclusively in all ADF-equipped Army aircraft. It was used in the F-101 and is the system specified in the newest fighter bomber, the F-105. The B-18A is used in Army aircraft requiring RMI capabilities. The low-weight RMI Converter uses existing aircraft power.

Officials Assist in Course

Conducting the instruction session on the ADF was *Edward B. Moore,* ARC's manager of military and industrial products. *Floyd W. Piper,* head of the firm's systems engineering department, conducted the session on systems. *Paul Hart,* ARC engineer, instructed the class on the AN/ARN 30D Omni system, and instruction in the theory of operation and maintenance of the RMI Converter was shared by engineers *Alex Adler* and *John Winter.* Supervising the conduct of the complete course was *Leroy Johnson,* military field engineering and sales.

A tour of the plant and observation of production operations also was part of the course. Particular interest was shown in assembly and final testing, hermetic sealing processes, and the Engineering Division.

At the end of the week-long session, certificates were presentd by *William F. Sauers,* president of Aircraft Radio Corporation, with *Mr. Johnson* and *Carl L. Cahill,* general sales manager, assisting.

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BROCK, EW, 1922-E Patton Dr, Ft. Meade, Md.
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PRODUCTION OF THE SKYHOOK, CESSNA'S NEW ROTARY-WING AIRCRAFT, IS NOW IN FULL SWING AT THE COMPANY'S PROSPECT PLANT IN WICHITA. CERTIFICATED IN AN IFR VERSION, THE 4-PLACE SKYHOOK WILL BE MARKETED COMMERCIALLY IN ONLY THE VFR VERSION. POWERED BY A CONTINENTAL 270 H.P. SUPERCHARGED ENGINE, THE HELICOPTER IS CERTIFICATED FOR CRUISING SPEEDS TO 122 MPH AND HAS A RATE OF CLIMB OF 1,030 FPM AT 8,000 FEET.

CAPTAINS (Continued)

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INSTRUCTIONAL TEAM

MAJ. GEN. N. A. COSTELLO, CENTER, ACofS, G3, HQS, USARPAC, CHATS WITH LT. COL. W. T. SCHMIDT, LEFT, AND 1ST LT HENRY ALLEN OF THE ARMY AVIATION SCHOOL, IN CONNECTION WITH THE AVIATOR ANNUAL WRITTEN EXAM AND THE ANNUAL INSTRUMENT RE-QUALIFICATION PROGRAM. (USA PHOTO).

CHANGE OF COMMAND

A GUIDON OF THE 13TH TRANSPORTATION COMPANY (LT HEL) IS PASSED AS A SYMBOL OF COMMAND FROM OUTGOING COMMANDER, MAJ. GEORGE E. LAWRENCE, LEFT, TO MAJ. WILLIAM L. DUNCAN, THE UNIT'S NEW COMMANDING OFFICER. THE "PASSING" TOOK PLACE AT A RECENT CEREMONY BEFORE THE MASSED TROOPS OF THE I CORPS (GROUP) AVIATION UNIT. (U.S. ARMY PHOTO).

OUTSTANDING PERFORMANCE

PRIOR TO DEPARTING FOR THE U.S., CAPT. EMMET P. HOLLOWELL, LEFT, IS PRESENTED WITH THE ARMY COMMENDATION MEDAL BY BRIG. GEN. J. HART CAUGHEY, I CORPS (GROUP) CHIEF OF STAFF. CAPT. HOLLOWELL WAS CITED FOR HIS OUTSTANDING PERFORMANCE OF DUTY AS ASSISTANT SECRETARY, GENERAL STAFF, AT CORPS HEADQUARTERS, NEAR UIJONGBU, KOREA. (U.S. ARMY PHOTO).

CARRIER TESTED

THE U.S. NAVY'S TWIN-TURBINE SIKORSKY HSS-2, AN ADVANCED HELICOPTER WEAPONS SYSTEM UTILIZED IN SUB HUNTING, HOVERS NEAR A DESTROYER DURING THE AIRCRAFT'S RECENT CARRIER SUITABILITY TESTS. THE CARRIER, USS LAKE CHAMPLAIN, AND ANOTHER DESTROYER ARE SHOWN IN THE BACKGROUND.

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By MAJOR KENNETH D. MERTEL

USAREUR REPORT

Sky Diving is of growing interest to USAREUR aviators for many participate as jumpers and still others fly the aircraft from which the "dives" are conducted. USAREUR has a total of seven official Sport Parachute Clubs. The oldest club is the *24th Infantry Division Sport Parachute Club* at Augsburg, Germany, with a total of 1,150 free fall jumps since August 1959. Most jumps are made at Gablingen Army Airfield.

The *10th Special Forces Group Sport Parachute Club,* the most active, has conducted over 1,464 free fall jumps. This club uses the Bad Tolz Army Airfield for most of their jumps. The *Golden Arrow Sport Parachute Club* (8th Inf Div) conducts its jumps in the Baumholder and Mainz Training Areas.

CREW MEMBERS MAJ. WILLIAM R. SCHMIDT (LEFT) AND SP-4 LEROY FAIRCHILDS ARE SHOWN AT BELL HELICOPTER'S HURST, TEXAS PLANT JUST PRIOR TO THEIR PARTICIPATION IN THE FERRY FLIGHT OF THREE HU-1B IROQUOIS TO A PORT FOR SHIPMENT TO ARMY AVIATION UNITS IN EUROPE. HU-1B OVERSEAS DEPLOYMENT BEGAN IN EARLY MAY.

The *Stuttgart American Sky Diving Club* jumps from the Karlsruhe and Ludwigsburg Army Airfields and the Malmsheim Airstrip in the Stuttgart area. The *3d Armored Division Sport Parachute Club* jumps in the Gelnhausen area near Frankfurt.

The *4th Armored Division Sport Parachute Club* jumps from the Goeppingen, Schwabish-Gmund and Erlangen Army Airfields. The youngest club is the *Heidelberg Sport Parachute Club,* recently organized. They conduct their jumps at the Coleman Army Airfield.

The records of all of these clubs are excellent. No fatalities have occurred, and only two serious accidents. Jumps are made from L-20 and U1-A aircraft. The H-34 helicopter, recently authorized by USAREUR for sky diving, will be used in the future. If you are interested in sport parachuting, look up your nearest club. All are interested in obtaining new members. If you desire to organize your own club, see USAREUR Circular 95-19 for guidance.

Drone flying in the Aerial Surveillance Platoons has been most successful over the past few months. The 24th Combat Aviation Company commanded by *Major Charles Ruple,* recently completed over 100 successful drone flights.

USAREUR aviators received another glimpse of the new HU-1A helicopter. Aviation elements of the 101st Airborne Division that participated in *Exercise Longthrust* brought a number of these new helicopters with them for the exercise. Happy to have our stateside visitors with us, even for such a short period.

The USAFE Flight Safety Publication *Airscoop* had an interesting memo entitled *"Incidence of Incidents."* I have taken the liberty of quoting a few sentences.

"Aircraft incidents are a prelude to an aircraft accident. . . . It is a known fact that a direct relationship exists between the occurrence of incidents and the occurrence of accidents. Unfortunately, the exact numerical value of this relationship is not known; however, it is reasonable to assume that a certain number of incidents precedes (in some form or other) every aircraft accident.

"My definition of an aircraft incident is anything that causes the aircraft or crew member to deviate from normal. Call it what you may—mishap, unusual occurrence, episode, reportable or nonreportable incident—they all mean the same in the accident business.

"Operational Unit Commanders should closely identify themselves with every aircraft incident and monitor the investigation and correction of the cause factors. The cause factors should be treated according to the accident potential involved. If the Chief considers all incidents serious, the Indians usually follow the leader."

What kind of an example are you setting?

Change 1 to USAREUR Circular 95-5, Regulations for US Army Aircraft and Army Aviators, was published this month. One of the more important changes is the granting of clearance to Army Aviators in the same manner as outlined in Change 1 to AR 95-1. Might be well to review *General Clifton F. Von Kann's* recent comments on this subject. They furnish excellent advice on using the new flight clearance system that should be followed by all USAREUR Aviators.

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Army Units Receive Kossler Award

Two U.S. Army units received the Captain William J. Kossler Award for their extensive participation in 1960 *in a relief mission to disaster-torn Chile. The joint Award was presented under the auspices of the American Helicopter Society at the organization's Honors Night Dinner held in Washington, D.C., on May* 5.

The 56*th Medical Platoon (Air Amb), Ft. Bragg, N.C., and the* 57*th Medical Platoon (Air Amb), Ft. Meade, Md., participated in the Department of Defense relief mission, "Operation Amigo." Both helicopter ambulance units were airlifted to Chile by Air Force C-*130 *cargo planes in response to Chile's plea for help following a series of earthquakes and a tidal wave that devastated wide areas.*

Operating under the most adverse weather conditions, with few tools at their disposal, the two air ambulance units kept their turbine-powered Iroquois helicopters busy carrying urgently needed food and medical supplies to isolated areas, flying medical teams throughout Chile's coastal region for a mass innoculation program and evacuating injured inhabitants while tremors continued to rock the already shattered communities.

*With just five HU-*1*As the* 56*th Medical Platoon alone flew* 189 *air hours, covering more than* 17,000 *miles, carrying* 77,320 *pounds of food, clothing, medical and building supplies,* 431 *passengers and evacuated* 22 *patients during its* 169 *flying missions of mercy.*

Helicopters of the 57*th Medical Platoon flew more than* 166 *hours, covering in excess of* 10,000 *air miles, transporting approximately* 39,000 *pounds of vitally needed supplies.*

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HENDERSON, RP, 401 Signal Rd, Newport Beach, Calif.

MASTER ARMY AVIATORS

(While ARMY AVIATION has attempted to report upon the issuance of each Master Army Aviator Rating—and has published such photographs that it has received covering the ceremonies surrounding individual awards, the publication has not received "PIO directs" in each instance. The following list is published in compliance with the many requests the publication has received from our readers, both military and industry. The list does not reflect very recent "additions" or changes in rank.)

1. Col Robert R. Williams, Arty
2. Maj James H. Lefler, Arty
3. Col Jack L. Marinelli, Arty
4. Maj Fred Hiatt, TC
5. Lt Col William G. Kilmer, TC
6. Lt Col David E. Condon, TC
7. Maj Norman W. Goodwin, TC
8. Capt Harry W. Wiltse, Jr., Arty
9. Lt Col John W. Oswalt, Arty
10. Lt Col Carl E. Bobo, Jr., Arty
11. Maj Robert R. Stanfield, Arty
12. Capt John L. Roderick, TC
13. Lt Col Wayne N. Phillips, TC
14. Capt Merrill E. Jameson, Arty
15. Lt Col Thomas E. Haynes, TC
16. Maj Allen S. Mou, Arty
17. Maj Clark C. Bohannan, Arty
18. Lt Col Richard L. Long, TC
19. Maj George E. Lawrence, TC
20. Maj Baird A. King, Arty
21. Maj William R. Dodd, TC
22. Maj Leland F. Wilhelm, Arty
23. Maj Leonard F. Seitz, MSC
24. Col Ford E. Allcorn, TC
25. Maj Francis F. Pfeifer, TC
26. Maj Bernard M. Zeppenfeld, Arty
27. Capt Thomas N. Hurst, Arty
28. Lt Col Jack Blohm*
29. Maj James V. Lowe, TC
30. Major Jack W. Duffy, Arty
31. Maj Floyd C. Wilson, Jr., Arty
32. Maj Eugene A. Wilson, TC
33. Maj Paynee O. Lysne, Arty
34. Maj William F. Proncavage, TC
35. Maj Henry S. Wann, TC
36. Lt Col Raymond E. Johnson, Arty
37. Lt Col Jack J. Tinnin, Jr., Arty
38. Maj Leland H. Willard†
39. Lt Col James A. McCord, Jr., Arty
40. Maj Flavius K. Simmons, Arty
41. Maj Theo L. Moore, Arty
42. Lt Col David M. Kyle, Arty
43. Maj John Olihovik, Inf
44. Maj Deanel B. Wilson, TC
45. Maj Hunter G. Harbison*
46. Capt Thad L. Farris, Arty
47. Maj Lowell K. Solt, Arty
48. Maj Carl A. Colozzi, Arty
49. Maj Elbert E. Drane, Armor
50. Maj Leo H. Bellieu, CE
51. Maj Joseph P. Smith, SigC
52. Maj Robert W. Miller, Arty
53. Maj Raymond G. McLaughlin, Arty
54. Maj Harold R. Snyder, Arty
55. Maj Oliver V. Norman, Arty
56. Capt Homer O. Robbins, Arty
57. Maj Ralph O. Bennett, Armor
58. Maj Robert C. Adams, Arty
59. Maj Floyd C. Erickson, Arty
60. CWO W-3 Roy W. Owen
61. Lt Col Morris C. Rawlings, Arty
62. Capt Robert N. Peterson, Arty
63. Major Raymond P. Johnson, Arty
64. Capt Guy R. Claybourn, Jr., Arty
65. Capt Melvin D. Tate, Arty
66. Capt Donald C. Blatt, Arty
67. Maj. Ronald H. Duell, Arty
68. Maj Leo E. Bergeron, Arty
69. Maj Neil Reese, Arty

NEWLY-ELECTED OFFICERS AND DIRECTORS OF THE NATIONAL AERONAUTICAL SERVICES ASSOCIATION, AN ORGANIZATION CLOSELY ALLIED TO ARMY AVIATION, ARE SHOWN FOLLOWING THE NASA ANNUAL MEETING IN WASHINGTON, D.C., SEATED, LEFT TO RIGHT, ARE HARRY S. BAER, JR., SEC-TREA.; FRANK W. HULSE, PAST PRES. AND ADVISORY COUNCIL MEMBER; HENRY I. McGEE, PRES.; MRS. ISABEL McKAY, VICE PRES.; AND RAMSEY D. POTTS, JR., ADVISORY COUNCIL MEMBER. MEMBERS OF THE BOARD OF DIRECTORS STANDING ARE, L-R, GEORGE L. CARTER, RAYMOND M. TONKS, BEVERLY E. HOWARD, E. MERRITT ANDERSON, E. FRED BUEHRING, AND WINSTON CASTLEBERRY. DIRECTORS RALPH J. OSBORN AND CLARENCE E. PACE ARE NOT SHOWN.

MASTER/*Continued*

70. Capt Diay B. High, Arty
71. Maj Richard J. Scheafnocker, Arty
72. Maj Hubert N. Reed, Arty
73. Lt Col Jean L. Chase, Arty
74. Maj Robert H. Williams, Arty
75. Maj Harry J. Langley, Arty
76. Maj Robert A. Filby, TC
77. Maj A. T. Pumphrey, Armor
78. CWO W-3 Anthony A. Rozga, TC
79. Capt Jack Martin, Arty
80. Capt Edward S. Hawkins, TC
81. Maj Eldon O. Basham, TC
82. Maj Neely R. Brown, Arty
83. Lt Col Harry L. Bush, Arty
84. Maj Eugene W. Dow, Inf
85. Maj Walter F. Jones, Arty
86. Maj William J. Hix, Arty
87. Maj Robert F. Litle, Jr., Inf
88. Capt John L. Cecil, Arty
89. Maj George T. Burton, Arty
90. Maj Arthur M. Clarke, Arty
91. Maj Harold B. Van Dyken, Arty
92. Maj Carl A. Pieper, TC
93. Maj John S. Aufill, Arty
94. Lt Col Milford L. Juhl, Arty
95. Capt Charles F. Kieffer, CE
96. Capt Dale M. Liggett, Arty
97. Maj Joseh M. Bowers*
98. Capt Floyd T. Barron, Arty
99. Lt Col Henry N. Weggeland, Jr., Arty
100. Capt Leonard R. Dennis, Inf
101. Maj Ralph S. Paxman, Arty
102. Lt Col Francis W. Holden, Jr., TC
103. Major William L. Barker, Arty
104. Capt Adrian D. Cunningham, TC
105. Capt Raymond J. Kangas, Arty
106. Capt William L. Alford, Arty
107. Maj John A. Murray, Arty
108. Maj John R. Goodrich, Arty
109. CWO W-2 Martin V. McInerney, TC
110. Capt Robert A. Michelson, Arty
111. Capt Thomas E. Stuart, TC
112. Maj Deverne R. Yost, Arty
113. Capt Robert J. St. Aubin, Arty
114. Capt Marquis D. Hilbert, Arty
115. Maj Michael R. Cullen, Arty
116. Lt Col Carl I. Sodergren, Arty
117. Capt Ben A. Byers, Arty
118. Capt Frederick W. McGowan, Arty
119. Capt Lee R. Rodawalt, Arty
120. Maj June H. Stebbins, TC
121. Lt Col Jack D. Wells, Armor
122. Maj Bernard O. Withrow, Arty
123. Capt Ross E. Noah, Arty
124. Maj Arthur F. Hammarstrom, Arty

* Retired
† Deceased

CWOS (Continued)

HERRING, HD, 65th Trans Co (LH), Ft. Eustis, Va.
HILDRETH, DP, Off Stu Det, Box H-29, Ft. Rucker, Ala.
HOLT, RH, 339th Trans Co (DS), Ft. Riley, Kan.
HOOKS, CD, Off Stu Det, Box H-16, Ft. Rucker, Ala.
HOUSE, WH, 6th Trans Co (LH), APO 71, San Fran, Calif.
HUNTER, CM, 568 Trans Co, APO 949, Seattle, Wash.
JAMES, MB, Jr., Davison Army Airfield, Ft. Belvoir, Va.
KEAN, RJ, Box 5, Bernard, Iowa
KETCHERSID, FR, TUSLOG Avn, Liaison Sect, APO 254, NY, NY
KIPE, OK, 26th Trans Co (LH), APO 189, NY, NY
KNUDSLIEN, MG, 101st Combt Avn Bn, Ft. Campbell, Ky.
LAMKIN, U, Off Stu Det, Box K-45, Ft. Rucker, Ala.
LASHOMB, LV, 59th Trans Co, APO 800, NY, NY
LEE, A, Jr., 110th Trans Co, APO 29, NY, NY
LINDSEY, DH, Qtrs 2357-E, Ft. Eustis, Va.
LORENCE, CE, 625 5th Ave, Ford City, Penna.
LUCHNER, HS, 2342-B Travis Pl, Holloman AFB, N. Mex.
MALLOW, D, Jr., 826 Ringgold, APO 957, San Fran, Cal.
MALONE, LJ, 90th Trans Co (Med Det), Ft. Knox, Ky.
MANTOOTH, GW, 516-A S. Valdez Dr, Ft. Benning, Ga.
MANUEL, WC, 26th Trans Co, APO 322, NY, NY
MARSH, JW, 14 Olson Lane, Ft. Rucker, Ala.
MARTIN, WJ, 12th Avn Co, Ft. Sill, Okla.
McCARTT, JV, Off Stu Det, Box MC-15, Ft. Rucker, Ala.
McGEHEE, JI, 217 Harris Dr, Ft. Rucker, Ala.
MOLICK, RJ, 508 USASA Gp, APO 301, San Fran, Calif.
MYERS, FE, 4th Trans Co (MH), APO 165, NY, NY
OWENS, MA, 110th Trans Co, APO 29, NY, NY
PAGANO, PL, USAAVNS F/W Cl 61-5, Ft. Rucker, Ala.
PATTERSON, JW, F/W Cl 61-6, USAAVNS, Ft. Rucker, Ala.
POTTS, BB, 57th Trans Co (LH), Ft. Lewis, Wash.
PROCTOR, HL, D/PS Inf, Aberdeen Prov Grounds, Md.
PROUTY, RW, Qtrs 2312-B, Ft. Eustis, Va.
PURDON, RL, PO Box 104, Georgetown, Ohio
REED, LM, 1927 S. Franklin, Colo Springs, Colo.
RHODES, HB, 59th Trans Co (LH), APO 800, NY, NY
SANDIDGE, JR, Marina Del Mar Trl Ct, Marina, Cal.
SHARE, LL, Hq, 7 Army Avn Gp, APO 154, NY, NY
STEELMAN, JL, USAAVNS FWQ Cl 61-6, Ft. Rucker, Ala.
STEJBACK, WJ, 246 Killder Dr, Columbus, Ga.
SLIGH, MW, 11th Trans Co (LH), APO 46, NY, NY
TALBOT, RB, Jr., Qtrs 2304-C, Ft. Eustis, Va.
THOMAS, BG, 53d Avn Det, APO 331, San Fran, Cal.

CWOS (Continued)

TOWNSEND, JR, 7th Army Avn Gp, APO 154, NY, NY
UPCHURCH, BF, 2079 Osceola Dr, Fayetteville, NC
VALENTINE, GE, Box V-2, USAAVNS, Ft. Rucker, Ala.
VERBEEK, GD, 110 Trans Co (LH), APO 29, NY, NY
VERTREES, CR, 13 Trans Co (LH), APO 358, San Fran, Calif.
WATTS, JC, USATATSA, Ft. Rucker, Ala.
WILDE, RC, 3d Trans Co, Ft. Belvoir, Va.
WILLIAMS, WJ, 57th Trans Co, Ft. Lewis, Wash.

WOS

McLAUGHLIN, CE, 65th Trans Co., Ft. Eustis, Va.
SEELEY, JS, 6th Trans Co (LH), APO 71, San Fran, Cal.
TSCHETTER, L, EUCOM SJS, APO 128, NY, NY
WHITE, GT, Jr., 338 Sandy Rd, Ft. Benning, Ga.

SFCS

BUCKLAND, JD, ARMISH MAAG FTT-2, APO 205, NY,
JOHNSON, WR, 3d ACR Avn Co, Ft. Meade, Md.
LYKKEN, DL, 43 Foster Circle, Ft. Rucker, Ala.

SP-6S

ALLEN, HP, Jr., 3d Trans Co (LH), DUSAAF, Ft. Belvoir, Va.
PANZERA, D, 360-F 6th St, APO 949, Seattle, Wash.

SERGEANTS

TAYLOR, MW, Hq Co, 3d Log Comd, APO 58, NY, NY

SP-4S

SCHOENBRUN, MM, 800 W. 5th St, Tyler, Texas

FRIENDS

GAINES, WR, Mr., Choctauhatchee Wells, Ala.
GOLEMBIESKI, MA, Mrs., 3128 Parkdale Rd, Richmond 34, Va.
FOSGATE, F, Mrs., Raytheon Msl & Space Div, Bedford, Mass.
HARTS, WG, Mr., 3736 Kencrest Dr NE, Cedar Rapids, Ia
LALUSH, BW, Mr., Bendix, 1730 K St NW, Wash, DC
McCREARY, RJ, 15 Beaufort St, Greenville, SC
PETERS, JE, Mr., 20 Plaza Square, 1202, St. Louis, Mo.
ROSS, J, Mr., Diverside Airport, Rt 5, Tulsa, Okla.
SPENCE, GG, 3507 Brooklyn, Grand Rapids, Mich.
THURSBY, JC, Mr., 200 Seay St, Enterprise, Ala.
TODD, BO, Mr., 2252 S. Hillside, Wichita, Kansas
VANIK, MF, Mr., 3430 Walnut Ave, Seattle, Wash.
WATSON, J, 4115 NW 61st St, Oklahoma City, Okla.
WEISS, MM, Miss, 729 W. Jewel, Kirkwood, Mo.

Third Annual Conference Conducted By Sixth U.S. Army

Emphasizing the "One Army" concept, Sixth U.S. Army recently conducted its third annual aviation conference in San Francisco, Calif. Approximately 150 aviators attended from units scattered throughout Sixth U.S. Army with additional conference participation by representatives of the aviation industry.

All activities of the conference centered in the Marines' Memorial Club in downtown San Francisco, which provided excellent facilities for billeting, dining, and meeting purposes.

Visitors and guest speakers at the conference included: *Col. Claude L. Shepard, Jr.*, DCSOPS, D/A; *Col. Robert M. Hamilton*, USAC&GSC; *Lt. Colonel C. R. Albright*, OCSigO; *Bryce Wilson*, President, AAAA; *J. Andrews*, USC; *L. A. Clusing*, NASA; *L. R. Griswold*, FAA; and *W. J. Barnard*, California Aeronautics Commission. Also present were members of the 1st Recon Sqdn, 16th Sky Cav, Ft. Carson, Colo., who displayed the Hughes Army Aviation Trophy as an incentive to Sixth U.S. Army units prior to its re-award by the AAAA in September.

Highlighting the conference was the annual banquet, held in the Club's main dining room. *Maj. Gen. Ernest F. Easterbrook*, Commanding General, U.S. Army Aviation Center, was the main speaker, outlining his views on the future of Army aviation. Other distinguished guests included *Lt. Gen. R. M. Cannon*, CG, Sixth U.S. Army; *Maj. Gen. B. A. Holtzworth;* Dep CG, Sixth U.S. Army; and *Brig. Gen. G. B. Bennett*, Asst Adjutant General, State of Idaho. *(See adjoining photo.)*

Eye-Catching Is the Word

LT. GEN. ROBERT M. CANNON, CENTER, CG, 6TH US ARMY, INSPECTS THE HUGHES ARMY AVIATION TROPHY AWARDED ANNUALLY THROUGHT THE AAAA. LOOKING ON ARE, L-R, LT. SIEBERT AND CAPT. YOUNG, REPRESENTING THE 1ST RECON SQDN, 16TH SKY CAV, PRESENT HOLDERS OF THE TROPHY; GEN. CANNON, AL W. BAYER, VICE PRESIDENT, HUGHES TOOL CO-AIRCRAFT DIV.; AND COL. CURTIS L. HANKINS, 6TH US ARMY AVIATION OFFICER.

OBITUARIES

Colonel Wayne E. Downing, assigned to the Office, Deputy Chief of Staff for Logistics, Washington, D.C., sustained fatal injuries on April 19, 1961, when he was struck by flying debris while standing near an H-21 helicopter which crashed shortly after taking off from a passenger loading pad near Indian Springs AFB, Nevada. He is survived by his wife, Mrs. Estamae Downing, of 1111 Army-Navy Drive, Arlington, Virginia.

First Lieutenant James R. Jensen, assigned to the 6th Armored Cavalry Regiment, Fort Knox, Ky., sustained fatal injuries on April 5, 1961, when his TL-19D aircraft crashed near Bristol, Tenn., during the conduct of a cross-country service mission. He is survived by his wife, Mrs. Anabelle W. Jensen, of 4102 Farragut Street, Fort Knox, Ky.

AAAA ORGANIZATIONAL NEWS

ANNUAL MEETING PLANNING

Ordinarily, the unexpected loss of an Annual Meeting Chairman following on the heels of the departure of a Vice Chairman, would serve to unnerve any Annual Meeting Committee. Not so with the AAAA group. Although *Maj. Gen. Richard D. Meyer* (*Chairman*), and *Col. John J. Tolson* (Vice Chairman) are on reassignment orders, the 1961 Committee anticipates no difficulties. As one Sub-Committee Chairman put it, *"The Chairman laid out the whole affair, detail by detail. I don't know how we can miss."* The Annual Meeting Program and Advance Registration details will appear in the next issue.

MEMBERSHIP RENEWALS

With the annual membership renewal period having terminated on June 1st, preliminary figures show that 83% of the '60-'61 members renewed their AAAA membership for the coming year. This is an exceedingly high ratio in organizational circles, and one that, in part, reflects the cohesiveness of those affiliated with Army aviation.

AWARDS NOMINATIONS

Colonel Robert M. Leich, Chairman of the National Awards Committee, indicates that "the going will be rough" when the Awards Committee meets July 14th to select the winners of the four Awards to be presented at the AAAA Annual Meeting. He added, *"As expected, the bulk of the nominations once again hit my mailbox in the week preceding the cut-off date. Please pass on my personal thanks to the many persons who took part in the preparation and submission of these nominations..."*

ACTIVITY STRUCTURE, AAAA

1961-1962 CHAPTER SLATES

Bluegrass Chapter
(Fort Knox, Kentucky)

President ..... Lt. Col. Earl B. Kelly
Exec Vice President ..... Lt. Col. Jack McCauley
Secretary ..... Capt. Quay B. Snyder
Treasurer ..... Capt. Paul Clark
VP, Army Aff ..... Lt. Col. Amore V. Juliano
VP, ARNG Aff ..... Lt. Jerry R. Varnon
VP, Industrial Aff ..... CWO L. J. Lisonbee
VP, Public Aff ..... CWO Tood
VP, Natl Functions ..... Maj. John G. Kamaras

Munich Chapter
(USAREUR Region)

President ..... Maj. Henry C. Sullivan
Exec Vice President ..... Capt. Obel H. Wells
Secretary ..... Capt. John W. McKinney
Treasurer ..... CWO George W. Cox, Jr.
VP, Army Aff ..... To Be Elected.
VP, Industrial Aff ..... CWO Franklin E. Pauli
VP, Public Aff ..... Maj. Alvin F. Futrell

Jimmie L. Hilton Chapter
(Fort Sill, Oklahoma)

President ..... Capt. Eugene I. Smith
Exec Vice President ..... Capt. W. F. Dixon
Secretary ..... CWO Herbert H. Kraus
Treasurer ..... CWO Jacob C. Crouch
VP, Army Aff ..... CWO Isidro S. Valdez, Jr.
VP, Reserve Aff ..... Capt. A. L. Sheider, Jr.
VP, Indus Aff ..... Lt. Col. Russell T. Blair, Ret.
VP, Public Aff ..... Mr. E. L. Storie

USARCARIB Chapter
(CZ, Central & South America)

President ..... Lt. Col. Jack W. Ruby
Exec Vice President ..... Lt. Col. Gerald L. Hough
Secretary ..... Capt. Howard L. Premo
Treasurer ..... Capt. Joseph J. Stepp
VP, Army Aff ..... Capt. William H. Dill
VP, Industrial Aff ..... James H. Crews
VP, Public Aff ..... Capt. John A. Willis

Fort McClellan Chapter
(Fort McClellan, Alabama)

President ..... Capt. Marvin E. Kemp
Exec Vice President ..... Capt. Donald E. Keen
Secretary ..... SP-6 Paul H. Meacham
Treasurer ..... SFC Clyde H. Johnson
VP, Army Aff ..... Lt. James E. Thomas
VP, ARNG Aff ..... CWO Thomas L. Rasberry
VP, USAR Aff ..... Capt. Daniel H. Hagood
VP, Industrial Aff ..... Lt. Harold L. Johnson
VP, Public Aff ..... Lt. Floyd Sparkman, Jr.

91st Trans Co Chapter
(USAREUR Region)

President ..... Capt. Leland G. Wanken
Exec Vice President ..... Capt. Anthony O. Croak, Jr.
Secretary ..... CWO William H. Ruffin
Treasurer ..... CWO Orlando Anzalotta
VP, Army Aff ..... 1st Lt. James R. Hensley
VP, ARNG Aff ..... 1st Lt. William J. Dimon
VP, USAR Aff ..... CWO James P. McCune
VP, Industrial Aff ..... CWO David W. Chase
VP, Public Aff ..... CWO Friedrich Burk

Lech River Chapter
(USAREUR Region)

President ..... Maj. George C. Connor
Exec Vice President ..... Capt. James E. Moore
Secretary ..... Capt. Russell E. Baugh
Treasurer ..... Capt. Myles H. Mierswa
VP, Army Aff ..... To Be Elected
VP, Industrial Aff ..... Capt. Laurence J. Lesch
VP, Public Aff ..... Capt. Rodney V. Saunders, Jr.

Pikes Peak Chapter
(Fort Carson, Colorado)

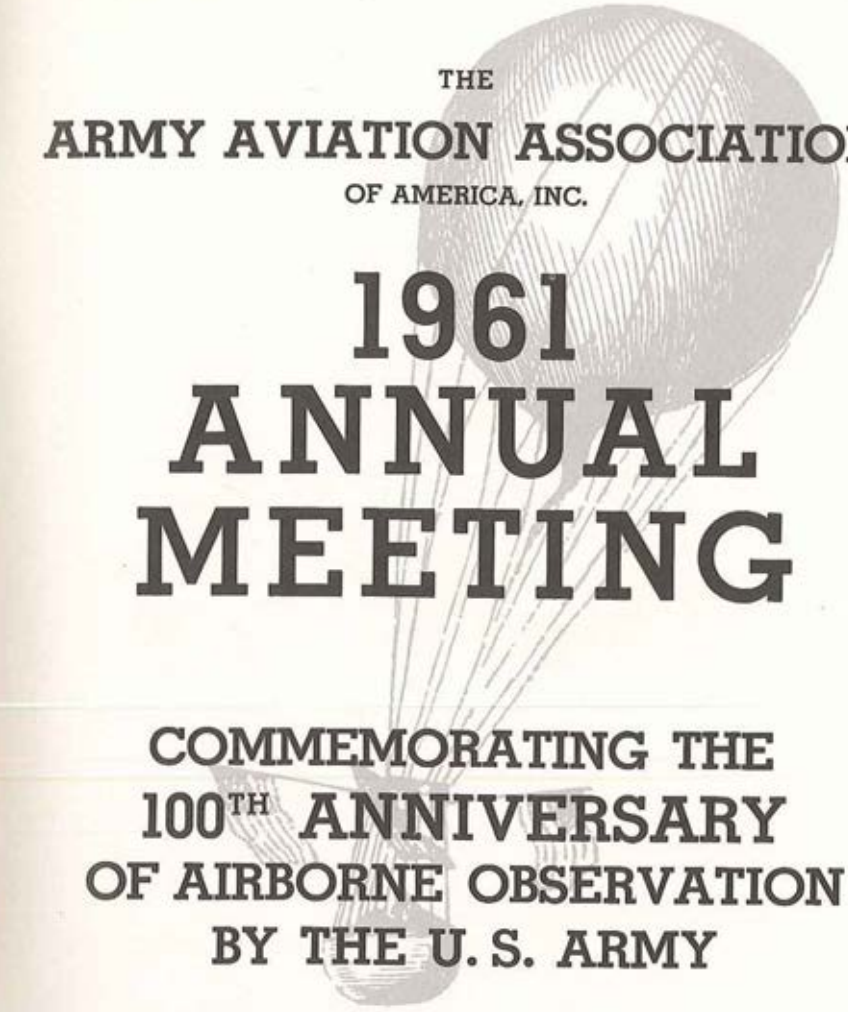
President ..... Lt. Col. Gordon L. Kinley
Exec Vice President ..... Capt. Dean G. Boyle
Secretary ..... Lt. Clarold F. Morgan
Treasurer ..... Capt. John F. Oliver
VP, Army Aff ..... Maj. Terry C. Salt
VP, Reserve Aff ..... Capt. Joe C. Hester
VP, Industrial Aff ..... Maj. James H. Lefler
VP, Public Aff ..... Capt. George J. Young

Stuttgart Chapter
(USAREUR Region)

President ..... Lt. Col. James H. Lee
Exec Vice President ..... Col. Jack W. Hemingway
Secretary ..... Capt. Albert W. Noel
Treasurer ..... Capt. Paul E. Needles
VP, Army Aff ..... Lt. Col. C. H. Ellis, Jr.
VP, Industrial Aff ..... Capt. George D. Shields
VP, Public Aff ..... Capt. James E. Hooker

Alamo Chapter
(Fort Sam Houston, Texas)

President ..... Maj. William D. C. Jones
Exec Vice President ..... Maj Bernard A. Blair*
Secretary ..... Capt. Lewis J. Neville*
Treasurer ..... Capt. Kenneth E. Witten
VP, Army Aff ..... Capt. James M. Frederick
VP, ARNG Aff ..... Capt. Thomas W. Loftin*
VP, USAR Aff ..... Capt. Robert E. Blount*
VP, Industrial Aff ..... Maj. Bill Rinkle, Ret.*
VP, Public Aff ..... Capt. Myron D. Billy
*Elected for two-year term of office.



THE

ARMY AVIATION ASSOCIATION

OF AMERICA, INC.

1961 ANNUAL MEETING

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

SEPTEMBER 4-5, 1961

SHERATON-PARK HOTEL

WASHINGTON, D. C.

Application for Coverage

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

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

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

Rank or Grade Name ASN Annual Flight Pay

Address Post Office Box Number, Residence or Quarters Address is desired

City Zone State Years of Service for Pay Purposes

I certify that I am currently on flying status with a U. S. Army unit; that I am in good health at the time of making this application; that I am entitled to receive incentive pay; that no condition is known to me at this time that could result in my loss of flying status for physical reasons; and that no action is pending to remove me from flying status for failure to meet required physical standards. I authorize the Company, or Company-designated representatives, to examine all official medical records that may be pertinent to any claim that I may submit.

SIGNATURE..... **DATE**.....

Failure to sign above invalidates this application.

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

☐ **INITIATION FEE . . . $3.00**

First Year Membership Only. Includes Lapel Pin and Decal.

ANNUAL OR PRO-RATED AAAA DUES

Membership Year Terminates Each March 31st

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

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

CATEGORY OF AAAA MEMBERSHIP

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

_____

_____

Flight Pay Protection Plan Premium Table

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

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Merrill O. Billbe
James H. Blake
G. F. Blunda
B. P. Boles
Thyra V. Bonds
Katherine M. Briesacher
R. M. Brown
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Robert C. Burgess
Mary A. Busch
Karl Bushong
Robert M. Caliboso
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Robert R. Chedester
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CHAPTER ACTIVITIES

(LOG OF CHAPTER MEETINGS, PAST & PLANNED)

■ *FORT RILEY CHAPTER.* Combined Business and Social Meeting. Ft. Riley Officers Open Mess. May 19.

■ *USARCARIB CHAPTER.* Membership Luncheon. Fort Kobbe Officers Mess. May 3.

■ *WASHINGTON, D.C. CHAPTER.* Membership Luncheon. Fort Myer, Va. Officers Mess. May 23rd.

■ *WASHINGTON, D.C. CHAPTER.* Army Aviation Birthday Ball. Members and Guests. Fort Myer Officers Mess. June 10.

■ *MUNICH CHAPTER.* Business and Social Meeting. Schleissheim Army Airfield—Recreation Area. July 8.

■ *ALASKA CHAPTER.* Business and Social Meeting. Fort Richardson, Alaska Officers Open Mess. May 26.

■ *NATIONAL EXECUTIVE BOARD.* Quarterly Business Meeting. West Gate Motel, Alexandria, Va. July 14-15.

ABOVE: MAJ. ROBERT JEFFREY, OUTGOING PRESIDENT, WELCOMES NEW OFFICERS OF THE PIKES PEAK CHAPTER. SHOWN L-R ARE CAPT. DEAN BOYLE (ExVP), LT. CLAROLD MORGAN (SECR), LT. COL. GORDON L. KINLEY (PRES), MAJ. JEFFREY, AND CAPT. JOHN F. OLIVER (TREA). BELOW: BRIG. GEN. WILLIAM B. BUNKER, LINDBERGH CHAPTER PRESIDENT, ADDRESSES THE FIRST JOINT MEETING OF THE AAAA CHAPTER AND THE ST. LOUIS SECTION, AHS. (U.S. ARMY PHOTOS).

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