KAMAN Rotor Tips

JANUARY-FEBRUARY, 1974

KAMAN AEROSPACE CORPORATION

Rotor Tips

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Volume VIII No.

FEATURES

HSL-35 Commissioning 3
HH-43 Crew Honored 5
Det 3 — USS Cook Team 6
KAC Hosts Reserve Officers 21
Cubi Supply Aids LAMPS Program 22
Pedro Provides Unique Reenlistment 26
HH-43 Night Mission Saves Sergeant 26
Numerous Missions For Pensacola SAR Det 27
HSL-30, 32, 33 Activities 28

DEPARTMENTS

Technical Section 9
Report From The Ready Room 25

Rotor Tips is published by the Customer Service Department, Kaman Aerospace Corporation, Bloomfield, Conn. 06002. The material presented is for informational purposes only and is not to be construed as authority for making changes in aircraft or equipment. This publication DOES NOT in any way supersede operational or maintenance directives set by the Armed Services.

ON THE COVER

An SH-2F shows its "teeth"–an ASW homing torpedo–while on a fly-by. Equipped with advanced electronic and electromagnetic sensors, navigation and communication systems, the LAMPS helicopter greatly extends the Fleet's capabilities in anti-submarine warfare and anti-ship missile defense. (Ruggiero photo)

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HSL-35 Commissioned In West Coast Ceremony

NAS IMPERIAL BEACH, Ca.—Helicopter Anti-Submarine Light Thirty-Five (HSL-35) was established in a ceremony here 15 January, 1974. The Commanding Officer is Cdr Jerry L. Vanatta. Cdr Charles D. Craft is the Executive Officer.

The commissioning of HSL-35 follows approximately seven months after the establishment of HSL-33 at NAS Imperial Beach. Both squadrons are dedicated solely to providing Light Airborne Multi-Purpose System (LAMPS) detachments for LAMPS-configured ships of the U. S. Pacific Fleet. Six months ago, HSL-32 was established at NAS Norfolk, Va., to provide LAMPS helicopter detachments to designated ships assigned to the U. S. Atlantic Fleet. Two other squadrons, HSL-30 at NAS Norfolk and HSL-31 at NAS Imperial Beach, contribute to the LAMPS effort as "Replacement air group" squadrons. Their mission is to train the pilots, aircrewmen, and maintenance personnel for their other LAMPS squadrons.

Guest speaker at the HSL-35 commissioning was Capt Mark R. Starr, Chief Staff Officer, Commander Anti-Submarine Warfare Wing, U. S. Pacific Fleet. Captain Starr noted that establishment of the new squadron "is indicative again of the increasing dependence on rotary wing aviation to meet the changing and dynamic needs of the Navy."

In referring to the squadron's mission of anti-submarine warfare (ASW), Captain Starr said that during the last 20 years "there had been a steady and ever increasing improvement in readiness, in coping with the ASW problem.

"Whatever success we have achieved, he said, "and I think it's been significant, has not been accomplished waiting for new hardware, but more over in the day-to-day development and understanding of the art so that new requirements, tactics, sensors and so forth can be identified. So, while we might indulge ourselves in the appreciation of the finest hardware the nation can provide, we know that it is, in fact only a vehicle by which we exploit our knowledge. Thus the training and experience gained in the SH-2F that this squadron will operate, will continue the trend in readiness and prepare for new challenges in ASW. . . ."

At the end of his speech, Captain Starr read congratulatory messages to HSL-35 from VAdm Robert B. Baldwin, Commander Naval Air Pacific, and RAdm Mark W. Woods, Commander Cruiser Destroyer Force Pacific. Among the dignitaries present at the ceremony was Capt George E. Smith, Commanding Officer of NAS Imperial Beach.

(Continued next page)

Cdr Jerry L. Vanatta

Cdr Charles D. Craft

In centuries-old ceremony, sideboys render honors as Capt M. R. Starr, USN, is welcomed aboard. Captain Starr, the guest speaker, is Chief of Staff Officer, Commander Anti-Submarine Warfare Wing, U.S. Pacific Fleet. (McLaughlin photo)

FACT SHEET

NAME — Helicopter Anti-Submarine Squadron Light (HSL-35)

NICKNAME — THE MAGICIANS

ESTABLISHED — Tuesday, 15 January 1974, NAS Imperial Beach, California

COMMANDING OFFICER — Cdr Jerry L. Vanatta
Last Duty — Aircraft Maintenance Officer and Executive Officer HSL-31

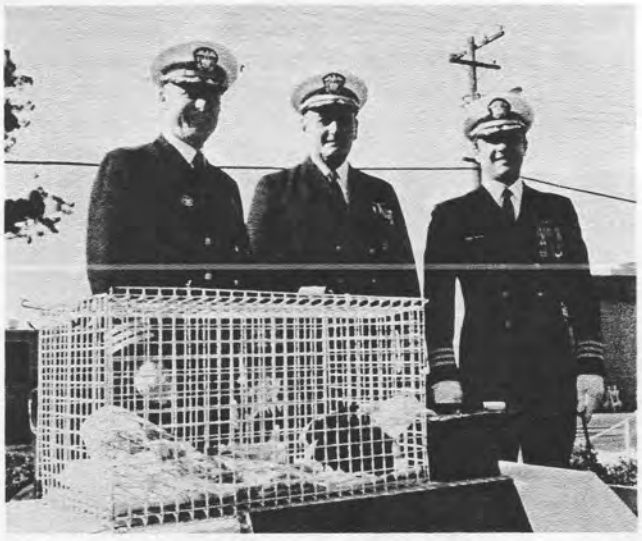
EXECUTIVE OFFICER — Cdr Charles D. Craft
Last Duty — Aircraft Maintenance Officer HSL-33

MISSION — The officers and men of HELANTISUBRON (L) 35 will fly the SH-2F "SEASPRITE" helicopter which is manufactured by the Kaman Aerospace Corporation. Using the aircrafts radar, magnetic anomaly detection gear (MAD), and sonobuoys they will be able to localize, classify and attack enemy submarines originally detected by a ship's sonar. In addition to their anti-submarine mission, the personnel of HELANTISUBRON (L) 35 will be able to provide anti-ship missile defense and to perform all the other missions for which helicopters are famous.

REASON — Tasked to provide LAMPS detachments aboard destroyers of the Pacific Fleet. The officers and men of HSL-35 look forward to the challenges of the future.

SQUADRON STRENGTH — Approximately 30 officers and 170 men flying 12 aircraft. The squadron is organized into 13 detachments consisting of three officers and eight enlisted men. Each detachment flys and maintains 1 aircraft.

Captain Starr and Commander Vanatta with one of squadron's H-2 "Foxtrot's" in background. (USN photo)



Commander Vanatta addresses squadron and guests. At left are Commander Craft and Captain Starr. (USN photo)
At right, the three officers share a close-up with the squadron's mascot, a rabbit. (McLaughlin photo)

Cdr Meryl A. Belto, center, Commanding Officer of HSL-33, NAS Imperial Beach, Calif., is shown with his crew and KAC officials just before takeoff in SH-2F. Left to right are, ADR1 Ronald E. Wood, Fred L. Smith, Chief, Test Operations and Customer Service; Commander Belto, Lt A. J. Olmstead, Jr., copilot, and William R. Murray, President—Kaman Aerospace Corporation. After leaving the Kaman facility at Bloomfield, Conn., Commander Belto flew the LAMPS helicopter to Washington, D. C. At the capitol city, he took VAdm William D. Houser, Deputy CNO (Air Warfare), and RAdm Carl J. Seiberlich, Director of Aviation Programs Division in CNO, on demonstration flights. Afterward, Commander Belto and his crew flew the SH-2F cross-country for delivery to HSL-33. (Ruggiero photo)

Now a familiar sight in the Norfolk area are SH-2's from HSL-30 and HSL-32. HSL-30 moved to NAS Norfolk from NAS Lakehurst, N. J., several months ago; shortly afterward HSL-32 was commissioned. Shown is one of the helicopters on a familiarization flight. (USN photos by PHC N. J. VanDenHandel, COMNAVAIRLant)

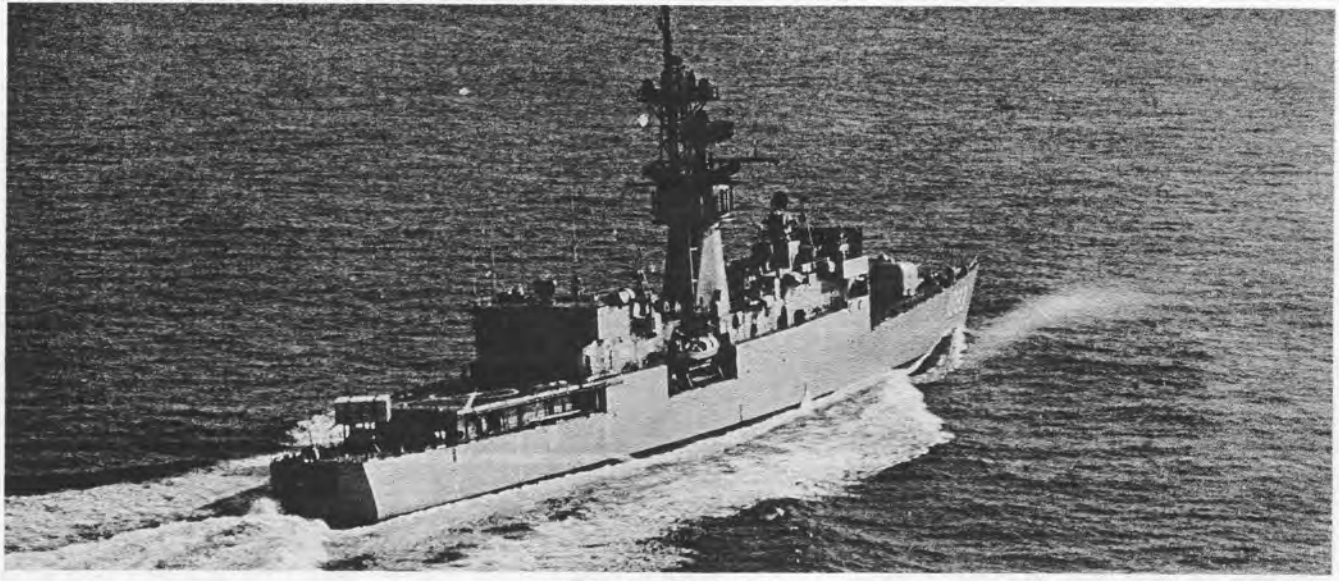
— ◇ HH-43 Crew Honored By Kaman ◇ —

Thomas Coiro Buck Laronge

An HH-43 crew from Det 12, 40th ARRSq (MAC), U-Tapao RTNA, Thailand, was honored by Kaman Aerospace recently for the hazardous medical evacuation of two injured U. S. Navy seamen from the USS Halleakala. Receiving KAC Scrolls of Honor for the mission were, left to right, SSgt Norman V. Thomas, medical technician; A1c John M. Coiro, flight mechanic; LtCol Norman C. Buck, Det 12 Commander, copilot; and Capt Lawrence S. Laronge, pilot.

The night medevac, at sea, involved light rain showers, high gusty winds and poor visibility. Despite rough seas, a successful landing was accomplished on the stern of the Halleakala, an ammunition supply ship which was in Sattahip Deep Water Port, Thailand, at the time of the mission. The patients were placed aboard the HH-43 and then airlifted to the hospital. (USAF photo)

"The Navy Helicopter Association invites representatives of industry and the military to submit papers for presentation at its annual convention to be held in San Diego, California, May 15, 16 and 17, 1974. Papers of both general and limited interest will be welcome on any subject related to helicopters and should not exceed 30 minutes. Audio and visual aids will be provided. Abstracts should be submitted to reach the Navy Helicopter Association, Naval Air Station Imperial Beach, California 92032, not later than March 1, 1974. Authors of selected papers will be notified by April 1, 1974."



USS COOK (DE-1083)

Det 3—USS Cook Team Demonstrates LAMPS Capabilities

(USN photos)

By Ens Cathey Dykes, USNR
HSL-33 Public Affairs Officer

NAS IMPERIAL BEACH, Calif.—HSL-33 LAMPS Detachment Three has had several noteworthy opportunities to demonstrate the Anti-Submarine Warfare (ASW) capabilities inherent to the LAMPS concept since it deployed on 7 May 1973.

LAMPS Det 3 and USS Cook (DE-1083) were selected to work with the Japanese Navy's Midshipman Program, and later with the Korean Navy, joining forces for a valuable ASW exercise. The groundwork for these activities was laid in late July when Cook and Det 3 joined Destroyer Squadron Fifteen (DESRON 15). DESRON 15 was at that time involved in the Japanese Midshipman Exchange Program. Several midshipmen of this allied Self Defense Force joined U. S. forces for training and observation of various fleet activities. The midshipmen were introduced to the LAMPS program and the ASW capabilities of the SH-2D helicopter when Det 3 flew demonstration hops utilizing all LAMPS equipment on board the helicopter. LAMPS Det 3 also demonstrated LAMPS' "Multi-Purpose" capabilities when its crew responded to a medical request. The helicopter flew to USS Parsons (DDG-33) where the Det picked up a doctor and transported him to a Japanese destroyer whose Executive Officer was ill.

HSL-33 DET 3—Front row, Lt Tom Halwachs, Assistant Officer-in-Charge; AW1 J. C. Richards, AW3 D. A. Butler, ADJ3 R. M. McKellar, AW3 P. L. O'Haver, ADJ1 J. B. McClain, AMSC L. R. Hopkins. Second row, Lt(jg) Dan Ellison, AX1 A. F. Krieger, AE3 P. E. Lushia, AX3 R. Terhune, AE3 C. G. Berry, AMS3 R. L. South, AMS3 R. A. Pottorf, Lt(jg) Bob Niemczyk, Lt Craig Reynolds, Officer-in-Charge.

BEGINNING—Crew from HSL-33 Det 3 flys SH-2D aboard the USS Cook at the beginning of the six-month cruise. Det 3 personnel lived up to their nickname "The MAD Trappers" during the deployment which showed the effectiveness of the ship/helicopter LAMPS team.

With the midshipman training exercise moving into its final phases, DESRON 15's forces began preparations for the Tae Kwon Do I ASW exercise with the Korean Navy. LAMPS Det 3's Officer-in-Charge, Lt Craig Reynolds, was appointed coordinator for planning and briefing in the forthcoming exercise. As the operation began, the LAMPS crew took its position and remained available, due to excellent maintenance procedures, for every scheduled event. The initial search phase involved not only USS Cook and USS Gurke (with DESRON 15 embarked), but also several Korean surface ships, the U. S. submarine Tang and airborne forces from VP-46.

The LAMPS sensor equipment (radar, sonobuoys, and Magnetic Anomaly Detection gear) provided a highly effective ASW detecting and tracking system. The use of this system enabled LAMPS Det 3 to make more "contacts" than all other units combined. Due to the LAMPS crew's highly professional use of sensor equipment, the submarine was continually forced to carry out evasive maneuvers.

As the exercise concluded, several debrief and summary sessions were held at which many favorable comments on the LAMPS system were made. Noteworthy was the reenforcement by the submarine crew of the effectiveness of the ship/helicopter LAMPS team which was described as, "the most dynamic element of the entire operation."

Of additional significance was the unique teamwork developed between Cook's CIC and the SH-2D's tactical maneuvering. Using the NC-2 plotter, and occasionally the ship's fire control radar, Cook controllers were consistently able to direct the aircraft to high areas of probability for detection. Similarly, the helo was often able to assist the ship in various search or evasive patterns. Working as a complete team lent additional professionalism to the U. S. forces and made noteworthy steps toward further development and cooperation between surface and aviation ASW units.

Although the Korean ASWEX highlighted the Det's WestPac cruise, several other noteworthy events bear mentioning. Enroute to Subic Bay following a September line period, Cook intercepted an SOS from the grounded USNS Jack Pendelton on Triton Island. LAMPS Det 3 stood by for two days ready to lend assistance which was not necessary due to extremely calm weather and the eventual arrival of salvage units.

Departing the Philippines for the last time, Cook struck out for Australia arriving in Darwin early in October after an extended dalliance at the equator to initiate those whom had not passed that way previously. This group included the entire air detachment. Having become "Shellbacks," and facing no further operational committments, the crew spent the next month circumnavigating the Australian continent. New Zealand was also included as a port visit early in November; and upon departing that friendly locale, Cook sailed toward Long Beach and home. Brief stops for fuel were made at Pago Pago and Hawaii prior to the place that really counted, in Southern California.

Lt Reynolds and Lt Halwachs flew "TF-13" off Cook for the last time on the morning of 28 November just prior to the ship's entry into the harbor. Their arrival brought to a close a highly productive and worthwhile six-month cruise.

END—Typical scene as Det 3 personnel returned to NAS Imperial Beach and waiting families at finish of deployment aboard the Cook.

2000th Helo Landing On Mt Whitney Celebrated

USS EDWARD MCDONNELL—The amphibious Command Ship USS Mt Whitney (LCC-20) recently landed its 2000th helicopter while operating with Task Force 61 in the Eastern Mediterranean. The landing was made by HSL-32 LAMPS Det Three serving on board USS Edward McDonnell (DE-1043). On hand to welcome the LAMPS helo, an SH-2D, was Rear Admiral William H. Ellis, Commander Amphibious Group Two, and Capt Robert F. Dean, Commanding Officer of USS Mt Whitney. The pilots of the LAMPS aircraft, Lt Vince Ammendola and Lt Jim Kirby, and the crewmen, AW2 Joel Leitch and AX3 Kurt Nueffer, joined the officers and men of Mt Whitney in a cake-cutting ceremony to mark the occasion.

HSL-32, homeported at NAS Norfolk, Va., provides LAMPS detachments for destroyers in the Atlantic Fleet. USS Edward McDonnell is the first 1040 Class Ocean Escort to deploy with a LAMPS aircraft embarked.

LAMPS is an acronym for Light Airborne Multi-Purpose System, and is the newest concept in Anti-Submarine Warfare (ASW). LAMPS significantly adds to the readiness posture of Edward McDonnell by extending the defenses of the ship far over the horizon to prosecute swiftly all potential enemies, whether they be airborne, surface or sub-surface threats.

Upper left, SN Bequillard guides H-2 in for Mount Whitney's 2000th landing. At left, Lt Vince Ammendola, helo pilot, cuts first piece of cake baked to celebrate event. Watching are Capt Robert F.Dean, Lt Jim Kirby, AW2 Joel Leitch, RAdm William H. Ellis, and AX3 Kurt Neuffer. (USN photos by PH3 Fittante)

Twirly Birds

William E. Zins, left, manager of R&D Marketing, Kaman Aerospace Corp., Bloomfield, Conn., and president of the Twirly Birds, welcomes Col William L. McKeown, Director, Eustis Directorate, US Army, Air Mobility R&D Laboratory of Ft. Eustis,Va., as the organization's newest member.

The Twirly Bird Club is an exclusive association which honors those pilots who pioneered in the helicopter/VTOL industry and flight operations. Founded in 1947, the Twirly Birds now have over 200 pilot members in the United States and eight foreign countries. To qualify as a member, one must have flown a rotary wing or other VTOL aircraft in sustained complete flight, including a take off and landing, over 20 years ago.

The Twirly Birds annual meetings are held in conjunction with the American Helicopter Society Annual Forum, during springtime, in Washington, D. C.

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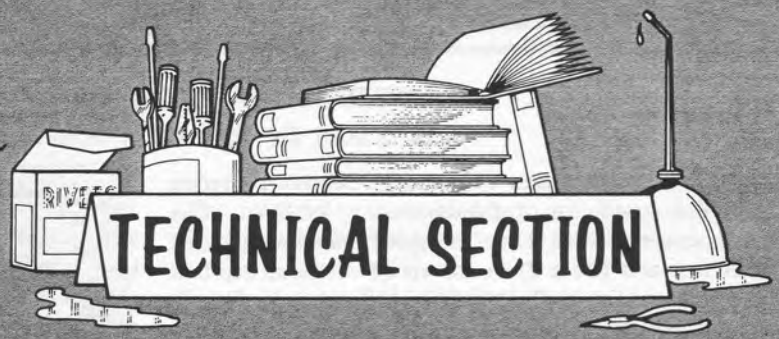
Published by the
Customer Service Department
Kaman Aerospace Corporation
Bloomfield, Connecticut 06002.



Kaman Rotor Tips technical information is supplied for informational purposes only and does not in any way supersede operational/maintenance directives established by cognizant authorities. The intent of this data will be incorporated, by future changes, into applicable manuals or directives.

Table of Contents

Sealing Generator Controller Panels 9
Speed Decreaser Gearbox Oil System 10
Combining Gearbox Input Oil Dam Seals 11
Interchangeability of Packings, Seals & Gaskets 11
Azimuth-To-Hub Rodend 12
Tire Pressures 13
Rotor & Control System Components 14
Servicing Main Battery 16
Pack Ups 16
Forward Fuel Cell Probe 17

G. M. Legault, Manager
Service Engineering

J. P. Serignese, Technical Editor

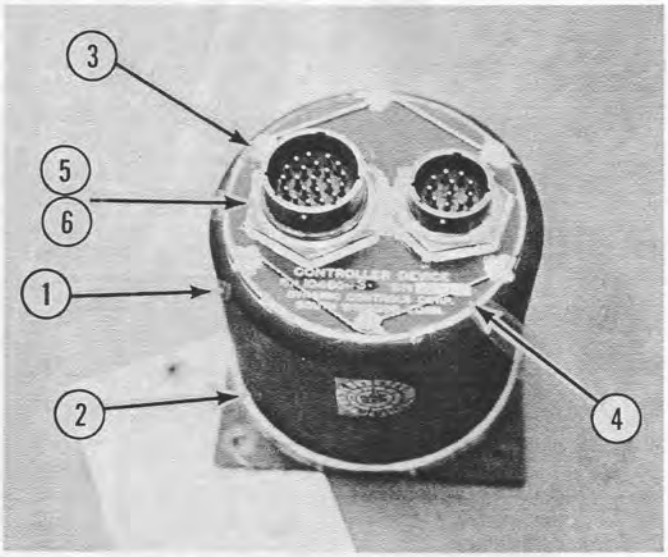
SEALING GENERATOR CONTROLLER PANELS

H-2

N. Hankins, Service Engineer

Experience has indicated that one of the principal causes of generator controller panel malfunction is entry of moisture due to improper sealing. The proper method of sealing these panels (P/N 10300-6, FSN RH6110-948-5384BH; and 10460-3, FSN RH6110-944-5592BH) is described as follows and is shown in the accompanying photo.

A. Remove the housing (1) and inspect the interior of the panel for evidence of water entry and/or corrosion. Clean and dry as necessary.
B. Replace and secure the cover.
C. Apply a bead of sealant, such as RTV-731, completely around the base of the housing (2) at the point where the housing contacts the base plate.
D. Apply sealant to the six housing screws (3) located at the top of the panel.
E. Apply sealant completely around the panel at the point where the housing and the nameplate meet (4).



F. Finally, apply a bead of sealant around the connector hex mounting nut where it contacts the nameplate (5), and also at the top where the connector threads are visible (6).

SERVICE ENGINEERS: N. L. Hankins, J. M. Nenichka, Avionics; R. J. Trella, Drive/Lube; W. J. Wagemaker, Rotors/Controls/Hydraulics; H. Zubkoff, Engine/Airframe/Fuel/Utilities.

SPEED DECREASER GEARBOX OIL SYSTEM

H. Zubkoff, Service Engineer

Photograph A shows a view of the speed decreaser gearbox oilpump just outboard of the combining gearbox. The quick-disconnects (item 1) in the speed decreaser gearbox oil inlet line and (item 2) in the speed decreaser gearbox oil outlet line ARE NOT INTERCHANGEABLE. Item 1 is part number 20343-1 (FSN RD4730-541-7319YX); item 2 is part number 20343-1B (FSN 9C4730-541-1332). Note that the only difference between the two part numbers is that item 2 has the suffix B. This suffix is used to indicate a longer quick-disconnect.

If the longer 20343-1B quick-disconnect (item 2) is used in the inlet line where item 1 belongs, it will force the K678747-17 speed decreaser gearbox oil inlet hose assembly downwards, and cause chafing as it passes through the firewall (see item 4 both photographs). Conversely, if the shorter 20343-1 quick-disconnect (item 1) is used in the outlet line where item 2 belongs, the result will be a stretched and pre-loaded hose assembly.

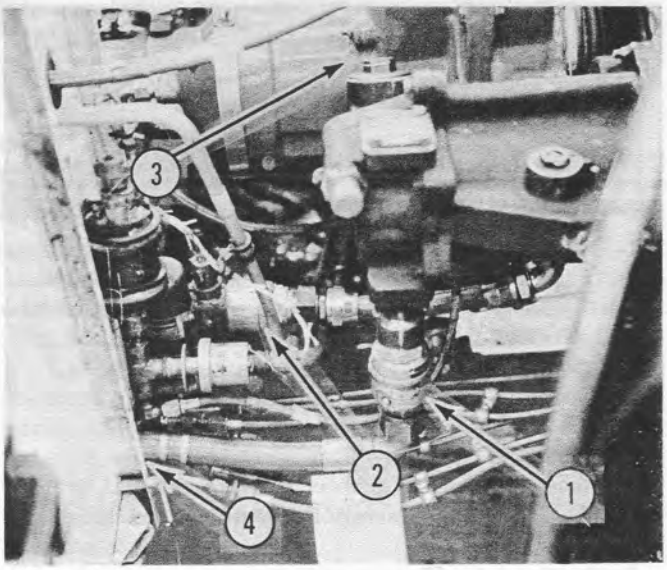
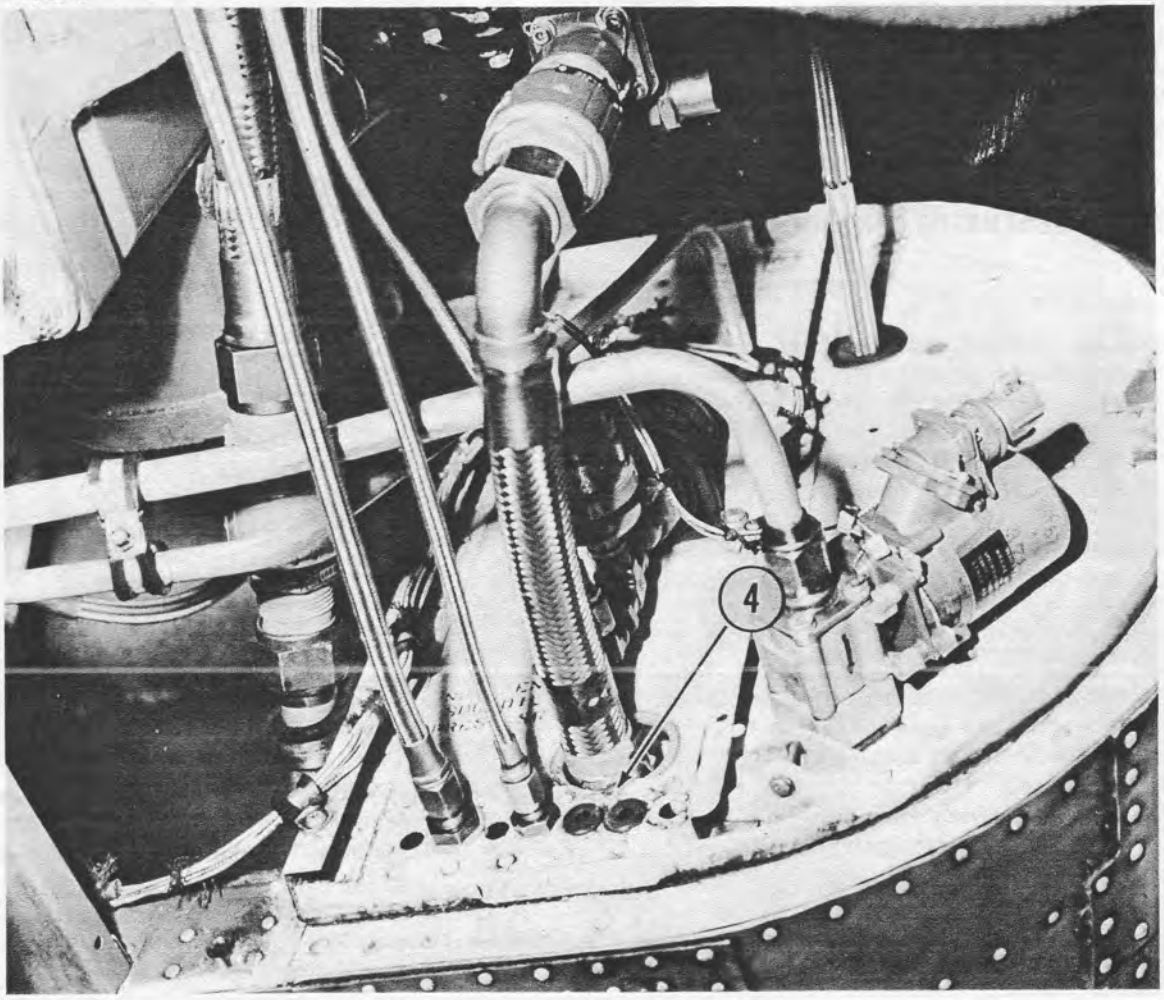


Photo A

1. Quick-disconnect, P/N 20343-1
2. Quick-disconnect, P/N 20343-1B
3. Combining gearbox
4. Point of interference-See Photo B

Photo B

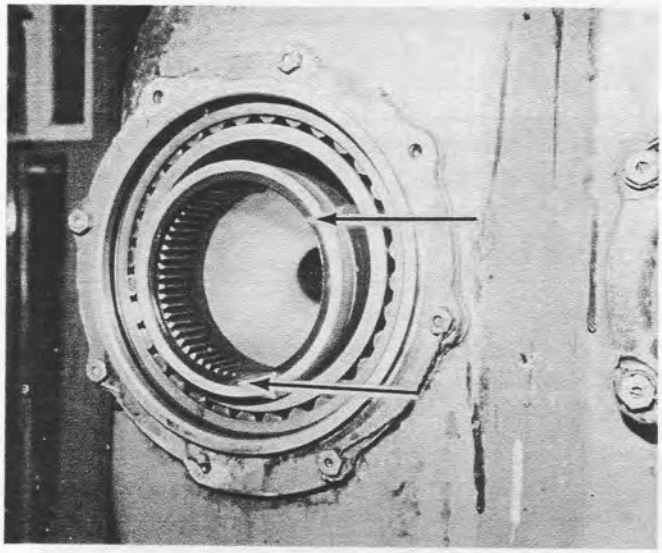


H-2 COMBINING GEARBOX INPUT OIL DAM SEALS

During engine removal/installation, input shaft oil dam seals are exposed to possible damage when mating the speed decreaser and combining gearbox drive splines. Seal replacement procedures require the use of special sockets and tooling, making it necessary to return the gearbox to overhaul for seal replacement. (One input shaft oil dam seal is installed on each side of the forward face of the CGB; see arrow in the photo.)

The following inspection criteria is presented to preclude premature gearbox replacement due to damaged seals.

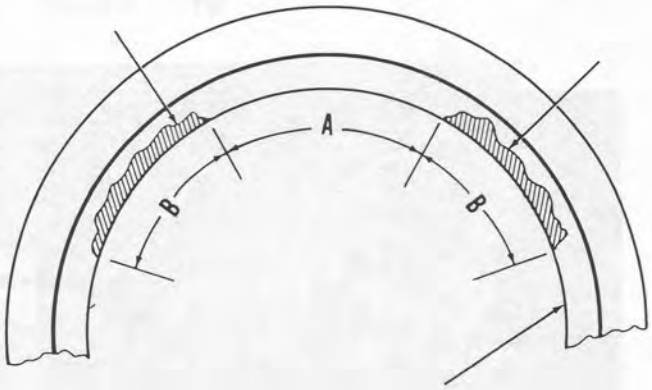
Forward side of combining gearbox
(Right hand input seal shown)



The information presented here will be incorporated into NAVAIR 01-260HCA-2-4.1 by a future change.

Oil dam seals (P/N K674853-13) must be replaced when any of the following is discovered:

1. Any missing segment of seal, exceeding 2 inches.
2. Three or more missing segments, which,when added together totals more than 5 inches.
3. Separation between adjacent missing segments (segment A on illustration) is less than shortest adjacent missing segment.



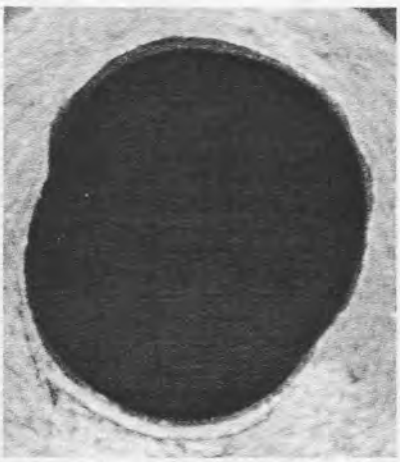
R. J. Trella, Service Engineer

INTERCHANGEABILITY OF PACKINGS, SEALS, AND GASKETS

A listing of interchangeables for the various O-rings, seals, packings, and gaskets is readily available in the following supply catalogs: Naval Management Data List; Master Cross Reference List; and, the USAF Interchangeability and Substitution Grouping Stock List. These publications are carried at all government supply activities at sea or ashore.

Substitutions on all requisitions submitted by squadrons and detachments are handled by the local supply department technical section. As soon as a requisition is received by supply, technical section personnel verify the part number and stock number and also list all interchangeable stock numbers. The stock numbers are then screened against supply stock records for a number showing an on-hand quantity. That number is then used to furnish the requisitioner with a component.

R. Collier, Logistics Representative



What is it? Turn to page 12

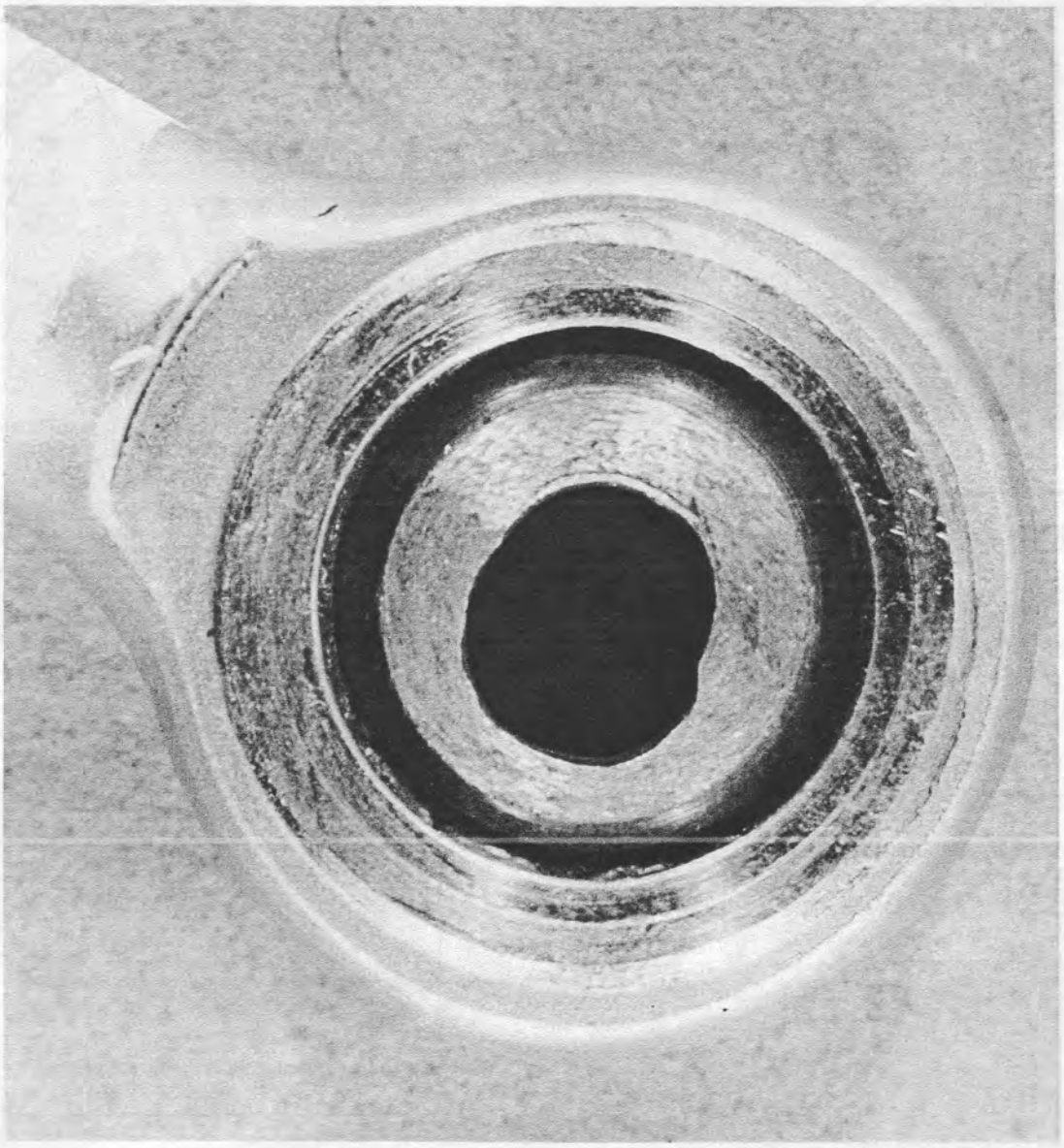
H-2 IS THIS YOUR AZIMUTH-TO-HUB RODEND?

W. Wagemaker, Service Engineer

It may be difficult to believe, but that black, elongated blob shown on page 11 was once a perfect circle contained in the rodend shown in the accompanying photo. The damage inflicted illustrates the results of insufficient torque applied to the attaching hardware. This particular rodend was installed at the lower end of an azimuth-to-hub rod assembly, P/N K659027-5. While all bolts and nuts must be properly torqued, the azimuth rod installation is considered to be a critical torque connection.

Earlier azimuth installations, with NAS464 bolts and standard nuts attaching the rodend, were tightened to a torque of 30-40 pound-inches. Airframe Change 194, titled, Modification of Anti-rotation Azimuth Link and Attachment to Main Gearbox, provides new bolts and special high-strength nuts capable of accepting the new torque requirement of 90-140 pound-inches. The assigned torque requirement is critical both before and after incorporation of AFC 194.

What we are stressing here is that all attaching parts should be tightened to the proper torque in order to prevent damage such as that shown in the photos. Furthermore, CRITICAL TORQUE requirements must be complied with for safety's sake.



CAN YOU MATCH THE CORRECT TIRE PRESSURES USING THE FOLLOWING LIST?

CORRECT ANSWERS ON PAGE 16

60
80
100
120
140
160

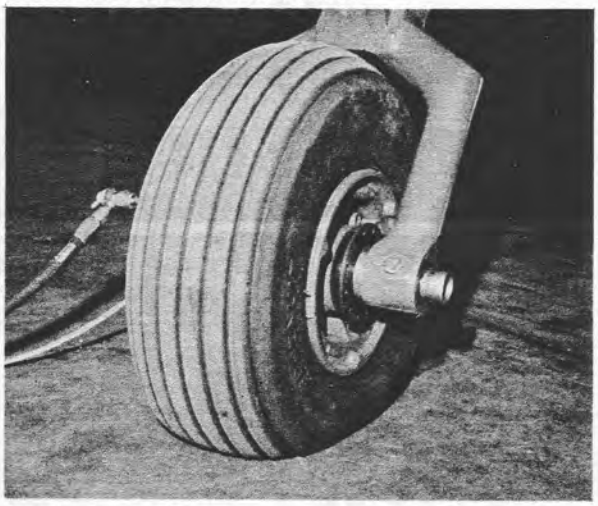


Photo A PSI

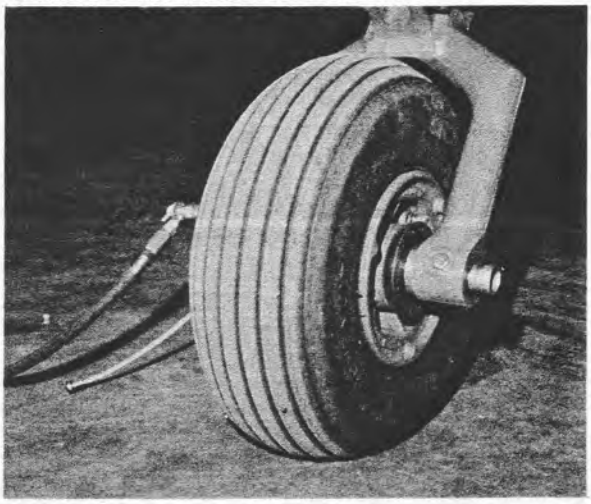


Photo D PSI

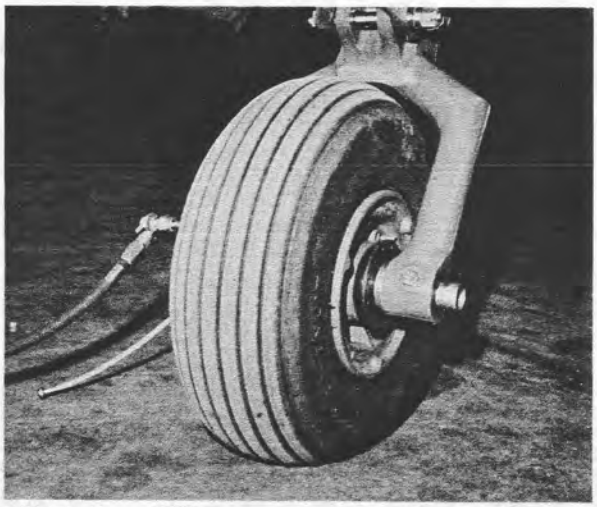


Photo B PSI

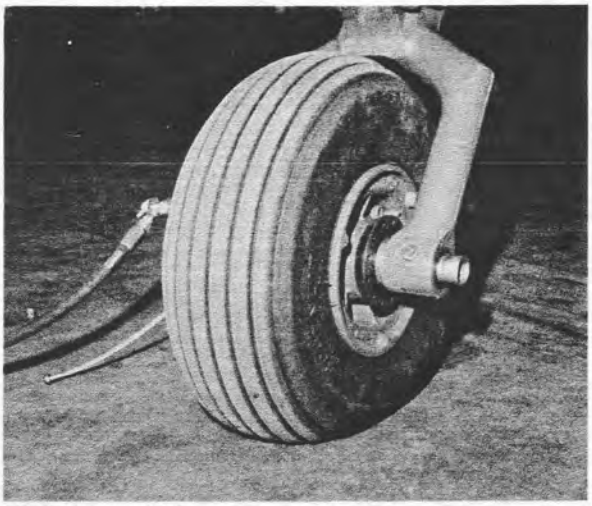


Photo E PSI

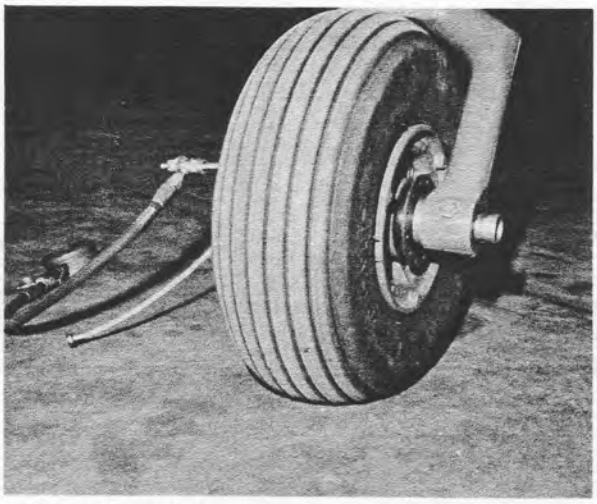


Photo C PSI

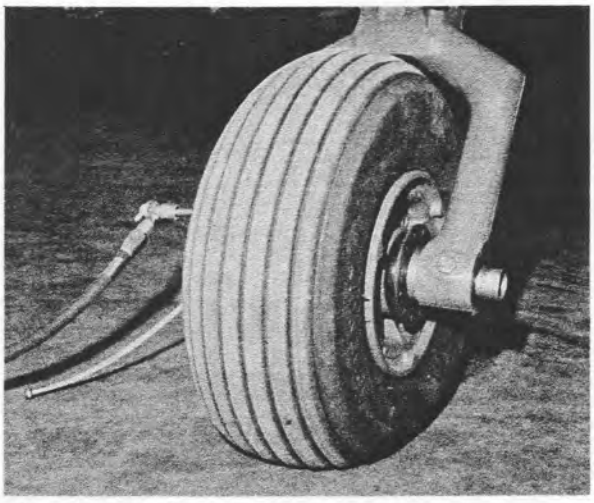


Photo F PSI

ROTOR AND CONTROL SYSTEM COMPONENT APPLICATION

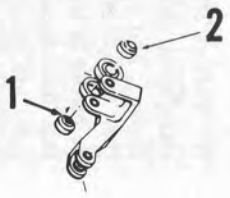
The H-2 has gone through several growth phases since its introduction. Due to this growth, several combinations of component use, Time Between Overhaul (TBO), and model application have developed. The following list details these components and the applicability of each.

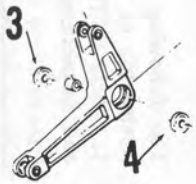
W. Wagemaker, Service Engineer

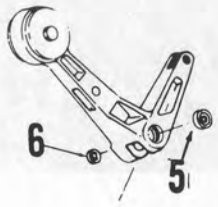
NOMENCLATURE/PART NUMBER	RETIRE/TBO INTERVAL HOURS	MODEL APPLICATION	REMARKS
Main Rotor Hub Assy			
K613002-109	500 Retire 1000 Retire	UH-2C HH-2D/SH-2D	Basic Configuration. Aluminum Hub-Use With Standard Rotor System Only.
K613036-5	(To be established)	SH-2F	Titanium Hub-Use with 101 Rotor (AFC-181).
Main Rotor Retention Assy			
K618080-603	800 TBO/2000 Retire	UH-2C/HH-2D/SH-2D	Basic Configuration.
K618080-605	800 TBO/2000 Retire	UH-2C/HH-2D/SH-2D	AFC-177 (Belleville Washers).
K618080-607	800 TBO/2000 Retire	UH-2C/HH-2D/SH-2D	AFC-176 (KAcarb Bearings) and AFC-177 (Use In Ships Sets Only).
K618740-1	3000 Retire*	SH-2F	AFC-181 (101 Rotor).
Main Rotor Blade Assy			
K611008-209/-309	800 Retire 1200 Retire	HH-2D/SH-2D UH-2C	Basic Configuration.
K611670-3	3000 Retire*	UH-2C/HH-2D/SH-2D	AFC-181 Blade With Basic Configuration Controls.
K611670-1	3000 Retire*	SH-2F	AFC-181 Blade (101 Rotor System).
Main Rotor Flap Assy			
K615002-101	2500 Retire	UH-2C/HH-2D/SH-2D/SH-2F	Basic Configuration.
K615224-1	3000 Retire*	UH-2C/HH-2D/SH-2D/SH-2F	Simplified Flap (ECP-342).
Main Rotor Damper Assy			
K610029-1 (101264)	2500 Retire 1250 Retire	UH-2C HH-2D/SH-2D	Basic Configuration.
K610100-1 (7-3733)	1750 Retire	SH-2F	Basic Configuration. Modified With New Rodend Assembly For The 101 Rotor System (AFC-181).
Lead-Lag Pin			
K610027-13	2500 Retire	UH-2C/HH-2D/SH-2D	Basic Configuration.
K610097-11	3000 Retire*	SH-2F	AFC-181 (101 Rotor).

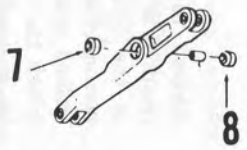
NOMENCLATURE/PART NUMBER	RETIRE/TBO INTERVAL HOURS	MODEL APPLICATION	REMARKS
Folding Pin			
K610014-17	2500 Retire	UH-2C/HH-2D/SH-2D	Basic Configuration - Silver Plated Tapered Area.
K610095-11	3000 Retire*	UH-2C/HH-2D/SH-2D/ SH-2F	Rolled Tapered Area For Better Fit With Cone In Retention (AFC-140).
Tail Rotor Blade And Grip Assy			
K614001-207	2000 Retire	UH-2C	After AFC-136.
K614701-1	2000 Retire	HH-2D/SH-2D	After AFC-170.
K614701-3	2000 Retire	SH-2F	ECP-369 Blades Can Be Converted By Changing Flyweights On Pitch Arm
Azimuth Assy			
K660008-109	500 TBO	UH-2C/HH-2D/SH-2D	Basic Configuration.
K660008-201	500 TBO	UH-2C/HH-2D/SH-2D SH-2F	After AFC-194.
Retention Bearings (See Illustration Below)			
K659458-15 (Item 1)	100 Retire	K659143-7 (Feedback, Idler)	On Retentions, K618080-603, -605 Only (Prior to AFC 176).
K659458-17 (Item 2)	100 Retire	K659143-7 (Feedback, Idler)	"
K659458-17 (Items 3&4)	400 Retire	K659163-101 (Feedback L Crank)	"
K659458-17 (Item 5)	400 Retire	K659586-1 (Counterweight L Crank)	"
K659587-11 (Item 6)	400 Retire	K659586-1 (Counterweight L Crank)	"
K659459-11 (Item 7)	400 Retire	K659598-1 (Lever) -9	On All K618080 Type Retentions.
K659587-11 (Item 8)	400 Retire	K659598-1 (Lever) -9	"
Tail Rotor Flapping Bearings			
K616300-1	240 Retire	UH-2C, HH-2D, SH-2D, SH-2F	Bearings To Be Inspected Each 60 Hours.

*Subject to NAVAIR Approval









H-2

SERVICING MAIN BATTERY

J. M. Nenichka, Service Engineer

Aircraft batteries should be given the care and attention required of precision equipment. This is particularly true of the silver-zinc battery. It is therefore essential that personnel servicing and maintaining these batteries be well-trained and qualified. Due to the emergency nature for which the battery is used, it is essential that the battery be in good condition when it is required to perform its function. The following procedures provide for inspecting and servicing the battery at Organizational Maintenance level.

Daily Inspection

1. Inspect battery for electrolyte leakage, warps, bulges and cracks.
2. Inspect vent lines for proper security, cracks, obstructions and deterioration.
3. Visually inspect battery terminals and connector for security and corrosion.
4. Insure battery tiedown bracket is secure and battery is not loose in vibration absorber.
5. Check open-circuit terminal voltage of battery with voltmeter reading accurately to 0.1 volts. A minimum of 25.6 volts should be obtained. Any reading less than 25.6 volts, battery should be replaced and sent to the battery shop where it will be serviced in accordance with NAVAIR 17-15BAD-1.
6. Insure Quick-disconnect is installed and safety wired with 0.020 copper wire, MS20995CU20.

The following actions are recommended to prolong the service life of the silver-zinc battery:

1. Utilize EXTERNAL POWER for all maintenance tasks and inspections. (Dailies, preflights, turnarounds, etc.)
2. Disconnect battery after last flight of each day.
3. Replace battery every 56 days in accordance with NAVAIR 01-260HCB-6-3.
4. When batteries are removed from aircraft to facilitate other maintenance, store in cool dry place.
5. Batteries should be removed from aircraft and stored in battery locker whenever extended scheduled maintenance is performed or when an extended NORM/NORS is anticipated.
6. Individual record cards should be maintained on each battery installation. This record should be transferred with the battery to allow comparision of its activated life history if, and when, defective cells must be replaced.

Safety considerations to remember when removing or installing aircraft batteries:

1. Avoid contact with the battery electrolyte since it will burn skin and destroy clothing.
2. Battery strap should NOT be removed after installation due to cell expansion and case splitting.
3. Do not handle battery by grasping the vent fittings, this can break the fittings and damage the battery case.
4. Insure that battery assembly weight is marked on the battery and that ballast weights on vibration absorber assembly are correct in accordance with NAVAIR 01-260HCA-2-1.
5. Charging a silver-zinc battery using ground power units is NOT a recommended procedure. This battery is very sensitive to excessive voltage when charging, and damage will result. Charging is the responsibility of the battery shop, it has the capability of charging the battery in accordance with NAVAIR 17-15BAD-1 and current manufacturer's instructions.

Q. (Applies H-2) A packup is a group of components which are required to support the aircraft while aboard ship. What determines which components are placed in the LAMPS packups?

A. Factors affecting the content in a packup are: 1, the established maintenance concept for the affected ship and mission; and 2, reported usage. Of the two, usage, more than any other factor,determines primarily which parts will be placed in the packups. For this reason, it is imperative that detachments report ALL parts used, whether these parts are obtained from the packups, a "goody locker," or the local pre-expended bin. On a periodic basis, a review is held for the sole purpose of screening the LAMPS packup. As a result of this review, parts which have shown no and/or little officially reported usage are removed from the packups. Parts not previously in the packup which have generated a great deal of usage are added to future packups. The usage recorded and officially reported during a specific deployment thus has a direct affect on subsequent deployments and the quality of support dets receive from their assigned packups.

R. Collier, Logistics Representative

Answers to tire pressure match-up on page 13

Photo A 60 PSI	Photo D 140 PSI
Photo B 120 PSI	Photo E 100 PSI
Photo C 160 PSI	Photo F 80 PSI

MORAL: YOU CAN'T TELL BY LOOKING!

Use the gage to check pressure on ALL Landing gear tires. Correct pressure is 160 PSI for the tail landing gear tire.

H-2 FORWARD FUEL CELL PROBE INSTALLATION

By H. Zubkoff, Service Engineer

The FORWARD fuel cell quantity probes, if not precisely installed and positioned, will chafe on internal components or the sump wall. If chafing were allowed to continue, the fuel quantity gaging system will malfunction. The procedures outlined here are a result of a recent investigation of cell chafing and will be incorporated into applicable manuals by future changes.

Proper installation of a probe begins with the use of the correct fuel cell covers: P/N K679104-5 for the right-hand cell; and, K679104-1 for the left-hand cell. Fuel cell probes, P/N 381097-16398, are used in both the RH and LH cells. The probe covers, P/N K679019-3, are also useable in either the LH or the RH cell. Cell covers incorporate an embossed arrow (Photo 1) which, when the cover is installed, must point forward.

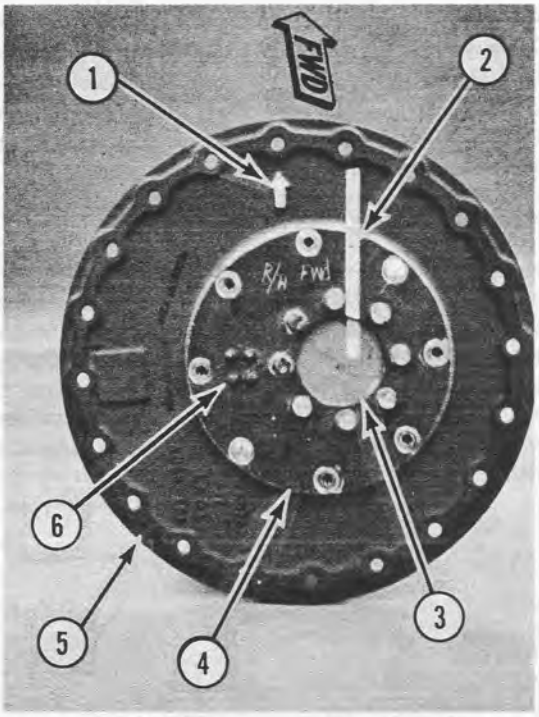


Photo 1–RH FWD

1. Embossed arrow
2. Index mark
3. Fuel probe
4. Probe cover
5. Cell cover
6. Bracket rivet heads

The probe must be secured to the probe cover in a position which places the probe harness connector adjacent to the connector mounted on the probe cover bracket as shown in Photo 2. Installation of the probe assembly (probe and cover) into the cell cover is the critical step in the installation procedure. Precise positioning is required because of the close proximity of the probe to internal fuel cell components.

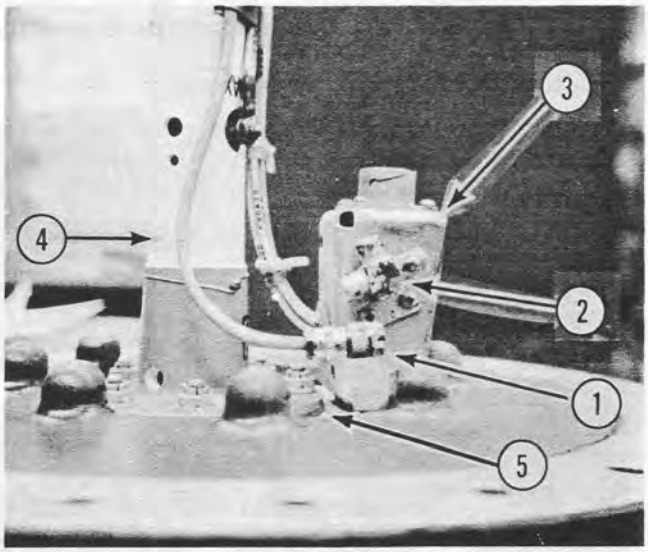


Photo 2

(Shown inverted)
1. Probe harness connector
2. Bracket connector
3. Bracket
4. Probe

Prior to removing a probe assembly, apply an index stripe across the probe, the probe cover, and the cell cover as shown in Photo 1. The stripe may be applied with a pencil, paint, or masking tape. (Do not scratch the cell cover with a sharp tool.) The stripe will assure proper positioning of the probe during re-installation. After marking and removal of the probe assembly, examine the probe for evidence of chafing. If there are no visible chafe marks, probe position was correct and the index marks should be used to insure identical re-installation. If, however, there is evidence of chafing, determine the point of contact by suspending the probe assembly into the tank (simulating the installed position) without the cell cover, and match the chafe mark with the internal components. If contact occurred against the plumbing, loosen, reposition, and retighten as necessary to provide the required clearance. If the lower end of the probe shows evidence of chafing, determine whether it was due to contact with the sump wall or the boost pump slip joint coupling adapter support bracket shown in Photo 3. If the chafing was against the sump wall, remove the sump access panel on the bottom of the fuselage. Loosen the bolts which secure the sump support brackets to the sump and inspect the brackets. If the

(Continued on next page)

brackets are found to be cracked, they must be replaced. If the brackets are serviceable, move the sump as far as possible (within the limits of the bracket bolt holes) in the direction which will increase the clearance between the probe and the sump wall. Hold the sump in this position and tighten the bolts. If the lower end of the probe appears to have been chafing against the boost pump slip joint coupling adapter support bracket (Photo 3) remove the clamp and the support. Prior to removal, note that one corner of the support (together with the clamp) is adjacent to the probe; with a hand file, round off this corner of the support. When re-installing the support, hold it, within the bolt hole limits, as far as possible in the direction away from the probe location and tighten the bolts. Be sure, when installing the clamp, that the boltheads are placed towards the probe.

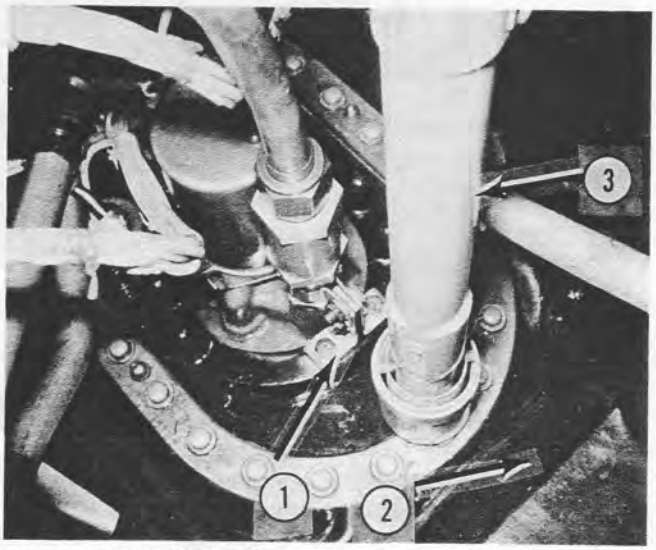


Photo 3–RH FWD Cell

1. Bracket
2. Sump wall
3. Probe

The following work aid may be fabricated at the operator's discretion to assist in correct installation of the probe. Obtain two forward tank cell covers. For the RH cell use the K679104-5 cover; for the LH cell, use the -1 cover. Modify the covers by adding visual inspection holes and removing a portion of each side as simulated in Photo 4.

Install the modified cover with the arrow pointing forward and secure in place with 2 or 3 bolts. Insert the probe assembly (actual probe and cover to be used in that cell) through the work aid cell cover and visually determine the optimum location. When the best position has been found (probe clearing all fuel components and sump wall), place a temporary index mark across the probe assembly and the work aid cell cover. Remove the probe assembly and the cell cover. Transfer the index mark to the actual cell cover, being sure to locate it accurately.

Install the fuel cell cover with arrow forward. Install the fuel probe assembly, aligning the index marks. Fuel probe installation may now continue in accordance with NAVAIR 01-260HCA-2-4.

The position of the aft tank probes is not as critical as the forward installation. Normal practice such as using the correct cell covers and probes, and proper orientation of the probe for harness compatability with connectors, will result in a satisfactory installation. For detailed information, refer to applicable manuals.

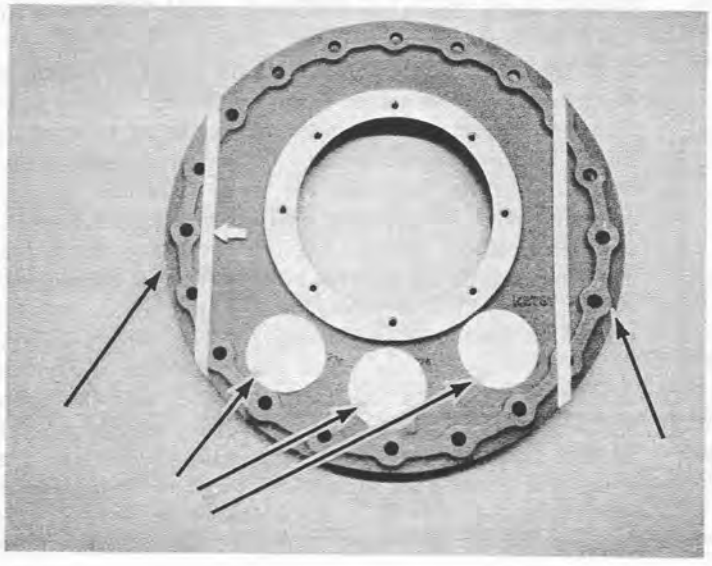


Photo 4. Remove material indicated by the arrows in accordance with the following instructions. Note position of the embossed arrow on the cover. Cut off approximately 1-1/8-inch of material outboard of the arrow. From that point, measure over approximately 7-9/16 inches and remove the remaining 1-3/4 inches from the other side of the cover. The dimension between the two flat sides should be approximately 7-9/16 inches (between the white stripes on the photo). Next, cut three 1-1/2-inch inspection holes in the approximate location indicated by the three white circles. The fabricated work may be used as described above.

If the efforts of the preceding paragraphs do not resolve the interference problem, squadrons may utilize the spacer described in the following paragraphs. The spacer may be fabricated locally or obtained from a KAC Field Service Representative. Rivet the spacer to the cover as shown.

A recent drawing change has authorized use of the K679019-5 probe cover assembly (LH forward fuel cell) on all H-2 aircraft. The K679019-5 cover assembly differs from the K679019-3 cover in that a spacer, part number K679019-25 is riveted to the K679019-3 cover as shown in the accompanying illustration and re-identified to the K679019-5 assembly. The spacer, when installed, causes the fuel probe assembly (K679067-107) to tilt away from internal fuel cell sump wall. This positive positioning will preclude interference and subsequent chafing of the probe assembly.

After the spacer is attached, it is imperative that the probe cover be installed so that the harness bracket, part number K679019-21, will be positioned toward the outboard side of the cell. Note the four rivet heads visible in Photo 1. This is the correct position for the installed probe cover assembly, P/N K679019-5. Positioning the cover as described here may negate the previously-applied index marks; however, because the thick side of the spacer is outboard (adjacent to bracket), the probe will tilt inboard and clear internal plumbing and the sump wall.

Photo 5 shows the K679019-25 Spacer attached to the K679019-3 Cover, which is now re-identified as the K679019-5 Cover Assembly.

NOTE

The probe cover assembly, P/N K679019-5, is used ONLY in the FWD LH cell. As in the other cells—it is important that the cell cover be installed with the embossed arrow pointing directly forward, prior to installing the probe and probe cover assembly. The tapered spacer, P/N K679019-25, riveted to the -3 probe cover (K679019-5 probe cover assembly) will provide the required clearance ONLY if the cell cover is properly installed.

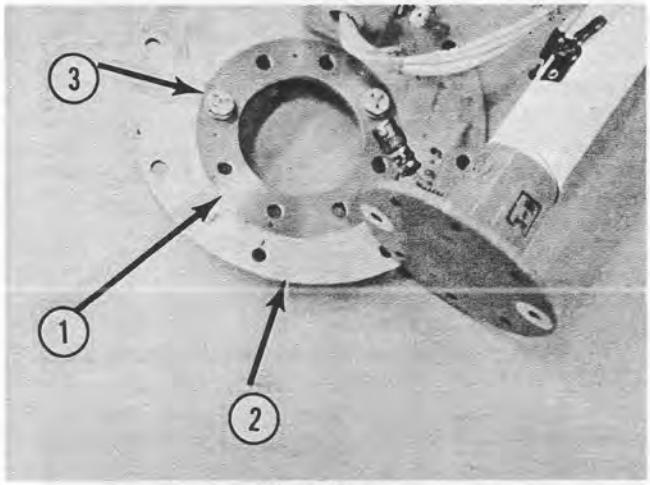
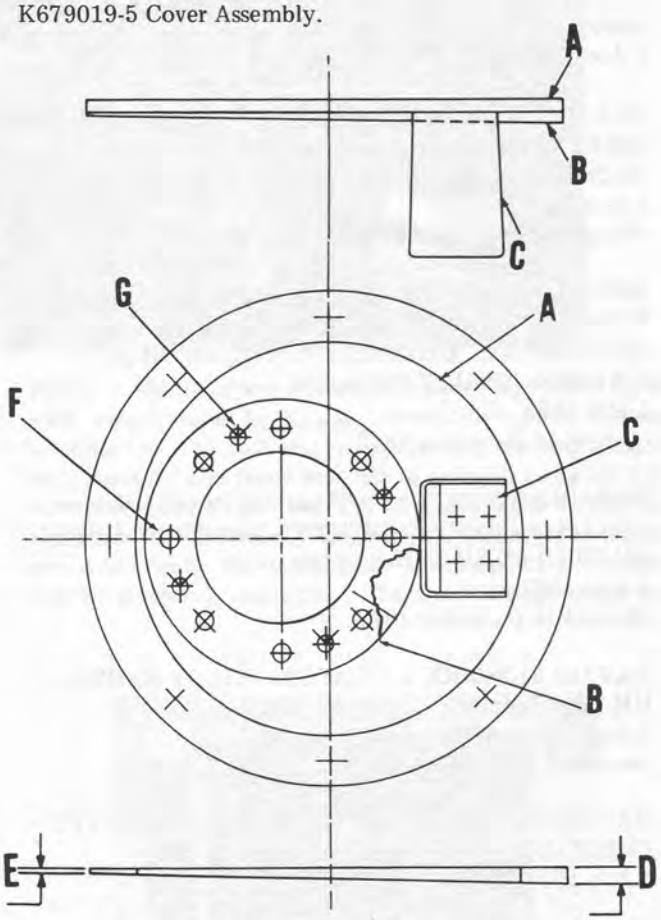


Photo 5

1. K679019-25 Spacer
2. K679019-3 Cover
3. Bolt heads are work aids used while riveting spacer to cover.



A. K679019-3 Cover } (K679019-5 Assy)
B. K679019-25 Spacer }
C. K679019-21 Bracket Assy
D. 0.075 inch (K679019-25 Spacer-thick side)
E. 0.020 inch (K679019-25 Spacer-thin side)
F. 0.225 inch diameter hole in K679019-5 Assy (8 holes located within 0.005 of true position)
G. MS20426AD3 Rivet (4 places in K679019-5 Assy for connector bracket)

1. MATERIAL: T3 2024 ALCAD SH, 0.080 inches x 3.15 inches OD x 1.88 inches ID. (To match probe cover including location and size of bolt holes.)
2. Be sure thick edge (0.075) is adjacent to K679019-21 bracket assembly when installed.
3. Use part number MS20426AD3 rivets. Be sure to machine-countersink both sides of the hole.

PUBLICATION INFORMATION

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

R. H. Chapdelaine, Manager, Service Publications

NAVAIR 01-260HCA-3 — Manual, STRUCTURAL REPAIR, Navy Models UH-2C/HH-2D/SH-2D/ SH-2F Helicopters
1 October 1967
changed 15 December 1973

NAVAIR 01-260HCB-4-1 — Illustrated Parts Breakdown, NUMERICAL INDEX AND REFERENCE DESIGNATION INDEX, Navy Models UH-2C/HH-2D/SH-2D/SH-2F Helicopters
1 April 1973

NAVAIR 01-260HCB-4-2 — Illustrated Parts Breakdown, AIRFRAME, Navy Models UH-2C/HH-2D/SH-2D/ SH-2F Helicopters
1 June 1967
changed 15 December 1973

NAVAIR 01-260HCB-4-4 — Illustrated Parts Breakdown, EQUIPMENT (FURNISHINGS, HYDRAULICS, INSTRUMENTS, UTILITIES) Navy Models UH-2C/ HH-2D/SH-2D/SH-2F Helicopters
1 May 1969
changed 15 December 1973

NAVAIR 01-260HCB-4-9 — Illustrated Parts Breakdown, SPECIAL SUPPORT EQUIPMENT, Navy Models UH-2C/ HH-2D/SH-2D/SH-2F Helicopters
1 June 1967
changed 15 December 1973

NAVAIR 01-260HCC-1 — NATOPS FLIGHT MANUAL, HH-2D Helicopter
1 September 1972
changed 1 July 1973

NAVAIR 01-260HCC-1B — NATOPS PILOT'S POCKET CHECKLIST, HH-2D Helicopter
1 July 1973

NAVAIR 01-260HCD-1 — NATOPS FLIGHT MANUAL, Navy Model SH-2D/SH-2F Helicopters
1 September 1972
changed 15 December 1973

NAVAIR 01-260HCD-1B — NATOPS PILOT'S POCKET CHECKLIST, SH-2D/SH-2F Helicopters
1 July 1973

NAVAIR 03-5CE-148 — Manual, Overhaul Instructions, QUADRANT HOUSING ASSEMBLY, K673802-7, -103, -105, -107
1 February 1971
changed 1 November 1973

NAVAIR 03-5CE-149 — Illustrated Parts Breakdown, QUADRANT ASSEMBLY, P/N K673802-7, -103, -105, -107
1 September 1970
changed 1 November 1973

NAVAIR 03-5KAM-3 —Technical Manual, Maintenance Instructions with IPB (Intermediate) MASTER CAUTION PANEL ASSEMBLY, P/N K683870-3
1 November 1973

NAVAIR 03-10KAM-2 — Technical Manual, Maintenance Instructions with IPB (Depot), SHUTOFF VALVE, 134145-15
15 October 1973

NAVAIR 03-25KAM-2 — Manual, Depot Maintenance Instructions, TAIL LANDING GEAR, K641201-1, -3
15 November 1973

NAVAIR 03-25KAM-3 — Illustrated Parts Breakdown, TAIL LANDING GEAR, K641201-1, -3
15 November 1973

NAVAIR 03-40KAM-1 — Manual, Overhaul Instructions, FLIGHT CONTROL SYSTEM, Navy Models UH-2C/ HH-2D/SH-2D/SH-2F Helicopters
15 November 1965
changed 1 January 1974

NAVAIR 03-95D-11 — Manual, Depot Maintenance Instructions, MAIN ROTOR SYSTEM, Navy Models UH-2C/HH-2D/SH-2D/SH-2F Helicopters
15 January 1966
changed 1 January 1974

NAVAIR 03-95D-14 — Manual, Overhaul Instructions, TAIL ROTOR GEARBOX ASSEMBLY, K671302-1, -3, -5; K671652-1, -3
1 May 1970
changed 1 December 1973

NAVAIR 03-95D-17 — Manual, Depot Maintenance Instructions, TAIL ROTOR BLADE AND GRIP ASSEMBLY, P/N K614001-201, -205, -207; K614701-1, -3
15 December 1972
changed 15 December 1973

NAVAIR 03-95D-18 — Manual, Overhaul Instructions, INTERMEDIATE GEARBOX ASSEMBLY, P/N K671402-1
15 July 1965
changed 15 December 1973

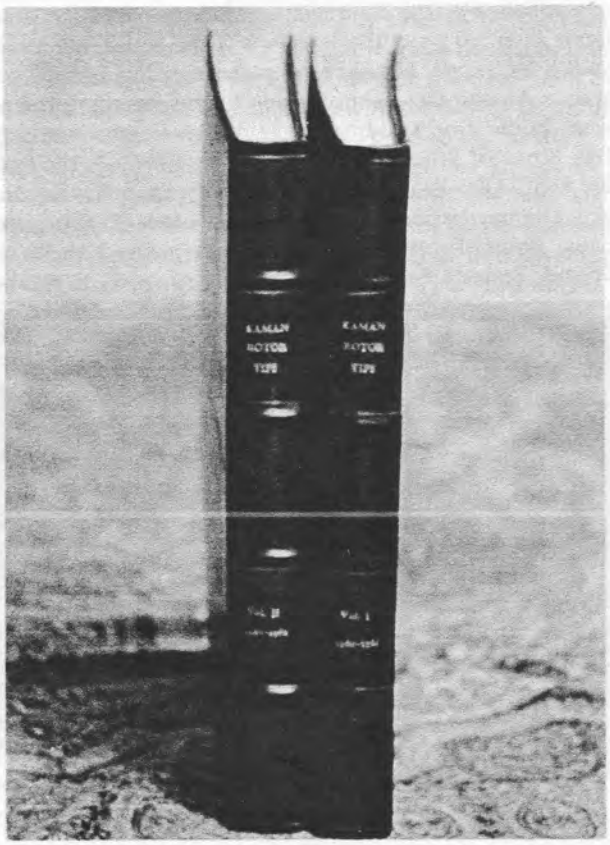
NAVAIR 03-95D-23 — Illustrated Parts Breakdown, MAIN GEARBOX ASSEMBLY, P/N K674877-1
1 December 1973

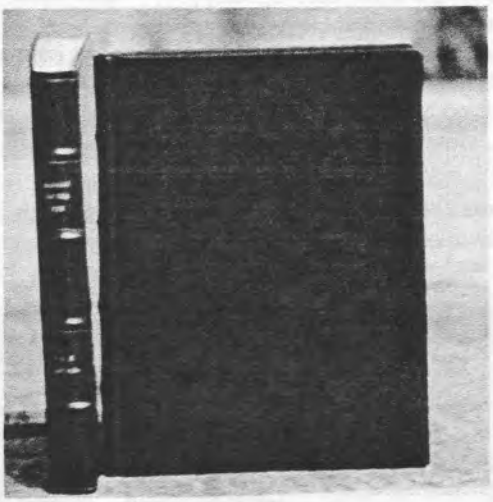
NAVAIR 03-95D-24 — Manual, Depot Maintenance Instructions, COMBINING GEARBOX ASSEMBLY, P/N 674702-3, -5
1 April 1971
changed 15 December 1973

KAC Hosts ASW Naval Reserve Staff Forces

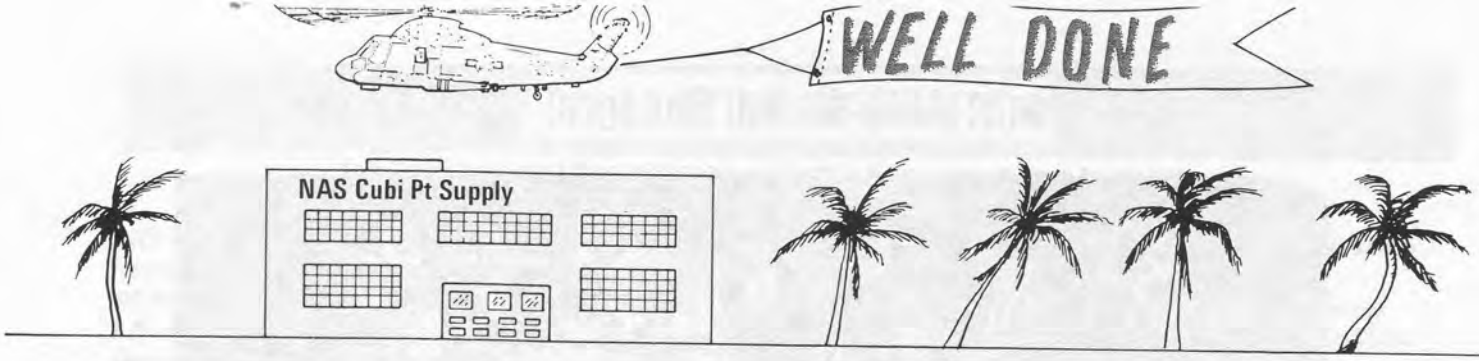
Kaman Aerospace was host recently to 12 pilots from ASW Naval Reserve Staff Forces at NAS Lakehurst, N. J. Guide for the day was Capt Jack C. Goodwin, USNR, Officer-in-Charge of the group and Assistant Chief Test Pilot at Kaman. All of the pilots on the tour are closely associated with the Naval Reserve's Anti-Submarine Warfare Program.

The day was spent in briefings on the LAMPS (Light Airborne Multi-Purpose System) program and related hardware manufactured by Kaman. Shown during one of these briefings, on the H-2 and its equipment, are Jack Goodwin, pointing, and front row, left to right, Lt L. Galizi, Cdr R. Nolan, LCdr T. Sanford, Cdr R. Curry, LCdr W. Merner and LCdr R. Ackerman. Rear row, W. McLaughlin, Manager, KAC Public Relations; LCdr J. Lunch, Lt D. Lovasl, Cdr G. Goehring, and LCdr L. Tappan. (Ruggiero photo)





PRESERVED FOR POSTERITY?—A sight to bring joy to an editor's heart is this photo furnished by William C. Barr, a Kaman Senior Service Representative stationed in Iran. Since Mr. Barr, an HH-43 expert and gentleman of excellent literary taste, had a complete set of Kaman Rotor Tips on hand, and Iran is noted for its beautiful leather work, the next step was a natural. The KAC Rep now proudly displays six leather-bound volumes, each containing 12 issues of Rotor Tips. The lettering is gold—of course!



'Can do' spirit draws praise from Kaman Rep

Cubi Supply Aids LAMPS program

USN photos by Lt(jg) Dan Stone

By Richard A. Collier
Kaman Logistics Representative

Dick Collier returned to the home office recently after working with Navy and civilian supply personnel at NAS Cubi Pt., for 18 months. Following is his enthusiastic report on the manner in which they met the challenge of providing logistic support for the LAMPS program in WestPac:

Ever since the first LAMPS detachment arrived in West-Pac during January of 1972, the Supply Department at NAS Cubi Point, R. P., has been one of the most important factors in the success of the LAMPS program in the Western Pacific!

Per Opnav 4420 of October 71, NAS Cubi Supply was tasked with the support of all LAMPS detachments in the Western Pacific. Providing this support has proven to be a real challenge for the Supply Department because of the often remote environment in which our LAMPS detachments have been operating. Support of small detachments of aircraft aboard ships has always been a problem for the fleet. This is further compounded in the LAMPS program as the SH-2 LAMPS helo is deployed as the only aircraft aboard designated DE's and DLG's which often operate as single units away from other ships and established H-2 support stations.

Under the capable leadership of Cdr Walter Meyers,NAS Cubi Supply Officer, the Supply Department met this challenge with a dedicated, "can-do" attitude. The first two years of LAMPS operations resulted in outstanding aircraft availability, and low NORS (Not Operational Ready, Supply) time that was directly attributable to responsive supply support. LAMPS, being a new concept and program, required a lot of flexibility and more of the "personal touch" in its developing stages—this is exactly what Cubi has given the program!

To illustrate the efficient operation of Cubi Pt Supply, in many cases the time taken to fill a requisition averaged 15 minutes from time of ordering to receipt of the required part. Often a detachment 2500 miles away notified Cubi of a required NORS item and received the part eight to ten hours later. This quick service was the result of interest shown by Supply personnel in supporting the LAMPS program. Among those contributing to this fine performance were LCdr "Doc" Dougherty, LCdr Jim Hargus and Lt(jg) Dan Stone of Stock Control; AK3 Daryl Mills in the Rotable Pool, AKC Ernie Roe in the Supply Response Section, and Filipino Nationals Fritz Mueller, Louie Napalan, Bert Saria, Frank Totol and Erasto Raposa in the LAMPS and Special Projects Section, and Jimmie Arceo in Screening.

Left to right are, Lt(jg) Dan Stone, Programs Management Division Officer; Fritz Mueller; Special Projects Supervisor; Louie Napalan, Control Division Supervisor.

At left, Jimmy Arceo, Technical Supervisor, Supply Screening Section. In middle photo is Bert Saria, Supply Clerk, ICB desk. At right are Frank Totol, Mr. Mueller and Erasto Raposa.

Lieutenant Stone examines LAMPS record with Mr. Mueller. At right, Mr. Saria checks the stock number on an H-2 component.

The following is a typical example of how a supply request from a LAMPS detachment is handled by the Cubi Pt activity: As soon as Fritz Mueller receives the requisition he immediately checks for availability of the item. If it is not at Cubi Supply, he contacts the Naval Supply Depot at Subic Bay. When the item is determined to be "in stock," which is usually the case, he makes out the paperwork, "personally" goes to the warehouse, "pulls" the part, and packages it for shipment. Meanwhile, the Naval Overseas Air Cargo Section has been alerted that an item is being readied for shipment and advises as to available flights, best routing and so on. The shipping box or crate is addressed accordingly and the distinctive red "LAMPS urgent" sticker is affixed. A supply expeditor hand-carries the part to the air terminal and soon the needed item is airborne and on its way to the detachment.

Cubi Pt Supply also stands out in another area of importance that is sometimes neglected or overlooked. This involves the turn-in of non-RFI (Ready for Issue) components for further transfer to Intermediate Maintenance and overhaul activities. This is a vital function because, in many cases, future ship requirements depend on the timely processing, induction, and repair of these items. Jimmy Arceo has been doing an outstanding job in the processing and shipping of all aircraft non-RFI material, including those items associated with the LAMPS program.

No discussion of WestPac Supply would be complete without mentioning the valuable assistance given the LAMPS program by ComFairWestPac's Det Cubi Supply under the leadership of LCdr John Sewell. This unit works closely with the NAS Cubi Pt Supply Department and has done a great deal to assist in the routing of high priority material to the LAMPS detachment and assuring that the LAMPS program receives the best possible support.

Personnel attached to ComFairWestPac Det Cubi Supply have put in many long hours and weekends to assist the LAMPS detachments in meeting their varied and sometimes unexpected commitments. For example, there was that "fateful" day on the 6th of May, 1972, when, with very little warning, a C-5A arrived at Cubi carrying three detachments, their helos, "pack-ups" and other items needed to support the helicopter operations at sea.

LCdr John Sewell, AK1 Charles Rittmayer, and AK2 Richard Kaster worked many 18-hour days getting these three detachments situated on their respective ships and giving supply briefings to all of the supply officers concerned.

Supply is often an unheralded and overworked aspect of Navy life, but the Supply Department at Cubi Pt can feel justly proud of the fact that the success story of LAMPS in WestPac is also a tribute to their hard work and dedication without which LAMPS could not have survived. Because of the high caliber of supply personnel working at NAS Cubi and ComFairWestPac Det Cubi, LAMPS detachments departing for the Western Pacific can be assured that their supply needs, no matter how small or great, will be in good hands!

USS PONCE (LPD-15)—Recently HSL-30 Support Det 35 made the 2000th landing aboard this ship. The NAS Norfolk, Va., detachment is deployed aboard the Ponce. Gathered in front of "77," the H-2 in which the landing was made, are, from left to right, Lt J. W. Crawford, AA Templeton, ADJ2 Robinson,AM3 Capriglione, AJAN Parker, AMH1 Atkinson, Lt(jg) Bartels,ADJ3 Partrige and AE3 Mound. (USN photo)

Cdr Daniel R. Bilicki, Commanding Officer of HSL-30, NAS Norfolk, Va., pins the Navy Achievement Medal on AMS2 John K. Sherman. The Petty Officer received the award for his efforts as a crewman aboard an HH-2D which airlifted 279 Tunisians and their 275 sheep to safety during a flood in Tunis several months ago. At the time, AMS2 Sherman was attached to HSL-30's Det 31 deployed aboard the USS Springfield. Other members of the rescue crew were Lt Gordon I. Peterson, Officer-in-Charge of Det 31; Lt Thomas Dean, Lt Larry Poh, ADR1 James Bailey, all from HSL-30, and KAC Service Representative Norman Myers. (USN photo by AN David Stinespring, AFCCG)

An Old Friend Returns To Fly Pedro

SCOTT AFB, Il.—Maj John C. Flournoy, Hq ARRS, H-1 Aircrew Standardization Pilot, recently departed for his new assignment as Detachment Commander, Det 12, 40th ARRSq, U-Tapao AB, Thailand. Major Flournoy's association with the H-43 goes back to October 1962 when he traded in his H-19 at Spangdahlem AB, Germany, for a brand-new HH-43B.

Major Flournoy has more than 3500 hours to his credit, including 3000 hours in rotary wing aircraft of which 2300 hours has been flown in the H-43. He returned to Germany from H-43 training at Stead AFB, Nev., in 1962. From Germany he moved to another H-43 detachment at Moody AFB, Ga., in 1965, followed by an assignment as H-43 Detachment Commander at Thule AB, Greenland, in 1967. Departing Thule in 1968 he returned to Georgia, this time to Robins AFB as the H-43 Aircrew Standardization Officer for the Eastern Aerospace Rescue and Recovery Center. In 1970, Major Flournoy departed Robins for Scott AFB, Il., as the Aerospace Rescue and Recovery Service Worldwide Aircrew Standardization Officer. He remained with the H-43 at Scott until converting to the H-1 in 1971. Major Flournoy flew the H-43 "Pedro" in Southeast Asia on TDY visits there from Scott in 1971 and 1972 and is looking forward to his PCS to U-Tapao.

While Detachment Commander at Thule, Major Flournoy received eight Kaman aircraft citations for participating in missions of mercy and two Kaman Scrolls of Honor. He received his 1000-hour Kaman plaque while at Moody AFB and passed the 2000-hour mark in the H-43 while stationed at Robins AFB. At Scott AFB as the Air Rescue Service H-43 pilot he was instrumental in developing and testing the smokeless fire system and procedures that were adopted by Air Force for use at the 1550th Aircrew Training and Test Wing at Hill AFB, Ut., prior to the deletion of the fire suppression mission. Many improvements have been made in the H-43 since its inception and Major Flournoy has been involved with most of them. Pedro says "Welcome Back" to an old friend.

FROM THE READY ROOM

By Al Ashley, Senior Test Pilot

Trouble shooting the ASE system is somewhat like trouble shooting a television set. It is a rare occasion when the operator (in this case the pilot) can put his finger on exactly which of the many components of the system is causing the malfunction. For the most part we still must rely on the expert (technician) with his test equipment to make the system go.

The ASE test equipment and check procedures are currently being overhauled and updated to improve their effectiveness as a trouble shooting aid and make the technician's life a little bit easier, however, we pilots can make a very real contribution to the trouble shooting process in two important ways: first, by being intimately familiar with the ASE system and its normal functioning and second, by writing a definitive and accurate description of a malfunction on the yellow sheet. Unfortunately, most yellow sheet gripes written against the ASE are misleading and invariably cause extra maintenance hops and frustration for the technician who can find nothing wrong.

The following yellow sheet gripe is typical:

"ASE Heading Hold Inoperative"—This sounds like a straight forward problem, however, several test flights were made in response to this gripe without effective corrective action because the technician could find nothing wrong. Subsequent investigation revealed that the heading-hold mode was operative but nowhere near as tight and precise as is normal. Also, the primary reason for the heading-hold malfunction was found to be an erratic ASN-73 compass which feeds into the heading channel of the ASE. There was nothing wrong with the ASE. A meaningful yellow sheet gripe in this case would have been as follows: ASN-73 COMPASS IS ERRATIC AND APPEARS TO BE ADVERSELY AFFECTING ASE HEADING-HOLD. Had the pilot been observant and noticed the erratic action of his compass as well as being aware that the compass does play an important part in the ASE heading-hold mechanism, several maintenance manhours would have been saved.

On another aircraft, several components of the ASE were needlessly changed in response to the following yellow sheet gripes. The gripes were written by different pilots but all relating to the same problem:

1. ASE loose in roll
2. ASE roll channel inoperative
3. Lateral stick misrigged

The problem with this aircraft was finally traced to a "lazy" gyro. When rolling out of a banked turn, the copilot's RAI was observed to lag excessively and on some occasions would not return to wings level. This would result in the need to re-trim lateral cyclic, creating an impression of looseness as well as causing the cyclic stick to be out of position for a given flight condition. Again, had this gyro characteristic been noted and reported by the pilot it would not have been necessary to change a Cadillac Unit, Trim strut, ASE Servo Valve and ASE Amplifier, all at different times requiring separate test hops. (Incidentally, the copilot's RAI is slaved to the gyro that provides attitude information to the ASE).

My purpose in citing these two examples is to illustrate the importance of knowing the ASE system and how each component interfaces with another. In order to effectively trouble shoot any system requires a working knowledge of that system coupled with simple logic and a great deal of thought.

A basic description of the ASE system and how it functions is found in Section One of the current NATOPS Manual. A block diagram of the controlling elements of the ASE is also included in Section One to assist in a more thorough understanding of the total system. In Section Three of the NATOPS Manual are functional flight check procedures for the ASE designed to quickly determine whether the ASE is functioning properly.

For those who are interested in the real "nuts and bolts" of the system, this information is found in NAVAIR 01-260HCA-2-5.

There is no magic "by the numbers" trouble shooting procedure that can be contained between the covers of this small publication, however, the information provided in the NATOPS Manual will enable the qualified HAC to at least write a meaningful yellow sheet gripe. After reading and digesting all the information on the subject in the NATOPS Manual, read it again. Each time you'll find a new piece of important information coming to focus and each time your effectiveness as a trouble shooter will improve.

Crewmen Praised For 'Professionalism' During Medevac

NAS OCEANA, Va.—The "professionalism" of two H-2 crewmen was praised by the helicopter pilot after a recent medevac involving an appendicitis victim. Lt Warren R. Eckert said that the two crewmen aboard, AME2 Timothy J. Patrick and AT3 Dennis L. Moses, "anticipated every situation" and expedited the delivery of the patient to the hospital.

The mission began with a call for a medevac from the USS Mt Whitney. After the helicopter and ship rendezvoued at the Chesapeake light, Petty Officers Patrick and Moses exited the aircraft with the flight surgeon, LCdr R. Bloomfield (MC), and helped assist the patient into the helo. He was receiving plasma, had a nasal gastric tube inserted and an icepack on his abdomen. On the 25-mile flight to the Portsmouth Naval Hospital, the doctor did all he could to make the trip as comfortable and relaxing as possible for the patient. The other member of the Oceana SAR Det Mercy team was Lt(jg) Wally Deberry, copilot.

Pedro Provides Unique Reenlistment

Edited by 1stLt Roland J. Hamel
Det 3, 40ARRS

HH-43 Pedro crew of Det 3 prepares to take MSgt Hairl D. Thacker up to 3000 feet for his reenlistment at Ubon, Thailand. Left to right are, Sgt Rex A. Kenney, Jr., flight mechanic, Sgt Delano Bowers, medical technician, 1stLt Jerry P. Christiansen, aircraft commander, 1stLt Gregory J. Seidenberger, MSgt Thacker, and 1stLt Roland J. Hamel, pilot.

UBON RTAFB, Thailand (OI)—MSgt Hairl D. Thacker, Maintenance Superintendent for Det 3, 40ARRS at this base, recently completed 20 dedicated years of active military service. Master Sergeant Thacker's military career began in May of 1952 in Belfry, Ky., where his wife Louise and son William now reside. It has included tours at Bolling AFB, Washington, D. C., Weisbaden, Germany and Hill AFB, Ut., to mention a few, and has presently taken the Sergeant to Ubon, Thailand, for his second Southeast Asia assignment.

Master Sergeant Thacker has been assigned to the Aerospace Rescue and Recovery Service for the past five years and it was only fitting that he take the initial step towards three more years in military service aboard one of the most worthy rescue helicopters in ARRS inventory—the HH-43 Pedro. On 13 Dec 1973, MSgt Hairl D. Thacker was administered the reenlistment oath by 1stLt Gregory J. Seidenberger, Detachment Aircraft Commander, at 3000 feet above Ubon, Royal Thai AFB. We, the members of Detachment 3, salute Master Sergeant Thacker as one of the most outstanding NCO's in the USAF. "His outstanding ability and professionalism has been demonstrated throughout his entire career and at Detachment 3 he continues to strive for perfection."

Master Sergeant Hairl D. Thacker, taking his reenlistment oath aboard HH-43. Administering the oath is Lieutenant Seidenberger. Also pictured is Sergeant Bowers. (USAF photos)

HH-43 Night Mission Saves Sergeant

By 1stLt Charles D. Brandi
Det 12, 41st ARRWg
Anderson AFB, Guam

ANDERSEN AFB, Guam—Around 1830 hours local the lifeguard at Taraque Beach, Guam, called Det 12 to report that a member of the base Scuba Diving Club had disappeared beyond the coral reef. An HH-43F from Detachment 12 was airborne in ten minutes and an intensive search effort was immediately undertaken involving both Air and Ground Parties.

The helicopter began a creeping line search pattern along the outside of the reef, while the ground party waded through waist deep water on the inside of the reef. Rapidly descending darkness required the use of flashlights. The high winds produced a violent surf which precluded the launching of a boat.

SSgt Douglas J. Klein, a member of the base Diving Club, while searching near the cut in the reef, was swept up by the surf and carried rapidly to sea by the swift current. Sergeant Klein had not expected this turn of events, and was not wearing a life vest, the other members of the rescue party were unware of his disappearance. The darkness, combined with marginal weather, high winds, inter-

mittent rain and violent sea conditions, severly hampered the search efforts. Just when the decision was about to be made to suspend efforts until day break, MSgt Jackie L. Porter, a pararescueman on board the HH-43, sighted a flash of light coming from the sea beyond the reef.

The survivor attempted swimming for shore, but high swells and winds made his efforts fruitless—the current carried him further out into the ocean. He had retained only his flashlight, but this combined with the presence of the "Pedro" helicopter, made the crucial difference.

LtCol George S. Mangum, the pilot, maneuvered the helicopter into a position over the survivor with the aid of directions from Sgt Robert W. Walter, the hoist operator. Poor visibility, high winds, and 15-foot waves caused the pilot to frequently lose sight of the horizon, it therefore became necessary for the copilot, 2ndLt John E. Blume,Jr., as well as the hoist operator, to constantly relay information regarding the position of the aircraft in a hover above the water. Violent swells lifted the survivor and tossed him about as he attempted to secure himself to the hoist. This made the recovery operation considerably more difficult.

After the survivor was safely aboard the aircraft, he was examined for possible injuries by A1c Donald L. Aldridge and Master Sergeant Porter before being transferred to the ambulance waiting near the beach.

Numerous Missions For Pensacola SAR Det

NAS PENSACOLA, Fla.—A variety of missions were flown during the last few months by H-2 crews attached to the SAR Det at this Naval Air Station.

A UH-2C launched shortly before 10 p.m. after word was received that a small cabin cruiser, dead in the water eight miles off-shore, had a man aboard with a severed artery. While fishing he had been bitten by a large eel and was in mild shock. A 12-year-old boy with him on the boat had applied a tourniquet and radioed for help.

Manning the rescue helicopter were Lt(jg) George V. Galdorisi, pilot; Lt(jg) Terry Green, copilot; AMS3 Charles Pierce, crewman; Lt Murphy, flight surgeon; and HM3 David Shackley, corpsman. When the UH-2C arrived overhead the crew could see a blanket-covered man lying in it. An attempt was made to lower the flight surgeon into the boat but it was found impossible to do so due to the high winds, five-foot swells, and the fact that the small craft was not anchored and drifting freely. Petty Officer Shackley volunteered to "go down the hoist," and then swam to the boat. Once he was aboard, the H-2 came into a low hover and a medical bag was tossed into the stern. The corpsman began treating the survivor for loss of blood and shock and then gave the "thumbs up" to indicate that the survivor was all right. At this time another boat came alongside the vessel, a man leaped aboard and then piloted the craft to the Lex pier. The survivor was taken to the Naval Hospital for treatment.

In another night mission, a UH-2C was flying plane guard for the USS Lexington when an F-8 pilot ejected close to the ship. The helo located the pilot in the dark water within a few minutes and made the pickup without incident. The survivor was back aboard the Lexington seven minutes after the alarm was sounded.

Manning the UH-2C were Lt John P. Harris, III, pilot; Lt(jg) Thomas E. Lee, copilot; ADJ1 David S. Wolfe and AT3 Robert E. Morton, crewmen.

A Pensacola SAR Det crew also medevaced a heart attack victim from the Lexington to the hospital at NAS Corpus Christi, Texas. Lt(jg) John R. Brown was pilot on the 121 nautical mile, overwater flight and Lt(jg) Richard M. Eubanks, was copilot. Others aboard were Petty Officer Morton, AN Danny R. Toney, HM2 Gary G. Gleason and LCdr J. A. Zapp. Another H-2 crew medevaced a patient suffering from pericarditis from the Lexington to NAS Pensacola. Lieutenant Brown was the pilot; Lt(jg) Raymond F. Haseltine was copilot; Petty Officer Morton and ADJ1 Richard M. Beitler, crewman; HM1 Gleason, corpsman.

A critically-ill infant was medevaced from Eglin AFB Hospital to Sacred Heart Children's Hospital at Pensacola by an H-2 crew from the Pensacola SAR Det. Manning the helo were Lt Peter B. Zuidema, pilot; Lieutenant Haseltine, copilot; Petty Officer Beitler, crewman; and HM3 Bennie C. Hanson, corpsman.

The Duty SAR crew responded to a call for assistance after a T-34 made an emergency landing on a farm one mile northwest of Magnolia OLF. The H-2 landing was uneventful and the helo returned the downed pilots to Saufley Field. The H-2 then transported an investigation team to the farm and returned home. Lt Charles M. Hartwell was pilot of the rescue helicopter and Lt(jg) William P. Deraimo was copilot. Crewmen were ADJ1 Arlington L. Levi and HM3 Barratt C. Sturtevant.

The SAR Det also responded when a call was received that a man had been injured at Choctaw OLF. The wounded man was picked up a few minutes later and taken to Sherman field for treatment at the dispensary. Lt Robert E. Rew, III, was pilot of the helo; Ens Melvin N. Wilhite was copilot; and AEAN Miles E. White and HM3 Barratt Sturtevant, were crewmen.

Lt Edwin K. Weigel, USN, of HT-8, NAS Ellyson, Fla., is presented with a 1000-hour plaque by Homer Helm, Kaman Service Representative. Lieutenant Weigel logged his 1000th hour in the H-2 SEASPRITE several weeks ago. At left, on hand to offer his congratulations is Cdr L. L. Smith, Commanding Officer of HT-8. Also receiving a 1000-hour plaque recently for accumulating the required number of hours as an H-2 pilot was Lt Thomas R. Dean, USN. Lieutenant Dean is presently attached to the HSL-30 detachment deployed aboard the USS Little Rock. (USN photo by C. A. Lairion)

"Unique" Det Returns From Med Cruise

NAS NORFOLK, Va.—Helicopter Anti-Submarine Squadron Light Thirty-Two recently welcomed home LAMPS Det 1 USS Belknap (DLG-26) after a six-month deployment with the U. S. Sixth Fleet.

The Belknap Detachment is unique in that it originally deployed as a detachment of HSL-30 homeported at NAS Lakehurst, N. J. While they were cruising several changes occurred at home. First, HSL-30 moved to NAS Norfolk. Second, HSL-30 split to form HSL-32, and third, LAMPS Det 1 became a part of HSL-32—thus the 19 men of the Belknap Detachment returned to the unfamiliar environment of Norfolk, Va. and a new squadron.

During their six-month cruise, over 400 hours were flown in the SH-2D in support of Med ASW operations, ASMD operations (the two primary missions of LAMPS), and the other helo missions of logistical support, SAR, and Medevac. They participated in all the Sixth Fleet exercises, numerous special operations, and the recent Mid-East Crisis.

LCdr Tim Buckley is Officer-in-Charge of LAMPS Det 1.

Two hours before the Belknap docked, an "advance guard" from Det 1 arrived at NAS Norfolk, Va., via SH-2D and were greeted by HSL-32's skipper, Cdr W. C. Powell. Left to right are, AMS3 Russell Wells, LCdr Tim Buckley, Officer-in-Charge; AW3 Joseph Bicknell, Lt(jg) Myles McGrane and Commander Powell. (USN photo)

HSL-33 Det 2 Praised For Achievements

NAS IMPERIAL BEACH, Calif.—A few weeks ago the "Snakes" of HSL-33's LAMPS Det Two returned from WestPac. Deploying on her maiden voyage on 26 April, 1973, USS Stein participated in the final operations in the Gulf of Tonkin and numerous training exercises. Lt Runyon, Officer-in-Charge, and his crew of 15 furthered the knowledge, capabilities, and reputation of the DE-LAMPS teams by its achievements.

The LAMPS "Bird" participated in an open ocean training encounter with the transiting U. S. submarine, Sailfish, utilizing the helicopter's ESM (Electronic Support Measures) effectively for detection and localization of the sub. During the deployment, a "first" was achieved in the use of the LAMPS Magnetic Anomaly Detection capabilities in conjunction with Stein's long range sonar. Many new and innovative techniques were demonstrated that will serve to enhance ASW capabilities for years to come.

In July, Det 2 was assigned to support minesweeping operations in the Gulf of Tonkin area. During the final, critical phases of that sensitive and significant mission, LAMPS provided timely, reliable logistics support, including several missions into North Vietnam. The Task Force commander and the head U. S. negotiator commended the ship and its LAMPS helo as follows: "Your responsiveness. . .was outstanding. . .no one could have done a better job, and you were essentially instrumental in the final negotiations which resulted in the satisfactory conclusion of the inland waterways portion of Operation End Sweep."

Finally, LAMPS Det 2 took part in the joint exercise "Longex 73," which included participation of British, Australian, New Zealand, Dutch, and U. S. naval forces. The LAMPS helo proved time and again its value primarily as an ASW (Anti-Submarine Warfare) vehicle, as well as an effective ESM and anti-surface and logistics platform. So impressive was the LAMPS team's performance, that the New Zealand Chief of Naval Staff paid a special visit to Stein to be briefed on LAMPS. Also, the Dutch sent one of their foremost aviators to take an indoctrination flight in the SH-2D and to report his findings.

With these achievements and visits to Japan, Australia, New Zealand, Hong Kong, and the Fiji Islands, we welcome back the officers and men on HSL-33's LAMPS Det Two from an exciting and accomplishment-filled deployment.

Emergency Medevac By HSL-30

NAS NORFOLK, Va.—Two HSL-30 pilots on a training flight responded when a call for an emergency medevac was received from the USS Belknap. Despite the fact that he had no crewman aboard, LCdr Arthur Schatz adroitly maneuvered his SH-2F aboard the Belknap and an injured seaman was placed aboard. Shortly afterward, thanks to the prompt action of the SEASPRITE crew, he was in the NAS Norfolk Dispensary. Ensign Gibson, a replacement pilot under instruction, was credited with providing "excellent assistance" on this, his first official shipboard landing. Shown congratulating one another after learning that their medevac passenger was listed in satisfactory condition by the medical facility are, Ensign Gibson, left, and LtCommander Schatz. (USN photo by Lt W. Harris)