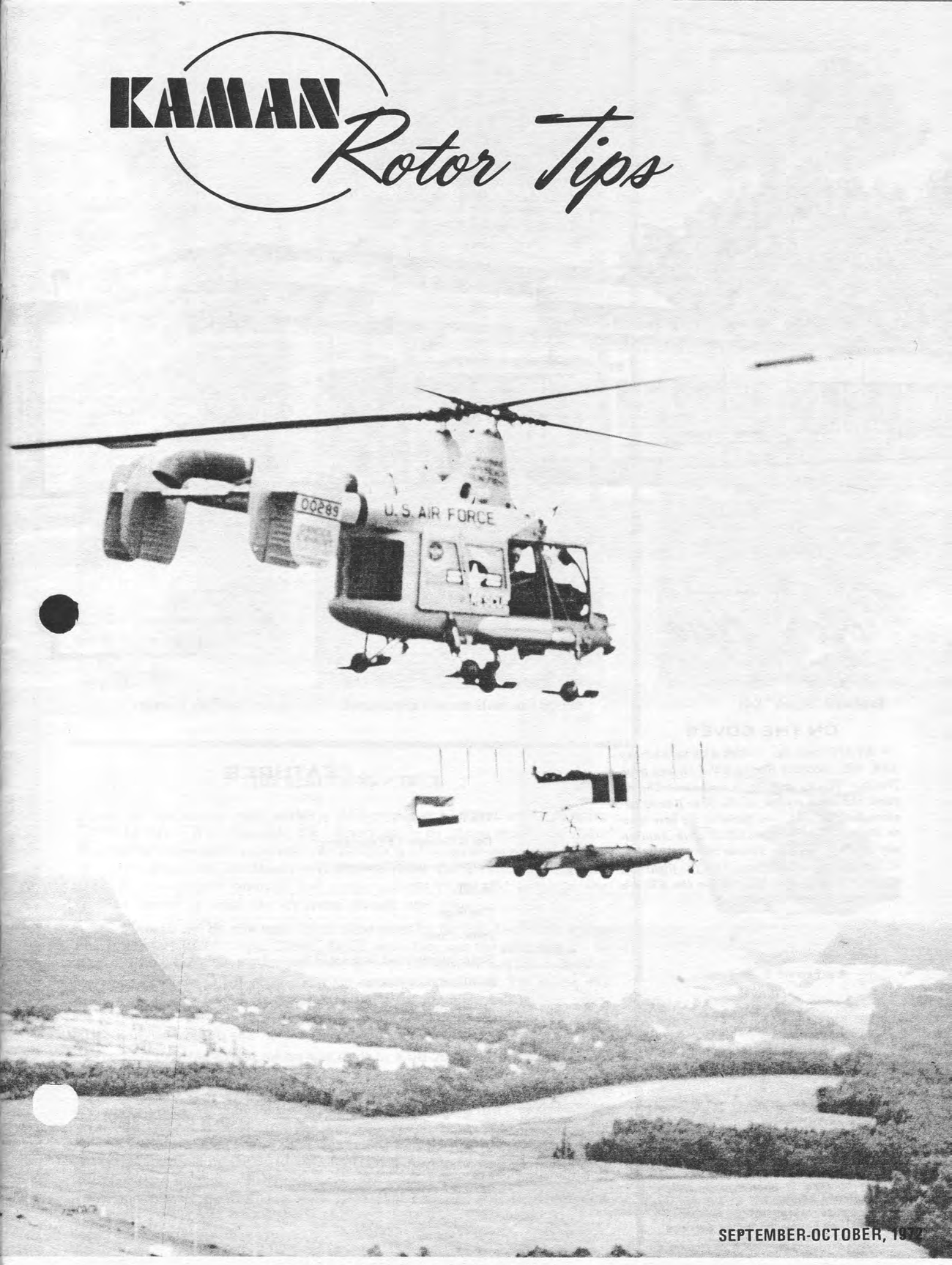
KAMAN Rotor Tips



SEPTEMBER-OCTOBER, 1972

KAMAN AEROSPACE CORPORATION

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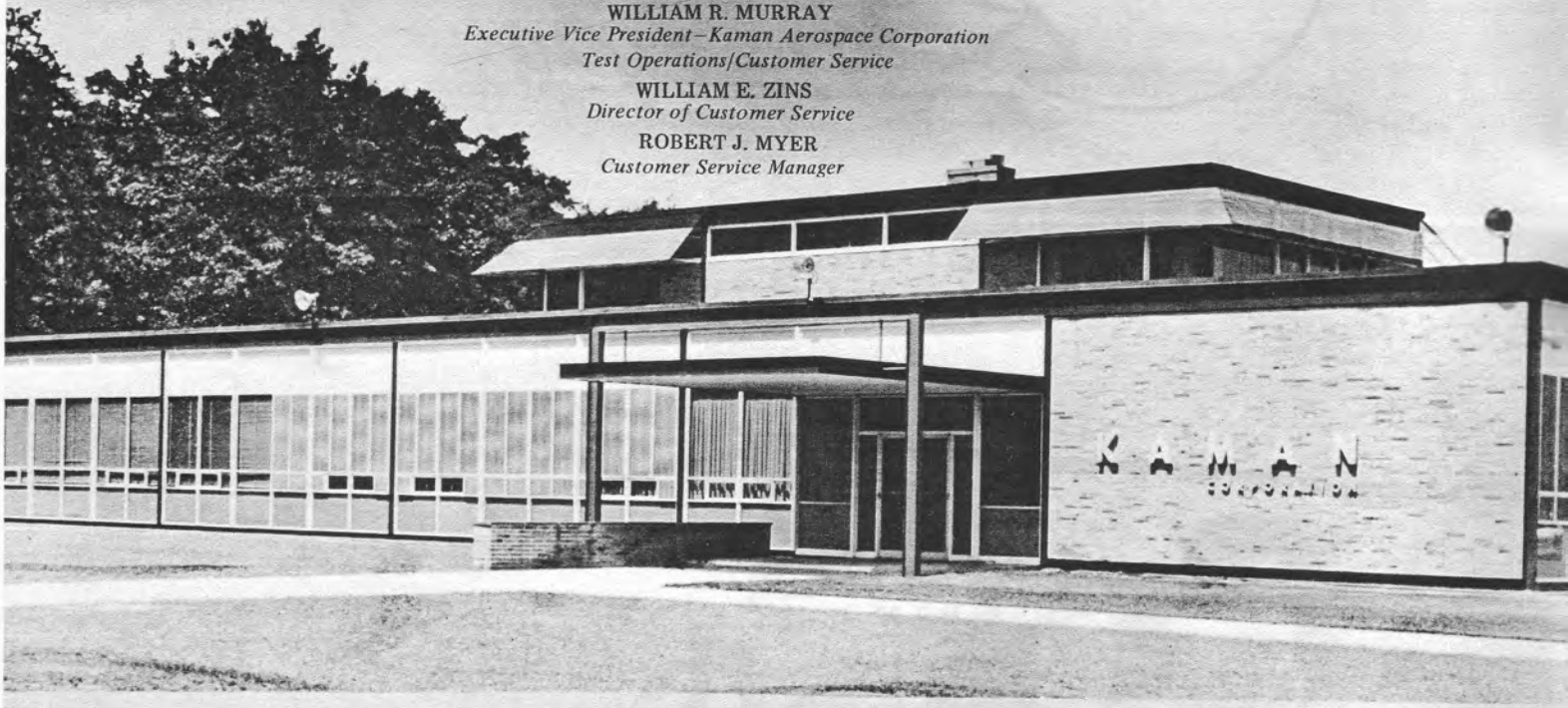

Rotor Tips

Volume VII Number 6

ON THE COVER

An HH-43F from Det 6, 44th ARRSq, Andrews AFB, Md., escorts a Boeing BW-1 biplane from Transpo '72 (see page 4) to Andrews. The biplane shown, a replica of the first Boeing airplane built in 1916, was stored at the base prior to display as part of the USAF 25th Anniversary celebration. The 30-mile trip was flown in 45 minutes. Cruising airspeed for the flight was 45 knots, maximum airspeed for the BW-1 is 60 knots. (USAF photo)

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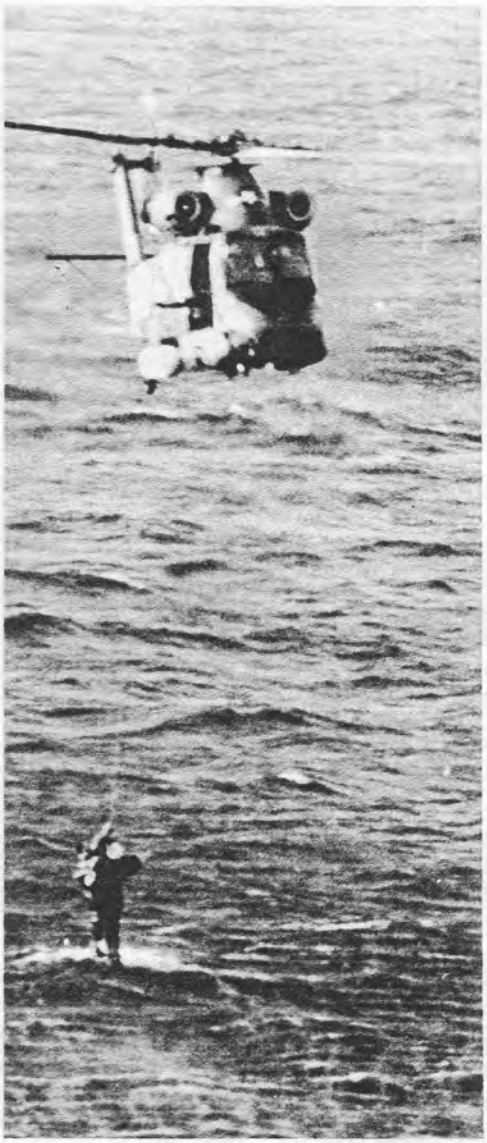
FEATURES

DEPARTMENTS

Lowered To Help



Rescuee and Rescuer Hoisted Together

H-2 "Angel" Overhead

THE REAL THING – TWICE

Shown are two rescues made within a 24-hour period by UH-2C crews from the CVT SAR Det at NAS Pensacola, Fla. Rarely during its 12-year history has Rotor Tips had the opportunity to present photographs of an actual at-sea rescue. Now... two at the same time! Our thanks to PH2 Burns Palmer and AN John Geil for their excellent photographic coverage, and congratulations to the H-2 crews for the efficient manner in which the life-saving rescues were made.

Lt J. P. Harris and his crew were flying plane guard for the USS Lexington, operating in the vicinity of Corpus Christi, Texas, when they saw the pilot of a TA-4J eject. Seconds later the UH-2C was hovering over the survivor and he was hoisted to safety as shown in the photos at right, taken by Airman Geil. The rescue was made without incident despite the proximity of the ship which made normal hovering "most uncomfortable and almost dangerous." With Lieutenant Harris were Lt R. E. Rew, the copilot; and AM3 B. L. Franklin and AE3 R. G. Tafoya, crewmen.

The next day, the second rescue was made by a UH-2C crew from the Pensacola Det after they saw the pilot of a TF-9 eject about 500 feet ahead of the ship. As Lt D. D. Weaver held the H-2 in a hover over the survivor it was seen that although the downed pilot was conscious he was making no attempt to free himself from his parachute. ATAN R. B. Morton was lowered to the water, see photos above taken by Photographer's Mate Palmer, and determined that the pilot's legs were broken. Although hampered by the six to eight foot waves, Airman Morton was able to free the pilot from his chute. Both men were then hoisted to safety at the same time. Other members of the H-2 crew were Lieutenant Rew, and AE1 H. A. Johnson.

Plucked From Sea

ON ALERT—An HH-43 is shown "on duty" at Transpo 72, Dulles International Airport, Va. More than 1.3 million persons visited the nine-day transportation exhibition to see the approximately 460 displays. The HH-43, from Det 6, 44th ARRSq (MAC), Andrews AFB, Md., furnished local base rescue protection during the almost continuous air show at the event. (USAF photo)

DET 6 OPERATIONS

FACT SHEET ■■■■■ transpo 72

UNITED STATES INTERNATIONAL TRANSPORTATION EXPOSITION

Det 6, 44th ARRSq (MAC) flew a total of 27 sorties for 17.9 hours in support of flying activities at the Department of Transportation's TRANSPO '72 at Dulles International Airport, Va., from 26 May to 4 June 1972. The HH-43 "Pedro" scrambled four times: three on fatal accidents and one on an aerial demonstration for the Air Force portion of the show. Average scramble time was 51 seconds.

FSK MISSIONS: The FSK was deployed two times to extinguish fires on wreckage. No saves using the FSK.

1. Crash of a Formula One racer after a mid-air collision during a pylon turn. Pilot fatally injured, burning wreckage extinguished.
2. Crash of No. 3 Thunderbird during a formation pull-up. Pilot ejected at an estimated altitude of 300' but became involved in impact fireball. Portions of burning wreckage extinguished with the FSK.

MEDICAL TECHNICIAN USE: Medical technicians involved in three accidents.

1. Medical technicians on both of the above accidents determined fatal status of pilots.
2. A kite rider lost control of his kite and fell 300'-500' to the ground. MedTech deployed and attempted assistance.

One precautionary orbit was flown for Mr. Bob Hoover, who made a one gear-up landing in his P-51 on a foamed strip.

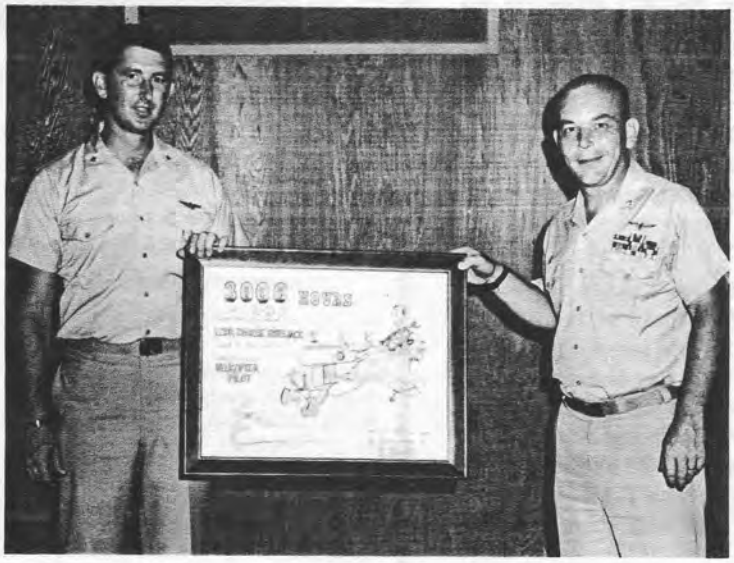
Aircraft In-Commission rate was 100%. There were no aborts and only one delay due to weather. (A 100% rate was also attained at Andrews assuring no break in our 24-hour alert posture.)

Of the assigned aircrew members, 90% were involved in actual incidents.

Other incidents occurring but not requiring Det 6 services included: One unsafe B-17 gear; loss of canopy on a Pinto fighter that sheared portions of the stabilizer; blown tire on a B-17 during a cross-wind landing; blown cylinder on a Formula I racer.

Pedro participated in the afternoon air show at Transpo on 29 May. The crew of the HH-43F demonstrated a scramble from the Transpo alert area and proceeded to

H-2 PILOT LOGS 3000 HOURS



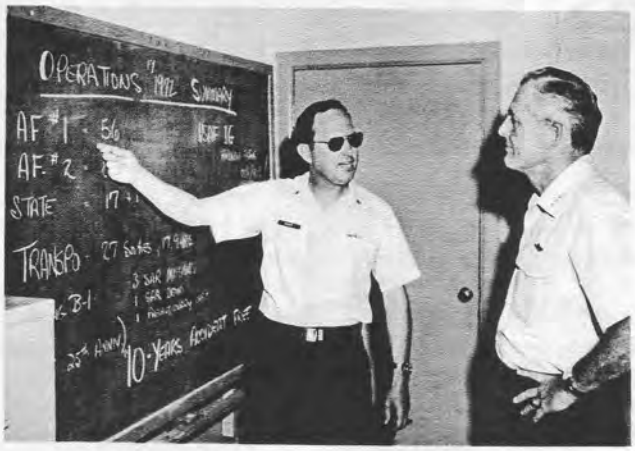
LCdr Charles Kiseljack, left, of HSL-31, NAS Imperial Beach, Calif., recently became the first U. S. Navy pilot to log 3000 hours in the H-2. In recognition of his achievement, Cdr George T. Crowell, right, commanding officer of HSL-31, presented the veteran helicopter pilot with a framed memento from squadron personnel. LtCommander Kiseljack also received a "3000-hour" award from Kaman Aerospace. Making the presentation was KAC Vice President William R. Murray.

LCdr Kiseljack was the first Naval aviator to log 2000 hours in the H-2, a distinction he achieved in 1967 while flying UH-2 SEASPRITES. (USN photo)

the grandstand area where they performed a smoke bomb drop then came around to demonstrate a hoist pickup. The crew consisted of: Maj Gayle D. Bernhardt, aircraft commander; Capt Arthur A. May, copilot; Sgt Thomas P. Horn, firefighter; SSgt David W. Lilliston, helicopter mechanic.

Potomac Rescue

A few weeks after Transpo 72, an HH-43 crew from Det 6 responded to a call for assistance when two men were trapped by the rising waters of the Potomac River just above the Georgetown section of Washington, D. C. The men had been boating in the old C & O Barge Canal when caught by the fast running waters of the Potomac and their boat was lost. One rescuee was holding on to the base of an 80-foot tree. As Capt Robert A. Sheppard held the HH-43 in a hover overhead, Sgt Edward A. Gunney made repeated attempts to lower the forest penetrator to the survivor. After 15 minutes the man below was able to move slightly away from the base of the tree and Capt Arthur A. May, the copilot, gave instructions over the helicopter's public address system on the use of the penetrator. The rescuee was hoisted to safety and the second man was picked up five minutes later. Both were treated for shock by SSgt William L. Irwin and transferred to waiting ambulances.



MAC COMMANDER VISITS—Gen Jack J. Catton, commander, Military Airlift Command, visited Det 6 in June. Briefing the General on the unit's activities is Maj Allan L. Gruer, left, detachment commander. Below, Det 6 personnel are shown with General Catton. Front row, left to right, A1c Ronald J. Spagnoli, TSgt Thomas B. Margagliano, Maj Richard D. Griffiths, Major Gruer, General Catton, TSgt Clyde Wilder, SSgt Regis J. Freed, Capt Richard G. Humphreys, A1c Ronald E. Morelli, A1c Ennis J. Walls. Back row, Sgt Eugene Sibley, Sgt Edward J. Larvia, A1c Robert A. Holland, Capt Arthur A. May, A1c Ronald J. Harris, Sgt Clarence J. Spencer, Maj Gayle D. Bernhardt, SSgt James T. Holstein, Sgt Edward A. Gunney, SSgt David W. Lilliston, SSgt William E. Niemann, SSgt Dwight L. Berry, Capt Robert A. Sheppard, SSgt Bayard E. Young.

HH-43 LOGS 5000 HOURS

On May 12th the first HH-43 to log 5,000 accident-free hours passed the magic mark at McChord AFB, Wash. Shown receiving the traditional wetting-down after the record-breaking flight is the pilot, Capt Everett E. (Gene) Barnett of Det 7, 42nd ARRSq (MAC). Wielding the hose is A1c Michael A. Dudgeon of the fire department. The HH-43, No. 58-1852, was received by Det 7 on March 31, 1971, after complete rehabilitation at Kaman. The majority of the 5,000 hours was accumulated earlier when the HUSKIE was used as a pilot training helicopter at Sheppard AFB, Tex. (USAF photo by Capt Samuel E. Chapin, Jr.)

Kaman Awarded Contracts - - -

B-1
DAVI
NASA
RESEARCH

GOOD NEWS—Shown after the announcement that Kaman Aerospace has been selected for subcontract work on the prototype B-1 strategic bomber are, left to right, Robert L. Martin, KAC vice president, Operations; U. S. Rep. Ella T. Grasso, Jack G. Anderson, KAC president; Donald L. Peitzke, North American Rockwell Corporation, Los Angeles Div.; U. S. Rep. William R. Cotter; Robert D. Moses, vice president, Kaman Corporation. In second photo, U. S. Rep. Robert H. Steele notifies Clayton M. Opp, KAC vice president, Washington Operations, of the contract award.

Rudders, Fairings For Test B-1

Kaman Aerospace Corporation of Bloomfield, Conn. has been selected by North American Rockwell Corporation to manufacture the rudders and horizontal stabilizer fairings for prototype test models of the new USAF B-1 strategic bomber.

Kaman's contract, valued at $700,000, is for fabrication of three aircraft sets of rudders and fairings, plus a spare set of rudders for fatigue testing. The airframe components will be of conventional aluminum, bonded non-metallic honeycomb and glass fibre construction. Kaman has begun design and fabrication of tooling for the work, which will be performed at Kaman's production facilities in Bloomfield and Moosup. First delivery is scheduled for December 1972.

Jack G. Anderson, KAC president, said, "Through this initial contract, which makes Kaman part of the B-1 team, the company hopes to participate in the production of the B-1 when the production decision is made. This will follow successful completion of the flight test program and demonstration of the B-1's effectiveness."

Kaman Aerospace, manufacturer of the H-2 SEASPRITE for the U. S. Navy and the H-43 HUSKIE for the U. S. Air Force, has been a principal airframe subcontractor for 25 years. Kaman has broad capabilities and experience in designing and fabricating precision lightweight bonded assemblies, in conventional sheet metal, in glass fibre prime structures and in mechanical components and gearboxes. Among the aircraft and powerplant companies for which Kaman has produced structural components are Grumman Aerospace, Lockheed, McDonnell Douglas and General Electric. Currently in production are components for the F-14, A-6, C-130, B-52, DC-8 and TF 39 Turbofan engine.

Davi Selected For Testing

Kaman Aerospace Corporation's dynamic antiresonant vibration isolator (DAVI) will be installed and flight tested in a rotor isolation application on a UH-1D/H model Iroquois helicopter under an approximate $1 million contract competitively awarded by the Eustis Directorate, U.S. Army Air Mobility Research and Development Laboratory, Fort Eustis, Va.

Kaman engineers consider DAVI a major innovation in isolating high level, low frequency vibrations common to helicopters. It provides nearly 100 percent isolation at the tuned frequency. Passive, light in weight and of simple design and construction, the Kaman-patented invention eliminates vibration in all directions: vertically, fore and aft, and laterally. Laboratory experiments and flight tests on the Kaman H-2 SEASPRITE helicopter have shown that DAVI reduces structural fatigue, increases component re-

liability, contributes to crew comfort and effectiveness and requires little maintenance. DAVI has been under development for eight years through a series of Army and Kaman-funded R & D projects.

Comparative analysis between the vibration levels and blade bending moments obtained on the DAVI-modified UH-1D/H and the unmodified baseline helicopter will be made to determine the degree of vibration reduction and effects on blade bending moments, along with the projected impact of the vibratory and bending moment changes on overall reliability and maintainability. Effects of the DAVI installation on overall system weight, complexity and increased forward speed capability, handling qualities and transient responses will also be compared and analyzed.

The testing program will establish DAVI's potential advantages for current Army aircraft, as well as for future programs.

Other Army Contracts Received By KAC

The development of advanced structural concepts for aircraft fuselage fabrication is the goal of two research contracts awarded by the Eustis Directorate.

Kaman Aerospace and Vertol Div., Boeing Co., will check various design approaches, material selections and production techniques to determine the most favorable approach for the design of an Army aircraft fuselage. This R & D effort will study the various benefits which can be achieved through advanced design concepts and composite material selection. The interaction of these benefits (weight, savings, cost, performance, maintainability) will be analyzed and their related trade-off characteristics established. Each contractor will rank concepts and provide reasons for the selections. After the design concept is approved, the contractor will develop a plan for future aircraft hardware testing, evaluation and production.

In addition, Kaman is studying the maintainability of major helicopter components, under a nine month contract awarded by the Eustis Directorate. The purpose of the study is to analyze current helicopter maintenance problems. The data gathered will be used to improve future helicopter designs.

New Test Methods For Space Craft Studied

Application of new dynamic testing methods for space craft to simulate weightless free flight will be studied by Kaman Aerospace Corporation under a fixed price contract awarded by the National Aeronautics and Space Administration's Langley Research Center, Hampton, Va.

Testing methods developed from the study may have application in predicting the dynamic stresses and vibrations to which the Space Shuttle will be subjected during earth orbital missions later in the decade.

Under the NASA contract, the Kaman Corporation subsidiary will develop computer programs to produce and analyze simulated dynamic test data. With mathematical models of representative space vehicle structures, they will conduct simulated tests using the new methods and analyze, evaluate, and document the results.

Kaman will utilize its in-house computer capability in developing and conducting the test program.

HONORED BY KAMAN

LCdr H. E. Higginbotham, left, of HSL-30, NAS Lakehurst, N. J., is congratulated by Horace Field, III, Kaman senior service representative, after presentation of a KAC Scroll of Honor for a hazardous mercy flight in the Mediterranean. LtCommander Higginbotham, officer-in-charge of the LAMPS detachment deployed aboard the USS Belknap, was pilot of an SH-2D which medevaced a seriously ill sailor from the Belknap to the USS Independence. The flight was made at night in winds so high that the blades on the carrier's helicopter could not be unfolded. It was supposed to make the pickup but the LAMPS helo was used instead. Other members of the SH-2D crew who also received Scrolls were Lt J. D. Dickinson, copilot; AT1 R. L. Daniel, crewman, and HM3 J. Griffin, ship's corpsman.

In right photo, receiving Kaman Mission Awards for a UH-2C mercy flight which aided a plane crash victim are, left to right, AMH3 George P. Cianteo, crewman; Lt Michael S. O'Leary, pilot; and Lt(jg) David C. Pallesen. Making the presentation is LCdr R. E. Weidler, assistant officer-in-charge of the SAR Unit, NAS Pensacola, Fla. The SEASPRITE crew airlifted LCdr Donald Flanigan (MC), a flight surgeon, to Horn Island after a civilian light aircraft crashed, killing one man and seriously injuring another. The flight surgeon also received a Mission Award. (USN photos)

LAMPS Activities ....

By Bruce Goodale,
LAMPS Program Manager

The USS Sterett (DLG 31) with LAMPS Det 1 from HSL-31 returned from its 7-months' Pacific cruise early in August with an outstanding record. In the same month, the USS Truxton (DLGN 35) arrived at Cubi Point, R. P., where it received the LAMPS detachment and SH-2D from the USS Roark (DE 1053) for the remainder of its deployment. Also in August, the USS Jouett (DLG 29) deployed for the Pacific with its det from HSL-31, joining the USS Truxton, the USS Marvin Shields (DE 1066) and the USS Harold E. Holt (DE 1074) which have other HSL-31 LAMPS dets aboard. Also deployed to the Pacific are two ships with LAMPS dets from HSL-30, the USS Biddle (DLG 34) and the USS Joseph Hewes (DE 1078). The USS Bowen (DE 1079) left for the Mediterranean in late July with an HSL-30 det, after participating in the LAMPS Operational Appraisal, to join the USS William H. Standley (DLG 32) already there.

The CO of the USS O'Callahan (DE 1051) has advised that his is the first of the DE 1040 class to complete LAMPS conversion in the Pacific fleet. The USS Garcia (DE 1040) and the USS Brumby (DE 1044) on the Atlantic coast already have their LAMPS pack-ups aboard. The USS Talbot (DEG 4) is scheduled to be the first of the DEG 1 class to be certified for LAMPS operations.

The LAMPS OpAppraisal, conducted by OPTEVFOR on the USS Wainwright (DLG 28) and the USS Bowen, is scheduled for completion in late summer, using a LAMPS det from HSL-30. NADC's D/V-98 at-sea program is continuing with a YSH-2E helicopter and a det from HSL-31 aboard the USS Fox (DLG 33), evaluating possible improvements in LAMPS mission equipment.

In July, a UH-2C fitted with a Sparrow missile launcher and guidance system was tested at the Pacific Missile Range, Pt. Mugu, Calif., by the Naval Air Test Center, Patuxent River, Md., and the Raytheon Company, Bedford, Mass. Purpose of the tests was to determine if the helicopter environment would adversely affect the launching and guidance of a Sparrow missile against a surface target, as compared to a launching from a fixed-wing aircraft. Judging by the hits and damage to a moving target, the tests successfully demonstrated no adverse affects. Such an attack weapons capability, if added to the LAMPS configuration, would appear to contribute greatly to the LAMPS ASMD mission.

Late in August, NAVAIR contracted with Kaman to modify 25 additional H-2's to the SH-2D LAMPS configuration. This will bring the quantity modified to 45; the Navy plans to modify a total of 105 through fiscal year 1975. Based on equipment availability, deliveries to the fleet of the 25 on contract will begin in the Spring of 1973.

Above, UH-2C in flight during test at Pt. Mugu. At right, static photo of same aircraft.

Cdr F. Hefford, DSC, AFC, R. N., 2nd from right, and LCdr A. W. English, R. N., recently visited HSL-30, NAS Lakehurst, N. J. to receive an update on Light Airborne Multi-Purpose System (LAMPS). Both officers are attached to the Commander British Navy Staff, Washington, D. C.

Cdr C. E. Myers, left, commanding officer of HSL-30 and LCdr H. E. Higginbotham, right, gave the formal briefing and explained the LAMPS-configured SH-2D helicopter employed in the mission. (USN photo by Joni L. Doi)

Cdr George T. Crowell, left, commanding officer of HSL-31, and Capt Herbert G. Harzan, Maritime Command of the Canadian Armed Forces. (USN photo)

Capt Herbert G. Harzan, an exchange officer from the Maritime Command of the Canadian Armed Forces, has reported aboard HSL-31, NAS Imperial Beach, Calif. He will be attached to the squadron for a two-year tour of shore duty in the capacity of assistant anti-submarine warfare (ASW) officer. He is an example of the Inter-Service Personnel Exchange program open to officer and enlisted personnel.

This exchange program provides personnel of the United States Navy, and navies of many of our allies, with a "new and challenging foreign shore duty." The exchange personnel fill positions "within the chains of command in foreign navies, as though they belong to the navy to which they are assigned." They are not to be considered liaison officers, advisors, instructors or observers. Instead, this program was established to create a better understanding, and "a mutual confidence and cooperation" between men and women of the U. S. Navy, and navies around the world.

The squadron to which Captain Harzan has been assigned, is the Pacific Fleet's only LAMPS (Light Airborne Multi-Purpose System) squadron. By effectively performing its mission, in concert with non-aviation combatants, such as destroyers, HSL-31 adds a new dimension to Anti-Submarine Warfare/Anti-Ship Missile Defense (ASW/ASMD). Captain Harzan's knowledge in the ASW field will aid in the continuing development of the LAMPS capabilities of the Squadron.

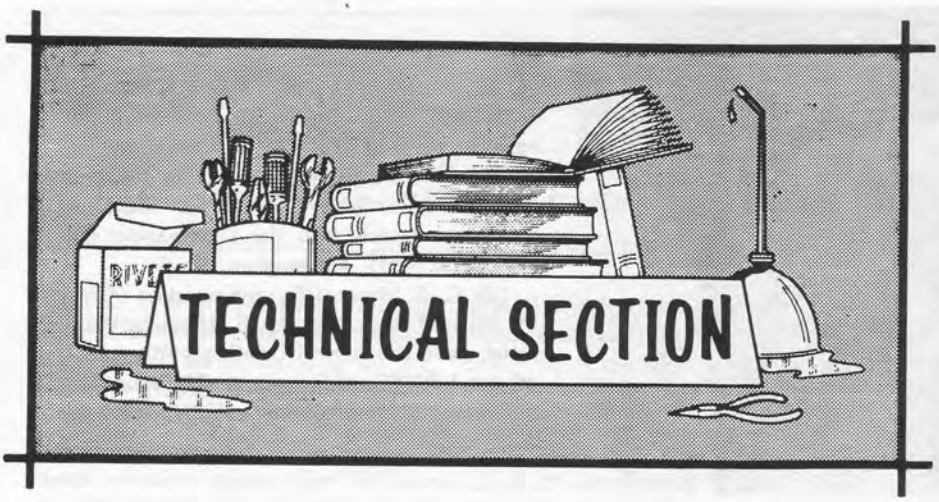
NATO BRIEFING

The Navy's NATO representative in the Pentagon has requested Bruce Goodale, Kaman's LAMPS program manager, to brief the NATO nations on the status of the LAMPS program at their next meeting in mid-September. The meetings are held in Brussels once or twice a year, and the briefings are sometimes presented by Navy representatives and sometimes by the contractors. Mr. Goodale plans on narrating a movie he has assembled from various Navy and Kaman films which concentrate on the LAMPS operational experience.

Navy Helicopter Association

Capt Mark R. Starr, president of the Navy Helicopter Association, receives the traditional gavel from Capt Alfred E. Monahan, outgoing president, after a Board of Trustees meeting at NAS Imperial Beach, Calif. Capt Alfred Emig, membership chairman, looks on. The Association is making plans for the 25th Annual Convention/Reunion scheduled for San Diego in March/April 1973.

The Navy Helicopter Association is a non-profit Navy wide professional and social organization whose purpose is to: provide recognition and to enhance the prestige of the U. S. Navy helicopter community; promote the use of helicopters in the U. S. Navy; keep members informed of new developments and accomplishments; and to meet socially with other members of the association.



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Technical Section information has been reviewed and approved by Service Engineering.

G. M. Legault, Supervisor

H-2 LUBRICATION OF TAIL ROTOR PITCH BEARINGS

W. Wagemaker, Service Engineer

When tail rotor blade pitch bearings are initially lubricated at Overhaul, the plastic shim (Illustration 1) is used to release trapped air under the seal and to thoroughly purge the bearings as shown in Illustration 2. Use of the shim at any other time is not recommended and unnecessary because tail rotor blades, P/N K614001-203, -205, -207, and K614701-1 all incorporate a ring seal assembly, P/N K616242-1 shown in Photo A (item 1).

An integral part of the ring seal is a flapper valve (item 2) which provides an automatic vent for entrapped air or excess grease. Photo B shows the ring seal installed into the tail rotor blade grip.

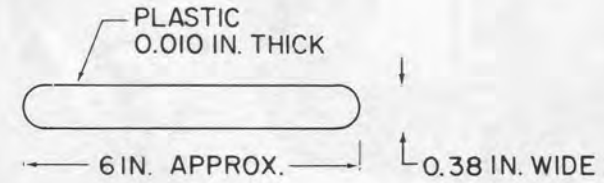


Illustration 1

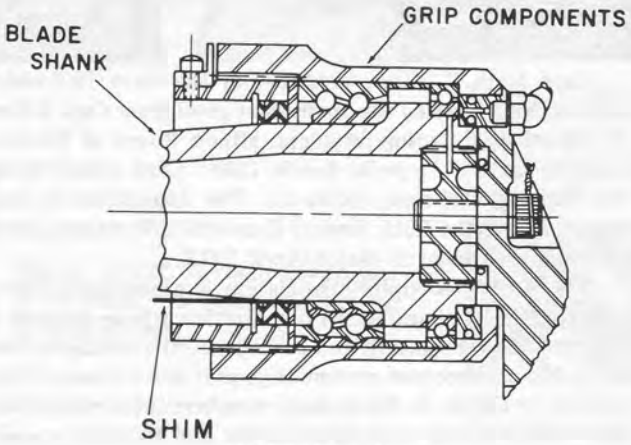


Illustration 2

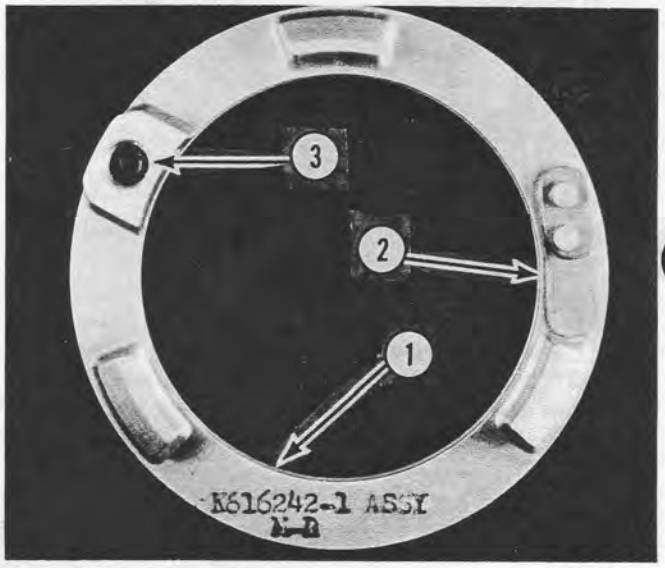


Photo A 1. Ring seal 2. Flapper valve 3. Grease fitting boss

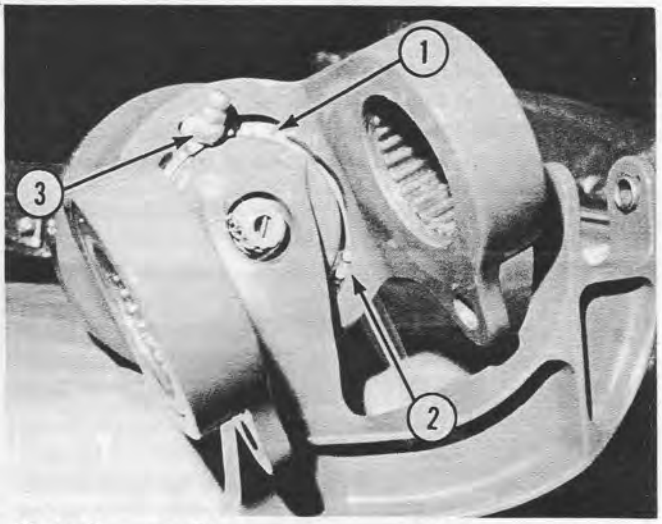
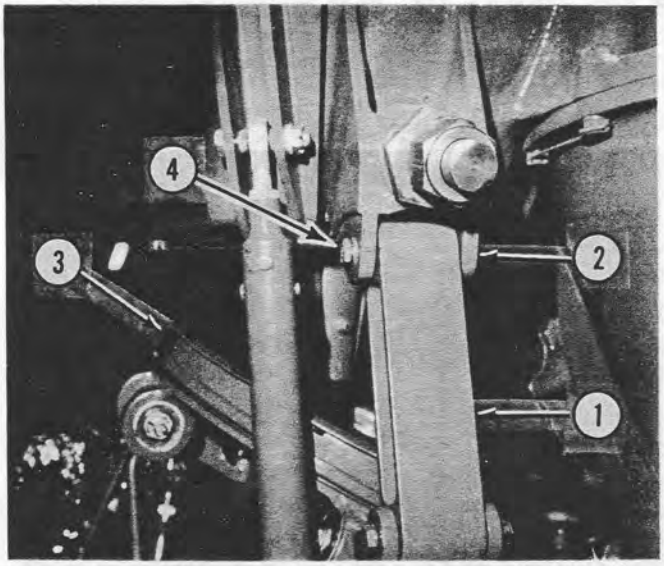


Photo B 1. Ring seal 2. Flapper valve 3. Grease fitting

H-2 AZIMUTH LINK INSTALLATION

R. Trella, Service Engineer



1. Azimuth link
2. Main gearbox lugs
3. Azimuth
4. Bolthead

To assure correct installation when assembling the azimuth anti-rotation link to the main gearbox housing, the attaching thru-bolt should be installed so that the bolthead is on the right-hand side of the gearbox (as shown in accompanying Photo, item 4). Prior to installing the thru-bolt, a slip-fit bushing, P/N NAS75-4-012, is placed into the gearbox RH lug. This bushing is part of the load carrying stackup that is necessary to prevent side preload application to the gearbox housing lugs. View A, in the illustration shows the principal components of the load-carrying stackup.

Assemble the link to the gearbox lugs as follows:

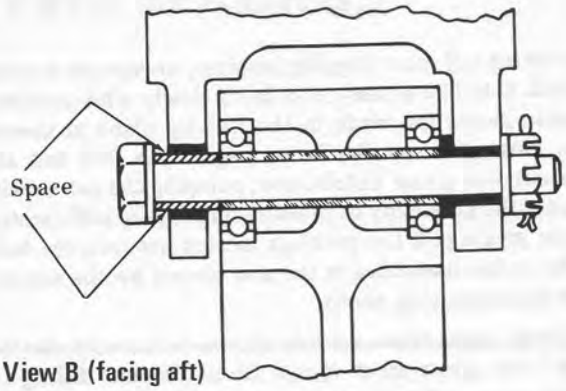
1. Insert the slip-fit bushing into the press-fit bushing of the gearbox RH attaching lug.

2. Place the azimuth link in position between the gearbox two lugs.

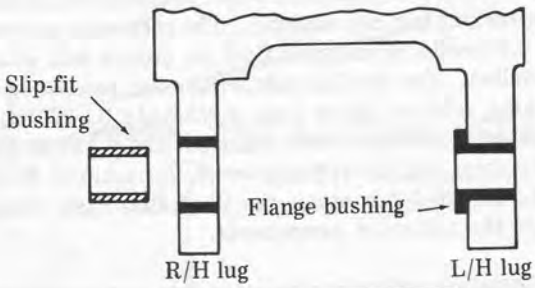
3. Install a washer under the bolthead and insert the bolt through the RH lug (containing the slip-fit bushing) through the link and the LH lug.

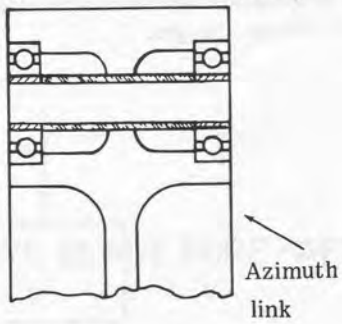
4. Install washer and nut, and torque to 30-40 pound-inches; secure with a cotterpin.

The assembled installation is shown in View B. Note the load-carrying line of the stackup consisting of the washer under bolthead, slip-fit bushing, link spacer/bearing inner races and the press-fit, flanged bushing in the LH lug. Correct installation of the hardware is evident when a space exists between the washer under the bolthead and the RH gearbox attaching lug. (See Illustration View B, arrows.)



View B (facing aft)





View A (facing aft)

press-fit bushing
slip-fit bushing
spacer and bearing inner races

Q. (Applies H-2) Should "101" Main Rotor Blades be intermixed with standard H-2 blades?

A. No. Anticipating implementation of the "101" main rotor system, blades, P/N K611670-3, are being introduced into the fleet; however, these blades *must be used in "ship sets"* only and should not be intermixed with standard U/HH-2 blades, P/N K611808-209 and -309. If a detachment deploys with a set of the new "101" blades, it should be sure to include a spare MATCHING blade. Also, dets receiving spare blades should immediately determine that the blade received is the correct one for use with the blades already on the aircraft. This information will be incorporated into applicable manuals by a future Change.

W. Wagemaker, Service Engineer

H-2

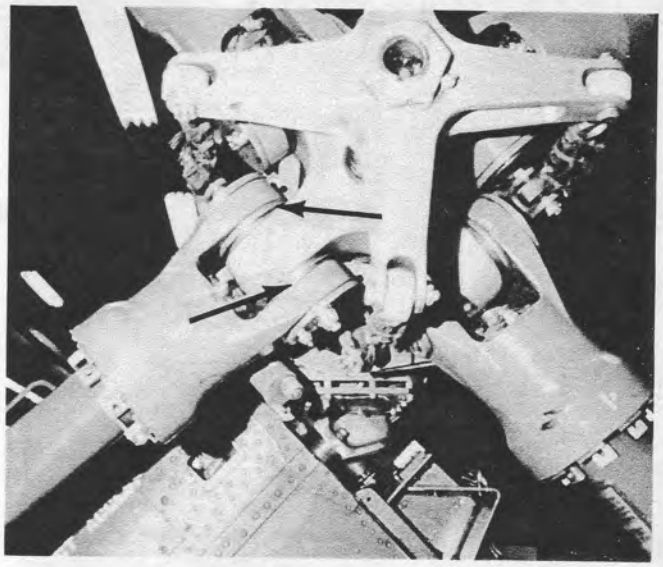
TAIL ROTOR FLAPPING BEARINGS

W. Wagemaker, Service Engineer

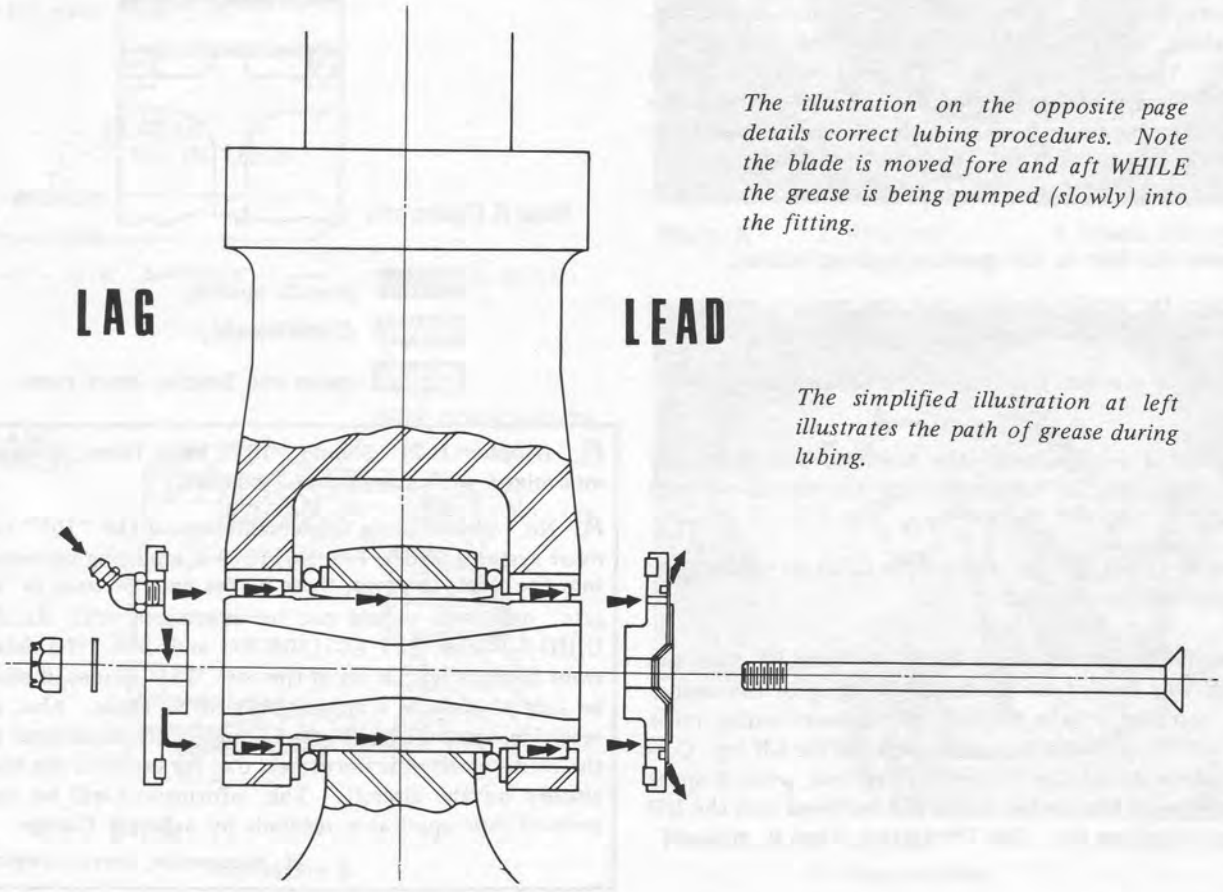
When lubing tail rotor flapping bearings, always use a hand gun (MIL-G-81322 grease), and pump slowly while another mechanic moves the blade in the lead-lag plane as shown in the illustration on the facing page. The fore and aft movement aids grease distribution; pumping the gun slowly precludes the possibility of pressure building up sufficiently to force grease past the packings located between the hub and the collar assemblies in the area shown by the arrows on the accompanying photo.

The blade grip cross section shown below details the path of the grease as it moves from the lube fitting to the vent valve. Care should be exercised when building up the grip components, especially when installing the packing into the rocking pin cap assembly. The packing is approximately 0.6 smaller in diameter than the groove into which it is installed. For detailed instructions for installation of the packing, refer to Figure 5-15 of NAVAIR 01-260HCA-2-4.2, dated 1 October 1967, Changed 1 July 1972. The -2-4.2 contains tail rotor maintenance instructions; NAVAIR 01-260HCB-4-7 contains the Illustrated Parts Breakdown for the tail rotor components.

This information will be incorporated into applicable manuals by future changes.

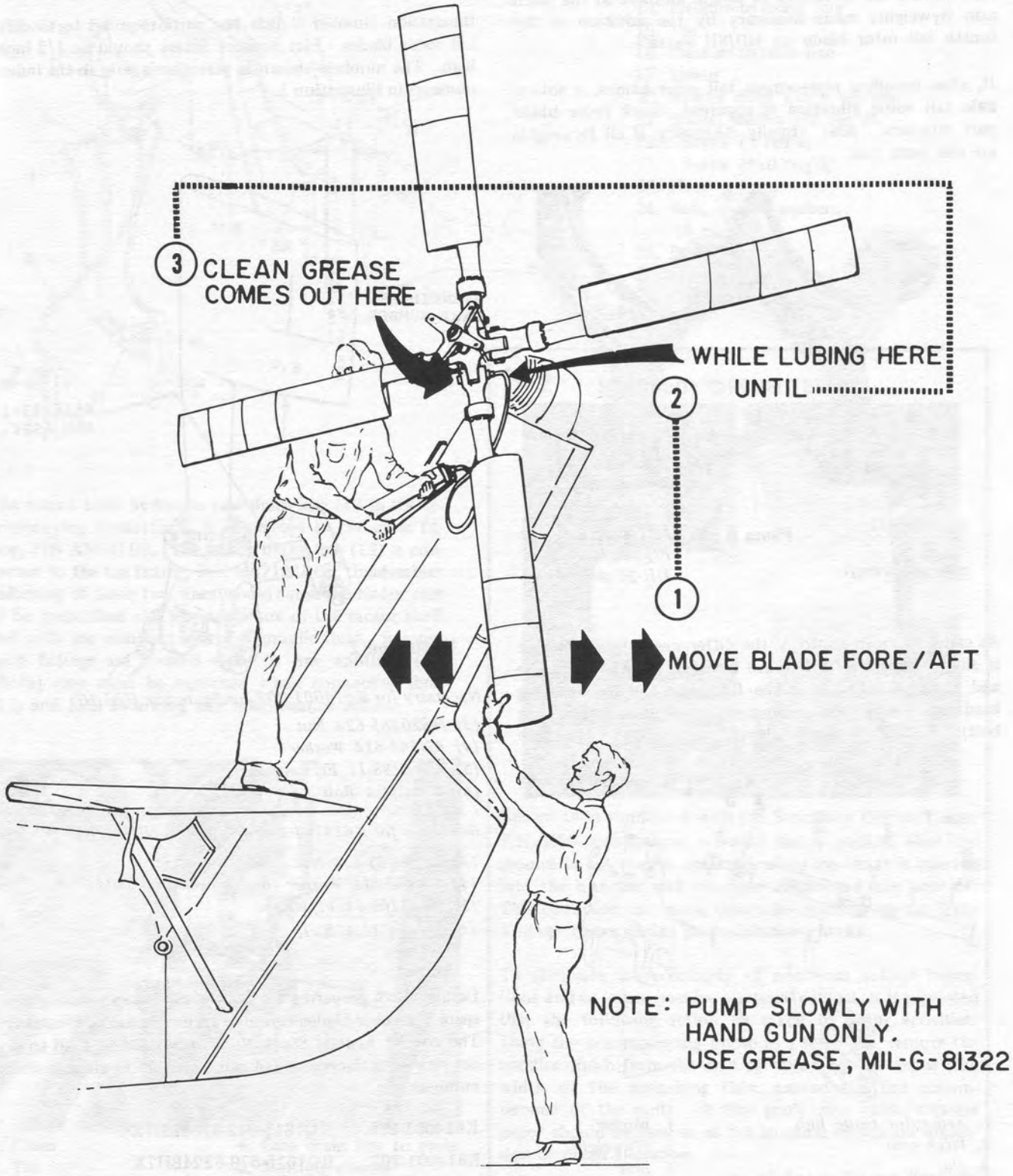


The illustration on the opposite page details correct lubing procedures. Note the blade is moved fore and aft WHILE the grease is being pumped (slowly) into the fitting.



The simplified illustration at left illustrates the path of grease during lubing.

TAIL ROTOR FLAPPING BEARINGS



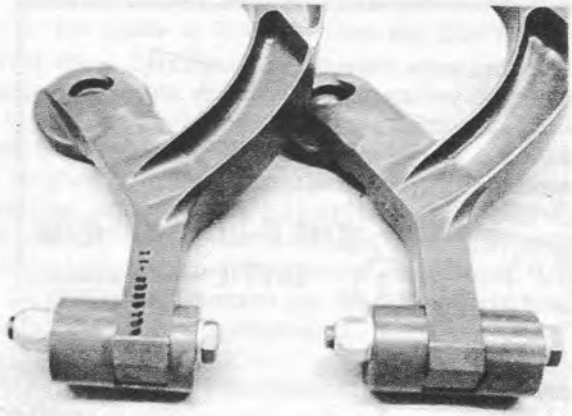
H-2

TAIL ROTOR BLADE APPLICABILITY

W. Wagemaker, Service Engineer

Tail rotor blades P/N K614701-1 must be used on HH or SH (4-bladed tail rotor) aircraft only. Tail rotor blades P/N K614001-205 and -207 must be installed on UH-2C (3-bladed tail rotor) aircraft only. The reason for the restriction is the difference in weight and size of the pitch arm flyweights made necessary by the addition of the fourth tail rotor blade on HH/SH aircraft.

If, after installing replacement tail rotor blades, a noticeable tail rotor vibration is apparent, check rotor blade part numbers. Also, visually determine if all flyweights are the same size.

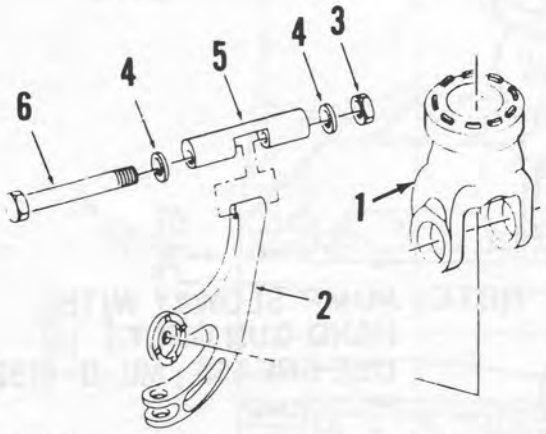


K616709-11
Flyweight
HH/SH Aircraft

Photo A

K616288-11
Flyweight
UH-2C Aircraft

As can be seen in Photo A, the difference in flyweight size is slight. The only difference between a K614001 blade and a K614701 blade is the flyweight and its attaching hardware. (The lighter flyweight has a shorter attaching bolt). Because of this small difference, either blade may be modified in event of shortage of correct part to the other configuration by changing the attaching bolt (6), flyweight (5), and the part number stenciled on the blade, see Illustration 1.



1. *Tail rotor blade hub*
2. *Pitch arm*
3. *Nut*
4. *Washer*
5. *Flyweight*
6. *Bolt*

Illustration 1

Illustration Number 2 lists the parts required to modify tail rotor blades. Part number letters should be 1/2 inch high. The numbers shown in parenthesis refer to the index numbers in Illustration 1.

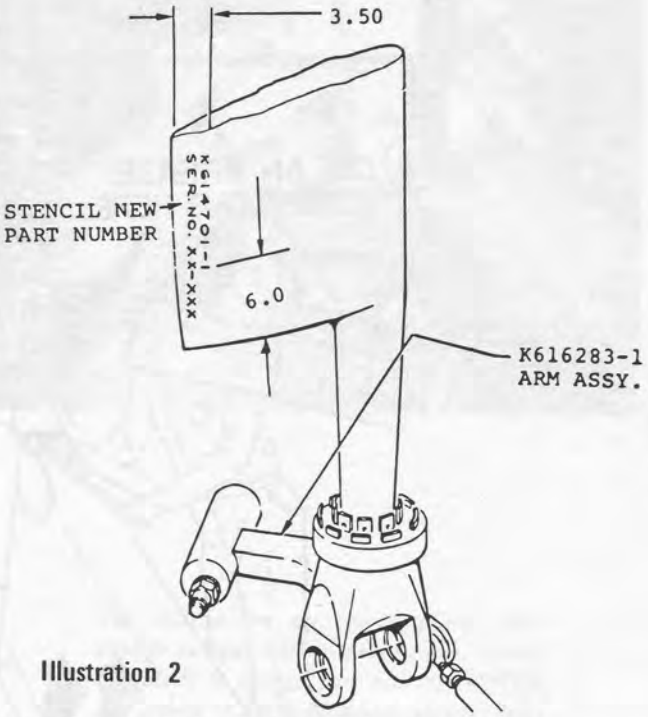


Illustration 2

Necessary for K614001-207 configuration (UH-2C)

(3) MS20365-624 Nut
(4) AN960-616 Washer
(5) K616288-11 Flyweight
(6) AN6C30A Bolt

Necessary for K614701-1 configuration (HH Acft)

(3) MS20365-624 Nut
(4) AN960-616 Washer (under head and nut)
(5) K616709-11 Flyweight
(6) AN6C25A Bolt

Detachments preparing for duty aboard ship should check spare tail rotor blades carefully to determine applicability. The correct Federal Stock Numbers should be used to order new or replacement tail rotor blades. Applicable stock numbers are:

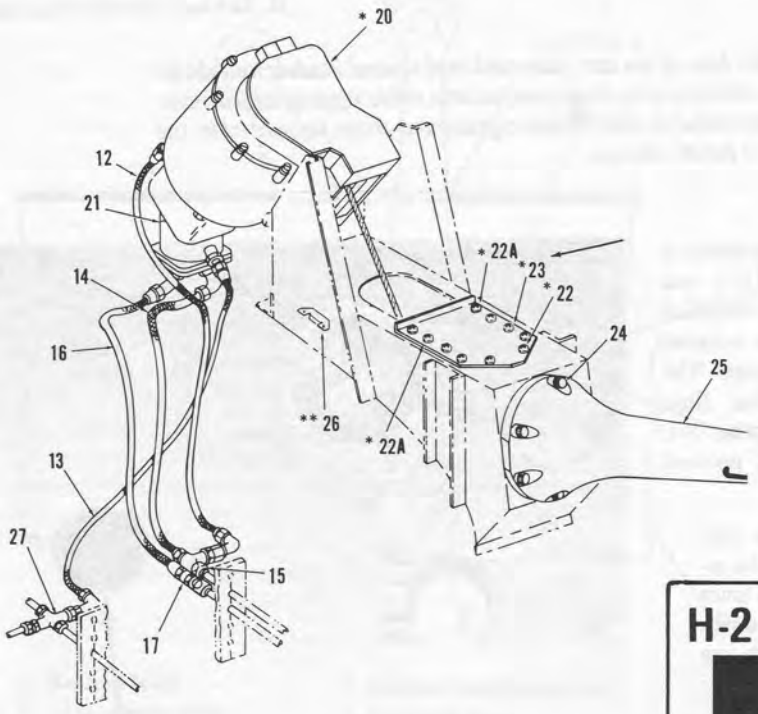
K614001-205. . . .RQ1615-942-8186BH7X

K614001-207. . . .RQ1615-879-6224BH7X

K614701-1. . . .RQ615-251-9686BH7X

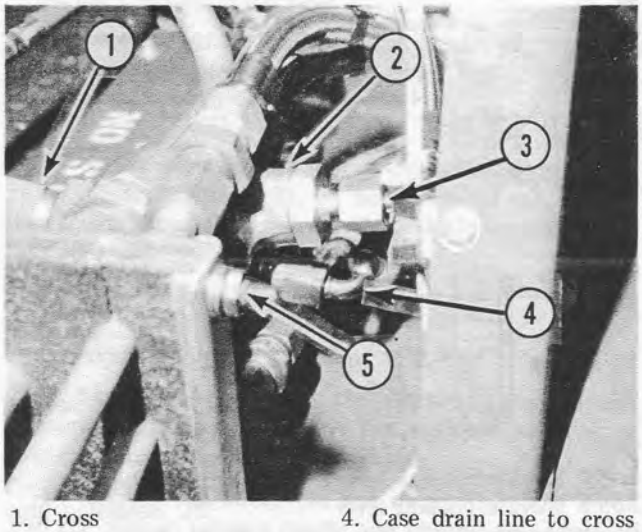
H-2 RESCUE HOIST MOTOR/WINCH LINES INSTALLATION

W. Wagemaker, Service Engineer



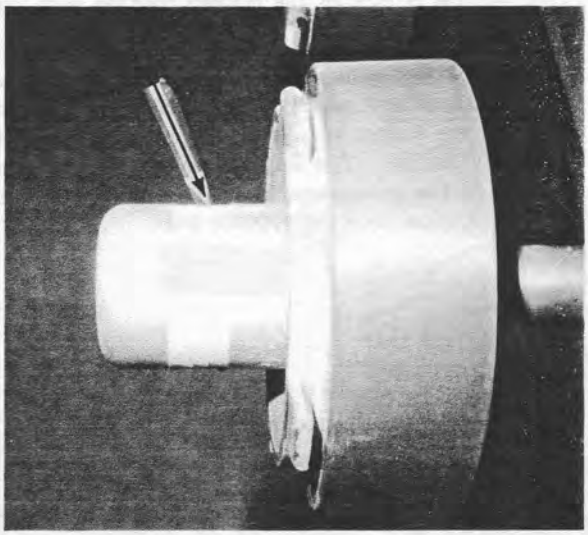
12. Hydraulic brake line
13. Hydraulic case-drain line
14. Pressure-to-lower line
15. Tee
16. Pressure-to-raise line
17. Union
20. Rescue hoist winch assembly
22. Screw, washer (*8 req'd)
22A. Screw (2 req'd)
Screw (*10 req'd)
23. Plate
24. Bolt, nut, 2 washers (6 places)
25. Boom assembly
26. Spacer (stowed position)
27. Cross

The rescue hoist hydraulic case drain line (13 in the accompanying illustration), is connected to the cross fitting, P/N AN937D8. The winch brake line (12) is connected to the tee fitting, P/N MS21910D6. Inadvertant switching of these two lines would cause the motor case to be pressurized and lead to failure of the motor shaft seal with the resultant loss of hydraulic fluid. Because both fittings are located close to one another (see photo) care must be exercised when connecting lines (12) and (13) following any maintenance action.



1. Cross
2. Tee
3. Hoist brake line to tee
4. Case drain line to cross
5. Multiple clamps

H-2 SONOBUOY CIRCUIT TESTER



Recent tests conducted with the Sonobuoy Circuit Tester, P/N K604484-1, have revealed that a positive electrical ground is not always obtained when the tester is inserted into the launcher rack chamber and locked into position. This condition can cause erroneous readings on the Stray Voltage Tester during pre-installation checks.

To eliminate the possibility of erroneous voltage indications and to insure positive electrical contact, it is suggested that the following action be taken by using activities: Using the accompanying photo as a reference, remove the anodize finish from the area as shown by the arrow (the width of the wrenching flats, around the full circumference of the unit). A fine grade zinc oxide abrasive paper should be used so as not to cause significant dimension or detail alteration.

H. Snow, Service Engineer

H-2

RIGGING AUX FUEL TANK SHACKLE JETTISON CABLES

H. Zubkoff, Service Engineer

Recent UR's reported one inflight loss of an aux fuel tank and several inadvertant drops on the deck. The incidents were attributed to improper jettison cable rigging/adjustment. The procedures listed here are presented to clarify and supplement those presented in the MIM and will be incorporated by a future change.

Steps n and p of paragraph 2-283 in NAVAIR 01-260HCA -2-4, 1 October 1967, changed 30 November 1971 and steps k and 1 of paragraph 20-3 in NAVAIR 01-260HCA -2-3, 1 March 1972, changed 1 July 1972 will be replaced by the information presented here by a future change. The information is relative to rigging the jettison cables. Illustration number 1 is a portion of figure 8-51 in the -2-4. After completing step m (-2-4) OR step j (-2-3), proceed as follows:

1. Cock the shackle by moving the cocking lever (16) full aft and hold in this position while moving the release lever (15) full forward. Allow the release lever to move aft; allow the cocking lever to move forward. The shackle is now in the cocked position with the hooks closed.

2. Using a flashlight, look into the inspection hole located above and slightly forward of the safety pin hole on the outboard side of the aux tank support assembly fairing. The latching lever roller will be resting on the release lever cam as shown in Photo A and Illustration 2 on the opposite page.

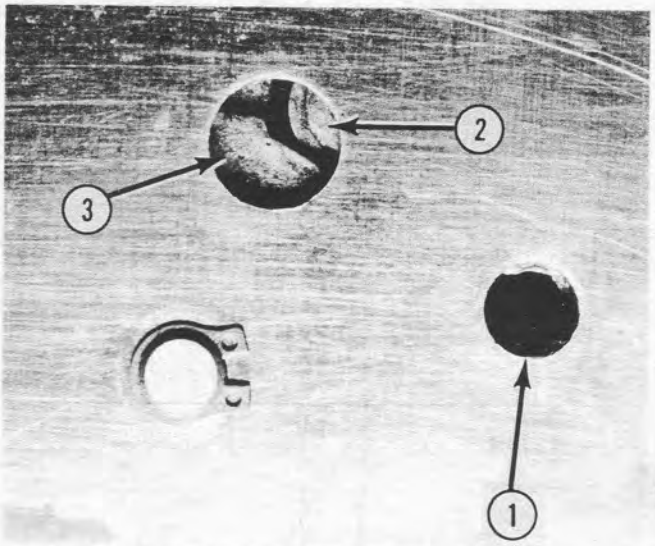
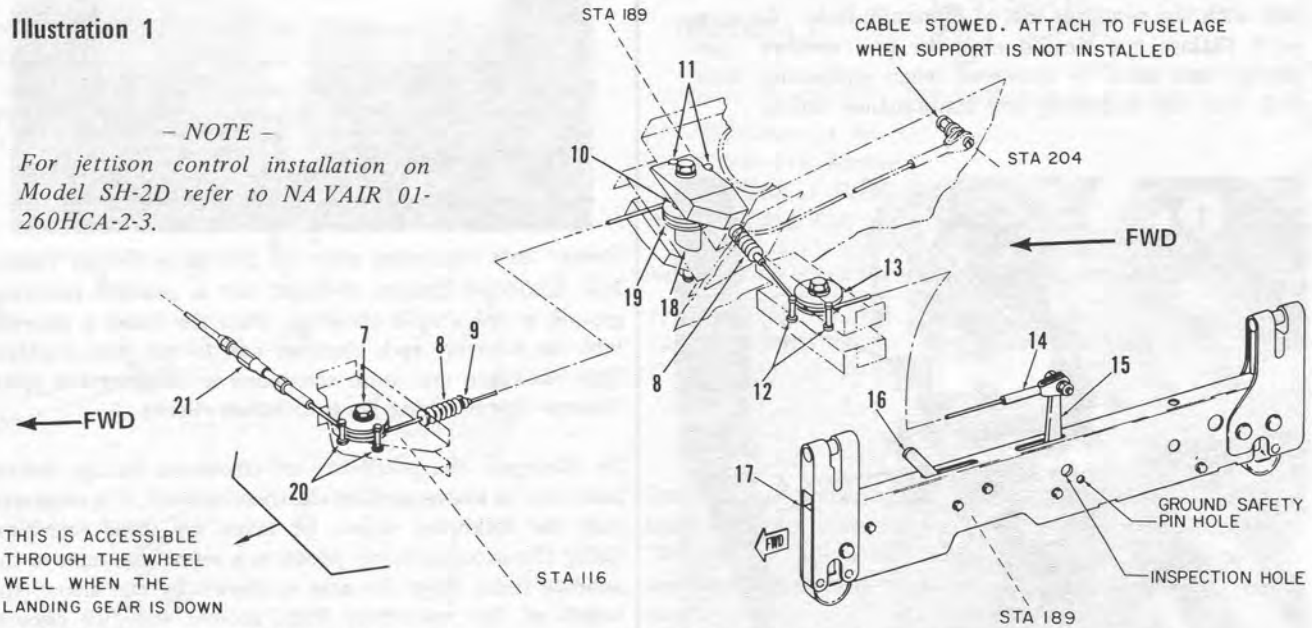


Photo A

1. Ground safety pin hole
2. Roller
3. Cam

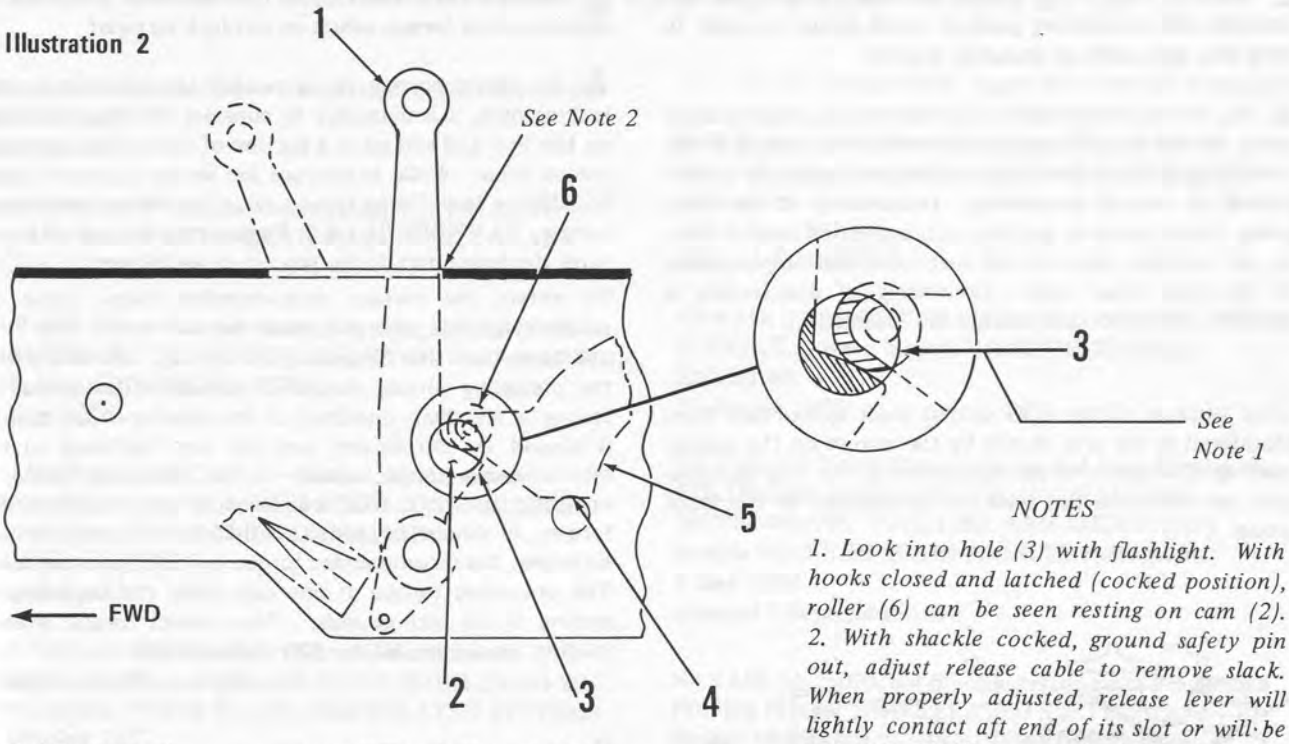
Illustration 1

– NOTE –
For jettison control installation on Model SH-2D refer to NAVAIR 01-260HCA-2-3.



7. Pulley
8. Boot
9. Clamp
10. Adapter
11. Retaining pins
12. Retaining pins
13. Pulley
14. Aft cable
15. Bomb shackle release lever
16. Bomb shackle cocking lever
17. Bomb shackle
18. Adapter
19. Pulley
20. Retaining pins
21. Turnbuckle

Illustration 2



1. Release lever
2. Cam-release lever
3. Inspection hole
4. Ground safety pin hole
5. Latching lever
6. Roller-latching lever

NOTES

1. Look into hole (3) with flashlight. With hooks closed and latched (cocked position), roller (6) can be seen resting on cam (2).
2. With shackle cocked, ground safety pin out, adjust release cable to remove slack. When properly adjusted, release lever will lightly contact aft end of its slot or will be not over 1/16" from end of slot and roller will be seated on cam surface.

3. With the shackle cocked and the ground safety pin NOT installed, adjust the turnbuckles (21, Illustration 1) to remove all slack from the jettison cables. Determine correct cable tension as follows:

A. The release lever on top of the shackle should not be more than 1/16-inch away from the aft end of the slot. If the gap exceeds the 1/16-inch dimension, cable tension is too tight.

B. There should be no sag in the length of cable visible in the main landing gear wheel well. If the cable sags, tension is too loose.

4. When the cable tension is properly adjusted, lockwire the turnbuckles (21, on both sides of the aircraft) and functionally check the shackle operation as follows:

A. Pull the cockpit jettison handle and observe that the shackle hooks spring open.

B. Repeat the preceding steps 1, 2, and 4A.

C. Repeat step 1 to cock the shackle. Insert the ground safety pin and pull the cockpit jettison handle; shackle will remain cocked.

D. Remove the safety pin and inspect per step 2. Pull the cockpit jettison handle and observe that the hooks spring open. This completes the functional check.

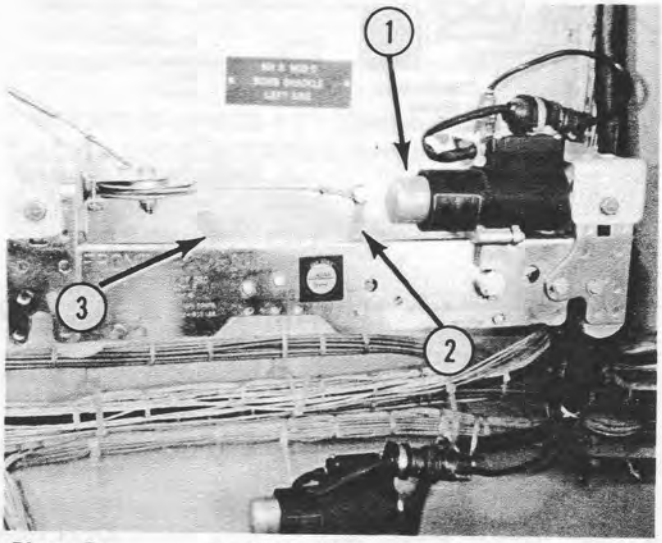


Photo B

1. Solenoid
2. Release lever
3. Cocking lever

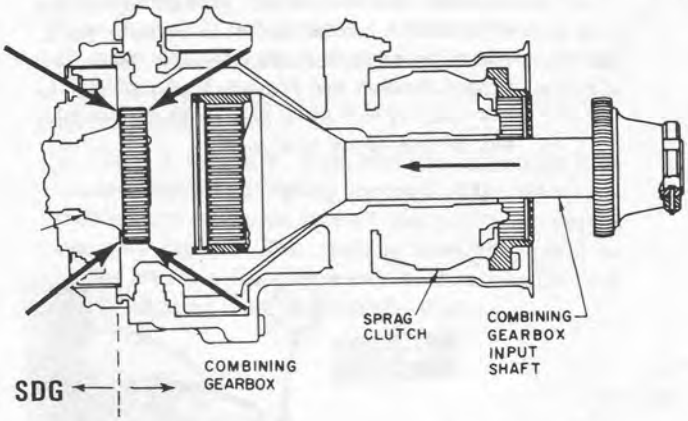
5. The preceding procedure applies to all models of the H-2 aircraft, including the SH-2D. It should be noted that the mechanical release system is a backup for the electrically-actuated solenoid release system on the SH-2D. The solenoid is mounted on top of the shackle as shown in Photo B. When actuated, the solenoid piston extends to exert pressure against the release lever moving it to the release position.

TECHNICAL SECTION

Q. **(Applies H-2) Is it always necessary to partially disassemble the combining gearbox input group in order to mate the box with an installed engine?**

A. No. Partial disassembly of the combining gearbox input group should be done only in the event that mating of the combining gearbox and speed decreaser cannot be accomplished by normal procedures. Disassembly of the input group could result in gearbox contamination and/or component damage which would then necessitate replacement of the high value item. Conversely, if disassembly is required, extreme care should be exercised.

Later versions of the SDG output shaft splines have been chamfered in the area shown by the arrows on the accompanying illustration to aid installation of the two components and eliminate the need for disassembly of the input group.



R. Trella, Service Engineer

Q. **(Applies H-2) What is the recommended procedure to obtain correct torque values on self-locking nuts?**

A. To obtain correct recommended torque value on self-locking nuts, it is necessary to consider the drag of the nut on the bolt and add all or a portion of this to the called-out torque value. While experience has shown it does no harm to add the total "drag torque value" to the recommended torque, NAVWEPS 01-1A-8, Engineering Manual of Structural Hardware details the procedure as follows:

To obtain the correct recommended torque value on self-locking nuts, the nut must be run down until it is one turn from the beginning of seating. At this point, the prevailing torque should be noted. If the prevailing torque is less than one-third of the recommended torque, it should be disregarded and the nut tightened to the recommended torque value. If the prevailing torque is one-third or more than one-third of the recommended torque, it should be added to the recommended torque. Example: the recommended torque is 50 to 70 inch-pounds The prevailing torque at one turn from the beginning of seating is 30 inch-pounds. The correct torque wrench reading would be 80 to 100 inch-pounds.

W. Magnan, Service Engineer

Q. **(Applies H-2) What are the service (IMA/Organizational) wear limits for KAcarb (Ceramic) self-aligning bearings?**

A. Service wear limits for self-aligning ceramic bearings are as follows:

Radial (max) 0.006-inch
Axial (max) 0.012-inch

This information will be incorporated into applicable manuals by a future Change.

W. Wagemaker, Service Engineer

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CUSTOMER OPERATIONS SECTION – ROBERT L. BASSETT, Supervisor

PUBLICATION INFORMATION

This list reflects latest manual changes and technical directives released to the field.

H-2 AFC 170, Amend 1 — UH-2C Helicopter, GROWTH CHANGES
19 July 1972

H-2 AFC 189 — Transmission System, INSTALLATION OF INCREASED STRENGTH MAIN ROTOR SHAFT
6 July 1972

H-2 AFC 203 — Communication System, AN/ARC-159 RADIOS AND SECURE SPEECH, KY-28, INSTALLATION OF, IN SH-2D HELICOPTERS
6 July 1972

NAVAIR 01-260HCA-2-1 — Manual, Maintenance Instructions, Navy Models UH-2C/HH-2C/HH-2D/SH-2D Helicopters, GENERAL INFORMATION
15 February 1972
changed 15 July 1972

NAVAIR 01-260HCA-2-4 — Manual, Maintenance Instructions, Navy Models UH-2C/HH-2C/HH-2D/SH-2D Helicopters, POWER PLANT AND RELATED SYSTEMS
1 October 1967
changed 1 June 1972

NAVAIR 01-260HCA-2-4.1 — Manual, Maintenance Instructions, Navy Models UH-2C/HH-2C/HH-2D/SH-2D Helicopters, TRANSMISSION SYSTEM
1 July 1971
changed 15 July 1972

NAVAIR 01-260HCA-2-6 — Manual, Maintenance Instructions, Navy Models UH-2C/HH-2C/HH-2D/SH-2D Helicopters, ELECTRICAL SYSTEM
1 March 1972
changed 15 June 1972

NAVAIR 01-260HCA-2-7 — Manual, Maintenance Instructions, Navy Models UH-2C/HH-2C/HH-2D/SH-2D Helicopters, RADIO AND RADAR SYSTEMS
1 October 1967
changed 15 July 1972

R. H. Chapdelaine, Supervisor, Service Publications

NAVAIR 01-260HCA-3 — Manual, STRUCTURAL REPAIR, Navy Models UH-2C/HH-2C/HH-2D/SH-2D Helicopters
1 October 1967
changed 1 July 1972

NAVAIR 01-260HCA-N2 — Manual, CROSS SERVICING SCHEDULE, Navy Models UH-2C/HH-2D/SH-2D Helicopters
15 August 1972

NAVAIR 01-260HCB-4-4 — Illustrated Parts Breakdown, EQUIPMENT (FURNISHINGS, HYDRAULICS, INSTRUMENTS, UTILITIES, ARMAMENT) Navy Models UH-2C/HH-2C/HH-2D/SH-2D Helicopters
1 May 1969
changed 1 September 1972

NAVAIR 01-260HCB-4-5 — Illustrated Parts Breakdown, POWER PLANT AND RELATED SYSTEMS, Navy Models UH-2C/HH-2C/HH-2D/SH-2D Helicopters
1 May 1969
changed 1 September 1972

NAVAIR 01-260HCB-4-7 — Illustrated Parts Breakdown, ROTORS, Navy Models UH-2C/HH-2C/HH-2D/SH-2D Helicopters
1 June 1967
changed 1 September 1972

NAVAIR 01-260HCB-4-8 — Illustrated Parts Breakdown, RADIO AND ELECTRICAL, Navy Models UH-2C/HH-2C/HH-2D/SH-2D Helicopters
1 June 1967
changed 1 September 1972

NAVAIR 01-260HCD-75 —Manual, AIRBORNE WEAPONS/STORES LOADING MANUAL, Navy Model SH-2D Helicopter
1 September 1972

* * * * * * TECHNICAL DIRECTIVES ASSIGNED * * * * * *

H-2 AFC211 — Instructor's Seat
ECP345

* * * * * * * * TECHNICAL DIRECTIVES RELEASED * * * * * * * *

This list reflects information released to the customer by KAC for distribution.

SEC/AFC No.	TITLE	RELEASE DATE (KAC)
H-2 Airframe Change 189	INCREASED STRENGTH ROTOR SHAFT	5 July 1972
H-2 Airframe Change 190 Part 1	AIMS INSTALLATION (UH-2C's without AFC 157; HH-2D)	18 August 1972

MILITARY ASSISTANCE TO SAFETY AND TRAFFIC

The following report on a meeting at Webb AFB, Texas, a few months ago shows the steps taken before establishment of a MAST program. Plans have since been made to formally request Webb's participation in MAST, and HH-43 crews from Det 18 were surveying hospital landing sites within a 75-mile radius of the base. Det 15 and 22, 42nd ARRSq, at Luke AFB, Ariz., and Mt. Home AFB, Idaho, respectively, have conducted highly successful MAST programs during testing which began in 1970.

WEBB AFB, TEXAS—Medical air evacuation of traffic accident victims in the style developed by the military under combat conditions may become a reality for Howard County and 24 neighboring counties if the civilian communities involved request the MAST (Military Assistance to Safety and Traffic) program.

Using HH-43 helicopters of Det 18, 43rd ARRSq at Webb, traffic accident victims could be whisked to the appropriate medical facility by air, saving the time which may mean the difference between life and death. Other potential uses of the Webb helicopters would be inter-hospital transfer of critical patients when requested by the attending physician and possible transfer of necessary equipment and blood in critical medical emergencies.

Webb Det "Ready To Go" MAST

These facts and how the West Texas counties could request MAST were briefed at Webb several weeks ago to invited civilian medical, public and law enforcement officials by a three-man federal team from the Government Departments cooperating in the MAST program. Members of the team and their respective Departments are: Army Col Ralph Parkinson, Defense; Francis L. Van Hee, Health, Education and Welfare; and Coast Guard Capt Frank Parker, Transportation.

MAST is a program, the audience was told, that was developed to supplement existing emergency medical services which in no way would compete with civilian ground or air ambulance services. Ultimately, the entire concept would become the responsibility of the civilian community.

MAST Requests From 20 States

However, for the immediate future the military's involvement in this type of medical evacuation seems assured. Colonel Parkinson told the audience that requests for MAST have been received by his inter-agency group from more than 80 communities in 20 states.

The Webb operation, if requested and approved, would normally operate in a 75-nautical mile radius of the base and Big Spring. The area serviced is dependent on the equipment available at each military installation.

In addition to the mileage factors, there were other limitations at Webb which must be considered and understood by the civilian community, the team members emphasized. Among the drawbacks is the fact that no supplemental equipment or personnel will be given to the Webb rescue detachment and that the helicopter's primary job would still be support of the undergraduate pilot training mission. In addition, that after normal duty alert hours and on non-flying days, it might take up to 30 minutes to assemble a crew to respond to a request. In any event, the team stated, the Wing commander was the sole authority for approving MAST request and that each situation would be weighed on an individual basis.

Increases Medical Service-Survival Rate

Even operating within the prescribed limitations, the team pointed out, MAST increases the community medical services presently available. To illustrate the growing need for expanded and rapid services, Colonel Parkinson displayed a slide that predicted 100,000 people would die on the nation's highways during 1980 (based on current trend statistics from 1920-1970 and growth in the number of automobiles).

He also pointed out the statistical fact that, percentage-wise, more Vietnam-era soldiers are surviving their combat wounds than in previous United States combat situations. Colonel Parkinson credited the survival rate with the rapidity with which the wounded are transported by helicopter to adequate medical care.

Civilian Communities Must Help

After concluding his presentation, Colonel Parkinson introduced Van Hee who emphasized that it was entirely up to the civilian community to initiate action to establish MAST at Webb. "Community" for MAST purposes, he said, should be defined not as a politically bounded area, but as a geographical area contained within the operational spectrum of Webb. Communities wanting the program. should be willing to categorize facilities, manpower and equipment. They should be willing to build helicopter landing pads, joint military-civilian training programs fo personnel that would be involved in emergency situation provide appropriate communications equipment, provide evidence of cooperative agreements between all communities and agencies involved and assure the Defense Department that military airlift is not in competition with commercial services.

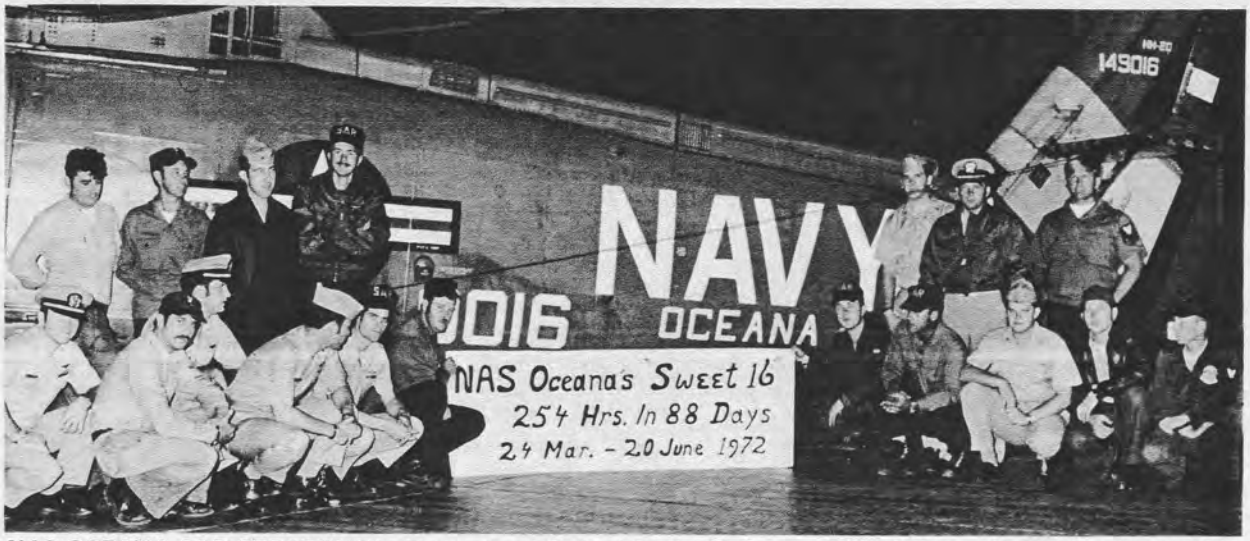
1000-HOUR PILOTS

Six more pilots have qualified for the plaque awarded by Kaman Aerospace to those logging 1000 hours in helicopters produced by the company. They are:

H-2 — Lt C. LeRoy Cook, NAF Naples, Italy, a former member of HC-7 who was awarded the Navy Cross for a rescue mission flown in an UH-2 over North Vietnam. Lieutenant Cook was copilot on the mission. The pilot, Lt (now LCdr) Clyde E. Lassen received the Medal of Honor. Lt John F. Buchanan, NAF Naples, who accumulated most of his H-2 time while flying with the HC-2 "Fleet Angels." Lt Robert A. Smith of HSL-31, NAS Imperial Beach, Calif.

HH-43 — Squadron Leader Khalid Latif Khan, PAF, a general duty pilot stationed at Pakistan AFB, Masroor Karachi; Maj Leslie E. Johnson, Det 7, 40th ARRWg (MAC), Torrejon AB, Spain, scheduled for retirement in September of this year; Maj Gregory W. Phillips, 3rd ARRGp, Tan Son Nhut Afld, RVN, scheduled for transfer from Southeast Asia in the near future.

CHALLENGE !



NAS OCEANA SAR PERSONNEL—Front row, left to right, Lt R. Pasco, ADJ2 J. Oates, Lt W. Arendas,LTJG T. Stables, LTJG R. Hambrecht, AMH2 K. Conner, LTJG J. Stahl, ADR1 J. Scott, Lt J. Daugherty, AMSAN B. Smith, ADJ1 T. Foote. Standing, AMS1 W. Ruddick, AE2 T. Wicker, LTJG W. Eckert, Lt W. Butler, LTJG W. Miller, Lt D. Bashista, AE2 D. Franklin. (USN photo)

Anyone dispute the following claim made by Lt Sandy Daugherty, USNR, on behalf of the SAR Unit at NAS Oceana, Va.?

"Naval Air Station Oceana's Search and Rescue branch is laying claim to a new record: The highest number of flight hours between check cycles in H-2's.

The superb Oceana maintenance team, headed by ADR1 John V. Scott, provided an HH-2D that flew 254 hours in 88 days between check cycles. That works out to an average of 2.88 hours per day on Buno 149016.

'Sweet Sixteen' was inducted into check early due to a rotor overspeed in January. It came out of check with every part new on the head from the hub out. This may partially account for the new record.

Lt Bob Pasco, Officer-in-Charge of the SAR unit, finds 149016 logged in different places in his log book. He flew it in November of 1965 when it was a UH-2A with HC-1 at Imperial Beach. 'Like a good wine, 016 gets smoother with age' says Lieutenant Pasco.

Special consideration is due to NAS Oceana's helo maintenance team for a record effort in H-2 maintenance."

THREE H-2's ABOARD CLG—During operation "Exotic Dancer V" in May, three H-2 SEASPRITE helicopters of HSL-30 were aboard the guided missile cruiser, USS Little Rock, simultaneously. This is believed to be the first time that three H-2 aircraft have ever been aboard a CLG at the same time. The aircraft were from HSL-30 Support Detachments 32, 33 and 34, operating with ships during Exotic Dancer V exercises. The squadron is based at NAS Lakehurst, N. J.

PEDRO CARES

By TSgt Charles E. Keilholz

Photos by SSgt D. P. Jenkins

Combine pilots, firemen, medical technicians and mechanics; add an unusual looking yet efficient aircraft; throw in one primary and many secondary tasks; and stir with gusto. Voila! You have a mission for all seasons. Moreover, this delightful concoction is served by Det 3, 3rd ARRGp (MAC) at Ubon Royal Thai Air Force Base, Thailand.

"Our main mission," said LtCol Richard P. Evans, detachment commander,* "is to provide local base rescue including fire suppression at aircraft accidents, aircrew recovery and their medical evacuation if required. But we do other things besides that."

Better known by its call sign "Pedro," the unit utilizes two compact HH-43 "HUSKIE" helicopters in its daily work.

High Monthly Average

Because of Ubon's geographical location and weather, the base receives the bulk of the aircraft emergencies in this section of Thailand. This means an average of 95 alert launches each month for Pedro. "That's far more than the other bases receive," stated the colonel.

While most alerts end with the troubled aircraft safely on the ground, an occasional one will not. "It's not often that little Pedro gets a chance to do the job of big brother Super Jolly," remarked Colonel Evans, "but a few months ago we flew out some 14 miles and picked up two crewmen who punched out of their F-4 before it went down. All Ubon's rescue capability was scrambled but Pedro was first on scene making the pick up." Total time on the ground for the two was 11 minutes.

Responding to aircraft emergencies in the immediate area, the choppers usually carry a ball-shaped Fire Suppression Kit on an external sling. If an aircraft should crash, Pedro would land the kit and two firemen nearby. The pilot then utilizes the rotor down wash to form a canopy of cooling air for the trapped aircrew as the firemen use foam from the FSK to clear a path and move in on the aircraft for their rescue. Trapped men removed, the airborne medic goes to work looking after their needs until they are evacuated either by ground or air.

Other Projects Too!

Pedro does indeed get involved in other operations, such as support for base security forces, the base Civic Action

CIVIC ACTION SUPPORT—The 8th Tactical Fighter Wing's Civic Action Program at Ubon Royal Thai Air Force Base, Thailand, relies heavily on Pedro choppers when wet weather prohibits ground travel to villages around the base. Flying into rice paddies or jungle areas, the unit carries medical and other teams on weekly visits. The choppers are from Det 3, 3rd Air Rescue and Recovery Group. **LtCol Evans has since been reassigned to Hq.MAC, Scott AFB, Ill.*

PRACTICE PICKUP—At left, a forest penetrator seat is utilized to hoist a crewman to an HH-43 during one of the numerous practice sessions held by Det 3.

MISSION PRACTICE—At right, under the watchful eyes of two evaluators, Pedro helicopter rescue crewmen from Det 3 go through their paces in a simulated accident situation.

program and medical evacuations from remote sites. The helicopters even have the capability of hauling more than 3,000 pounds of cargo if needed.

Ubon's Civic Action team relies heavily on Pedro when wet weather prohibits ground travel to villages around the base. Airlift support includes taking medical teams on trips into difficult locations, helping with aerial site surveys and flying observation missions with Civic Action personnel around the Ubon area.

When and if munitions are discovered off-base, Pedro provides either the required airlift or backup support for explosive ordnance disposal teams until their operation is completed.

The base community relations program receives a boost from Pedro as well. Working hand in hand with the 8th Tactical Fighter Wing (PACAF) Information Office, the unit provides an interesting tour program for visiting Thai school children and adults. This includes a flying demonstration when possible, and a close examination of the choppers by the inquisitive youngsters.

The unit's own assigned material section performs all maintenance and supply functions for the helicopters except for unique special requirements which are performed by the host base.

"We have a heavy commitment with many of the men working up to 84 hours a week when you take in around-the-clock alert duty," said Colonel Evans. "Yet the work gets done because I've got the finest of people maintaining the aircraft, the best crew members flying them, and the greatest supporting people a commander could ask for."

And that's straight from the chef's mouth!

ALERT LAUNCH—An HH-43 hovers over its FSK while a ground crewman dashes from the launch pad to direct pilot on his way to an aircraft emergency.

MAINTENANCE INSPECTION—Maintenance men from Det 3 give their helicopter and equipment daily once over while standing alert at Ubon.

6TH INTERNATIONAL HELICOPTER RESCUE MEETING

By Laura Belgrave
USAF Office of Information, Weisbaden, Germany

One of the HH-43's which participated in the Sixth International Helicopter Search and Rescue Competition is shown over England's southern coast. At right, racing against time, the crew of a HUSKIE lowers a weight simulating a medical aid package to a target on the ground. (USAF photos)

The United States Air Force crews entered in the Sixth International Helicopter Search and Rescue Competition knew the odds they were up against—tough competition from seven other countries, unfamiliar grounds on the southern coast of England, a race against the clock, and no more practice time.

Only one team out of 12 could walk away with the first-place honors. England's Royal Navy and Royal Air Force had won three out of the last five years. The Americans knew that no one was going to hand them a trophy, so they came prepared and fired up with enthusiasm.

The Alpha and Bravo crews of the 40th Aerospace Rescue and Recovery Wing based at Ramstein AB, and Hahn AB, Germany, practiced search and rescue techniques independently for more than nine months, and as a team for three weeks. They were ready and eager to take on any comers.

Comers they had. Twelve international teams flocked to H. M. S. Daedalus, British Naval installation at Lee-on-Solent, England, where the competition was hosted by the Royal Navy, last year's winners and recipient of five out of six trophies.

The weather was good, although a bit windy, and not everyone spoke the same language or used the same aircraft. But they shared a common goal—winning the coveted Henri Dunant Trophy, awarded to the team of two crews obtaining the highest number of overall points.

Competition reigned fierce throughout the meet, amidst a hub-bub of international spirit and sportsmanship. Business was mixed with pleasure as crew members tried to "speak, sprechen and parler" to their international competitors, and win or lose, no one but no one missed a party. The helicopters used by the teams were as varied as the crews themselves; Transall, Iroquois, Wessex, Whirlwind, Huskie, and Alouette. Lined up on the runway, they meant business. In the air, they left no doubt.

After the preliminary weather briefings, introductions, competition instructions and rules, the moment of reckoning was upon them. The composite course event began and 24 anxious crews got exactly what they anticipated—dynamic competition. Crews (first A, then B) were tasked with navigating around invisible points in the sea within a 110-mile radius, and pinpointing the pick-up area of a

Pilot/navigator of the Alpha crew, Capt John Smith, discusses navigational strategy with a member of Bravo crew before taking off for the composite course event, in which USAF won the scramble phase.

Maj Juan H. Migia, left, USAF team captain, discusses final plans with crew members. At right, the Major celebrates USAF's second place position in the competition. He quipped, "I still think we are number one!" (USAF photos)

"downed" airman. Judging was based on accuracy and timing for both the navigation and scramble phases of the composite course event. Wind factors and the brilliant rays of the sun reflecting off of the water into pilot's eyes was their problem. The judges were only concerned with results.

Flying two HH-43 HUSKIE helicopters, the USAF team forged ahead in this event—putting themselves in front of the game in the early stages, and walking off with the Rolls Royce Trophy for having the highest number of points in the scramble phase of the event. They couldn't breathe easy though—the worst was yet to come.

And the Royal Navy, not to be undone quite so easily, ran off with the Westland Trophy for the most points in the navigation phase. It looked like a contest between the Royal Navy and USAF more than anything else. Even the judges were sitting on the edges of their chairs now. It was no secret that even if the composite course could make winners, the Precision Winching event could break them. Helicopter crews had to make a quick take-off and fly a distance of about 125 meters, carry a weight at roughly a 30-foot height, and lower the weight onto a target. The closer they came to the "Bull's eye," the better they scored, depending also on the time it took.

There was a colorful array of spectators and pressmen in the bleachers this time, as well as the by-now harried judges. "A" crews undertook the nerve-wracking event first, followed by "B" crews, while the 21 grim-faced judges representing the eight nations involved kept close tabs on every team. All the while, scorekeepers worked at a frantic pace, adding to, subtracting from, erasing, and finalizing results as they poured in from the judges benches. Pressmen scribbled down standings as fast as the scorekeepers put them up and spectators rooted for their team like they were at a football game.

Maj Juan H. Migia, USAF team captain, still quite pleased with the results from the composite course event, emphasized that "although our team has had practice, there's no doubt that the precision winching event is the most difficult. We've been working for 25-second pick-ups during practice but, fact is, there's a lot of luck involved too."

Whether it was luck or skill, or a combination of both, the Royal Navy shot ahead of USAF after the final totaling of the precision winching event, winning the competition and the Henri Dunant Trophy. Following in hot pursuit, USAF took second position and another award, the Kaman Aerospace Trophy, for the second best team of two crews.

Capt William C. Leonard, pilot of the USAF "Alpha" crew said, "We're very pleased with the result, but naturally we would rather be number one. However, we've had lots of competition from the Royal Navy,they're a great team."

Relaxing afterwards and excited with the results, was the Alpha crew from Ramstein AB, including Captain Leonard, TSgt Leroy W. King, Capt John Smith and SSgt William G. Wilson.

Toasting with frosty mugs of beer, the Bravo crew from Hahn AB, Germany, Maj William D. McColl, Capt John W. Christianson, SSgt Robert T. Anderson, and SSgt Carl M. Miller, praised everything from the competition, the trophies, and their standings, to the unusual good English weather they'd had and that "dynamic Royal Navy team."

This was the first time since the competitions began in 1967 that the USAF copped a trophy. That was enough to toast right there, but more so, all the competitors gained something from the meet—whether a tangible trophy or new friendships and ideas on search and rescue techniques.

Following the Royal Navy's first place position, and USAF's second, were—in their order of finish—British Royal Air Force, Royal Danish Air Force, Royal Danish Navy, Royal Netherlands Air Force, Royal Belgian Air Force, Royal Netherlands Navy, French Navy, Federal German Air Force, Federal German Navy, and Italian Air Force.

The competition is over and the crews have returned to their respective bases, leaving H. M. S. Daedalus free of helicopters buzzing about, phones ringing, and an altogether chaotic, yet somehow orderly scene. But it wouldn't be surprising to find some crews already looking forward to next year's meet—to be held in the midst of international spirit, sportsmanship and confusion.

Members of the USAF teams' ground crew included SSgt Carlos L. Joiner, SSgt Donald C. Blair and Sgt Gray W. Wasmer.

FAST "FEET WET" RESCUE

DA NANG AFLD, RVN—An HH-43 Pedro from the 37th ARRSq here plucked two U. S. Marine Corps A-4 crewmembers from the South China Sea in one of the fastest "feet wet" rescues reported in Southeast Asia.

Piloted by Capt Robert R. Ames, the Pedro launched with a Fire Suppression Kit when the Marines radioed that they were losing hydraulic pressure and would attempt an emergency landing here. However, as the battle-damaged A-4 slowed below 140 knots, the pilot could not control the aircraft and was forced to fly out over the sea and eject.

Capt Ames left the FSK at the end of the runway and followed the crippled aircraft to a point at sea, approximately eight miles northeast of Da Nang, where the Marines ejected. The Pedro flew to the probable splash-down area and, as the first pilot surfaced and started swimming for his raft, he found a forest penetration seat, with flotation collar, just to his right where it had been lowered from the HH-43. He placed himself on the penetrator and was hoisted aboard the rescue helicopter—less than one minute after entering the water. The other Marine was hoisted to safety three minutes later. The rescue gave the Da Nang Pedros the first saves of the year and added two more men to the more than 1,100 persons saved by the SEA Pedros since 1965.

Other members of the HH-43 crew were Capt Michael F. Schmidt, copilot; SSgts David C. Newman and Michael J. Kondash, firefighters: Sgt Larry Johnson, medical technician, and SSgt John Szczecina, crewman.

Four Medevacs Flown By 37th HH-43's

In another mission, the Pedro crew was contacted at night by the 366 USAF Dispensary to evacuate an Air Force sergeant who had suffered critical injuries in a motorcycle accident. The weather was poor, with numerous thunderstorms and rain showers in the area, but no other transportation was immediately available. Pedro 61 flew to the dispensary where the patient was onloaded from a waiting ambulance and airlifted to the 95th USA Hospital and a waiting surgical team. The accident victim suffered from multiple lacerations of the face and head and possible fractures of the facial bones and left leg.

Members of the Pedro crew included Captain Ames, pilot; Capt James L. Wilkinson, copilot; Sgt Ronald D. Littleton, helicopter mechanic; and SSgt Gregory A. Brown, medical technician.

In a second mission that day, the same HH-43 crew airlifted a Vietnamese National, seriously injured when hit by a munitions truck while walking. The patient had a compound fracture of the left lower leg with multiple bone fragments protruding, multiple lacerations over all extremities and possible facial bone fractures. Whether or not his leg would be amputated depended on the timeliness of his treatment. The crew has been credited with one non-combat save for this mission.

A sergeant suffering from an overdose of drugs, was also medevaced to the 95th Army Hospital by an HH-43 from the 37th ARRSq. The attending physician credited the Pedro crews' "quick response and professional handling of the mission," as the contributing factor in saving the life of the patient.

The crew consisted of Captain Ames, pilot; Captain Wilkinson, copilot; SSgt Charles R. Worley, helicopter mechanic; and SSgt Fredrick Stordy, medical technician.

A few days later an HH-43 crew from the 37th medevaced two Vietnamese to the 95th Field Hospital. One was severely burned when the aircraft they were working on caught fire and suffered first, second, and possibly third degree burns over 30% of his body. The other man was burned on the arm and shoulder. The mission was conducted without incident. Crewmembers were Captain Wilkinson, pilot; 1stLt William L. Latham, copilot; Sergeant Littleton and Staff Sergeant Stordy.

Pedro Rescues Army General

TAN SON NHUT AB, RVN—An HH-43 Pedro crew of Det 14, 3rd ARRGp, here rescued LtGen William J. McCaffrey, deputy commanding general of the U. S. Army in Vietnam (USARV), several weeks ago after his helicopter was forced to make an emergency landing.

The crew of the Army helicopter in which the general was riding declared a "mayday" at approximately 3 p.m. and shortly afterward successfully landed in a rice paddy about four miles east of Tan Son Nhut. None of the six persons on board the aircraft was injured. The Pedro arrived on the scene minutes after the "mayday" call and picked up the general and his aide. The four other men on board elected to remain with the downed helicopter until it could be lifted from the site. The general and his aide were airlifted to the Tan Son Nhut flight line.

Aircraft commander of the HH-43 was Capt Jackie L. Roberts. His crew consisted of Capt Howard A. Randall, copilot; Sgt Robert J. S. Brind, mechanic; and SSgt William T. Matthews, medical technician.

In another Det 14 mission, an HH-43 Pedro crew rescued the survivors of a C-119 plane crash that claimed the lives of the copilot and one passenger. Nine persons survived the crash that occurred when the Republic of Vietnam Air Force (VNAF) cargo aircraft was attempting an emergency landing here.

Ironically, it was the last day of alert for the aircraft commander, Capt Verl K. Diamond, and the mechanic, Sgt Teddy L. Jones, before they departed Vietnam for the United States. The crew scrambled about 8 a.m. to follow the C-119 as it attempted to land with one engine out. In the few minutes it took the rescue team to get airborne, the cargo plane crashed in a rice paddy approximately two miles west of the base.

As soon as the Pedro arrived on the crash scene, the firefighters, SSgt Kenneth Daniels and SSgt Ernest Taylor, doused the flames that had erupted in the engine area. Meanwhile, Sgt Melvin C. Evans, the medical technician, quickly examined the survivors who had freed themselves from the wreckage.

The trio of enlisted men then turned to the survivors still trapped in the aircraft. With Sergeant Jones coordinating between the men working in the C-119 and Captain Diamond and 1stLt William K. Rubertus, copilot, the HH-43 shuttled between the crash site and the base with survivors and equipment.

The rescue brought the total number of saves performed by the 3rd ARRGp during 1972 to 225.

DET 16 AIDS FLOOD VICTIMS

On June 22 the HH-43 alert crew at Det 16, 42 ARRSq, Williams AFB, Ariz., was contacted by local authorities requesting assistance in a major rescue effort underway in flood-ravaged Scottsdale, Ariz. Capt Gale Webb and a crew consisting of Capt Don Blair, copilot; Sgt Taras Soroka, crew chief; SSgt David Filut and A1c Mark Beard, firemen; departed Williams at 1145 local.

Arriving on the scene, Captain Webb checked in with the on-scene commander and began the task of finding and airlifting people from the disaster area. The search and rescue effort was made hazardous by the extreme number of light aircraft and helicopters in the area. The crew was constantly kept busy clearing for other aircraft and also searching for victims in the raging water below.

The first few pickups were quite routine and involved landing on high spots of ground, loading the trapped victims on board and transporting them to a school yard which was being used as a makeshift heliport. Many pickups were not so routine. These demanded the utmost in crew coordination and skill.

While searching the flooded area, Airman Beard spotted a boy clinging to a thin strand of barbed wire in the middle of the rain-swollen river. Captain Webb came to a hover downstream of the victim, and while Sergeant Soroka lowered the forest penetrator seat into the water, Captain Webb gave the key directions for getting on the penetrator over the loudspeaker. The HH-43 pilot then moved forward to where the boy could grab the penetrator. When the boy was on the seat, Sergeant Soroka raised the penetrator and brought him into the cabin where Airman Beard secured him for the take-off. The rescue was made harder by the swiftly moving current and the lack of adequate hover references.

Captain Blair was required to make a hoist pickup from the left seat when two men were spotted stranded inside a large truck. High power lines and strong gusting winds necessitated the pickup by the copilot since he was in a better position to maintain clearance from the lines and poles. When Captain Blair came to a hover over the truck, the rotor blades were over the power lines and the gusty winds made a stable hover extremely difficult. Sergeant Filut brought the men up one at a time, and Airman Beard made them ready for the take-off. The men were returned to the school and at that time the crew was notified that two other men were perched in a tree amidst the torrent of water.

Pedro 89 proceeded to the area and located the victims. Captain Webb performed the pickup under extremely hazardous conditions due to the gusty winds and numerous poles and trees in the area. As the helicopter was hovered over the trees, Sergeant Filut lowered the forest penetrator seat down through the tree branches. No difficulties were encountered until both were on the penetrator and Sergeant Filut started the hoist up. It became entangled in the trees, but the skillful maneuvering of the hoist by Sergeant Filut allowed the pickup to be completed with no injuries to the rescuees.

As the two men were unloaded at the school, the crew was told by some bystanders that they had seen a man being swept downstream by the raging water. Captain Webb immediately took off and started working downstream, crisscrossing the area. About five minutes later the man was spotted in the middle of the river clinging to a flimsy slab of wood. Captain Webb flew farther downstream and set up an approach that would let them be in a good position as the man floated by. The forest penetrator was lowered to the water and Pedro 89 came to a hover just short of the victim. The man grabbed the penetrator as he floated by and managed to strap himself on. He was then hoisted aboard and returned to the school yard.

TREED MEN SAVED—As muddy water rages beneath them, two men are rescued from the tree in which they took refuge from the flash flood. It was one of several rescues carried out by the HH-43 crew from Det 16, Williams AFB, Ariz. (USAF photo by TSgt Ray Agee)

Pedro 89 returned to Williams AFB at 1530 local after picking up 15 people, six of this number quite probably would have been swept away if it had not been for the presence of the helicopter. A total of 64 rescues were reported, with 49 "saves" by all helicopters involved in the rescue effort.

Kitty Hawk Crewman Aided By 37th

DA NANG AFLD, RVN—At 1800 the 37th ARRSq was notified through the primary crash network that a Navy C-1A from the aircraft carrier "Kitty Hawk" was bringing in a man who had suffered a cerebral hemorrhage. Because an aeromedical neuro-surgeon was immediately required due to the patient's critical condition, and one was not available at Da Nang, a rapid medevac of the patient to the U. S. Army 95th Field Hospital was required. An HH-43F Pedro met the inbound aircraft as soon as it pulled off the runway and the patient and his doctor were transferred to the helicopter. Eight minutes after the Navy plane touched down, the patient was in the hospital five miles away.

Manning the Pedro were Capt Allan C. Spitler, pilot; 1stLt William I. Latham, copilot; SSgt John Szczecina, helicopter flight mechanic; and SSgt Randall S. Swens, medical technician.

PRESIDENT HONORS 3rd ARRGp

FOR EXTRAORDINARY HEROISM—General Vogt places the streamer signifying the third Presidential Unit Citation on the group's streamer-laden flag. MSgt Aaron D. Farrior holds the unit's flag. (USAF photo)

TAN SON NHUT AB, RVN—The Presidential Unit Citation for extraordinary heroism was presented recently to the 3rd Aerospace Rescue and Recovery Group. It was the third Presidential Unit Citation awarded the 3rd ARRGp for service in the Republic of Vietnam.

Gen John W. Vogt, commander, 7th Air Force, made the presentation of the award which covered the period of Feb. 1, 1969 to April 30, 1970.

The citation stated that "during this period, aircrews of the 3rd ARRGp daily risked their lives by exposing themselves to intense hostile fire to rescue other downed crewmembers. Their selfless courage and dedicated professionalism resulted in the rescue and recovery of 714 American and allied personnel. Of these personnel, 516 were saved from almost certain death or capture by enemy forces."

The citation further noted "the profound impact on the morale of combat aircrew members serving throughout Southeast Asia."

The following units share in the award for the same period unless otherwise indicated: 37th, 38th, 39th and 40th ARRSq's; Detachments 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, and 14 of the 38th; and Detachment 1 of the 40th. Det 10 of the 38th received the award for the period Feb. 1, 1969 to Dec. 27, 1969.

The Department of the Air Force Special Order GB-162 is dated March 24, 1972.

In addition to the Presidential citations, the group has received the Air Force Outstanding Unit Award with V device and the Republic of Vietnam Cross of Gallantry with Palm for its service in Vietnam.

Outstanding Rescue Units Named

The 37th ARRSq and Det 5, both of the 3rd ARRGp have been named the outstanding rescue units of 1971 by the Military Airlift Command. Gen Jack J. Catton, commander, MAC, presented the Commanders Trophies to the units at a ceremony held at the 3rd ARRGp's headquarters.

The 37th ARRSq performs search and rescue operations out of Da Nang Afld, while Detachment 5 is responsible for base rescue operations at Udorn RTAFB, Thailand. The 37th was cited for saving 118 men from either death or certain capture by the enemy. Last year, its HH-53 Super Jolly Green Giant and HH-43 Pedro helicopters flew 5,721 combat hours.

It was pointed out that the 37th preserved a perfect safety record last year while operating out of one of the most congested areas of the Republic of Vietnam without a flying accident.

Last year, men assigned to the 37th earned 12 Silver Stars, 99 Distinguished Flying Crosses, 8 Bronze Stars, 395 Air Medals, 100 Air Force Commendation Medals and 17 Purple Hearts.

In the three years the ARRS Commanders Trophy has been presented, this is the second time a 3rd ARRGp squadron has received the award. Det 5 became the first unit to ever receive the new Commanders Trophy for units of its type.

The officers and men of Detachment 5 were cited for their outstanding mission accomplishments during 1971. Last year, they scrambled more than 350 times for in-flight emergencies, aircraft accidents or emergency medical evacuations. They were credited with saving three lives.

Included in the citation was recognition of the flying training program conducted by Detachment 5 for its own crews and other units' pilots in the use of the new light water fire-fighting agent.

Det 5 also received recognition for having one of the most outstanding maintenance sections in the Air Force. During a recent visit, an Air Force Inspector General Team reported that its maintenance section was one of the best it had ever inspected.

37th, DET 5 "OUTSTANDING"—Looking over the Commanders Trophies presented to the units are, left to right, Maj John R. Cassarini, Det 5 commander; MSgt Willie Bostic, Jr., the detachment's line chief; and Col Cecil N. Muirhead, Jr., 3rd ARRGp commander. (USAF photo)