Army Aviation

AUGUST 16, 1967
SILVER ANNIVERSARY YEAR

When the Chinook goes in for weightlifting, it flexes our muscles.

(See back cover)

On the spot response: Boeing style.

This make-shift tent stands in a small, remote jungle clearing. But it's as effective an operation as you're likely to run in to. It's part of a Boeing commitment: we build superior helicopters and we provide the support to keep them that way—anywhere, any time.

Boeing builds helicopters to last, to reach a high level of efficiency and to stay at that level. Our reps in remote places see that the full resources of Boeing are used to maintain this efficiency. They study, evaluate, observe, recommend.

Unpredictable problems created by environmental conditions, for example, are handled on the spot by our field service reps. They report the problem back home, where a customer support team immediately swings into action to work on solutions.

In-the-field reps are just one part of Boeing's completely integrated support capability. Training, technical publications, ground support equipment, continuous maintenance engineering, field data analysis and spares is still another part of our response to customer requirements.

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The Boeing Company, Vertol Division, Morton, Pennsylvania 19070.

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Captain Gordon L. Wagner, with approximately 1400 Mohawk flying hours, was, until recently, assigned to the Combat Surveillance School at Ft. Huachuca, Arizona. His previous assignment was with the Aerial Surveillance Platoon, 1st Cavalry Division, in Vietnam, where he received the Air Medal with 7 clusters.

GRUMMAN
Aircraft Engineering Corporation
Bethpage, L. I., New York

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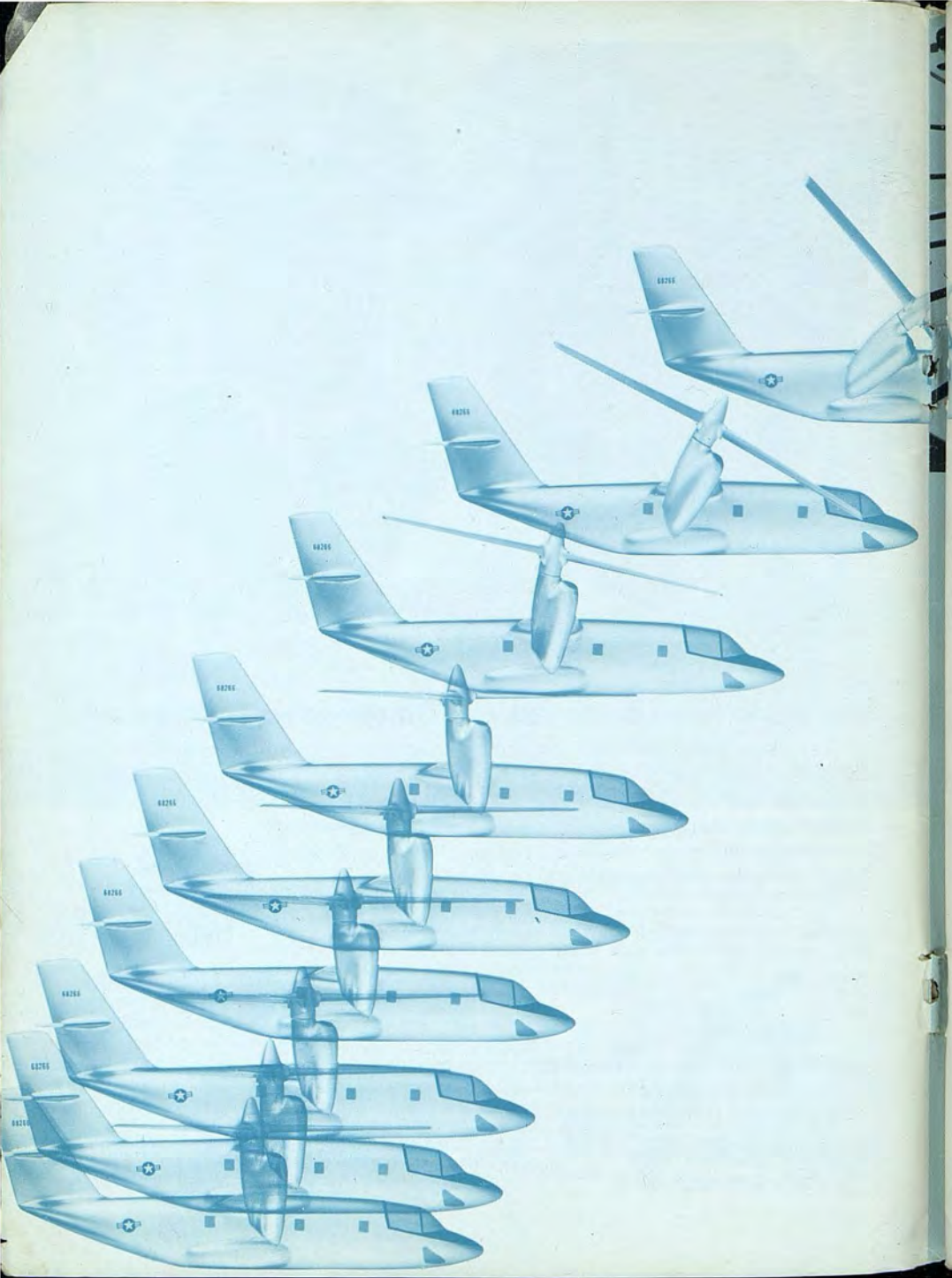
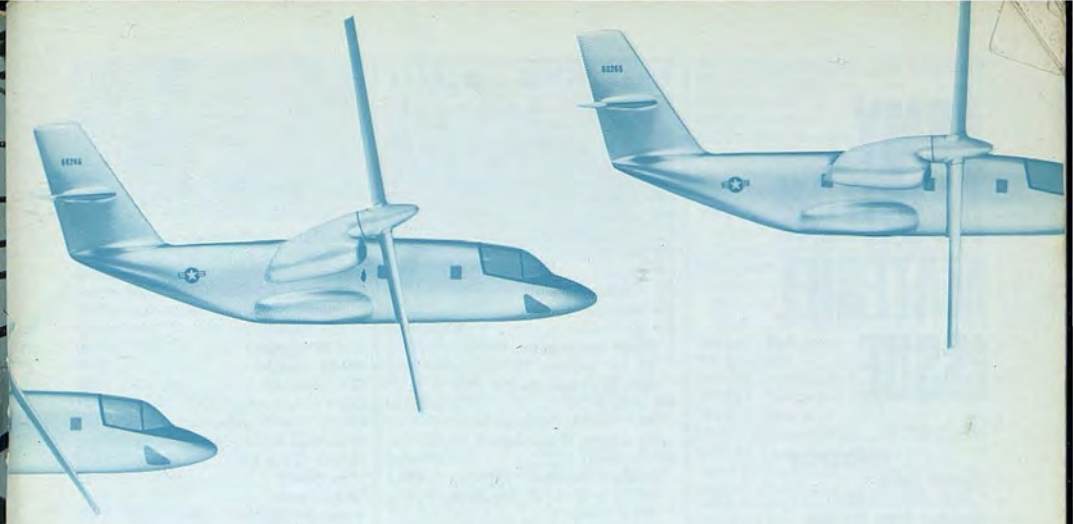
B. Each Army Aviator qualifying for the 1,000 MOHAWK Flying Hours Plaque should notify the nearest Grumman representative or office, in writing. He should enclose a certified copy of the Army Aviator's individual Flight Record, indicating that he has logged 1,000 hours in the MOHAWK in accordance with A. above.





BELL PROPROTOR HAS MULTI-MISSION POTENTIAL

Helicopter and airplane characteristics are efficiently blended in a highly versatile vehicle with multi-service mission potential. Speed is increased by over 100% in comparison with contemporary helicopters. The effect is global self-deployment capability and a corresponding increase in radius of action on all traditional military helicopter missions, which include reconnaissance, tactical troop lift, re-supply, medical evacuation and rescue. The improved radius of action and reduced response time is particularly notable as regards the helicopter rescue and recovery mission. The Proprotor will extend this unique capability, without in-flight fueling, into heretofore inaccessible areas.

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VOLUME 16, NUMBER 8

ARMY AVIATION MATERIEL ISSUE

AUGUST 21, 1967

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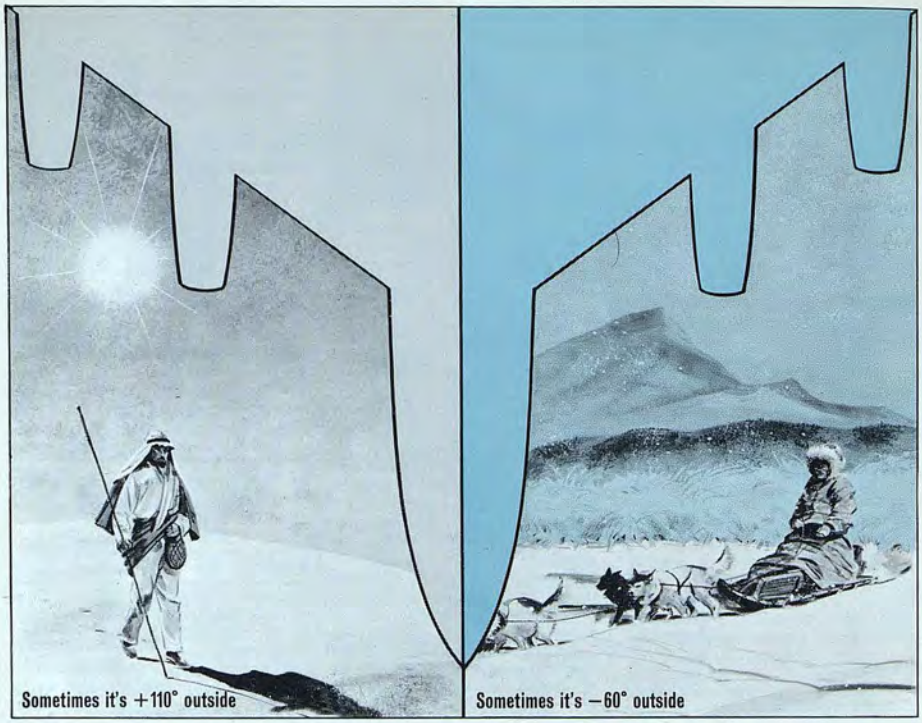

But it's always comfortable *inside* ▪▪▪ thanks to Chandler Evans' CATV

In a matter of minutes, today's large commercial airliners can go from uncomfortably warm temperatures on the ground to bitter, sub-zero readings high in the air. Thus, if passsengers and certain types of cargo are to be carried in comfort and safety, it is imperative that comfortable cabin air temperatures be maintained.

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Left: CECO's CATV. *Right:* CECO's Hot Air Valve (HAV-10) used for anti-icing of aircraft turbine engine inlet cowls.

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The New Army Aviation Policy Statement

By
Major General ROBERT R. WILLIAMS
Director of Army Aviation
OACSFOR, DA

THE Chief of Staff has just approved a new *Army Aviation Policy Statement*, which I propose to make the primary subject for this month's letter. The revised policy is not greatly different from the previous one, which I described to you in these pages of a year ago.

However, there are many new members in the aviation family, on both the military and industry sides, who I believe might be interested in a rundown on this subject.

General provisions

Basically, the new statement prescribes policy concerning the development and procurement of Army aircraft and the doctrine for their employment. The general provisions of the policy are that:

. . The Army will use aircraft to support prompt and sustained land combat operations.

. . The Army will use tactical air support and air capabilities of other military services in accordance with joint directives and existing service agreements.

. . Aircraft systems will be organic to Army organizations where their use requires direct control and planning by the unit commander, and their immediate and constant availability is essential.

. . The Army will develop and acquire aircraft and associated command and control systems capable of fulfilling requirements of immediate availability to combat support units for sustained operation in field environments.

. . The Army recognizes that *JCS Pub 2 (Unified Action, Armed Forces)* provides authority to the unified commander to direct attachment of elements of any of his service components to a subordinate unified command, joint task force, or uni-Service force.

THE NEW ARMY AVIATION POLICY STATEMENT

In view of this authority and the agreement between the Army and the Air Force regarding control and employment of certain types of fixed and rotary wing aircraft, the Army reiterates its current position that certain Air Force tactical airlift aircraft should be attached to Army units in cases of operational need, as determined by the appropriate joint/unified commander.

Requirements for aircraft

Army requirements for aircraft fall into the seven broad categories which we have long recognized. These are described in the *Army Aviation Policy Statement* as follows:

Command and Control. The Army will develop and operate aircraft to meet requirements for command and control at echelons from battalion to theater Army level.

Reconnaissance and Surveillance (R&S). The Army will develop and operate aircraft for R&S primarily within the Corps area of responsibility and for missions demanding immediate and specific response to the requirements of the unit commanders in the field. The Army will normally use aircraft of the other services to provide R&S capabilities beyond the division area of influence.

Firepower. The Army will develop and operate vertical take-off and landing (V-TOL) aircraft to deliver direct fire support for Army forces. In addition, Army aviation will be employed to give greater flexibility to ground artillery by providing airlift for artillery weapons and accurate target spotting and fire control.

Maneuver and Mobility. The Army will:

. . Develop and employ VTOL aircraft which are capable of providing airlift for tactical maneuver.

. . Use strategic airlift provided by the other services for strategic movement.

. . Use tactical fixed-wing airlift of other services, including intra-theater movements to the extent practical, to assist in accomplishing the Army's mission.

Logistics. Army VTOL aircraft will be developed and used in air line of communications operations. These operations are characterized by use of relatively unimproved air strips, no terminal cargo facilities, short hauls, cargo load capacities commensurate with the ability of small field units to absorb the delivery, and scheduled and unscheduled hauls under the control of the land force commander.

The Army considers tactical fixed-wing airlift support by other services essential to accomplishing its mission and considers that attachment of these units to Army forces will be necessary in certain combat situations.

Utility Transportation, Combat Unit Support, and Special Activities. The Army requires fixed and rotary wing aircraft organic to combat and combat support units; in detachments or units at echelons from battalion to theater Army level; and in CONUS for utility transportation, combat unit support, and special activities. To the maximum extent practicable these requirements will be met by aircraft designed for missions listed above, or by off-the-shelf procurement, and employed on the same basis as that of other services and civilian industries.

Administrative Mission Support. The Army requires fixed and rotary wing aircraft to support command, administrative, executive, and inspection functions. These aircraft

will be obtained by off-the-shelf procurement and employed on the same basis as that of the other services and civilian industry.

Organic needs defined

With respect to organizational principles, aircraft will be made organic to Army units when:

. . An appreciable improvement in mission effectiveness/capability can be achieved.

. . The aircraft can survive and be supported in the unit's operational environment.

. . The needed capability cannot otherwise be made immediately responsive to unit command requirements or is not in existence elsewhere.

Development and procurement

The new *Poliry Statement* dwells at considerable length on the subject of development and procurement. Development guidelines state that Army aircraft systems will be developed to meet definite military requirements, that secondary missions will be carefully controlled, and that Army aircraft will *not* be designed or equipped:

. . For deep penetration into hostile airspace or sophisticated enemy air defense areas.

. . For air-to-air combat.

. . To duplicate close air support responsibilities and capabilities of other military services.

In view of the Army-Air Force agreement regarding certain fixed and rotary-wing aircraft, the Army will continue to develop follow-on VTOL aircraft for intra-theater movement. Further, the Army will continue to develop VTOL aircraft jointly with other services for common use of operation by the Air Force to support the Army.

Developmental emphasis

Developmental emphasis is to be placed on the following characteristics and will stress operational and maintenance simplicity, immediate operational availability, and economy:

All weather capability.
Night operational capability.
Survivability.
Concealability.

THE NEW ARMY AVIATION POLICY STATEMENT

Vertical/Short take off and landing (V/STOL) capability.
Ease of maintenance.
Reliability.
Low fuel consumption.
Use of common fuels.
Low noise level.
Strategic mobility (portable by strategic transport aircraft, or self-deployable).

Army aircraft procurement will stress complete aircraft systems including avionics, sensors, EW equipment (to include electronic self protection devices), armament, and ground support equipment.

Standardization of spare parts and components among aircraft systems will facilitate interchangeability and reduce procurement and stockage lists.

In developing and procuring aircraft for the primary purpose of transporting passengers, full consideration will be given to multi-engine design as a means of achieving, during peacetime and in combat, safe flight operations over difficult terrain and water and under night and instrument conditions.

Specific aircraft systems

In addition to the foregoing general guidance, the policy statement sets forth objectives for the development and procurement of specific aircraft systems for use in the seven mission categories:

Observation / Command and Control: The Army will continue to procure and improve the *OH-6 helicopter* (page 75) as a replacement for the *OH-13* (pase 76), *OH-23* (page 77), and *O-1* (page 33).

Reconnaissance and Surveillance.

a. The Army will continue to procure the *OV-1 aircraft* (page 34) to meet its surveillance requirements. A product-improvement program will be instituted for the *OV-1* to increase its capabilities in all intensities of warfare.

b. The Army will explore the feasibility of developing an unmanned aerial surveillance

THE NEW ARMY AVIATION POLICY STATEMENT

system with hover capability which will be employed at brigade level.

c. Further statement of policy on additional manned and unmanned surveillance aircraft is deferred pending additional study.

Transport Aircraft: The *XC-142* (page 98) was developed on a tri-service basis to ascertain the effects of high downwash velocity, noise level, maintenance, and complexity. Field testing of the *XC-142A* in the Army environment is expected to ascertain applicability of this or smaller V/STOL concepts to the Army mission or to a supporting Air Force mission.

If a tilt-wing is found suitable to replace both the *CH-47* (page 69) and tactical fixed-wing airlift aircraft of the other services, a determination should then be made regarding proportionate numbers of this aircraft to be assigned to the Army for battlefield mobility and to the other services for logistics. The Army advanced development effort is currently concentrated on full-scale compound/composite helicopters since technical forecasts show high promise for this type aircraft.

Utility Tactical Transport: The *UH-1D* (page 80) will meet Army requirements in this area for the immediate future; however, the Army will continue considering development of a replacement with the following improvements:

a. Improved cruise speed and efficiency.

b. Longer endurance.

c. Improved payload and performance under hot-day conditions.

Heavy Lift Helicopter: Procurement of the *CH-54* (page 73) will continue to meet immediate requirements, and effort will continue on the definition of an optimum heavy lift helicopter and subsequent development.

Armed Helicopters: The *AH-56A Advanced Aerial Fire Support* (page 84) is unis under development to meet the Army's requirement for armed helicopters. The *AH-1G Hueycobra* (page 57) is being procured as an interim armed helicopter pending the *AH-56A* procurement.

Utility Airplane: For many years the Army has used a variety of aircraft to meet requirements for multi-purpose utility aircraft for utility transportation, combat unit support, and special activities. Until recently, the plan was to replace these aircraft with the *UH-1*.

However, the *U-8* (page 39), previously procured as a mission support aircraft for administrative missions, has been very effective in Vietnam for special operations and utility transport. This indicates a continuing requirement for fixed-wing aircraft for utility missions. The *U-21* (page 44) is therefore being procured for utility purposes to support tactical units.

The Army also is expanding use of the obsolescent *C-45* and *C-47* type aircraft for support missions in CONUS. The Army will continue to obtain the most satisfactory aircraft available, including fixed-wing, to meet utility support requirements.

Mission Support Aircraft (Administrative): The Army will continue to use *U-8* type aircraft to meet administrative mission support requirements. These aircraft will be procured off-the-shelf and employed on the same basis as that of large corporations and the other services as transport for senior staff officers and officials.

The revised policy statement is being published as a DA memorandum. Those of you who are on the distribution list should be receiving it in the near future. It will, of course, have a relatively limited distribution since the primary users are the developers of equipment, organizations, and doctrine. I believe they will find it useful, informative, and sufficiently unrestrictive to allow wide latitude for new concepts and improved applications.

The ARMY AVIATION Materiel Issue is published as one of each subscriber's regular issues, and takes the place of the normal August "news issue." The editors welcome corrections and additions from all sources.

LOGISTIC SUPPORT OF ARMY AVIATION

By Brigadier General
JOHN L. KLINGENHAGEN
Special Assistant for Logistic Support
of Army Aircraft, ODCSLOG, DA

TODAY, the words, "*Army Aviation,*" bring to mind a battlefield assault by airmobile companies, the troop-carrying aircraft being escorted by specially designed gunships and being supported logistically by *Flying Cranes* and transport helicopters.

Not immediately brought to mind but backing up this type of combat operation is a vast, interwoven complex of operational and logistical activities that require centralized management for cost-effective results.

The increasing complexity, value, and quantity of the Army aircraft fleet (as indicated in *Chart 1*) now dictate that greater emphasis be placed on improving supply operations, maintainability, reliability, and management techniques.

To insure that a large, sophisticated fleet of aircraft are in a constant state of readiness to perform the operational mission requires a wide range of logistical activities and projects. The measurement of success of these activities is most commonly stated in terms of the per cent of the fleet that is operationally ready.

Operational readiness rates

Aircraft operational readiness rates are composed of three elements: The *Not Operationally Ready Supply (NORS) rate* which

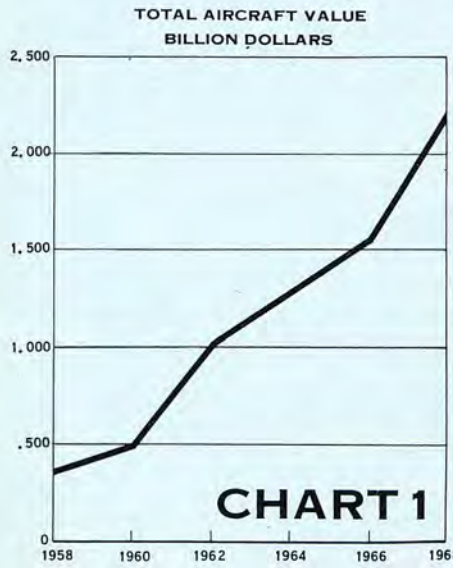
indicates the time to the nearest hour on a 24-hour day that an aircraft is out-of-action awaiting required repair parts; the *Not Operational Ready Maintenance (NORM) rate* which provides the same statistics for aircraft down for maintenance; and the *Operational Readiness (OR) rate* which indicates the number of hours that an aircraft is ready to perform its primary mission.

The rates actually accomplished are reported by using units in the field in accordance with AR 710-12. From these reports, data are accumulated monthly by the Aviation Materiel Command for analysis, publication, and distribution to the Department of the Army and worldwide commands where they are used to determine the effectiveness of logistics support programs and to identify problem areas.

In order to attain a high readiness posture, operational readiness objectives in the form of standards are developed annually. For FY-67, the worldwide operational standards for fixed wing aircraft were 75% and for rotary wing aircraft 65%, with a weighted average for all aircraft of 68%.

During the first three quarters of FY-67, while supporting one-fourth of the total aircraft inventory in Vietnam, the readiness rates were 75% for fixed wing and 69% for rotary wing aircraft, with a weighted average of 71% for all Army aircraft worldwide. *(Chart 2).*

As a result of this performance, it can be expected that the standards will be increased. Looking to the future, a goal of a 90% sustained availability rate may well be attainable, and is certainly highly desirable.



Intensive supply management

As utilization rates increase and the standards of availability are raised, the need for a system of intensive management of selected aviation components becomes apparent, particularly since the unforeseen requirements generated by combat useage in RVN have placed a heavy burden on the logistics system.

For proper programming and management, the Department of the Army requires a worldwide knowledge of the location, condition, status, and current operation hours of selected aircraft components in the hands of using units. In addition, quantitative information on assets in the supply, maintenance, and transportation segments of the pipeline is required for use in distributing existing assets and determining new procurement of components and repair parts.

To fill these needs for minimum essential information, a *T-53/T-55 Engine Intensive Management Test* was undertaken to improve the responsiveness of the logistic system to meet the users' needs. The test was established as a two-part action. The first part consisted of one-time, worldwide initial inventory of all assets, installed and uninstalled; serviceable and unserviceable.

To keep the inventory status current and correct, a recurring report was established as the second action. This reporting procedure, which utilizes a self-instructing, pre-addressed postcard, notifies the NICP directly of changes in the status of selected components as they occur, and provides real-time

information directly from the point at which the status changes.

At the present time, this intensive management system is limited to the T-55, L-1 through L-15, and the T-55, L-5 through L-11 turbine engines. However, as the system proves its worth, it is contemplated that the procedure will be expanded to include other high dollar value, critical aviation components as a means of further raising the levels of aircraft availability.

Stock levels

Coupled with the implementation of the intensive management system outlined above was an allied action taken by DA to control the stockage levels of critical aviation items. With minor exceptions, stockage of these items below theater depot level was suspended.

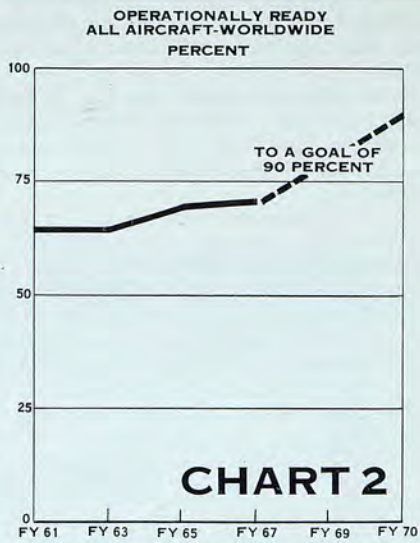
The purpose of the action was to retain close control of critical items, which should result in getting the item to the unit that needs it when it needs it.

DA and AMC have also dispatched teams of supply experts to units in the field to assist them on site in reviewing and establishing realistic *Prescribed Load Lists (PLL)* and *Authorized Stockage Lists (ASL)*. This action has helped field units to eliminate items they do not need to stock based on demand data, and to put on their shelves the items required to meet daily needs. Initial results of this effort have appeared in the lowering of *NORS rates* on CH-47 *Chinooks*.

Special supply procedures

As the intensity of aviation activity in RVN increased it became apparent that some type of streamlined procedure was required to meet the needs of aviation units for replenishment of repair parts. The system that routed requisitions through Okinawa and Hawaii was too cumbersome and time-consuming to meet critical needs in the combat area.

As a result, certain aircraft systems (CH-47, UH-1, CH-54, and OH-6) in RVN are allowed to submit requisitions on parts peculiar via airmail or transceiver directly to AVCOM, where they are channeled to the applicable NICP for supply action. The requistions are processed under a high priority, and given expedited treatment to fill the users' needs.



In March of this year, the *Special Supply Support System* for the CH-47 and the CH-54 was expanded to allow the submission of requisitions directly to AVCOM for all items including airframe, engine, avionics, armament, and common parts.

DA is now gathering data for a critical analysis of the *Expanded Special Supply System* to determine the feasibility and desirability of applying the procedure to all aircraft in RVN. A decision on this issue should be forthcoming in the near future.

Closed Loop Support

Intensive management programs and special supply procedures emphasize the fact that limitations in terms of manpower, material, and time are such that we cannot afford to waste any of these precious resources. A problem that haunts the aviation logistic program is the time lag between discovery of a problem and its solution, a

problem that is compounded by the tremendous lead time on certain items of equipment.

In an effort to reduce time lag, to put management on a real-time basis, and to change the logistic song to a happier note, the *Closed Loop Support (CLS) System* was established.

The *CLS* program brings together in one document total authorization including maintenance float, receipts within the theater from new production or rebuild facilities, losses to the theater through combat attrition crash damage or evacuation from the theaters for depot maintenance program, and a continuous picture of the current inventory status.

The objectives of *CLS* are, first, to assure that the proper quantity of assets are in place to fill authorizations; and secondly, to assure that the quality of the inventory is continually improved. The *CLS System* works in such a manner that serviceable assets are pumped in by procurement, maintenance, and supply activities, while unserviceable assets are siphoned off to keep overhaul rebuild lines moving. Command emphasis and close coordination at all echelons is required to keep the materiel moving.

A real-time reporting system utilizing messages and summary reports has been established to provide current management data, to investigate problem areas as they occur, and to analyze performance versus objectives. The *CLS System* for aviation items in RVN was developed in Hawaii in June and has been approved by DA.

The future should see *CLS* expanded to include additional aviation items in RVN and in other major commands worldwide. Proper management of the *CLS System* should result in reducing the time lag between problem and solution and in a better utilization of our manpower, materiel, and time resources.

Data Collection

Many of the items already discussed have clearly pointed out the requirement for more and better daily data concerning aviation logistic activities. This objective is somewhat difficult to achieve, since we are trying to get more information faster, and yet hold to an absolute minimum the reporting requirements placed upon the lower echelons.

In an effort to determine what types of information are best suited for management purposes, an effectiveness analysis of aviation activities in RVN has been made by the American Power Jet Company (APJ). This firm not only gathered and analyzed data over an extensive period of time, but also assisted USARV in establishing its own data collection, preparation, and dissemination agency. This effort should provide the type of accurate daily statistics that are needed to manage the aviation program logistically.

As an aid to aviation planners and managers, *FM 101-20, The Aviation Planning Manual*, has been published. The manual contains a great deal of useful statistics and data, and is kept current by semi-annual revision. It is hoped that future refinement of the manual will result in an unclassified, miniaturized version which can be carried readily by the individual.

Premium transportation

Air shipment of Army aircraft between CONUS and overseas areas, including the CH-47 and CH-54, is now being used extensively. In April, 1967, the first CH-47 *Chinook* was loaded on an Air Force C-133B at Olmstead AFB, Pennsylvania, and flown to RVN. That successful flight led to the almost exclusive use of air shipment for all aircraft that are designated as critical replacement items.

Air shipment offers the advantages of reduced in-transit time and the elimination of the cross-country ferry requirements. Both contribute directly to aircraft availability by reducing the number of aircraft in the pipeline and saving operational time on engines and critical components. Increased utilization of airlift for Army aircraft, and supporting parts and equipment, can be expected in the future, particularly as larger transport enter the USAF inventory.

(SUPPORT — Continued on Page 20)

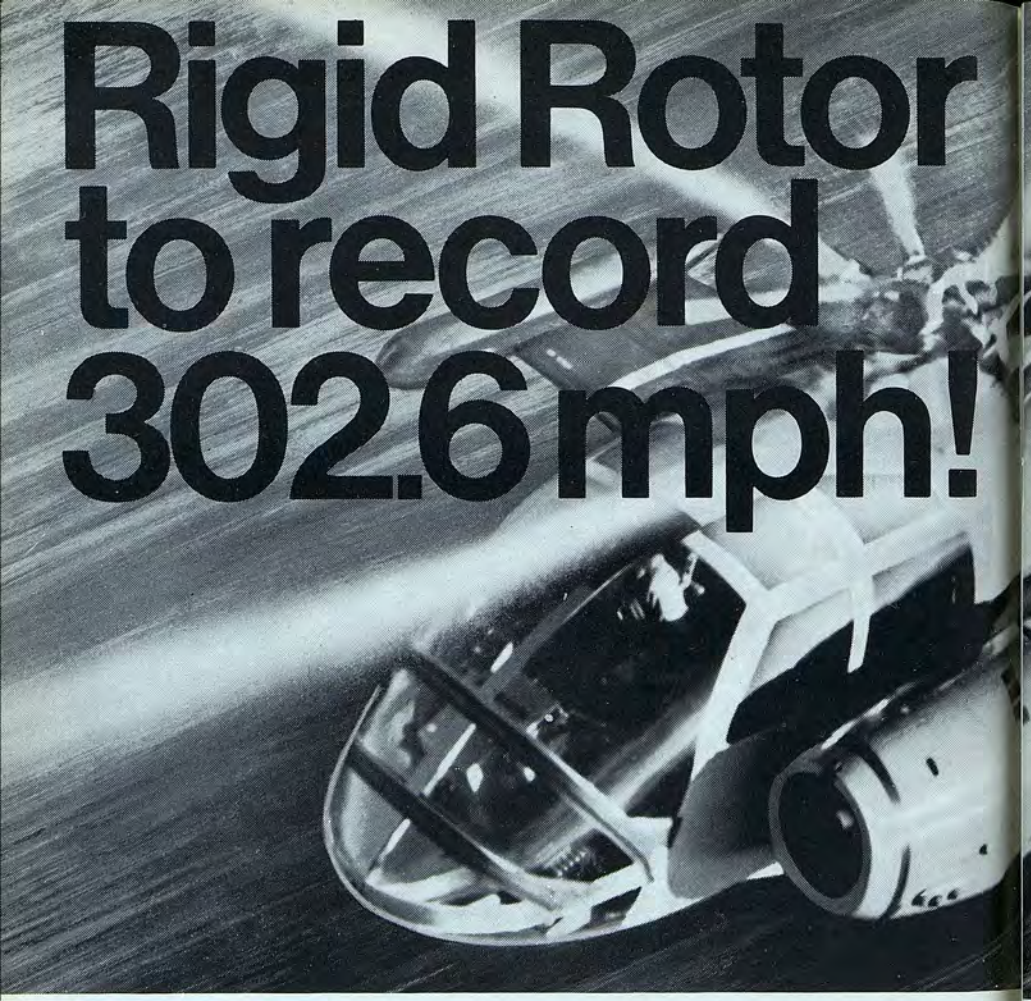
Fire for effect...
With Bell Artillery Target Locator

Bell's Visual Airborne Target Locator System, AN/UVS-1, pinpoints a target (in real time without maps or grids) with sufficient accuracy so that an artillery battery could fire for effect without any prior fire adjustment . . . a major improvement over bracketing. "VATLS" catches the enemy by surprise, allows fire support units to inflict casualties before the enemy takes cover . . . it could reduce ammunition requirements and weapon wear by elimination of the requirement for fire adjustment . . . it increases unit security by reduction of time between enemy detection and fire for effect.

Under development by direction of the US Army, VATLS is another example of the Bell capability in electronics that is contributing so much to the nation's power on land . . . sea . . . air . . . space.

BELL AEROSYSTEMS—A textron COMPANY Buffalo, New York

Rigid Rotor to record 302.6 mph!



streaks

Rewriting the books on rotary wing capabilities, the U.S. Army/Lockheed XH-51A compound aircraft* added a new chapter on June 21, 1967, near Oxnard, California. The Rigid Rotor craft flashed past its old record with a healthy 30-mph increase.

This remarkable speed was made possible by using the Rigid Rotor in a compound aircraft. Lift was provided by stubby wings, forward thrust came from a single jet engine, and the Rigid Rotor supplied inherent stability and control power. Although spinning totally unloaded, the Rigid Rotor controlled and stabilized the ship with "hands-off-the-stick" ease . . . and without the aid of ailerons or elevators.

Both the XH-51A's old and new speed marks are unofficial, occurring only as part of Army-sponsored structural loads and performance tests, yet illustrating the Rigid Rotor's considerable advantages.

These advantages stem from a unique design concept. Instead of teetering or flapping on hinges, the blades are rigidly fixed to the hub. This greatly increases stability and makes the Rigid Rotor far easier to control . . . thus providing a margin of safety equal to that of fixed-wing airplanes and far superior to that of ordinary helicopters. Also, its simplicity trims weight, reduces cost, and drastically cuts maintenance.

Applying its advantages to defense, the Rigid Rotor is being used on Cheyenne, the U.S. Army/Lockheed armed compound aircraft now in prototype production.

Commercially, the exceptional stability and controllability of the Rigid Rotor make it ideal for future city center to city center aircraft that take off and land like helicopters, then cruise on wings with propellers or jets.

*Helicopter with wings and propeller(s) or jet(s)

LOCKHEED
LOCKHEED AIRCRAFT CORPORATION
BURBANK, CALIFORNIA

LOGISTIC SUPPORT OF AA

(Continued from Page 16)

Cyclic depot maintenance

A program has been initiated to expand cyclic depot maintenance for all Army aircraft. The combat experience gained by operational units in Vietnam has re-emphasized the need for all aircraft to be scheduled for periodic depot type maintenance.

Several "sample" aircraft have been returned from RVN for detailed analytical teardown inspections and evaluation to determine the extent of maintenance requirements. As a result of the analysis of UH-1 and OV-1 systems, it was determined that at some point in time related to operational hours and/or elapsed time, it would be necessary to perform depot maintenance work that could *not* be accomplished in the field under combat conditions.

The following criteria has been established for planning the magnitude and scope of the expanded cyclic depot maintenance program:

Aircraft	*Turn-Around Time Since New or Overhaul*
UH-1/AH-1 (Combat)	2,200 hrs or 30 mo.
CH-47 (Combat)	1,500 hrs or 30 mo.
All other A/C (Combat Opns.)	3 years
All A/C (Other Opns.)	5 years

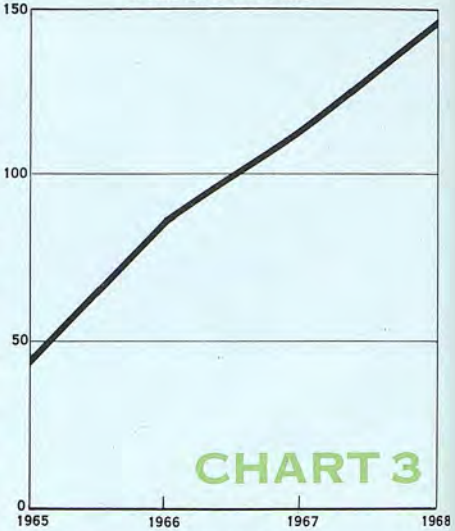
A multi-million dollar request over and above the maintenance costs shown on *Chart 3* is currently being processed to meet this requirement. The implementation and progression of this program will be a major step forward in assuring continued aircraft operational readiness.

Improved inspections

The present technique of manually inspecting, testing, and checking Army aircraft is excessively time-consuming and costly. A proposed *Qualitative Materiel Requirement (QMR)* for an automatic diagnostic and inspection system has been developed and submitted for approval. This equipment will be capable of automatically diagnosing mechanical malfunctions, warning of impending mechanical failure, obviating unnecessary inspections, and permitting change of aircraft components on a *condition*, instead of a *time* change basis.

COST OF DEPOT MAINTENANCE FOR ARMY AIRCRAFT

MILLION DOLLARS



These diagnostic and prognostic capabilities will provide a reliable basis for anticipating component replacement, and by a simple analysis of test results, will predict faulty areas within Army aircraft before actual failure.

Employment of this system will provide our aviation maintenance units with the capability of automatically inspecting aircraft and determining the "go-no-go" condition with a minimum of disassembly and removal of inspection doors and cowlings or other major mechanical dismantling. Anticipated reductions in timely inspections and the extension of component replacement intervals will contribute to our efforts of increasing aircraft availability.

Avionics

Avionics is the general term applied to those electronic devices required for the safe

(SUPPORT — Continued on Page 92)

ARMY AVIATION MATERIEL ISSUE

FIXED WING

PAGES 21-44

L-1 VIGILANT

Two-place observation/reconnaissance airplane. Vultee-Stinson.

ENGINES

One Lycoming R-680-9 engine of 295 hp.

PROPELLERS

Hamilton-Standard constant speed propeller, 8 ft. 6 in. diameter.

SPECIFICATIONS

Gross weight: 3,325 lb.

PERFORMANCE

Cruise speed: 114 mph. Service ceiling: 14,000 ft. Max. range: 275 st. mi.

REMARKS

This aircraft was originally designated the O-49. The procurement was handled by the Army Air Corps. All models had flaps and slots. Originally 142 L-1s were purchased off-the-shelf and 182 A models were obtained later. Procurement of all other models was negligible.

L-2

Two-place observation/reconnaissance airplane. Taylorcraft.

ENGINES

One Continental O-170-3 engine of 65 hp.

PROPELLERS

Sensenich two-bladed fixed pitch wooden propeller, 6 ft. diameter.

SPECIFICATIONS

Gross weight: 1,300 lb.

PERFORMANCE

Cruise speed: 96 mph. Service ceiling: 10,050 ft. Max. range: 265 st. mi.

REMARKS

During the period 1941 through 1944, the Army procured 1,942 L-2s. This metal framed, fabric covered aircraft was originally designated the O-57. The L-2 was procured in the A through M models, all models having 65 hp. except the L model, which was 50 hp.

L-3

Two-place observation/reconnaissance airplane. Aeronca.

ENGINES

One Continental O-170-3 engine of 65 hp.

PROPELLERS

The A model had a Freedman-Burnham ground adjustable, two-bladed propeller with aluminum hub. The B & C models had a Sensenich fixed pitch wooden propeller.

SPECIFICATIONS

Gross weight: 1,300 lb.

PERFORMANCE

Cruise speed: 87 mph. Service ceiling: 7,750 ft. Max. range: 190 st. mi.

REMARKS

The L-3 was a fabric covered, metal frame airplane, originally designated the O-58. A total of ten models were purchased. All were tandem, except the F and G models, which had side by side seating. Largest procurement was in 1942 when 875 were purchased. The following year 490 entered the Army inventory with a total of 1,464 ultimately procured.

L-4 CUB

Two-place observation/liaison aircraft. Piper Aircraft Corp., Lock Haven, Pa.

ENGINES

One Continental O-170-3 piston engine of 65 hp.

PROPELLERS

Two-bladed Sensenich fixed-pitch wooden propeller.

SPECIFICATIONS

Span: 35 ft. 4 in. Length: 22 ft. 4 in. Height: 6 ft. 7 in. Empty weight: 658 lb. Gross weight: 1,220 lb.

PERFORMANCE

Max. speed (SL): 87 mph. Cruise speed (SL): 75 mph. Service ceiling: 9,300 ft. Max. range: 190 st. mi.

REMARKS

From the initial procurement in 1942 until 1945, 9,404 L-4s were delivered to the Army. Ten models were purchased. All were tandem except the E and F models. While the L-2, L-3, and L-4 were all officially referred to as "Grasshoppers", the civilian name "Cub" stayed with the L-4.

L-5 SENTINEL

Two-place observation/reconnaissance airplane. Vultee-Stinson.

ENGINES

One Lycoming O-435-1 engine of 185 hp.

PROPELLERS

Sensenich fixed pitch two-bladed wooden propeller, 7 ft. 1 in. Diameter.

SPECIFICATIONS

Gross weight: 2,020 lb.

PERFORMANCE

Cruise speed: 100 mph. Service ceilinp: 15,800 ft. Max. range: 420 st. mi.

REMARKS

The L-5 had a metal frame fuselage, wood and metal airfoil structure, and was fabric covered. Originally used only by the Army Air Corps, it was designated the O-62. Army Liaison pilots operated these aircraft from 1945 and during the first months of the Korean hostilities. The "drop" rear seat permitted cargo or litter carrying capabilities. A total of 3,975 L-5s were delivered between 1942 and 1945.

L-6

Two-place observation/reconnaissance airplane. Interstate.

ENGINES

One Aircooled O-200-5 engine of 102 hp.

PROPELLERS

Two-bladed U.S. Propeller made fixed pitch propeller, 6 ft. 4 in. diameter.

SPECIFICATIONS

Gross weight: 1,650 lb.

PERFORMANCE

Cruise speed: 87 mph. Service ceiling: 12,100 ft. Max. range: 692 st. mi.

REMARKS

This fabric covered aircraft was known commercially as the S-1B Cadet. Its original Army Air Corps military designation was the O-63.

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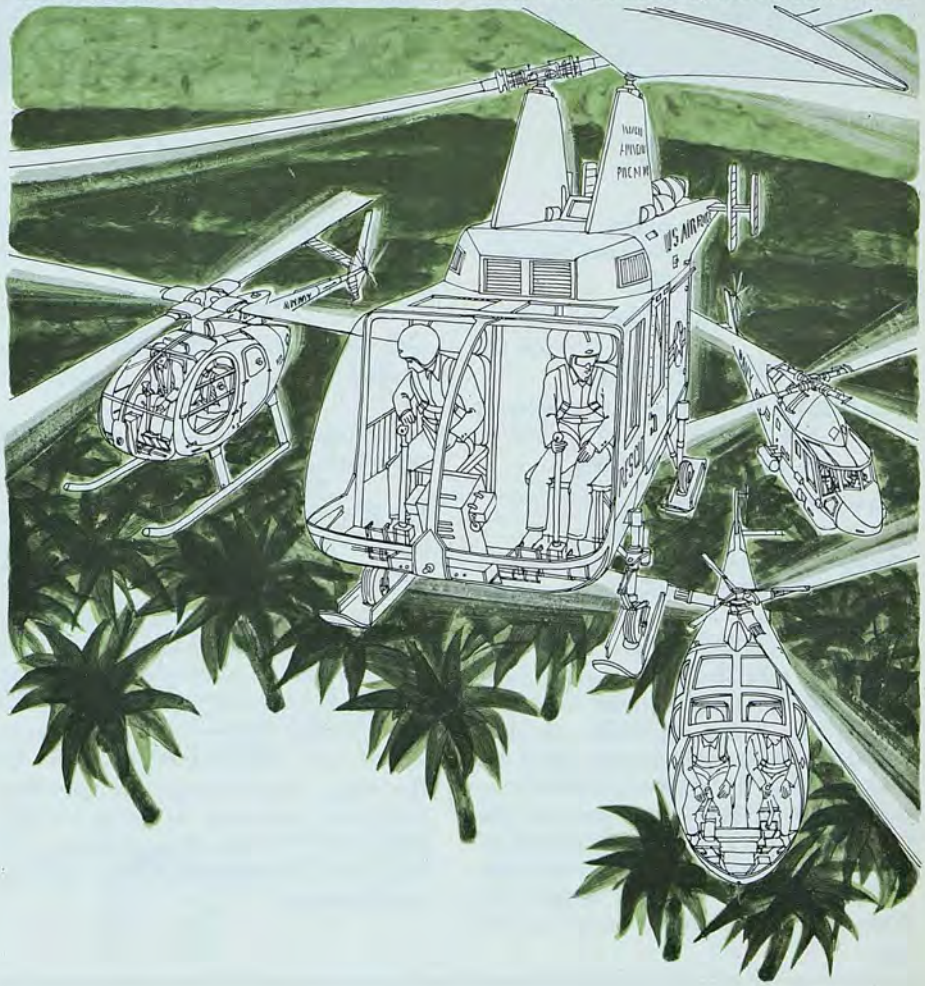


L-13

Three-place Observation / reconnaissance airplane. Consolidated Vultee.

ENGINES

One Aircooled XO-425-5 engine of 245 hp.

PROPELLERS

Two-bladed variable pitch propeller, 8 ft. 6 in. diameter.

SPECIFICATIONS

Gross weight: 2,900 lb.

PERFORMANCE

Cruise speed (SL): 106 mph. Service ceiling: 15,000 ft. Max. range: 488 st. mi.

REMARKS

Although the Army Ground Forces tested two of these aircraft in 1945, the L-13 was not accepted at that time. Later, the AGF did procure the L-13 and by June, 1951, there were 43 of this model in the Army inventory. The L-13 could carry two litters in place of the rear passenger seats. Production prototypes had folding wings, but these models were not procured by the Army.

L-14

Three-place observation airplane with med-evac capability. Piper Aircraft Corp., Lock Haven, Pa.

ENGINES

One Lycoming O-290-3 piston engine of 130 hp.

PROPELLERS

Two-bladed Sensenich model 76 JB 44 propeller.

SPECIFICATIONS

Span: 35 ft. 10 in. Length: 23 ft. 3 in. Height: 7 ft. Empty weight: 1,100 lb. Gross weight: 1,800 lb.

PERFORMANCE

Max. speed (SL): 117 mph. Cruise speed (SL): 104 mph. Service ceiling: 14,500 ft. Max. range: 345 st. mi. Endurance: 3.5 hours.

REMARKS

The Army Ground Forces procured five L-14s and cancelled an order for 845 more on VJ Day. The airplane had long landing gear and a litter carrying configuration.

L-15 SCOUT

Two-place observation airplane. Boeing.

ENGINES

One Lycoming 0-290-7 engine of 125 hp.

PROPELLERS

Two-bladed variable pitch propeller.

SPECIFICATIONS

Gross weight: 2,216 lb.

PERFORMANCE

Cruise speed (SL): 86 mph. Service ceiling: 12,500 ft. Max. range: 217 st. mi.

REMARKS

This was a production prototype that was never produced in quantity. Twelve YL-15s were procured by the Army between 1947 and 1949. The aircraft used spoilers instead of ailerons and full flaps. The Observer was seated backwards.

L-16

Two-place observation/reconnaissance airplane. Aeronca.

ENGINES

One Continental 0-190-1 engine of 95 hp.

PROPELLERS

Two-bladed McCauley fixed pitch metal propeller, 6 ft. 1 in. diameter.

SPECIFICATIONS

Gross weight: 1,300 lb.

PERFORMANCE

Cruise speed (SL): 81 mph. Service ceiling: 14,500 ft. Max. range: 252 st. mi.

REMARKS

This metal frame, fabric covered aircraft was the military version of the Aeronca "Champion". The L-16 was the most inexpensive aircraft ever purchased by the military. The initial date of Army procurement was in 1948, with a total of 609 eventually being delivered. The L-16 was used extensively in the early part of the Korean conflict.

L-17 NAVION

Four-place utility/liaison airplane. Ryan (North American).

ENGINES

One Continental 0-470-7 engine of 205 hp.

PROPELLERS

Two-bladed Hartzell variable pitch metal or plastic propellers, 7 ft. diameter.

SPECIFICATIONS

Gross weight: 3,050 lb.

PERFORMANCE

Cruise speed (SL): 121 mph. Service ceiling: 10,900 ft. Max. range: 592 st. mi.

REMARKS

Three models of the L-17 were procured by the Army. The "A" models (185 hp.) were first purchased in 1947 with the inventory high point of 42 being reached in 1951. The "B" and "C" models (205 hp.) were purchased in FY 1949 with 196 "B"s and 35 "C"s being inventory highs in 1949. The Navions were turned over to Army flying clubs when they were phased out of service.

L-21

Two-place observation/liaison aircraft. Piper Aircraft Corp., Lock Haven, Pa.

ENGINES

One Lycoming O-290-D piston engine of 125 hp.

PROPELLERS

Two-bladed Sensenich fixed pitch metal propeller.

SPECIFICATIONS

Span: 35 ft. 4 in. Length: 22 ft. 3 in. Height: 6 ft. 8 in. Empty weight: 935 lb. Gross weight: 1,500 lb.

PERFORMANCE

Max. speed (SL): 120 mph. Cruise speed (SL): 110 mph. Service ceiling: 16,000 ft. Max. range: 300 st. mi. Rate of climb: 1,000 fpm.

REMARKS

Since initial delivery date in 1951, the Army procured 150 A models and 69 B models. This metal-frame fabric-covered airplane was used mainly as a trainer. The B model saw extensive use in the Far East. The L-18C, purchased for MDAP, was the same as the L-21 except that it had a 90 hp. Continental engine.

O-1 BIRD DOG

Two-place liaison, observation aircraft. Cessna Aircraft Company, Wichita, Kansas.

ENGINES

One Continental O-470-11 piston engine rated at 213 hp.

PROPELLERS

McCauley fixed-pitch two-bladed metal propeller.

SPECIFICATIONS

Span: 36 ft. Length: 25 ft. 10 in. Height: 7 ft. 4 in. Empty weight: 1,614 lb. Gross weight: 2,430 lb.

PERFORMANCE

Max. speed (SL): 115 mph. Cruise speed (SL): 100 mph. Cruise speed, 10,000': 106 mph. Service ceiling: 1,850 ft. Max. range: 592 st. mi. Endurance: 4.67 hours. Rate of climb: 1,040 fpm.

REMARKS

The TO-1D is the instrument trainer version of this aircraft and is structually stronger. It has a variable-pitch propeller and an instrument panel in the rear, which may be enclosed for hooded flight. The O-1E encorporates the redesigned structural changes of the TO-1D. The O-1F is a modified TO-1D with its rear instrument panel, VOR, and UHF radios removed, and bomb shackles and a VHF radio installed.

L-25

One-place experimental aircraft. McDonnell Aircraft Corp., St. Louis, Missouri.

ENGINES

One Continental R-975-19 engine.

ROTOR SYSTEM

Single three-bladed rotor and two-bladed pusher propeller.

SPECIFICATIONS

Empty weight: 4,277 lb. Gross weight: 5,505 lb.

PERFORMANCE

Max. speed (SL): 195 mph. Service ceiling: 11,800 ft. Max. range: 368 st. mi.

REMARKS

The Army procured two L-25 aircraft from McDonnell for state-of-the-art research. This was the only aircraft given three separate designations. It was also called the XV-1 and the XH-35.

LC-126

Four-place utility aircraft. Cessna Aircraft Company, Wichita, Kansas.

ENGINES

One Jacobs R-755-11 direct drive engine of 300 hp.

PROPELLERS

Hamilton Standard constant-speed metal, 7 ft. 9 in. diameter.

SPECIFICATIONS

Span: 36 ft. 2 in. Length: 27 ft. 4 in. Height: 8 ft. 3.5 in. Empty weight: 2,250 lb. Gross weight: 3,350 lb.

PERFORMANCE

Max. speed (SL): 180 mph. Cruise speed (SL): 135 mph. Cruise speed, 10,000': 165 mph. Service ceiling: 19,800 ft. Max. range: 900 st. mi. Endurance: 4 hours. Rate of climb: 1,200 fpm.

REMARKS

In 1950, five LC-126B's were purchased by the USAF for the Army National Guard. The Army issued a contract in 1952 for 63 LC-126C's for use in such varied missions as search and rescue, light cargo transport, and instrument training.

T-37

Two-place jet trainer. Cessna Aircraft Company, Wichita, Kansas.

ENGINES

Two Continental J-69-T-9 turbo jets developing 1,840 lbs. thrust.

SPECIFICATIONS

Span: 33 ft. 10 in. Length: 29 ft. 4 in. Height: 9 ft. 5 in. Gross weight: 6,600 lb.

PERFORMANCE

Max. speed: 408 mph at military power 21,730 rpm, 35,000 ft. Cruise speed: 368 mph at normal power 20,700 rpm at 35,000 ft. Service ceiling: 39,200 ft. Max. range: 796 st. mi. Endurance: 2.8 hrs. Rate of climb: 3,200 fpm.

REMARKS

This aircraft is procured by the U.S. Air Force as a primary jet trainer. Three T-37s were loaned to the Army in 1958 for the purpose of evaluating the use of high speed, high performance aircraft for long range artillery adjustment and observation as well as low altitude, high speed flight.

G-91

One-place tactical/reconnaissance jet fighter. Fiat Aviation Div., Turin, Italy.

ENGINES

Two GE J85-13 engines of 4,078 lb/thrust each, with after-burner.

SPECIFICATIONS

Span: 29 ft. Length: 39 ft. 3 in. Height: 14 ft. 5 in. Empty weight: 8,380 lb. Gross weight: 19,070 lb.

PERFORMANCE

Max. speed (SL): 715 mph. Operational ceiling: 27,600 ft.

REMARKS

In 1961, the U.S. Army received the loan of three of these NATO fighters to be used for test and evaluation as a high speed, high performance observation aircraft. Testing was discontinued after two of these jets were lost in separate accidents.

T-37

CV-2 Caribou

Tactical transport STOL aircraft. De Havilland Aircraft of Canada, Ltd., Downsview, Ontario.

ENGINES

Two Pratt & Whitney R2000-7M2 engines of 1,450 hp each.

PROPELLERS

Hamilton Standard three-bladed metal variable pitch.

SPECIFICATIONS

Span: 95 ft. 8 in. Length: 72 ft. 7 in. Height: 31 ft. 9 in. Empty weight: 16,920 lb. Gross weight: 28,500 lb. Places: Crew of two and 32 passengers or 14 litters plus 8 troops.

PERFORMANCE

Max. speed (SL): 216 mph. Cruise speed (SL): 170 mph. Cruise speed, 7,500' at 50% power: 182 mph. Service ceiling: 27,500 ft. Max. range: 1,400 st. mi. Rate of climb: 1,575 fpm.

REMARKS

Since initial procurement in November 1959, the Army brought 173 Caribou into its inventory. According to the joint Army-Air Force agreement of April 1966, the Army released all CV-2 Caribou aircraft to the U.S. Air Force.

CV-7 Buffalo

Tactical transport STOL aircraft. De Havilland Aircraft of Canada, Ltd., Downsview, Ontario.

ENGINES

Two GE T64-10 turbo-prop engines of 2,850 shp each.

PROPELLERS

Hamilton Standard three-bladed metal reversible pitch, 165 in. diameter.

SPECIFICATIONS

Span: 96 ft. Length: 77 ft. 3 in. Height: 28 ft. 7 in. Empty weight: 22,864 lb. Gross weight: 41,000 lb. Places: Crew of two and 41 passengers or 35 Paratroopers or 24 litters and six troops.

PERFORMANCE

Max. speed (SL): 267 mph. Cruise speed (SL): 253 mph. Cruise speed, 5,000': 277 mph. Service ceiling: 31,000 ft. Max. range: 529 st. mi. Rate of climb: 2,050 fpm.

REMARKS

The Buffalo is a larger turbo-prop version of the CV-2 Caribou. Since April 1965, four prototypes have been built under a U.S.-Canadian production-sharing agreement.

What can airlift
96.6% of a ROAD
Division's equipment
right to the battlefield?

OV-1 MOHAWK

Two-place observation/surveillance airplane. Grumman Aircraft Engineering Corp., Bethpage, L.I., New York.

ENGINES

Two Lycoming T53-L-7,8 turbines of 1,100 shp each.

PROPELLERS

Hamilton Standard three-bladed reversing and feathering, 10 ft. diameter.

SPECIFICATIONS

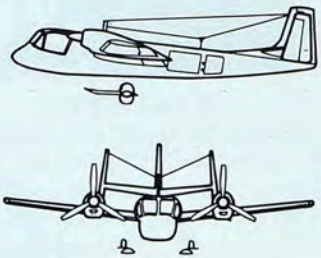
Span: 42 ft. Length: 41 ft. Height: 12 ft. 8 in. Gross weight: 12,675 lb.

PERFORMANCE

Max. speed (SL): 325 mph. Cruise speed (SL): 207 mph. Service ceiling: 33,000 ft. Max. range: 774 st. mi.

REMARKS

Three basic configurations of the Mohawk have been produced—the "A" for visual and photographic; the "B" for visual, photographic, and side-looking radar (SLAR); and the "C" for visual, photographic, and infrared. The electronic equipment varies with each model, resulting in changes in gross weight, performance, and cost. First Mohawk deliveries were made to the Army in 1960.



CH-54B PERFORMANCE FACTS
Speed: 100 to 130 kts.
Max. Payload: 17.9 tons
Ferry Range: 1650 n. mi.
Productivity: 924.8 Ton-Miles/hr.

Sikorsky's new CH-54B!

The Sikorsky CH-54B, growth version of the U.S. Army's CH-54A Skycrane, will be capable of airlifting payloads of up to 17.9 tons.

That represents 96.6% of the equipment needed to support an entire Reorganized Army Infantry Division, 91.7% of the equipment used by a Reorganized Army Armored Division.

All it takes to produce the CH-54B is the go-ahead.

Sikorsky Aircraft
STRATFORD, CONNECTICUT

DIVISION OF UNITED AIRCRAFT CORPORATION

U-10 HELIO COURIER

Six-place STOL utility aircraft. Helio Aircraft Corp., Bedford, Mass.

ENGINES

One Lycoming GO-480-G1D6 developing 295 hp.

PROPELLERS

Hartzell three-bladed constant-speed, 96 in. diameter.

SPECIFICATIONS

Span: 39 ft. Length: 31 ft. Height: 8 ft. 10 in. Empty weight: 2,037 lb. Gross weight: 3,600 lb.

PERFORMANCE

Max. speed (SL): 170 mph. Cruise speed (SL): 150 mph. Cruise speed, 10,000': 164 mph. Service ceiling: 16,500 ft. Max. range: 1,100 st. miles. Endurance: 14 hours. Rate of climb: 1,125 fpm.

REMARKS

Originally designated the L-24, the Helio Courier was an "off-the-shelf" purchase in 1963 for operational testing and evaluation. Twenty U-10s have been procured through FY 1965. Purchased for use by U.S. Army Special Forces Groups.

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U-1A OTTER

Eleven-place utility STOL aircraft. De Havilland Aircraft of Canada, Ltd., Downsview, Ontario.

ENGINES

One Pratt and Whitney R-1340-59 piston engine developing 600 hp.

PROPELLERS

Hamilton Standard three-bladed metal variable pitch.

SPECIFICATIONS

Span: 58 ft. Length: 41 ft. 10 in. Height: 12 ft. 7 in. Empty weight: 4,431 lb. Gross weight: 8,000 lb.

PERFORMANCE

Max. speed (SL): 153 mph. Cruise speed (SL): 120 mph. Cruise speed, 5,000': 138 mph. Service ceiling: 17,400 ft. Max. range: 580 st. mi. Rate of climb: 735 fpm.

REMARKS

Since the initial procurement in March 1955, the Army has purchased 205 Otters. The U-1A is one of the few service aircraft to retain its original designation.

U-6 BEAVER

Six-place utility aircraft. De Havilland Aircraft of Canada, Ltd. Downsview, Ontario.

ENGINES

One Pratt & Whitney R-985 AN-1, -3, -39, -39A engines of 450 hp.

PROPELLERS

Hamilton Standard two-bladed metal variable pitch.

SPECIFICATIONS

Span: 48 ft. Length: 30 ft. 4 in. Height: 10 ft. 5 in. Empty weight: 3,000 lb. Gross weight: 5,100 lb.

PERFORMANCE

Max. speed (SL): 156 mph. Cruise speed (SL): 125 mph. Cruise speed, 5,000': 130 mph. Service ceiling: 20,000 ft. Max. range: 690 st. mi. Endurance: 8 hours. Rate of climb: 850 fpm.

REMARKS

A rugged all-purpose aircraft originally used as a civilian "bush plane", the Beaver perfoms a wide variety of Army missions. Since initial procurement in 1951, the Army has purchased 654 U-6 aircraft. L-20 was the former designation of the Beaver.

U-8D SEMINOLE

Six-place, command/liaison utility transport. Beech Aircraft Corp., Wichita, Kansas.

ENGINES

Two Lycoming GSO-480-1 engines rated at 340 hp each.

PROPELLERS

Hartzell, 3-bladed, constant speed.

SPECIFICATIONS

Span: 45 ft. 3-3/8 in. Length: 31 ft. 6-15/32 in. Height: 11 ft. 6½ in. Empty weight: 4,978 lbs. Gross weight: 7,300 lbs.

PERFORMANCE

Max. speed (SL): 212 mph. Cruise speed (SL): 179 mph (65% power). Cruise speed, 5,000 ft. (65% power): 187 mph. 10,000 ft. (65% power): 195 mph. Service ceiling: 25,500 ft. Max. range: 1,320 st. mi. Endurance: 8.2 hrs. Rate of climb: 1,585 fpm.

REMARKS

The U-8D Seminole is the military version of the Beechcraft Model 50 Twin-Bonanza. Under contract in 1960, a number of U-8Ds were modified to the RL-23D (RL-8D) configuration incorporating the APQ86 SLAR installation. A total of 206 Seminoles have been purchased from 1952 through FY 65.

U-8F SEMINOLE

Seven-place utility command/liaison aircraft. Beech Aircraft Corp., Wichita, Kansas.

ENGINES

Two Lycoming IGSO-480-A1A6 engines. 340 hp each.

PROPELLERS

Hartzell, 3-bladed, metal, diameter 93 inches.

SPECIFICATIONS

Span: 45 ft. 10 in. Length: 33 ft. 4 in. Height: 14 ft. 2 in. Empty weight: 4,987 lb. Gross weight: 7,700 lbs.

PERFORMANCE

Max. speed (SL): 212 mph. Cruise speed (SL): 181 mph. Cruise speed, 5000 ft. (65% power): 187 mph. 10,000 ft. (65% power): 196 mph. Service ceiling: 27,100 feet. Max. range: 1,272 st. mi. Endurance: 8.38 hrs. Rate of climb: 1,304 fpm.

REMARKS

The U-8F is the military counterpart of the Beechcraft Queen Air 65 executive transport. A total of 71 U-8Fs have been procured through FY 65 since the initial purchase date in 1959.

U-9 AERO COMMANDER

Five-place utility, command/liaison aircraft. Aero Commander, Bethany, Okla.

ENGINES

Two Lycoming GO-480-1 piston engines of 550 hp.

PROPELLERS

Hartzell 3-bladed variable-pitch, metal propellers.

SPECIFICATIONS

Span: 49 ft. 6 in. Length: 35 ft. 2 in. Height: 14 ft. 6 in. Empty weight: 4,475 lb. Gross weight: 7,500 lb.

PERFORMANCE

Max. speed (SL): 255 mph. Cruise speed (SL): 198 mph. Cruise speed, 10,000': 226 mph. Service ceiling: 22,900 ft. Max. range: 1,150 st. mi. Rate of climb: 1,525 fpm.

REMARKS

The first U-9 (YL-26) was obtained by the Army in 1953. Since then, three later models, the B, C, and D, have been procured in addition to a conversion of the D model to carry special electronic gear. Nine Aero Commanders (all models) were in the Army inventory as of Jan., 1965 of twenty purchased.

T-41B

Four-place, single engine trainer. Cessna Aircraft Company, Wichita, Kan.

ENGINES

One Continental IO-360 of 210 hp.

PROPELLERS

One McCauley two-bladed constant speed propeller. Diameter, 6'4".

SPECIFICATIONS

All metal, high wing, fixed gear. Span: 36'2". Length: 26'6". Height: 8'11". Empty weight: 1,255 lbs. Gross weight: 2,500 lbs.

PERFORMANCE

Max. speed: 153 mph. Cruising speed: 148 mph. Rate of climb: 910 fpm at 2,500 lbs. Service ceiling: 17,500 feet. TO 50 ft obstacle: 1,045'. LA 50 ft obstacle: 860'.

REMARKS

First delivery of six T-41Bs made in November, '66, with delivery of complete 255-ship order to be made by March, '67. Off-the-shelf version of Cessna's commercial Model 172. Nav / Com equipment includes three C-1611C/AIC interphone sets, an RT-515R-1 VHF Nav/Com radio with VOR course deviation indicator, an AN/ARN-83 low freq ADF, a BEI-901C emergency VHF transceiver with a single channel on 121.5, and provisions for an AN/ARC-54 FM radio for air-to-air and air-to-ground communications.

T-42A

Four-place instrument/transition trainer. Beech Aircraft Corp., Wichita, Kan.

ENGINES

Two Continental IO-470-L engines, rated at 260 hp each.

PROPELLERS

McCauley 2-blade, metal, 78 in. diameter.

SPECIFICATIONS

Span: 31 ft. 8 in. Length: 26 ft. 7 in. Height: 9 ft. 6 in. Empty weight: 3,197 lb. Gross weight: 5,100 lb.

PERFORMANCE

Max. speed (SL): 235 mph. Cruise speed (SL): 200 mph. Cruise speed, 5,000 ft. (65% power): 210 mph. 10,000 ft. (65% power): 218 mph. Service ceiling: 19,700 ft. Max. range: 1,065 nm (with 45 min. reserve). Endurance: 7.5 hrs. Climb rate: 1,670 fpm.

REMARKS

In Feb. 1965, 55 T-42As were ordered for delivery between Aug. 65 and June 66. The T-42A is used primarily as a fixed-wing, twin-engine instrument trainer by the Army Aviation School Instrument Training Division at Fort Rucker, Alabama. The secondary mission of the airplane is the twin-engine transition of single-engine rated Army Aviators and is capable of fulfilling other military roles. The T-42A is the military counterpart of the Beechcraft B55 Baron.

U-21A

8-12 place utility tactical transport aircraft. Beech Aircraft Corporation, Wichita, Kan.

ENGINES

Two United Aircraft of Canada PT 6A-20 free shaft turbine engines of 520 hp. each.

PROPELLERS

Beech full feathering, reversible propellers. 7'9" diameter.

SPECIFICATIONS

Span: 50'3". Length: 35'6". Height: 14'2". Empty weight: 6,065 lbs. Gross weight 7,700 lbs.

PERFORMANCE

Max. speed. 10,000': 225 knots. Cruising speed, 10,000': 210 knots. Rate of climb: 1,500 (SL). Service ceiling at max gross wt: 27,000. TO 50' obstacle: 1,400'. LO 50' obstacle: 2,300'.

REMARKS

Initial U-21A acceptance took place on April 16, 1967. Procured to provide support for tactical units, rather than as general administrative support mission aircraft. DA ordered 48 under a $9.8 million contract in October, 1966, with deliveries by June, 1967. Modified version of Army's NU-8F, which underwent initial user evaluation in March, 1964, as well as modified version of Beechcraft Queen Air.

ARMY AVIATION MATERIEL ISSUE

ROTARY WING

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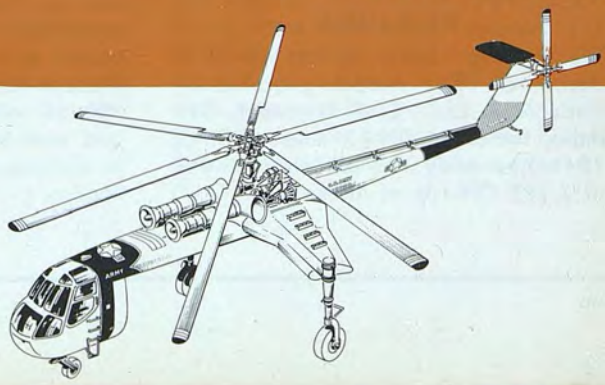

OH-13 SIOUX

Two-place observation helicopter. Bell Helicopter Company, Fort Worth, Texas.

ENGINES

One Lycoming C-435-23 piston engine of 250 hp.

ROTOR SYSTEM

Single two-bladed semi-rigid main rotor. Two-bladed metal tail rotor.

SPECIFICATIONS

Rotor diameter: 37 ft. Length: 31 ft. 7 in. Height: 9 ft. 4 in. Empty weight: 1,800 lb. Gross weight: 2,950 lb.

PERFORMANCE

Max. speed (SL): 81 mph. Cruise speed (SL): 81 mph. Cruise speed, 5,000': 88 mph. Service ceiling: 13,400 ft. Max. range: 191 st. mi.

REMARKS

The Army procured its first YR-13 in December 1946. Models procured include A, B, C, D, E, G, H, and K. See index for other OH-13 models. Since 1946, the Army has procured a total of 2,197 OH-13s of all models.

XH-15

Two-place experimental observation helicopter. Bell Helicopter Company, Fort Worth, Texas.

ENGINES

One Continental XO-470-5 turbo supercharged engine of 280 hp.

ROTOR SYSTEM

Single two-bladed rotor system, wooden blades.

SPECIFICATIONS

Rotor diameter: 36 ft. 10 in. Length: 43 ft. Gross weight: 2,700 lb.

PERFORMANCE

Max. speed (SL): 100 mph Service ceiling: 20,000 ft. No other mission data available. Only experimental work completed.

REMARKS

Because the XH-15 never became a production article, many of the parameters were never firmly established. The XH-15 was designed as a high altitude helicopter for the U.S. Air Force and was probably the first helicopter to incorporate a turbo supercharged engine.

H-16B

Research cargo helicopter. Piasecki Aircraft Corp., Philadelphia, Pa.

ENGINES

Two Allison T56-A-5 turbine engines of 2,100 shp each.

ROTOR SYSTEM

Tandem four-bladed metal fully articulated rotor system.

SPECIFICATIONS

Rotor diameter: 82 ft. Gross weight: 46,700 lb. Places: crew of three and 47 troops.

PERFORMANCE

Cruise speed (SL): 143 mph. Service ceiling: 15,600 ft. Max. range: 200 st. mi.

REMARKS

The Army procured two YH-16s for test and evaluation purposes. The second H-16 was an "A" model employing the Allison T38 turbine engine. The test project was terminated in 1956.

H-17

Heavy lift aircraft test vehicle. Hughes Tool Company, Aircraft Div., Culver City, California.

ENGINES

One TG-180 (J-36) modified gas turbine engine of 3,480 hp.

ROTOR SYSTEM

Single two-bladed metal main rotor, 130 ft. diameter and 68 in. chord.

SPECIFICATIONS

Rotor diameter: 130 ft. Gross weight: 46,000 lb. Three-place.

PERFORMANCE

Test aircraft, no performance data available.

REMARKS

This was the initial effort to produce a flying crane or heavy lift aircraft. The H-17 was a test vehicle procured by the U.S. Air Force in 1953. Evaluation data was supplied to the Army. This project was launched by the Kellett Company and later taken over by Hughes.

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YH-18A

Four-place utility helicopter. Sikorsky Aircraft Div., Stratford, Connecticut.

ENGINES

One Franklin 0-425-1 piston engine of 245 hp.

ROTOR SYSTEM

Single three-bladed metal main rotor and two-bladed metal 5 ft. 5 in. dia. anti-torque rotor.

SPECIFICATIONS

Rotor diameter: 33 ft. Length: 35 ft. 6 in. Height: 8 ft. 8 in. Gross weight: 2,700 lb.

PERFORMANCE

Max. speed (SL): 110 mph. Cruise speed (SL): 92 mph. Service ceiling: 13,800 ft. Hover ceiling (OGE): 1,100 ft. Max. range: 305 st. mi. Endurance: 3.5 hours. Rate of climb: 1,050 fpm.

REMARKS

Four YH-18As were procured by the Army in 1950 for operational and engineering tests and evaluation.

UH-19

Twelve-place utility helicopter. Sikorsky Aircraft Division, Stratford, Conn.

ENGINES

One Curtiss-Wright (Lycoming) R-1300-3 piston engine of 700 hp.

ROTOR SYSTEM

Single three-bladed main rotor and a two-bladed metal 8' dia. anti-torque rotor.

SPECIFICATIONS

Rotor diameter: 53 feet. Fuselage length: 41 ft. 2 in. Height: 15 ft. 6 in. Empty weight 5,250 lb. Gross weight: 7,500 lb.

PERFORMANCE

Max. speed (SL): 112 mph. Cruise speed (SL): 91 mph. Service ceiling: 10,600 ft. Hover ceiling (OGE): 2,300 ft. Max. range: 360 st. mi. Endurance: 4.3 hours. Rate of climb: 1,020 fpm.

REMARKS

The UH-19 was the world's first transport helicopter and the first to be used for commercial scheduled passenger service. Since initial procurement in Nov. 1949, 355 Chickasaws have been brought into the Army inventory through FY 65.

H-24

Two-place observation helicopter. Seibl Helicopter.

ENGINES

One Lycoming 0-290-D1 engine of 130 hp.

ROTOR SYSTEM

Single two-bladed main rotor, wooden blades.

SPECIFICATIONS

Rotor diameter: 29 ft. Gross weight: 1,540 lb.

PERFORMANCE

Cruise speed (SL): 58 mph. Service ceiling: 4,300 ft. Max. range: 98 st. mi.

REMARKS

Two H-24s were procured in 1951 for operational and engineering evaluation. The aircraft was also considered for aeromedical evacuation purposes.

H-25

Eight-place utility helicopter. Piasecki Aircraft Corp., Philadelphia, Pa.

ENGINES

One Continental R-975-42 engine of 475 hp.

ROTOR SYSTEM

Tandem three-bladed rotor system.

SPECIFICATIONS

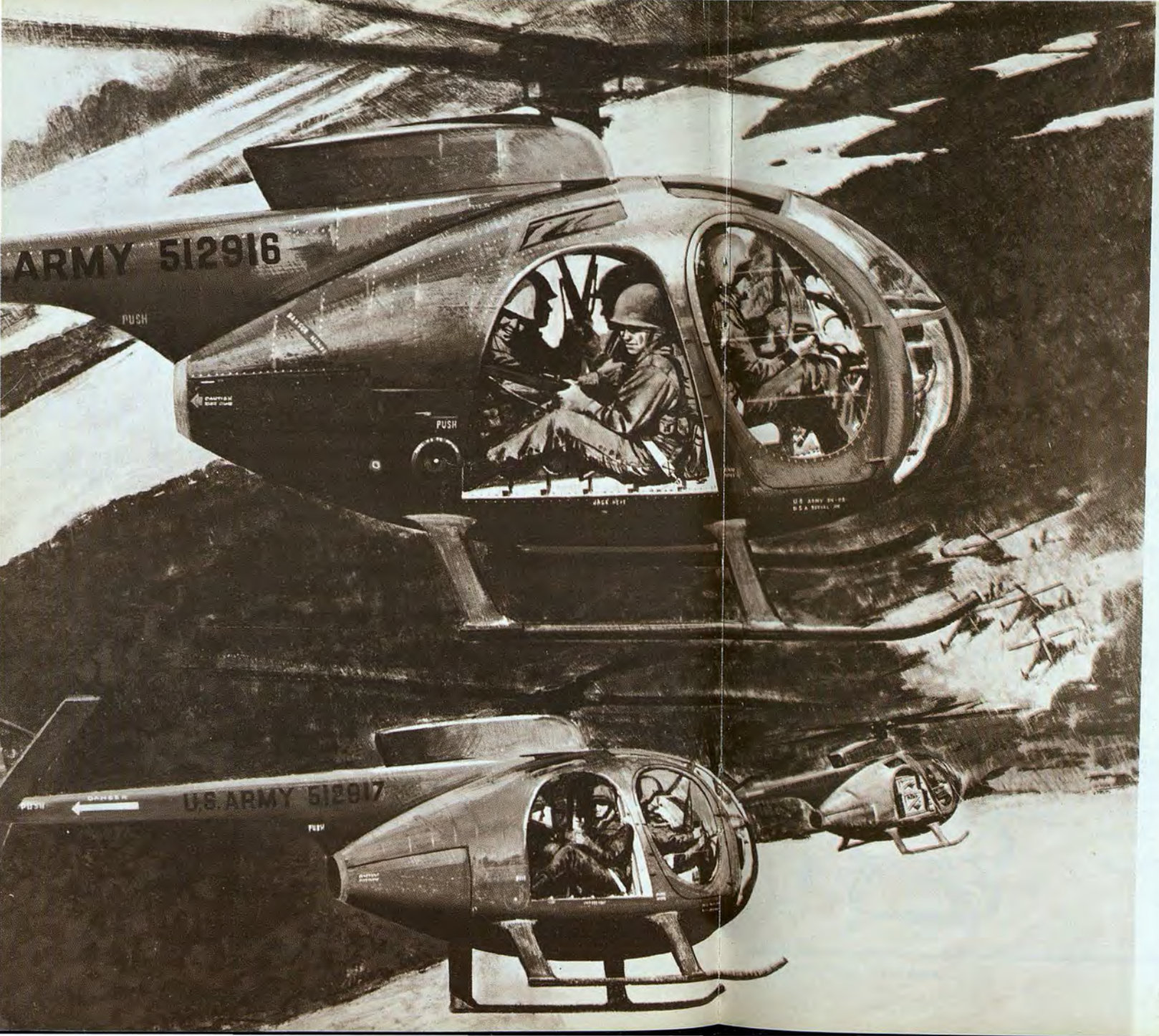
Rotor diameter: 35 ft. Gross weight: 5,500 lb.

PERFORMANCE

Cruise speed (SL): 92 mph. Service ceiling: 12,700 ft. Max. range: 357 st. mi.

REMARKS

The H-25 was developed for the Navy for rescue operations. With minor modifications, it met Army operational needs in cargo and utility missions. Fifty H-25s were procured by the Army, but were later turned over to the Navy for use.



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Now we're building a lot more. For the U.S. Army. It's their new light observation helicopter—the OH-6A.

Hughes Helicopters

Hughes Tool Company/Aircraft Division

H-26

One-place observation research helicopter. American Helicopter.

ENGINES

Two XPJ49-AH-3 tip-mounted pulse jet engines, 36 lb/thrust.

ROTOR SYSTEM

Single two-bladed teetering rotor system, blades by Prewitt.

SPECIFICATIONS

Gross weight: 810 lb.

PERFORMANCE

Cruise speed (SL): 75 mph. Service ceiling: 7,000 ft. Max. range: 100 st. mi.

REMARKS

The Army procured five YH-26s during the period 1952-1954 for engineering and operational evaluation.

H-30

Two-place observation helicopter. McCulloch Motors.

ENGINES

One Franklin 6A4-200-C6 engine of 200 hp.

ROTOR SYSTEM

Tandem three-bladed rotor system.

SPECIFICATIONS

Rotor diameter: 22 ft. Gross weight: 2,000 lb.

PERFORMANCE

Cruise speed (SL): 90 mph. Service ceiling: 12,000 ft. Max. range: 198 st. mi.

REMARKS

Two H-30s were procured by the Army in 1952 for operational and engineering evaluation.

H-31

Eight-place utility helicopter. Doman Helicopters Inc., Danbury, Connecticut.

ENGINES

One Lycoming SO-580-D engine of 400 hp.

ROTOR SYSTEM

Single four-bladed main rotor system, wooden blades. Three-bladed tail rotor, wooden blades.

SPECIFICATIONS

Gross weight: 5,200 lb.

PERFORMANCE

Cruise speed (SL): 78 mph. Service ceiling: 5,700 ft. Max. range: 450 st. mi.

REMARKS

The Army procured two H-31s in 1952 for tests and evaluation. The aircraft had a completely sealed, rigid, non-articulated rotor system. The commercial designation was the LZ-5.

H-32 HORNET

Two-place observation helicopter. Hiller Aircraft Company, Palo Alto, Calif.

ENGINES

Two Hiller HR J2B Ram Jet engines of 30 lb/thrust each.

ROTOR SYSTEM

Single two-bladed metal main rotor and single two-bladed wooden tail rotor, 32 in. diameter,

SPECIFICATIONS

Rotor diameter: 23 ft. Gross weight: 1,080 lb.

PERFORMANCE

Cruise speed (SL): 70 mph. Service ceiling: 11,500 ft. Max. range: 28 st. mi.

REMARKS

The Hornet first flew in 1950, although the Army did not take delivery of the aircraft until 1956, when six were received.

H-33 (XV-3)

Two-place tilting-rotor research aircraft. Bell Helicopter Company, Fort Worth, Texas.

ENGINES

One R-985 engine.

ROTOR SYSTEM

Two two-bladed semi-rigid tilting rotors.

SPECIFICATIONS

Rotor diameter: 23 ft. Length: 30 ft. 4 in. Height: 13 ft. 7 in. Empty weight: 4,200 lb. Gross weight: 4,850 lb.

PERFORMANCE

Max. speed (SL): 150 mph. Cruise speed (SL): 130 mph. Service ceiling: 12,000 ft. Max. range: 140 st. mi.

REMARKS

The Army procured two prototypes of the H-33 in 1958. The Convertiplane achieved 100 per cent in-flight conversion of its tilting rotors in Dec. 1958, the world's first such performance by this type aircraft. Over 100 full conversions were made during tests conducted. The Convertiplane was also designated the XV-3.

H-39

Four-place utility helicopter. Sikorsky Aircraft Division, Stratford, Connecticut.

ENGINES

One Turbomeca Artouse II-XT-51-T3 turbine.

ROTOR SYSTEM

Single four-bladed articulated main rotor and metal three-bladed 6', 4" dia. anti-torque rotor.

SPECIFICATIONS

Rotor diameter: 35 ft. Length: 41 ft. 9 in. Height: 9 ft. 7 in. Empty weight: 2,105 lb. Gross weight: 3,361 lb.

PERFORMANCE

Max. speed (SL): 150 mph. Cruise speed (SL): 138 mph. Service ceiling: 17,900 ft. Hover ceiling (OGE): 15,100 ft. Max. range: 265 st. mi. Endurance: 2 hours. Rate of climb: 1,680 fpm.

REMARKS

The H-39 was basically a modified H-18 with an Artouse II gas turbine engine installed. In 1954 the Army obtained one of these helicopters to be used for operational and engineering evaluation. The H-39 set World Records in 1954 for its class for Speed: 156.1 mph and Altitude: 24,220 feet.

AH-1G HUEYCOBRA

Two-place armed helicopter. Bell Helicopter Company, Forth Worth, Texas.

ENGINES

One Lycoming T53-L-13 gas turbine of 1,400 shp.

ROTOR SYSTEM

Single two-bladed Model 540 "door hinge" main rotor, 27 in. chord. Two-bladed tail rotor, 8 ft. 6 in. diameter.

SPECIFICATIONS

Rotor diameter: 44 ft. Length: 44 ft. 5 in. Height: 12 ft. Empty weight: 5,280 lb. Gross weight: 9,500 lb.

PERFORMANCE

To be determined after flight tests.

REMARKS

The HueyCobra was designed independently by Bell and procured by the Army to fill the gap in armed helicopters until production of the AAFSS reaches the field. The three basic weapons of the AH-56A are the XM-134 minigun, M-5 grenade launcher, and the 2.75 inch folding fin aerial rocket. Armored crew seats and Teflon hub bearings are features of the HueyCobra.

No time for engine failure

Continental's new T67-T-1 twin turboshaft powerplant assures greater safety, better economy and offers the simplest operation of any twin engine helicopter powerplant available today.

The most unique feature is the completely automatic power sharing system that maintains power balance between the engines and increases power from the remaining engine in the event of single engine failure. The automatic power sharing system also relieves the pilot from constantly monitoring and trimming power. This promotes greater safety by permitting the pilot to pay full attention to control of the helicopter, air and ground observations and other flight requirements.

The Bell UH-1D helicopter powered by the T67-T-1 takes off and operates on one engine (at reduced payload) permitting self-evacuation from combat areas to a repair base. Complete interchangeability of both engines further simplifies maintenance and logistics.

The new T67-T-1 has completed a 50 hour Pre-Flight Rating Test and has logged over 90 hours in a Bell UH-1D helicopter. Official flight evaluations were conducted by the Army, Navy and Air Force.

Continental Aviation and Engineering Corp., 12700 Kercheval, Detroit, Michigan 48215.

Continental CAE

H-41 SENECA

Four-place observation helicopter. Cessna Aircraft Company, Wichita, Kansas.

ENGINES

One Continental FSO-526 horizontally mounted piston engine of 260 hp.

ROTOR SYSTEM

Single two-bladed metal main rotor. Two-bladed metal 7 ft. diameter tail rotor.

SPECIFICATIONS

Rotor diameter: 35 ft. Length: 42 ft. 5 in. Height: 8 ft. 5 in. Empty weight: 2,080 lb. Gross weight: 3,000 lb.

PERFORMANCE

Max. speed (SL): 122 mph. Cruise speed (SL): 95 mph. Cruise speed, 10,000': 120 mph. Service ceiling: 12,200 ft. Hover ceiling (OGE): 6,500 ft. Max. range: 310 st. mi. Endurance: 3.37 hours. Rate of climb: 1,030 fpm.

REMARKS

The Army procured ten H-41 helicopters in 1957 for high altitude operation tests and evaluation. No others were purchased.

YHC-1

28-place medium transport helicopter. Boeing Vertol Div., Morton, Pa.

ENGINES

Two T58-GE-6 turbines of 1,050 shp each.

ROTOR SYSTEM

Tandem three-bladed rotors.

SPECIFICATIONS

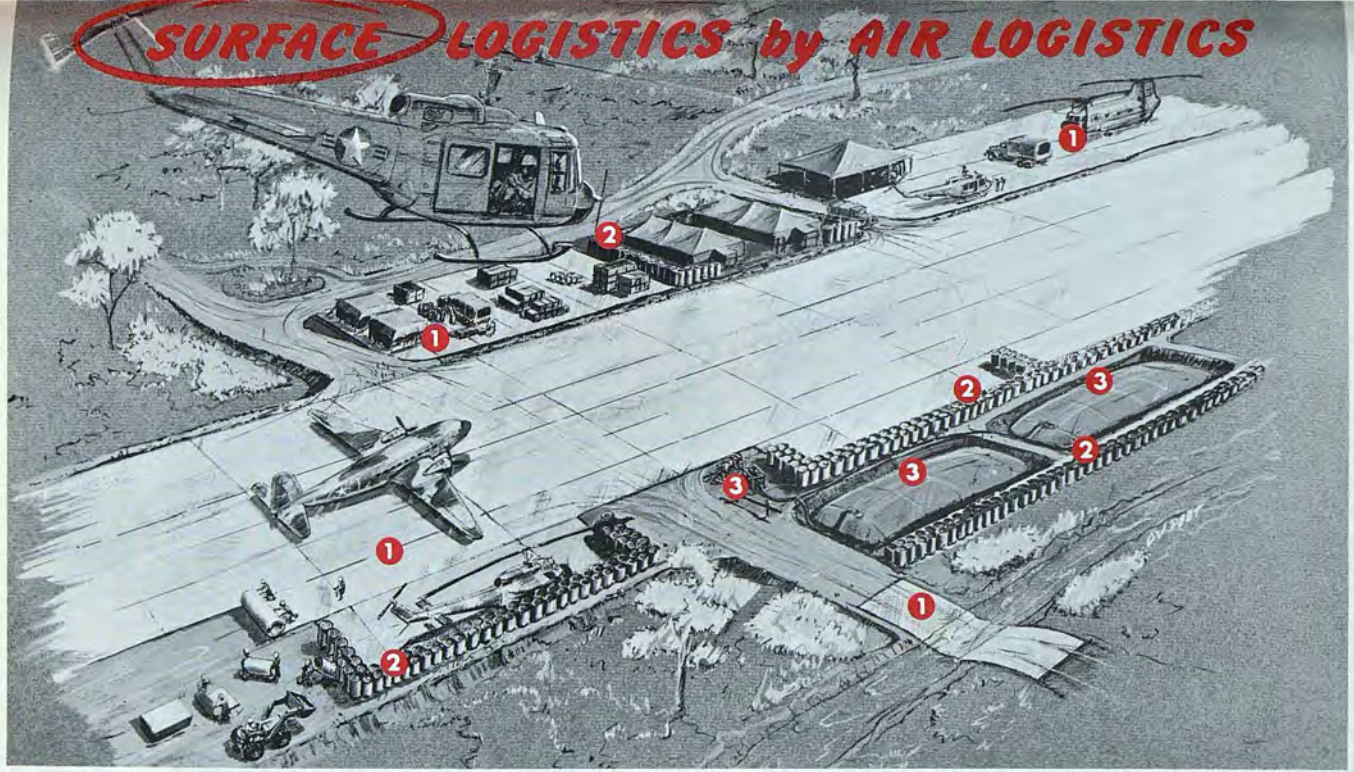
Rotor diameter: 48 ft. 4 in. Length: 44 ft. 7 in. Height: 16 ft. 10 in. Empty weight: 11,716 lb. Gross weight: 18,700 lb. Overload gross wt.: 21,400 lb.

PERFORMANCE

Max. speed (SL): 168 mph. Cruise speed (SL): 155 mph. Service ceiling: 13,700 ft. Hover ceiling, OGE: 6,500 ft. Max. range: 115 st. mi Rate of climb: 1,700 fpm.

REMARKS

The Army procured three YHC-1s in 1959 for tests and evaluation. Engineering and operational data obtained from this aircraft led to the development of the CH-46, the Boeing 107, and the CH-47 Chinook.



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CH-21 SHAWNEE

Cargo helicopter. Boeing Vertol Div., Morton, Pa.

ENGINES

One Curtiss-Wright R-1820-103 developing 1,425 hp.

ROTOR SYSTEM

Tandem 3-bladed rotors.

SPECIFICATIONS

Rotor diameter: 44 ft. Length: 52 ft. 7 in. Height: 15 ft. 9 in. Empty weight: 8,950 lb. Gross weight: 15,200 lb. Places: Crew of three and 20 troops or 12 litters.

PERFORMANCE

Max. speed (SL): 127 mph. Cruise speed (SL): 98 mph. Service ceiling: 18,600 ft. Max. range: 245 st. mi. Endurance: 2 hrs. 41 min.

REMARKS

Since the initial date of procurement in June 1950, the Army purchased 334 CH-21s of all models. The Shawnee was, until late 1963, the workhorse of Vietnam, when it was phased out, being replaced by the ubiquitous Huey.

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Bendix

CH-34 CHOCTAW

16-place cargo and light tactical transport helicopter. Sikorsky Aircraft Division, Stratford, Conn.

ENGINES

One Curtiss-Wright R-1820-84 piston engine of 1,425 hp.

ROTOR SYSTEM

Single four-bladed main rotor, and four-bladed metal, 9 ft. 4 in. dia. antitorque rotor.

SPECIFICATIONS

Rotor diameter: 56 ft. Overall length: 65 ft. 8 in. Height: 15 ft. 10 in. Empty weight: 7,675 lb. Gross weight: 13,000 lb. Overload gross wt: 14,000 lb.

PERFORMANCE

Max. speed (SL): 122 mph. Cruise speed (SL): 108 mph. Service ceiling: 9,500 ft. Hover ceiling (OGE): 2,400 ft. Max. range: 276 st. mi. Rate of climb: 1,100 fpm.

REMARKS

The Army procured a total of 437 Choctaws of all models through FY 65. The VH-34 version was used for VIP transport, notably as the first helicopters of the Executive Flight Detachment.

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CH-37 MOJAVE

Medium cargo helicopter. Sikorsky Aircraft Div., Stratford, Conn.

ENGINES

Two Pratt & Whitney R-2800-54 piston engines of 2,100 hp each.

ROTOR SYSTEM

Single five-bladed main rotor and four-bladed metal 15 ft. dia. anti-torque rotor.

SPECIFICATIONS

Rotor diameter: 72 ft. Length: 88 ft. Height: 22 ft. Empty weight: 20,690 lb. Gross weight: 31,000 lb. Places: Crew of 3 and 36 troops or 24 litters.

PERFORMANCE

Max. speed (SL): 130 mph. Cruise speed (SL): 115 mph. Service ceilings: 8,700 ft. Hover ceiling (OGE): 1,100 ft. Max. range: 145 st. mi. Rate of climb: 910 fpm.

REMARKS

Since initial procurement in 1956, the Army has purchased 91 CH-37 Mojaves through FY 65. The Mojave is loaded through clam-shell doors in the aircraft's nose.

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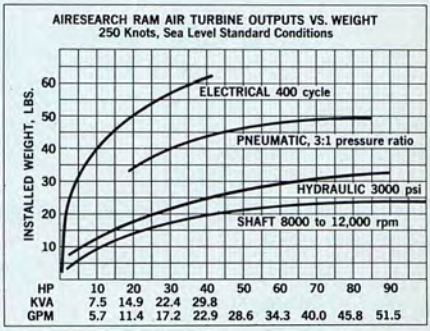

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GARRETT

CH-47A CHINOOK

Medium transport helicopter. Boeing Vertol Div., Morton, Pa.

ENGINES

Two Lycoming T55-1-L-7 turbines of 2,650 shp each.

ROTOR SYSTEM

Tandem 3-bladed rotors.

SPECIFICATIONS

Rotor diameter: 59 ft. 1 in. Fuselage length: 51 ft. Overall length: 83 ft. Height: 18 ft. 6 in. Empty weight: 17,913 lb. Gross weight: 33,000 lb. Overload gross wt.: 38,550 lb.

PERFORMANCE

Max. speed (SL): 178 mph. Cruise speed (SL): 164 mph. Service ceiling: 9,500 lb. Hover ceiling, OGE: 7,750 ft. Max. range: 115 st. mi. Rate of climb: 1,750 fpm.

REMARKS

Since the initial date of procurement in 1960, the Army has added 198 Chinooks to its inventory. In 1963 the CH-47 was classified as the official Army medium transport helicopter. Armed and armored versions are now in operation in Vietnam. The Chinook can transport a full rifle platoon of 44 combat-equipped troops.

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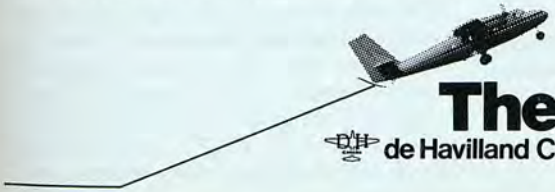


The Twin Otter

de Havilland Canada, world leaders in STOL

CH-47B CHINOOK

Medium transport helicopter. Boeing Vertol Division, Morton, Pa.

ENGINES

Two Lycoming T-55-L-7C turbines of 2,850 shp at 16,000 rpm.

ROTOR SYSTEM

Tandem 3-bladed rotors of 60′ diameter.

SPECIFICATIONS

Fuselage length: 51′. Overall length: 99.17′. Height: 18.65′. Empty weight: 19,375 lbs. Design gross weight: 33,000 lbs (40,000 lbs. max.).

PERFORMANCE

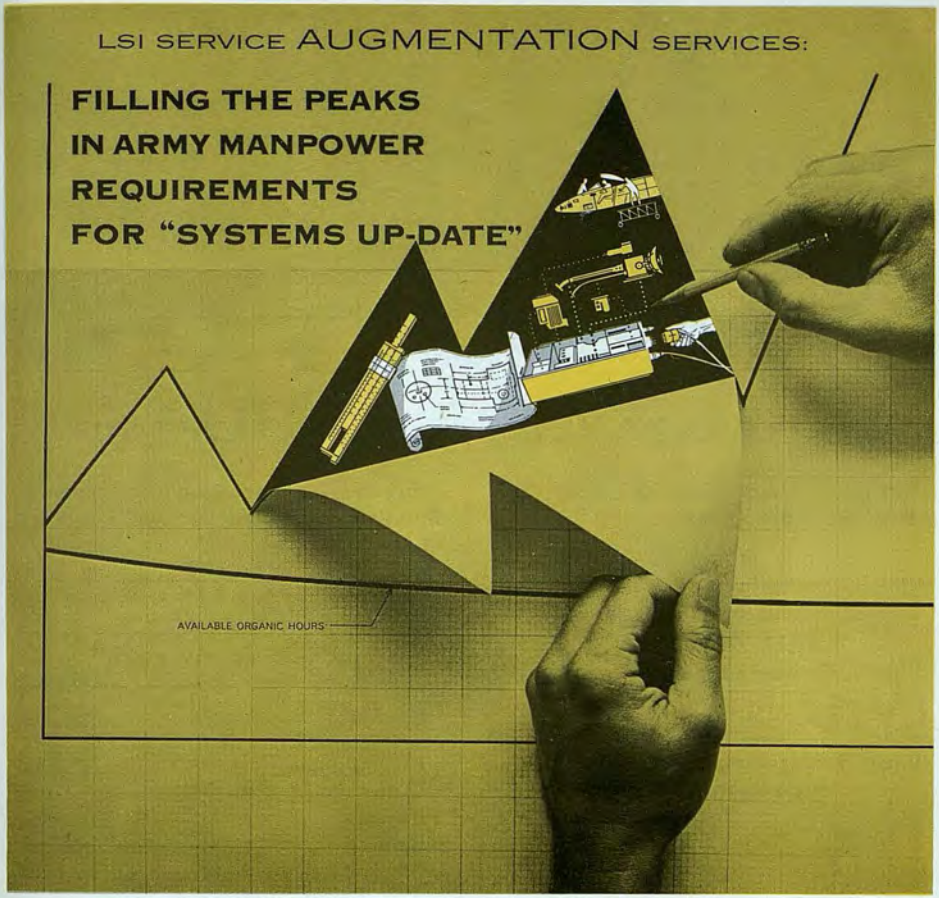
Max. speed: 196 mph. Cruise speed: 177 mph. Service ceiling: 16,300′. Hover ceiling (OGE): 10,650′. (IGE): 14,200′. Max. range: 351 mi. Rate of climb (SL): 1,990 at NRP.

REMARKS

An advanced version of the CH-47A Chinook, the "B" Model returns improved flight performance through redesigned rotor blades and stepped up turbine engines. The 33-seat "B" made its first flight in October, 1966, and will be followed by a "C" model with yet another increase in performance.

LSI SERVICE AUGMENTATION SERVICES:

FILLING THE PEAKS IN ARMY MANPOWER REQUIREMENTS FOR "SYSTEMS UP-DATE"



Along with new systems and hardware, Army Aviation's requirements include specialized capabilities to up-date, modernize and adapt improvements in current inventory.

□ □ LSI Service Corporation is actively engaged in numerous programs of an "up-date" nature for Army Aviation, other DOD agencies, and prime systems manufacturers, including accessory equipments and complete aircraft/helicopter systems. The capabilities of LSI Service are being applied from design and engineering, through prototyping and production to retrofit installations, including complete maintenance.

□ □ This combined and coordinated capability from concept to check out, offers the advantage of single source planning for complete "up-date" requirements and represents another way in which LSI Service provides augmentation of organic capabilities.

LEAR SIEGLER SERVICE, INC. (LSi)

A Subsidiary of Lear-Siegler, Inc.

3171 SOUTH BUNDY DRIVE, SANTA MONICA, CALIFORNIA

HO-1 DJINN

Two-place observation helicopter. Sud Aviation, Paris, France.

ENGINE

One Turbomeca Palouste 4 turbo-generator.

ROTOR SYSTEM

Single two-bladed main rotor, diameter 35 ft. 5 in. Air bled from compressor is fed to blade-tip ejectors providing thrust for rotational power.

SPECIFICATIONS

Fuselage length: 17 ft. 5 in., Height: 8 ft. 7 in. Empty weight: 794 lb. Max gross weight: 1,676 lb.

PERFORMANCE

Max. speed (SL): 78 mph. Cruise speed (SL): 62 mph. Hover ceiling OGE: 4,000 ft. Hover IGE: 2,500 ft. Range: 125 st. mi. Endurance: 2 hours 15 min.

REMARKS

The Army procured three YHO-1s for engineering and operational evaluation as an observation aircraft. It was the first helicopter to receive the new HO designation.

HO-3

Two-place observation helicopter, Brantley Helicopter Corp., Frederick, Oklahoma.

ENGINES

One Lycoming VO-360 engine of 162 hp.

ROTOR SYSTEM

Single three-bladed; Brantley designed two-section blades.

SPECIFICATIONS

Rotor diameter: 28 ft. 3 in. Overall length: 21 ft. 9 in. Height: 6 ft. 9 in. Empty weight: 1,020 lb. Gross weight: 1,670 lb.

PERFORMANCE

Max. speed (SL): 100 mph. Cruise speed (SL): 90 mph. Service ceiling: 9,000 ft. Hover ceiling (IGE): 4,000 ft. Normal range: 250 st. mi. Rate of climb: 1,400 fpm.

REMARKS

The Army purchased five HO-5s for evaluation. The aircraft had skid gear instead of wheels.

CH-54A

Heavy lift helicopter. Sikorsky Aircraft Div., Stratford, Connecticut.

ENGINES

Two Pratt & Whitney JFTD-12A-1 turbines of 4,050 shp each.

ROTOR SYSTEM

Single six-bladed main rotor and four-bladed metal, 15 ft. 4 in. dia. anti-torque rotor.

SPECIFICATIONS

Rotor diameter: 72 ft. Overall length: 88 ft. 7 in. Height: 25 ft. 7 in. Empty weight: 18,217 lb. Gross weight: 38,000 lb. Alt. gross wt.: 42,000 lb. Crew of 3 and 2 passengers in cockpit, plus 67 troops or 48 litters in pod.

PERFORMANCE

Max speed (SL): 124. Cruise speed: 110. Service ceiling: 13,000'. Hover ceiling: 7,000' (OGE); 11,900' (IGE). Normal range: 220. Rate of climb: 1,400 fpm.

REMARKS

Since initial procurement in July, '64, the Army has purchased 28 Flying Cranes through FY 68. The CH-54 carries a 10-ton payload and is designed to carry its cargos externally. It has a rear-facing seat for the third crew member to have a clear view of the load during pickup and delivery, which can be accomplished without landing by means of a hoist.

OH-4A

Four-place light observation helicopter. Bell Helicopter Company, Fort Worth, Texas.

ENGINES

One Allison T63 turbine engine of 250

ROTOR SYSTEM

Single two-bladed main rotor system, two-bladed tail rotor, metal, 5 ft. 2 in. diameter.

SPECIFICATIONS

Rotor diameter: 33.3 ft. Length: 38 ft. 8 in. Height: 8 ft. 10 in. Empty weight: 1,536 lb. Gross weight: 2,573 lb.

PERFORMANCE

Max. speed (SL): 135 mph. Cruise speed (SL): 111 mph. Cruise speed, 5,000': 111 mph. Service ceiling: 20,000 ft. Hover ceiling (OGE): 8,000 ft. Max. range: 283 st. mi. Endurance: 2 hrs. 35 min. Rate of climb: 1,100 fpm.

REMARKS

The OH-4A was the first of three LOH competitors to fly, taking to the air in December, 1962. Five OH-4s were delivered to the U.S. Army Aviation Test Board for tests and evaluation in January, 1964.

OH-5A

Four-place light observation helicopter. Hiller Aircraft Company, Palo Alto, California.

ENGINES

One Allison T63-A-5 turbine engine of 250 shp.

ROTOR SYSTEM

Single two-bladed Hiller "L" rotor by Parsons. Two-bladed metal anti-torque rotor.

SPECIFICATIONS

Rotor diameter: 35 ft. 6 in. Empty weight: 1,370 lb. Gross weight: 2,530 lb.

PERFORMANCE

Max. speed (SL): 128 mph. Service ceiling: 17,200 ft. Hover ceiling (OGE): 12,000 ft. (IGE): 16,900 ft. Endurance: 8.1 hours. Rate of climb: 1,850 fpm.

REMARKS

Five OH-5As were built for the Army to test and compare with two other versions of the proposed LOH. The first flying model was turned over to the Army in December 1963. The OH-5A was eliminated from the LOH competition. A modified version of the Hiller LOH is marketed as the FH-1100.

OH-6A CAYUSE

Four-place light observation helicopter. Hughes Tool Co, Aircraft Div., Culver City, California.

ENGINES

One Allison T63-A-5A turbine of 252 shp (derated).

ROTOR SYSTEM

Single four-bladed main rotor and two-bladed metal anti-torque rotor, 4 ft. 2 in. diameter.

SPECIFICATIONS

Rotor diameter: 26 ft. 4 in. Overall length: 30 ft. 4 in. Fuselage length: 23 ft. Height: 8 ft. 6 in. Empty weight: 1,156 lb. Mission gross wt.: 2,163 lb. Overload gross wt.: 2,700 lb.

PERFORMANCE

Max. speed (SL): 143 mph. Cruising speed (SL): 143 mph. Service ceiling: 15,500'. Hover ceiling (OGE): 7,600'. (IGE): 9,150' Normal range: 413 mi. at 5,000'. Rate of climb (SL): 1,550 fpm. Normal fuel capacity: 400 lbs.

REMARKS

The initial date of procurement of the Cayuse was May 26, 1965, with deliveries beginning in Mid-1966. A prototype set 23 world records in the spring of 1966 during a three-week period, including a 2,215 mile non-stop, non-refueled flight from Los Angeles to Daytona Beach. The initial Army order for 714 aircraft is now in production.

OH-13S SIOUX

Three-place observation helicopter. Bell Helicopter Company, Fort Worth, Tex.

ENGINES

One Lycoming TVO-435-25 turbo-supercharged engine of 260 hp.

ROTOR SYSTEM

Single two-bladed metal main rotor. Two-bladed metal tail rotor, 5 ft. 10 in. diameter.

SPECIFICATIONS

Rotor diameter: 37 ft. Overall length: 43 ft. 3 in. Fuselage length: 32 ft. 7 in. Height: 9 ft. 3 in. Empty weight: 1,936 lb. Gross weight: 2,850 lb.

PERFORMANCE

Max. speed (SL): 105 mph. Cruise speed (SL): 93 mph. Cruise speed, 5,000': 92 mph. Service ceiling: 18,000 ft. Hover ceiling (OGE): 15,000 ft. Max. range: 324 st. mi. Endurance: 2 hours. Rate of climb: 1,190 fpm.

REMARKS

The Army has procured a total of 283 OH-13S models through FY 65.

TH-13 SIOUX

The Army has procured 220 OH-13 T models through FY 65. Navigational equipment in this ship includes VOR, ADF, glide slope, slaved gyro compass, and attitude indicator. Portions of the bubble are blacked out to allow for hooded flight training.

OH-23D

Three-place observation helicopter. Hiller Aircraft Company, Palo Alto, California.

ENGINES

One Lycoming VO-435-23B engine of 250 hp.

ROTOR SYSTEM

Single two-bladed main rotor, metal blades by Parsons, Hiller Rotormatic system.

SPECIFICATIONS

Rotor diameter: 35 ft. 5 in. Fuselage length: 27 ft. 9 in. Overall length: 40 ft. 8 in. Empty weight: 1,816 lb. Gross weight: 2,700 lb.

PERFORMANCE

Max. speed (SL): 95 mph. Cruise speed (SL): 82 mph. Service ceiling: 13,200 ft. Hover ceiling (OGE): 5,200 ft. (IGE): 1,250 ft. Max. range: 197 st. mi. Rate of climb: 1,050 fpm.

REMARKS

The "D" model Raven has been used mainly as the primary helicopter trainer until late 1965 when it began being replaced by the TH-55A. The OH-23 is still in use operationally in the field.

OH-23G

Three-place observation helicopter. Hiller Aircraft Company, Palo Alto, California.

ENGINES

One Lycoming VO-540 engine of 305 hp.

ROTOR SYSTEM

Single two-bladed main rotor. Two-bladed tail rotor, 5 ft. 6 in. diameter.

SPECIFICATIONS

Rotor diameter: 35 ft. 5 in. Fuselage length: 28 ft. 6 in. Overall length: 40 ft. 8 in. Height: 10 ft. 2 in. Empty weight: 1,759 lb. Gross weight: 2,800 lb.

PERFORMANCE

Max. speed (SL): 96 mph. Cruise speed (SL): 90 mph. Service ceiling: 15,200 ft. Hover ceiling (OGE): 5,800 ft. Max. range: 225 st. mi. Rate of climb: 1,290 fpm.

REMARKS

The "F" model is the same as the "G" with the following exceptions: fuselage length — 29 ft. 6 in.; four-place; and the empty weight is 1,813 lb.

TH-55A

Two-place primary trainer helicopter. Hughes Tool Company, Aircraft Div., Culver City, Cal.

ENGINES

One Lycoming HIO-360-B1A engine of 180 hp.

ROTOR SYSTEM

Single three-bladed main rotor and four-bladed metal anti-torque rotor, 3 ft. 4 in. diameter.

SPECIFICATIONS

Rotor diameter: 25 ft. 3½ in. Overall length: 22 ft. 4 in. Height: 8 ft. 3 in. Empty weight: 1,008 lb. Gross weight: 1,600 lb.

PERFORMANCE

Max. speed (SL): 86 mph. Cruise speed, 5,000': 81 mph. Service ceiling: 11,500 ft. Hover ceiling (OGE): 4,000 ft. (IGE): 6,400 ft. Max. range: 187 st. mi. Endurance: 2.5 hours. Rate of climb: 1,350 fpm.

REMARKS

The TH-55A (formerly designated the HO-2) was purchased as an off-the-shelf item after tests and evaluation by the Army. The initial date of procurement was Nov. 1964. By June 30, 1965, 257 TH-55As had been brought into the Army inventory.

UH-1B IROQUOIS

Nine-place utility helicopter. Bell Helicopter Company, Fort Worth, Texas.

ENGINES

One Lycoming T53-L-11 turbine engine of 1,100 shp.

ROTOR SYSTEM

Single two-bladed main rotor. (Later models will have the model 540 "Doorhinge" rotor system).

SPECIFICATIONS

Rotor diameter: 44 ft. Overall length: 53 ft. Fuselage length: 42 ft. 7 in. Height: 12 ft. 8 in. Empty weight: 4,523 lb. Gross weight: 8,500 lbs.

PERFORMANCE

Max. speed (SL): 138 mph. Cruise speed (SL): 124. Service ceiling: 16,700'. Hover ceiling (OGE): 12,700'. (IGE): 16,800'. Normal range: 312 st. mi. Rate of climb: 2,350 fpm.

REMARKS

The Army has procured a total of 1,306 UH-1Bs from 1960 to the end of FY 65. The original Army designation, HU-1, gave rise to the common nick name "Huey". The Bell H-40 was produced as an aero-medical ambulance, but because of its versatility became an interim replacement for the piston powered cargo helicopters. (All figures listed here are based on the UH-1B at max. gross weight and with the standard rotor).

UH-1D IROQUOIS

12-15 place tactical transport helicopter. Bell Helicopter Company, Fort Worth, Texas.

ENGINES

One Lycoming T53-L-11 turbine engine of 1,100 shp.

ROTOR SYSTEM

Single two-bladed metal main rotor. Two-bladed metal anti-torque rotor, 8 ft. 6 in. diameter.

SPECIFICATIONS

Overall length: 53.9′. Fuselage: 44.6′. Height: 13.4′. Empty weight: 4,717 lbs. Normal gross wt: 9,500 lbs.

PERFORMANCE

Max. speed (SL): 138 mph. Cruise speed: 124 mph. Service ceiling: 22,000′. Hover ceiling (OGE): 14,000′. (IGE): 18,200′. Range: 315 mi. Rate of climb: 2,350 fpm (SL).

REMARKS

Since the initial date of procurement in 1961, the Army has purchased 1,254 Iroquois through FL 65. With the incorporation of the Lycoming T53-L-13 engine in the "D" in early 1967, the Huey's hot day performance should be substantially improved. Called a "slick" by Army pilots in Vietnam, the UH-1D is the backbone of all airmobile operations within the combat zone.

UH-2

A compound version of the utility helicopter. Kaman Aircraft Corporation, Bloomfield, Conn.

ENGINES

One GE T58-8 turbine engine of 1,250 shp, and one GE J-85 turbojet of 2,500 lb/thrust for auxiliary propulsion.

ROTOR SYSTEM

Single four-bladed main rotor. Three-bladed tail rotor, 9 ft. 4 in. diameter.

SPECIFICATIONS

Rotor diameter: 44 ft. Length: 52 ft. 6 in. Height: 13 ft. 7 in. Empty weight: 6,100 lb. Gross weight: 8,637 lb.

PERFORMANCE

Max. speed (SL): in excess of 225 mph. No other performance figures available.

REMARKS

The UH-2 compound Seasprite was flown in 1965 under a joint Army/Navy test program to investigate the high speed potential of the Seasprite rotor system. The UH-2 compound is basically a UH-2 with stub wings and an auxiliary jet engine added.

XH-51A

Two-place research helicopter. Lockheed-California Company, Burbank, California.

ENGINES

One United Aircraft of Canada PT-6B-6 turbine engine of 500 shp.

ROTOR SYSTEM

Single four-bladed Lockheed rigid-rotor system. 6.5 ft. tail rotor.

SPECIFICATIONS

Rotor diameter: 35 ft. Fuselage length: 32 ft. 4 in. Height: 8 ft. 2 in. Empty weight: 3,100 lb. Gross weight: 4,000 lb.

PERFORMANCE

Max. speed (SL): 174-plus mph. Cruise speed (SL): 144 mph. Hover ceiling (OGE): 7,000 ft. Range: 287 st. mi. Endurance: 2.7 hr. Rate of Climb: 1,850 fpm.

REMARKS

The XH-51A was developed under a joint Army/Navy contract as a research vehicle for high performance rotary wing aircraft. The first flight of the XH-51A was in Nov. 1962. It is equipped with retractable landing gear.

XH-51A

Two-place research compound helicopter. Lockheed-California Company, Burbank, California.

ENGINES

One United Aircraft of Canada PT-6B-6 turbine of 500 shp, and one Pratt & Whitney JT-12A turbojet.

ROTOR SYSTEM

Single four-bladed Lockheed rigid rotor system. Two-bladed tail rotor, 6.5 ft. diameter.

SPECIFICATIONS

Rotor diameter: 35 ft. Fuselage length: 32 ft. 4 in. Height: 8 ft. 2 in. Wing span: 16 ft. 10.5 in. Empty weight: 3,800 lb. Gross weight: 4,700 lb.

PERFORMANCE

Max. speed (SL): 272 mph. Cruise speed (SL): 230 mph. Service Ceiling: 20,000 ft. Hover Ceiling (OGE): 2,500 ft. Range: 270 st. mi. Endurance: 4 hrs. Rate of Climb: 3,500 fpm.

REMARKS

This compound helicopter is basically an XH-51A with stub wings and a jet engine added. The aircraft was developed under an Army-sponsored program.

YUH-1B

Research compound helicopter. Bell Helicopter Company, Fort Worth, Texas.

ENGINES

One Lycoming T53-L-11 turbine engine of 1,100 shp and two J69-T27 turbojet engines of 1,260 lb/thrust each.

ROTOR SYSTEM

Single two-bladed main rotor with tapered blade tips. Two-bladed tail rotor.

SPECIFICATIONS

The aircraft is basically the UH-1B with modifications for mounting the two turbojet engines, two stub wings, and the addition of fairings around the mast and cross tubes. Rotor diameter: 44 ft. Overall length: 53 ft. Fuselage length: 42 ft. 7 in. Height: 12 ft. 8 in.

PERFORMANCE

The YUH-1B has been flown in excess of 250 mph in level flight. No other performance data available.

REMARKS

The YUH-1B was developed under a joint program by Bell Helicopter Company and the U.S. Army Transportation Research Command (TRECOM).

SIOUX SCOUT

Two-place experimental armed helicopter. Bell Helicopter Company, Fort Worth, Texas.

ENGINES

One Lycoming TVO-435 turbo supercharged engine of 260 hp.

ROTOR SYSTEM

Single two-bladed main rotor 37 ft. diameter. Two-bladed metal tail rotor, 5 ft. 10 in. diameter.

REMARKS

The Scout was an extensively modified OH-13 featuring aerodynamic refinements for reduced drag, stub wings, internal fuel cells, an integrated nose gun system, mounting points for external stores, and increased maneuverability. Tests on the Scout led to concepts for design of the AH-56A Huey-Cobra.

16H-1C

Eight-place developmental shaft compound, ring-tail helicopter. Piasecki Aircraft Corporation, Phila., Pa. 19153

ENGINES

One GE T-58-5 turbine engine, 1,500 shp.

ROTOR SYSTEM

Fully-articulated 3-bladed main rotor and a 3-bladed controllable pitch ducted tail-prop for forward propulsion and anti-torque directional control.

SPECIFICATIONS

Rotor diameter: 44 ft., Empty Weight: 4,800 lbs., STOL gross weight: 8,150 lbs., Disc Loading: 5.36 lb./sq. ft., STOL Gross weight: 10,800 lbs.

PERFORMANCE

Max. speed (SL): 207 mph, Cruise speed (SL): 187 mph @ 80% Takeoff power, Service Ceiling: 18,700 ft., Hover Ceiling (OGE): 7,800 ft., Max. Range: 450

REMARKS

Private development initially by PiAC as 16H-1 Pathfinder, it was later modified to the Pathfinder II under a joint Army-Navy contract to explore high speed.

AH-56A CHEYENNE

Two-place high-speed compound helicopter. Lockheed-California Company.

ENGINES

One General Electric T64-GE-16 turbine of 3,435 shp.

ROTOR SYSTEM

Single rigid rotor, 50.4′; 10.0′ tail rotor; 10.0′ pusher propeller for horizontal mode propulsion.

SPECIFICATIONS

Length: 54.7′. Height: 13.7′. Wing span: 26.7′. Empty weight: 11,718 lbs. Gross weight 16,995 lbs.

PERFORMANCE

Max. speed (SL): 253 mph. Cruising speed (SL); 241.5 mph. Service ceiling: 26,000 feet. Hover ceiling (OGE): 10,600 feet. Max. range: 874 st. mi. Max. ferry range: 2886.5 st. mi. Max. rate of climb: 3,420 fpm. Vertical rate of climb: 2,100 fpm. Endurance: 5.4 hours.

REMARKS

Rolled out on May 3, 1967 thirteen months after the contract was let, the No. 1 prototype of the Army's AAFSS (Advanced Aerial Fire Support System) is planned for service evaluation by March, 1968 or sooner. Lockheed-California and its 813 suppliers have received funding for 10 prototypes with No. 10 to come off the production line on or before January, 1968.

ARMY AVIATION MATERIEL ISSUE

V/STOL AND GEMS

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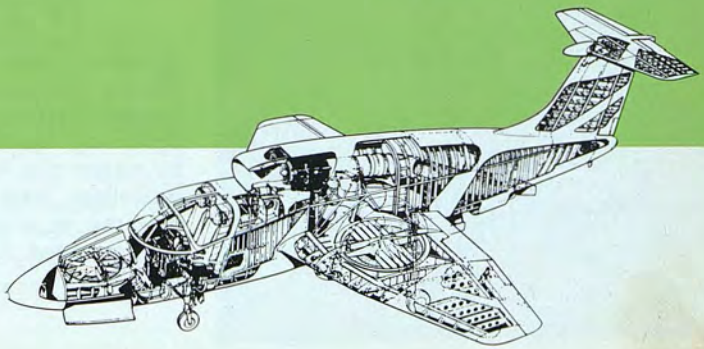


VZ-1E

Greater mobility for the individual soldier on scouting and reconnaissance missions was the object of this research vehicle by Hiller Aircraft. The flying platform was kinesthetically controlled. A ducted fan, powered by three 40 hp Nelson H-59 engines, provided propulsion and lift. The VZ-1, known as the Pawnee, weighed approximately 465 lbs.

VZ-2PH

A research tilt-wing aircraft built by Boeing Vertol that operated both as a vertical take-off and landing aircraft and as a conventional plane. The VZ-2PH aircraft completed full transition from vertical take-off to cruise and back to vertical landing in July, 1958. The interconnected propellers were powered by one T-53 gas turbine engine.

VZ-3RY

A research aircraft built by Ryan employing two propeller deflected slipstreams. Vertical flight was achieved by deflecting the slipstreams downward by means of a high-flapped wing. The propellers were interconnected and powered by a single T-53 turbine engine mounted in the fuselage.

VZ-4DA

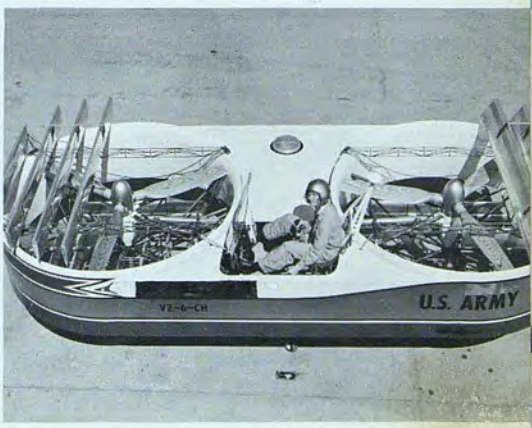
This VTOL aircraft was built by Doak with ducted propellers on the wing tips that rotated through 90 degrees to convert the plane in flight. To land, the propellers were again turned to the vertical position. The entire plane maintained the conventional horizontal attitude at all times. One T-53 turbine engine powered the interconnected ducted propellers.

VZ-5FA

A research aircraft built by Fairchild that achieved VTOL capability by deflecting the slipstream downward by means of a high-flapped wing. The four interconnected propellers were powered by a single T-58 turbine engine. NASA conducted wind tunnel and flight tests.

VZ-6CH

A single place research aircraft designed by Chrysler to explore the aerial jeep concept. Shafting from a single 380 hp reciprocating engine transmitted power to the two ducted propellers. Propulsion was obtained from a combination of vehicle nose down attitude and the rearward propeller slipstream deflection accomplished by duct exit vanes.

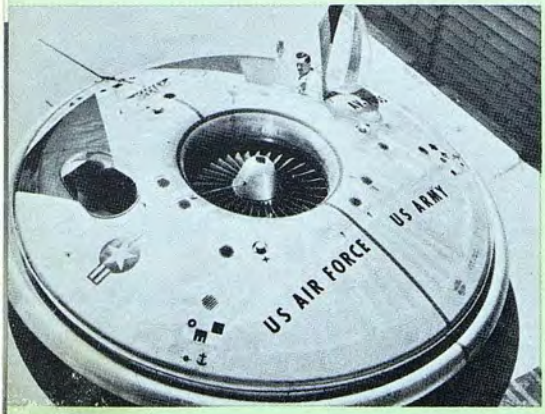


VZ-7AP

This aerial jeep research vehicle was originally designed and constructed by Curtiss-Wright utilizing four ducted fans. Finally the ducts were removed. The vehicle was powered by a single Artouste II turbine.

VZ-8PB

An aerial jeep research vehicle powered by two Artouste II turbine engines. Developed by Piasecki, the VZ-8PB derived lift from two 3-bladed rotors. An earlier version, utilizing a single turbine, made its first flight in 1958. The craft's low silhouette enabled it to hug the ground, fly under low bridges, between buildings or other obstacles.

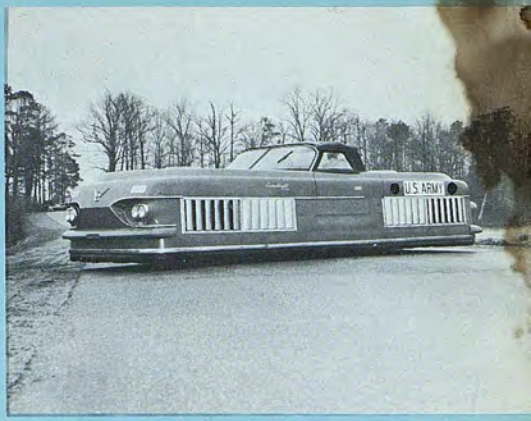


VZ-9A

Designed to explore vertical take-off and landing techniques, this vehicle operated in ground effect only. Developed by AVRO Aircraft of Canada under U.S. Army and Air Force sponsorship.

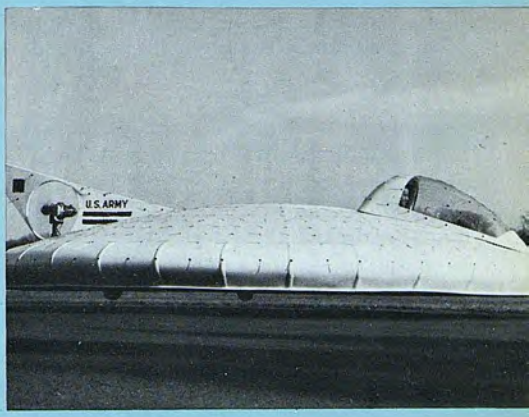
CW AIRCAR

A 4-place Ground Effects Machine (GEM), designed by Curtiss-Wright to skim 6 to 12 inches off the round at speeds up to 35 miles per hour. Two of these machines were bought "off-the-shelf" to obtain research information on basic operating principles.



PRINCETON GEM

This Ground Effects Machine (GEM) was designed and built by Princeton University under Army contract to study the GEM phenomenon and particularly the problems of stability and control.



HZ-1DE

One of several approaches to the flying platform, this research vehicle by DeLackner provided data on the unducted propeller concept for an individual lift device. A later version used metal skids as landing gear instead of the outriggers and inflated rubber bags. Power was supplied by a 40 hp Kiekhaefer Mercury Mark 55 engine.

XV-4A

Experimental VTOL aircraft. Lockheed-Georgia Company, Marietta, Georgia.

ENGINES

Two Pratt & Whitney JT-12 turbo jets of 3,200 lb/thrust each. 40% augmentation for a total of 8,300 lb/thrust in VTOL mode.

LIFT SYSTEM

The aircraft achieves vertical flight by diverting the high velocity jets from both engines through a series of nozzles and ducts into mixing chambers in the center of the fuselage and thence downward toward the ground. Bombay-type doors in the top and bottom of the fuselage open to expose the mixing chambers and nozzles.

SPECIFICATIONS

Span: 25 ft. 10 in. Length: 33 ft. Height: 11 ft. 9 in. Empty weight: 5,000 lb. VTOL gross weight: 7,200 lb.

PERFORMANCE

Max. speed (SL): 660 mph. Service ceiling: 50,000 ft. Range: 920 st. mi. Rate of climb: 18,000 fpm.

REMARKS

In mid-1966, the U.S. Air Force took over operational control of the XV-4A.

XV-5A

Experimental fan-in-wing aircraft. Ryan Aeronautical Co., San Diego, Calif.

ENGINES

Two GE J85-5 turbines of 2,650 shp each.

LIFT SYSTEM

The aircraft gets its vertical lift from downward thrust produced by two five-foot diameter fans submerged in the wings. The fans are powered by the exhaust from the engines.

SPECIFICATIONS

Span: 29 ft. 9 in. Length: 44 ft. 6 in. Height: 14 ft. 8 in. Empty weight: 7,500 lb. VTOL gross weight: 12,500 lb. STOL gross weight: 15,500 lb.

PERFORMANCE

Max. speed (SL): 545 mph. Cruise speed, 30,000': 440 mph. Service ceiling: 45,000 ft. Hover ceiling (OGE): 12,000 ft. Max. range: 1,200 st. mi. Rate of climb: 9,500 fpm.

REMARKS

Two XV-5As have been built under the Army program. Transition to forward flight is accomplished by vectoring control vanes (louvers) mounted under the back wing fan.

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Aircraft Radio Corporation ARC

LOGISTIC SUPPORT OF AA

(Continued from Page 20)

nd efficient operation of aircraft, day or night, under all weather conditions; or to electronic equipment necessary for the accomplishment of the aircraft mission. Army aviation has made great progress in the field of avionics in the past few years.

In the early 1950's, Army aircraft were generally equipped with a two-way voice radio and a low frequency direction finding set (manual loop) for navigation. At the time, it appeared that the equipment was satisfactory for performing the missions assigned to Army aircraft, i.e., observation, liaison, artillery adjustment, and medical evacuation. The installed equipment was somewhat unsophisticated and did not have a major impact on logistics.

With the introduction of the L-23 (U-8) into the Army inventory in 1952, followed by the UH-1, CV-2, OV-1, CH-47, CH-54, and OH-6, and in the near future the AH-56, avionics have taken on a new and more important role.

Today, avionics provides not only communications and navigation but also surveillance, fire control, air traffic control, stabilization, identification, instrumentation, and environmental information. From the few hundred dollars spent on avionics equipment for an aircraft in the early 1950's, it's expected that the avionics equipment installed in the AH-56 *(AAFSS)* will exceed 2.4% of its total cost. This increased requirement for avionics capability has caused an increase in the supply and maintenance load at all levels of support.

Centralized management

The magnitude of the overall aviation program makes it apparent that all of the varied, but interrelated logistical activities must be well coordinated and managed to provide unity of effort and direction. Toward this end, the Chief of Staff for the Army recently established the *Office of the Special Assistant for Logistical Support of Army Aircraft (OSALSAA)* under the Deputy Chief of Staff for Logistics (DCSLOG).

OSALSAA was established in January, 1967 as the Department of the Army single contact point for all aviation logistic support matters requiring attention or decision of the DCSLOG, Chief of Staff, Secretary of the Army, Joint Chiefs of Staff, or Secretary of Defense.

The functions of the office include the coordination of and monitorship over the formulation of general policy relating to logistic support of Army aviation worldwide to assure that aviation operational requirements receive required and timely support. In addition, the office is responsible for monitoring the materiel readiness posture of worldwide Army aviation to assure that its capabilities are sufficient to meet requirements.

To accomplish these broad management tasks, *OSALSAA* has two staff branches under the special assistant and his deputy. The *Aircraft Systems Logistical Support Branch*, with rated action officers assigned to specific aircraft systems, is organized to perform the overall functions of logistic support management. These officers provide a single responsive communication link between the commodity aligned systems officer *(DASSO)* in ACSFOR, the AMC Project Managers, and the functionally aligned DCSLOG staff.

The second branch, the *Materiel Analysis and Forecast Branch*, supervises worldwide reporting systems, maintains statistical data, and monitors the overall adequacy of logistic support requirements. The establishment of *OSALSAA* as a centralized coordination point for all aviation logistic matters, does not change the responsibilities assigned to the other elements of DCSLOG.

This short review of the status of several current logistical projects is representative of the activity that is taking place. The operational and logistical momentum that we have achieved today must be maintained if future anniversaries of Army aviation are to reflect continued growth and success.

The ARMY AVIATION Materiel Issue is published as one of each subscriber's regular issues, and takes the place of the normal August "news issue." The editors welcome corrections and additions from all sources.

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Start with AiResearch experience.

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Here are some other reasons:

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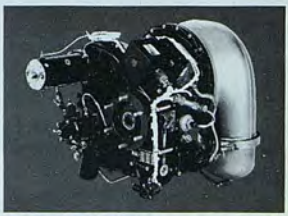
This APU will start and operate at 15,000 ft., and at temperatures as low as —65°F. It also supplies ground power for electrical systems and armament checkout without running the main engine.

To get all the facts on our performance-proved APUs, contact AiResearch Manufacturing Company, 402 So. 36th Street, Phoenix, Arizona 85034.



GARRETT **AiResearch**
Secondary Power Systems

XV-6A

One-place vectored thrust V/STOL aircraft. Hawker Siddeley Aviation Ltd., Kingston-Upon-Thames, England.

ENGINES

One Bristol Siddeley Pegasus engine of 15,500 lbs/thrust.

SPECIFICATIONS

Span: 22 ft. 10 in. Length: 42 ft. 4 in. Height: 10 ft. 8 in. Empty weight: 10,180 lb. Gross weight: 17,500 lb.

PERFORMANCE

Max. speed (SL): 0.91 Mach. Cruise speed (SL): 0.89 Mach. Cruise speed, 10,000': 0.90 Mach. Service ceiling: 45,000 ft. Max. range: 1,245 st. mi. Endurance: 2.75 hours. Rate of climb: 13,000 fpm.

REMARKS

In 1961 the U.S. Army procured three of the nine XV-6As in the Tripartite Squadron and later took control of the three F.R.G. aircraft. The six XV-6As (built in Britain as the P. 1127) underwent tri-service evaluation in the U.S. in early '66. DOD does not plan a production order for the plane.

XV-8A FLEEP

One-place flex-wing utility vehicle. Ryan Aeronautical Company, San Diego, California.

ENGINES

One Continental pusher piston engine of 210 hp.

SPECIFICATIONS

Span: 33 ft. 5 in. Length: 26 ft. Empty weight: 1,029 lb. Gross weight: 2,359 lb.

PERFORMANCE

Max. speed (SL): 81 mph. Cruise speed (SL): 55 mph. Max. range: 133 st. mi.

REMARKS

The XV-8A is a light aircraft with short field landing capability designed as a simple flying truck to operate from unimproved areas. The Fleep uses wings of flexible material attached to a keel. Leading edge members form a V-shaped kite-like surface.

OV-10A

Light armed reconnaissance aircraft. North American Aviation, Columbus Div., Columbus, Ohio.

ENGINES

Two AiResearch T76 turboprops of 715 hp each.

PROPELLERS

Hamilton Standard three-bladed, counter-rotating, metal, 8 ft. 6 in. diameter.

SPECIFICATIONS

Span: 30 ft. 3 in. Length: 40 ft. 11 in. Height: 15 ft. 1 in. Empty weight: 5,257 lb. Gross weight: 10,000 lb. Places: One to six, depending on configuration.

PERFORMANCE

Max. speed (SL): 305 mph. Cruise speed (SL): 218 mph. Cruise speed, 10,000': 234 mph. Service ceiling: 19,000 ft. Max. range: 1,035 st. mi. Endurance: 2.75 hours. Rate of climb: 2,100 fpm.

REMARKS

Has many configurations to fill various counterinsurgency missions. '67 deliveries under Navy-administered contract.

NU-8F

Seven-place command/liaison utility transport aircraft. Beech Aircraft Corp., Wichita, Kansas.

ENGINES

Two Pratt & Whitney PT6A-6 turbine engines rated at 550 shp each.

PROPELLERS

Hartzell, 3-blade, constant speed.

SPECIFICATIONS

Span: 45 ft. 10½ in. Length: 35 ft. 4¼ in. Height: 14 ft. 8 in. Empty weight: 5,081 lbs. Gross weight: 9,300 lbs.

PERFORMANCE

Max. speed (SL): 239 mph. Cruise (SL): 239 mph. Cruise speed, 10,000 ft.: 260 mph. Service ceiling: 27,400 ft. Max. range, 16,000 ft.: 1,470 st. mi. Endurance: 6.8 hrs. Rate of climb: 1,900 fpm.

REMARKS

The NU-8F is a turbine powered, unpressurized U-8F. The increased speed, useful load, and range make it an excellent addition to the Army fleet. One NU-8F was procured by the Army in 1964.

XV-9A

Two-place hot cycle research helicopter. Hughes Tool Co., Aircraft Div., Culver City, California.

ENGINES

Two GE YT64 gas generators.

ROTOR SYSTEM

Single three-bladed main rotor driven by blade tip propulsion.

SPECIFICATIONS

Rotor diameter: 55 ft. Fuselage length: 45 ft. Height: 12 ft. Empty weight: 8,600 lb. Gross weight: 15,300 lb. Overload gross wt.: 25,500 lb.

PERFORMANCE

Max. speed (SL): 138 mph. Cruise speed (SL): 92 mph. Cruise speed, 5,000': 92 mph. Service ceiling: 17,300 ft. Hover ceiling (OGE): 13,200 ft. Rate of climb: 2,000 fpm.

REMARKS

In September 1962, the Army procured one XV-9A aircraft for research, testing, and evaluation.

X-19

Six-place experimental V/STOL aircraft. Curtiss-Wright Corp., Wood-Ridge, New Jersey.

ENGINES

Two Lycoming T55-L-7 turbines of 2,650 shp each.

PROPELLERS

Four Curtiss-Wright plastic three-bladed 13 ft. dia. propellers cross-shafted and mounted on ends of two stub wings.

SPECIFICATIONS

Span: 34 ft. 6 in. Length: 44 ft. 5 in. Height: 17 ft. Empty weight: 9,750 lb. Gross weight (VTOL): 13,660 lb. Gross weight (STOL): 14,750 lb.

PERFORMANCE

Max. speed (SL): 460 mph. Cruise speed (SL): 400 mph. Max. range: 520 st. miles. Rate of climb: 3,250 fpm.

REMARKS

Two aircraft were procured under a tri-service contract managed by the U.S. Air Force. One X-19 was destroyed in an accident in late 1965. No longer an active project.

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X-22A

Eight-place V/STOL research aircraft. Bell Aerosystems Co., Buffalo, N.Y.

ENGINES

Four YT58-GE-8D turboshaft engines of 1,250 hp each mounted on aft wing.

PROPELLERS

Four 3-bladed Hamilton Standard, seven foot, cross-shafted propellers.

SPECIFICATIONS

Span: 39.2 feet; Length: 39.6 feet; Height: 20.7 feet; VTOL Gross weight: 16,274 lbs; max gross: 18,016; STO over 50 feet — 720 feet.

PERFORMANCE

Max. speed (SL): 322 mph. Hover ceiling: 11,000 feet. Endurance: VTOL, 2.9 hrs — STOL, 4.4 hrs; Range: VTOL, 455 n. mi. — STOL, 685 n.m.

REMARKS

Tri-service program under Navy-administered contract. Roll-out took place on May 25, 1965 with maiden hovering flight on March 17, 1966. STOL first accomplished on June 30, 1966, with first VTOL, transition to conventional flight, and return to VTOL occuring on March 1, 1967.

XC-142A

Tilt-wing, deflected slipstream, V/STOL medium transport aircraft. LTV Aerospace Corp., Dallas, Texas.

ENGINES

Four GE T64-6 turboprops of 3,080 shp each.

PROPELLERS

Hamilton Standard four-bladed fiberglass, 15 ft. 6 in. diameter, cross-shafted. Three-bladed tail rotor for longitudinal control at low speeds.

SPECIFICATIONS

Span: 67 ft. 6 in. Length: 58 ft. Height: 26 ft. Empty weight: 23,000 lb. Gross weight, STOL: 41,500 lb. Gross weight, VTOL: 37,500 lb. Places: 35.

PERFORMANCE

Max. speed (SL): 430 mph. Cruise speed (SL): 285 mph. Cruise speed, 10,000': 345 mph. Service ceiling: 25,000 ft. Hover ceiling (OGE): 6,000 ft. Max. range: 460 st. mi. Endurance: 6.5 hours. Rate of climb: 6,800 fpm.

REMARKS

Five XC-142As have been built under a tri-service developmental program with Hiller Aircraft, and Ryan Aeronautical as associate contractors.

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ABOVE: MACHINING A TITANIUM AAFSS ROTOR HUB

AVCOM Contracts Exceed $1 Billion For Second Year

Largely in response to urgent requirements stemming from the war in Vietnam, procurements effected by the U.S. Army Aviation Materiel Command of this city established an all-time record for the fiscal year that ended last June 30.

Totaling $1,361,500,000, they marked the second straight year that AVCOM's purchases of end item aircraft, repair and replenishment spare parts, maintenance and support equipment, and aerial delivery items, engineering and other services exceeded the billion-dollar mark. The total for the year just ended compares with previous fiscal year procurements amounting to $1,227,432,000.

Ranking topmost in the area of procurements during FY '67 were $206.5 million in contracts awarded to the Bell Helicopter Company of Fort Worth, Tex., for the production of the UH-1 "Huey" and of the newer AH-1G HueyCobra rotary wing gunship.

Other large procurements of end item aircraft during the same period included the following:

CH-47 Chinook helicopter (Boeing Vertol), $135.6 million.

OV-1 Mohawk fixed wing reconnaissance aircraft (Grumman), $43.2 million.

CH-54A Flying Crane heavy lift helicopter (Sikorsky), $38 million.

OH-6A Cayuse light observation helicopter (Hughes Tool Co-Aircraft Div.), $28.2 million.

U-21A utility fixed wing aircraft (Beech), $23.5 million.

U-8 Seminole utility fixed wing aircraft (Beech), $6.8 million.

T-41B fixed wing trainer (Cessna), $3.9 million.

O-1 Bird Dog fixed wing observation aircraft (Cessna), $2.8 million.

TH-55A primary helicopter trainer (Hughes Tool Co.-Aircraft Div.), $1.4 million.

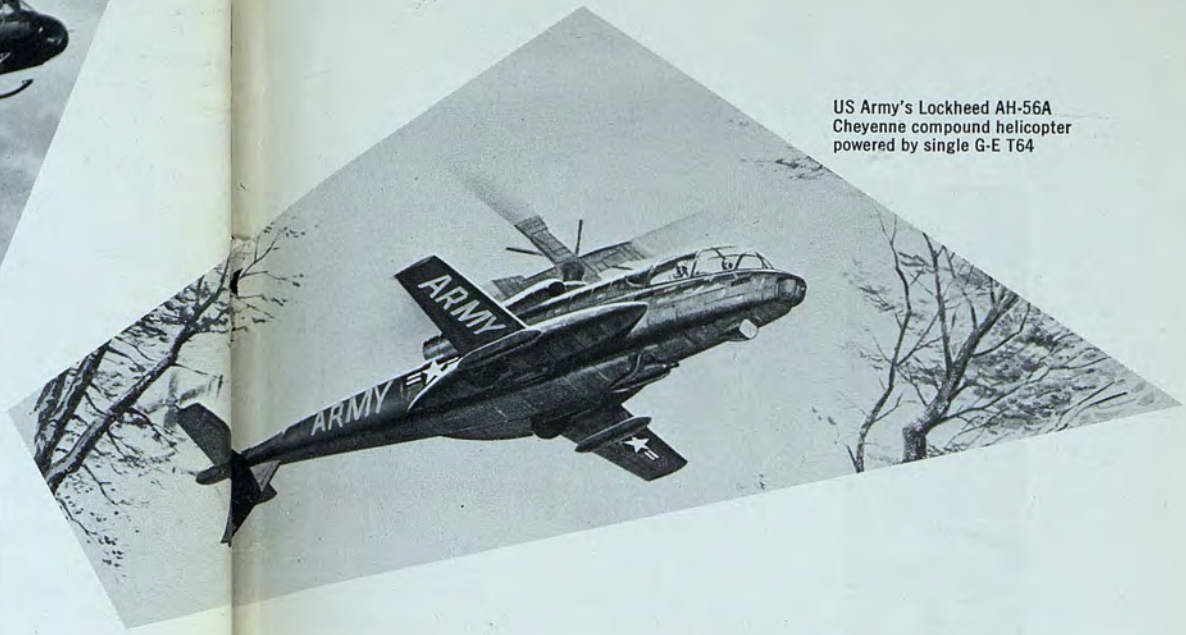
Also soaring to unprecedented heights were AVCOM's procurements of aeronautical spare parts. They totaled $643,021,672 for the year just ended, compared with $525,991,838 in FY 1966 and $125,098,838 in FY 1965.

Placing continuing emphasis on its Small Business program, the command reported that $53,709,000 of its procurement outlay went to producers in that category, representing approximately 35 percent of all contracts awarded by AVCOM.

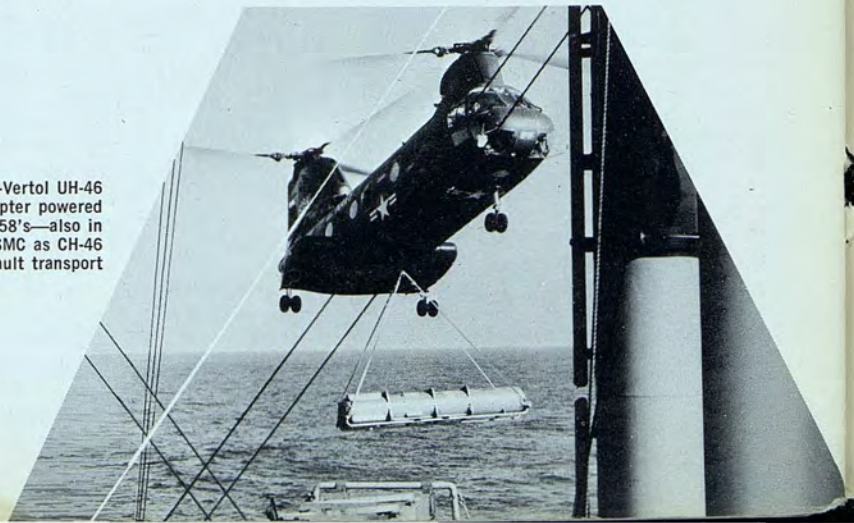
USAF Bell UH-1F utility helicopter powered by single G-E T58

USN Kaman UH-2 utility helicopter powered by single G-E T58

USMC Sikorsky CH-53A heavy assault helicopter powered by twin G-E T64's



US Army's Lockheed AH-56A Cheyenne compound helicopter powered by single G-E T64



USN Boeing-Vertol UH-46 utility helicopter powered by twin G-E T58's—also in service with USMC as CH-46 medium assault transport

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