

KAMAN

Rotor Tips



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Rotor Tips

Volume VI Number 2

ON THE COVER

Shown is SEALITE — latest of the H-2's. The Kaman-designed helicopter is part of a unique team proposed for the Navy LAMPS program.

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Unique Helicopter Family Proposed for Lamps

By Bruce A. Goodale, Program Manager
- and -
Robert J. Gilson, Director, Systems Development

"SEALAMP" and "SEALITE"—two versions of the twin-engine UH-2C—have been proposed by Kaman Aerospace Corp for consideration in the U. S. Navy LAMPS program. Now in its Concept Formulation stage, the Navy program is aimed at developing a Light Airborne Multi-Purpose System utilizing helicopters for a variety of missions while operating from, and extending the capabilities of, destroyers and escort vessels. As envisioned, these helicopters would be used for anti-submarine warfare (ASW), cruise missile defense (CMD), and utility work.

As suggested by Kaman, SEALAMP would be a UH-2C configured as LAMPS for use on larger ships, while SEALITE, a lightweight version, would be utilized on smaller vessels. The Naval Air Development Center at Johnsville, Pa., has been given the task of formulating the Proposed Technical Approach for this program.

The ASW mission usually involves: re-detection of a target that has been initially located by the ship's sonar or some other means; localization of this target; classification; attack by the helicopter's torpedoes or depth charges as dictated by circumstances. The CMD mission normally consists of: search beyond the ship's radar horizon to locate missile-launching vessels or incoming long-range cruise missiles; identification of the threat; airborne early warning for the fleet; attack of the missile or its launching platform, or use of Electronic Counter Measures (ECM) to jam or decoy the missile, when justified.

A helicopter with the proven capabilities of a UH-2C is required to carry the equipment needed to most effectively perform ASW or CMD missions. The new DX series (recently designated DD-963 class) of destroyer is already being designed to carry two UH-2C's. This circumstance would seem the obvious answer for the LAMPS requirement on the DX—especially since early deploy-



USN Photos by COMCRUDESAC

ment is desired. In addition, there are approximately a dozen of the new DE-1040 class escort ships and about six new guided missile escorts (DEG-1 class) now in operation. Commissioning of 46 new DE-1052 class escorts is scheduled to begin this year. All of these ships should carry LAMPS, but their decks and hangars will not accept helicopters of the weight and size of the UH-2C without considerable modification. The only light helicopters available are about 5,000 pounds gross weight or less, and cannot carry an effective complement of mission equipment for both search and attack. If such a "marginal" aircraft were to be procured for the smaller vessels, and also used on the larger ships, the capabilities of the larger vessels would be compromised rather than enhanced. On the other hand, procuring two

ASW
MISSION



C M D MISSION



completely different LAMPS helicopters for the different sized vessels without commonality of parts, would increase the program costs and put a tremendous burden on the logistics and supply systems, as well as on training.

After analyzing the problem from a Systems approach, Kaman has proposed the UH-2C and its smaller light-weight version as the most cost-effective team solution.

The SEALAMP is the up-rated UH-2C now under contract with the Navy. Kaman's tests show that the maximum take-off gross weight of this helicopter is 12,800 pounds. New production of this aircraft would utilize twin T58-GE-10 (or -5) engines and all the new improvements now being considered by the Navy for incorporation. These would include the new "101" rotor system for higher performance, simplified controls for improved reliability and maintenance, and up-dated navigation and communication equipment.

Experience in operating UH-2's in the salt air environment from non-aviation ships governs the design and development of the SEALITE helicopter. The aircraft will utilize nearly all of the dynamic components of the UH-2C and, basically, wrap a new fuselage around them. The SEALITE will use only three of the UH-2C's four main "101" rotor blades, the same tail rotor, the same main transmission, the same tail rotor gear boxes, the same drive shafting, and to a large extent the same flight control, electrical and hydraulic systems. The fuselage and landing gear will be new, the three-bladed main rotor hub will be new, and a new lighter twin powerplant will be used (the Navy's PT6T Twin-Pac). All of the recommended UH-2C improvements for maintainability will be incorporated. This interchangeability of dynamic components between the SEALITE and SEALAMP systems offers a unique commonality of logistics support already in fleet-wide inventory. This, of course, minimizes the problems usually associated with operating two different helicopters or introducing a new one. In addition, it is the rotor and transmission systems which are usually the causes for high helicopter development costs and long schedules, and these items are already developed, proven and in production. Kaman is confident that the SEALITE can complete contractor and Navy tests, and be introduced into the fleet, within 20 months from contractual go-ahead.

The SEALITE will have an empty weight of 4,500 pounds, without avionics or mission equipment. Kaman anticipates that the decks of the smaller escort vessels can accommodate helicopters of up to 8,000 pounds gross weight, thus enabling the SEALITE to carry up to 3,500 pounds of mission equipment, avionics, crew and fuel, and perform the most effective missions the decks will allow. In fact, with its surface-to-air refueling provisions and fuel dumping capability, the aircraft could take off and then fuel to a higher gross weight for anticipated longer missions—or based on normal load factors, it could take off at a higher gross weight than that allowed for landing. The maximum gross weight to which the SEALITE

will initially be qualified is 8,800 pounds. With an internal fuel capacity of 1,600 pounds, this will allow more than three hours of fuel, or additional weapons and sensors, as dictated by the mission. A retractable rescue hoist will be part of the basic empty weight since it is normally considered mandatory on fleet helicopters.

The SEALITE will be sized for the new DE-1040, DE-1052 and DEG-1 class escorts. It will be low enough to fit into the hangars of all of these ships, and narrow enough so that a pair can be accommodated in each hangar. No modification to hangar structure will be required to fit SEALITES aboard the DE-1040 and DEG-1 classes. The 27-foot-long DASH hangar on the DE-1052 class escorts would have to be extended for all helicopters except the smallest light observation helicopter (LOH).

In the interests of simplicity, weight, reliability, rapid deployment, and commonality with the UH-2C, tail pylon folding was not recommended for the SEALITE. Even with extended hangars on the DE-1052, it can operate from the deck within standard Navy clearances. Both wheel and skid type landing gear configurations are being considered for the SEALITE, with wheels being preferred for ease of deck handling and rapid deployment. The wheeled gear will be fixed, rather than retractable, and will have a "short footprint" for operations on decks of limited size. The rotor and transmission will be lowered into the fuselage to keep the silhouette low and fit into the shipboard hangars. This will provide room for three seats or two litters in the aft cabin. The rescue doorway will be on the right side behind the pilot, directly below the retractable rescue hoist. A 360° scanning radar will be housed in a chin radome under the nose. The Magnetic Anomaly Detection (MAD) equipment when retracted, will be almost completely inside the fuselage lines. All equipment installations will be designed for ease of servicing and maintenance.

The PT6T Twin-Pac (T400-CP-400) of 1800 shp, will do for the SEALITE what the twin T58's do for the UH-2C—provide more power than required, thus assuring excellent one-engine-out capabilities. The rotors and transmissions will be more lightly loaded when used on the SEALITE than they are on the SEALAMP, so that better service life and time between overhauls (TBO) will be realized. Calculations show that the SEALITE will have a dash speed of 165 knots at 8,000 pounds gross weight under standard sea level conditions.

* * *

The Navy is seeking a helicopter which will be a vital and integral part of its destroyer system. This helicopter must be able to operate from small vessels, search and kill, defend, and yet carry out numerous utility missions.

Kaman's answer is a unique team concept that offers two-helicopter versatility with the economic advantages of single-aircraft support: SEALAMP...newest version of the UH-2C already on duty with the Fleet, and SEALITE...latest of the H-2's...smaller and lightweight, but just as eager to serve in the family tradition.



BEST SAFETY RECORD—A clean sweep of all three Military Airlift Command Safety Awards for the past three years brings proud smiles to Col Saleem Aswad, center, 40th Aerospace Rescue and Recovery Wing commander; Maj Richard C. Goven, left, chief of safety, and SSgt Ramon A. Alvardo, safety NCOIC. The plaques represent a "clean sweep" of the MAC Flying, Ground and Private Motor Vehicle Safety Awards for 1966, 1967 and 1968. (USAF photo by SSgt Joe Adams)

40th ARRWg Honored By MAC For 3rd Consecutive Year

By MSgt Mike Switzer

Maj Richard C. Goven, serving his third year as 40th ARRWg chief of safety, has all the vital statistics about the wing's safety record and he's quick to repeat them to anyone within earshot. "It's been over seven years since we've had a private motor vehicle fatality," he says, quietly knocking on wood. "Rescuemen in the 40th are located in 15 units spread throughout seven different countries and in these seven years they have accumulated approximately 25 million miles of fatality-free driving. That's certainly a record to be proud of."

Flying rescue missions—often at extremely low altitudes—over the Alps; the Atlantic; the jungles and deserts of Africa; and the frozen Northlands; as well as over the crowded airspaces of Europe, is no easy task either. Rescue aircrews of the 40th have logged a total of 93,819 accident-free flying hours over the past four years in such aircraft as the HC-130H Hercules, HU-16 Albatross, HH-43B Huskie and HH-3E Jolly Green Giant. Converting the hours into miles flown, Capt Glynn McGregor, assistant chief of safety, came up with an impressive figure of nearly 15 million miles of accident-free flying.

In a letter to Colonel Aswad, Gen Howell M. Estes, Jr., MAC commander, wrote, "It is with great pleasure that I commend you and the members of your organization for a superb flying safety record. Although operating in a demanding and hazardous environment your aircrews continued to distinguish themselves in flight safety. This fine record equates to total safety awareness on the part of every individual member of your organization."

Concerning the Ground and Private Motor Vehicle Safety Awards, BrigGen Allison C. Brooks, ARRS commander, wrote, "This accomplishment results only from steady and effective safety management and a great deal of hard work on the part of a great many people. Please convey my appreciation to all personnel for their fine safety attitude and its obvious results."

ARRS Presented MAC Trophies

ARRS was presented the 1968 MAC Trophy and the MAC Commander's Trophy for outstanding flying and ground safety records. The MAC Trophy is given to one MAC unit each year in recognition of an outstanding flying safety record. The citation accompanying the trophy reads:



ON CAMERA—A German television cameraman films an HH-43B HUSKIE as it prepares to land and fight a simulated aircraft fire during a training exercise at Ramstein AB, Germany. The television crew was documenting 40th ARRWg activities for a film to be shown soon. Pilot of the Det 4, 40th ARRWg, chopper is Maj Robert H. Busch. (USAF photo by MSgt Mike Switzer)

RAMSTEIN AB, GERMANY—Ask any airman, NCO or officer in the 40th Aerospace Rescue and Recovery Wing at Ramstein which rescue unit has the best safety record in the world and he'll be quick to reply, "We do. We're the only rescue wing to ever win all three Military Airlift Command safety awards for three consecutive years."

Recently, three additional safety plaques were prominently placed in the 40th headquarters signifying its safety record for 1968. They joined six other plaques which attest to the wing's record for 1966 and 1967. Together they represent MAC's Flying, Ground, and Private Motor Vehicle Safety Awards for the past three years.

"Without the positive safety consciousness of each and every man in this command, these awards would not have been possible," says Col Saleem Aswad, 40th ARRWg commander. "I am deeply impressed with the magnificent safety efforts of my people. It's a great honor to accept these awards on their behalf."

"During this period (1968), ARRS flew more than 117,000 accident-free hours, largely in support of U. S. combat operations in Southeast Asia. ARRS aircrews took part in an unusually large number of special missions without a single major or minor accident.

"The record reflects 572 combat saves of which 255 were combat aircrew members. ARRS units also participated in internationally significant events such as the Apollo program, 'Cold Ash,' 'Combat Sage,' and the world-wide deployment of forces during the Pueblo crisis.

"This outstanding performance could have been achieved only through dynamic leadership, meticulous planning, methodical execution, and consistent emphasis on safety throughout the command."

The MAC Commander's Trophy is also presented each year for outstanding achievement in ground safety. The citation mentions ARRS' "substantial reductions in all accident injury and fatality categories..." It also commends ARRS for completing the year without a single private motor vehicle fatality.

Downed Secretary of Defense

Picked Up By Det 14 Crew

The quick response of ARRS crews to an emergency was clearly demonstrated to Secretary of Defense Melvin Laird and several other dignitaries recently by Air Force personnel from Det 14, EARRC (MAC), MacDill AFB, Fla.

Three HH-43's from the detachment were flying rescue coverage for Mr. Laird and his party when the helicopter in which they were passengers was forced to make a precautionary landing, at night, on the grass median of heavily-traveled Interstate Highway 75. Immediately, two of the HH-43's dropped down to assist. Landings were made in almost complete darkness in an area surrounded by thick woods. Several power lines were also in the vicinity. The Secretary and nine other persons were quickly taken aboard the HUSKIES and then flown to MacDill. Among those with Mr. Laird were General Conway, commander in chief, U. S. Strike Command; Rear Admiral Lynch, U. S. Strike Command; and U. S. Congressmen William C. Cramer and Robert L. F. Sikes. Later, the third HH-43B crew flew a precautionary orbit when the Secretary's jet aircraft departed from the air base for Washington.

Manning one of the two HUSKIES which made the high-way landings were Capt Thomas F. Madden, pilot; Sgt Larry D. Kniss, flight engineer; TSgt Harold A. Kerr, medical technician; SSgt Harold J. Marten and SSgt Gerald W. Psalmond, firefighters. In the other HH-43 were Maj Edwin J. Christy, pilot; Maj Stanley L. Thompson, copilot; Sgt Paul A. Erickson, medical technician; and Sgt Michael Monetti, flight engineer. In the third HUSKIE were Capt Billy C. Marcontell, pilot; Maj Dale W. Eder, copilot; MSgt Haydn T. Poore, medical technician; Sgt Steven Stegelvik, and A1c Jerry L. Payton, firefighters; Sgt Coy N. Carrington, flight engineer.



SSgt Duane D. Hackney receives reenlistment oath from astronaut Col James A. McDivitt. (USAF photo)

ELLINGTON AFB, TEX. — SSgt Duane D. Hackney was recently reenlisted in the United States Air Force by astronaut Col James A. McDivitt at a ceremony here.

Sergeant Hackney, a member of Det 21, CARRC at Ellington, is one of the most highly decorated enlisted men in the Air Force. He wears the Air Force Cross, the Silver Star, the Bronze Star, Distinguished Flying Cross with two Oak Leaf Clusters, Airman's Medal, Air Medal with seven Oak Leaf Clusters, Air Force Commendation Medal and Purple Heart.

Hackney also was the Military Airlift Command's Airman of the Year in 1968 and recipient of the Cheney Award — an award given for acts of valor, extreme fortitude or self-sacrifice in a humanitarian interest.

Det 21, commanded by Maj Robert A. Bunton, has the unique mission of providing rescue coverage for the Apollo astronauts training in the Lunar Landing Training Vehicle. Activated in April, 1969, the unit is part of the ARRS headquartered at Scott AFB, Ill.

Silver Anniversary Celebrated

An estimated 6,000 people attended the open house held at Sheppard AFB, Texas, recently to celebrate the 25th anniversary of the U. S. Air Force Helicopter School. Now a part of the 3630th Flying Training Wing, the school received its first operational aircraft in June 1944.

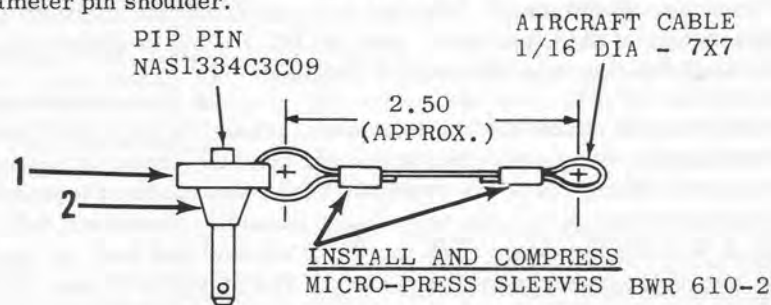
The Silver Anniversary celebration included an all-rotary-wing airshow with a formation fly-by of school helicopters, fire-fighting and heavy lift demonstrations, air-to-air refueling, parachute drops, rappelling and flights of many other helicopters used by Air Force, Army and civilian pilots. The static display included rotary-wing aircraft, equipment, and components. Historic helicopters from the Smithsonian Institution and the Air Force Museum were also shown.

The banquet that night brought together former instructors, students, and many others associated with helicopters. One pilot had applied for leave and journeyed all the way from Korea to attend. Climax of the banquet was the presentation of the USAF Flying Safety plaque to the Helicopter School by MajGen John M. McNabb, commander of the Sheppard Technical Training Center. The plaque was awarded in recognition of the school's flying safety record during 1968. The school, which utilizes HH-43B's, CH-3C's and TH-1F's, logged 27,000 hours of accident-free flying time during 1968 and by May 1, 1969, had extended its record to 50,000 hours.

Timely Tips

Center Nacelle Sliding Panel (UH-2C)

Part of H-2 Airframe Change 167 installs a pip-pin in the center nacelle sliding panel assembly, P/N K636707-5. The instructions create a 3/8-inch hole into which the pip-pin is inserted to lock the panels when in the closed position. Properly inserted, the undersurface of the pip-pin head (1 in the illustration) should lie flush against the panel surface. However, it has been discovered that the diameter of the pip-pin spring housing below the head can be larger than the 3/8-inch diameter. The result is that the oversize pip-pins cannot be fully inserted into a 3/8-inch hole and consequently, cannot be locked. If this situation arises, replace the pip-pin with one of the correct size or enlarge the 3/8-inch hole to receive the larger diameter pin shoulder.



H. Zubkoff, Service Engineer

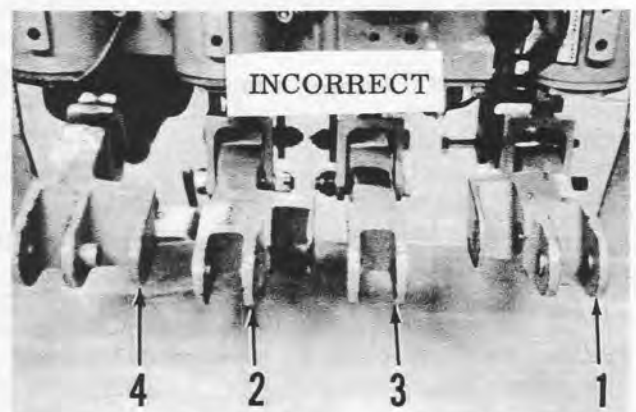
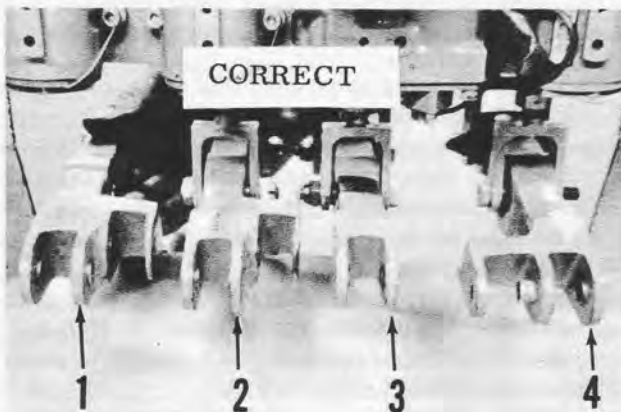
Flap Horn Bearings (UH-2)

The outside diameter (OD) of the KAcarb ceramic-type flap horn bearing, P/N K615220-11, is, by design, less than the OD of the teflon-type bearing, P/N K615111-13, which it replaces. The smaller diameter is specified to ensure an adequate, but not overly tight, fit in the flap bore. Excessive pressure from too tight a fit would be undesirable. However, some flap horn bores have become slightly oversize as a result of repeated removals and installations of the old teflon bearing. KAcarb bearings may be installed into clean, oversize bores, provided the bore size does not exceed 0.841-inch. Before installing a KAcarb bearing into an oversize bore, apply Loctite, Grade A (FSN 9Z8030-680-0889), to the bearing OD. Make sure the Loctite does not contact the bearing ball. This information will be contained in a future revision of the MIM, NAVAIR 01-260HCA-2-4.2 and the Overhaul Manual, NAVWEPS 03-95D-11.

W. J. Wagemaker, Service Engineer

ASE Input Lever Check (UH-2)

Normally only minimal control rod adjustments (rigging) are necessary when a new or overhauled ASE unit is installed in a UH-2. Therefore, if it appears that considerable adjusting is necessary, check for improper installation of the ASE input levers. In Photo A, the input levers, items 1 through 4, are correctly installed. Photo B shows two of the levers incorrectly installed—levers 1 and 4 have been transposed. The best method of determining this condition is to check the part numbers. However, a visual check of lever position will also aid in this determination. For example: the offset clevis on all double-ended levers must face toward the center of the ASE. If one were positioned so it faced outboard, it would obviously be wrong. Levers 1 and 2 are identical; notice the added clevises are also offset. Lever 4 has a double clevis which is in-line so one bolt may be used to attach both rod ends. The part numbers for the levers are: levers 1 and 2, P/N 18175-1; lever 3, P/N 18172; lever 4, P/N 18177-1. For further information, refer to NAVAIR 01-260HCA-4-1 and NAVAIR 01-260HCB-4-3.



A B

J. R. Tomon, Mechanic, Transmission Room



SEASPRITE ACTIVITIES

... A pilot and RIO who "punched out" of their F-4 at night after instruments malfunctioned were rescued by a UH-2C plane guard crew consisting of Lt R. M. Redmond, Lt(jg) V. C. Ray, ADJ3 R. M. Cramblit and ADR2 R. D. Garcia. All are attached to HC-1's Det 43 deployed aboard the USS Coral Sea. The downed pilots, about 100 yards apart, were located by their strobe lights. Petty Officer Garcia was lowered into the water, helped one rescuee into the sling and both were hoisted aboard by Petty Officer Cramblit. Garcia went back into the water a minute later and cut the second survivor loose from entangling shroud lines. Both men were then hoisted aboard. ... UH-2C pilot Lt Leroy W. Livermore and his crew rescued a man who had fallen overboard from the USS Oriskany. The survivor was about four nautical miles from the ship when plucked from the water. Other members of the UH-2 crew, all from HC-1's Det 34 aboard the Oriskany, were Lt(jg) Ron P. Cirre, AMSAN Edward H. McElvain and ADJAN Robert J. Bolding.

... A downed pilot was rescued by a UH-2C crew flying plane guard for the USS Bon Homme Richard. The helicopter, piloted by Lt(jg) William E. Bentley, was from HC-1's Det 31 deployed aboard the carrier. It was reported afterward that "the rescue could not have been improved upon, as cooperation between survivor and rescue team was optimum. Pilot had received rescue brief by helo detachment prior to incident." Other members of the UH-2 crew were Lt(jg) Donald J. Danielson, ADJ3 Thomas F. Brand and ATRAN Danny B. Dever. ... A sailor who fell overboard from the USS Forrestal was back on deck 10 minutes later thanks to a UH-2 crew from HC-2's Det 59 deployed aboard the carrier. The SEASPRITE was on the CVA's flight deck with the blades folded when the alarm sounded. Three minutes afterward Lt(jg) Dan Estreich and his crew were airborne and seconds later had located the survivor 100 yards east of a smoke flare thrown from the ship. He was picked up without incident. Others aboard the UH-2 were Lt(jg) C. G. Tourigny, AN J. W. Freeland, and ADJ2 R. L. Myers. ... A pilot who ejected from an RA-5C immediately after takeoff from the USS John F. Kennedy was rescued a few minutes later by a UH-2 crew from HC-2's Det 67 deployed aboard the giant carrier. Pilot of the SEASPRITE was Lt Robert E. Hofstetter and the copilot was Lt William Gregory. Crewmen were ADJ3 Peter B. Dehey and AE1 Donald L. Lewis. Hampering the rescue effort were debris, five-foot waves and cold water shock which left the rescuee unable to free himself from his shroud lines. Petty Officer Lewis went into the water to assist the survivor. ... A pilot whose aircraft crashed at night near NAS Chase Field, Texas, was taken to the dispensary in a UH-2 from the SAR unit at the Navy installation. Lt(jg) Ronald D. Grooters was SEASPRITE pilot, ADR1 Donald L. Saul, crewman, and Lt Virgil Keith (MC), doctor. ... The SAR unit at Chase Field also responded when a civilian member of a crash crew was injured after a truck collided with a jet which was taking off at NAS Kingsville. The civilian, who had a suspected broken neck, was taken by the UH-2 crew to NAS Corpus Christi. The jet pilot, also seriously injured, was picked up by a helo from Corpus Christi. Lieutenant Grooters was UH-2 pilot; Petty Officer Saul, crewman; and HM2 Richard G. Smith, corpsman.

... A sailor who fell overboard was rescued by a UH-2C from HC-1's Det 65 deployed aboard the USS Enterprise. Manning the SEASPRITE were Lt(jg) Jack L. Berg, Lt(jg) George G. Kirsten, ADJ3 P. L. Swartz and AN S. B. Griffith. ... An enlisted man, seriously injured in an accident aboard the USS Lowry, was evacuated by a UH-2 crew from HC-4's Det CLG-7 deployed aboard the USS Springfield. Lt Paul R. Lien hovered the helo over the destroyer and the patient was brought aboard in a litter. He was then taken to Roosevelt Roads and a waiting ambulance. Only 30 minutes elapsed from alert time to delivery of the patient. The SEASPRITE covered more than 40 miles during the mission. Others aboard were Lt Joseph P. Arcari and ADJ3 Gary M. Shaw. ... A UH-2C crew flying plane guard for the USS Kitty Hawk rescued a downed pilot soon after he ejected from his crippled aircraft. Aboard the SEASPRITE were Lt(jg) John W. Hyde, Lt(jg) Thomas D. O'Neill, AE3 Roy E. Watkins and ADJ2 Thomas F. Romero. All are attached to HC-1's Det 63 aboard the carrier.

... A Navy pilot was plucked from the sea by a UH-2C crew from HC-1's Det 61 deployed aboard the USS Ranger. The rescue was described as "quick and uneventful." LCdr B. H. Bay was pilot of the SEASPRITE and Lt(jg) Dennis R. Egle was copilot. Crewmen were ADJ1 J. Kennedy and ADJ3 H. Shoults. ... A sailor who fell from the deck of the USS Saratoga was picked up four minutes later by a UH-2C crew from HC-2's Det 60 aboard the carrier. SEASPRITE pilot Lt(jg) David A. Dull was just starting the engines on the helo when the "man overboard" call sounded. He immediately took off and began following the ship's wake. The survivor was sighted and taken aboard the UH-2C two minutes later. Other members of the helicopter crew were the copilot, LCdr Harley A. Backstrom, and crewmen, ADJ3 Robert R. Hughes and AN Mark A. Clawson. ... A bombardier-navigator who ejected from an A-6 when the engines failed, was rescued by a UH-2 crew from HC-1's Det 64 aboard the USS Constellation. One of the SEASPRITE crewmen, AEAN H. L. Coffey, leaped into the water to aid the survivor who was entangled in his shroud lines and being dragged by his chute. Both men were hoisted aboard the helo by AMH2 P. H. Daye. Pilots of the UH-2 were Lt Nicholas L. Press and Lt(jg) Daryl C. Spelbring. Afterward it was learned that the A-6 pilot had been able to restart the engines and save the aircraft.



CHECKS OUT IN UH-2C—Capt David L. Hughes, USN, Aviation Plans and Requirements Division, CNO, recently checked out in the "Twin Charlie" while visiting the Kaman Aerospace Corporation's Bloomfield, Conn., facility. Occupying the cockpit with Captain Hughes a veteran helicopter pilot, is KAC Vice President William R. Murray, left seat. On hand to greet them after the flight was Jack C. Goodwin, assistant chief test pilot at Kaman.

Navy Change of Commands

Cdr Lowell E. Perry, USN, assumed command of HC-4, NAS Lakehurst, N. J., recently from Cdr Raymond G. Burkemper who was ordered to the USS Princeton. In a similar ceremony a few weeks earlier, Cdr Henry H. Abe, USN, assumed command of HC-2, also at NAS Lakehurst, from Cdr Jack H. Hartley who was transferred to the USS Guadalcanal.

Commander Perry is a native of South Dakota and a former enlisted submariner. At the beginning of his naval career, he was serving aboard the submarine USS Cutlass as an RM3 (SS) when selected for flight training. After receiving his wings and commission, he served with VP-48, then attended General Line School and later was a flight instructor with METG (now VT-6). After transitioning to helicopters, he served with HU-1 (now HC-1) on the West Coast and was deployed to WESTPAC on the USS St. Paul. Commander Perry received his BS degree after attending the Naval Postgraduate School at Monterey, Calif., and then returned to sea duty with HS-5 at NAS Quonset Point, R. I. Later he was again attached to HC-1 and served a tour as OIC of HC-1's Det Cubi in the Philippines. Commander Perry completed the Command and Staff Course at the Naval War College, Newport, R. I., and also received a Master's Degree in International Affairs from the George Washington University, Washington, D. C. He reported to HC-4 as executive officer in July, 1968.

Commander Abe was born in Hawaii and began his military career in the Army where he served with the occupation forces in Japan. After attending Marquette University in Milwaukee, Wis., he joined the Navy in 1952 and went to NAS Pensacola for flight training. After receiving his wings and commission, he served with VP-40 and later graduated from Naval Test Pilot School. Later he transitioned into helicopters and was attached to HC-6. While with the squadron he was deployed to various parts of the Pacific. Commander Abe came to HC-2 as executive officer from NAS Patuxent River last year after serving three years as operations officer and flight instructor.

Adak UH-2 Rescues 24 Japanese

High winds, snow and poor visibility—a UH-2 crew from NS Adak, Alaska, encountered them all earlier this year while rescuing 24 Japanese fishermen. The Kukuyoshi Maru was intentionally beached on Rat Island February 1st to prevent the craft from sinking but, due to heavy surf, the crew was unable to reach the beach 200 yards away. Shallow water and heavy seas prevented their rescue by surface vessels and the severe weather held up helicopter operations for two days.

On February 3rd a UH-2A piloted by Lt Rudd B. Thabes was launched from the naval station for the 250-mile flight to Rat Island. Lt(jg) Ronald K. Wilsbach was co-pilot and crewmen were ADJ3 Larry B. Gettle and AN Robert T. Welch. The flight was hampered by 200-500 foot ceilings, 45-knot winds, and poor visibility. Arriving over the vessel, Airman Welch was lowered to the deck to assist the crewmen, who spoke no English, into the rescue harness. In order to maintain visual reference with the vessels, it was necessary for Lieutenant Thabes to hover the aircraft within four feet of the shifting mast.

The Japanese were lifted from the vessel to Rat Island four at a time and then shuttled to Amchitka 50 miles away. During the last flight the weather deteriorated to one-eighth-mile visibility in snow showers, so the UH-2 pilot followed gravel roads leading to his destination.

Marine Crew Makes Sub Medevac

Launching at dawn in response to a submarine's call for a medevac, a UH-2 crew from the SAR unit at MCAS Beaufort, S. C., flew 90 miles to sea in order to make the pickup. The flight was made under a low ceiling and through numerous rain showers. The pilot, Capt John E. Luby, Jr., also circumnavigated several isolated thunderstorms in the area. Part of the time navigation was by dead reckoning. SSgt Arthur R. McCann, one of the crewmen, spotted the submarine and the UH-2 was hovered over the vessel while a stokes litter was lowered. Then a sling was substituted and a doctor was hoisted from the sub to the UH-2. After circling in light rain showers for 10 or 15 minutes, the helo returned and picked up the litter into which the patient had been secured. Maintaining a 500-foot altitude for 25 minutes, Captain Luby flew around thunderstorms and showers. He picked up Charleston TACAN at 20 NM and arrived at the Naval Hospital there a few minutes later.

In another mission, a boy who suffered serious head injuries after falling from a building onto a concrete floor, was taken to the Charleston, S. C., County Hospital in a UH-2 from the SAR unit at Beaufort. Capt Charles W. Bowers, SEASPRITE pilot, landed in a parking lot near the hospital with the assistance of Charleston police and the Charleston AFB approach control. Accompanying Captain Bowers were Sergeant McCann, crewman, and Asa Godownes, ambulance attendant.

NAS Chase Field, Texas, is a busy place—and Lt(jg) Ronald D. Grooters, who is attached to the SAR unit there, is a busy man.

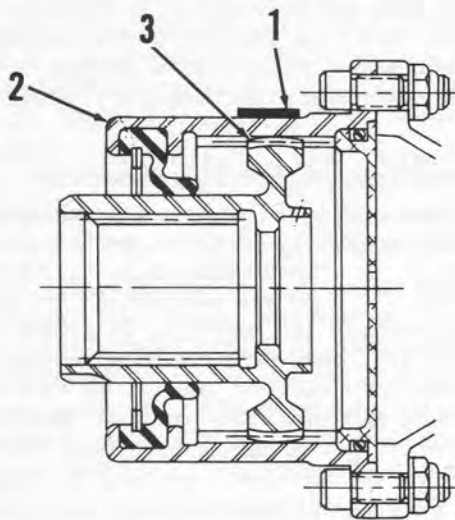
Lieutenant Grooters has made five rescues, three of them at night, before reaching a total of 500 flight hours. He has logged 486 flight hours with 152 hours in the UH-2B.

Q's AND A's

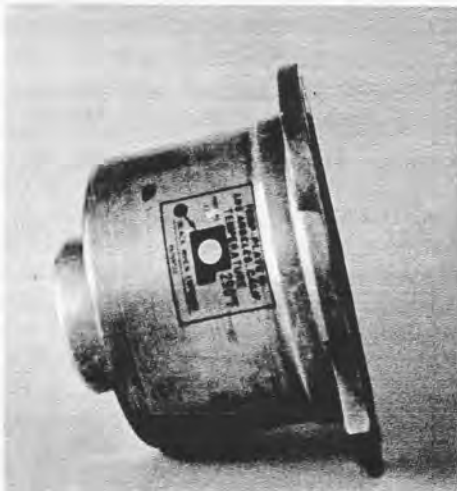
If you have a question regarding Kaman Aircraft maintenance, send it along to Rotor Tips. The Service Department's engineers will be glad to answer it.

Q. (Applies UH-2) WHAT IS THE PROPER LOCATION FOR THE TAIL ROTOR DRIVESHAFT COUPLING TEMP PLATE?

A. The temp plate, P/N 222 (item 1 in the illustration), should be placed so its edge is adjacent to the radius of the coupling sleeve as shown in the accompanying Photo. When installed in this position, the indicator portion of the temp plate (white dot) is directly above the hub teeth working area. This information will be incorporated into applicable handbooks by future Changes.



1. Temp plate
2. Coupling sleeve
3. Hub gear teeth



R. J. Trella, Service Engineer

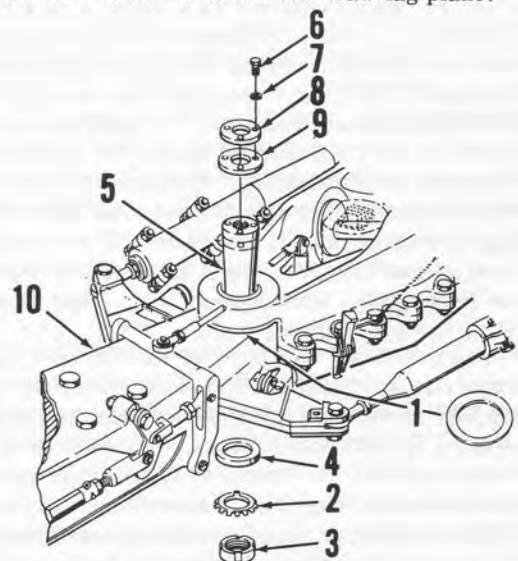
Q. (Applies UH-2) CAN ALTERNATE SCREWS BE USED TO SECURE THE TAIL ROTOR PYLON FAIRINGS?

A. Yes. Because Phillips-type screws in the intermediate gearbox and tail pylon trailing edge fairings can corrode and become difficult to remove, operating activities may, at their discretion, replace the screws as follows: intermediate gearbox, replace the AN525-10R8 screws with 10-32 bolts, P/N AN3-C4A; pylon trailing edge screws, P/N AN525-10R6 and AN525-10R18, may be replaced with 10-32 bolts, P/N AN3-C3A and AN3-11A, respectively. Be sure to use washers, P/N AN960-C10L, under the boltheads. If the fairing holes are slightly enlarged it is suggested that wood washers, P/N AN970-3, be used under the bolthead in place of the AN960-C10L washers until repairs can be made. If the damage is such that fairing retention even with wood washers is questionable, the fairing should be replaced. (Pylon fairing modifications which will preclude this type of damage will be accomplished on UH-2's during normal PAR rework.) In emergencies, when a serviceable fairing is not available, a temporary repair can be made by bonding a piece of aluminum to the fairing. For example: stop drill the fairing cracks and cut a piece of aluminum to overlap the damaged area by at least 0.50-inch. Drill a hole for the screw or bolt and then hand-form the aluminum to fit the contour of the fairing. If the patch is large, it should be bonded and riveted to the fairing. (Use Epon A6 or a similar adhesive; use washers under the formed rivet heads next to the fiberglass.)

H. Zubkoff, Service Engineer

Q. (Applies HH-43) WHEN INSTALLING THE ROTOR BLADES, WHERE SHOULD THE LAG PIN WASHER BE LOCATED?

A. The lag pin washer, P/N K310057-15 (item 1 in the illustration), should be lightly coated with molybdenum disulfide powder (MIL-M-7866) before installing it on the upper face of the blade grip. The lag washer assures centering of the blade grip in the rotor hub and provides a replaceable wear surface in the lead-lag plane.

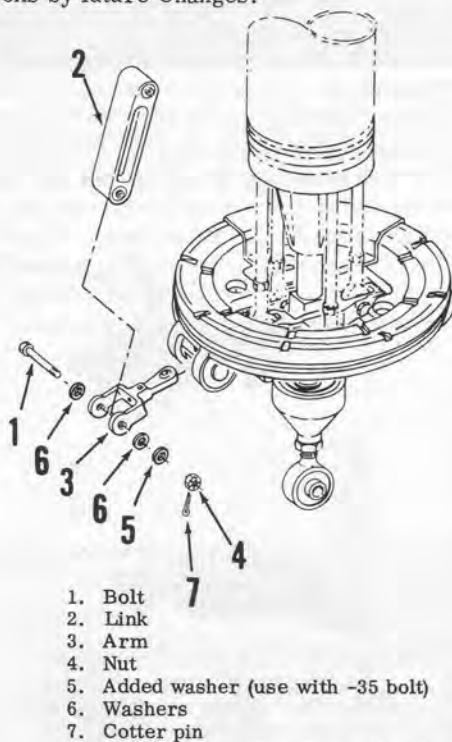


- | | |
|-------------------|------------------|
| 1. Lag pin washer | 6. Bolt |
| 2. Lockwasher | 7. Washer |
| 3. Lag pin nut | 8. Protector cap |
| 4. Special washer | 9. Gasket |
| 5. Lag pin | 10. Rotor blade |

W. J. Wagemaker, Service Engineer

Q. (Applies UH-2) SHOULD THE NAS 464P4-35 BOLT BE USED TO SECURE THE AZIMUTH LINK TO THE AZIMUTH ARM?

A. Only as an interim measure. Interim Airframe Bulletin 168 directs that the -35 bolt be replaced with a -34 bolt to preclude the possibility of the nut bottoming on the imperfect thread of the -35 bolt. The accompanying illustration shows the location of the bolt (1), link (2), arm (3) and nut (4). Gain access to the area and remove the -35 bolt; install a -34 bolt. If a -34 bolt is not readily available, remove the -35 bolt and inspect the threads for damage or wear; replace if necessary. When installing a -35 bolt, use an additional AN960-416 or -416L washer (item 5) under the nut to prevent bottoming. Torque the assembled bolt (-34 or -35) to 30-40 pound-inches. This information will be incorporated into applicable handbooks by future Changes.



W. J. Wagemaker, Service Engineer

Q. (Applies UH-2) WHAT METHOD SHOULD BE USED TO CHECK THE VOLTAGE OF A SILVER-ZINC BATTERY, P/N MS18122?

A. The best method is the individual cell open voltage check because an open circuit check of the battery terminal voltage could indicate that a battery is serviceable even when it is not. For example: thirteen cells could be high at 1.87, while one cell was low at 1.29. ($13 \times 1.87 = 24.31$, plus 1.29 for a total of 25.6 volts.) Therefore, even though the terminal voltage check indicated it was serviceable, the battery requires maintenance action. Individual minimum cell voltage should be between 1.82 to 1.86 volts. To obtain a true voltage reading, allow 2 hours to elapse between aircraft operation of the battery and the actual cell voltage check. This will allow the cell voltage to stabilize. This information will be incorporated into applicable handbooks by future changes.

J. J. McMahon, Service Engineer

Q. (Applies UH-2) WHAT FSN SHOULD BE USED WHEN ORDERING A SILVER-ZINC BATTERY?

A. Three FSN's can be used to order silver-zinc batteries from supply. In the order of preference they are: 1. Battery specification MS18122-1, FSN 2RD6140-880-5913D336. 2. Battery P/N 8073, FSN RM6140-993-5227 D336 (Yardney). 3. Battery P/N NSZR-40-14HXS, 1RD 6140-880-5913BHVX, (Gould). Notice that item 1 is an MS number. Because more than one manufacturer is producing batteries to this specification, Navy Supply has assigned it a FSN. When ordering a battery, it is recommended that the MS and its FSN be used as a first choice. The information listed as items 2 and 3 should be added to the alternate or substitute block on the supply requisition.

J. J. McMahon, Service Engineer

Q. (Applies UH-2) WHAT IS THE REPLACEMENT INTERVAL FOR THE MAIN ROTOR BLADE RETENTION FEEDBACK BEARINGS?

A. H-2 Airframe Bulletin No. 115, Revision B, specifies a mandatory replacement interval of 200 hours for AN201KP8A and K659458-17 main rotor blade feedback bearings. If, however, interim inspection of the bearings reveals excessive wear, they can and should be replaced immediately.

W. J. Wagemaker, Service Engineer

Q. (Applies UH-2) WHAT ARE THE LATEST MAIN ROTOR BLADE FOLDING PROCEDURES?

A. The latest main rotor blade folding procedures have been confirmed as follows (fold aft blades first):

1. Disconnect the antenna from outboard position on horizontal stabilizer and stow on inboard end of stabilizer.
2. Position hub in a 45-degree position relative to the helicopter centerline by lining up index marks on slip-ring shield with the marks on the cowling. Lock the rotor brake.
3. Have one crewmember install blade retainer on each aft blade and hold; have another crewmember hold the safety line; have third crewmember at rotor hub area.
4. Rotate blades aft against the damper stops.
5. Crewmember at hub: Release pitch lock. Twist outer retention to line up L mark for LH blades or R mark for RH blades exactly opposite mark on inner retention. Release folding handle and withdraw blade locking wedges from blade arm and engage pitch spline collar in indexed position. Alert ground crewmen and start blade folding aft. Be sure blade folds approximately parallel to the aft fuselage in both the longitudinal and horizontal planes.
6. Crewmembers on ground: Linesman assist strut man to move the blade to the aft position. The linesman may be required to restrain or pull on blades depending on location. Both men should be prepared for sudden pull in event blade is not properly indexed.
7. After aft blades are folded and secured, proceed to fold forward blades in a similar manner.

NOTE: The short member of the blade retainer assembly is adjustable. Use extended tube to secure aft blades and shortened tube to secure forward blades.

W. J. Wagemaker, Service Engineer



RESCUE IS THEIR BUSINESS—Shown are the men from Det 10, 38th ARRSq, Binh Thuy AB, RVN, with their HH-43 "Pedro" helicopters. Kneeling, left to right, are Alc J. D. Selfridge, Sgt R. L. Wright, SSgt G. H. Jones, SSgt J. H. Hogan, Sgt R. E. Neil, Sgt J. B. Potthier, Alc R. C. Stiefken, Alc W. M. Tutwiler, SSgt W. J. Juchem, SSgt D. A. Filut, SSgt G. L. Villeneuve (holding mascot Figno), Sgt E. L. Cartwright, Sgt K. P. Johnson, Alc T. J. Polys. Standing are SMSgt J. F. McCue, MSgt J. G. Regan, Jr., Capt R. A. White, Capt J. D. Cusano, Sgt T. S. Wellington, Sgt H. F. Bayne, TSgt D. R. Peckinpaugh, Capt J. L. Debevec, Capt P. H. Kammann, Capt C. A. Jessee, and Maj R. L. Gaede. (USAF photo)



TO SAVE A LIFE—An HH-43 crew runs toward helicopter during typical Det 10 "scramble." Shown are Capts Cecil A. Jessee and John L. Debevec, Sgt Terry S. Wellington and TSgt Dudley R. Peckinpaugh. In another typical mission, Capt Philip H. Kammann holds an HH-43 in position as Sgt Kenneth P. Johnson hoists a wounded Navyman from a speeding river patrol boat. In photos at right, Army medics rush sailor to emergency treatment at the 29th Evac Hospital near Binh Thuy. Captain Debevec is the HUSKIE pilot. Weary rescuemen return after a mission—one of hundreds carried out by ARRS crews in Southeast Asia. Left to right are, Sergeant Peckinpaugh, Captain Debevec, and Captain Jessee. (USAF photos)

***** New Commander for 3rd ARRGp *****



Colonel Frazee

TAN SON NHUT AB—Col Malcolm C. Frazee, a 20-year veteran of air rescue assignments, took command recently of the 3rd ARRGp and became the senior Military Airlift Command commander in Southeast Asia. Colonel Frazee replaces Col Rayvon Burleson, who departs for a new assignment at Ramstein AB, Germany, in a few weeks.

Colonel Frazee takes command of the 3rd ARRGp after serving as vice commander of the 41st ARRWg at Hickam AFB, Hawaii. The 41st ARRWg has direct administrative control over all USAF rescue forces in the Pacific, including those in Southeast Asia.

The Colonel entered flight training school in 1943 after he was graduated from Vista High School, Vista, Calif., and was commissioned Dec 4, 1943. He flew 264 combat tours in B-17s over Europe in World War II.

With the exception of assignments in Washington, D.C., the Republic of the Philippines and at March AFB, Calif., all of Colonel Frazee's assignments since 1945 have been associated with air rescue. From November 1965, to December 1968, he served as deputy commander, operations, of the 89th Military Airlift Wing (Special Missions) at Andrews AFB, Md.

Colonel Frazee wears the Legion of Merit, Distinguished Flying Cross with one oak leaf cluster, the Air Medal with three oak leaf clusters, the Air Force Commendation Medal with one oak leaf cluster and numerous other decorations.

Southeast Asia

BINH THUY AB (7AF)—Det 10, 38th ARRSq—the world's busiest base rescue detachment—recently recorded the 2,500th "save" in Southeast Asia. Two HH-43 rescue crews from the detachment flew to the Mekong Delta town of Rach Gia to pick up three U. S. Navymen after they were wounded in a mortar explosion. The rescues, which brought the total to 2,500, were listed as non-combat saves.

Both the detachment's HH-43 "Pedro" helicopters were used in the evacuation. Maj Ralph Gaede was pilot of one helicopter and Capt John Debevec was pilot of the other. With Major Gaede were Capt Cecil L. Jessee and Sergeants Michael F. Dean and Kenneth P. Johnson. Captain Debevec's crew included Capt Jack D. Cusano and TSgt Dudley R. Peckinpugh.

The three saves brought Det 10's 1969 total to 71. All but 15 of the total have been made during enemy attacks. Since elements of the 3rd Aerospace Rescue and Recovery Group came to Vietnam in 1964, its Pedro and Jolly Green Giant rescue helicopter crews have recorded 1,693 combat and 808 non-combat saves. Det 10 has recorded nearly one-fourth of the 3rd ARRGp's total saves for 1969 and one third of the group's 176 combat saves have been credited to the busy Delta unit.

The detachment was activated in December, 1965, and

DET 10's BUSINESS CARD
On the back are a number of questions, all concerned with less than desirable situations—"Blue Monday?"... "Your aircraft quit?"... "Wife send a dear John?"... "Got a tiger by the tail?" etc., and the advice to call Binh Thuy for air rescue.



HH-43 crews attached to the unit began making saves a few weeks later. During 1966 a total of 10 combat saves were made by Det 10, plus eight additional medevacs. (Non-combat saves were not recorded for that, or the following, year.) In 1967, Det 10 made 66 combat saves, plus an additional 16 medevacs. A total of 69 combat saves, 21 non-combat saves, and five medevacs were made in 1968. (other SEA activities on page 22)



HONORED BY KAMAN—Numerous Scrolls of Honor and Mission Awards have been presented by Kaman Aerospace Corp to Det 10 in recognition of the many rescue, medevac and other flights made by the HH-43 crews. Among the latest recipients are, front row, left to right, Sgt Kenneth P. Johnson, TSgt Dudley R. Peckinpugh, A1c Theodore J. Polys, A1c Richard C. Stiefken, Capt John L. Debevec, Capt Cecil A. Jessee and Capt Robert A. White. Rear row, Capt Philip H. Kammann and Sgt James B. Potthier. (USAF photo)



ESPRIT DE CORPS—"King-sized" sign clearly portrays HC-5's pride in its mission and aircraft. At left are AFM Robert H. Selman and Cdr Roy M. Hollingworth, executive officer. On right is Cdr Ronald L. Helms, commanding officer, and William R. Murray, Kaman vice president—Test Operations/Customer Service. (USN photo)

Versatile HC-5 Carries Out Wide Range of Duties

What's In A Sign?

By H. A. Isbell, AZC

It all started on the first day of September 1967 when the words "Set the watch" could be heard echoing across the ramp at NAS Imperial Beach, Calif. Yes, Helicopter Combat Support Squadron Five was born and Cdr C. O. Borgstrom took the helm of the infant group as the first commanding officer. A small group at first, HC-5 was to grow into a well-knit organization which is one of the finest of its type in the U. S. Navy.

Although HC-5's primary responsibility is to train pilots for HC's, its duties are varied, and as symbolized in the squadron insignia, extend to the four points of the compass. The squadron has been supplying aircraft in

support of Coast Guard icebreakers in the Arctic and Antarctic, as well as other non-aviation type ships and Eastern Pacific carriers. Squadron personnel also respond to any military or civilian emergency requiring helicopters in their area of operations. New ideas in rescue techniques, devices, and the like are continually being sought and HC-5 is called upon frequently to evaluate new hardware and techniques so that the higher Commands can pass judgement on their merit.

For its aircrew members, HC-5 provides a rugged combat crew training course in self-defense, survival, and rescue which attempts to anticipate every conceivable situation squadron personnel may later encounter on their varied missions. Graduates agree that while the training often taxed their strength, it provided them with a great deal of self-confidence—a factor vital to any man downed in a combat zone. The course is mandatory for all crewmen to ensure that when they leave HC-5 for a squadron operating with the Fleet, it will be with the best training and knowledge available.

A typical day in HC-5 commences as the first indication of the sun's light creeps over the mountains to the east. Flight line personnel are already heading towards the aircraft to perform the first of many pre-flights which are necessary during the normal operating day. Rapid aircraft turnaround is essential in an operating squadron of this type and the HC-5 people have excelled in response to the needs at hand. They are certainly no amateurs



OJT—Performing a double duty, HC-5 personnel prepare one of the squadron's H-2's for flight while, at the same time, explaining the procedures to replacement maintenance personnel for other helicopter squadrons. (USN photo by JOC John J. Gravatt, PacFlt Camera Gp)



MAINTENANCE KNOW-HOW—In first photo, ADAN Billy Conley works on engine of one of HC-5's "Super Charlie's." In second photo, two maintenance crewmen from the squadron check the rotor on another UH-2C. In third photo, AD2 Carlos Chamberlain, left, and AD3 John King install a transmission oil tank line on one of the twin-engine helicopters. (USN photos by JOC John J. Gravat, PacFlt Combat Camera Gp)

when it comes to fast, thorough pre-flights which ensure aircraft readiness for the next launch. This cycle repeats itself over and over again throughout the day and the beehive of activity does not cease until well after sundown and night flying is secured.

Cdr R. L. Helms took command of HC-5 in September of 1968 and the squadron has continued to grow not only in physical strength, but in attitude, dedication, and professionalism as well. Commander Helms has at his disposal a maintenance department which would be the envy

of any commanding officer. No task has been too large, no challenge has gone unmet by LCdr Jerry Fenton and his staff of maintenance personnel. There are many individual standouts in the squadron but to name a few would be unfair since every man in the outfit contributes his share towards accomplishment of the mission.

What's in a sign? Some lumber, a little paint, perhaps some concrete and glass but really, much more than these. Determination, ambition, initiative, are a few words which might best describe HC-5 along with one other famous phrase—"ESPRIT DE CORPS!"

HC-4 Aids USCG, Scientists, in Antarctic Operation



By Lt D. C. Wynne HC-4

HC-4 detachments operating with U. S. Antarctic Research Program scientists leave no stone unturned in their search for new knowledge of, and facts concerning, the loneliest continent. HC-4 UH-2 SEASPRITE helicopters have been operating with the Coast Guard icebreakers for three years and have extended the areas of scientific exploration many miles from previously short-ranged exploration plans. The two helicopters assigned to each icebreaker embark the scientists at their land bases and fly them to many areas accessible only by air.

USARP team leaders have praised the helicopter detachments from HC-4 and readily report that many types of heretofore unknown types of flora and fauna have been identified and brought back by the helo-borne scientists. By flying in company, the helos can assure quick rescue should one aircraft develop trouble and force the crew and passengers to put down in near freezing water or on isolated ice caps. The poor reliability of magnetic compasses and the limitations to icebreaker radio-navigation aids have made reliance on the UH-2's all-weather ca-

pability a large factor in research planning. Previous helicopters without instrument flight capability or the ability to fly for long distances or long periods, limited the research to about a 10-mile radius from the ship. During the tenure of the SEASPRITE, the radius of action has been extended to nearly 75 miles from any fixed base camp. Not one SEASPRITE nor HC-4 airman has been lost nor put into a serious survival situation since the inception of their use.

Additional missions assigned to the HC-4 "Deep Freezers" include invaluable ice reconnaissance flights and the vertical replenishment of stations which are so located that movement of cargo over rocky glacial areas is too time consuming and dangerous to be feasible. Ice recon flights see the helicopters precede the icebreakers through the ice fields, radioing ice reports back as they go. Highly trained detachment pilots are able to determine ships' best courses by careful attention to ice coloration and cracks or flaws in the ice fields. Cargo operations made possible the building of a new station on the Antarctic Peninsula and Anvers Island, and most recently the relief of Wilkes Station, operated by the Australians. When the Australian station's cargo re-supply ship became locked in an ice field, re-supply had to be accomplished utilizing the icebreaker SOUTHWIND and the two assigned UH-2 helicopters.

Every helicopter crew is a rescue unit and Deep Freeze has been no exception. Many helicopter evacuations of injured personnel have been accomplished in the frozen wastelands of Antarctica. On less frequent occasions the helicopters have lifted scientific parties stranded by ice crevasses to safe areas. A USARP spokesman put into words the mission and usefulness of the HC-4 and HC-5 helicopter detachments, "Early Deep Freeze explorations were dependent upon good sleds and dog teams. Modern and future dependence is on the helicopter. Without it progress would be impossible."

Timely Tips — continued from page 7

Color-Coded Hold-Open Struts (UH-2C)

The telescoping hold-open struts, P/N K636809-1, used on both the left-hand and right-hand upper engine access doors must be properly installed to prevent chafing while the door is in the closed position. As an aid to correct installation, the rodends and the fittings to which the rodends are attached will be color-coded as follows:

1. The K636762-11 fitting (located on firewall), the rodend, and approximately 1.5 inches of the 0.625-inch diameter strut tube, will be painted with MIL-L-19537 Lacquer, Color No. 12197, International Orange.

2. The K636764-13 and -14 fitting (located on the nacelle doors), the rodend, and approximately 1.5 inches of the 1-inch diameter strut tube, will be painted with MIL-L-19537 Lacquer, Color No. 14187, Light Green. Operating activities may, at their discretion, apply the paint according to the above directions (care should be taken not to paint the bearing). For further information, refer to the Q & A pages of the May-June-July, 1969, issue of KRT. This information will also be included in future revisions to the Airframe and the Power Plant MMI's.

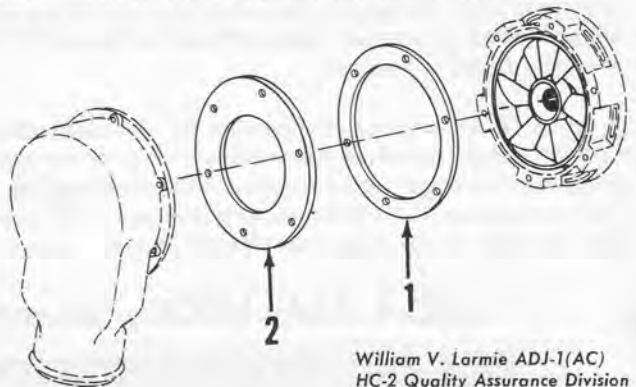
H. Zubkoff, Service Engineer

Number 2 Generator Check (UH-2)

It is good practice, whenever drawing a generator from supply, to grasp the splined end and twist; the shaft should turn without hanging-up. If considerable force is required to turn the shaft, or if the shaft hangs-up, it is an indication of incorrect assembly, for example:

A generator was replaced on a UH-2 and, as the main rotor was turned by hand, a screeching noise emanated from the newly-overhauled generator. Disassembly of the unit revealed the following: (Refer to the illustration.) Instead of installing the ring spacer (item 1) between the air baffle (item 2) and the generator housing, someone had inadvertently installed the baffle first. This forced the baffle against the fan, resulting in the noise as the generator was turned.

As can be seen by the illustration, the generator housing, ring spacer, air baffle, and the duct all have the same OD. The spacer, however, has the same ID and OD as the generator housing and, when installed, acts as a shim to prevent the baffle from contacting the Fan blades. (The fan is mounted flush with the end of the housing.)



*William V. Larmie ADJ-1(AC)
HC-2 Quality Assurance Division*

Speed Decreaser Oil System (UH-2C)

NAVAIR 01-260HCB-4-5, figures 12 and 13 are in error. The P/N is listed as 20343-1B, Coupling-half, socket assembly, quick-disconnect. The correct P/N is 20343-1, FSN RD 4730-541-7319YX2X. Figure 13 shows a phantom view of a -1B bulkhead fitting whereas the correct fitting (-1) is a shorter, standard nipple assembly. The figure and part numbers will be corrected by a future handbook Change.

H. Zubkoff, Service Engineer

Airspeed System (HH-43, UH-2)

Sometimes the airspeed indicating system is taken for granted, so when an expected indicated airspeed (IAS) isn't reached, the engine is blamed. Before accusing any component or expending time on trouble shooting, check the airspeed system for security. A loose fitting anywhere in the system will necessarily cause faulty readings, usually lower than actual speed. A case in point is the helicopter that could only reach an apparent top speed of 80 knots IAS—and this with the engine topped! After spending some time looking for the engine problem, someone realized that an incorrect airspeed indication caused by system leakage could also be the culprit. A check for items that might have loosened, included the pitot system where the connector on the copilot's airspeed indicator was found loose. This again points out that periodic checking, particularly shortly after performing maintenance actions, could save time later and ensure correct IAS.

J. J. McMahon, Service Engineer

UH-2C—SCUPPER DRAIN SEALS

by L. R. Abatte, Mechanic, Production Assembly

Inspection of the transmission and engine oil tank scupper seals on UH-2's returning for Progressive Aircraft Rework (PAR), indicates that a variety of seal bonding and end-joining methods are being employed by Field maintenance personnel: for example: some of the ends have been stapled, riveted, or taped together. These methods should not be used because the result is usually poor sealing and eventually increased maintenance. In an effort to reduce these problems, a new procedure consisting of a one-piece seal and 2-coat application of adhesive has been developed. The method described here will provide superior bonding of the seal to the scupper, reduce maintenance time and also ensure a more positive seal.

Fabricate a one-piece seal from closed cell sponge rubber, MIL-C-3133, Type SB42LFF or equivalent. The easiest way to make the seal is to place the inverted scupper onto the sponge rubber, outline the required OD and ID and cut it out. An alternate method is to fabricate a pattern and use it to outline the seal dimensions. Sometimes, due to the lack of proper cutting tools, the ID and OD may not be perfectly round. If this occurs, bond the seal to the scupper and then trim the OD to the correct contour; use sandpaper on the ID. Bonding surfaces must be clean and the scupper surface slightly roughened. Remove all traces of the old seal and, after fabricating the new seal, wipe both bonding surfaces with a suitable solvent. (Use the coarse side of the rubber for the best adhesion.) The recommended adhesive is "Pliobond 20" but alternates are listed immediately following the bonding procedures.

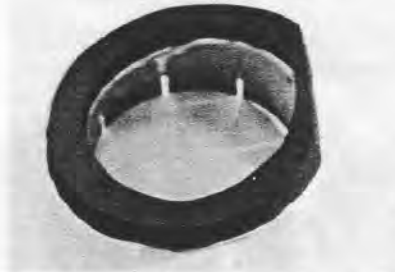
BONDING: Apply a thin film of adhesive to the scupper and the seal as shown in Photo A. Allow the adhesive to air-dry until tack-free (approximately 15 minutes). Apply a second coat of adhesive to both surfaces. (It should be noted here that the first coat of adhesive will seal the rubber while the first coat on the scupper will leave tiny voids or air gaps. The second coat of adhesive will ensure complete coverage and maximum bonding.) When both surfaces are tack-free, carefully position the seal over the scupper. Care should be exercised in positioning because once the seal makes firm contact, further repositioning will be extremely difficult. Allow the seal to make contact at one point and work the seal from the first point of contact toward the opposite side. Remove any entrapped air by squeezing the seal and scupper between



A



B



C

the thumb and forefinger of each hand as shown in Photo B. Use a clamp or weight to maintain light, even pressure against the bonded joint for approximately 30 minutes; if necessary, the scupper may then be put into service. However, it is recommended that the adhesive be allowed to cure for 24 hours at about 72°F in order to provide a positive bond. The completed project is shown in Photo C.

The following rubber base adhesives may be used as a substitute only when "Pliobond 20" is not available.

Adhesive Material

Specification	Typical Trade Brand Names	Applications
MIL-C-4003	EC 847 (Minn. Mining & Mfg. Co.) Proseal 590F (Coast Proseal & Mfg. Co.)	General usage for bonding nitrile rubbers and vinyl plastics
MIL-A-5092, Type III	PL 110B (Permalastic Prod., Inc.) EC 826 (Minn. Mining & Mfg. Co.)	For cementing Buna N to other surfaces. For bonding vinyl plastics; fuel and oil resistant.
MIL-A-5092	BR No. 305 (Bloomington Rubber) EC 870 (Minn. Mining & Mfg. Co.) EC 711 " " " " *EC 2141 " " " " Proseal 584 (Coast Proseal & Mfg. Co.)	For bonding Neoprene rubber to itself and to other surfaces; general usage; oil resistant, not fuel resistant.
MIL-A-1154	Stabond T-161	For bonding synthetic rubber materials such as gaskets, matting, etc., to steel.
MIL-A-25457	Dow Corning A-4000	For bonding silicone rubber to itself and to other surfaces.

*Substitute EC 2141 for EC 711 and EC 870 upon depletion of stock.



Off-Shore MEDEVACS

Made By Det 6 HUSKIES

HH-43B crews from Det 6, 41st ARRWg, Kadena AB, Okinawa, have added two more off-shore evacuations to the growing list of such missions they have carried out with their land-based rescue helicopters.

Capt Robert M. Garlow and his crew made a 120-mile overwater flight to evacuate a South Korean, critically ill with a ruptured spleen, from a U. S. Naval vessel. Other members of the rescue crew were Maj Bert Cowden, copilot; TSgt Frank Crummit, flight engineer; MSgt Elie Hebert, medical technician; and Capt William E. Marks (MC), flight surgeon. A second HH-43 from Det 6, which flew cover during the evacuation, picked up a Korean interpreter from the ship. The top left photo shows the patient being hoisted to the helicopter.



In a similar evacuation, shown in the second photograph, Maj Dale L. Potter flies an HH-43 into position to pick up a critically-injured merchant seaman from the SS Evergreen State 65 miles off the Okinawan shore. With Major Potter were SSgt Dwight L. Berry, flight engineer; Sergeant Hebert; and SSgt Vincent K. Matulja, rescue specialist. Manning a second HH-43 which flew cover were Major Cowden, pilot; TSgt Charles C. Maxwell, flight engineer; and Sgt Paul Mullikin, rescue specialist.

1000-Hour Pilot Awards



Three pilots from HC-2, NAS Lakehurst, N. J., were recently presented 1,000-hour plaques by Horace F. Field, left, Kaman Senior Service Representative. On hand to offer his congratulations was Cdr Henry H. Abe, squadron commander, right. Shown receiving his plaque is Lt Frank "Skip" Dirren, while in the second photograph, Lt Patric J. Burtch, left, and Lt Geoffrey A. Foss are displaying their awards. Capt James E. McLain, an HH-43 pilot from Det 16, WARRC (MAC), Williams AFB, Ariz., was also honored by the Kaman Aerospace Corp after logging his 1,000th flight hour in a helicopter produced by the company. Captain McLain is shown in the cockpit of the HUSKIE at the end of the "magic mark" flight. Other pilots who also recently qualified for, or received, plaques are: HH-43 HUSKIE—Capt Wayne A. Grant, III, Det 13, 38th ARRSq, Phu Cat AB, RVN; Capt Charles E. Noyes, 3638th Flying Training Squadron, Sheppard AFB, Texas; Capt Lew E. Phillips, Det 16, WARRC (MAC), Williams AFB, Ariz. UH-2 SEASPRITE—Lt Robert Parkinson, Lt Richard R. Mason and Lt A. S. Woodle, HC-1, NAS Imperial Beach, Calif. (USN, USAF photos)





Det 6 also continued flying mercy missions for the inhabitants of the Ryukyuan islands. An HH-43B crew evacuated a 13-year-old boy from Iheya Shima after he was bitten by a poisonous snake. Major Potter landed in a schoolyard to make the pickup and on the flight to the hospital the boy was treated by Captain Robert M. Dale (MC), flight surgeon, shown in the third photograph with his patient. In fourth photograph, SSgt Joseph M. Carter, left, and Sergeant Hebert, the other members of the ARRS crew, carry the boy to a waiting ambulance. A 73-year-old Ryukyuan suffering from tetanus was evacuated after a 70-mile flight from Okinawa. To make the night pickup on Kume Jima, Captain Garlow landed the HH-43 on a narrow road illuminated by portable landing lights. Other members of the helicopter rescue crew were Major Potter, copilot; Sergeant Berry, TSgt Ronald L. Wilson, medical technician; and Capt William J. Binkley (MC), flight surgeon. (USAF photos)



Det 17 HH-43 Crews Honored

An HH-43B crew from Det 17, WARRC (MAC), Davis-Monthan AFB, Ariz., was honored recently for a hazardous life-saving flight in which they participated a few months ago. Maj Elmer L. O'Banion, pilot of the HUSKIE, was awarded the Air Medal, and USAF Commendation Medals were presented to Capt James P. F. Egbert, copilot; Capt Richard A. McLeod (MC), flight surgeon; TSgt Johnnie McDuffie, firefighter; and TSgt Eugene R. Veltre, medical technician.

Major O'Banion and his crew evacuated a critically-injured hunter who had been shot while in a remote section of the Tortillita Mountains. The evacuee was on a sheer ridge closely surrounded by higher cliffs and mountains. Major O'Banion had to make a crosswind approach and then hovered the HH-43 with two wheels on a rocky cliff while three members of the rescue crew jumped five feet to the ground. Rotor blade clearance from nearby rock formations and cacti was "minimum" and gusts of wind over the top of the ridge added to the problem of keeping the rescue helicopter in position. Captain Egbert aided the pilot by continually reporting the clearance between the HH-43 and the various obstacles.

For 15 minutes Captain McLeod, Sergeant Veltre and Sergeant McDuffie worked to stop the bleeding before the hunter could be placed aboard the HH-43. The medical team then climbed aboard and Major O'Banion slowly lifted the helicopter from the precarious spot. On the flight to the hospital the flight surgeon and his assistants continued to treat the patient who was almost beyond help due to loss of blood. Later, their "teamwork and attention to detail" was credited with saving the man's life.....



Maj Bert E. Cowden assumed command of Det 6, 41st ARRWg, Kadena AB, Okinawa a few months ago after completing a tour as commander of Det 13, 38th ARRSq, Phu Cat AB, RVN. Major Cowden is the first pilot in the U. S. Air Force to log 3,000 hours in the HH-43 and is also the first to pass the 1,000 and 2,000-hour marks in the HUSKIE. While assigned to Vietnam, he flew 452 combat sorties and 350 combat hours and was decorated with the Silver Star, two Distinguished Flying Crosses and 13 Air Medals for flying combat rescue and recovery missions.

In the top photo, Col Thomas L. Shockley, commander of the 41st ARRWg, Hickam AFB, Hawaii, presents a congratulatory cake to Major Cowden, right, after the 3,000th hour was logged. (USAF photo) In the second photo, the Major is shown with Air Force Secretary Robert C. Seamans, Jr., in HH-43 cockpit, and MajGen Jerry D. Page before taking them on a 60-minute aerial tour of Okinawa. General Page, 313th Air Division Commander, briefed the Secretary on USAF activities and pointed out military facilities on the island. Secretary Seamans went on the helicopter flight after his plane made a 90-minute refueling stop at Kadena AB enroute to South Vietnam. (USAF photo by Sgt Willie J. King)

NEEDLE RESCUE

This unofficial report of a hazardous rescue in Arizona's Superstition Mountains was written by Capt Laurence W. Conover, an HH-43 pilot from Det 16, WARRC, Williams AFB, Ariz. The perseverance shown is typical of ARRS crews attempting to effect a speedy recovery despite the frustrating situations encountered. With Captain Conover were SSgt Gerald R. Boone, a flight engineer TDY from Det 22, WARRC, Mountain Home AFB, Idaho; SSgt Jerry L. Copeland, medical technician; and Capt Leonard J. McIntyre (MC), flight surgeon.

1100—The boys were enjoying the bright sunny day by hiking up to Weavers Needle, a tall rock mountain that looks much like an inverted funnel, the upper portion being 790 feet of sheer rock requiring mountain climbing equipment to scale. A few years ago some climber (or miner) had placed a large rope ladder on the east side of the Needle, but recently it had broken on one side. The 15-year-old boy decided to climb up the remaining half of the ladder even though his companions refused to accompany him. About 350 feet up, he was standing on a narrow ledge trying to fix the ladder when it collapsed, falling across his left hand and tearing off a couple of layers of skin. Fortunately he had a medical kit with him and was able to bandage the wound to prevent excessive bleeding. Unfortunately he had nowhere to go—the sheer rock around him was unpassable even for an uninjured climber. One of his companions immediately hiked out of the rugged country and called the Sheriff's office for help.

1405—Detachment 16, WARRC, received a call from the sheriff's office requesting assistance in recovering "a boy who had fallen off of Weavers Needle." No other information was available. An HH-43B—"Pedro One"—took off for the rough and rocky Superstition Mountains and, after a 15-minute flight, landed at the Don camp 20 miles northeast of Williams AFB to obtain information; however, no one there was aware of the incident.

1510—Pedro One arrived at the base of the Needle and located the boy's companions who pointed straight up at the Needle where he was stranded. The HH-43 pulled into a hover opposite the boy and assessed the situation. There was only minor turbulence from the wind but, try as they could, there was no way for the helicopter crew to get close enough to the sheer wall to use the rescue hoist without the rotor blades striking the rocky surface. After assuring the boy over the public address system that they would be back, the Pedro pilot climbed out of the hills and called the WAFB tower operator. He was asked to contact the Sheriff's office for experienced climbers and at least 400 feet of rope. After 15 minutes, Pedro was advised that the only rope available was located at Florence (25 miles southeast of Williams). "Could Pedro pick it up?" . . . "Roger!"

1615—Pedro landed at Florence, picked up the rope, but no climbers, and returned to the Air Force base to refuel. Time was becoming a serious factor if the boy was to be brought down before the cold darkness set in.

1655—The Sheriff's office notified Pedro that some climbers had been located and were heading north to Kearny (49 miles southeast of Williams). "Could the chopper pick them up there and take them to the Needle?" . . . "You bet!"

1725—Pedro landed at Kearny but the climbers were not there yet. Please hurry!

1740—Pedro was off for the Needle with a team of five experienced climbers. Their professional skill was to become evident very soon.

1810—After what seemed an eternity the chopper final-

ly arrived at the Needle. The climbers surveyed the situation from the air and agreed that the wall could not be climbed. The only way was to drop a rope from the top of the Needle. "Could Pedro get them to the top?" . . . "We'll try." The chopper dropped down to a plateau on a neighboring mountain, landed, offloaded three climbers and the medical technician, and then climbed back up to tackle the Needle. There was no place to land on the top of the Needle, but on the west side, about 20 feet from the top, was a slightly slanted area to which the climbers could be lowered on the hoist without fear of them falling off the mountain. Sergeant Boone, the hoist operator, briefed the climbers on the unfamiliar (to them) hoist apparatus and then directed the helicopter slowly and carefully over the drop area. The rocks were rising steeply in front and above the chopper and on both sides the blades were dangerously close to rock outcroppings (the right blades were about six feet from the rocks—and there was a light quartering left tail wind). The aft section of the chopper was hanging over the ledge with a 790 foot drop to the base. Below the base, a 2,000-foot slope which led steeply down into the ravine. Wow! After the first two climbers were safely hoisted down, the chopper picked up the other three and, under the expert skill of Sergeant Boone, were quickly deposited on the Needle.

1832—The sun had set. How long would it take to get the boy out? With the high mountains and rugged terrain Pedro would have a difficult time assisting after it became dark. The climbers could not see the boy from the top of the Needle, however, Pedro, with the use of the PA system, was able to direct them to a spot directly over the boy. With amazing rapidity and teamwork the climbers set themselves up and dropped the rope. It only went a third of the way down! Quickly gathering it in they tied on more sections, tied a rock on the end of the rope and once more dropped it over the side. Twice it hung up in the rock outcroppings, but with Pedro directing, the rope was shaken loose and allowed to drop freely.

1844—The rope reached the ledge! The boy had it and was tying the rope around him. The team of climbers started pulling him up in a smooth, rhythmic sequence but had to rest every minute or so due to the multiplied weight at the end of the long rope. Pedro was not only "sweating the darkness" but now fuel was becoming a critical factor.

1900—The boy was safely on top of the Needle. Pedro quickly moved in and picked up the boy and two climbers and flew them to the plateau. Pedro returned for the remaining three climbers (this exacting maneuver was even more exciting because of darkness) and then collected the remaining personnel and returned to the Don camp where they were turned over to the Sheriff's deputies.

1920—Pedro landed at Williams AFB with 200 pounds of fuel remaining after four hours of flying and one well coordinated save between the rescue unit and the Sheriff's office.

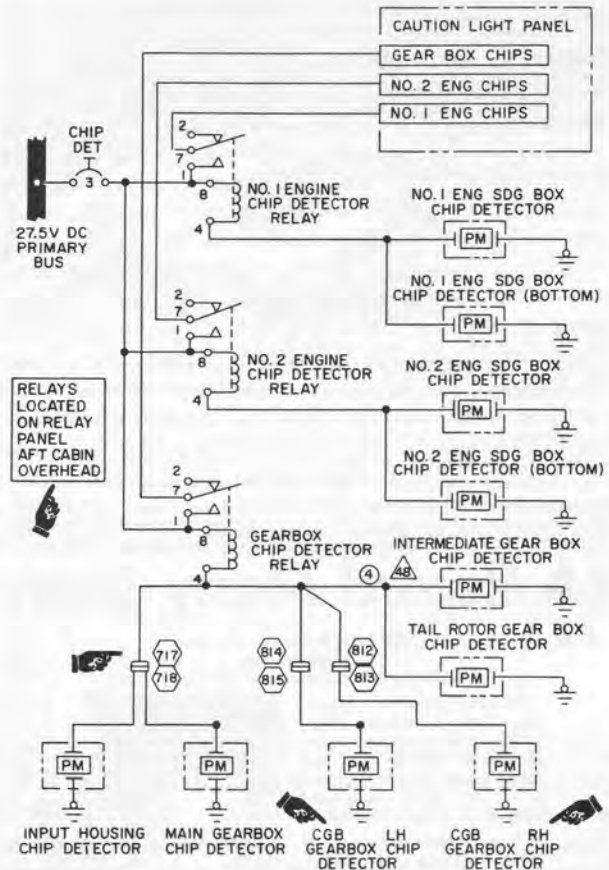
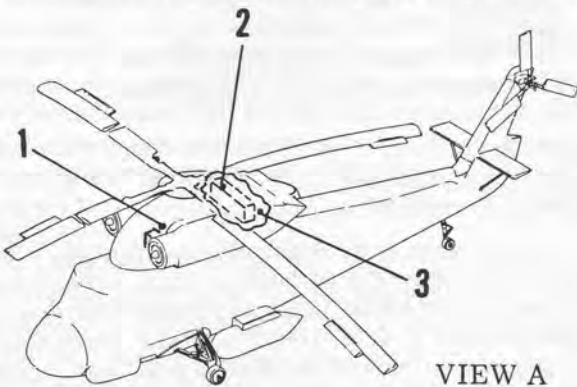
Oh yes! If anyone wants over 500 feet of rope it's at the top of Weavers Needle. First come—first served.

UH-2C—GEARBOX CHIP LIGHTS

by J. J. McMahon,

Service Engineer

On the UH-2C, any one of six chip detectors could cause the GEARBOX CHIP caution light to actuate. (Refer to the accompanying schematic.) When the caution light remains ON, it is necessary to determine which is the shorted detector. The following systematic trouble shooting procedures will enable a mechanic or electrician to quickly isolate the shorted detector. With the caution light energized, disconnect and re-connect each connector in sequence (718; 813; 815). If the caution light de-energizes when a connection is broken, the shorted chip detector has been isolated. Notice that both the input housing and the main gearbox chip detectors are routed through connector 717/718. If the caution light de-energizes when this connector is broken, an ohmmeter can be used to determine which chip detector is causing the caution light to energize. Continuity between pin U and ground indicates the input housing chip detector is shorted; continuity between pin d and ground indicates the main gearbox detector is shorted. In the event the shorted chip detector has not been discovered, gain access to the intermediate gearbox and tail rotor gearbox; physically check these two chip detectors. (These detectors can be checked directly at terminal block 48, but since the preceding steps have isolated the contaminated chip detector to one of these two, it is quicker to physically inspect them.) View A shows the location of the three roof-mounted connectors.



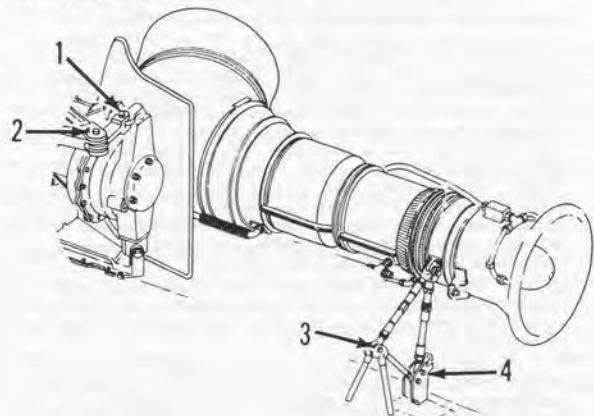
Connector 718 (item 1) is immediately aft of the power relay box, under the auxiliary battery support. Connectors 815 (item 2) and 813 (item 3) are located just aft of the combining gearbox.

With the existing system the only method of isolation for intermittent indications is to carefully examine each chip detector unit. Indications can also be caused by non-magnetic foreign matter circulating in the detector area.

UH-2C Engine Mount Bolt Torques

The recommended torque for the bolts shown as items 1, 2, 3, and 4 in the accompanying illustration, has been changed from 370-690 pound-inches to 370-744 pound-inches. The higher range will aid in lining up the nut with the cotter pin hole. Inspect the cotter pins and nuts for security and if the nuts appear loose, remove and check the threads for damage. Do not remove the bolts to perform the inspection since the engine will roll outboard slightly causing misalignment of the associated support members. Installation of the bolts, in the event that replacement is necessary, will require that the engine be supported with a hoist in accordance with the UH-2C engine installation instructions contained in NAV-AIR 01-260HCA-2-4. Visually check condition of threads and, if damage is evident, replace the nut, bolt and cotter pin. The recommended torque of 370-744 pound-inches should be applied as follows: After bolt installation, tighten the nut to 370 pound-inches. Turn the nut in the tighten direction to align the closest castle slot to

the cotter pin hole but DO NOT EXCEED 744 pound-inches torque. Finally, install the correct cotter pin. This information will appear in a future change to NAVAIR 01-260HCA-2-4.



H. Zubkoff, Service Engineer

A downed Vietnamese pilot undoubtedly owes his life to the courageous efforts of a pararescueman from Det 7, 38th ARRSq, Da Nang AB. Ignoring the obvious danger from a large shark in the immediate area, Sgt Norman C. Kohlstrand leaped into the water from an HH-43 and attempted to unbuckle the pilot from his encumbering straps and equipment. The sergeant worked steadily although the shark was less than 50 feet away and occasionally disappeared in the five-foot swells with their breaking whitecaps. The survivor, seasick and in a mild state of shock, was tangled in his parachute, his ejection seat was still attached, and his life preserver had inflated behind his neck and was forcing his head down into the water. Sergeant Kohlstrand finally cut the survivor loose after attempts at unbuckling failed. Meanwhile, in the Pedro overhead, TSgt William H. Sands, SSgt William N. Shannon, and Sgt Bruce J. Bell kept weapons trained on the shark in case any move was made to attack the two men in the water. For almost 10 minutes, Capt Johnny R. Johnson, RCC, and his copilot, Capt John S. Murray, held the HH-43 in a hover until the rescuee and Sergeant

Kohlstrand were safely aboard. Maintaining position had been extremely difficult for the rescue pilots due to the combination of light rain driven by winds gusting to 26 knots and the greyness of the day which obliterated reference points.

A few weeks earlier, Sergeant Kohlstrand volunteered to be lowered from an HH-43, at night, into an old French mine field with unexploded mines still in it. After a 10-minute search through the dark forest, the pararescueman located the downed pilot he sought and both were hoisted to the rescue helicopter. Earlier another pilot, who had ejected from the same aircraft, was rescued by the Pedro which was manned by Captain Johnson, Capt Henry E. Hooke, Sgt Brian D. Morris, Sgt Roger D. Elam, and Sgt George S. Gladu. Captain Johnson hovered the helicopter in the darkness just above the tree tops to make the rescue.

Maj Morgan A. Downing recently assumed command of Det 11, 38th ARRSq (MAC), at Tuy Hoa AB. He previously served three years as commander of the Athens Flight Service Center, Athens, Greece. This new assignment is Major Downing's first experience with rotorcraft. He attended helicopter school at Sheppard AFB, Texas, in September 1968 and was subsequently assigned to the 38th ARRSq.

Since taking command of the unit, the Major says, "I enjoy it very much. There is a real sense of accomplishment in taking part in a combat rescue. We've had twenty combat saves since the first of the year. When we come back from a mission and touch down with the men we've picked up, everyone in the detachment from the pilots to the maintenance men can see first hand that they had a part in it. It's a very rewarding experience," Major Downing, a senior pilot, has personally participated in nine of the rescues.

LtCols Richard W. Burkholder and Harold V. Wright were rescued from mountainous, jungle-covered terrain by Det 13, 38th ARRSq, after they ejected from their crippled aircraft 11 miles from Phu Cat AB where the ARRS unit is based. One of the downed pilots was rescued by an HH-43 crew consisting of Capt Richard J. Bouckhout, RCC; Capt Robert S. Morita, RCCP; Sgt Daniel L. Lange, RS and Alc Barry D. Herbert, RS. The other rescue was carried out by 1stLt Wayne A. Grant, III, RCC; and his crew: Maj Juan H. Migia, RCCP; SSgt Delbert B. Dunn, FE; and Sgt James E. DeGraw. Sergeant DeGraw was lowered from the helicopter and worked for 20 minutes to free the survivor who was hanging from his shroud lines.

A Record Many Share

By Col Hollon H. Bridges
Commander
3rd Aerospace Rescue and Recovery Group

On the eve of my departure from Southeast Asia, I take great personal satisfaction in having had the opportunity to have served with the most decorated unit in Air Force history.

During the past year we have witnessed many changes and the establishment of new records throughout Southeast Asia. None, however, is more meaningful than a record which can be measured in the numbers of human lives which have been saved from probable death. Recently the men of the 3rd ARRGp completed the 2,500th aerial save of an Allied Serviceman—men who would otherwise probably have died or been taken enemy prisoner.

There is no way to measure the value of a life saved, but each pilot rescued represents a savings of at least \$1-million, plus the savings of a like amount to train his replacement. While we have rescued men of all services, enough pilots have been brought back to safety to man several combat flying wings.

I cannot say enough in praise for the men who daily fly the rescue mission. They are the most dedicated, most determined, most courageous men I have ever been privileged to serve with. There is not a man among them who does not put the safety of others above his own personal desires and comfort. Not once has a rescue crew of the 3rd ARRGp failed to fly its mission, regardless of the hazards involved. These are 1,200 men of whom I am justly proud.

By the same token, my appreciation goes out to the many others who participate in the rescue mission, but who are not an integral part of the 3rd ARRGp. These include the A-1 "Sandy" and "Spad" pilots who work hand-in-glove with our "Jolly Green Giants" and "Crowns" on every rescue mission involving those aircraft. It goes to the Army "Huey Cobras" and "Gunships" who provide firepower support for our unarmed "Pedros" on their local base rescue recoveries. And it most assuredly goes to the many fighter pilots, forward air controllers and others without whom our accomplishments would not have been possible. Without the gallantry of all members of the rescue team, whose gallantry is well documented, we could not possibly have compiled the record number of saves with which we have been credited.

Air Force, Army, Navy and Marine personnel have all contributed to the success of our mission. Many have risked their lives for the most noble of all causes... "that others may live!"

Finally, my thanks to each of those who have acknowledged the contribution which we have made in performance of the U.S. mission in Southeast Asia. To each I offer my heartfelt thanks and sincere "Well Done!"



Colonel Bridges

PHU CAT AB (7AF)—Six men assigned to Det 13, 38th ARRSq, at Phu Cat AB recently received Distinguished Flying Crosses for their parts in a massive rescue operation near Vinh Thanh several months ago. The rescue took place when an Army UH-1 Huey gunship was shot down 15 miles northwest of Phu Cat.

HH-43 Pedro crews from Phu Cat, along with one from Pleiku AB, successfully extracted 11 injured soldiers, three of them critically wounded, despite intense enemy ground fire. In addition to the 11 injured, another 17 men who were part of the rescue team, had to be pulled from the triple-canopied jungle area. A fireman, three pararescuemen, and a fire suppression team, were all lowered into the area before the rescue could be successfully completed.

Crew members from Det 13 were Maj Juan H. Migia, Maj Dwight C. Hageman, Capt Richard J. Bouckhout, and SSgts Jesse Franklin, Jr., Larry H. Knefelkamp and Delbert B. Dunn.



FLIGHT ENGINEERS—Their knowledge and competence is an important factor in every rescue flown by ARRS crews. In top photo, Sgt Clint Berg, Det 8, 38th ARRSq, Cam Ranh Bay AB, works on an HH-43 rotor hub. Below, Sgt John Dougherty, Det 11, Tuy Hoa AB, performs a pre-flight inspection. (USAF photos by A1c Robert Mulica and SSgt Chuck Henderson)



Ignoring enemy small arms and mortar fire, an HH-43 crew from Det 1, 38th ARRSq, Phan Rang AB, recently evacuated three critically wounded Republic of Korea (ROK) soldiers.

When Maj John C. Acton, Jr., RCC, and his rescue crew arrived at the battle location, the ROK's were still exchanging fire with the hostile forces. Overhead flares to light the helicopter landing zone could not be used—they would expose friendly troops to enemy fire. As a

* * * * * **Major Shershun Honored For Work In Vietnam** * * * * *

TAN SON NHUT (7AF)—Maj Carroll S. Shershun was presented the Orville Wright Award, the Silver Anvil Award and the Air Medal recently for his activities while serving as information officer and head of the civic action program for the 3rd ARRGp at Tan Son Nhut.

The Orville Wright Award is presented annually by the Aviation Space Writers Association to an Air Force officer for public information activities. Major Shershun received the award for his significant contributions in establishing public awareness of the humanitarian aspects of the Vietnam War. The Silver Anvil, presented yearly by the Public Relations Society of America for community relations efforts, was awarded to the Major for carrying out the top public relations program in a government or military organization. Previously, he was cited for his community relation efforts in furthering Japanese-American understanding while stationed in Toyko from 1958-1961. The Air Medal was awarded for meritorious achievement while participating in aerial flight.

Major Shershun entered the Air Force in 1951 and was



MEMORIAL FOR A COMRADE—Amid the stark loneliness of Vietnam's central highlands stands a memorial to Maj David H. Pittard, an HH-43 Pedro helicopter pilot who was killed on a rescue mission Sept. 27, 1968. Det 13, 38th ARRSq, recently dedicated a plaque in memory of the major who died while trying to save the crew of an Army helicopter in the Soui Ca Mountains. During the rescue attempt, the Pedro crew was ambushed by North Vietnamese Army troops. Though only here five months, Major Pittard heroically distinguished himself by winning two Silver Stars, the Distinguished Flying Cross, a Bronze Star and six Air Medals.

The memorial, see inset, reads: "In memory of Major David H. Pittard, That Others May Live," the motto of rescuemen the world over, and one that the major fulfilled to the limit.

(USAF photo by A1c Nick Grisanti)

final resort, ground flares were ignited to give the chopper crew a landing position. Major Acton came in over a minefield surrounded by concertina wire, hover-taxed the HH-43B over the wire and landed on the rough, unprepared surface outside the ROK compound perimeter.

SSgt Joseph Defeo, medical technician, and SSgt Jeffery L. Bailey, flight engineer, darted from the chopper to aid the Korean soldiers in boarding the helicopter but were pinned down as enemy forces renewed their small arms and mortar attack against the compound. As the HH-43's fuel supply was becoming dangerously low, the ROK soldiers threw a defensive perimeter around the rescue helicopter and the crewmen quickly placed the wounded aboard. The Pedro immediately took off and headed for Phan Rang.

commissioned in 1957 after completing Officer Candidate School. He served as assistant editor of the *Airman*, official magazine of the Air Force; editorial advisor of the *Aerospace Historian*, official publication of the USAF Historical Foundation; and worked on the staffs of the *Boston Globe* and the *San Antonio Express*.

In addition to his regular duties, Major Shershun teaches English during his off-duty hours to a group of Catholic nuns at an orphanage near Saigon. After his Vietnam tour, he will proceed to L. G. Hanscom Field, Mass., where he will be director of information in the Electronics System Division, Air Force Systems Command.

Major Shershun is the author of an article "Never Fear, Pedro's Here!!" which appears in the August, 1969, issue of *Airman*, the official magazine of the U. S. Air Force. Described in the article are HH-43 operations in Southeast Asia and the activities of the dedicated men from the 38th ARRSq who man the rescue helicopters. In slightly over four years of operation in the area, Pedro crews have made more than half of the recorded combat saves.

Luckily for a wounded Vietnamese soldier, the rescuers in an HH-43 which flew overhead had sharp eyes. The helicopter, from Det 9, 38th ARRSq, Pleiku AB, was enroute from the base to Kotum when the soldier was spotted near a road in hostile territory. Ignoring the possibility of enemy fire, Maj Robert C. Gordon landed the HH-43 and SSgts Frank B. Deck, Jr., and Colin A. Lane leaped out. A minute or two later they had placed the wounded man aboard the HH-43 and it was once again airborne. Other members of the crew were Capt Arthur A. May and SSgt Teddy E. Lusk. In another Det 9 mission, Capt William F. Clark was on a training flight when notified that an Army UH-1 was making an emergency landing with two wounded soldiers aboard. The Captain maneuvered his HH-43 in behind the Huey on final and landed nearby as the other aircraft came to a stop. Sergeant Deck and A1c David L. Patterson placed the wounded aboard the HH-43 and they were taken to the hospital. Other members of the Pedro crew were Capt James F. Hinkel and Sgt Floyd M. Barnes.

During a recent at-sea rescue, the sea was just choppy enough to make hovering difficult due to the lack of a good reference. Capt Henry E. Hooke, copilot aboard the Det 7, 38th ARRSq, HH-43 inflated a glove and threw it on the water to provide the pilot, Capt Robert S. Henderson, with a hover reference. Crews have found this technique to work as well as smoke flares in some instances—and sometime more convenient to deploy, as in this case. Other members of the rescue crew were SSgt Kenneth R. Jones and Sgt Steven T. White.

Capt Jack Bartholomew and Fred Doyle, who ejected at night from their crippled F-4, were rescued shortly afterward by an HH-43 crew from Det 3, 38th ARRS, Ubon Afl, Thailand. Capt Ernest L. Neville, RCC, landed in a partially wooded area surrounded by sloping rice paddies and TSgt Thomas P. Gratton, medical technician, and SSgt Michael W. Mulvany, flight engineer, leaped out and began searching for one survivor. Meanwhile, the rescue helicopter headed for the second survivor who was showing a light. Captain Neville made two attempts to land on the uneven ground and then retained enough power to hold the helicopter level while the copilot, Maj Robert C. Collom, jumped out and assisted the rescuee aboard. The HH-43 then returned to pick up the first rescuee and crewmembers.

In another night mission, Major Collom landed on a dirt road marked by a bonfire to evacuate an Air Force sergeant injured in a motorcycle accident. Capt Michael C. Kiefl was copilot; Sergeant Gratton, medical technician; Sergeant Mulvany, flight engineer; and Capt Edward V. Hudson (MC), flight surgeon.

Det 8 Aids Community



APPRECIATIVE—Receiving thanks for their unit's cooperation with civil defense emergency rescue plans for Sandy Island are SSgt Lester Blaxton, left, helicopter technician, and Capt Ferdinand M. Espiau, HH-43 pilot, from Det 8. Expressing his appreciation is Greg R. Duffy, right, deputy director of the Georgetown County Civil Defense Agency. With him are Phil Hill, information representative for the South Carolina State Civil Defense Agency, Edward Carraway, director of the Georgetown, S. C. Civil Defense Agency, and Edward Carraway, Jr. (USAF photo)

Now, as part of a civil defense emergency rescue plan for Sandy Island, S. C., HH-43's from Det 8, EARRC (MAC), at Myrtle Beach AFB, can be called to pick up medical cases from the isolated community when quick evacuation is deemed necessary. The town, which has 300 residents, is located on an island 20 miles from the airbase. Travel is by boat and in case of an extreme medical emergency, the trip to the hospital does consume precious time.

Georgetown County Civil Defense officials contacted Maj Adolph E. Selch, Det 8 commander at the time, to determine if the Air Force could aid in an emergency situation. Once authorization from the Air Force was obtained, the Civil Defense officials coordinated with the Air Force and Price Washington, mayor of the community, to find a suitable landing area for the helicopters that would be deployed to the island when needed.

Commenting on Det 8's role in the program, the present unit commander, Maj Bruce C. Bowden, said, "the helicopter will be deployed only in extreme situations—primarily medical emergencies—where time is at a premium. Validation of the emergency will come from the Georgetown County Civil Defense officials."

Both Major Bowden and Civil Defense officials agree that the people living on the island played the key role in establishing the Sandy Island helipad.

KAMAN SERVICE REPRESENTATIVES

EDWARD F. NOE
NAS Lakehurst, N. J.

JACK L. KING
NAF Naples, Italy

WILLIAM C. BARR
MICHAEL T. FIASCHETTI
USS Wright

HORACE F. FIELD
GERARD A. BOUTIN
DONALD R. DELANEY
ROBERT C. BELISLE
NAS Atsugi, Japan
NAS Cubi Point, P. I.

RICHARD A. REYNOLDS
NORMAN M. MEYERS
BILL L. MAGNAN
Home Office

HOMER C. HELM
NARF North Island, Calif.

DONALD P. ALEXANDER
Iran

ANTHONY WYNZEN
MCAS Cherry Point, N. C.

DONALD T. LOCKRIDGE
WILLIAM G. WELLS
LLOYD R. GARDNER
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CUSTOMER OPERATIONS SECTION — ROBERT L. BASSETT, Supervisor

Detachment Achieves 1st For Rescue From the Eglin AFB, Fla., "Eagle"

A "first" has been reached by Detachment 25, Eastern Aerospace Rescue and Recovery Center (EARRC) here. The detachment has been selected as the first recipient of the EARRC Commander's Award.

Commander of Det. 25, EARRC, Maj. Robert R. Reeves, accepted the award from Col. Thornton C. Peck, base commander, during ceremonies held in front of the "Pedro" alert pad.

The detachment received the award for maintaining a 98.5 per cent operational ready rate on two HH-43B "Pedro" helicopters and receiving outstanding ratings from EARRC Headquarters in all unit functions.

The new award was established to stimulate competition and professional expertise among units and as a recognition for superior achievement.

"Since the activation of our unit in June 1967, our personnel have worked diligently day and night to insure 24-hour rescue coverage for the Eglin complex and neighboring civilian communities," Major Reeves, a charter member of Det. 25, stated. "We achieved this goal and by so doing saved the lives of eight military persons and one civilian. This in itself is enough reward for the air rescuer; however, it is particularly gratifying to win the Commander's Award recognizing top accomplishment as a team."

Accompanying the Commander's Award was a letter from EARRC Commander, Col. Walter F. Derck, citing the unit.



DET 25 RECEIVES COMMANDER'S AWARD—Maj Robert R. Reeves, detachment commander, left, accepts the award from Col Thornton C. Peck, Eglin AFB commander. Det 25 personnel watching are, front row, left to right, TSgt Rodney L. Griffith, TSgt Charles H. Herring, Sgt Glenn A. Mumpower, Capt Phil C. Hurley, SSgt William E. Roberts, SSgt Roy J. Taylor, CMSgt Robert E. Everton, SSgt John W. Coleman. Rear row, SSgt James B. Reed, Jr., SSgt Frank S. Gilash, TSgt John T. Snow, SSgt V. Cook, SSgt Felix H. Havis, SSgt Clinton H. Godown, A1c James A. Fisher and SSgt William D. Conn.

It stated, "The selection of Det. 25 as the first winner of the Commander's Award carries with it recognition of superiority in management and excellence in all phases of unit operation. The members of the EARRC join me in commending the personnel of Det. 25 for their individual and collective efforts which have resulted in this noteworthy achievement."

"Although you are a small unit in number, you have consistently been a giant in performance and accomplishment," Colonel Peck said while congratulating the unit. "You have established admirable rapport with other organiza-

tions while consistently providing invaluable rescue protection for the local area," he continued. "The familiar call sign 'Pedro' penetrating the air waves has become a comforting sound and tremendous morale booster for pilots in distress everywhere. Now it stimulates even greater confidence for us because we have EARRC's best supporting our local area," Colonel Peck stated.

The unit has amassed over 1,000 emergency missions and over 40 recoveries without an accident. Someone mentioned, their new goal? The answer, improvement and retention of the coveted award.

Current Changes

This list reflects the latest changes to the handbooks. Consult applicable "A" page for changes issued prior to those listed below.

	Issue Date
H-2 Airframe Change 132 - Amend 1, CARGO HOOK SYSTEM, IMPROVEMENT OF	10 June 1969
H-2 Airframe Change 140 - Main Rotor, BLADE FOLDING IMPROVEMENT	23 June 1969
NAVAIR 01-260HCA-2-2 - Manual, Maintenance Instructions, Navy Models UH-2A/UH-2B/UH-2C Helicopters, AIRFRAME	1 October 1967 changed 15 April 1969
NAVAIR 01-260HCA-2-5.1 - Manual, Maintenance Instructions, Navy Models UH-2A/UH-2B/UH-2C Helicopters, INSTRUMENTS	1 October 1967 changed 1 July 1969
NAVAIR 01-260HCA-4-8 - Illustrated Parts Breakdown, Navy Models UH-2A/UH-2B Helicopters, NUMERICAL INDEX AND REFERENCE DESIGNATION INDEX	15 January 1967 changed 15 May 1969
NAVAIR 01-260HCB-4-5 - Illustrated Parts Breakdown, Navy Model UH-2C Helicopters, POWER PLANT AND RELATED SYSTEMS	1 June 1967 changed 1 May 1969
NAVAIR 01-260HCB-4-9 - Illustrated Parts Breakdown, Navy Model UH-2C Helicopters, SPECIAL SUPPORT EQUIPMENT	1 June 1967 changed 1 May 1969
NAVAIR 03-10ADG-7 - Manual, Overhaul Instructions with Illustrated Parts Breakdown, MANUALLY OPERATED BALL VALVE P/N AV23A1101	15 May 1969
NAVAIR 17-15KL-21 - Manual, Operation and Service Instructions with Illustrated Parts Breakdown, ASE SERVO VALVE LINE AND BENCH TEST SET, P/N K604639-1	15 April 1969
Support Equipment Change 1085 - MODIFICATION OF ASE AMPLIFIER BENCH TEST SET, P/N K604603-2	10 June 1969

R. H. Chapdelaine, Supervisor, Service Publications

Huskie Happenings



...An HH-43B crew from Det 18, EARRC (MAC), Thule AB, Greenland, evacuated an ill officer from the USCG LORAN Station at Cape Athol to the air base. Maj Frank W. Schnee was pilot on the flight and Maj Sam J. Scamardo was copilot. Sgt Fredrick A. Giffin was flight engineer. ...An HH-43 crew from Det 12, WARRC (MAC), George AFB, Calif., picked up a man and his wife from a spot near their threatened home after the rain-swollen Mojave River overflowed its banks. Aboard the HUSKIE were Capt Troy G. Irvin, pilot; LtCol John F. Ward, copilot; and Sgt David V. Smith, flight mechanic. In a second mission, also flown by Captain Irvin, two boys were plucked from an island in the rapidly rising river. Other members of the rescue crew were Maj Ryland R. Dreibelbis, copilot; TSgt Billy E. Workman, medical technician; and Sergeant Smith. Two other flood rescues carried out by Det 12 crews were reported earlier in Rotor Tips. ...In a night mission over mountainous terrain, two Army men seriously injured in a jeep accident were evacuated to the Ascom Hospital by an HH-43 crew from Det 5, 41st ARRWg, Suwon AB, Korea. Due to overcast sky conditions, Capt Vance E. Need, RCC, dropped to a low level and followed a highway from Suwon to his destination. With Captain Need were Capt Joseph B. Marsh, CP; SSgt John P. McCann, PJ; and SSgt Lloyd E. Wakefield, FE. ...In another medevac, Captain Need picked up a wounded Korean soldier and a doctor and took them to Ascom Hospital. Others aboard the HUSKIE were Captain Marsh, Sergeant McCann and TSgt Larry L. Holocker.

...A man hemorrhaging from internal injuries was evacuated from a heavily forested area by Capt Edmund W. Fischbeck, Jr., and his crew from Det 3, WARRC (MAC), Kirtland AFB, N. M. An initial landing was made at 9,000 feet near the evacuation site. Because of the man's serious condition, however, trees were cut down and the HH-43 made another landing even closer to the patient. The pickup was made without incident. With Captain Fischbeck were Major Edward A. DuChene, CP; SSgt Herbert L. Conner, FE; and Sgt John C. Breuninger, MT. ...In a second Det 3 mission, a civilian who had been seriously injured when his horse fell on him, was evacuated from an isolated area by an HH-43B flown by Capt Richard L. Kelley. After the HUSKIE landed in a mountain clearing at the 9,500-foot level, the evacuee was placed aboard by HH-43 crewman Sgt Victor R. Moffett and others at the scene. The third member of the crew was Sergeant Conner.

...An HH-43B crew from Det 11, 41st ARRWg, Kunsan AB, Korea, evacuated a seriously-ill soldier from an artillery battery 20 miles from the base. The patient stopped breathing twice during the flight to the hospital but each time A1c Terry L. Wetzel, rescue specialist, used a resuscitator to revive him. External heart massage was also applied by Airman Wetzel. The emergency treatment was complicated by turbulence encountered during the flight. Maj Earle D. Williams was pilot on the life-saving mission. Others aboard were A1c John W. Bryant, HM, and SSgt Rodney J. Bettevy, FE.

...Maj Clifford Brandon and his HH-43 crew from Det 4, 40th ARRWg, Ramstein AB, Germany, were returning from a precautionary mission for an inbound F-102 when they saw smoke coming from the autobahn. Investigating, they found the rear of a tractor-trailer on fire. Using the public address system on the helicopter, Major Brandon told police at the scene he would attempt to extinguish the fire if they would stop traffic. The HH-43 pilot then positioned the fire suppression kit near the burning truck and the two firefighters on board the helicopter—Sgt Thomas M. Densham and A1c Michael J. Lind—jumped out and quickly put out the fire. The other HH-43 crewmember was SSgt Orlet D. Cookson.

...Flying at night in heavy rain and with poor visibility, HH-43 pilot Capt Bobby L. Meadows followed a road to an Army site, picked up a heart attack victim and then delivered him to the hospital. The HUSKIE pilot used the floodlights to keep the roadway in sight and flew just above the telephone poles. With him on the hazardous flight were Capt Joseph T. Herr, CP; SSgt Dwight L. Berry, FE; Sgt Lawrence H. Weller, MT; and Capt Norman Tkemato (MC), FS. The HUSKIE was from Det 6, 41st ARRWg, Kadena AB, Okinawa.

...A young man, injured after falling from a canyon wall near Tangué Verde Falls, was evacuated from the bottom of the narrow canyon by an HH-43 crew from Det 17, WARRC (MAC), Davis-Monthan AFB, Ariz. The pilot, Capt James P. F. Egbert, carefully lowered the helicopter 200 feet below the rim of the canyon and then held it in position with the rotor blades a scant 10 feet from the rocky wall. Ninety feet of cable was used by the hoist operator to lower Capt Richard A. McLeod (MC), flight surgeon, to the accident site. After treatment by the flight surgeon, the evacuee was placed in a stokes litter and hoisted to the helicopter. Other members of the rescue crew were Capt Clarence L. Hansell, copilot; SSgt Harvey A. Meltzer, flight engineer; and TSgt Eugene R. Veltre, medical technician. ...

KEESLER RESCUE TEAM—Shown in flight line photograph are HH-43 aircrews and maintenance personnel from Det 4, EARRC (MAC), Keesler AFB, Miss. Front row, left to right, Maj Delmar G. Worschech, commander; A1c Greg A. Peterson, TSgt Ahart R. Reed, MSgt Harold L. Neely, Sgt Jessie L. Herrell, Sgt James A. Clawson, Maj Arthur E. Oakes. In rear row, SSgt Har- ril E. Barber, SSgt Charles Hudson, Sgt Thomas R. Beltz, SSgt Marvin E. Bell, Capt Curtis K. Bayer, Capt Ronald C. Tubbs, 1stLt Ronald W. Bashant. (USAF photo)



FAREWELL FLIGHT—Col C. S. Dresser, commander of the 4683d Air Base Group at Thule AB, Greenland, left for Stateside duty recently. He is shown with others in his party who flew with him in an HH-43 for his last visit to the village of Kanak. Left to right are Maj Frank W. Schnee, commander of Det 18, EARRC (MAC), who piloted the HUSKIE, Cdr Jørgen Mølgaard, Danish liaison officer, Mrs. Mølgaard, Colonel Dresser and Lt Col Patrick L. Doran, base materiel director. Below, Col James A. Darby, commander of the 37th Air Division, prepares to depart on an HH-43 flight to Savigsivik. The Colonel was at Thule to participate in change-of-command ceremonies for Colonel Dresser and Col Nat D. King. Pilot of the HUSKIE is Capt David E. Mullen. (USAF photos)



"BELLES AND BEAUX"—USO group from Harding College, Searcy, Ark., are shown with Det 18 crew which transported them to the USCG Loran Station at Cape Athol to present their "America in Song" show. With them are, left to right, Maj Charles W. Simmons, pilot; MSgt Joseph W. Blaquierre, maintenance supervisor; SSgt Gerald E. Kislek, flight mechanic; Sgt Jack D. Cable, administrative specialist; SSgt Frederick A. Giffin, flight mechanic; and Capt Louis R. Beck, pilot. (USAF photo)



THULE INSPECTION—Col Robert P. Baumann, Jr., second from right, commander of the Eastern Communications Region, and his party are shown before an aerial inspection of air base communication facilities. Left to right are Major George E. Nancarrow, 1983d Communications Sqdn; LtCol Raull Bugg, AFCS; Maj Frank Schnee, Det 18 commander, and LtCol R. L. Gillings, commander of the Communications squadron. (USAF photo)



SCROLL OF HONOR

Odham, Larry, ADJ2, USN
 Okonek, James F., Major, USAF
 Overton, Gaylon R., Captain, USAF
 Owens, William P., SSGT, USAF
 Ozcan, Mahmut, Major (Turkish)
 Page, Kenneth G., ADJ3, USN
 Page, Roland J., Captain, USAF
 Parker, Pasco, Major, USAF
 Parks, James L., A1c, USAF
 Pass, Ronald I., Captain, USAF
 Patrick, W. J., ADR2, USN
 Payne, James M., Sgt, USAF
 Payne, Ray, SSGT, USAF
 Peckinpugh, Dudley R., TSgt, USAF
 Peirce, Frank, Lt, USN
 Perisse, Charles, PH2, USN
 Peterson, L. R., AN, USN
 Pfadenhauer, Richard C., Major, USAF
 Phythian, C. W., Sgt, USAF
 Pickering, Harold, Major, USAF
 Pittard, David H., Captain, USAF
 Porter, Richard E., Captain, USAF
 Pospichel, James R., Sgt, USAF
 Precious, Thomas D., Captain, USAF
 Reckard, R. D., PR3, USN
 Reeves, Robert R., Captain, USAF
 Regan, Ronald L., Sgt, USAF
 Reilly, Robert A., Captain, USAF
 Rendell, John R., SSGT, USAF
 Reynolds, Timothy M., A1c, USAF
 Ricks, Keith H., Captain, USAF
 Rodriguez, Jose L., SSGT, USAF
 Rodriguez, Raul, TSgt, USAF
 Rohrbouck, Kenneth G., TSgt, USAF
 Ruble, Richard S., Lt, USN
 Runninger, Robert E., TSgt, USAF
 Sablan, Daniel M., Sgt, USAF
 Sage, Dave, Lt(jg), USN
 Salome, Charles F., Sgt, USAF
 Sanderson, Gary F., Captain, USAF
 Sandt, A. H., Jr., Lt(jg), USNR
 Schildgen, Paul R., Captain, USAF
 Schmidt, Roland C., Sgt, USAF
 Schwake, Gary L., ADJ2, USN
 Shea, William P., Captain, USAF
 Simmons, James W., Sgt, USAF
 Skrine, L. E., ADJ1, USN
 Smariga, John P., Captain, USAF
 Smith, David J., Sgt, USAF
 Sorenson, Steven L., Sgt, USAF
 Speckman, Roland E., LtCol, USAF
 Stamey, Jones, A1c, USAF
 Stiefken, Richard C., A1c, USAF
 Stone, Paul E., Captain, USAF
 Stormiolo, Anthony R., AEAN, USN
 Strayer, Jay M., Major, USAF
 Stroh, Jerry D., Major, USAF
 Stubblefield, Willie F., SSGT, USAF
 Sullivan, Lafayette, SSGT, USAF
 Tarantino, James E., A1c, USAF
 Teeter, Earl, Sgt, USAF
 Terbeest, Leslie W., SSGT, USAF
 Thomas, William H., LCpl, USMC
 Thompson, E. D., ADJ3, USN
 Thompson, L. L., AE3, USN
 Thompson, Robert F., Sgt, USAF
 Tobey, John F., SSGT, USAF
 Tollefsen, Albert E., Captain, USAF
 Touchette, Bernard L., SSGT, USAF
 Tourigny, Clement G., Lt(jg), USNR
 Tracy, John L., Sgt, USAF
 Tubbs, Ronald C., Captain, USAF
 Tucker, Charles L., Sgt, USAF
 Tyler, William H., SSGT, USAF
 Tyson, John M., ATN2, USN
 Uhl, William R., Captain, USAF
 VanHoutin, Donald W., Sgt, USAF
 Walker, Michael L., 1stLt, USAF
 Walther, Glen P., Captain, USAF
 Warren, Ernest H., Major, USAF
 Wassmer, Douglas H., Lt(jg), USNR
 Weeks, Leroy, Major, USAF
 West, Donald, ADJ3, USN
 Whitehead, Archelaus, Sgt, USAF
 Wichman, David M., A1c, USAF
 Wiggins, F. D., Lt, USN
 Wilkins, John C., A1c, USAF
 Williams, Alma L., Major, USAF
 Williams, Earle D., Jr., Major, USAF
 Wilson, Huel W., SSGT, USAF

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