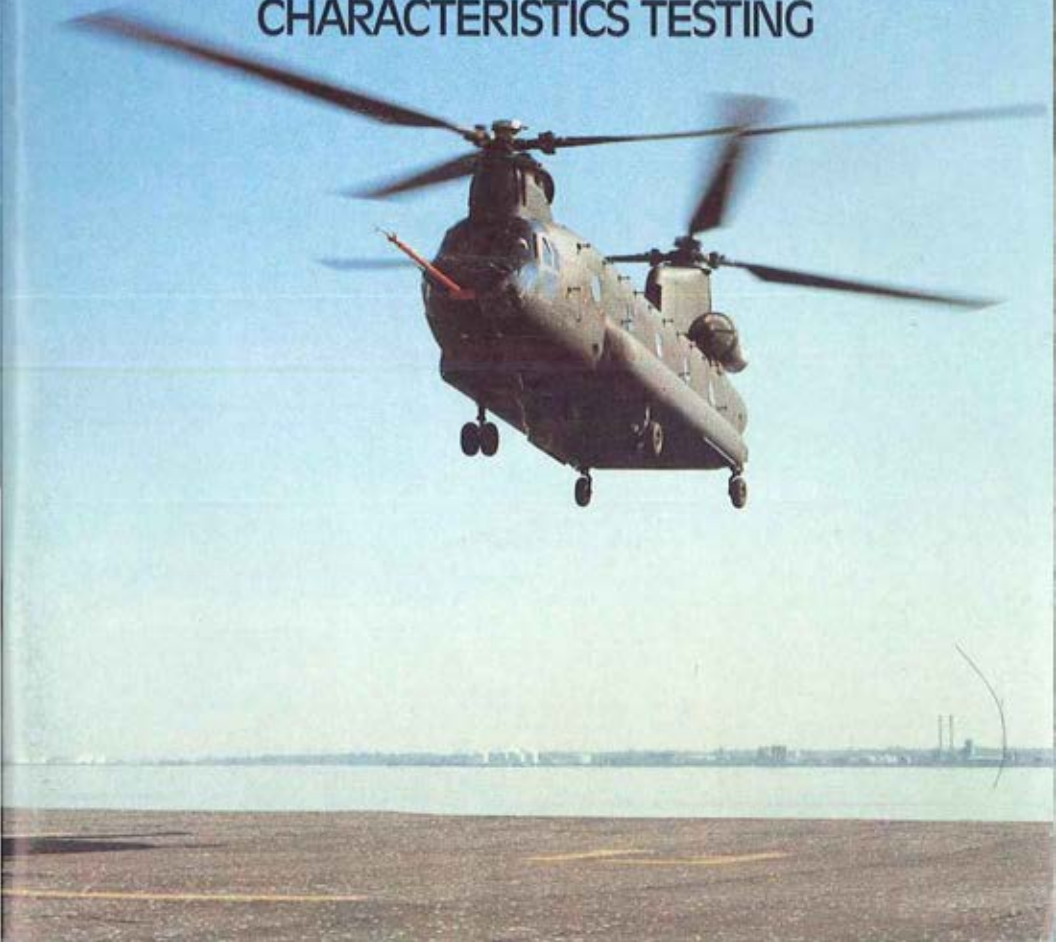
SPECIAL TRIENNIAL ISSUE ON ARMY AVIATION EQUIPMENT

FEATURING ARMY AIRCRAFT EMPLOYED DURING 1942-1982

Army Aviation

DECEMBER 15, 1982

THIRD PRODUCTION ARMY/BOEING CH-47D CHINOOK ENTERS AIRWORTHINESS AND FLIGHT CHARACTERISTICS TESTING



FRONT COVER PHOTO

THE THIRD PRODUCTION MODEL OF THE U.S. ARMY'S CH-47D HELICOPTER IS SHOWN TAKING OFF FROM THE FLIGHT RAMP AT THE BOEING VERTOL COMPANY'S PHILADELPHIA PLANT. THE NEW "D" MODEL CHINOOK IS CURRENTLY ENGAGED IN AIRWORTHINESS AND FLIGHT CHARACTERISTICS TESTING. SOME 5,000 MILITARY AND CIVILIAN GUESTS ATTENDED THE ON SCHEDULE DELIVERY OF THE FIRST PRODUCTION CH-47D IN MID-MAY OF THIS YEAR.

ADVERTISERS

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1982 EQUIPMENT ISSUE

VOLUME 31 — NUMBER 12

DECEMBER 15, 1983

ARMY AVIATION MAGAZINE

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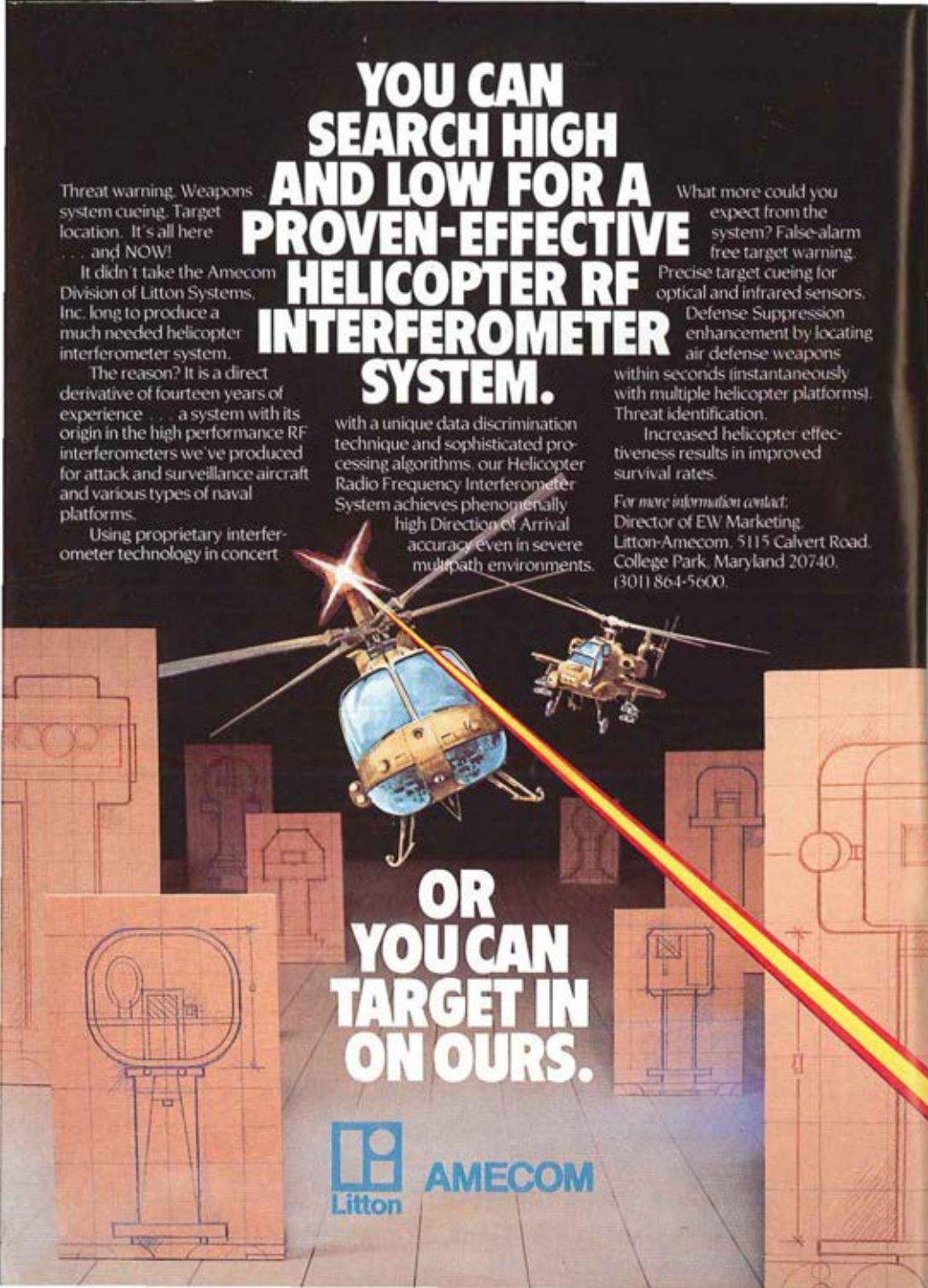

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GENERAL ELECTRIC

205-320

I'M happy to visit Fort Rucker again and to address the Army Aviation Association of America. Though not an aviator, I have had a long and solid relationship with Army Aviation.

Let me share a few of my thoughts about Army Aviation and some of the challenges we face. Then I would like to turn to the Army and its obligations in the world today.

Army Aviation does not have a long history. And many of us in this room have lived through much of that history. Nevertheless, Army Aviation has come a long way as the aerial dimension of the Combined Arms Team.

I recall some of the cross currents which we experienced with the 101st Airborne (Air Assault) Division during its participation in REFORGER 1976. During the maneuvers in Germany we were told that there would be no cross-FEBA operations because they were not feasible.

A deep strike capability

Now, of course, we see in the Air-Land Battle doctrine that deep strike and deep reconnaissance are necessary. We are developing the capabilities to conduct such operations with a high degree of success.

During the REFORGER maneuvers we were told many times over that the best tank killer remains the tank. But now we see the important contributions to tank killing provided by the ground TOW and particularly by the aerial TOW in the COBRA and APACHE. These anti-tank systems are as important to battlefield lethality as the main guns are on tanks.

GEN John A. Wickham, Jr., shown above as the guest speaker at the AAAA's Army Aviation Center Chapter Nov. 18 dinner meeting, is the Vice Chief of Staff, U.S. Army.

At the time of the REFORGER maneuvers there was considerable discussion about converting the 101st Airborne to a mechanized outfit. Now, of course, we see that the 101st is a part of the Rapid Deployment Force and here to stay as an air assault unit. Many of the tactics and capabilities of the air assault division are being incorporated in the high technology light division which is undergoing test and evaluation at Fort Lewis.

As you know, Division 86 involves the organization of separate aviation units in all of our divisions. These integral aviation units capitalize on air assault capabilities.

Since 1976 we can see considerable progress with aviation research and development and systems acquisition. Examples include the APACHE helicopter, the program to modernize the Scout helicopter, the COBRA upgrade

By GEN John A. Wickham, Jr.

The challenges we face

which is under consideration, the development of a new family of aerial munitions, and, finally, serious consideration is being given to establishing a separate aviation branch and aviation componency at Ft. Rucker. Incidentally, I support these initiatives.

A pioneering role

Finally, in recent years we have all seen the growth in standardization of training and institutionalization of safety procedures throughout the Army. Army Aviation played an important pioneering role in both of these areas.

Although we have witnessed considerable growth in the recognition of the capabilities provided by Army Aviation and the growth in the strengthening of these capabilities, we have to admit there remains much to be done. Let me touch briefly on two important areas.

Safety. All of us recognize the importance of improving safety because of its implications for materiel and human resources. It also has implications for force readiness and for our ability to justify additional resources from the Congress.

Unfortunately, the trend of mishaps in aviation is up—and we have to do something about it. I realize, of course, that there are a number of aviation units throughout the Army that have and continue to maintain a superlative safety record. I note that the Aviation Center's annual rate is down in all categories.

Our review of aviation accidents indicates that most are caused by human error and that the average pilot involved in an accident had 4.3 years of aviation experience and approximately 1,300 flying hours. Rigorous tactical training does not appear to be a major cause of accidents. We find that violations of flight discipline on the part of some air crews and on the part of certain commanders contributes to the trend.

If you look closely at the record of aviation safety throughout the years, you will note that where the chain of command is totally involved, the safety record is excellent. **General Bruce Clarke** used to say that a unit does well those things a commander pays attention to. To illustrate this, at one time we were able to get the class A rate down to two per 100,000 flying hours, so it can be done when the chain of command is fully engaged. As a result of these efforts, I expect to see improvement in the trend.

In addition to requiring greater chain of command involvement, including one with quarterly reviews of safety, we are investing substantial funds in safety product improvements.

The second area I want to emphasize involves the **human quality of ingenuity,** and there's a lot of it in Army Aviation! We are undergoing a period of considerable change in the Army. The changes include doctrine, training, equipment, and organization. All of the

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changes will place particular demands on Army Aviation, because Army Aviation not only will have to demonstrate the highest professional standards of safety and operational performance, but also demonstrate **ingenuity.**

Ingenuity will be particularly valuable to the Army in developing tactics, doctrine, and training for combat operations. We need to emphasize night training and field maintenance techniques especially. In addition, **ingenuity** will be helpful in developing closer joint interface with the Air Force and other Services.

We will be fighting in joint and combined operations, if war occurs, and the A-10 as well as other vast movers, will be in the airspace of helicopters. Moreover, Allied air, which may not have the same flight control or operational procedures as we do, will be operating in our airspace or we in their airspace, and we need to use the best of our **ingenuity** in developing solid operational interfaces and agreed procedures.

If we go to war tomorrow it will be as joint forces and combined forces. We see evidence of this reality through our commitments, such as NATO, in the combined forces command in the Republic of Korea, and with the recent development of the **Rapid Deployment Joint Task Force (RDJTF).**

Joint commitment recognized

The extended or deep battlefield concept, which is known as the **Air-Land Battle,** further recognizes the joint commitment to the conduct of operations overseas. The U.S. Army's Training and Doctrine Command and the U.S. Air Force's Tactical Air Command continue working closely together to develop and disseminate joint doctrine and procedures.

Alliances also are essential to our war fighting capabilities. The day has gone when we could go it alone. Since 1949, the NATO alliance has deterred war in the North Atlantic region. Despite periodic criticism of the NATO Alliance, it remains of bedrock importance to maintaining world peace. We and our allies must continue to strengthen the alliance.

Our alliance with the Republic of Korea also has contributed to maintaining peace since 1953. Our commitment to the ROK-US combined forces command is just as firm as our commitment to NATO. We must continue to strengthen that alliance if we are to assure peace in Northeast Asia.

These alliances and others illustrate that we have global interests as well as commitments. Wherever there is conflict, the blessings of life, liberty, and the pursuit of happiness are threatened. We have a fundamental interest in assuring world peace through deterrence of military hostilities and through the development of friendly nations which are politically, economically, and militarily capable of surviving.

Thus, in view of our worldwide interests and alliance commitments, if we are to assure peace, we must be ready for war.

That, of course, continues to be the mission of our Armed Forces. It has been the mission of our Armed Forces ever since they were formed.

George Washington wrote Congress in 1793, "There is a rank due the U.S. among nations which will be withheld, if not absolutely lost, by the reputation of weakness. If we desire to secure peace it must be known that we are at all times ready for war."

Building for peace

We are rebuilding our military strength in order to assure peace. Our strategic and conventional forces are being strengthened and we must assure that they are developed in a balanced way if we are to deter across

AWARD—CPT Teddy M. Cheatham, r., receives the Orville Wright Achievement Award from GEN John A. Wickham, Jr., Vice Chief of Staff, at the Nov. 18 professional; dinner meeting of the Army Aviation Ass'n's Aviation Center Chapter.

the spectrum of conflict. If we heed the lessons of history, they tell us that there is no cheap or painless way to assure deterrence.

As **President Reagan** said on Veterans' Day: "In this era of much more dangerous weapons, it is even more important to remember that vigilance, not complacency, is the key to peace."

Now some folks would argue that traditional deterrence is outmoded. They believe that this is so because strategic arsenals are now capable of destroying adversaries many times over, and because conventional as well as subconventional conflicts continue to occur irrespective of U.S. military strength.

Individuals who believe this way argue that efforts to rebuild or to extend U.S. military strength serve little purpose other than to foster further arms competition, and perhaps to raise the risk of war. The nuclear freeze movements share this point of view.

Whether one agrees or disagrees with this point of view, the inescapable facts are that strategic capabilities have deterred nuclear war. Moreover, these capabilities and the threat of their use probably have contributed to restraining the geographic extent as well as level of violence in conventional conflicts. Our strong conventional forces in such trouble spots as Europe and Korea also have kept the peace.

While there has been a growth in strategic capabilities, our objective has been to achieve agreement on arms reduction. This objective has been our constant goal and the continuing recommendation of U.S. Joint Chiefs of Staff. However, it is clear that the Soviet Union negotiates seriously only when their interests are challenged by military strength. It does not take a Kremlinologist to realize that the Soviets disdain weakness and irresolution, but respect might and will.

Let's remind ourselves!

We need to remind ourselves from time to time about the nature of the Soviet threat. The British International Institute for Strategic Studies, recently reported, "The Soviet arms buildup in almost every area seems to outpace the intensity and scope of Western military programs. As Western military options become more constrained, Soviet military options increase. The Soviet arms procurement process has remained unaffected by the general improvement in political relations between East and West and it was not marked by the starts and stops so characteristics of Western procurement policies. The reason for the Soviet emphasis on military power is that the Soviet Union has no other means to spread its influence in the world. Economically uncompetitive, culturally repressive, and ideologically increasingly barren, the Soviet Union's primary claim to global power and influence is in military might."

We see evidence of the Soviet leverage with military might in the invasion of Afghanistan, the threat against Poland which crushed the Solidarity move-

ment, and the buildup of Cuba as a military surrogate to foment violence in Latin America.

Despite the realities of the Soviet threat, democratic countries customarily deplore expenditures on armaments because they conflict with the requirements of social services. There is also a tendency to forget that the most important social service the Government can provide for its people is to keep them alive and free.

I believe the American people recognize the threat and need to rebuild our military strength. They realize that only in this way can we assure deterrence and also motivate the Soviets to negotiate seriously toward strategic arms reductions.

We have a quality Army!

We have a quality Army and it is getting better. This is something of which all of us can be proud. This past year 87% of our recruits were high school diploma graduates, an unprecedented achievement. We have an obligation to develop among these quality young soldiers a commitment to excellence, professionally and personally. For it is only through a deep commitment to excellence that we can achieve what **Oliver Cromwell** meant when he said, "Give me soldiers who know what they are fighting for and who love what they know."

The quality of our young soldiers today is excellent. In my opinion they are as good, if not better, than at any time in recent years. These young soldiers are motivated and patriotic. They understand their role in deterring war. They are not confused by esoteric debates about deterrence. They see all too well that strength along the East German border or the demilitarized zone in Korea keeps the enemy on the other side of the barbed wire. Because they may have to fight, they also cannot ignore the growth in military capabilities facing them.

Recently I received a letter from a young corporal. Let me share part of it with you. "I have a feeling of pride when I hear that 'Star Spangled Banner' being played, and I've never lost a drop of blood towards its preservation, but I've got enough true feeling to know what I was born under and what I owe to those who cannot fight any more. They fought for me, and my father, and sister, and mother, and everybody else: they fought for the preservation of this country, for what they believed in for others. The least I can do is have enough guts to do the same. Knowing that we have over 200 million Americans who support us financially, morally, and spiritually is another reason that I am proud of the flag and all it symbolizes. May God almighty help our leaders to make the right decisions."

You see, this young soldier not only is patriotic and committed, but has faith in the good Lord and the American people. And faith is important for all of us, including our leaders, just as it was for **Abraham Lincoln** when he said, "I would be the most foolish person on this footstool earth if I believed for one moment that I could perform the duties assigned to me without the help of one who is wiser than all."

Clearly, our Army and Armed Forces are filled with quality young men and women. And these forces are growing stronger in order to assure peace. Let there be no mistake about it.

The American people share freedoms bought with great sacrifice by our forebearers. Our people, young and old alike, realize that if we are to give these blessings intact to our children, we have no alternative but to be strong and to shoulder the sacrifices that go with that noble commitment. IIIII

by Major General Carl H. McNair, Jr.

A year end assessment

RING out the old and ring in the new is an expression frequently heard this time of year; however, it might be more appropriate for us aviation professionals to ring up a brief summary of some of the giant strides made in Army Aviation this year. And many they are if you have kept score.

We moved ahead on all fronts — personnel, materiel, training, organization, and in the latter few months — aviation safety.

Another banner year

First and foremost, we had another banner year in aviation production at the Aviation Center, not only meeting but slightly exceeding our TRADOC contract for the second year in a row. We added 1,568 new Army Aviators to the active and Reserve Components while also producing almost 100 new aviators for our allies around the globe and another 95 for the U.S. Air Force.

Graduate flight courses produced another 363 UH-60 aviators, 437 AH-1S transitions, and a few hundred other equally skilled crews in OV-1's, U-21's, and the CH-47's.

While we are exceedingly proud of the School product, I am even prouder that we met our training commitments in spite of severe shortages of instructor pilots and aircraft. The Center has operated throughout the year with up to a 20% shortfall in assigned instructors; hence the performance of those present is that much more remarkable.

Success was equally ours in the enlisted ranks as 1,621 new UH-1 and OH-58 crew chiefs joined our ranks along with 675 air traffic controllers and flight operation specialists who graduated from Aviation Center courses of instruction.

A bountiful year indeed by any standards and we were indeed proud of those graduates, officers, and enlisted alike. The quality of the student is unsurpassed as is the quality of the soldiers we have received. With very few exceptions, every enlisted student this year has been at least a high school graduate with many having college credits and some with one or even two college degrees — a real credit to those choosing Army Aviation as their career field.

Materiel improvements

I really need not mention materiel improvements since our troops in the field see living proof daily of our modernization efforts with fully modernized COBRAs, AH-1Ss(MC), and UH-60 BLACK HAWKs deployed to Europe this year. The first CH-47D modernized CHINOOK was delivered to the training fleet here at Fort Rucker only this month and

Major General Carl H. McNair, Jr., (photo on opposite page), serves as the Commander of the United States Army Aviation Center and Fort Rucker, Alabama.

transition will begin in early 1983 to support delivery of the first CH-47D's to a tactical unit.

Subject to final Congressional approval, FY 83 will see the AH-64 enter its second year of full production and the AHIP development will continue towards its first flight in mid-1983.

Our Reserve Components saw another Army Aviation first with delivery of a BLACK HAWK to the Kentucky National Guard last month. This delivery, coupled with earlier AH-1S (MC) deliveries to the Guard, are real milestones for our total Army concept. We now see the Reserve Components receiving first line aircraft for operations and maintenance training. Since they will be called upon to operate and maintain these new systems in the event of mobilization, it is fitting and prudent that they be issued aircraft accordingly. This is a big step forward for all of us in aviation.

Some moderate setbacks

In the area of training in the field, we have seen some moderate setbacks as well as advances — the setbacks occurring from flying hour reductions which have caused us to reassess our overall training efforts and to use our resurces more efficiently. Coupled with reductions in hours has been an increase in aviator strength; hence this compounds the flying hour shortage problem and gives us more reason to insure that we use each hour judiciously toward AIM, ARTEP standards, and readiness training.

At least we now have more simulators worldwide to assist us in maintaining the keen edge of flying proficiency. This year saw the introduction of the CH-47 simulator at Fort Campbell and Fort Hood as well as Coleman Barracks in Germany, with five AH-1S simulators under procurement for 1984-85 delivery.

Reports from our worldwide standardization visits indicate that units are not only maintaining that proficiency edge but are enhancing their tactical training problems with greater emphasis on NOE and night operations. As units now know, the revised focus of our standards and evaluation flights is now on the tactical application of aircraft skills more so than traffic pattern evaluation of nonstandard manuevers, as in yesteryear.

And we have learned from this new approach that our aviators' focus is and should be on just such operations. And since flying hours for next year will again be in short supply, we simply must maximize the use of the hours available and get real training value out of each.

With respect to organization and force structure, FY 82 saw the organization and test of our first **Cavalry Brigade Air Attack (CBAA)** in the 9th Infantry Division, the Army's High Technology Light Division. The CBAA is at the very core of the High Tech Division and gives it not only mobility but muscle.

Tests of the newer, smaller, more flexible aviation units, both attack and air cavalry, were on the whole quite suc-

(YEAR END/Continued on Page 16)

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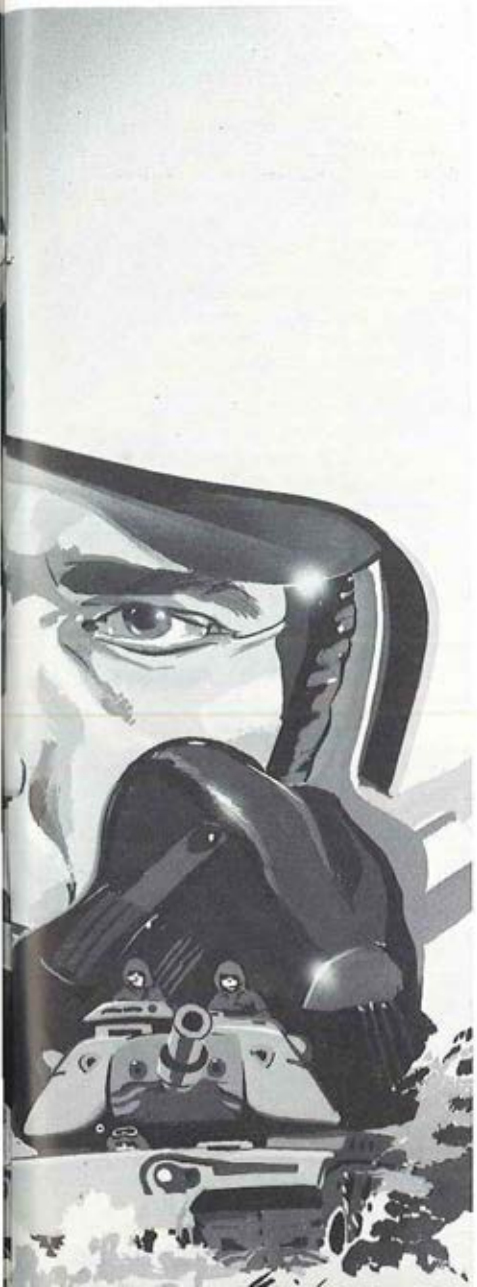
The Force Enhancer



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cessful and have become the basis for the CBAA organization Army-wide. While further tests and refinements are yet to come, the initial work done by the 9th Division CBAA has been most encouraging, the boldest advance in aviation operational and organization concepts since the Air Assault Division tests of two decades ago.

On the home front in Combat Developments, the Aviation Mission Area Analysis looking at all areas of aviation training, doctrine, tactics, materiel, organization and force structure was completed by the Aviation Center Team. It identified critical deficiencies in each of these areas. In turn, the recommended solutions were reviewed by the Army senior leadership during the Aviation Systems Review in March, 1982.

" . . . affordability issues and resource constraints will dictate that not all of our needs can be met at once . . "

From that review and the guidance provided by **General Otis,** the TRADOC Commander, and **General Vessey,** who chaired the review, the Army Aviation Development Plan was prepared and forwarded to DA as our roadmap for the balance of the decade. And a critical road it is before us as Army Aviation is called upon to meet more and more of our Army needs on the Airland battlefield.

We must, however, also be realistic and practical in recognizing that affordability issues and resource constraints will dictate that not all our needs can be met at once. As a consequence, we must prioritize those needs along with the other critical needs of our Army. Aviation will certainly continue to enjoy a high priority within these constraints as is evidenced by our current acquisition posture.

Finally, in the area of aviation safety, we ended FY 82 on a low note with our highest Army-wide major accident rate since our current reporting system was established in FY 77. But a renewed effort of command emphasis and aviator vigilance initiated in the last quarter under the personal supervision of the Vice Chief has seen a marked turnaround in the last three months.

From ten major accidents in September, we saw avery real reduction in October and November with the FY 83 accident rate now running less than half the FY 82 rate. This is living evidence of what can be accomplished when we all set our minds to it. Accidents don't just happen. "We" cause them.

Consequently, each and every aviator should take as a personal New Year's Resolution, **"Accident Free in '83!!"** Our profession, our Army, and our nation demands that sense of dedication and professionalism that those words embody.

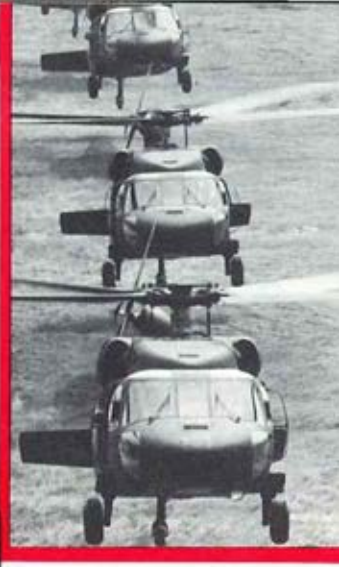
40 years young!

Yes, it has been a great year for Army Aviation — your 40th year — and there is almost something magic about being 40 years young. We have reached the true stage of maturity, a combat arm, no longer a "support" element, but a full member of the Combined Arms Team - beside our ground counterparts in the Infantry, Armor, Field Artillery and Air Defense.

We will continue to be "Above the Best." Is there any other way for aviators and Army Aviation to be? Ring out the old with great satisfaction — and ring in the new with even greater enthusiasm. Strive for excellence!!

1940'S — L-4

1960'S — UH-1



1980'S — UH-60A

1982 EQUIPMENT ISSUE

ARMY AVIATION — 1942-1982

VOLUME 31 — NO. 12

ARMY AVIATION EQUIPMENT ISSUE

DECEMBER 15, 1982

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■■■■■ **PLEASE NOTE** ■■■■■
The eight-page centerfold section is a special AAAA insert which may be removed as a simple pullout.
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1950'S — U-1

1960'S — OV-1

1970'S — C-12

FIXED WING AIRCRAFT

1982 EQUIPMENT ISSUE

C-12A HURON

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POWER PLANT: Two Pratt & Whitney PTA6A-38 turbine engines of 750 shaft horsepower each.
PROPELLERS: Three-bladed Hartzell full-feathering, reversible propellers.
SPECIFICATIONS: Span: 54 ft, 6 in. Length: 43 ft, 10 in. Height: 15 ft, 5 in. Gross weight: 12,500 lbs. Empty weight: 7,821 lbs. Useful load: 4,764 lbs. Fuel: 386 gal.
PERFORMANCE: Cruising speed (25,000 ft): 280 knots. Economical cruising speed : 275 knots. Stall speed: 80 knots. Service ceiling: 30,400 feet. Max range: 1,577-2,960 nautical miles. Rate of climb: 2,130 feet per minute.
REMARKS: A member of Beechcraft's King Air family, the T-tail C-12A is truly a well-tested off-the-shelf "buy." Fully-instrumented and having a quick-change interior, wide cargo door, and high-flotation landing gear, the Huron provides rapid and secure movement of vital people and critically needed materiel from short-grass runways while still being able to operate at 31,000 feet in pressurized comfort. First accepted in July 1975, a total of 70 C-12A's are currently on contract with four one-year options of 20 aircraft each year remaining. Most are assigned to flight detachments, embassies, and missions.

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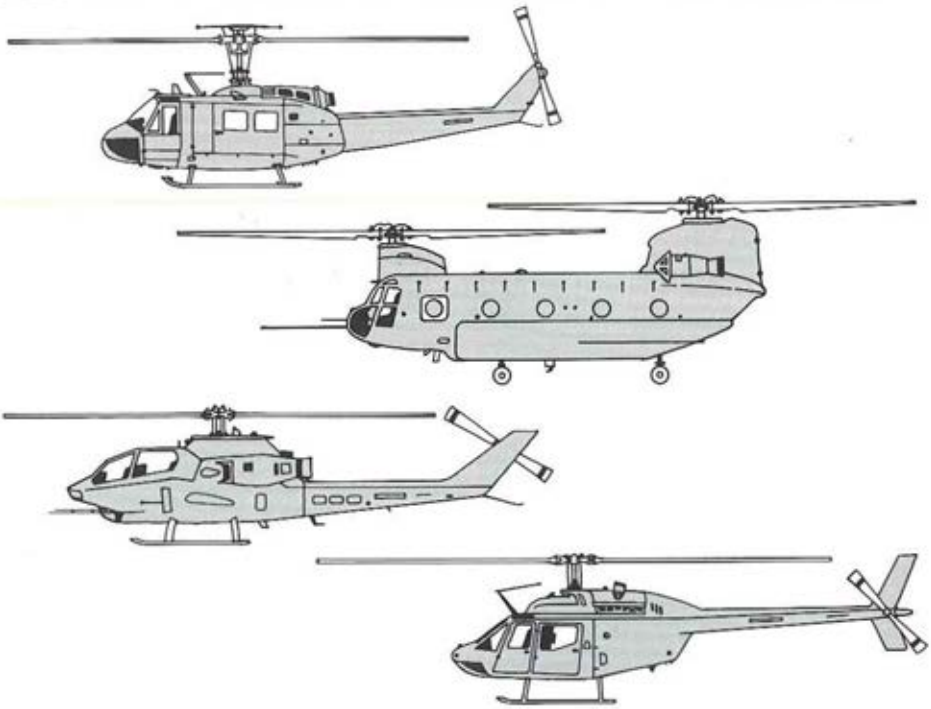

CV-2 CARIBOU

DESCRIPTION: Medium Tactical Transport (MTT) STOL aircraft with wheel or wheel-skis.
MANUFACTURER: DeHavilland Aircraft of Canada, Limited, Downsview, Ontario.
POWER PLANT: Two Pratt & Whitney R2000-7M2 engines of 1,450 hp each..
PROPELLERS: Hamilton Standard three-bladed, variable pitch metal propellers.
SPECIFICATIONS: Span: 95 ft, 8 in. Length: 72 ft, 7 in. Ht: 3l ft, 9 in. Empty wt: 16,920 lbs. Gross wt: 28,500 lbs. Places: Crew of two and 32 pass., 24 combat-equipped troops, or 14 litters and 8 troops.
PERFORMANCE: Max speed (SL): 216 knots. Cruise speed (SL): 149 knots. Service ceiling: 27,500 ft. Max range: 1,611 n.m. Rate of climb: 1,575 fpm.
REMARKS: Since initial procurement (Nov 1959) and first delivery (Jan 1961), the Army purchased 173 Caribou before releasing them to the USAF in April 1966 under a Army-Air Force agreement. The CV-2's were ferried to Vietnam in 1962 where their excellent short-field performance and three-ton payload served well. DOD later approved ('66) a twin-turbine, wide fuselage program.

CV-7 BUFFALO

DESCRIPTION: Medium Tactical Transport (MTT) STOL aircraft.
MANUFACTURER: DeHavilland Aircraft of Canada, Limited, Downsview, Ontario.
POWER PLANT: Two General Electric T64-10 turbo-prop engines of 2,850 horsepower each.

PROPELLERS: Hamilton Standard three-bladed, reversible pitch metal propellers, 13 feet, 9 inches diameter.
SPECIFICATIONS: Span: 96 feet. Length: 77 feet, 3 inches. Height: 28 feet, 7 inches. Empty weight: 22,864 pounds. Gross weight: 41,000 pounds. Places: Crew of two and 41 passengers (or 35 paratroopers) or 24 litters and 6 troops.
PERFORMANCE: Maximum speed (Sea level): 234 knots. Cruising speed (Sea level): 222 knots. (5,000 feet): 443 knots. Service ceiling: 31,000 feet. Maximum range: 609 nautical miles. Rate of climb: 2,050 feet per minute.
REMARKS: The Buffalo is a larger turbo-prop version of the CV-2 Caribou. Since April, 1965, four prototypes of the CV-7 Buffalo were built under a U.S.-Canadian production-sharing agreement.

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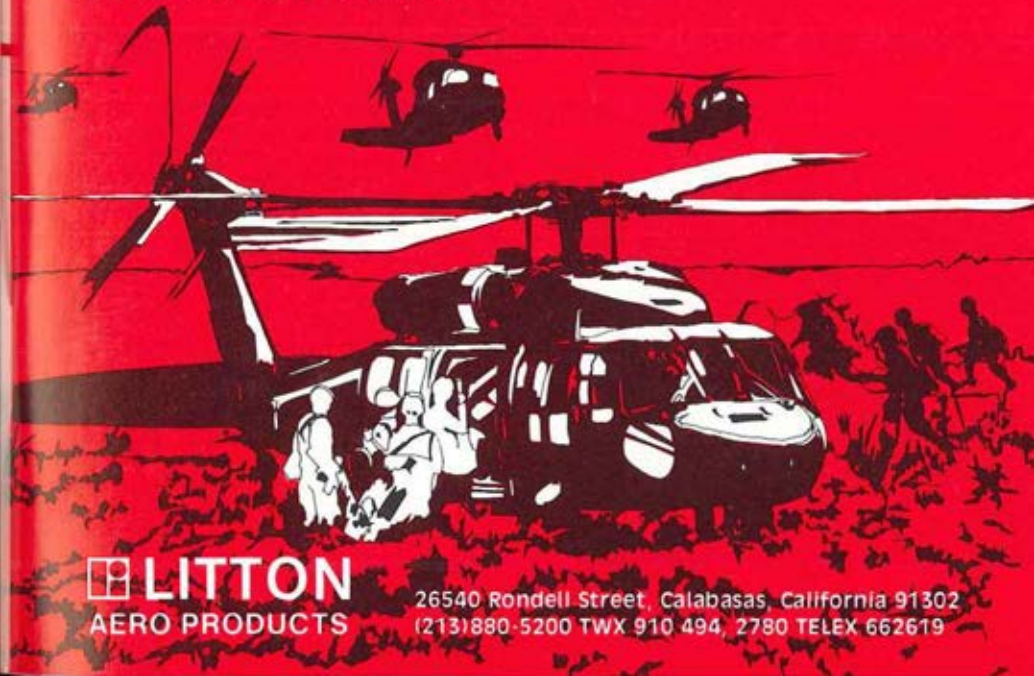

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L-1 VIGILANT

DESCRIPTION: Two-place metal frame, fabric covered high wing observation and reconnaissance aircraft employed in medical evacuation missions in its litter configuration.
MANUFACTURER: Stinson Division of Consolidated Vultee Aircraft Corporation.
POWER PLANT: One Lycoming R-680-9 radial, 9 cylinder, aircooled engine of 295 horsepower.
PROPELLERS: Hamilton-Standard constant speed, 8 foot, 6 inch diameter.
SPECIFICATIONS: Gross Weight: 3,325 lbs.
PERFORMANCE: Cruise speed (Sea level): 100 knots. Service ceiling: 14,000 feet. Maximum range: 317 nautical miles.
REMARKS: This aircraft was originally designated as the O-49 with its procurement being handled by the Army Air Corps. The Vultee-Stinson entry was the winner of a competition with the Bellanca YO-50 and the Ryan YO-51 Dragonfly. All models (A through F) had flaps and slots. 327 Vigilants were purchased in 1942 to include 142 L-1's, 182 L-1A's, and 3 L-1B ambulance aircraft. An additional 25 were bought in 1943 with 21 L-1D's being converted A's for familiarization in glider training.

L-2 GRASSHOPPER

DESCRIPTION: Two-place metal frame, fabric covered, high wing observation and reconnaissance aircraft.
MANUFACTURER: Taylorcraft.
POWER PLANT: One Continental O-170-3 4 cylinder, direct drive, horizontally opposed, aircooled engine of 65 horsepower.

PROPELLERS: Sensenich two-bladed fixed pitch wooden propeller, 6 foot diameter.
SPECIFICATIONS: Gross Weight: 1,300 lbs.
PERFORMANCE: Cruise speed (Sea level): 84 knots. Service ceiling: 10,050 feet. Maximum range: 305 nautical miles.
REMARKS: Originally designated within the Army Air Forces as the O-57, the aircraft was used by both the AAF and the Army Ground Forces. All models, A through M and excluding "I", had 65 horsepower engines, except the L with its 50 horsepower engine. Procurement included 559 in 1942 (74 L-2's, 476 L-2A's, and one each of the C, D, E, F, G, H, J, K, and L models). 1943 procurement totaled 1,390 aircraft (490 L-2B's and 900 L-2M's). The H, J, K, and L's had side-by-side seating; all other models featured tandem seating.

L-3 GRASSHOPPER

DESCRIPTION: Two-place metal frame, fabric-covered observation and reconnaissance aircraft. Military version of commercial "Challenger." Models ranged from "A" through "J", excluding "I".
MANUFACTURER: Aeronca Mfg. Company.
POWER PLANT: One Continental O-170-3 4 cylinder, direct drive, horizontally opposed, aircooled engine of 65 horsepower.
PROPELLERS: "A" model: 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 lbs.
PERFORMANCE: Cruise speed (SL): 76 knots. Service ceiling: 7,750 feet. Maximum range: 219 nautical miles.
REMARKS: Used by both AGF and AAF. Originally the O-58, the L-3 was dubbed "Grasshopper" by the Army. All models had

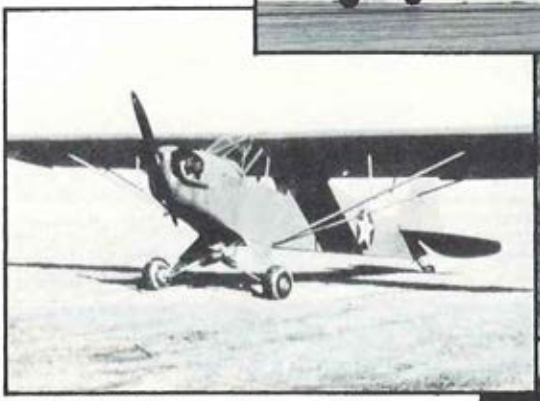
65 horsepower engines; all but the "F" and "G" with side-by-side seating, had tandem seats. 875 "B's" and 490 "C's" were purchased during 1942-1943 with total procurement being 1,465 aircraft.

ADD'L "L" AIRCRAFT

L-7 Monocoupe.. Manufactured by Universal; powered by a 90 hp O-200-1 Franklin engine. All 19 two-place "A's" purchased in FY 1943 were sent to the ETO.
L-8 Cadet.. Manufactured by Interstate; powered by a 65 hp O-170-3 Continental engine. Two-place commercial **S-1A Cadet** not used by the AGF; Bolivia bought 8.
L-9 Voyager.. Manufactured by Stinson; powered by a 90 hp 0-200-1 Franklin engine. The British Navy bought eight three-place L-9A's in FY 42 and also used 12 L-9B's with 4AC-199-E3 engines.
L-10.. Manufactured by Ryan Aeronautical; powered by a 145 hp 50-499 Warner engine. Designated as the Ryan **SCW** in 1937, one three-place L-10 was leased in FY 42.
L-11.. Manufactured by Bellanca as the six-place 31-50. Powered by a 600 hp R-1340-41 Pratt & Whitney engine. One leased.
L-12 Reliant.. Manufactured by Stinson as the **SR-5A** ("A" model) and the **SM-7b** ("B" model.) Two L-12's with a 300 hp R-680-9 Lycoming engine and two L-12A's with 300 hp R-985-A P&W engines were purchased by the AFF in FY 44 as four-place trainers.
L-18.. Manufactured by Piper as **Cub 95;** powered by a 90 hp 0-205-1 Continental engine. First purchased in FY 49 with the bulk of a 1,043 buy (105 "B's" and 938 "C's") being obtained by Turkey and a small number utilized by Army flying clubs.
L-22 Super Navion.. Manufactured by Ryan Aeronautical; Only three aircraft carried this designation. Redesignated as **XL-17D's.**
L-25.. Manufactured by McDonnell Aircraft; only aircraft to carry three designations; also known as the **XV-1** and **XH-35.**
L-27... Manufactured by Cessna Aircraft as its commercial **Model 310** twin-engine aircraft and used within the USAF. No Army procurement of this model.

L-4 CUB

BELOW: An L-4 on the deck



LEFT: The L-4 is hand propped

DESCRIPTION: Two-place metal frame, fabric-covered, high wing observation/liaison aircraft.

MANUFACTURER: Piper Aircraft Corporation, Lock Haven, Pennsylvania.

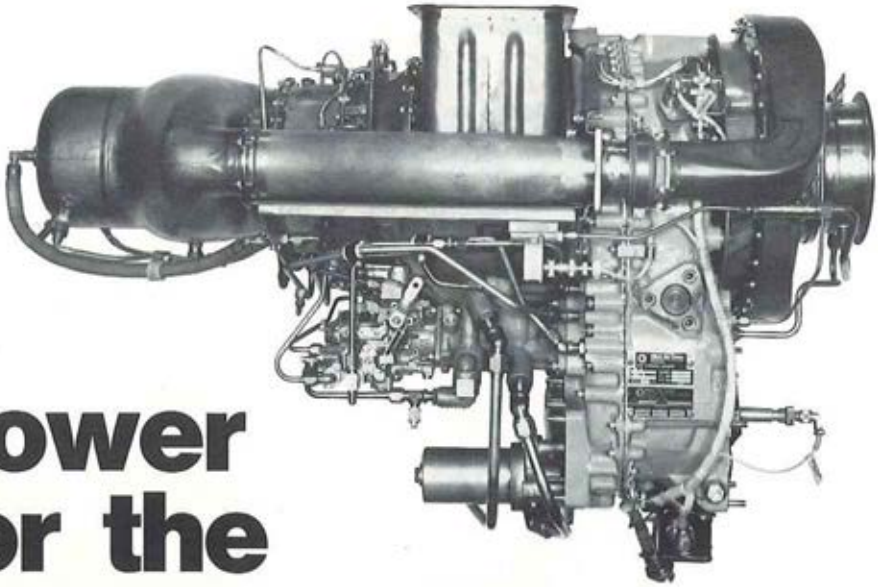
POWER PLANT: One Continental 0-170-3 piston engine of 65 horsepower.

PROPELLERS: Sensenich fixed pitch, two bladed wooden propeller.

SPECIFICATIONS: Span: 35 feet, 4 inches. Length: 22 feet, 4 inches. Height: 6 feet, 7 inches. Empty weight: 658 pounds. Gross weight: l,220 pounds.

PERFORMANCE: Maximum speed (Sea level): 76 knots. Cruising speed (Sea level): 66 knots. Stalling speed: 60 knots. Service ceiling: 9,300 ft. Maximum range: 219 n.m..

REMARKS: From initial '42 procurement until '45, the Army rec'd 5,671 L-4's. Ten models were purchased, ranging from the "A" (948 purchased) through the "J" (1,680 units). 981 "B's" and 1,801 "H's" were other major buys. All had tandem seating, except the E and F. They also had a 75 hp Continental engine; three-places, one in front, two in back; and were used for pre-glider training. "G" had a 100 hp Lycoming engine. "H" was a "B" with a fixed pitch prop and a 65 hp Lycoming engine; the "J" was an "H" with a controllable pitch propeller. While the L-2, L-3, and L-4 were all called "Grasshoppers", the name "Cub" stuck to the L-4. It was also called the "Maytag Messerschmidt."



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L-5 SENTINEL

DESCRIPTION: Two-place metal frame, fabric covered high wing observation-reconnaissance and medical evacuation aircraft used by the AAF, AGF, and the Navy. Originally the O-62, the models ranged from "A" to "G", excluding "D."

MANUFACTURER: Stinson Division of the Consolidated Vultee Aircraft Corporation.

POWER PLANT: One Lycoming O-435-I engine of 185 horsepower.

PROPELLERS: Sensenich fixed pitch, two-bladed wooden propeller, 7 feet, 1 inch diameter.

SPECIFICATIONS: Aircraft Gross weight: 2,020 pounds.

PERFORMANCE: Cruising speed (Sea level): 87 knots. Service ceiling: 15,800 feet. Maximum range: 483 nautical miles.

REMARKS: Army L- Pilots operated the L-5 from 1945 through the first months of the Korean hostilities. The "drop" rear seat permitted cargo or litter carrying. A total of 2,272 L-5's were purchased between 1942—1945 (2,419 L-5 and L-5A's in 1942) (679 "B's" in 1943) (300 "C's", 558 "E's", and one "F" in 1944) (115 "G's" in 1945.)

L-6

DESCRIPTION: Two-place metal frame, high wing observation and reconnaissance aircraft.

MANUFACTURER: Interstate.

POWER PLANT: One air-cooled Franklin O-200-5 engine of 102 horsepower.

PROPELLERS: U.S. Propeller fixed pitch, two-bladed propeller of 6 feet, 4 inches diameter.

SPECIFICATIONS: The aircraft's gross weight totaled 1,650 pounds.

PERFORMANCE: Cruising speed (Sea level): 76 knots. Service ceiling: 12,100 feet. Maximum range: 796 nautical miles.

REMARKS: This fabric-covered aircraft was sold commercially as the Interstate S-1B Cadet. Its original Army Air Corps military designation was the O-63. One XL-6 Interstate Cadet was procured in 1942 with an additional 250 of the aircraft being purchased by the government in 1943.

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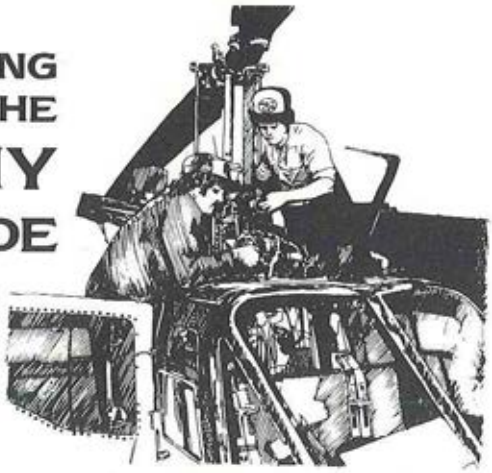

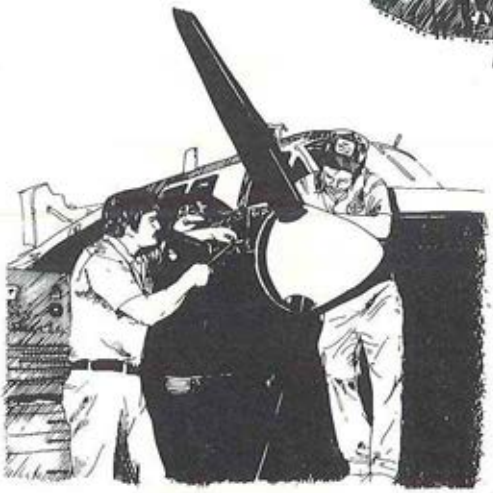

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L-13

DESCRIPTION: Three-place, all-metal, high wing observation and reconaissance aircraft capable of fulfilling the medical evacuation mission.
MANUFACTURER: Stinson Division of the Consolidated Vultee Aircraft Corporation.
POWER PLANT: One air-cooled Franklin XO-425-5 engine of 245 horsepower.
PROPELLERS: Two-bladed, variable pitch propeller of 8 feet, 6 inch diameter.
SPECIFICATIONS: The aircraft had a gross weight of 2,900 pounds.
PERFORMANCE: Cruising speed (Sea level): 93 knots. Service ceiling: 15,000 feet. Maximum range: 562 nautical miles.
REMARKS: Although the Army Ground Forces tested two of these aircraft in 1945, the L-13 was not accepted at that time. Later, the Army Ground Forces procured the L-13 model and by June, 1951, there were 43 of this aircraft in the Army inventory. The L-13 could carry two litters in place of the rear passenger seats. The production prototypes of the L-13 aircraft had folding wings, but this particular model was not procured for use by the Army.

L-14

DESCRIPTION: Three-place, metal frame, fabric-covered observation and reconnaissance aircraft capable of fulfilling medical evacuation missions.
MANUFACTURER: Piper Aircraft Corporation of Lock Haven, Pennsylvania.

POWER PLANT: One Lycoming O-290-3 piston engine of 130 horsepower.
PROPELLERS: Sensenich two-bladed model 76 JB 44 propeller.
SPECIFICATIONS: Span: 35 feet, 10 inches. Length: 23 feet, 3 inches. Height: 7 feet. Empty weight: 1,100 pounds. Gross weight: 1,800 pounds.
PERFORMANCE: Maximum speed (Sea level): 117 knots. Cruising speed (Sea level): 104 knots. Service ceiling: 14,500 feet. Maximum range: 397 n.m. Endurance: 3.5 hours.
REMARKS: The Army Ground Forces procured five L-14's and cancelled an order for 845 more on VJ Day. The airplane had long landing gear, a litter-carrying configuration (over the rear seat and into the rear fuselage), and exceptional all-around visibility through the plexiglass 'birdhouse' in which the pilot sat.

L-15 SCOUT

DESCRIPTION: Two-place all-metal, high wing observation and reconnaissance aircraft with tricycle landing gear.
MANUFACTURER: TheBoeing Airplane Co.
POWER PLANT: One Lycoming O-290-7 engine of 125 horsepower.
PROPELLERS: Two-bladed, variable pitch propeller.
SPECIFICATIONS: The aircraft had a gross weight of 2,216 lbs.
PERFORMANCE: Cruising speed (Sea level): 75 knots. Service ceiling: 12,500 feet. Maximum range: 250 nautical miles.
REMARKS: This was a production prototype that was never produced in quantity. Twelve YL-15 aircraft were procured by the Army Ground Forces between 1947 and 1949 for service and evaluation tests only. The YL-15's were later utilized in Alaska by the Forestry Service. The Boeing-built L-15 Scout used spoilers instead of ailerons and full flaps. With its high wing and elevated tail boom, the L-15's observer was seated backwards and had a full panoramic downward view unobstructed by the normal tail structure of most observation aircraft.

L-16

DESCRIPTION: Two-place, metal frame, fabric-covered observation and reconnaissance aircraft.
MANUFACTURER: Aeronca Manufacturing Company.
POWER PLANT: One Continental O-190-1 engine of 95 horsepower.
PROPELLERS: McCauley fixed pitch, two-bladed metal propeller of 6 feet, 1 inch diameter.
SPECIFICATIONS: The aircraft had a gross weight of 1,300 lbs.
PERFORMANCE: Cruising speed (Sea level): 71 knots. Service ceiling: 14,500 feet. Maximum range: 405 nautical miles.
REMARKS: This tandem-seating L-16 aircraft was the military version of the Aeronca "Champion", and was the most inexpensive aircraft ever purchased by the military. The initial date of Army procurement was in 1948, with a total of 742 L-16A's eventually-being delivered. There were 61 "B" Models through June 1948. The L-16 was used extensively in the early part of the Korean conflict in 1950, and a large number were also used in the Civil Air Patrol in the mid-'50's.

L-17 NAVION

DESCRIPTION: Four-place all-metal, low wing utility and liaison aircraft with fully-retractable landing gear.
MANUFACTURER: Ryan Aeronautical Company (L-17A). North American Aviation manufactured the "B" and "C" models of the L-17.
POWER PLANT: One Continental O-470-7 engine of 185 horsepower ("A" Model); 205 horsepwer ("B" and "C" Models).
PROPELLERS: Hartzell two-bladed, variable pitch metal or plastic propeller, of 7 foot diameter.
SPECIFICATIONS: Gross weight: 3,050 lbs.
PERFORMANCE: Cruising speed (Sea level): 106 knots. Service ceiling: 10,900 feet. Maximum range: 681 nautical miles.
REMARKS: Three models of the L-17 were procured by the Army. The "A" models were first purchased in FY 1947 with the inventory high point of 42 being reached by 1951. The "B" and "C" models had 205 horsepower engines and were purchased in FY 1949 with 196 "B's" and 35 "C's" being inventory highs in June 1949. The L-17 Navions were turned over to Army flying clubs on being phased out of service.

L-21 SUPER CUB

DESCRIPTION: Two-place observation and liaison aircraft.
MANUFACTURER: Piper Aircraft Corporation, Lock Haven, Pennsylvannia.
POWER PLANT: One Lycoming O-290-D piston engine of 125 horsepower.
PROPELLERS: Sensenich fixed pitch, two-bladed metal propeller.
SPECIFICATIONS: Span: 35 feet, 4 inches. Length: 22 feet, 3 inches. Height: 6 feet, 8 inches. Empty weight: 935 pounds. Gross weight: 1,500 pounds.
PERFORMANCE: Maximum speed (Sea level): 105 knots. Cruising speed (Sea level): 96 knots. Service ceiling: 16,000 feet. Maximum range: 345 nautical miles. Rate of climb: 1,000 feet per minute.
REMARKS: Since its 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 with leased aircraft being used in SFT by Reservists. The L-18C, used in MDAP, was the same as the L-21 except that it had a 90 horsepower Continental engine.

L-25 (XV-1, H-35)

DESCRIPTION: Four-place experimental convertiplane.
MANUFACTURER: McDonnell Aircraft Corporation, St. Louis, Missouri.
POWER PLANT: One Continental R-975-19 engine of 550 horsepower.
ROTOR SYSTEM: Single three-bladed rotor and two-bladed pusher propeller.
SPECIFICATIONS: Empty weight: 4,277 pounds. Gross weight: 5,505 pounds.
PERFORMANCE: Maximum speed (Sea level): 171 knots. Service ceiling: 11,800 feet. Maximum range: 414 nautical miles.
REMARKS: The Army procured two L-25 aircraft in FY 1954 from McDonnell Aircraft for state-of-the-art research and evaluation. This was the only aircraft ever given three separate designations. The Army originally called this aircraft the XH-35 while the USAF referred to the convertiplane as the XL-25 with the XV-1 being the compromise designation. The twin boom aircraft had a greenhouse-type cockpit and stressed skids. The XV-1 was followed by the XV-2 (Sikorsky) convertiplane (design study only) and the XV-3 (Bell) which achieved in-flight conversion.

LC-126

DESCRIPTION: Four-place utility airplane.
MANUFACTURER: Cessna Aircraft Company, Wichita, Kansas.
POWER PLANT: One Jacobs R-755-11 direct drive engine of 300 horsepower.
PROPELLERS: Hamilton Standard constant speed metal propeller, 7 ft, 9 in diameter.
SPECIFICATIONS: Span: 36 feet, 2 inches. Length: 27 feet, 4 inches. Height: 8 feet, 3.5 inches. Empty weight: 2,250 pounds. Gross weight: 3,350 pounds.
PERFORMANCE: Maximum speed (Sea level): 158 knots. Cruising speed (Sea level): 118 knots. Service ceiling: 19,800 feet. Maximum range: 1,036 nautical miles. Endurance: 4 hours. Rate of climb: 1,200 feet per minute.
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. The maximum inventory totals for the aircraft were eight "A's", five "B's", and 64 "C's",dropping to nine aircraft by January 1962.

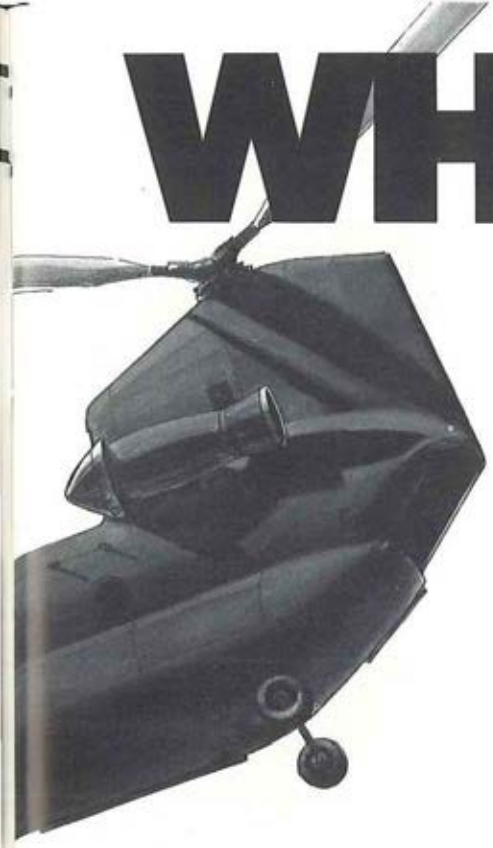
O-1 BIRD DOG

LEFT: A specially-rigged O-1 Bird Dog is ready to drop two 82d Abn troopers.

BELOW: A float-equipped O-1 on a Panama mission.

DESCRIPTION: Two-place all-metal, high wing observation, reconnaissance, and liaison aircraft with tandem seating.
MANUFACTURER: Cessna Aircraft Company, Wichita, Kansas.
POWER PLANT: One Continental O-470-11 piston engine rated at 213 horsepower.
PROPELLERS: McCauley fixed pitch, two-bladed metal propeller.
SPECIFICATIONS: Span: 36 ft. Length: 25 ft, 10 in. Height: 7 ft, 4 in. Empty wt: 1,614 lbs. Gross wt: 2,430 lbs. Fuel: 40 gal. Flaps, fixed landing gear.
PERFORMANCE: Max speed (SL): 101 knots. Cruising speed (SL): 100 knots. 170 knots. Stalling speed: 86 knots. Service ceiling: 18,500 ft. Max range: 681 n.m. Endurance: 4.67 hours. Rate of climb: 1,040 fpm.
REMARKS: Developed for the Army after WW II, the Bird Dog (originally designated by the Army as the L-19) was Cessna's winning design competition entry in April 1950. The Army accepted some 3,430 O-1A's and E's by March 1964 with the USMC using O-1B's and O-1C's. Later, the USAF utilized F's and G's in Vietnam for forward air controller missions. Nineteen other countries also purchased this versatile aircraft. The structurally stronger TO-1D served as the Army's instrument trainer version in having a variable pitch propeller and an instrument panel in the rear. The latter could be enclosed for hooded flight.

WHAT'S UP?



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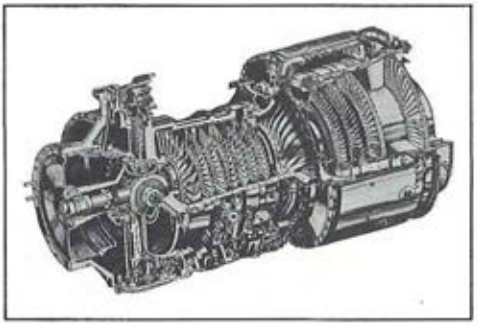

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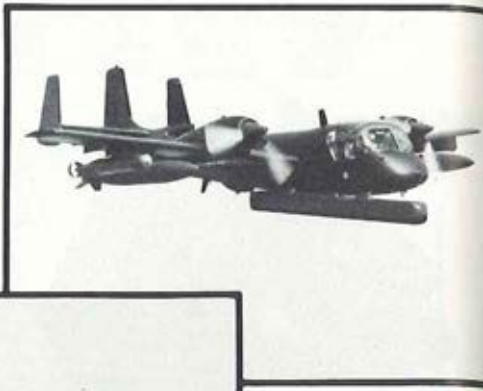



9
ARMY


U.S. ARMY
ARMY

OV-1 MOHAWK

LEFT: OV-1 Mohawk equipped with SLAR

DESCRIPTION: Two-place observation and reconnaissance aircraft.
MANUFACTURER: Grumman Aerospace.
POWER PLANT: Two Lycoming T53-L-701 turboprop engines of 1,400 shp each.
PROPELLERS: Hamilton-Standard three-bladed reversing & feathering, 10 ft. diam.
SPECIFICATIONS: Span: 48 ft. Length: 41 ft. Length (with SLAR antenna): 43 ft. Height: 13 ft. Empty wt: 11,800 lbs. Fuel: 1,930 lbs; Two 150-gallon drop tanks: 2,368 lbs.
PERFORMANCE: Max speed (Sea level): 285 knots (IR/photo). Cruise (Sea level): 182 knots. Service ceiling (80% fuel): 25,000 ft. Range (w/drop tanks): 890 nm (IR/photo).
REMARKS: The OV-1 was first purchased as the AO-1 in Sept., 1960. The "A" utilized two 960 hp Lycoming T-53-L3 turboprop engines; a 1,100 hp T-53-L7 was installed in the 'B" model in 1963. Designed to operate from small, unimproved fields in the forward battle area, the "D" is deceptively similar to earlier versions but rapid configuration procedures enable a single OV-1D to perform the surveillance functions of any previous Mohawk. Capable of daylight, darkness, and inclement weather operations, the 'D' has a more accurate inertial navigation system, improved infrared and radar performance,a vertical panoramic camera system that photographs terrain horizon to horizon, a radiological monitoring system, and ECM equipment to assure mission success.

T-37

DESCRIPTION: Two-place, side-by-side off-the-shelf jet trainer.
MANUFACTURER: Cessna Aircraft Company, Wichita, Kansas.
POWER PLANT: Two Continental J-69-T-9 turbojets developing 1,840 pounds thrust.
SPECIFICATIONS: Span: 33 feet, 8 inches. Length: 29 feet, 2 inches. Height: 9 feet, 1 inch. Gross weight: 6,600 pounds. Empty weight: 4,076 pounds.
PERFORMANCE: Maximum speed (10,000 feet): 355 knots at military power, 21,730 rpm. Cruising speed (25,000): 279 knots at normal rated power, 20,700 rpm. Service ceiling: 35,000 feet. Maximum range: 607 nautical miles. Endurance: 2.8 hours. Rate of climb (Sea level): 3,200 feet per minute.
REMARKS: This aircraft was procured by the USAF as a primary jet trainer. Three T-37's were loaned to the Army in 1958 for Project LONG ARM 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. More than 900 were built for the USAF and other nations.

G-91

DESCRIPTION: One-place high performance tactical reconnaissance jet fighter evaluated for use by the USA Aviation Test Board as an observation aircraft.
MANUFACTURER: Built for the NATO Forces by the Fiat Aviation Division of Turin, Italy.

POWER PLANT: Bristol-Siddeley Orpheus MK 803 axial flow turbojet engine of 4,078 pounds thrust each with after-burner. 5,000 pounds of rated sea level static thrust.
SPECIFICATIONS: Span: 29 feet. Length: 39 feet, 3 inches. Height: 14 feet, 5 inches. Empty weight: 8,380 pounds. Gross weight: 19,070 pounds.
PERFORMANCE: Maximum speed (Sea level): (G-91R) 603 knots, (G-91Y) 605 knots. Operational ceiling: 27,600 feet.
REMARKS: In 1961, the 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. The G-91T was a two-place tandem-seating trainer version.

T-41B MESCALERO

DESCRIPTION: Four-place, all-metal, high wing single engine primary trainer.
MANUFACTURER: Cessna Aircraft Company, Wichita, Kansas.
POWER PLANT: One Continental IO-360-D piston engine of 210 horsepower.
PROPELLERS: One McCauley two-bladed, constant speed propeller. 6 ft., 4 in. dia.
SPECIFICATIONS: 35 feet, 10 inches. Length: 26 feet, 11 inches. Height: 8 feet, 11 inches. Gross weight: 2,300 pounds. Empty weight: 1,255 pounds.
PERFORMANCE: Maximum speed (Sea level): 134 knots. Cruising speed (5,500 feet): 130 knots per hour. Service ceiling: 17,500 feet. Normal range (5,500 feet): 582 nautical miles. Maximum range (10,000 feet): 920 nautical miles. Takeoff, sod runway: 635 feet. Landing, sod: 400 feet. Fuel: 52 U.S. gallons. Rate of climb: 910 feet per minute.
REMARKS: An off-the-shelf Cessna Model 172, 255 T-41B's were delivered through

March, 1967 under a $4 million contract. With extensive nav-com equipment for student-instructor usage, the T-41 released the O-1 Bird Dog, then the Army's primary trainer, for other support missions.

T-42A

DESCRIPTION: Four-place off-the-shelf dual intrumented, all-weather instrument and transition trainer.
MANUFACTURER: Beech Aircraft Corporation, Wichita, Kansas.
POWER PLANT: Two Continental IO-470-L fuel injection engines rated at 260 horsepower each.
PROPELLERS: McCauley constant speed, full-feathering two-bladed metal propellers, 6 feet, 6 inches diameter.
SPECIFICATIONS: Span: 37.9 feet. Length: 27.3 feet. Height: 9.6 feet. Empty weight: 3,423 pounds. Gross weight: 5,100 pounds.
PERFORMANCE: Maximum speed (Sea level): 134 knots. Cruising speed, 65 percent (Sea level): 175 knots. Service ceiling: 19,700 feet. Absolute ceiling: 21,000 feet. Maximum range: 1,226 nautical miles (with 45 minute reserve). Endurance: 7.5 hours. Rate of climb: 1,670 feet per minute.
REMARKS: Commercially known as the Beechcraft B55 Baron, the T-42A was first purchased in '65 becoming one of the Army's most active trainers. Additional T-42's were flown to Turkey by US Army pilots under a Military Assistance Program.

U-1A OTTER

DESCRIPTION: Eleven-place all-metal, high wing utility STOL aircraft.
MANUFACTURER: DeHavilland Aircraft of Canada, Ltd., Downsview, Ontario, Canada.
POWER PLANT: One Pratt & Whitney R-1340-59 piston engine of developing 600 horsepower.
PROPELLERS: Hamilton Standard three-bladed, variable pitch metal propeller.
SPECIFICATIONS: Span: 58 feet. Length: 41 feet, 10 inches. Height: 12 feet, 7 inches. Empty weight: 4,431 pounds. Gross weight: 8,000 pounds.. Fuel: 216 gallons.
PERFORMANCE: Maximum speed (Sea level): 134 knots. Cruising speed (Sea level): 105 knots. (5,000 feet): 121 knots. Service ceiling: 17,400 feet. Absolute ceiling: 20,5000 feet. Cruising range: 667 nautical miles. Rate of climb: 735 feet per minute. Endurance at cruise power: 6.9 hours.
REMARKS: Since the intial procurement in March 1955, the LArmy has purchased 205 Otters. Described as an "airborne one ton truck," the U-1A is one of the few service aircraft to retain its original designation. It employs wheels, skis, wheel-skis, and floats in filling Arctic, tropic, and normal missions.

U-6 BEAVER

DESCRIPTION: Six-place, all-metal, high wing general utility aircraft with non-retractable gear. Originally the Army L-20; Off-the-shelf commercial DHC-2.
MANUFACTURER: DeHavilland Aircraft of Canada, Limited, Downsview, Ontario.
POWER PLANT: One Pratt & Whitney R-985 AN-1 engine of 450 horsepower.
PROPELLERS: Hamilton Standard two-bladed, variable pitch metal propeller.
SPECIFICATIONS: Span: 48 ft. Length: 30 ft, 4 in. Height: 9 ft. Empty wt: 3,000 lbs. Gross wt: 5,100 lbs.
PERFORMANCE: Max speed (SL): 136 knots. Cruise speed (SL): 110 knots. Service ceiling: 18,000 ft. Max range (5,000 ft): 794 n.m. Endurance: 8 hours. Rate of climb: 850 fpm.
REMARKS: Operable on wheels, floats, skis, or with a wheel-ski combination, the L-20 was designed for Canada's "bush" country, its high wing allowing easy mooring at lakeside docks. Its Army missions included transporting and air-dropping personnel and supplies, wire laying, courier services, med evacuation, and command transport. 968 U-6s in all were delivered to the Army.

U-8D/F SEMINOLE

LEFT: RU-8D with APS-85 Radar

BELOW: RU-8D Wine bottle Configuration

DESCRIPTION: Six-place all-metal, low-wing high performance, all-weather courier and personnel transport with retractable tricycle landing gear. Convertible to a medevac ambulance, pilot trainer, or cargo hauler.
MANUFACTURER: Beech Aircraft Corporation, Wichita, Kansas.
POWER PLANT: Two Lycoming GSO-480-I engines rated at 340 horsepower each, supercharged for high altitude flight.
PROPELLERS: Hartzell three-bladed, all-metal featherable propellers.
SPECIFICATIONS ("F"): Span: 45 ft, 10.4 in. Length: 33 ft, 4 in. Height: 11 ft, 6½ in. Empty wt: 5,112 lbs; gross wt: 7,700 lbs.
PERFORMANCE: Max speed (SL): 186 knots. Cruise speed (10,000 ft): 157 knots. Service ceiling: 27,000 ft. Max range: 1,519 n.m. Endurance: 8.36 hrs. Rate of climb: 1,300 feet per minute.
REMARKS: The U-8D (originally the L-23) is the military version of the Beechcraft Model 50 Twin-Bonanza with the "F" being a Beechcraft 65 Queen Air. 358 Seminoles were purchased during 1952-1962. Three production and 68 production U-8Fs were delivered starting in January 1962. The NU-8F, a turbine-powered, unpressurized U-8F (two Pratt & Whitney PT6A-6 turbine engines rated at 550 shaft horsepower each) was procured by the Army in 1964. Its increased speed, higher useful load, and greater range made it a welcome addition to the Army fleet.

U-9 AERO COMMANDER

DESCRIPTION: Five-place all-metal, high-wing, utility, command, and liaison aircraft. Originally designated as the Army L-26 (Models B through D, excluding A). Off-the-shelf-version of the commercial Model 520.

MANUFACTURER: Aero Design and Engineering Co., Bethany, Oklahoma (Later North American Rockwell Corporation).
POWER PLANT: Two Lycoming GO-480-1 piston engines of 260 hp (YL-26); 270 hp (L-26B); 320 horsepower (C, D, and E models).
PROPELLERS: Hartzell three-bladed variable pitch, metal propellers.
SPECIFICATIONS: Span: 49 ft, 6 in. Length: 35 ft, 1¼ in. Height: 14 ft, 9½ in. Empty wt: 4,475 lbs. Gross wt: 6,750 lbs. Fuel: 156 gal.
PERFORMANCE: Max speed (SL): 186 knots. Cruise speed (SL): 159 knots. Service ceiling 21,000 ft. Max range: 1,464 n.m. Rate of climb: 1,525 fpm.
REMARKS: The first U-9 (YL-26) was obtained by the Army in 1953. Some seven 260 hp U-9's, one 270 hp "B", four 320 hp "C", 3 "D's" similar to the "C", and five RL-26's (SLAR-carriers) were purchased in '53-'59 with only nine remaining by January 1962.

U-10 HELIO COURIER

DESCRIPTION: Six-place all-metal, high wing short takeoff and landing utility aircraft.
MANUFACTURER: Helio Aircraft Corporation, Bedford, Massachusetts.

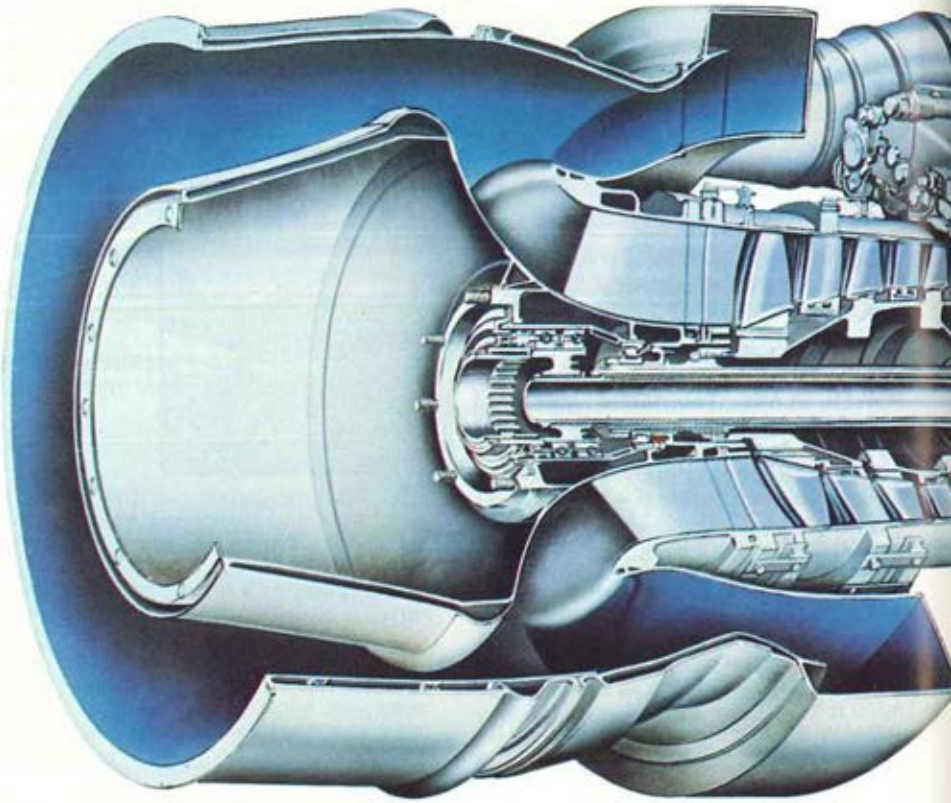
POWER PLANT: One Lycoming GO-480-G1D6 engine developing 295 horsepower.
PROPELLERS: Hartzell three-bladed, constant-speed propeller, 8 feet diameter.
SPECIFICATIONS: Span: 39 feet. Length: 31 feet. Height: 8 feet, 10 inches. Empty weight: 2,037 pounds. Gross weight: 3,600 pounds.
PERFORMANCE: Maximum speed (Sea level): 149 knots. Cruising speed (Sea level): 132 knots. (10,000 feet): 144 knots. Service ceiling: 16,500 feet. Maximum range: 1,267 nautical miles. Endurance: 14 hours. Rate of climb: 1,125 feet per minute.
REMARKS: Originally designated the L-24, the commercial Helio-Courier H-395 was purchased "off-the-shelf" in 1963 by the U.S. Army for operational testing and evaluation. Twenty U-10's were procured through Fiscal Year 1965 for use by the Army's Special Forces Groups. The L-28 was the USAF version of the Helio Courier.

U-21 UTE

BELOW: An RU-21D with SEMA antenna array similar to that on an RU-21E reconnaissance aircraft.

DESCRIPTION: Twelve place unpressurized, high performance, all-weather utility and tactical troop transport with a three-chair, three-litter air ambulance configuration.
MANUFACTURER: Beech Aircraft Corporation, Wichita, Kansas.
POWER PLANT: Two United Aircraft of Canada PT 6A-20 free shaft turbine engines of 520 horsepower each.
PROPELLERS: Beech full-feathering, reversible propellers, 7 ft, 9 in diameter.
SPECIFICATIONS: Span: 50 ft, 3 in. Length: 35 ft, 6 in. Height: 14 ft, 2 in. Empty weight: 6,065 lbs. Gross weight: 7,700 lbs. Retractable tricyle landing gear with single wheels.
PERFORMANCE: Max speed (10,000 ft): 197 knots. Cruising speed (10,000 ft): 184 knots. Service ceiling (at max gross wt): 27,000 ft. Max cruise range: 2,679 n.m. Rate of climb: 1,500 fpm.
REMARKS: A military combination of the Beechcraft corporate turbine-powered King Air 90 and Queen Air, the U-21A is capable of carrying 3,000 lbs. of air cargo and features a spacious cabin with a large cargo door (53.5 in. x 51.5 in.). As a troop transport, the Ute can carry 10 field-equipped men with combat gear stowed under bench-type seats. Initial U-21A acceptance took place in April 1967. Modified version of the Army's NU-8F, which underwent initial user evaluation in March 1964. The RU-21D version was a SEMA configuration.

THE PW3005: NO OTHER ENGINE CAN DO SO MUCH, FOR SO MANY, FOR SO LITTLE.



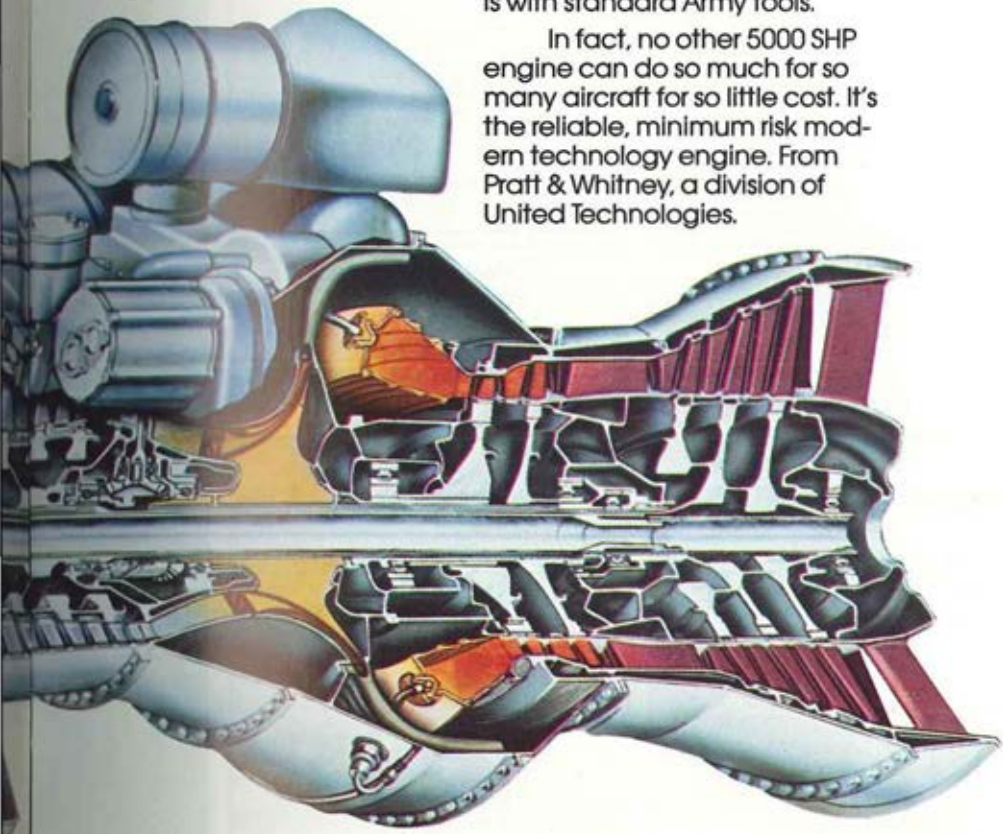
5000 SHP. Affordable. Able to give new and existing helicopters and fixed-wing aircraft an unprecedented level of performance.

On every count, the PW3005 will meet or exceed existing or new aircraft requirements.

Take affordability, for instance. Not only will its design features reduce acquisition cost, but the PW3005 will be 30% more fuel efficient than existing engines. That efficiency plus its performance means 30% more ferry range for the CH-47. Some 800 nautical miles of additional reach for the P-3C. And enhanced performance for the JVX.

Maintenance costs will be low, too. Its simple five-module design reduces disassembly time. And all field maintenance is with standard Army tools.

In fact, no other 5000 SHP engine can do so much for so many aircraft for so little cost. It's the reliable, minimum risk modern technology engine. From Pratt & Whitney, a division of United Technologies.



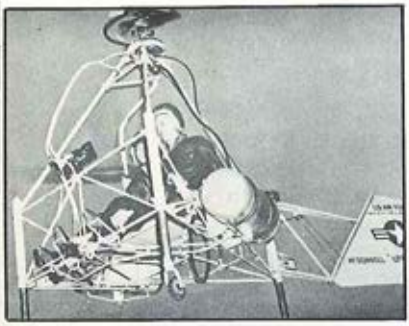
WOTIZZ?

IT'S QUIK QUIZ #1.

Are you sharp in recognizing the not-so-well-known aircraft proposals that have graced our magzine pages over the years? If you can name either the model number or the year in which ten of the 19 models pictured were produced, consider yourself an aviation intellectual. The answers appear on the next page.

● 4. KAMAN.....

● 8. FAIRCHIL

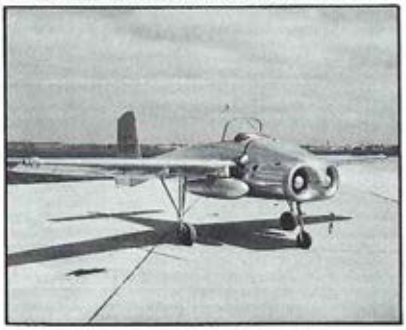


● 1. McDONNELL.....

● 5. DEL MAR.....

● 9. BELL AE

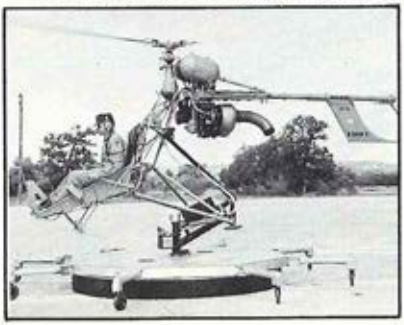
● 2. BELL.....



● 6. BELL AEROSYSTEMS.....

● 10. GOODYI

● 3. BELL.....



● 7. DEL MAR.....

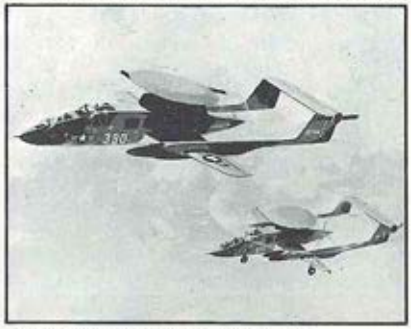
● 11. AGUSTA

LLER.....

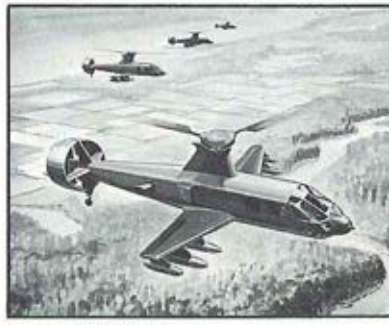
● 12. VERTOL.....

● 16. BELL.....

ROSYSTEMS.....



● 13. RYAN AERONAUTICAL.....



● 17. PIASECKI.....

EAR.....

● 14. CANADAIR.....

● 18. SIKORSKY.....

.....

● 15. BOEING VERTOL.....

● 19. BEECH.....

UV-18 TWIN OTTER

DESCRIPTION: 21-place high-wing "command administrative, logistical, and personnel" STOL aircraft capable of operating on wheels, wheel-skis, floats, or high-flotation tires.

MANUFACTURER: De Havilland Aircraft, Limited, Downsview, Ontario, Canada.
POWER PLANT: Pratt & Whitney of Canada PT6A-20 turboprop of 579 shp.
SPECIFICATIONS: Span: 65 ft. Length: 51 ft, 9 in. Gross wt: 12,500 lbs.
PERFORMANCE: Cruising speed (SL): 184 knots. Service ceiling: 26,700 feet. Range: 928 nautical miles. Max T.O wt: 12,500 lbs. Rate of climb: 1,600 fpm. T.O. run: 860 ft. Landing run: 950 ft.
REMARKS: Joining the Alaska Army National Guard in 1970, the highly successful DHC-6 Twin Otter provided ARNG forces with a a multi-mission capability. On observation or search and rescue missions, the UV-18A can fly for more than six hours. Easily handled at only 129 knots, the aircraft can drop men and supplies by parachute with great precision. Its double-slotted flaps and ailerons provide safe, steep, visible descents.

ANSWERS TO QUIK QUIZ #1

- 1. McDONNELL AIRCRAFT... XH-20 AAF PURCHASE..... 1952
- 2. BELL HELICOPTER..... H-12 AAF PURCHASE..... 1947
- 3. BELL..... TWIN-ENGINE UH-1D..... 1966
- 4. KAMAN AIRCRAFT..... HOK-1 PROPOSAL..... 1957
- 5. DEL MAR..... DH-2C TARGET DRONE..... 1966
- 6. BELL AEROSYSTEMS..... X-14 TWIN DUCT..... 1959
- 7. DEL MAR..... WHIRLYMITE R/W TRAINER..... 1966
- 8. FAIRCHILD-HILLER..... TURBO-PORTER (PILATUS)..... 1964
- 9. BELL AEROSYSTEMS. CARABAO GEM..... 1963
- 10. GOODYEAR..... INFLATO-PLANE..... 1959
- 11. AGUSTA..... 109 ASH PROPOSAL..... 1979
- 12. VERTOL..... SIX-ENGINE V/STOL AIRCRAFT..... 1959
- 13. RYAN AERONAUTICAL.... DISC-ROTOR..... 1966
- 14. CANADAIR..... CL-84 TILT-WING..... 1965
- 15. BOEING VERTOL..... YUH-61A UTTAS PROPOSAL..... 1976
- 16. BELL..... WINGED HELICOPTER..... 1963
- 17. PIASECKI..... 16H-1B PATHFINDER..... 1964
- 18. SIKORSKY..... VH-3A WHITE HOUSE AIRCRAFT..... 1962
- 19. BEECH..... L-23 WITH FUEL TANK OUTRIGGERS..... 1962

HOW DID YOU DO? IDENTIFYING TEN OR MORE OF THE 19 PICTURED AIRCRAFT MODELS OR KNOWING THEIR MAIDEN YEAR PLACES YOU IN THE "AVIATION INTELLECTUAL" CATEGORY. IF YOU IDENTIFIED FIVE TO NINE PHOTOS, YOU'RE SHARP! IF YOU COULD ONLY LABEL FOUR OR LESS, AVIATION AIN'T YOUR THING!

1950'S — OH-13

1960'S — CH-54

1970'S — CH-47D

ROTARY WING AIRCRAFT

1982 EQUIPMENT ISSUE

LEFT: An "S" Cobra NOE below the trees

AH-1 COBRA

LEFT & BELOW: An AH-1S is shown on the deck.

BELOW: AH-1G with stabilized night sight

DESCRIPTION ("S"): Two-place attack helicopter.
MANUFACTURER: Bell Helicopter Textron, Fort Worth, Texas
POWER PLANT: Avco Lycoming T-53-L-703 turbine, 1,800 shaft horsepower.
ROTOR SYSTEM: Single composite two-bladed semi-rigid fiberglass 44 ft. dia. main rotor; flapping hinge, 8 ft., 6 in. dia. tail rotor.
SPECIFICATIONS: Gross wt: 10,000 lbs. Empty wt: 6,598 pounds.Length: 44 ft., 7 in. Height: 12 ft. Fuel: 259 gal.
PERFORMANCE: Max speed (SL): 171 knots, depending upon stores. Max range: 362 n.m. Rate of climb: 1,580 fpm.
REMARKS: The AH-1 series, in replacing the UH-1 armed helicopter, started in April 1966 with a development and production contract for 110 AH-1G's. First delivery followed just 13 months later with combat introduction to Vietnam in August 1967. During 1967-1972, 1,126 G's were produced at the rate of 35 per month, logging over one million combat hours. In 1975, 91 G's were equipped with TOW systems as Q's. Later, all Q's and 198 G's received a new power train becoming the AH-1S (modified). In a three-step program beginning in March 1977, Bell was to produce 297 new S's by February 1981. In companion steps, the remaining G's were to be re-modified in the Modernized "S" configuration and all earlier production "S's" were to receive Modernized Cobra features.

AH-56A CHEYENNE

BELOW: A pusher-prop speeds the AH-56 along

BELOW: Gear up and doing about 380 knots!

DESCRIPTION: Two-place high-speed compound aircraft.
MANUFACTURER: Lockheed-California Company, Burbank, California
POWER PLANT: One General Electric T64-GE-16 turbine of 3,435 shp.
ROTOR SYSTEM: Single rigid rotor, 50.4 ft dia.; tail rotor 10.0 ft dia.; 10 ft dia. pusher propeller for horizontal propulsion.
SPECIFICATIONS: Wing span: 26.7 ft. Gross wt: 16,995 lbs. Empty wt: 11,700 lbs. Length: 55 ft. Height: 13 ft, 7 in. Tandem-seating.
PERFORMANCE: Max speed (SL): 214 kt. Cruise speed (SL): 197 kt. Service ceiling: 26,000 ft. Hover ceiling (OGE): 10,600 feet (std). Maximum range: 547 n.m. Endurance: 5.4 hrs. Rate of climb: 3,420 fpm.
REMARKS: The No. 1 prototype of the Army's AAFSS (Advanced Aerial Fire Support System) was rolled out on May 3, 1967, 13 months after the initial contract was let, with the 10th and final prototype being accepted in August, 1968. FAA certification took place in October '68 with Lockheed and its 813 suppliers to build 375 of the advanced attack helicopters for the U.S. Army. OSA terminated the Cheyenne contract in Aug '72 due to delayed development, rising costs, and the appearance of two competitive company-funded AAH candidates. In a July '72 report, a task force called for a more agile, smaller, and somewhat slower AAH with less sophisticated fire control and navigation equipment.

CH-21 SHAWNEE

BELOW: An H-21 with floats is tested at the Boeing Vertol facility.

LEFT: A hook-up in South Vietnam.

LEFT: An Alaska ski landing.

DESCRIPTION: Twenty-two place single engine, twin rotor personnel and cargo helicopter.

MANUFACTURER: Piasecki Helicopter Corporation (later the Vertol Aircraft Corporation), Morton, Pennsylvania.

POWER PLANT: One Curtiss-Wright supercharged R-1820-103 engine developing 1,425 horsepower,

ROTOR SYSTEM: Tandem fully-articulated three-bladed counter-rotating rotors, each 44 feet in diameter.

SPECIFICATIONS: Gross weight: 15,200 pounds. Empty weight: 8,950 pounds. Length: 52 feet, 6 inches. Height: 15 feet, 9 inches.

PERFORMANCE: Maximum speed (Sea level): 111 knots. Cruise speed (Sea level): 86 knots. Service ceiling: 18,600 feet. Maximum range: 281 nautical miles. Endurance: 2 hours, 41 minutes.

REMARKS: Since the intial date of procurement in June 1950, the Army purchased 334 CH-21s of all models. It also obtained 16 B's from the USAF. In its litter configuration, the CH-21 could carry 12 litters plus seats for two medical attendants. A multi-mission helicopter, the Shawnee utilized wheels, skis, or floats. The Shawnee was, until late 1963, the workhorse of Vietnam, when it was replaced by the UH-1. Widely used by other nations, the French employed the "Flying Banana" in Algeria combat operations.

DECEMBER, 1982

■■**DEC. 2.** Lindbergh Chapter. "Holiday Kick-off"—Professional membership luncheon. **COL "Mike" Harvey, Jr.,** CO, 9th Cavalry Brigade Air Attack, guest speaker. St. Louis (Airport) Marriott Hotel.

■■**DEC. 2.** Lone Star Chapter. Chapter Re-Activation Meeting. Austin Army Aviation Support Facility.

■■**DEC. 3.** Monmouth Chapter. Christmas Party. The Windjammer (EARL Officers' Club), Colts Neck, NJ.

■■**DEC. 3.** Rhine Valley Chapter. Late afternoon professional meeting. **Mr. Ralph Pineo,** Customer Support Repr., Bell Helicopter, guest speaker. Coleman NCO/EM/O-Club.

■■**DEC. 7.** Jack H. Dibrell (Alamo) Chapter. Early evening social-business meeting. Chapter elections. Guest speaker TBA. Free beer and soft drinks. Alamo Coors.

■■**DEC. 10.** Colonial Virginia Chapter. Professional Luncheon Meeting. **Mr. Joseph Cribbins,** Special Assistant for Aviation, ODCSLOG, guest speaker. Ft. Eustis Main NCO Club.

■■**DEC. 10.** Corpus Christi Chapter. Business Meeting and Annual Christmas Party. Free beer and food. NAS Party House.

■■**DEC. 10.** Coastal Empire Chapter. Tour of Savannah Port Facilities and Social Hour. Hunter Army Airfield Officers' Club.

■■**DEC. 14.** Delaware Valley Chapter. Pre-Christmas Professional Dinner Meeting. **MG Story C. Stevens,** Commander, USAAVRADCOM, guest speaker. Towne House, Baltimore Pike, Media, PA.

■■**DEC. 15.** Hanau Chapter. Late afternoon Professional Get-Together. **Mr. John Courcha,** Int'l Marketing, Sikorsky Aircraft, guest speaker.

■■**DEC. 18.** Air Assault Chapter. AAAA Christmas Ball, general membership meeting. Music by "Side Trac". Main Ballroom, Fort Campbell Officers Open Mess.

■■**DEC. 18.** Morning Calm Chapter. Christmas Formal and Quarterly Meeting. **General Robert W. Sennewald,** CINC UNC/CFC/USFK/-EUSA, guest speaker. Presentation of '82 Chapter Awards, Eighth Army Safety Awards. Eighth Army Officers' Club.

■■**DEC. 18.** Stuttgart Chapter. Christmas Bar-B-Q "Carolina Style". Country and Western Dance Contest. Nellingen Officers' Club.

■■**DEC. 21.** Taunus Chapter. First Annual Christmas Party. Free food and beverages. Camp King Officers' Club.

JANUARY, 1983

■■**JAN. 11.** Ft. Benning Chapter. Professional Luncheon Meeting. **Mr. J.J. Halisky,** PMO, HELLFIRE Missile System, guest speaker. Ft. Benning Officers' Club.

■■**JAN. 12.** Connecticut Chapter. Professional-Social Meeting. **MG Story C. Stevens,** Commander, AVRADCOM, guest speaker. Valle's Restaurant, Stratford.

■■**JAN. 14.** Chicago Chapter. Professional Dinner Meeting. **COL Teddy G. Allen,** Aviation Officer, USA FORSCOM, guest speaker. 302nd TC Bn Armory Building, NAS Glenview.

■■**JAN. 22.** Nat'l Executive Board. Quarterly business meeting; '83 convention site inspection. Omni Hotel, Atlanta, GA.

■■**JAN. 25.** Bonn Area Chapter. Professional-Social Meeting. Presentation by Hughes Helicopters; Tour of the Convent at Obernhirchen; Candlelight Dinner and Special Presentation. Bueckburg "The Home of German Army Aviation".

MARCH 1983

■■**MAR. 12-19.** 1983 USAREUR Region—AAAA Convention. AFRC, Garmisch, Germany.

APRIL 1983

■■**APR. 7-10.** 1983 AAAA Nat'l Convention and 1983-85 Hall of Fame Induction. Omni Hotel, Atlanta, GA.

MAY 1983

MAY 8-11. 1983 AHS Forum. Sheraton-St. Louis Hotel, St. Louis, MO.

UNIQUE—THE CH-54 "FLYING CRANE" HAS SERVED THE ARMY WELL IN A WIDE VARIETY OF MISSIONS AND CHORES, AND HERE IN A PHOTO TAKEN BY CW4 DON JOYCE A CRANE IS SHOWN STRADDLING THE INFORMATION BOOTH LOCATED AT THE MAIN GATE AT FORT EUSTIS.

Army Aviation Association

1 CRESTWOOD ROAD, WESTPORT, CT 06880
(203) 226-8184

Dear AAAA Member:

Although we're most familiar with all of the AAAA's programs and work with many of them on a day-to-day basis, we rarely get the opportunity to address the worldwide membership on Association matters of interest. However, there's no letter in the bin from the President Marr, and John Marr has since said, "Art, you run with the ball this month."

There are several items we'd like to bring to your attention. The first is the strong resurgence of interest in the AAAA in some very key areas . . . This groundswell takes the form of renewed Chapter activity at Forts Benning, Bragg, McPherson, and Leavenworth, installations at which sizable groups of members have been virtually leaderless in recent years. This may not seem all that important, but we assure you that there cannot be a healthy AAAA without vigorous participation at these four locations.

We also wish to make you aware of the remarks made by General John A. Wickham, Jr., at a recent Ft. Rucker AAAA dinner meeting. The Vice Chief of Staff indicated that "serious concern is being given to establishing a separate aviation branch and aviation componency at Ft. Rucker." He then went on to say that he supported these initiatives.

The Association has never taken a position on the subject of a separate branch although its members, and sundry subscribers to "Army Aviation", have taken opposing editorial stances in the magazine over the years. We wish to point out that for the past 25 years your Association, through its member-supported programs and countless thousands of lapel pins, plaques, banners, membership meetings, awards, and what have you, has provided a dash of cohesiveness, a big dose of camaraderie, and some small measure of identity to branchless aviators, crewmen, and technicians everywhere.

The last item? You've heard it many, many times already, and by the time you receive this issue and read this page, you'll have stowed your Christmas decorations until next year, but we wish to take this moment to belatedly wish you and yours the very, very best for '83.

Art Kesten
Executive Vice President
AAAA

Go for No. 1!

Seven Chapters compete for AAAA honors!

AFTER three full months of competition in the 1982-1983 **Worldwide Chapter Membership Enrollment Contest,** the **Morning Calm (Korea) Chapter** leads the AAAA in both categories of the contest, "Membership Gain" and "Membership Percentage Gain."

COL "Mike" Bissell, President of the **Morning Calm Chapter,** indicated, "Our guys really want to take the cupcakes at the April '83 Convention, and it's their intention to make each of the other 42 Chapters also rans."

With the "cupcake" for the "Membership Gain" competition being an All-Expense Chapter Hospitality Suite on opening night with the room, beverages, setups, and ice provided, and the competition's end still some three months away, **Bissell's Boppers** can still be overtaken.

In the competition for "Largest Membership Percentage Gain" many of the Association's smaller Chapters are decidedly in the running with the **Schwaebisch Hall, Nurnburg, Rhine Valley, Stuttgart,** and **Wings of the Marne Chapters** all capable of increasing their "Percentage Gain" in the ensuing months.

While no prize is given for "Total Membership," a good **horse race** is on with only a 44-member count separating the **Army Aviation Center Chapter,** now No. 1; the **Corpus Christi Chapter,** a gaining No. 2; and the **Lindbergh (St. Louis) Chapter,** down a bit as No. 3.

ROLLING MEADOWS, IL—SHOWN AT A RECENT CHICAGO AREA AAAA CHAPTER MEETING ARE L-R CPTS FRANK NOVAK AND NATHEN NOYES, LORRY THOMAS (PRES.), COL DAVID E. BAEB (FT. SHERIDAN),AND COL WILLIAM TAYLOR, SEMA-PM AND MEETING GUEST SPEAKER.

Two USAREUR Chapters compete in Turkey Bowl

I FEEL almost certain it was a **first;** at least, I've never known two AAAA Chapters to square off in any kind of a physical encounter, but that's just what they did here in Marneland . .

I'm not too happy to report that my Chapter, the **Wings of the Marne Chapter**", was bested by the **Valley View Chapter,** 21-20, in the **"First Annual Turkey Bowl"** Flag Football Championship Game. The close score attested to the excellence of the contest, and the game was covered over AFN-TV and aired USAREUR-wide.

Most importantly, the build-up to the game generated much Chapter enthusiasm and a least forty (40) new AAAA members were enrolled by the two Chapters in the interim.

Wings of the Marne is the largest Chapter in the USAREUR Region and

(TURKEY/Continued on Page 65)

LARGEST MEMBERSHIP GAIN

(Standings as at December 1)

THE GAINING CHAPTERS

	Name of Chapter	Membership Gain
1	Morning Calm Chapter	+92
2	Rhine Valley Chapter	+24
3	Schwaebisch Hall	+23
4	Wings Of The Marne	+22
5	Air Assault Chapter	+18
5	Monmouth Chapter	+18
5	Fort Hood Chapter	+18
6	Washington, DC Chapter	+15
7	Valley View Chapter	+14
8	Greater-Atlanta Chapter	+11
9	Southern California Chapter	+9
10	Mount Rainier Chapter	+8
10	Bonn Area Chapter	+8
10	Suncoast Chapter	+8
10	Chicago Area Chapter	+8
11	Stuttgart Chapter	+7
12	Corpus Christi Chapter	+5
12	Indiantown Gap Chapter	+5
12	Old Ironside Chapter	+5
12	Nurnburg Chapter	+5
12	Lone Star Chapter	+5
13	Lindbergh Chapter	+3
13	Mainz Chapter	+3
14	Connecticut Chapter	+2
14	Fort Sill Chapter	+2
15	Jack H Dibrell (Alamo)	+1
15	Hanau Chapter	+1
15	Leavenworth Area Chapter	+1
15	Tennessee Valley Chapter	+1
15	Birmingham Area Chapter	+1
16	Delaware Valley Chapter	+0

THE LOSING CHAPTERS

	Name of Chapter	Membership Loss
17	Coastal Empire Chapter	—1
17	Fort Benning Chapter	—1
18	Air Cavalry Chapter	—2
19	Mid-America Chapter	—3
19	Fulda Chapter	—3
20	Monterey Bay Chapter	—4
21	Taunus Chapter	—5
22	Cedar Rapids Chapter	—8
23	Aloha Chapter of Hawaii	—10
24	Checkpoint Charlie	—11
25	Colonial Virginia Chapter	—18
26	Army Avn Center Chapter	—33

LARGEST PERCENTAGE GAIN

(Standings as at December 1)

THE GAINING CHAPTERS

	Name of Chapter	Membership Gain
1	Morning Calm Chapter	+44%
2	Schwaebisch Hall Chapter	+41%
3	Rhine Valley Chapter	+16%
4	Lone Star Chapter	+13%
5	Chicago Area Chapter	+12%
6	Wings of the Marne	+11%
6	Nurnburg Chapter	+11%
7	Valley View Chapter	+10%
7	Suncoast Chapter	+10%
8	Greater Atlanta Chapter	+9%
9	Monmouth Chapter	+8%
9	Fort Hood Chapter	+8%
10	Bonn Area Chapter	+7%
10	Old Ironside Chapter	+7%
11	Stuttgart Chapter	+5%
12	Mount Rainier Chapter	+4%
12	Mainz Chapter	+4%
13	Washington, DC Chapter	+3%
13	Air Assault Chapter	+3%
13	Southern California	+3%
13	Indiantown Gap Chapter	+3%
13	Fort Sill Chapter	+3%
13	Birmingham Area Chapter	+3%
14	Tennessee Valley Chapter	+2%
15	Corpus Christi Chapter	+1%
15	Connecticut Chapter	+1%
15	Jack H. Dibrell (Alamo)	+1%
15	Hanau Chapter	+1%
15	Combined Arms Center	+1%
16	Lindbergh Chapter	+0%
16	Delaware Valley Chapter	+0%

THE LOSING CHAPTERS

	Name of Chapter	Membership Loss
17	Coastal Empire Chapter	—1%
18	Fort Benning Chapter	—2%
18	Air Cavalry Chapter	—2%
19	Monterey Bay Chapter	—3%
20	Army Avn Center Chapter	—4%
20	Taunus Chapter	—4%
20	Mid-America Chapter	—4%
21	Colonial Virginia Chapter	—7%
21	Fulda Chapter	—7%
22	Aloha Chapter of Hawaii	—9%
23	Cedar Rapids Chapter	—11%
24	Checkpoint Charlie	—26%

BG Ellis D. Parker
Deputy Director of Requirements and Army Aviation Officer, ODCSOPS
225-0527

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Aviation Team Chief, Combat Division, JVX Crew Ratios
227-9666

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CH-47, HLH, Ground Support Equipment, Cargo Handling Equipment
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AH-1, ALSE, 2.75 Rockets
227-9666

MAJ Joe F. Shipes
SEMA OV-1, Joint STAR Radar, RPV
227-6527

(Note: All on p. 60 are DAMO-RQ)

COL James M. Davis, Jr.
Chief, Combat Div., Requirements Directorate ODCSOPS
227-5611

LTC William B. Leonard
Deputy Chief, Combat Division, SC-15 Coordination, AR 95-1, Fixed Wing
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UH-60, UH-1, Aviation RDTE, CBAA
227-9666

MAJ Carlos M. Collat
SEMA-Guardrail Quicklook, Guardlook Quickfix, JVX (SEMA)
225-4222

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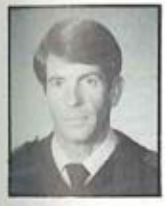

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. . FALL TOGETHER!

25TH AAAA NATIONAL CONVENTION
April 7-10, 1983
Atlanta, Georgia

Having the time of their lives! That's what some 700 AAAA members do annually at the national convention each April and the photographer has only captured a part of the many activities at "National." Put yourself into these scenes. Complete the coupon and join us for three rewarding days at Atlanta's Omni Int'l Hotel!

Advance Registration Form for AAAA's 1983 National Convention — April 7-10

OMNI INTERNATIONAL HOTEL, ONE OMNI INTERNATIONAL, ATLANTA, GA 30335 — APRIL 7-10, 1983

I plan to attend the 1983 AAAA NATIONAL CONVENTION functions indicated below and have enclosed a check made payable to "AAAA" to cover the costs of my attendance and the function tickets. I understand that Advance Registration closes on Monday, March 21, and that I may receive a full refund by phone call to AAAA made on or before that date, or by written notification to AAAA that's postmarked not later than Monday, March 21, 1983.

SPECIFIC FUNCTION HELD AT THE 1983 NAT'L CONVENTION OF THE AAAA	MIL. MEMB. FEE	CIV. MEMB. FEE	MIL. DELE-GATE	CIV. DELE-GATE	FEE FOR SPOUSE	NON-MEMB. FEE *	ITEM LINE TOTAL	OFFICE USE ONLY
REGISTRATION (NECESSARY FOR ADMITTANCE TO THE AAAA..... PROFESSIONAL SESSIONS)	☐ $12	☐ $35	☐ $ 8	☐ $31	N/A	☐ $27 ☐ $50	$ ____ $ ____	
FRIDAY, APRIL 8 SPOUSE'S BREAKFAST.....					☐ $ 9	— MILITARY OR CIVILIAN FEE AS APPROPRIATE —	$ ____	1
FRIDAY, APRIL 8 HALL OF FAME LUNCHEON..... (UNRESERVED SEATING)►	☐ $12	☐ $16	☐ $ 8	☐ $12	☐ $12		$ ____	2
FRIDAY, APRIL 8 PRESIDENT'S RECEPTION..... (FINGERTIP BUFFET)	☐ $10	☐ $16	☐ $ 7	☐ $13	☐ $10		$ ____	3
SATURDAY, APRIL 9 SPOUSE'S ATLANTA SIGHT-..... SEEING TOUR					☐ $10		$ ____	4
SATURDAY, APRIL 9 BUFFET LUNCHEON..... (COMPLIMENTARY BUD)►	☐ $ 9	☐ $12	☐ $ 7	☐ $10	☐ $ 9		$ ____	5
SATURDAY, APRIL 9 AWARDS BANQUET RECEPTION.. AND AWARDS BANQUET●	☐ $25	☐ $40	☐ $20	☐ $35	☐ $25		$ ____	6
SUNDAY, APRIL 10 CHAMPAGNE BRUNCH..... (OPEN BAR-CHAMPAGNE)►	☐ $ 9	☐ $12	☐ $ 7	☐ $10	☐ $ 9		$ ____	7
TOTAL.....	$	$	$	$	$	$	$	

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* Includes $15.00 First Year AAAA Membership Dues. ►Unreserved seating at 10-seat tables with table service. ● Formal/Black Tie, Dark Business Suit. ◄Served in Exhibit Hall. NOTE: "Military Member" Fees apply only to Active Army, Reserve Component, DAC Personnel, and those retired AAAA members who are not in the current employ of defense contractors or suppliers on a full-time, part time, or consulting basis. Please make your check payable to "AAAA," and mail with this Advance Registration Form to AAAA, 1 Crestwood Road, Westport, Connecticut 06880.

FOR OFFICE USE ONLY:
AMOUNT OF CHECK.....$ ____ P ____ B ____
DATE ____

TURKEY/Cont. from Page 58

we expect to grow by another 30% by March 1983. In addition to our strong schedule of Chapter meetings, we've spiced our membership drive with a drawing for a full expense-paid trip to the Regional Convention at Garmisch. The kicker is that the winner (and family) will be chauffeured in a Rolls Royce to and from the Convention.

—**LTC James B. Sauer**

WWII Liaison Pilots Meet at Pittsburg, Kan. 40th Reunion

COMMEMORATING the 40th Anniversary of Army Liaison Pilot (Primary Flight) Training at Pittsburg, the City of Pittsburg, Kansas, hosted **Airport Day—1982.**

Many World War II oldtimers, each a former Liaison Pilot who trained in Pittsburg during 1942-1944, returned to the city and airfield for the event. They also attended a reunion in the Tower Ballroom, a room in which many class graduation parties were held during those training days.

FT. RUCKER—THE AAAA AWARD TO THE DISTINGUISHED GRADUATE OF THE 78-MEMBER WO SENIOR COURSE WAS PRESENTED IN NOVEMBER 24 CEREMONIES TO CW3 JOSEPH L. WITTSTROM OF BOULDER, COLO.

The very successful celebration was coordinated by a former L-Pilot and member of AAAA's Cub Club, **Gordon H. House,** who currently serves as the Director of the city's Department of Planning and Community Development. (See accompanying photo).

PITTSBURG, KA—40TH REUNION'ERS AT AIRPORT DAY—1982 WERE STANDING, L-R, HANK COPPOCK, CHARLES COLLAR, IVAN PELLER, DON CHAMBERLAIN, SHERMAN CLARK, BURDETT NYGREN, CHARLES BROWN, ALVIN BURCH, HAROLD BARNES, AND TOM SABISTON. KNEELING, L-R, GORDON HOUSE, MELVIN KIRBY, HOMER JOHNSTON, LEO BERGERON, PADDY WOOLF, BILLY BRASHEAR, DON McPHAIL, RAYMOND E. JOHNSON, WAYNE N. PHILLIPS, JERRY EYLER, AND CHARLES DAMON.

CH-34 CHOCTAW

DESCRIPTION: 12- to 16-place cargo and light tactical transport helicopter.
MANUFACTURER: Sikorsky Aircraft Division, Stratford, Connecticut.
POWER PLANT: One Curtiss-Wright R-1820-84 piston engine of 1,425 horsepower.
ROTOR SYSTEM: Single four-bladed main rotor, 56 foot diameter. Four-bladed metal anti-torque rotor, 9 feet, 4 inch diameter.
SPECIFICATIONS: Gross Weight: 13,000 pounds. Empty Weight: 7,675 pounds. Length: 65 ft. 8 inches. Height: 15 feet, 10 inches.
PERFORMANCE: Maximum speed (Sea level): 107 knots. Cruise speed (SL): 95 knots. Service ceiling: 9,500 feet. Hover ceiling (OGE): 2,400 feet. Maximum range: 318 nautical miles. Rate of climb: 1,100 feet per minute.
REMARKS: Beginning in FY 1955, the Army procured a total of 437 Choctaws of A and C models through FY 65. The VH-34 was used for VIP transport, notably as the first helicopters used by the Presidential Flight Detachment. It had an eight-litter med evac capability.

CH-37 MOJAVE

DESCRIPTION: 26-place medium cargo helicopter.
MANUFACTURER: Sikorsky Aircraft Division, Stratford, Connecticut.
POWER PLANT: Two R-2800-54 Pratt & Whitney piston engines of 2,100 hp each.

ROTOR SYSTEM: Single five-bladed main rotor, 72 ft. diameter. Four-bladed metal anti-torque tail rotor, 15 ft. diameter.
SPECIFICATIONS: Gross weight of the CH-37 is 31,000 pounds. Empty weight is 20,690 pounds. Length: 88 ft. Height: 22 feet. Rotor Diameter: 72 feet. Tail Rotor Dia.: 15 feet.
PERFORMANCE: Maximum speed (Sea level): 114 knots. Cruise speed (SL): 101 knots. Service ceiling: 8,700 feet. Hover ceiling (OGE): 1,100 feet. Maximum range 167 nautical miles. Rate of climb: 910 feet per minute.
REMARKS: Since initial procurement in 1956, the Army purchased 91 similarly powered CH-37 "A" and "B" models through FY 65. The Mojave is loaded through clamshell doors in the nose portion of the aircraft. It also had a 24-litter med evac capability, or could carry three tons of cargo.

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ABOVE: A CH-47 lifts a CV-2 Caribou

ABOVE: The fly-by-wire, triple hook CH-47 with the craft operated from the retractable load controller crewmember's (LCC) station. CIRCLE ABOVE: The Boeing Model 347 — the world's largest tandem rotor 'copter with a controllable tilt-wing.

CH-47 CHINOOK

RIGHT: The CH-47 demonstrates its flotation ability.

BELOW: A Chinook with three separate fuel bladders as an underslung load.

BELOW: Up to five 105mm howitzers can be carried by the CH-47. Shown is a four-howitzer airlift.

DESCRIPTION ("D"): 47-place twin-turbine, deployable tandem-rotor medium transport helicopter.
MANUFACTURER: Boeing Vertol Division, Philadelphia, Pennsylvania.
POWER PLANT: Two Lycoming T55-L-712 turboshaft engines of 4,600 shaft horsepower each
ROTOR SYSTEM: Tandem three-bladed, counterrotating fiberglass rotors, 60 ft. dia.
SPECIFICATIONS: Gross wt: 33,000 lbs. Empty wt: 22,756 lbs. Length: 51 ft. Height: 18 ft, 7.8 in. Fuel: 1,047 US gal.
PERFORMANCE (at gross wt.): Max speed (SL): 128 knots. Service seiling: 19,800 ft. Hover ceiling (OGE): 13,850 ft. Max range: 132 n.m. Rate of climb: 3,000 fpm.
REMARKS: Selected to produce a new medium transport helicopter in September 1958, the Vertol Division delivered its first Chinook to the Army four years later. Some 699 were delivered, the Chinook being a combat-tested performer throughout Vietnam. The B and C models utilize the same airframe as the A, the B using T55-L-7C turbines and the C using the T55-L-11 engine. The rollout of the D prototype took place in March 1979 with the first flight occurring two months later. Army plans call for 361 earlier Chinooks to be remodified over a 10-12 year timespan with additional new production CH-47D's being ordered to meet the Army's MLH continuing needs.

CH-54 TARHE

DESCRIPTION: 48-place twin-turbine heavy lift helicopter.
MANUFACTURER: Sikorsky Aircraft Division, Stratford, Connecticut.
POWER PLANT: Two Pratt & Whitney JFTD-12A-5A turbines of 4,800 hp each.
ROTOR SYSTEM: Single six-bladed main rotor; four-bladed metal anti-torque tail rotor.
SPECIFICATIONS: Gross wt: 42,000 lbs. Useful load: 19,031 lbs. Length: 88 ft, 6 in. (Blades extended). Height: 25 ft, 4 in. Rotor Dia: 72 ft. Tail Rotor Dia: 15 ft, 4 in. Pod (28' 1" × 9', 6"): 24 litters + 15 seats; 45 troops.
PERFORMANCE: Max speed (SL/GW): 111 kts. Cruise (SL/GW): 96 kts. Service ceiling: 13,000 feet. Hover ceiling (OGE): 4,000 feet. Best rate of climb: 1,700 fpm. Endurance: 2 hrs. 15 minutes.
REMARKS: Since first flight (1962) and initial procurement of six Sikorsky S-64 Skycranes (1964), the Army had purchased 28 CH-54's through FY 68. Designed to carry loads externally, it has a rear-facing pilot's seat to provide a clear view of the cargo during pickups and deliveries. By means of a hoist it can pick up or deposit loads without landing. A lightweight van (universal pod) can be attached to the fuselage and used as a CP, MASH, or repair shop. Particularly suited for recovering downed aircraft and offloading in ship-to-shore missions, the CH-54 did yeoman service in Vietnam.

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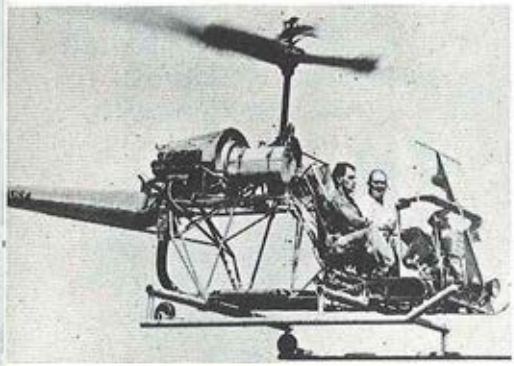
H-24



DESCRIPTION: Two-place (pilot and passenger) observation and medical evacuation helicopter.
MANUFACTURER: Seibel Helicopter.
POWER PLANT: One Avco Lycoming 4-cylinder, horizontally opposed, aircooled 0-290-D1 piston engine of 130 horsepower.
ROTOR SYSTEM: One wooden main rotor blade of 29 foot diameter; a two-bladed 74 inch tail rotor.
SPECIFICATIONS: Gross weight: 1,540 pounds. Places: Two, or pilot and one litter.
PERFORMANCE: Cruising speed (Sea level): 51 knots. Service ceiling: 4,300 feet. Maximimum range: 113 statute miles.
REMARKS: Two H-24 Seibel helicopters were procured in Fiscal Year 1951 for test and evaluation.

TEST YOURSELF!

More than 200 Army fixed and rotary wing aircraft are pictured on the 120 editorial and advertising pages of this December 1982 "Equipment Issue." **Do you pride yourself on your aircraft recognition capability?** If so, turn to page 114 and take the **QUICK QUIZ** that appears on that page.

H-25 ARMY MULE

DESCRIPTION: Eight-place tandem rotor cargo and utility helicopter.
MANUFACTURER: Piasecki Aircraft Corporation, Philadelphia, Pennsylvania.
POWER PLANT: One Continental Motors 9-cylinder radial R-975-46 engine of 475 horsepower.

ROTOR SYSTEM: Two three-bladed counter-rotating rotors. 35 foot diameter.
SPECIFICATIONS: Gross Weight: 5,500 pounds. Rotor Diameter: 35 feet. Fixed landing gear. The H-25 crew numbered two persons, with an optional load of three to six passengers.
PERFORMANCE: Cruising speed (Sea level): 80 knots. Service ceiling: 11,500 feet. Maximum range: 411 nautical miles.
REMARKS: The Piasecki H-25 was developed for the U.S. Navy for rescue operations, but with minor modification, it met Army operational needs in cargo and utility missions. The first H-25A Army Mules were purchased in FY 1953 with the highest full-year inventory count reaching 63 in FY 1955. All inventory aircraft were later turned over to the Navy for use.

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The Grumman Mohawk OV-1. Where survival counts, you can count on Mohawk.

GRUMMAN AEROSPACE CORPORATION
BETHPAGE, NEW YORK 11714

H-26

DESCRIPTION: One-place observation and reconnaissance research helicopter.
MANUFACTURER: American Helicopter Company.
POWER PLANT: Two American Helicopter 48 horsepower XPJ49-AH-3 tip-mounted pulse jet engines of 36 pounds thrust each.
ROTOR SYSTEM: Single two-bladed teetering rotor system, with rotor blades by Prewitt.
SPECIFICATIONS: Gross Weight: 810 pounds.
PERFORMANCE: Cruising speed (Sea level): 65 knots. Service ceiling: 7,000 feet. Maximum range: 115 nautical mailes.
REMARKS: The Army procured five American Helicopter XH-26's during the period 1952-1954 for engineering and operational evaluation. The aircraft shown in the photograph is on permanent display at the U.S. Army Aviation Museum at Fort Rucker, Alabama.

H-30

DESCRIPTION: Two-place (pilot and passenger) observation, medical evacuation, and utility helicopter.
MANUFACTURER: McCulloch Motors Corporation.

POWER PLANT: One Franklin Motors 6A4-200-C6 6-cylinder, horizontally opposed, aircooled engine of 200 horsepower.
ROTOR SYSTEM: Tandem three-bladed rotor system with each blade being 22 feet in diameter.
SPECIFICATIONS: Gross Weight: 2,000 pounds. Rotor Diameter: 22 feet.
PERFORMANCE: Cruising speed (Sea level): 79 knots. Service ceiling: 12,000 feet. Maximum range: 228 nautical miles. Side-by-side crew seating.
REMARKS: Two McCulloch Motors H-30 helicopters were procured by the Army in 1952 for operational and engineering evaluation. The rotor hub of the H-30 was later used on the Hughes YHO-2 which eventually became the Army's TH-55. The H-30 had tricyle landing gear and a full "greenhouse" that afforded the pilot and passenger maximum all-around visibility.

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H-31

DESCRIPTION: Eight-place (pilot and three to seven passengers) medical evacuation and utility helicopter.
MANUFACTURER: Doman Helicopters Inc, Danbury, Connecticut.
POWER PLANT: One Avco Lycoming SO-580-D 8-cylinder piston engine of 400 horsepower.
ROTOR SYSTEM: Single four-bladed main rotor system utilizing wooden blades. Three-bladed tail rotor (wooden blades).
SPECIFICATIONS: Gross Weight: 5,200 pounds (with eight persons aboard).
PERFORMANCE: Cruising speed (SL): 68 knots. Service ceiling: 5,700 feet. Maximum range: 394 nautical miles.
REMARKS: The Army procured two Doman Helicopters H-31's in 1952 for test and evaluation by the US Army Aviation Test Board at Fort Rucker, Alabama. The aircraft had a completely sealed, non-articulated rotor system (the first "rigid rotor" system in use), and featured four-wheel fixed landing gear and an oversize cargo door. The Doman commercial designation for the H-31 was LZ-5.

H-32 HORNET

DESCRIPTION: Two-place (pilot and passenger) observation helicopter.
MANUFACTURER: Hiller Aircraft Company, Palo Alto, California.
POWER PLANT: Two Hiller HR J2B Ram Jet tip-mounted engines of 30 pounds thrust each.

ROTOR SYSTEM: Single two-bladed metal-main rotor and single two-bladed wooden tail rotor.
SPECIFICATIONS: Gross Weight: 1,080 pounds. Main Rotor Diameter: 23 feet. Tail Rotor Diameter: 32 inches.
PERFORMANCE: Cruising speed (Sea level): 61 knots. Service ceiling: 11,500 feet. Maximum range: 32 nautical miles.
REMARKS: The ram jet Hiller Hornet first flew in 1950, although the Army did not take delivery of this type of aircraft until 1956. at which time it purchased six. The H-32 featured extremely high maneuverability and agility, an exceptional rate of climb, side-by-side seating for the pilot and the observer-passenger, and a sturdy landing skid in lieu of wheels. The Hornet was the first practical micro-copter in an era of large machines.

H-33 (XV-3)

DESCRIPTION: Two-place tilt-rotor research aircraft.
MANUFACTURER: Bell Helicopter Textron, Fort Worth, Texas.
POWER PLANT: One Pratt & Whitney R-985-AN-3 engine of 450 horsepower.
ROTOR SYSTEM: Two two-bladed semi-rigid tilting prop-rotors of 23 feet diameter.
SPECIFICATIONS: Gross Weight: 4,850 pounds. Empty Weight: 4,200 pounds. Length: 30 feet, 4 inches. Height: 13 feet, 7 inches.
PERFORMANCE: Max speed (SL) : 131 knots. Cruising speed (SL): 114 knots. Service ceiling: 12,000 ft. Max range: 161 nautical miles.
REMARKS: Two aircraft were procured in '51 under a joint Army-USAF contract, No. 4147 being first flown in Aug '55. The prop-rotor H-33 was then destroyed in an accident, two-bladed semi-rigid rotors being added to the

No. 4148. The latter achieved full in-flight conversion of its tilting rotors in Dec '58, a 10-second operation, the world's first such performance by this type of aircraft. The convertiplane was also designated as the XV-3.

H-39

DESCRIPTION: Four-place (pilot and three passengers) utilty helicopter.
MANUFACTURER: Sikorsky Aircraft Division, Stratford, Connecticut.
POWER PLANT: One Turbomeca Artouse II-XT-51-T3 turbine engine of 400 horsepower.
ROTOR SYSTEM: Single four-bladed articulated main rotor of 35 foot diameter and metal three-bladed anti-torque tail rotor of 6 foot, 4 inch diameter.
SPECIFICATIONS: Gross Weight: 3,361 pounds. Empty Weight: 2,105 pounds. Length: 41 ft, 9 in. Height: 9 ft, 7 in.
PERFORMANCE: Maximum speed (Sea level): 132 knots.Cruise speed (SL): 121 knots. Service ceiling: 17,900 feet. Hover ceiling (OGE): 15,100 feet. Maximum range: 305 nautical miles. Endurance: 2 hours. Rate of climb: 1,680 feet per minute.
REMARKS: The H-39 was basically a modified H-18 with an Artouse II gas turbine engine installed. In 1954 the Army obtained one Sikorsky YH-18A to be used for operational and engineering evaluation. The H-39 set World Records in 1954 for its class for speed (132 knots) and altitude (24,220 feet.)

HO-1 DJINN

DESCRIPTION: Two-place (pilot and passenger) obsevation and reconnaissance helicopter.
MANUFACTURER: Sud Aviation of Paris, France.

POWER PLANT: Single Turbomeca compressed air Palouste 4 turbo-generator of 240 horsepower.
ROTOR SYSTEM: Single two-bladed main rotor, 35 feet, 5 inches in diameter. Air bled-from the compressor was fed to the Djinn's blade-tip ejectors providing thrust for their rotational power.
SPECIFICATIONS: Gross Weight: 1,676 pounds. Empty Weight: 794 pounds. Length: 17 ft. 5 inches. Height: 8 feet, 7 inches.
PERFORMANCE: Max speed (SL): 68 knots. Cruise speed (SL): 54 knots. Hover ceiling (OGE): 4,000 ft. Hover ceiling (IGE): 2,500 ft. Max range: 144 nm Endurance: 2 hrs, 15 min.
REMARKS: The Sud Djinn was the first aircraft to receive the Army's new "Helicopter Observation — HO" designation. Three YHO-1's were purchased by the Army for engineering and operational evaluation at its U.S. Army Aviation Test Board.

HO-3

DESCRIPTION: Two-place (pilot and passenger) observation and reconnaissance helicopter
MANUFACTURER: Brantley Helicopter Corporation, Frederick, Oklahoma.

POWER PLANT: One Lycoming VO-360 engine of 180 horsepower.
ROTOR SYSTEM: Single three-bladed main rotor of 28 feet, 3 inches diameter; Brantley-designed two-section blades.
SPECIFICATIONS: Gross Weight: 1,670 pounds. Empty Weight: 1,020 pounds. Length: 21 feet, 9 inches. Height: 6 feet, 9 inches.
PERFORMANCE: Maximum speed (Sea level): 87 knots. Cruising speed (Sea level): 79 knots. Service ceiling: 9,000 feet. Hover ceiling (OGE): 4,000 feet. Normal range: 288 nautical miles. Rate of climb: 1,400 fpm.
REMARKS: The Army purchased five YHO-3's (Commercial off-the-shelf Brantley B-2's) for engineering and operational evaluation. The Army test aircraft had skid gear instead of wheels as shown. The YHO-3 was referred to affectionately as an "ice cream cone" by all flight test personnel.

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OH-4A

DESCRIPTION: Four-place light observation helicopter.
MANUFACTURER: Bell Helicopter Textron, Fort Worth, Texas.
POWER PLANT: One Allison T63 turbine engine of 250 horsepower.
ROTOR SYSTEM: Single two-bladed main rotor system, 33.3 foot diameter; metal two-bladed tail rotor, 5 feet, 2 inch diamater.
SPECIFICATIONS: Gross Weight: 2,573 pounds. Empty Weight: 1,536 pounds. Length: 38 feet, 8 inches. Height: 8 feet, 10 inches.
PERFORMANCE: Maximum speed (Sea level): 118 knots.Cruising speed (SL): 97 knots. Service ceiling: 20,000 feet. Hover ceiling (OGE): 8,000 feet. Maximum range: 326 n.m. Endurance: 2 hours, 35 minutes Rate of climb: 1,100 feet per minute.
REMARKS: Designated as the Bell D-250, the OH-4A (HO-4) was the first of the three competing Light Observation Helicopters (LOH) to fly, taking to the air in December 1962. Five OH-4's were delivered to the U.S. Army Aviation Test Board for test and evaluation in January 1964.

OH-5A

DESCRIPTION: Four-place light observation helicopter (LOH).
MANUFACTURER: Hiller Aircraft Company, Palo Alto, California.
POWER PLANT: One Allison Division T63-A-5 turbine engine of 250 shaft horsepower.
ROTOR SYSTEM: Single two-bladed Hiller "L" rotor by Parsons, 35 ft. 5 in. diameter. Two-bladed metal tail rotor, 6 ft. diameter.
SPECIFICATIONS: Length: 41 ft. 4 in. Height: 9 ft. 2 in. Gross Weight: 2,530 pounds. Empty Weight: 1,395 pounds.
PERFORMANCE: Max speed (SL): 112 knots. Cruise speed: 110 knots. Service ceiling: 16,400 feet. Hover ceiling (OGE): 12,000 feet. (IGE):15,950 feet. Endurance: 8.1 hours. Rate of climb: 1,830 feet per minute.
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 Hiller OH-5A was the first of the three LOH's to be eliminated fom the LOH competition. A modified version of the Hiller LOH is marketed as the FH-1100.

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OH-6A CAYUSE

LEFT: A Cayuse pilot checks his gun mountings

DESCRIPTION: Four-place light observation helicopter (LOH).
MANUFACTURER: Hughes Helicopters Division, Culver City, California.
POWER PLANT: One Allison T63-A-5A turbine of 252 horsepower (derated).
ROTOR SYSTEM: Single four-bladed main rotor, 26 ft. 4 in. Two-bladed metal tail rotor, 4 ft. 3 in.
SPECIFICATIONS: Mission gross wt: 2,163 lbs. Overload gross wt: 2,700 lbs. Empty Weight: 1,030 lbs. Overall length: 30 ft. 4 in. Fuselage length: 23 ft. Height: 8 ft, 6 in.
PERFORMANCE (at 2,400 lb.): Cruising speed (SL): 125 knots. Service ceiling: 15,800 ft. Hover ceiling (OGE): 7,200 ft. (IGE): 12,100 ft. Normal range: 475 n.m. at 5,000 feet. Rate of climb: 1,550 fpm. Fuel: 400 lb.
REMARKS: Commercially marketed as the Hughes 500, the OH-6A was the winning LOH design tested and evaluated by the USA Aviation Test Board. The initial date of procurement for the Hughes OH-6A Cayuse was May 26, 1965 with first deliveries to U.S. Army, Vietnam commencing in early 1968. Organic to division, brigade, and battalion or equivalent units, the OH-6A was employed in performing command and control, visual observation, target acquisition, and reconnaissance missions. Highly popular with aviators in USARV, the "Loach" proved to be veritably indestructible, taking major hits from ground fire and still coming home.

OH-13 SIOUX

RIGHT: An OH-13B in flight at the Bell plant. BELOW: A turbo-supercharged OH-13S helicopter on the ramp.

BELOW: Sioux Scout, a 2-place experimental armed helicopter that led to the HueyCobra.

DESCRIPTION: Three-place observation, recon, and medical evacuation helicopter.
MANUFACTURER: Bell Helicopter Company, Fort Worth, Texas.
POWER PLANT: One Lycoming VO-435-25 6-cylinder, horizontally opposed, aircooled, turbo-supercharged engine of 260 hp.
ROTOR SYSTEM: Single two-bladed metal main rotor, 37 ft. diamater; two-bladed metal tail rotor, 5 ft, 10 in. diameter.
SPECIFICATIONS: Gross Weight: 2,950 pounds. Empty Weight: 1,936 pounds. Length: 43 ft., 4 in. Height: 9 ft., 3 in.
PERFORMANCE: Max speed (Sea level): 92 knots. Cruise speed (SL): 82 knots. Service ceiling: 20,000 feet. Hover ceiling (OGE): 18,600 feet. Maximum range: 373 nautical miles. Endurance: 2 hours. Rate of climb: 880 feet per minute.
REMARKS: The Army procured its first YR-13 in Dec 1946. Since that date, it has purchased 2,197 OH-13's of all models ranging from A's through T's. An E model drone demonstrated a remote control capability more than six miles away from its ground control unit. Many OH-13's performed admirably in the Korean War as scouts and med evac aircraft. The T served as a basic instrument trainer. Very agile, OH-13's were crowd pleasers for many years as Bozo, the clown, or in their numerous Square Dance demonstrations or lifting a 70 lb. Yo-Yo.

OH-23 RAVEN

BELOW: A familiar sight in Korea: the two-litter OH-23 descending to the pad

DESCRIPTION ("G"): Four-place observation, utility, and med evac helicopter.
MANUFACTURER: Hiller Aircraft Company, Palo Alto, California.
POWER PLANT ("G"): One Lycoming VO-540 6 cylinder, horizontally opposed, aircooled engine of 305 hp.
ROTOR SYSTEM: Single two-bladed metal main rotor, 35 ft, 5 in. dia.; two-bladed tail rotor, 5 ft., 6 in. dia.
SPECIFICATIONS: Gross wt: 2,800 lbs. Empty wt: 1,759 lbs. Length: 40 ft., 8 in. Height: 10 ft., 2 in.
PERFORMANCE: Max speed (SL): 84 knots. Cruise speed (SL): 79 knots. Service ceiling: 15,200 ft. Hover ceiling (OGE): 5,800 ft. Max-range: 259 n.m. Endurance: 3 hrs, 12 min. Rate of climb: 1,290 fpm.
REMARKS: With procurement starting in FY 1950, the Army ordered A through G models, excluding E. Used in the Korean War with two external litters, the A's and B's had 178-200 hp Aircooled Motors. The "D" model Raven was used mainly as the primary helicopter trainer until late 1965 when it was replaced by the TH-55A. The four-place F was used throughout Latin America for Coast & Geodetic Survey missions. The F and G models were very similar in capabilities, the F being slightly larger and heavier and being sold commercially as the E4. By January 1962 the Army had 656 OH-13 Ravens in its inventory.

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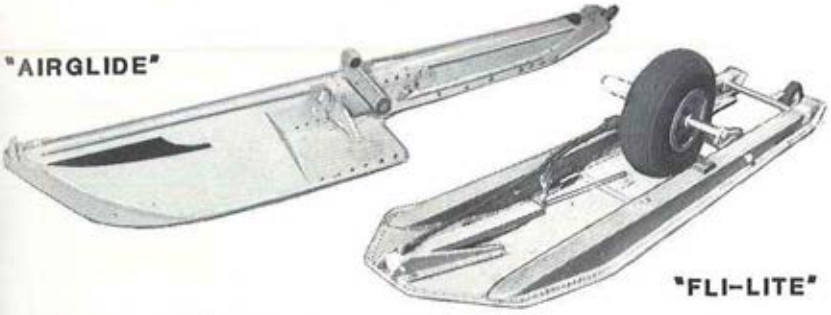

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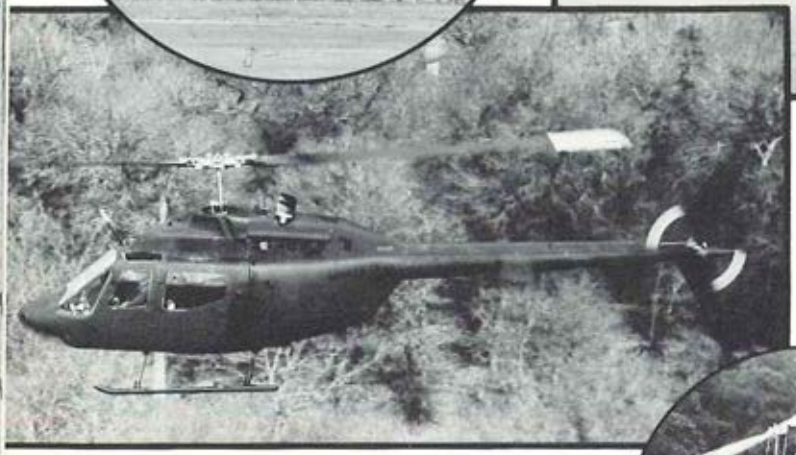


OH-58 KIOWA

LEFT: Kiowa using a mast mounted sight.

ABOVE: Kiowa with inflatable floats.

DESCRIPTION: Two-place, single engine light observation helicopter being used as an interim scout.

MANUFACTURER: Bell Helicopter Company, Fort Worth, Texas.

POWER PLANT: Allison T63-A-700 turbine engine with 317 horsepower at takeoff and 270 continuous horsepower.

ROTOR SYSTEM: Two-bladed semi-rigid main rotor of 35'-4" diameter; two-bladed tail rotor of 5'-2" diameter.

SPECIFICATIONS: Fuselage length: 32'-3.5". Height: 9'-6.5". Maximum gross weight ("C"): 3,200 lb. Empty weight: 1,930 lb. Armor: 112 lb. Cargo volume: 40 cubic feet. Fuel: 73 gallons.

PERFORMANCE (Observation mission): Maximum allowable airspeed: 121 knots. Maximum cruise speed (Sea level to 4,000 feet): 102 knots. Cruising range: 345 nautical miles. Hover ceiling: OGE, 5,400 feet and IGE, 10,500 feet. Endurance: 3.5 hours. Rate of climb: 1,200+ feet per minute.

REMARKS: As an interim scout, 585 OH-58As are being modified to the "C" configuration, and will have new T63-A -720 turbine engines, flat plate windsheilds, IR suppression, redundant tail rotor controls, and improved transmission and driveshaft covers to protect hangar bearings and tail rotor driveshafts. In performing its roles, the Kiowa will operate in air cavalry, attack helicopter, and field artillery units.

R-4 (1942)

Sikorsky Aircraft. First 'copter to be procured in quantity. Firt obtained in FY 1942. 134 purchased ranging through "C". Two-place, side-by-side. 165, 180, 200 hp. Used for observation, recon, and med evacuation.

R-5 (H-5) (1944)

Sikorsky Aircraft. The first **XR-5** in 1944 was a tandem rotor model, the **VS-272;** all others were single rotor. 132 procured in 11 models; later redesignated as the **H-5.** Powered by a P&W R-985-AN-5 540 horsepower engine.

R-6 (1945)

Sikorsky Aircraft/Nash Kelvinator. 225 of the Sikorsky design produced by N/K in 1944. All except D had 450 hp P&W R-985-AN-5 engines; D had a 600 hp P&W R-1340 engine. Used primarliy by US Navy and Coast Guard.

XCH-62 HLH

Boeing Vertol. 1974 R&D heavy lift project. Loads of 35-tons + lifted at 150 knots. First aircraft designed for "fly-by-wire." Powered by three Allison T701 turboshaft engines of 24,000 total shp. Program cancelled in 1976.

TH-55 OSAGE

DESCRIPTION: Two-place side-by-side, dual control primary trainer helicopter.
MANUFACTURER: Hughes Tool Company, Aircraft Division, Culver City, California.
POWER PLANT: One Lycoming HIO-360-B1A engine of 180 horsepower.
ROTOR SYSTEM: Single three-bladed main rotor, 25' 4" dia.; two-bladed metal anti-torque rotor, 3' 4".
SPECIFICATIONS: Gross Wt: 1,600 lb. Empty Wt: 1,010 lb. Useful load: 590 lb. Length: 28' 5". Height: 8' 3".
PERFORMANCE: Max speed (SL): 75 knots. Cruising speed (SL): 66 knots. Hover (OGE): 4,000 ft. (IGE): 6,400 ft. Max range: 235 n.m.. Endurance: 2.5 hrs. Rate of climb: 1,350 fpm.
REMARKS: The TH-55A (formerly designated as the HO-2) was purchased off-the-shelf after Army tests and evaluation by the Army. Commercially known as the Hughes 200, the Osage was initially procured in Nov '64 with some 860 TH-55A's eventually being purchased. Features: 360-degree visibility, 8-foot ground-to-rotor clearance; low vibration and noise; and well-designed skids to absorb hard student landings.

16H-1C

DESCRIPTION: Eight-place developmental shaft compound, ring-tail helicopter.
MANUFACTURER: Piasecki Aircraft Corporation, Philadelphia, Pennsylvania 19153.
POWER PLANT: One General Electric Company T-58-5 turbine engine of 1,500 shaft horsepower.
ROTOR SYSTEM: Fully-articulated 3-bladed main rotor, 44 dia.; 3-bladed controllable pitch ducted tail-prop for forward propulsion and anti-torque directional control.
SPECIFICATIONS: Empty wt: 4,800 lb. STOL Gross wt: 8,150 lb. Disc loading: 5.36 lb./sq ft. STOL Gross wt: 10,800 lb.
PERFORMANCE: Max speed (SL): 182 knots. Cruising speed (SL): 66 knots at 80% Takeoff power. Service ceiling: 18,700 ft. Hover ceiling (OGE): 7,800 ft. Maximum range: 235 n.m.
REMARKS: Developed initially by the Piasecki Aircraft Corporation as a private company-funded project using the 16H-1 Pathfinder project name, this compound aircraft was later modified to the Pathfinder II under a joint Army-Navy contract to explore high speeds in rotary wing aircraft..

ABOVE: A Huey pre-
pares to splashdown

RIGHT: Three Hueys in a tight formation.

BELOW: A stick of six goes out the doors

UH-1 IROQUOIS

BELOW: An Aerial Rocket Artillery (ARA) Huey in action.

DESCRIPTION ("H"): 13-place tactical transport helicopter.
MANUFACTURER: Bell Helicopter Textron, Fort Worth, Texas.
POWER PLANT: One Lycoming T53-L-13 turbine engine rated at 1,400 shp.
ROTOR SYSTEM: Two-bladed semi-rigid metal main rotor, 48' dia.; two-bladed semi-rigid metal tail rotor, 8' 6" dia.
SPECIFICATIONS ("H"): Gross Weight: 9,500 lbs. Empty Weight: 5,210 lbs. Length: 41' 11". Height: 11' 9". Fuel: 211 gal. External cargo: 4,000 lbs. Internal cargo: 220 cu. ft.
PERFORMANCE: Max cruise speed (SL): 111 knots. Max endurance: 3.4 hours.
REMARKS: A major Army helicopter asset since its initial procurement in 1959, the UH-1 series has evolved through 13 models (A through V). Starting its career as a med evac aircraft, the Huey has flown more than 20,000,000 flight hours in supporting a wide variety of Army missions. From the 7-place UH-1A of 1959-1961 (173 purchased), the Army procured 1,033 nine-place B's during 1961-1965 and 749 C's/M's during 1965-1967. More than 7,534 D's/H's have been bought since 1963, The Army's utility fleet of today is composed of 90% H's and 10% B's, C's, and M's with 82% operating from Division Forward. The "Slick" was the backbone of all airmobile combat operations in Vietnam. The last production H was delivered in Dec '76 with average fleet age at nine years now.

UH-2

DESCRIPTION: A compound version of the six- to thirteen-place UH-2 general utility helicopter.
MANUFACTURER: Kaman Aircraft Corporation, Bloomfield, Connecticut.

POWER PLANT: One General Electric T58-8 turbine engine of 1,250 shaft horsepower, and one GE J-85 turbojet of 2,500 lb/thrust for auxiliary propulsion.
ROTOR SYSTEM: Single four-bladed main rotor of 44 feet diameter; and a three-bladed tail rotor of 9 feet, 4 inches diameter.
SPECIFICATIONS: Gross Weight: 8,637 pounds. Empty Weight: 6,100 pounds. Length: 52 feet, 6 inches. Height: 13 feet, 7 inches.
PERFORMANCE: Maximum speed (Sea level): In excess of 197 knots. No other performance figures are available.
REMARKS: The UH-2 compound Seasprite helicopter 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 auxiliary jet engine added.

UH-19 CHICKASAW

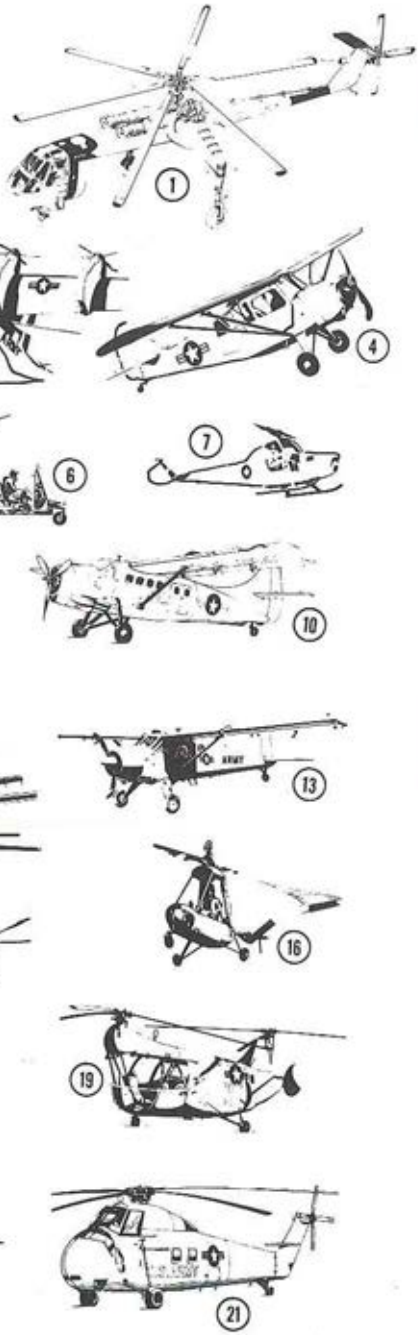
DESCRIPTION: Twelve-place utility and light tactical helicopter.
MANUFACTURER: Sikorsky Aircraft, Stratford, Connecticut.
POWER PLANT ("D"): One Curtiss-Wright R-1300-3 piston engine of 700 horsepower; the A and C models used a 550 horsepower Pratt & Whitney R-1340-57 engine.

ROTOR SYSTEM: Single three-bladed main rotor of 53 foot diameter; metal two-bladed tail rotor of 8 foot diameter.
SPECIFICATIONS: Fuselage length: 41 feet, 2 inches. Height: 15 feet, 6 inches. Empty weight: 5,250 lb. Gross weight: 7,500 lb.
PERFORMANCE: Max speed (SL): 98 knots. Cruising speed (SL): 80 knots. Service ceiling: 10,600 ft. Hover ceiling (OGE): 2,300 ft. Max range: 414 n.m. Endurance: 4.3 hrs. Rate of climb: 1,020 fpm.
REMARKS: The world's first transport helicopter and the first to be used for commercial scheduled service. Crew of two plus six litters and one medical orderly, or ten passengers. Since its initial procurement in Nov 1949, 355 Chickasaws were brought into the Army inventory through FY 1965.

WOTIZZ?

IT'S QUIK QUIZ #2.

Are you sharp in recognizing the not-so-well known aircraft designs that have graced our magazine pages over the years? If you can name either the model number or the year in which 12 of the 21 models pictured were produced, consider yourself an aviation intellectual. The answers appear on Page 113.



BELOW: Slope landing test.

UH-60A BLACK HAWK

BELOW: Hooking up at Fort Campbell

LEFT: 105mm howitzer in tow

DESCRIPTION: 14-place combat assault helicopter. Crew of three and 11 fully equipped troops, four stretcher patients, internal cargo, or 8,000 pounds of slung cargo.
MANUFACTURER: Sikorsky Aircraft, Stratford, Connecticut.
POWER PLANT: Two General Electric T-700 turboshaft engines of 1,543 shaft horsepower each.
ROTOR SYSTEM: Composite (titanium and fiber glass) four-bladed main rotor, 53' 8" diameter.
SPECIFICATIONS: Length: 50' ¾". Mission gross weight: 16,450 pounds. Gross weight: 20,250 pounds.
PERFORMANCE: Maximum speed: 160 knots. Hover ceiling (OGE): 10,400 feet; (IGE): 14,700 feet; service ceiling: 17,690 feet. Range: 429 nautical miles. Required endurance: 2.3 hours. Rate of climb: 450 feet per minute.
REMARKS: Following an extensive, exhaustive, and highly competitive test and evaluation, the Sikorsky UTTAS (Utility Tactical Transport Aircraft System) was selected by the Army from a field of five companies on December 23, 1976 with eventual production to exceed 1,100 aircraft. Now procured under a multiyear FY 82-84 contract, the UH-60A is in wide use in CONUS. A CSAC was fielded in USAREUR in '82. An '83 delivery to Korea will be followed by later WESTCOM and FORSCOM unit fieldings.

XH-15

DESCRIPTION: Four-place (pilot and three passengers) experimental observation-utility helicopter.
MANUFACTURER: Bell Helicopter Textron, Fort Worth, Texas.

POWER PLANT: One Continental XO-470-5 turbo-supercharged engine of 275 horsepower.
ROTOR SYSTEM: Single two-bladed rotor system, wooden blades, 36 feet, 10 inch diameter.
SPECIFICATIONS: Length: 43 feet. Gross weight: 2,700 pounds.
PERFORMANCE: Maximum speed (Sea level): 87 knots. Service ceiling: 20,000 feet. No other mission data is available in that only experimental work was completed.
REMARKS: In FY 1950, the Army Air Forces procured three Bell XH-15 helicopters for service test and evaluation. Because the aircraft never became a production article, many of the operational parameters were never firmly established. The XH-15 was designed as a high altitude helicopter for the USAF and was the first helicopter to incorporate a turbo-supercharged engine.

XH-17

DESCRIPTION: Three-place heavy lift research helicopter.
MANUFACTURER: Hughes Helicopters, Division of Summa Corporation, Culver City, California.

POWER PLANT: One TG-80 (J-36) modified gas turbine engine of 3,480 horsepower.
ROTOR SYSTEM: Single two-bladed metal main rotor of 168 foot diameter and 68-inch chord.
SPECIFICATIONS: Gross Weight: 47,500 pounds.
PERFORMANCE: This was a test aircraft and no performance data is available.
REMARKS: This was the first effort to prove to prove the feasibility and the advantages of jet power for rotary wing aircraft. Built and demonstrated by Hughes, the XH-17 was procured by the USAF in 1952 and flew numerous tests through 1955. All evaluation data was supplied to the Army with invaluable knowledge of jet engine installation, complex ducting, and pressurized structures being "fallout." The project was initially launched by Kellett Aircraft and and later taken over by Hughes Helicopters.

XH-51A

DESCRIPTION: Two-place developmental rigid-rotor compound research helicopter.
MANUFACTURER: Lockheed-California Company, Burbank, California.
POWER PLANT: One UA of Canada PT-6B-6 550 shp turbine engine; P&W J60-P2 turbojet of 2,900 lb/thrust for auxiliary propulsion.
ROTOR SYSTEM: Single four-bladed Lockheed rigid-rotor, 35' dia; 6' tail rotor.
SPECIFICATIONS: Fuselage length: 32 ft, 10 in. Height: 8 ft, 2 in. Empty wt: 4,000 lb. Gross wt: 4,500 lb. Retractable landing gear.
PERFORMANCE: Max speed (SL): 153 knots. Cruising speed (SL): 126 knots. Hover ceiling (OGE): 7,000 ft. Max range: 330 n.m. Endurance: 2.7 hrs. Rate of climb: 1,850 fpm.
REMARKS: The XH-51A compound helicopter was developed under a joint Army-Navy contract as a research vehicle for high performance rotary wing aircraft, completing its first flight in November 1962. The XH-51N

has PT6B-9 550 shp engine, three-bladed rigid rotor, gross weight of 3,500 lbs, and 2,650 lb. empty weight. Lockheed also developed a commercial model of the XH-51 designated as its Model 286.

YH-16

DESCRIPTION ("B") : 50-place tandem rotor, heavy cargo helicopter. "A" was 44-place aircraft first designated as the H-27.
MANUFACTURER: Piasecki Aircraft Corporation, Philadelphia, Pennsylvania.
POWER PLANT: Two T-56-A5 Allison turbine engines of 2,100 hp. Initial YH-16A (H-27) had two Allison T-38-A3 engines.
ROTOR SYSTEM: Tandem four-bladed metal fully-articulated rotor system. Diameter: 82 feet.
SPECIFICATIONS: Gross weight: 46,700 pounds.
PERFORMANCE: Cruise speed (Sea level): 125 knots. Service ceiling: 15,600 feet. Maximum range: 230 nautical miles.
REMARKS: The Army procured two Piasecki YH-16 cargo helicopters for test and evaluation purposes, the second H-16 being an "A" model employing the Allison T38 turbine engine. The project was terminated in 1956.

TEST YOURSELF!

More than 200 aircraft are pictured on the "Equipment Issue's" 120 pages. **Do you pride yourself on your aircraft recognition capability?** If so, turn to page 93 for **QUICK QUIZ #2.**

AH-64A APACHE

BELOW: The YAH-64 as it appears head on!

DESCRIPTION: Two-place, twin engine advanced attack helicopter.
MANUFACTURER: Hughes Helicopters, Culver City, California.
POWER PLANT: Two General Electric T-700 turboshaft engines of 1,543 shaft horsepower each.
ROTOR SYSTEM: Four-bladed articulated main rotor, 48 feet diameter, with static mast; four-bladed tail rotor.
SPECIFICATIONS: Gross weight: 18,500 lb. Length: 49'-5".
PERFORMANCE (Primary Mission): Cruise speed (SL): 145 knots TAS. Maximum forward speed: 196 knots. Sideards and readward: 45 knots. Max gross weight: 18,500 lbs. Endurance (Primary Mission): 1.83 hours. Endurance (SL): 2.5 hours. Sustained rate of climb: 3,000 fpm.
REMARKS: Selected after a competitive fly-off in June 1973, the APACHE received its production go aheadIN March '82 with first aircraft delivery expected in February '84. A potential anti-helicopter helicopter, the AH-64, with its TADS/PNVS acquisition and HELLFIRE missile systems, is regarded as "the most lethal and survivable helicopter in aviation history." With the latest countermeasures systems, withering firepower, and an around-the-clock capability, the APACHE, as an addition to the Combat Arms Team, is a formidable anti-tank weapon and a deadly deterrent to any enemy force.

YH-18A

DESCRIPTION: Four-place (pilot and three passengers) utility helicopter.
MANUFACTURER: Sikorsky Aircraft Division, Stratford, Connecticut.
POWER PLANT: One Franklin 0-425-1 piston engine of 245 horsepower.
ROTOR SYSTEM: Single three-bladed metal main rotor, 33 feet in diameter; two-bladed metal tail rotor of 5 feet, 5 inch diameter.
SPECIFICATIONS: Length: 35 feet. Height: 8 feet, 6 inches. Gross weight: 2,700 pounds. Four-wheel landing gear.
PERFORMANCE: Maximum speed (Sea level): 96 knots. Cruising speed (Sea level): 81 knots. Service ceiling: 13,800 feet. Hover ceiling (OGE): 1,100 feet. Maximum range: 351 nautical miles. Endurance: 3.5 hours. Rate of climb: 1,050 feet per minute.
REMARKS: The Army obtained four Sikorsky Aircraft YH-18A's for service test and evaluation in FY 1980.

YH-41 SENECA

DESCRIPTION: Four-place observation helicopter.
MANUFACTURER: Cessna Aircraft Company, Wichita, Kansas.
POWER PLANT: One Continental FSO-526 horizontally piston engine of 270 hp.
ROTOR SYSTEM: Single two-bladed metal main rotor, 35' ft dia. Two-bladed metal tail rotor, 7 ft. dia.
SPECIFICATIONS: Gross Wt: 3,000 lb. Empty wt: 2,050 lb. Length: 42' 5". Height: 8' 5".
PERFORMANCE: Max speed (SL): 107 knots. Cruise: 105 + knots. Hover ceiling: 14,500 ft. (OGE): 6,500 ft. Max range: 357 nm. Endurance: 3.37 hrs. Rate of climb: 1,030 fpm.
REMARKS: The Army procured ten H-41 helicopters in 1957 for high altitude operation test and evaluation. None were boughtafter that date. The initial two YH-41 of the evaluation quantity went to Edwards AFB; the remainder were sent to Ft. Rucker.

In Dec '57 a YH-41, with Army CPT James E. Bowman as pilot, broke the then world altitude records for helicopters in two categories (under 2,204 lbs. and unlimited weight) reaching approximately 30,300 feet.

YHC-1

DESCRIPTION: 28-place medium transport helicopter.
MANUFACTURER: Boeing Vertol Division, Morton, Pennsylvania.
POWER PLANT: Two General Electric Company T58-6 turbine engines of 1,050 shaft horsepower each.
ROTOR SYSTEM: Tandem three-bladed rotor system. The rotor diameter was 48 feet, 4 inches.
SPECIFICATIONS: Gross Weight: 18,700 pounds. Empty Weight: 11,716 pounds. Length: 44 feet, 7 inches. Height: 16 feet, 10 inches.
PERFORMANCE: Maximum speed (Sea level): 147 knots. Cruise speed (Sea level): 136 knots. Service ceiling: 13,700 feet. Hover ceiling (OGE): 6,500 feet. Maximum range: 132 nautical miles. Rate of climb: 1,700 feet per minute.
REMARKS: The U.S. Army procured three YHC-1's in 1959 for service test and evaluation. Engineering and operational data obtained from this aircraft led to the later development of the company-funded Boeing 107, the CH-46, and the CH-47 Chinook.

YUH-1B

DESCRIPTION: High Performance Research compound helicopter.
MANUFACTURER: Bell Helicopter Textron, Fort Worth, Texas.
POWER PLANT: One Lycoming T53-L-11 turbine engine of 1,100 shaft horsepower and two J69-T27 turbojet engines of 1,260 pound/thrust each.

ROTOR SYSTEM: Single two-bladed main rotor with tapered blade tips, 44 foot diameter. Two-bladed tail rotor.
SPECIFICATIONS: Basically the UH-1B with modifications for mounting the two turbojet engines, two stub wings, and additional fairings around the mast and cross tubes. Overall length: 53'. Fuselage length: 42' 7". Height: 12' 8".
PERFORMANCE: The YUH-1B was flown in excess of 219 mph in level flight during 1963-1964 time frame.
REMARKS: Developed under a joint Bell-U.S. Army Transportation Research Command (TRECOM), the YUH-1B test bed flew with a three-bladed rigid rotor, three-bladed gimbal-mounted rotor, and standard semi-rigid rotor.

RSRA

DESCRIPTION: Multi-purpose 3-place flying test bed designed to flight test current and advanced rotor systems.
MANUFACTURER: Sikorsky Aircraft, Stratford, Connecticut.

POWER PLANT: Two GE T58-GE-5 turbines of 1,400 horsepower each. Compound has two auxiliary TF34-GE-400A turbofans with 9,275 lb. maximum thrust.
ROTOR: 5-bladed, 62 feet diameter; 5-bladed, 10.67 feet diameter tail rotor.
SPECIFICATIONS: Span: 45'-½". Fuselage length: 70'-7". Height: 17'-10". Design gross weight: 18,400 lb. Yankee extraction seat. Controls: Fly-by-Wire Primary with Mechanical Back-up. Compound: 26,200 lb. design gross weight.
PERFORMANCE: Maximum speed (Sea level): 160 knots. RSRA Compound: 300 knots.
REMARKS: RSRA represents a significant advance in R/W technology by virtue of its adaptability to a wide variety of gimbaled, articulated, and hingeless rotors. RSRA is the first R/W aircraft to be built with a blade severance/ crew escape system.

UNFLYABLES

RIGHT: Not a gag but a real nuts-and-bolts creation of the Maintenance Section of "The Real Cal" — B Troop, 7/17th Air Cavalry Squadron. The "OH-6C" underwent a few additions (nose gun and side-by-side rocket pods) while "The Real Cav" was in the Pleiku area in early 1972. CWO Bill C. Walton submitted the photograph of this "Unflyable."

LEFT: Tested with heavy ground fire in late '70, a full-scale mockup of Sikorsky Aircraft's Aerial Armored Reconnaissance Vehicle (AARV) passed the test! Both armor-piercing and ball projectiles were used with the armor plate being dented, but not penatrated. The impact of the projectiles can be seen on the AARV's lower front fuselage.

HZ-1DE PLATFORM

VZ-7AP JEEP

XC-142A TILT-WING

V/STOL, JEEPS, AND GEMS

1982 EQUIPMENT ISSUE

VZ-1E FLYING PLATFORM

Greater mobility for the individual soldier on scouting missions was the object of this '55 Hiller vehicle. A ducted fan, powered by three 40 hp Nelson engines, provided lift. Known as the Pawnee, the VZ-1 weighed 465 pounds.

VZ-2PH TILT WING

This Vertol VTOL (commercially called the Model 76) completed full transition from vertical takeoff to cruise and back in July 1958. Its interconnected propellers were powered by a 600 hp Lycoming turbine (T53-L-1A).

VZ-3RY DEFLECTED SLIPSTREAM

Called the Vertiplane by Ryan, the VZ-3 employed two propeller-deflected slipstreams aided by a high-flapped wing. Its interconnected propellers were powered by a T-53-L-Lycoming 825 hp turbine in the fuselage.

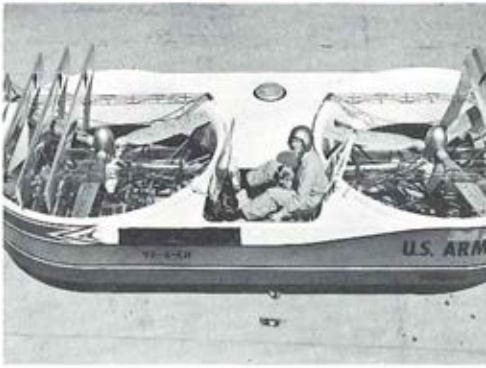
VZ-4DA DUCTED PROPELLERS

The Doak Aircraft two-place convertiplane's ducted props in its wing-tips rotated through 90° to convert the plane in flight. The Model 16 used one 825 hp T-43-L-1 turbine engine with its interconnected propellers.

VZ-5FA DEFLECTED SLIPSTREAM

This one-place research aircraft by Fairchild achieved VTOL by deflecting the slipstream downward by means of a high-flapped wing. Four interconnected props were powered by

VZ-6CH DUCTED PROPELLERS



A single place research aircraft designed by Chrysler to explore the aerial jeep concept. The shafting from a single 380 horsepower reciprocating engine transmitted the power

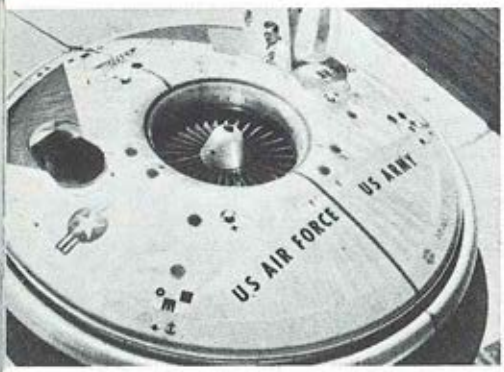
VZ-7AP DUCTED FAN

This aerial jeep research vehicle was originally designed and constructed by the Curtiss-Wright Corporation and utilized four ducted fans. Later, the ducts were removed. Power came from one Artouste II turbine engine.

VZ-8PB DUCTED FAN

An aerial jeep powered by two Artouste II turbine engines. Built by Piasecki Aircraft, the VZ-8PB derived lift from two three-bladed rotors. An earlier version, utilizing a single turbine, made its first flight in 1958.

VZ-9A AVROCAR GEM

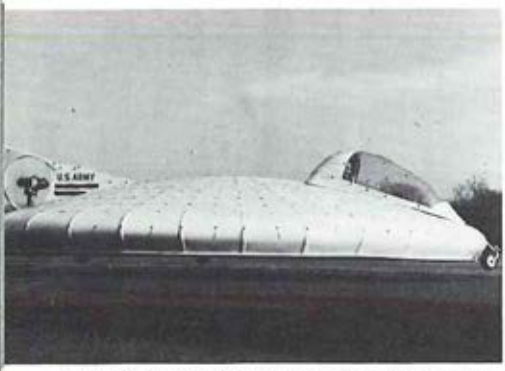


Designed to explore VTOL techniques, this vehicle operated in ground effect only. Developed by AVRO Aircraft of Canada, the VZ-9A Ground Effects Machine was a joint project of the U.S. Army and the USAF.

CURTISS-WRIGHT AIRCAR

A four-place Ground Effects Machine (GEM) designed by the Curtiss-Wright Corporation to skim six to 12 inches off the ground at speeds up to 35 mph. Two of these machines were bought "off-the-shelf" for research.

PRINCETON GEM



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

HZ-1DE FLYING PLATFORM

Another flying platform design, the DeLackner provided data on an unducted propeller concept. A later version used metal skids instead of outriggers — inflated bags. A 4 hp Mercury Mark 55 marine outboard engine.

VZ-10 (XV-4A) HUMMINGBIRD

DESCRIPTION: Experimental augmented jet ejector VTOL aircraft.
MANUFACTURER: Lockheed-Georgia Company, Marietta, Georgia
POWER PLANT: Two Pratt & Whitney JT-12 turbo jets of 3,300 lbs. thrust each with 40% augmentation for a total of 8,300 lbs. thrust in the VTOL mode.
LIFT SYSTEM: The aircraft achieved 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. Bomb bay-type doors in the top and bottom of the fuselage opened to expose the mixing chambers and nozzles.
SPECIFICATIONS: Span: 25' 10". Length: 33'. Height: 11' 9". Empty wt: 5,000 lb. VTOL gross wt: 7,200 lb.
PERFORMANCE: Max speed (SL): 579 knots. Service ceiling: 50,000 ft. Max range: 1,059 nm. Rate of climb: 18,000 fpm.
REMARKS: The Army procured two test models; one was destroyed in an accident. In mid-1966, the USAF took over XV-4A operational control.

XV-5A VERTIPLANE

DESCRIPTION: Experimental fan-in-wing aircraft.
MANUFACTURER: Ryan Aeronautical Company, San Diego, California.
POWER PLANT: Two GE J85-5 turbines of 2,650 shaft horsepower 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 feet, 9 inches. Height: 14 feet, 8 inches. Empty weight: 7,500 pounds. VTOL Gross weight: 12,500 pounds. STOL Gross weight: 15,500 pounds.
PERFORMANCE: Maximum speed (Sea level): 478 knots. Cruising speed (30,000 feet): 386 knots. Service ceiling: 45,000 feet. Hover ceiling (OGE): 12,000 feet. Maximum range: 1,381 nautical miles. Rate of climb: 9,500 feet per minute.
REMARKS: Two XV-5As were built under the Army program; one being destroyed in an accident. Transition to forward flight was accomplished by vectoring control vanes (louvers) mounted under the back wing fan.

XV-6A
HARRIER

DESCRIPTION: One-place vectored thrust V/STOL strike-reconnaissance fighter aircraft (First designated the P.1127, then the "Kestrel", the the Harrier.)
MANUFACTURER: Hawker Siddeley Aviation, Ltd., Kingston-Upon-Thames, England.
POWER PLANT: One Bristol Siddeley Pegasus engine of 15,500 pounds/thrust.
SPECIFICATIONS: Span: 22 feet, 10 inches. Length: 42 feet, 4 inches. Height: 10 feet, 8 inches. Empty weight: 13,159 pounds. Gross weight: 23,500 pounds.
PERFORMANCE: Maximum speed (Sea level): Mach + . Cruise speed (Sea level): 0.89 Mach. Cruise speed, 10,000 feet: 0.90 Mach. Service ceiling: 45,000 feet. Maximum range: 1,992 nautical miles. Endurance: 2.75 hours. Rate of climb: 13,000 feet per minute.
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 underwent tri-service evaluation in the U.S. in early 1966. A later version has been employed by the USMC. The aircraft has exceeded the speed of sound in forward flight.

XV-8A
FLEEP

DESCRIPTION: One-place flex-wing utility man-carrying vehicle designed to demonstrate the para-glider concept.
MANUFACTURER: Ryan Aeronautical Company, San Diego, California.

POWER PLANT: One Continental pusher piston engine of 210 horsepower.
SPECIFICATIONS: Span: 33 feet, 5 inches. Length: 26 feet. Empty weight: 1,029 pounds. Gross weight: 2,359 pounds.
PERFORMANCE: Maximum speed (Sea level): 71 knots. Cruising speed (Sea level): 48 knots. Maximum range: 153 nautical miles.
REMARKS: Developed and wind-tunnel proven by Francis M. Rogallo, a NASA aeronautical engineer at the Langley Research Center, the paraglider began as a flexible, high performance tail-less toy kite. Later, Ryan Aeronautical was awarded a 30-hour flight test contract to prove the flight envelope with the first flight being completed in March 1961. The hang-gliders in use today stem from the development of the Rogallo Wing and Army-funded R&D on this program.

SURVIVABILITY

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- A new restraint system together with a lamb's fur covered and specially contoured multi-foamed cushion was also developed to provide maximum comfort and safety for U.S. Army pilots.

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XV-9A
HOT CYCLE

DESCRIPTION: Two-place hot cycle research helicopter.
MANUFACTURER: Hughes Helicopters, Culver City, California.
POWER PLANT: Two General Electric Company YT64 gas generators with the main rotor being driven by tip propulsion.
ROTOR SYSTEM: Single three-bladed main rotor. Rotor diameter: 55 feet.
SPECIFICATIONS: Fuselage Length: 45 feet. Height: 12 feet. Empty weight: 8,600 pounds. Gross weight: 15,300 pounds. Overload gross weight: 25,500 pounds.
PERFORMANCE: Maximum speed (Sea level): 121 knots. Cruising speed (Sea level): 80 knots. Cruise speed, 5,000 feet: 80 knots. Service ceiling: 17,300 feet. Hover ceiling (OGE): 13,200 feet. Rate of climb: 2,000 feet per minute.
REMARKS: In September 1962, the Army procured one XV-9A for research and evaluation. Fuselage-mounted turbojets supplied high energy gas through ducts to the blade tips to drive the rotor. Light ducting was substituted for heavy, complex power turbines, gear boxes, shafting, and tail rotor.

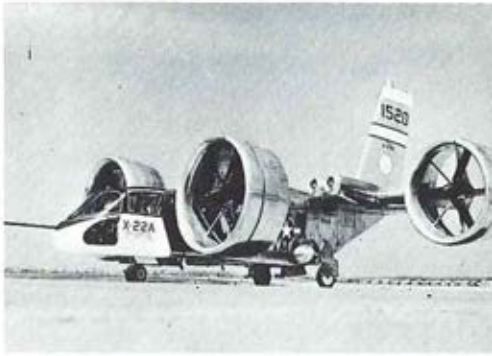
X-19
TILT WING

DESCRIPTION: Six-place high-wing tilt-prop experimental V/STOL aircraft.
MANUFACTURER: Curtiss-Wright Corporation, Wood-Ridge, New Jersey.
POWER PLANT: Two Lycoming T55-L-7 turbine engines of 2,650 shaft horsepower each mounted at the top of the aft fuselage.

PROPELLERS: Four Curtiss-Wright plastic 3-bladed propellers cross-shafted and mounted on the ends of two stub wings. 13 foot diameter.
SPECIFICATIONS: Span: 34 feet, 6 inches. Length: 44 feet, 5 inches. Height: 17 feet. Empty weight: 9,750 pounds. Gross weight in VTOL mode: 13,660 pounds. Gross weight in STOL mode: 14,750 pounds.
PERFORMANCE: Maximum speed at sea level: 403 knots. Cruising speed at sea level: 350 knots. Maximum range: 599 nautical miles. Rate of climb: 3,250 feet per minute. Other performance data unavailable.
REMARKS: Two X-19 aircraft were procured under a tri-service test and evaluation contract managed by the U.S. Air Force. Prior to termination of the program, one X-19 was destroyed in an accident in late 1965.

X-22A
DUCTED FAN

DESCRIPTION: Eight-place V/STOL research aircraft.
MANUFACTURER: Bell Aerosystems Company, Buffalo, New York.
POWER PLANT: Four General Electric YT58-GE-8D turboshaft engines of 1,250 horsepower each mounted on aft wing.
PROPELLERS: Four three-bladed Hamilton Standard cross-shafted propellers of 7-foot diameter each.
SPECIFICATIONS: Span: 39.2 feet. Length: 39.6 feet. Height: 20.7 feet. VTOL gross weight: 16,274 pounds.Maximum gross: 18,016 pounds. STO over 50 feet. obstacle: 720 feet.
PERFORMANCE: Maximum speed (Sea level): 282 knots. Hover ceiling: 11,000 feet. Range: VTOL, 523 nautical miles; STOL, 788 nautical miles. Endurance: 4.4 hours.
REMARKS: Tri-service program under a Navy-administered contract. Roll-out took



place on May 25, 2965 with maiden hovering flight on March 17, 1966. STOL completed on June 30, 1966 with first VTOL, transition to conventional flight, and return to VTOL on March 1, 1967.

XC-142A
TILT WING

DESCRIPTION: 35-place, tilt-wing, deflected slipstream V/STOL medium transport aircraft.
MANUFACTURER: LTV Aerospace Corporation, Dallas, Texas.
POWER PLANT: Four General Electric T64-6 turboprops of 3,080 shaft horsepower each.
PROPELLERS: Four four-bladed Hamilton Standard cross-shafted propellers of 15' 6" diameter each. Three-bladed tail rotor for longitudinal control at low speeds.
SPECIFICATIONS: Span: 67 feet, 6 inches. Length: 58 feet. Height: 26 feet. Empty weight: 23,000 lb. Gross weight, STOL: 41,500 lb. Gross weight, VTOL: 37,500 lb.
PERFORMANCE: Maximum speed (Sea level): 377 knots. Cruise speed (Sea level): 250 knots. Cruise speed, 10,000 feet: 303 knots. Service ceiling: 25,000 feet. Hover ceiling (OGE): 6,000 feet. Maximum range: 529 nautical miles. Endurance: 6.5 hours. Rate of climb: 6,800 feet per minute.
REMARKS: Five XC-142A's were built under a tri-service developmental program with Hiller Aircraft and the Ryan Aeronautical Company as associate contractors.

ABC (XH-59A)

DESCRIPTION: Advancing Blade Concept (ABC) research helicopter.
MANUFACTURER: Sikorsky Aircraft, Stratford, Connecticut.
POWER PLANT: Twin P&W PT6 engines of 1,825 hp each. Aux propulsion: two outboard P&W J60 engines with 3,000 lb. add'l thrust.
ROTOR SYSTEM: Two three-bladed, counter-rotating, coaxial, rigid rotors, 36 ft. dia.
SPECIFICATIONS: Overall length: 41'-5". Height: 12'-11". Design gross weight: 9,000 lb; aux. version: 11,100 lb.
PERFORMANCE (Aux): Max speed (SL): 160 kph (Aux: 437 kph). Service ceiling: 14,000 feet. Hover ceiling: 6,700 feet.
REMARKS: Currently a tri-Service/ NASA-Sikorsky-funded program. ABC flight testing began July 1975 with modification into a compound following. In April 1980 the compound reached 237 miles per hour. ABC's counter-rotating rotors on a common main shaft permit the advancing side of both rotor discs to generate lift, offering the potential of 300 knot speeds without the need of a wing to offload the rotor and the need for a tail rotor.

XV-15

DESCRIPTION: NASA/ Army/ Navy tiltrotor research aircraft. 20 troops plus crew.
MANUFACTURER: Bell Helicopter Textron, Fort Worth, Texas.
POWER PLANT: Three GE T700 turbines.

ROTOR SYSTEM: Two three-bladed semi-rigid tilt-rotors of 25 foot diameter each.
SPECIFICATIONS: Fuselage length: 42'-1". Span: 32'-2". Height: 15'-4". Max gross weight: 15,000 lb. Design gross weight: 13,000 lb. Empty weight: 9,700 lb.
PERFORMANCE: Model D303 max speed (SL): approx. 300 knots. At 20,000 normal cruising altitude, cruise speed is 265 knots. One engine inoperative service ceiling: 16,000 feet at 260 knots. Two engines inoperative: 180 knots at low altitudes.
REMARKS: In April 1973, Bell received a NASA-Army contract to design, manufacture, and test two tilt-rotor aircraft, and to determine the tilt-rotor technology's potential for civil and military applications. The Navy joined the program in 1979. Rollout, 1976; first flight, 1977; first airplane mode flight, 1979. Tri-engine growth version (D303), June 1982.

HERE ARE THE ANSWERS TO QUIZ QUIZ #2

- 1. SIKORSKY AIRCRAFT.....CH-54 FLYING CRANE (HLH).....1964
- 2. BOEING AIRPLANE CO.....L-15 SCOUT (OBSERVATION AIRCRAFT)....1947
- 3. LTV AEROSPACE CORP.....XC-142A TILT-WING (MEDIUM TRANSPORT AIR-CRAFT).....1964
- 4. TAYLORCRAFT MANUFACTURING..L-2 GRASSHOPPER (LIAISON AIRCRAFT)...1941
- 5. BOEING VERTOL CO.....CH-47 CHINOOK (MED LIFT HELICOPTER).....1962
- 6. SIEBEL HELICOPTER CO.....H-24 (OBSERVATION HELICOPTER).....1951
- 7. CESSNA AIRCRAFT CO.....YH-41 SENECA (UTILITY HELICOPTER).....1957
- 8. PIPER AIRCRAFT CORP.....L-14 (OBSN—MED EVAC AIRCRAFT).....1947
- 9. SIKORSKY AIRCRAFT.....CH-37 MOJAVE (MED CARGO HELICOPTER)...1956
- 10. DE HAVILLAND AIRCRAFT.....U-1A OTTER (GENERAL UTIL AIRCRAFT).....1955
- 11. BELL HELICOPTER.....OH-13 SIOUX (OBSN—MED EVAC HCPTR)....1946
- 12. BEECH AIRCRAFT CORP.....U-8F SEMINOLE (UTIL, COMMAND, LIAISON)1952
- 13. DE HAVILLAND AIRCRAFT.....U-6 BEAVER (GENERAL UTILITY AIRCRAFT)1951
- 14. HUGHES HELICOPTERS.....TH-55 OSAGE (PRIMARY TRAINER).....1964
- 15. PIASECKI AIRCRAFT CORP.....CH-21 SHAWNEE (CARGO HELICOPTER).....1950
- 16. AMERICAN HELICOPTER CO.....H-26 (OBSN—RECON AIRCRAFT).....1952
- 17. RYAN AERONAUTICAL CO.....XV-8A FLEEP (FLEX-WING PARAGLIDER).....1961
- 18. HUGHES HELICOPTERS.....OH-6 CAYUSE (LIGHT OBSN HELICOPTER)...1965
- 19. McCULLOCH MOTORS CORP....H-30 (OBSERVATION HELICOPTER).....1952
- 20. AERO COMMANDER.....U-9 (UTIL, COMMAND, LIAISON ACRFT)....1953
- 21. SIKORSKY AIRCRAFT.....CH-34 CHOCTAW (LIGHT TACT TRANSPORT)..1955

DECEMBER 1982 CHANGES OF ADDRESS AND RESIDENCE AND MILITARY PCS (PERMANENT CHANGE OF STATION)

Takeoffs - PCS

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How did more than 12,000 Army Aviators share over $2 million during the past 23 years?

They received more than $2 million in flight pay claims under the AAAA-endorsed Flight Pay Insurance Plan (FPPP).

What are your flight pay insurance plan benefits if you are grounded?

Basic Plan

Provides you with TAX-FREE indemnity payments of 80% of your current flight pay, payable each month for up to 12 months if you become grounded for illness, an ordinary accident, or a military aviation accident caused by combat action . . .and pays you up to 24 months if you are grounded for a military aviation accident not caused directly or indirectly by war or an act of war.

Added Benefit Plan

DOUBLES your standard 12 and 24 month indemnity payment periods for only about one-third more than the cost of the basic coverage.

If you choose the ADDED BENEFIT option, benefits are payable to you each month for up to 24 months if you are grounded for illness or ordinary accident or military aviation accident caused by combat action, and for up to 48 months for groundings caused by military aircraft accident not caused directly or indirectly by war or act of war.

This optional coverage, together with the plan's graduated premium scale, provides you with the maximum flight pay income protection during the years when your financial obligations are greatest.

Combat Coverage

This is all-risk combat protection against illness, wounds, an aircraft accident, or anything that's caused by a combat action with indemnities payable for up to 24 months.

Indemnities are tax-free

Your monthly indemnity checks - in the amount of 80% of your flight pay, are TAX FREE under Sec. 1.104 (d) (3) of the 1954 Internal Revenue Code. This means that your income checks are roughly equivalent to the TAXABLE flight pay income you'd normally receive from the government.

WHAT ARE THE FPPP DEATH BENEFITS?

Life Insurance

Monthly indemnity payments equal to 80% of your current flight pay will be paid to your beneficiary each month for the period shown below. The payment period is determined by your age at time of death.

Under 30	4 years
30 — 34	6 years
35 — 39	5 years
40 — 44	4 years
45 — 50	3 years
51 — 55	2 years

Exclusive Death Benefit

This death benefit — an exclusive feature of AAAA-endorsed Flight Pay Insurance — is paid to your beneficiary in the event of your natural or accidental death, except death sustained in a military aviation accident caused directly or indirectly by war or an act of war, or by hostile, police, or civil action or invasion, or resulting civil commotion or riots, or suicide, while sane or insane, within two years of effective date.

Premium Options

Premiums are payable annually, semi-annually, quarterly, or monthly by government allotment. If you select government allowment as your mode of payment, submit two month's premium along with your application. Contact your Finance Officer for Form DA 1341 to apply for the allotment.

Rates for AAAA-Endorsed Flight Pay Insurance

The Annual Premium Paid is based on a percentage of one's Annual Flight Pay

Age of Insured	Basic Protection Plan	Added Benefit Plan
Under 30	2½%	3¼%
Age 30 and Over	3½%	4¼%

Pre-Existing Illnesses

After 12 months of continuous coverage, the policy guarantees protection against groundings due to ANY AND ALL illnesses, even those pre-existing your first date of coverage, provided that your coverage is renewed from term to term without lapse.

Other facts about FPPP

All policies are dated on the first day of the month after the month in which the application is postmarked, and protection against grounding due to all accidents starts as of that date. Protection against grounding due to illness begins 30 days later.

Officer/Warrant Officer Flight Pay

Under 2 years	$125
Over 2 years	156
Over 3 years	188
Over 4 years	206
Over 6 years	400

Commissioned Officers

Over 18 years	$370
Over 20 years	340
Over 22 years	370
Over 24 & Under 25	280
Over 25*	250

*If an O-6 or under and in an operational flying job.

EXCLUSIONS

The insurance under the program shall not cover any loss to any Insured Person resulting in whole, in part from, or due to any of the following:

1. Criminal act of the Insured, or from injury occasioned or occurring while in a state of insanity, temporary or otherwise.

2. "Fear of flying," as officially certified by responsible head of the Insured's Service in accordance with ap-

plicable regulations.

3. Anxiety neuroses, mental or nervous disorders, dizzy spells, or loss of consciousness that are not accompanied by any organic symptoms or ailments.

4. Alcohol, drugs, venereal disease, arrest or confinement.

5. Disability caused by intentional self-injury, attempted suicide, or criminal assault committed by the insured, or fighting, except in self-defense.

6. Failure to meet flying proficiency standards as established by the insured's Service, unless caused by or aggravated by or attributed to physical disqualification, including sickness or accidental bodily injury.

7. Inability of the insured to meet the physical standards for Hazardous Flight Duty because of a revision in those standards, rather than because of disease or accidental bodily injury causing a change in the physical condition of the insured.

8. Voluntary removal or suspension from Hazardous Flight Duty

9. Willful violation of flying regulations resulting in suspension from flying, as a punitive measure, or as adjudged by responsible authority of the insured's Service.

10. Sentence to dismissal from the Service by a general court martial, submitted resignation for the good of the Service, or suspension from flight duty for administrative reasons not due to disease or accidental bodily injury.

11. An accident while riding, flying, or driving in any kind of a race.

12. Primary duty requiring parachute jumping.

13. Due to accidental bodily injury sustained before the effective date of an insured's coverage under the program.

14. Caused by illness or disease which arose or was contracted before or within 30 days after the effective date of an insured's coverage under the program, or a recurrence of such disability, whether or not a waiver has been authorized by appropriate medical authority in accordance with regulations or directives of the Service concerned, unless the insured has been covered for twelve consecutive months immediately prior to the date disability commenced.

FPPP PREMIUM TABLE INSUREDS UNDER AGE 30

AAAA-Endorsed Life Insurance/Flight Pay Protection Plan

If Monthly Flight Pay	Your Annual Flight Pay	Your Annual Prem. Rate	Your Semi-Annual Prem.	Your Quarterly Prem.	Your Gov't Allot. Prem.
$125	$1,500	$37.50	$19.75	$10.38	$3.38
Added	Benefit	$48.75	$25.38	$13.19	$4.31
$156	$1,872	$46.80	$24.40	$12.70	$4.15
Added	Benefit	$60.84	$31.42	$16.21	$5.32
$188	$2,256	$56.40	$29.20	$15.10	$4.95
Added	Benefit	$73.32	$37.66	$19.33	$6.36
$206	$2,472	$61.80	$31.90	$16.45	$5.40
Added	Benefit	$80.34	$41.17	$21.09	$6.95
$400	$4,800	$120.00	$61.00	$31.00	$10.25
Added	Benefit	$156.00	$79.00	$40.00	$13.25

FPPP PREMIUM TABLE FOR AGE 30 AND OVER

AAAA-Endorsed Life Insurance/Flight Pay Protection Plan

$156	$1,872	$60.84	$31.42	$16.21	$5.32
Added	Benefit	$88.92	$45.46	$23.23	$7.66
$188	$2,256	$73.32	$37.66	$19.33	$6.36
Added	Benefit	$107.16	$86.08	$27.79	$9.18
$206	$2,472	$86.52	$44.26	$22.63	$7.46
Added	Benefit	$117.42	$59.71	$30.36	$10.04
$250	$3,000	$105.00	$53.50	$27.25	$9.00
Added	Benefit	$142.50	$77.25	$36.53	$12.13
$280	$3,360	$117.60	$59.80	$30.40	$10.05
Added	Benefit	$159.60	$80.80	$40.90	$13.55
$310	$3,720	$130.20	$66.10	$33.55	$11.10
Added	Benefit	$176.70	$89.35	$45.18	$14.98
$340	$4,080	$142.80	$72.40	$36.70	$12.15
Added	Benefit	$193.80	$97.90	$49.45	$16.40
$370	$4,440	$155.40	$78.70	$39.85	13.20
Added	Benefit	$210.90	$106.45	$53.73	$17.83
$400	$4,800	$168.00	$85.00	$43.00	$14.25
Added	Benefit	$228.00	$115.00	$58.00	$19.25

APPLICATION FOR FLIGHT PAY PROTECTION PLAN COVERAGE
Ladd Agency, Inc., 1 Crestwood Road, Westport, Conn. 06880

Rank/Grade Name ASN Yrs Svc for Pay

Address

City State ZIP Date of Birth

I have enclosed a check or money order made payable to LADD AGENCY, INC. for the correct premium and understand that coverage under the FPPP is to become effective on the first day of the month after the month in which I make application for the coverage.

I certify that I am currently on flying status in an Active U.S. Army or ARNG USAR unit, am entitled to receive incentive pay, and that to the best of my knowledge I am in good health and that no action is pending to remove me from flying status for failure to meet the required physical standards of the service.

Signature Date

NOTE: This coverage is only made available to AAAA members. I am a current member of the AAAA.
I am not a current member of the AAAA but have enclosed my $15.00 initial year AAAA Dues.

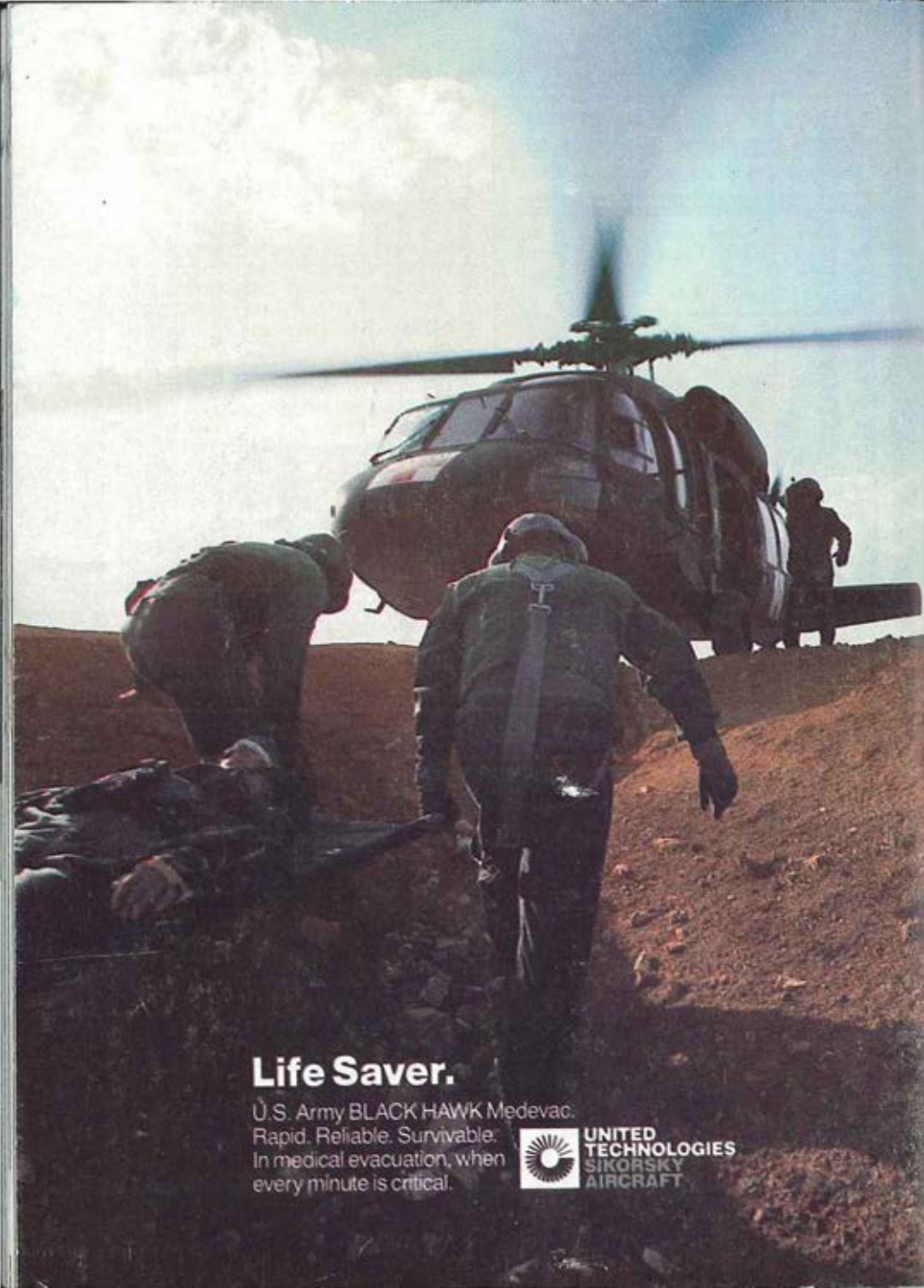
Annual Flight Pay Premium Mode

Beneficiary

Relationship to Insured

HERE'S HOW TO TO OBTAIN COVERAGE

1. Complete the application form in its entirety, selecting your premium payment mode. Consult the premium table to determine your appropriate premium.
2. Make your check or money order payable to LADD AGENCY in the amount of the correct premium.
3. Mail your check and this application form to LADD AGENCY, 1 Crestwood Road, Westport, Conn. 06880.
4. Allow 2-3 weeks for the delivery of your individual policy of insurance.
5. Consider that your FPPP coverage begins on the first day of the month after the postmark month in which you make application for the coverage.


Life Saver.
U.S. Army BLACK HAWK Medevac.
Rapid. Reliable. Survivable.
In medical evacuation, when
every minute is critical.
UNITED
TECHNOLOGIES
SIKORSKY
AIRCRAFT