

**KAMAN**

# *Rotor Tips*



KAMAN AIRCRAFT CORPORATION

PIONEERS IN TURBINE POWERED HELICOPTERS

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## THE COVER

*OH-43D manned by VMO-1 marines drops into jungle clearing to rescue engineers besieged by hostile Indians. Cover by Donald D. Tisdale, Service Publications.*

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A short while ago marines from VMO-1, MAG-26, MCAF, New River, N.C., played a leading role in the helicopter rescue of 11 sick, injured or wounded Peruvian road engineers from the dense Amazon Basin jungle near Iquitos in Northern Peru. The engineers had been surrounded and under attack by hostile Indians for several days. Flying in OH-43D's, the marines were part of a combined rescue operation involving the Peruvian Air Force, the U.S. Air Force and the U.S. Fleet Marine Force, Atlantic. A request from the Peruvian government for aid for the beleaguered party put the wheels in motion. Following alert of the rescue control center at Albrook AFB, C.Z., USAF C-130's airlifted two marine OH-43D's from Howard AFB to Iquitos, Peru, 600 miles north of Lima. The helicopters normally operated from

the USS Guadalcanal which was taking part in training exercises in the Caribbean area. Four rescue sorties were flown in minimal weather in an area which few humans have ever seen. The tropical rain and dense undergrowth were a constant hazard. Lacking facilities for navigation into the dense jungle, the pilots set up smoke signals to guide them. Peruvian Air Force C-47's flew cover for the helicopters and maintained voice communications with the rescue aircraft and the coordination center at Iquitos. Earlier, a group of specially trained Peruvian jungle rangers hacked their way to the survivors and escorted the 28 uninjured persons to safety. Below is a report written by the three OH-43D pilots on the hazardous mission. Kaman Scrolls of Honor are being awarded to all who participated in the flights.

## VMO-1'S MISSION TO PERU

By Capt. G. F. Gallagher  
Capt. R. N. Moore  
W.O. R. L. Norton

As Told To  
1st Lt. S. C. Spink  
Informational Services Officer



We were in Panama at the time the news of the trapped engineers arrived. They were deep in the Peruvian jungles, pinned down by hostile Indians, and their wounded had to be evacuated by air. We got the commitment.

Our two OH-43D helicopters were loaded, with all of us, aboard an Air Force C-130 and flown directly to the jungle outpost of Iquitos. When we offloaded and reassembled the "K's," we stripped off all the gear we could do without—or so we thought at the time! Before the completion of the mission the planes were stripped even further, down to a seat for the pilot and an FM radio. Even the hoists were gone. We gassed up at Iquitos and headed

out for the town of Requena, deeper still in the jungles. We flew the 92 miles, navigating over the Amazon for better than half the trip, while a PBY brought in additional fuel and the rest of the men. We re-joined at Requena and fueled our planes there from 55 gallon drums, using a chamois cloth for a filter-funnel. We left some of our crew at Requena to await our return with the wounded engineers. The rest we packed aboard the planes with additional drums of fuel and flew out over the jungles for the town of Curinga.

Curinga lies about 40 miles from Requena as the Aardvark flies, but because we had no navigation aids other than rivers, the leg was ex-

tended to about 65 miles. At Curinga we stripped the planes to just the essentials for flight and refueled again from the drums. This was to be homeground for our rescue sorties. Here Warrant Officer Norton was left with the remaining crewmen and fuel drums, and Captains Gallagher and Moore set out on the first run.

Our route to the distressed party at Moca was uncertain to say the least. We flew some 30 miles over what our charts showed to be an intermittent stream. The jungles were so thick and the stream so "intermittent" that we hardly saw it at all, but we reached a fork comprised of two larger rivers where a few huts squatted in a clearing—





**JUNGLE FLIGHT PLAN**—Studying map before takeoff on mercy mission are, left to right, WO R. L. Norton, Major Melzi of the Peruvian Air Force, Cpts G. F. Gallagher and R. N. Moore. (USMC photo)

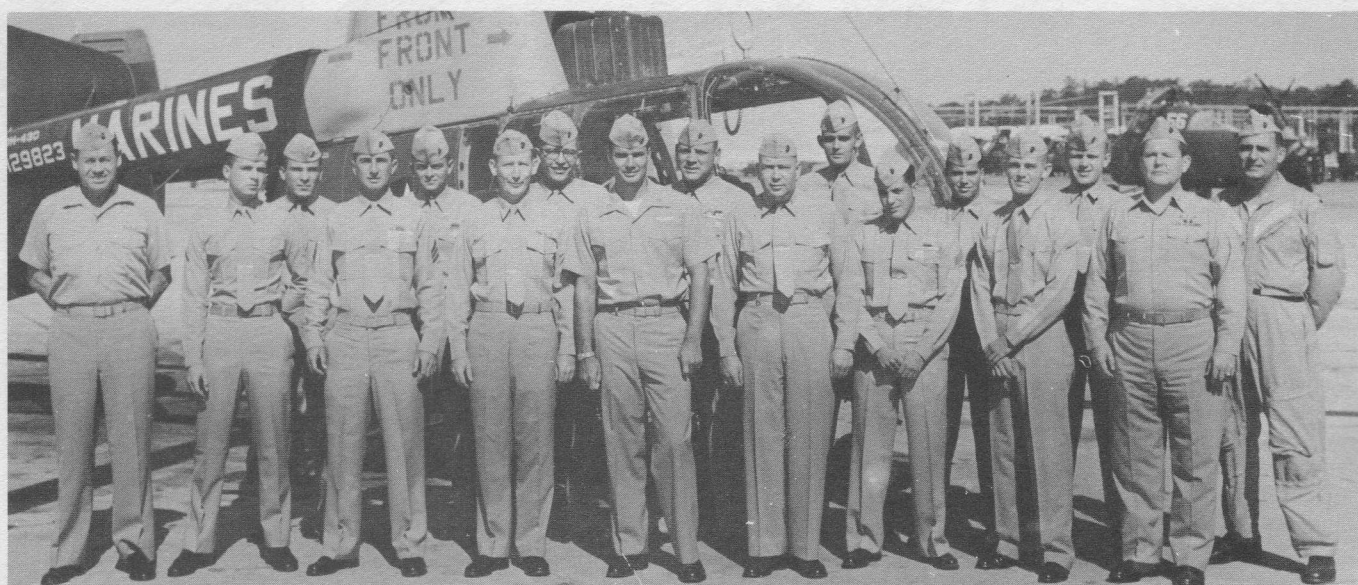


**WORK AND HEAT**—OH-43D tail is unloaded from C-130 at Iquitos. Aircraft is refueled "jungle style" at Requena. (USMC photos)

this was our check-point. From here we had only a compass heading for the remaining twelve miles. As we approached Moca where the engineers were pinned down, we saw our biggest problem ahead. The landing area was in the center of a clearing in trees 200 feet tall. It would necessitate almost a vertical descent and climbout, with no more than 75 feet of forward travel until we were clear of the trees. There was room to land only one plane at a time so, when one went in, the other orbited.

Loaded with our wounded, we made the return run to Curinga a

straight leg. Gunner Norton and the crewmen waiting there had built smoke fires to help us find our way. At Curinga again we refueled and Gunner Norton replaced Captain Gallagher for the remaining sorties. Eleven wounded were evacuated and returned by the same route that brought us in. The more seriously wounded were flown the entire route, and the others taken up by barge to the medical care they required. At Iquitos we reloaded our planes on the C-130, relaxed, and returned to our ships with one more mission and a pretty good idea of how the Wright brothers felt. ✈



**PERUVIAN RESCUE TEAM**—Shown are the men from Marine Observation Squadron One, Marine Aircraft Group-26, who helped save the lives of 11 Peruvian engineers. With them are Col K. L. Reusser, second from right, MAG-26 commanding officer, and LtCol J. A. Nelson, VMO-1 commanding officer, far right. LtCol M. B. Porter of MABS-26, who aided in coordinating the rescue effort, is in front row, left. Rescue team members are: Pfc B. L. Terrell, Sgt A. E. MacLellan, Capt G. F. Gallagher, Capt R. N. Moore, WO R. L. Norton, Cpl M. J. Luca and Pfc R. J. Smith. Pfc R. Bove, LCpl C. R. White, LCpl M. Stapleton, SSgt J. W. Gerhard, Pfc H. Ladewig, Pfc J. L. Feder and LCpl G. Eaton. Others on mission were Cpl R. W. Hockenbury and Sgt T. J. Barrington. (USMC photo)



# UH-2 FUEL SYSTEM

## FUNCTIONAL CHECK

by Herman Zubkoff  
Service Engineer  
Customer Service Department

**B**efore checking the system for proper operation, inspect for leaks in accordance with the Handbook of Maintenance Instructions, NavWeaps 01-260HCA-2-3, as required by the Handbook of Inspection Requirements, NavWeaps 01-260HCA-7. Make sure that all components are properly installed and secured and that the fuel quantity system is operating properly (Ref: UH-2 Fuel Quantity Measuring System, June/July 1963 issue of Kaman Rotor Tips. Reprints are available if desired). The battery should be fully charged or 28 volt DC auxiliary power should also be connected to the external AC power receptacle.

1. Attach the pressure fueling nozzle and check the pressure fueling precheck panel in accordance with the servicing instructions. DO NOT, however, completely service the aircraft at this time. Instead, correct any discrepancies in the pressure fueling system and then proceed to step 2.

2. Gravity service the forward tank with approximately 60 gallons (408 pounds) and the aft tank with 50 gallons (340 pounds). Fill the auxiliary tanks.

3. Check the fuel quantity gages for accuracy by comparing the indicated quantity to the known quantity of fuel used. With both DC and AC power applied, check to see that the following caution lights are on: (a) Fuel boost: (b) Fuel transfer: (c) Compressor pressure.

4. Check the operation of the forward tank boost pumps, one at a time. When either pump is activated, the fuel boost pressure caution lights should go OUT. When the DC pump is activated, the emergency pump caution light should be ON. When the AC pump is ON, the emergency pump caution light should be OFF. With both pumps ON, check operation of the automatic pump switch-over by deactivating the AC pump, thus simulating pump failure. The DC pump should come ON and the emergency pump light should be ON.

5. Check the aft tank boost pumps, one at a time. The fuel transfer light should go OFF as each pump is

activated. Check the fuel quantity gages to ensure that the amount of fuel transferred from the aft tank equals the amount pumped into the forward tank.

6. Momentarily disconnect the external power and actuate the landing gear pressure switch. This can be accomplished by holding it in the engaged position with a clamp or, with safety pins inserted in the landing gear, raise the landing gear selector lever. Connect the external power again and activate the auxiliary fuel compressor. The compressor light and the fuel transfer light should go OFF, although there may be some slight delay until sufficient air pressure is developed. Cross check the fuel quantity gages to ensure that the amount of fuel transferred out of the auxiliary tanks equals the amount pumped into the forward tank.

7. With the forward tank boost pump and compressor OFF, disconnect the fuel feed line at the centrifugal purifier. Attach a long, locally manufactured fuel hose (5/8-inch O.D., approximately 10-foot long, #10 fitting) to the fuel feed line and insert the other end into the aft tank. Activate the forward boost pump and note the amount of fuel pumped out of the forward tank. When the 30-minute fuel warning light comes ON, shut OFF the boost pump and check the amount of fuel pumped into the aft tank. The increase in the aft tank should equal the decrease in the forward tank. The amount of fuel remaining in the forward tank should be from 250 to 310 pounds. This will vary due to minor differences in the static attitude of the aircraft and the slight variation of the low level switch time delay reaction.

8. When the above check has been satisfactorily completed, pressure fuel the aircraft to full capacity and allow it to remain undisturbed for at least 12 hours for a static leakage check.

9. If malfunctions occur which cannot be corrected during the fuel system check, trouble shooting will be required utilizing pressure gages and a flow meter, in accordance with instructions contained in the HMI. **K**

### CURRENT CHANGES

	Issue Date
AFC No. 24 - Relocation of HOIST OPERATORS D-RING.	10/30/64
AFC No. 25 - Modification of HAND HOLD PROVISIONS	10/30/64
AFC No. 32 - Relocation of TORQUE SENSOR/SPEED DECREASER GEARBOX SCAVENGE OIL FIREWALL DISCONNECT COUPLING AND OIL LINE.	10/15/64

AFC No. 36 - Modification for DOWN-LOCK RIGGING OF THE MAIN LANDING GEAR DRAG BRACE.	11/30/64
AFC No. 41 - Modification of ROTOR DEICING STEPPING SWITCH.	10/30/64
AFC No. 44 - Addition of BOOST RELEASE SWITCH GUARD.	10/30/64

A. J. Leonaitis, Service Publications





**MARINE LANDING**—Capt P. J. Ryan, commanding officer of the marine detachment on board the carrier Bon Homme Richard, uses mountain climbing technique and rappels from UH-2 SEASPRITE 120 feet above deck of the moving ship. The helicopter rappel permits marines to quickly land on a moving ship or in the jungle. Piloting the UH-2, flown and maintained by HU-1's detachment Echo, are Lt(jg) Andrews and Lt(jg) Griffith. (USN photos)



**SCROLL OF HONOR**—Capt Herbert G. Gates, commander of ARS Det 13, EARC (MATS), at Brookley AFB, Ga., presents Kaman Scroll of Honor to HH-43B pilot Capt Rockwell N. Greene for the dramatic New Year's Eve rescue, from Mobile Bay, of the base commander and two other persons. Others who participated in the rescue and received Scrolls are, left to right, TSgt Grady L. Dunn, SSgt Robert D. Benton and SSgt Clyde R. Ross. Copilot on the mission, 1stLt Fernand M. Espiau, was also honored with a Scroll. (USAF photo)

## 1000-Hour Pilot Awards



Three HH-43B pilots in widely separated areas qualified recently for desk sets awarded by Kaman Aircraft to those logging 1000 hours in helicopters produced by the company. In photo on left, Col G. J. Dunkleberg, commander of Eastern Air Rescue Center (MATS), presents a set to Capt H. A. Lee, commander of ARS Det 14, EARC, MacDill AFB, Fla. In middle photograph, Capt J. A. Crupper, left, commander of Det 10, AARC, Aviano Air Base, Italy, congratulates Capt H. A. Jones on completion of his first 1000 hours in HUSKIE. In right photo, LtCol E. L. Read, commander of the 54th Air Rescue Squadron, presents award to Capt J. H. Black, Jr., of Det 1, Thule AB, Greenland. (USAF photos)



# Timely Tips

## Oil Servicing (HH-43B,UH-2)

Do not use cadmium-plated tools to open oil cans. An HH-43B recently aborted a mission because the chip detector light came on. The oil system was flushed and the cooler replaced. On the following flight the chip detector light came on again. A small flake identified as a piece of cadmium plating was found. Investigation revealed that oil cans were being opened with cadmium-plated screwdrivers. One can was screened and three cadmium flakes were found. This could have caused the abort of a life-saving mission.

*H. Zubkoff, Service Engineer*

## Bug Light Flicker (UH-2)

If the "Bug" light on the Navigational System Plotting Board flickers during operation, check for corroded/dirty lamp or rail contacts. If, after cleaning the contacts and rails, the Bug light still flickers, insure that the lamp and rail contacts have sufficient spring pressure on the rails. (Refer to NAVAER 05-35BA-501, 502; HMI and Handbook Overhaul Inst, Plotting board, Tactical Display, PT-429A)

*J. J. McMahon, Service Engineer*

## Tracking Turnbuckle Check (UH-2, HH-43B, OH-43D, UH-43C)

Upon completion of any track adjustment, insert safety wire into the inspection hole in the small diameter end of the turnbuckle barrel. The safety wire must contact threads to assure that sufficient thread engagement of the rodend bearing exists. If the safety wire goes through the turnbuckle, check the tracking turnbuckle for proper assembly per handbook procedures.

*D. W. MacDonald, Service Engineer*

## Corrosion Control (UH-2)

To prevent internal corrosion of the number 1 and number 2 Generator Protective Panels, P/N 10460 and 10300-3, -4, make sure the electrical connector O-rings are placed UNDER the cover assembly when the panels are reassembled after maintenance work has been performed.

*J. J. McMahon, Service Engineer*

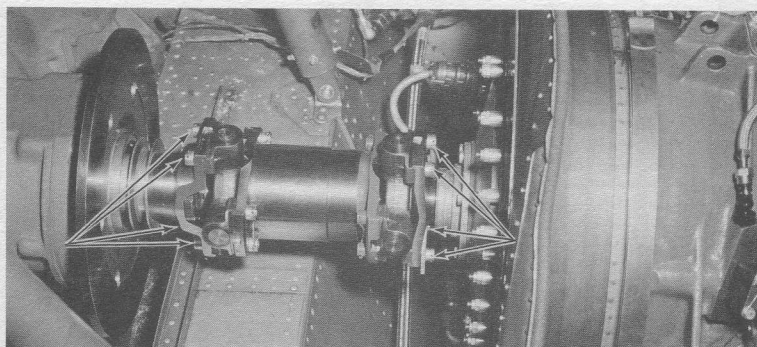
## Hoist Modification (UH-2)

Make sure the chamfered edge of the splice plate, P/N K636030-125, is properly positioned when incorporating H-2 Airframe Change 37—"Rescue Hoist Boom Support Fitting Modification." If the splice plate is installed so that one of the unchamfered edges is against the lower radius of the hinge ears of the fixture, P/N K636160-1, it may mark, scratch or chafe the fixture, resulting in subsequent problems with fitting. Proper positioning of the splice plate is clearly shown in figure 4 on page 11/12 of Airframe Change 37.

*R. W. Spear, Service Engineer*

## Drive Shaft Attach Bolts (HH-43B)

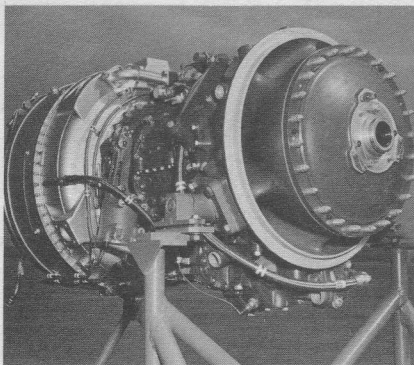
Drive shafts on early HH-43B aircraft are attached to engine and transmission yokes with internal wrenching bolts, P/N AN148860. Experience has demonstrated that repeated removal of these bolts may enlarge the hex sockets and prevent proper engagement of torque wrench adapters, P/N K704505-1. An improved installation has been provided in later aircraft by making use of twelve-point, external wrenching bolts, P/N MS9091-06. These bolts require the use of a different torque wrench adapter, P/N K704512-11. If you find yourself making frequent replacement of internal wrenching bolts, why not switch to the "latest and greatest" external wrenching type? Consult T.O. 1H-43(H)B-4 for applicable part numbers.



*F. E. Stares, Service Engineer*



# KAMAN INTRODUCES HH-43F



The Kaman HH-43 HUSKIE helicopter now in production by Kaman Aircraft Corporation, Bloomfield, Conn., has a new, more powerful turbine engine which will add to the aircraft's already outstanding altitude and payload performance.

Kaman announced that current and future deliveries of the HH-43, now in production for the United States Air Force, are being powered by the Lycoming T53-L-11A gas turbine engine in place of the T53-L-1B used in earlier models. The new engine has 1100 horsepower in place of the 860 horsepower of the previous engine.

The new model, designated HH-43F by the Air Force, looks the same as the HH-43B, in service around the world with the USAF and foreign governments. However, the HH-43F can carry more, fly further and higher, and climb faster.

The advantages of the T53-11 engine installation are to be found in superior performance at increased altitudes and during hot day operating conditions. This approximates an 800-pound advantage in payload or a 3000/4000 foot altitude advantage. Additionally, the -11 engine displays much better fuel economy.

The unique intermeshing rotor system of the HUSKIE means that it needs no tail rotor and makes possible the efficient Kaman "unitized" drive system. All drive system gearing and rotating controls are in a single assembly. In 1962 the Air Force approved the HUSKIE drive system for unlimited life, and last year increased the rating of the transmission to 1000 horsepower.

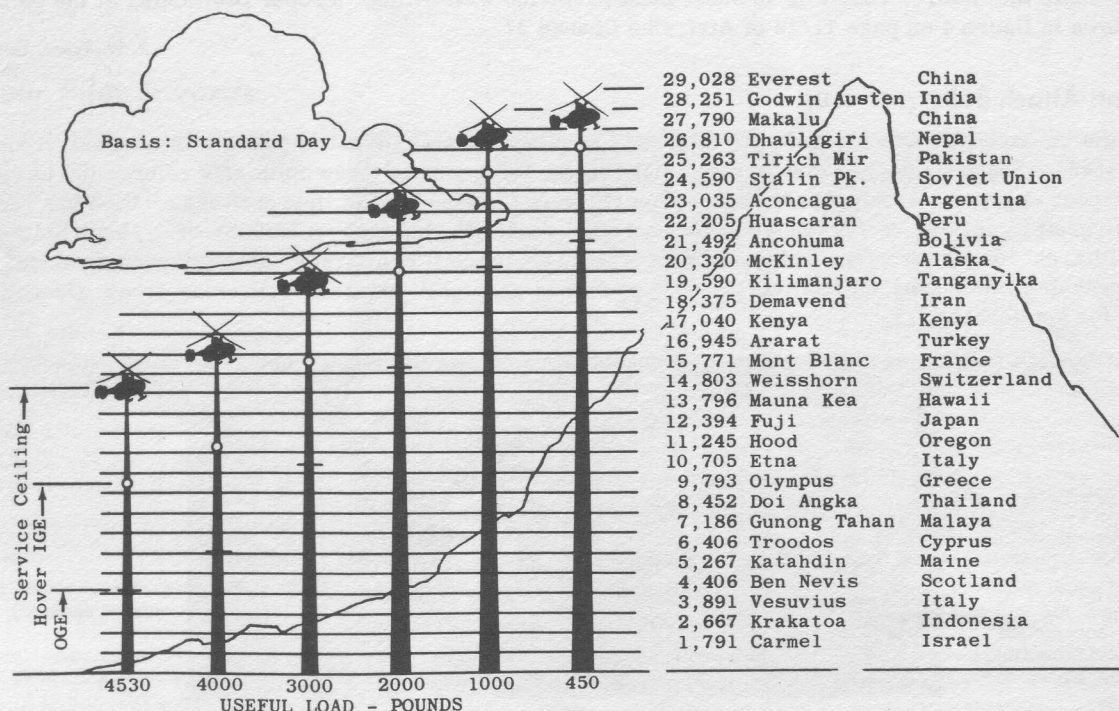
The HUSKIE is used by Air Rescue Service as its standard rescue helicopter and by foreign governments for a wide variety of roles. The missions and accomplishments of the HUSKIE are already legend. The HUSKIE has an outstanding safety and reliability record. In the entire four and a half years of USAF operations there has not been a single major injury or fatality to an HH-43B crewman, pilot, or copilot.



The HUSKIE has been directly responsible for rescuing over 500 persons. It has plucked climbers off the sides of the Rockies, flown missions of mercy at density altitudes of 17,000 feet in the Peruvian Andes, and in a special demonstration for the European military, the HH-43B carried the equivalent of 14 fully-equipped troops, pilot, and copilot at the top of the Jungfrau.

The HH-43B has broken seven world records for altitude, distance, payload to altitude, and time-to-climb.

The spectacular and unique fire rescue role of the HUSKIE is currently being studied by the FAA. As a local base rescue helicopter, it can get rescue equipment quickly to the scene of a crashfire and use its rotor downwash to provide a rescue path.





## Mountain Rescue

In one of the first rescues of its kind with the SEASPRITE, a helicopter designed primarily for over-water missions with the fleet, a UH-2 crew from NAS Whidbey Island, Wash., plucked a seriously injured woman from a ledge at the 8300-foot level on Shark Fin Peak, Mount Eldorado, Calif. Lt J. R. Greenway piloted the helicopter on its hazardous mission over rock and snow covered terrain to make the rescue. LCdr A. O. Hanson was copilot and G. L. Weiser, AD3, crewman.

Before attempting the pickup, Lieutenant Greenway first dropped off the guide who helped locate the ground rescue party on the cloud-covered slope and then climbed back to 8300 feet and dumped all aft tank fuel amounting to about 1000 pounds. The rescue effort was hampered by a lack of space necessary to hover into the wind to maintain position but, after some maneuvering, the



**AIRLIFT TO SAFETY**—Crew of UH-2 SEASPRITE from NAS Whidbey Island, Wash., rescues seriously injured woman from mountain ledge. (Official Photograph U. S. Navy)

rescue hook was snapped onto the rings of the stretcher, the woman was taken aboard, and the helicopter headed for the hospital. Her physician said later she had a bro-

ken vertebrae at the base of her skull and that a ground rescue would probably have caused either permanent damage to her nervous system or fatal injury. ✦

## SEASPRITE - HUSKIE MISSION



Shown are members of the aircrews and Kaman helicopters—a UH-2 and HH-43B—that teamed up to rescue two marines who parachuted from their crippled F-4 into the shark-infested South China Sea. Left to right are: R. E. Hall, AE2c, crewman, and Lt David E. Turner, pilot, who manned the UH-2 from Cubi Point Naval Air Station, and Capt Marvin L. Palmer, HH-43B pilot, and A2c Edward L. Thorpe, crew chief, from the 31st ARSq at Clark Air Base, P.I. Also aboard the HUSKIE were Capt Zack L.

Stockett, copilot, and SSgt Maxie L. Walker, medical technician. LCdr Van E. Spradley was copilot of the SEASPRITE.

The marines were forced to abandon the F-4 at 2005 but, due to adverse weather, search and rescue operations were delayed until the following morning. Shortly after sunrise, the UH-2 and HH-43B left their bases for the search area and the two survivors were spotted in the water a short time later. Simultaneous hoist pickups were made and the rescue was completed at

0630. The downed flyers, having spent almost 11 hours in the water, were delivered to the Cubi Point hospital within minutes.

This is the second recorded incident where an Air Force HH-43B and Navy UH-2 teamed up on a rescue mission. More than a year ago, a SEASPRITE from HU-2, NAS Lakehurst, N. J., and an ARS HUSKIE from Dover AFB, Del., rescued the occupants of a civilian light plane which crashed in a New Jersey swamp. (USN photo)



# Q's AND A's

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

**Q.** (Applies UH-2) WHAT DOES THE ABBREVIATION TAST STAND FOR?

**A.** TAST stands for True Air Speed Transmitter. This transmitter, P/N A24950-00-005, is located in the left forward electronic bay and provides the AN/ASA-13A navigation computer with airspeed corrected for variations in altitude and outside temperature. TAST mechanically computes this "true" airspeed by using the primary factors of pitot pressure, static pressure and bulb temperature so that a direct and continuous indication of true airspeed is given for all speeds, altitudes and temperatures. True airspeed indications are corrected for the compressibility effect and friction of the air stream on the temperature bulb. The True Air Speed Transmitter is manufactured by the Kollsman Instruments Corp., Elmhurst, New York.

*A. Savard, Service Engineer*

**Q.** (Applies HH-43B) FOUR LONG BOLTS, COMPLETE WITH WASHERS AND NUTS, ARE LOCATED ON THE LEFT-HAND SIDE OF THE HELICOPTER NEAR THE MAIN GEAR (Station 143-WL18.000). WHAT ARE THESE BOLTS USED FOR?

**A.** These bolts are to be utilized for repositioning the flood light when flotation gear is installed. Complete instructions will be furnished with flotation gear kits.

*W. J. Wagemaker, Service Engineer*

**Q.** (Applies UH-2) WHAT IS THE PURPOSE OF RUBBER DISCS, P/N K631166-11, LOCATED BESIDE THE KEEL BEAM BETWEEN STATIONS 92.25 AND 216.24?

**A.** There are eleven of these discs between the stations mentioned. (Reference NAVWEPS 01-260HCA-4-6) Each is contained in a retainer housing, P/N K631165-11, which is attached to the bottom of the belly skin. Directly above the center of each rubber disc is a 0.370-inch hole for drainage of any fluids trapped in the belly of the aircraft. In the event of an emergency landing in the water, the pressure of the outside water forces the rubber disc against the drain hole thus closing it. This prevents the fuselage from being flooded and the built-in buoyancy is retained for a longer period. Under normal conditions, the rubber disc rests on the bottom of the retainer and the fluids drain through the circle of holes.

*R. W. Spear, Service Engineer*

**Q.** (Applies UH-2) WHAT IS THE FUNCTION OF THE RUBBER COMPRESSION BLOCKS, P/N K618297-13, ON THE BLADE RETENTION ASSEMBLY? WHAT STEPS CAN BE TAKEN TO PREVENT THEIR LOSS AND WHY IS THIS IMPORTANT?

**A.** During gusty winds, unsecured rotor blades may pitch with sufficient force to hammer the pitch lever against the stops on the pitch collar assembly. This impact is absorbed and cushioned by the 16 rubber compression blocks spaced evenly between the outer and inner rings of the assembly. During the impact between the pitch lever and stop limits, the blocks are compressed and—because an accumulation of excess retention grease is often present—one or more may become dislodged. Up to four blocks may be lost without harm provided they are missing from areas evenly spaced around the pitch collar assembly. If more than four blocks are missing, or if four missing blocks are not evenly spaced, the blade retention assembly should be replaced. If this action is not taken, noise and vibration may be encountered during rotor system engagement. Best method to prevent rubber compression block loss is to use tiedown boots during windy weather and wipe off excess grease from the retention area.

*D. W. MacDonald, Service Engineer*

**Q.** (Applies UH-2) WHAT IS THE MOST PROBABLE CAUSE OF CYCLIC STICK DISPLACEMENT WHEN HYDRAULIC BOOST IS ENGAGED?

**A.** Air in the hydraulic accelerometer lines or actuators caused by inadequate or improper bleeding. The air should be bled out using instructions outlined in NAVWEPS 01-260HCA-2-8.

*P. M. Cummings, Service Engineer*

**Q.** (Applies HH-43B) WHY DOES OIL SIPHON OUT PAST THE TANK FILLER NECK CAP AND HOW CAN THE REASON BE DETERMINED?

**A.** A loose fitting filler neck cap or a deteriorated seal under the cap will allow oil to seep by. Check for this first. If the cap and seal are found satisfactory, overfilling of the oil tank can then be suspected. See whether oil leakage has occurred through the tank vent line at station 131.50 on the bottom right side of the fuselage. Overfilling the oil tank leaves insufficient expansion space, which forces the foaming return oil out through the vent line. Between station 114.80 and station 120.75 the oil tank vent line has a slight dip. Oil can remain in the vent line at this point, instead of draining overboard. This causes a "liquid lock" or blockage of the vent line. This, in turn, causes a pressure build-up in the tank and leakage past the tank cap seal. Oil should, therefore, be serviced only up to the upper hole in the dip-stick. This ensures adequate expansion space. If overfilling should occur, resulting in leakage through the vent line, the line must be cleared of oil. This can be accomplished by removing the filler cap, plugging the scupper (the eraser end of a pencil makes an excellent plug), and applying a low air pressure to the vent line at the overboard drain end, thus blowing the oil back into the tank.

*H. Zubkoff, Service Engineer*



**Q.** (Applies UH-2) HOW IS THE "VOX" FEATURE IN THE UH2'S ICS C2645C/AIC-14 CONTROL PANEL UTILIZED?

**A.** The voice-operated transmission VOX is a new feature found in the AIC-14 intercom system of many UH-2 helicopters. It allows the operator to automatically key the intercom without pressing the trigger switch on the cyclic stick. To operate VOX, place the MIC SEL switch in the HOT position and adjust the VOX SENS knob clockwise until the operator's voice actuates the intercom. When the operator stops talking, the intercom should become deactivated. If it is desired to actuate the intercom by means of the trigger switch on the cyclic stick, simply leave the MIC SEL switch in the COLD position. (NOTE - This feature is for intercommunications only and has no effect on radio communications.)

M. T. Fiaschetti, Service Engineer

**Q.** (Applies HH-43B) HOW DOES A MALFUNCTIONING SPEED SWITCH IN THE ENGINE STARTING CIRCUIT CAUSE THE DC GENERATOR WARNING LIGHT TO ILLUMINATE?

**A.** If the multi-speed does not terminate the starting cycle at 28 to 30 percent by de-energizing the starter relay, then the direct drive starter-generator begins to feed back unregulated DC voltage into the DC power circuit. As engine speed builds up, this unregulated DC voltage becomes sufficient to keep the reverse current relay de-energized and consequently illuminates the DC GEN warning light. The functional tie-in of the DC power and engine starting circuits is illustrated in the simplified schematic.

A. Savard, Service Engineer

**Q.** (Applies HH-43B) HOW DO YOU ORDER A NEW BUMPER FOR THE CLAMSHELL DOOR STRUT, P/N K734562-7?

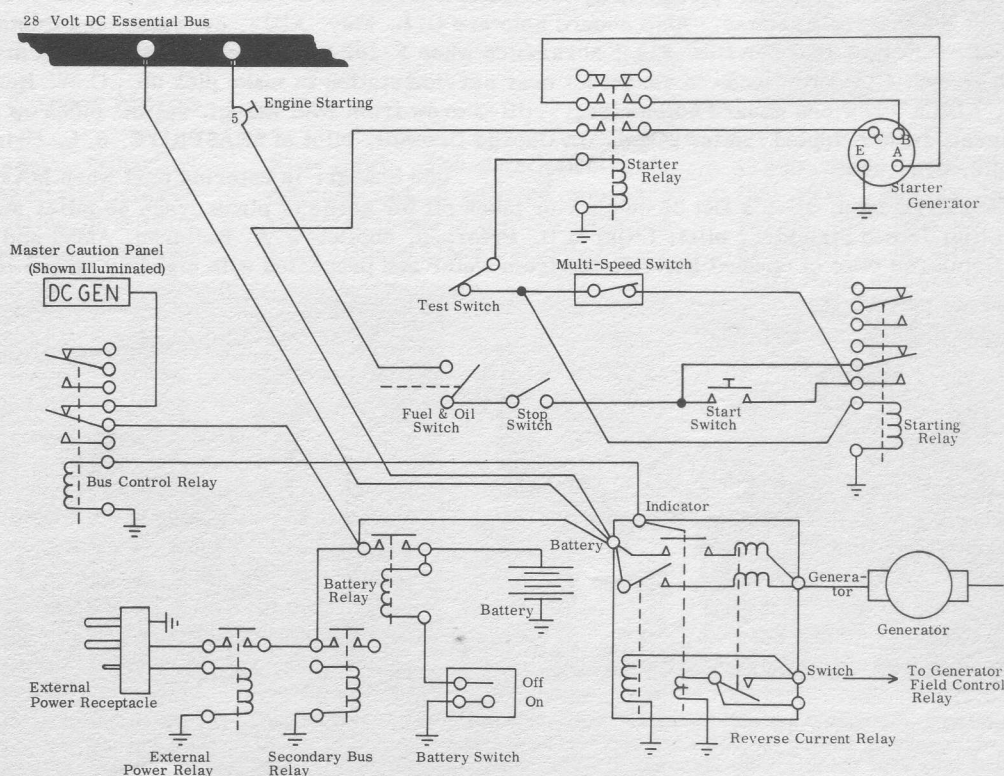
**A.** Until recently, the bumpers, P/N K734566-11, were source coded X1 and manufactured locally. Now, however, they may be ordered under FSN 1560-076-0756JC.

W. J. Wagemaker, Service Engineer

**Q.** (Applies UH-2) WHAT IS THE DIFFERENCE BETWEEN THE K604605-2 AND K604605-4 A. S. E. FLIGHT LINE TEST SETS?

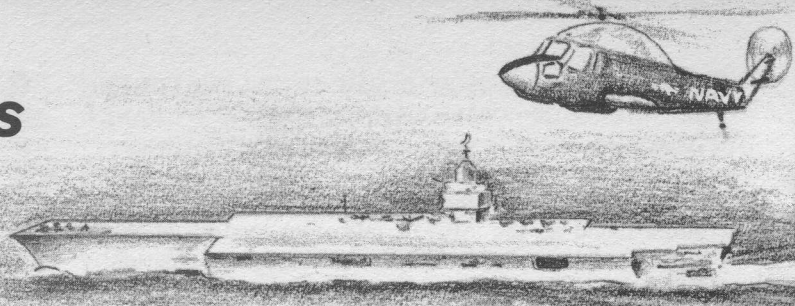
**A.** In addition to all the provisions of the K604605-2 test set, the K604605-4 test set improves DEMODULATOR METER read out, permits monitoring and testing of the RADAR REFERENCE SIGNAL in the collective channel, and incorporates three toggle switches which serve to deactivate the vertical gyro, rate gyro and accelerometer signals from the sensor unit. The sensor unit deactivating switches are labeled VERT GYRO, RATE GYRO and ACCEL. By positioning one or all of these switches, which are located just above the PITCH selection knob, in the ground position (up) the respective signal is deactivated. This will enhance the test set's capability of testing one or two of the sensor units signals without interference from the others. All K604605 test sets will be modified to the -4 configuration. Support Equipment Change #133 and Modification Kit S/N R4920K604177-1 SEC-133, released 15 June 1964 will modify all test sets prior to S/N 6-41A.

M. T. Fiaschetti, Service Engineer





# SEASPRITE ACTIVITIES



...Jet pilot and seaman saved by prompt action of SEASPRITE crewman Walter Tkacz, AMS1, of HU-2, NAS Lakehurst, N.J., who leaps into sea from helicopter on two occasions to aid survivors. Tkacz, attached to Det 42 aboard USS Roosevelt, is crewman in UH-2 piloted by Lt(jg) Albert G. Perry and Ens Paul G. Carroll when he jumps from helo 40 feet above water and swims through jet fuel to aid injured pilot. Rescuer hoisted into helicopter by D. L. Soesholtz, ADR2. While in UH-2 piloted by Lt(jg) Paul Kayle and Lt(jg) Clarence Robert, Tkacz leaps to aid of seaman who fell overboard from Roosevelt and was exhausted from fighting turbulent water.

...Another Det 42 crewman, Elvis B. Jordan, AE3, jumps from UH-2 into water — at night — and swims through blinding jet fuel to clear radar intercept officer from entangling parachute after plane crash. Second crewman, R. F. Parry, AT3, hoists both men to SEASPRITE which is piloted by Lieutenant Kayle and Lt(jg) Oscar Harper.

...UH-2 piloted by Lt(jg) Kenneth O'Gorman in guard position when crash alarm sounds. SEASPRITE, from HU-1's Det "Foxtrot" aboard USS Constellation, over crash scene in seconds. E. K. Gray, AD3, helo crewman, leaps into sea and swims underwater to cut pilot's legs free. Other pilot now in raft. Both hoisted to safety by L. E. Mitchel, AN.

...Sailor overboard from USS Enterprise rescued soon afterward by UH-2 plane guard crew from Det 65, HU-2. Pickup made two minutes after survivor sighted in water. SEASPRITE piloted by Ens Verne P. Giddings and Ens Dennis C. Rautio. Joseph V. Tomlin, ADJ3, and Joseph A. Lukens, ADR3, crewmen.

...SEASPRITE crew from HU-1's Det "Alfa" aboard USS Midway rescues Air Force pilot from choppy seas after he ejects from fighter-bomber 220 miles off coast of Okinawa. SA-16 Albatross amphibious rescue plane sent to scene earlier but unable to land due to sea state. Rescue made soon after Midway launches UH-2 and E1B Tracer radar search plane.

...SEASPRITE from Det A also makes 250-mile overwater flight to pick up litter patient, bleeding internally and in need of immediate medical attention, from USS Banner and returns him to Midway. E1B accompanies UH-2 on mercy mission. Vice Adm Thomas H. Moorer, commander of Seventh Fleet, sends following message afterward: "Your two unusual rescues within a week are highly commendable. Please convey my admiration to HU-1 Det Alfa for their display of professionalism in saving these two lives."

...Pilot from stricken aircraft picked up by SEASPRITE from NAS Cecil Field, Fla. UH-2 landing made in small clearing by Lt Fred Lakeway. Also aboard helo are C. L. May, ADJ3, crewman; and Captain Brown (MC). ...UH-2 crew from NAS Jacksonville, Fla., scrambles when F-102 pilot ejects 27 miles from station. SEASPRITE pilot, Lt(jg) James G. Kearse lands in vacant lot near service station to make pick up. C. W. Hensley, ADR1; and L. E. Todd, ADR3, crewmen aboard helicopter. ...UH-2 crew from NAS Atsugi, Japan, picks up pilot who ejected, at treetop level, from crippled fighter plane. Lt George Crowell, pilot of SEASPRITE, J. L. Crick, ADJ3, and R. A. Curtis, ADR2, crewmen.

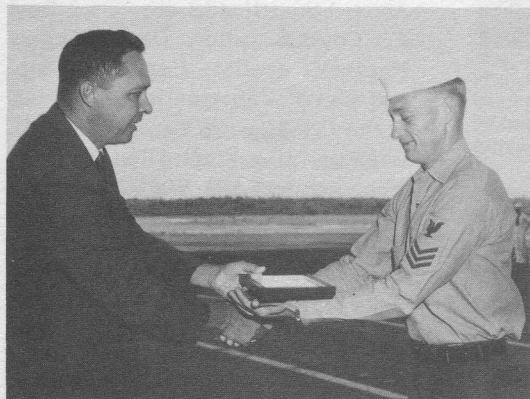
...USS Shangri-la entering port when MAYDAY report received. SEASPRITE from HU-2's Det 38 on carrier takes off for scene of plane crash 40 miles away. Aboard helicopter are Lt(jg) James Strickler, pilot; Lt(jg) L. H. Petersen, copilot; F. A. Bellaran, AMS3 and D. King, AMS3, crewman. Uninjured pilot of downed F8A hoisted from water and presented with cigar by aircrewmen.



**TOP DETACHMENT?** —Can any other unit "surpass, meet or come close to the following record compiled by HU-2's Det 59 during a 20 day period while serving aboard the USS Forrestal?" The question is asked by the "Forrestal Angels" whose pride in performance is reflected, not only with the following facts and figures, but in the promise of "Red Carpet Service" printed on their letter head: Number of sorties flown - 143 (97 day, 46 night); aircraft hours - 176.1 (149 day, 27.1 night); litter transfers - 7; personnel transfers - 80; U.S. and guard mail - 135 (over 1500 pounds of mail); cargo transfers - 40 (over 4000 pounds of weight). Two crewmen also compiled more than 40 hours flight time each and 51.5 hours of ground training was given. Shown are detachment personnel during typical flight operations aboard the Forrestal. (USN photos)



**PACIFIC AIRLIFT**—Recently two detachments from Helicopter Utility Squadron One, NAAS Ream Field, Calif., carried out what is believed to be the first airlift of its kind in the Pacific. For approximately six hours three UH-2 SEASPRITE helicopters maintained and flown by personnel from Detachments Bravo and Foxtrot shuttled between the aircraft carriers USS Ticonderoga and USS Constellation. An impressive total of 241 persons and over 30,000 pounds of cargo were transferred during 75 sorties which were interrupted only by sporadic air operations from the carriers. The detachments are deployed aboard the two ships. (USN photo)



**MERCY MISSION**—Charles R. Beasley, AMH1, of Helicopter Utility Squadron Two, NAS Lakehurst, N.J., is presented Kaman Aircraft's Scroll of Honor by Mr. William G. Wells, company representative. Beasley, just returned from a cruise, was a crewman aboard a UH-2 from Detachment 62 which made a 100-mile night flight to transfer an injured man from a destroyer to the USS Independence. The detachment was deployed aboard the carrier. Similar awards have already been made to others who participated in the hazardous flight. (USN photo)



**"ENSIGN O'TOOLE"**—Dean Jones, star of the TV show "Ensign O'Toole," poses in UH-2 after orientation flight while on visit to NAAS Ream Field, Calif. Lt(jg) Gary Mowery of HU-1 demonstrated the helicopter's versatility with autorotations, hover, high-speed flight, etc. After the SEASPRITE landed, Cdr Dale W. Fisher, right, commanding officer of HU-1, presented Mr. Jones with a honorary helicopter pilot card and an orange Navy flight suit decorated with the squadron's patch and navy wings of gold. (USN photo)



## Det "Charlie" Comes Home

HU-1's detachment "Charlie" came home to NAAS Ream Field recently upon completion of duty in the Western Pacific aboard the USS

Kitty Hawk. The detachment's six officers and 16 enlisted men participated in one of the longest peace time cruises since World War II—a

cruise which began in October of last year. During this 9-month period, they flew the new UH-2A SEASPRITE in utility support of Kitty Hawk and her embarked Carrier Air Wing 11 to a total of 1000 flight hours and 1400 landings.

Detachment members shown are: Front row, left to right—P. H. Daye, AMS3; J. H. Adams, ADR3; R. E. Niswander, ADR3; J. L. Weston, AN; L. E. Rupright, ATN3; E. F. Rutherford, ADRAN; R. L. Blue, AMH3; and D. P. Kelsey, ADR3.

Back row—R. J. Chaffee, AMH3; S. L. Sewell, AE2; L. J. Jaynes, ADR1; R. E. Hohme, AMH1; LT(jg) D. G. Holmes; LT(jg) M. A. Johnson; LCdr R. E. Tobias; LT(jg) H. K. Phinney; LT(jg) W. W. Beck; LT(jg) L. W. Beguin; D. R. Kinney, ADR3; J. Duncan, AN; and D. K. Middleton, AE3.





## Practical Thanks



**STEAD DONATION** —SSgt Charles Baker, Capt Louis Anatrella and SSgt Edward Hawley, left to right, act as middlemen in passing \$300 check to Ernest Orchard and Richard Hughes from United Fund. William Thornton, representing three civilians rescued by HH-43B presented the check to the Air Force men on behalf of his clients. (USAF photo)

STEAD AFB, NEV. — A few months ago the men of Stead AFB rescued three injured fliers from a snow covered mountainside in California. Recently the rescuees extended their thanks to the air base in a manner which will aid all those in the county where the ATC base is located.

On April 3 a light plane flown by Jack Roys of Reno and carrying Ralph Weaver and Jack Copple of San Jose, Calif. crashed at 11,000 feet altitude. After spending a night nursing serious wounds and battling sub-freezing weather, the trio was rescued by an HH-43B crew from the 3638th Flying Training Squadron (Helicopter) at Stead.

In a flight line ceremony, a \$300 check was presented to members of the rescue crews. They in turn, presented the money to the Washoe County United Fund. On hand for the presentation were Capt Louis Anatrella, pilot of one of the rescue helicopters, SSgt Charles E. Baker

and SSgt Edward E. Hawley, crewmen on the rescue craft. Other members of the rescue team have been transferred or are on temporary duty elsewhere. Present at the time of the rescue were Capt William L. Henderson, Capt Richard Finley, Capt Donald R. Olsen, 1stLt Raymond J. McGeechan and SSgt Carthey D. Lewis.

In line with the save, the eight Air Force men have been cited in a letter from Mr. Copple to Secretary of the Air Force Eugene M. Zuckert. It said, in part... "These officers and men went far beyond the call of duty in bringing us out... The manner in which we were handled left nothing to be desired." He also praised the Civil Air Patrol and units of the Air Force Reserve at Hamilton AFB, Calif., whose members located the downed aircraft on the day of the crash but were unable to make the rescue.

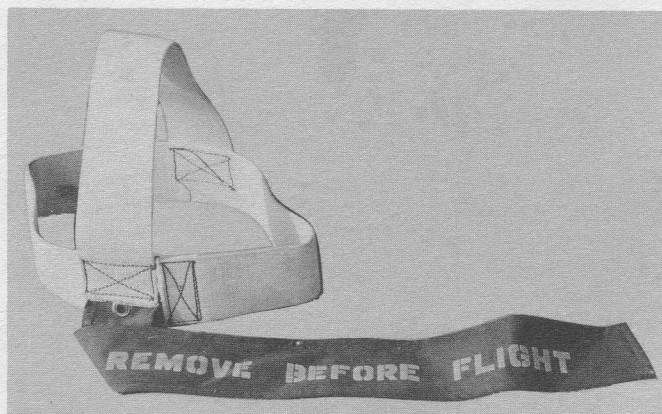
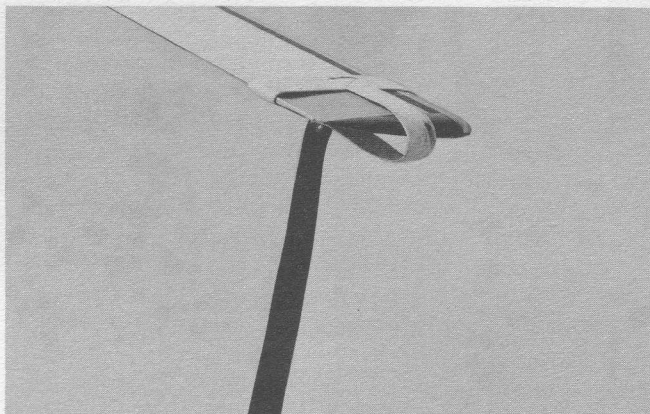
Recently another HH-43B crew from the 3638th Flying Training

Squadron flew through 30 to 45-knot winds and over mountainous terrain to aid a woman who was seriously injured when thrown from her horse. The helicopter landed at 9,000 feet in a meadow. The woman was given medical attention by Capt Paul W. Knoop, flight surgeon, and then taken to the hospital. A CH-3C from Stead also answered the request for help and accompanied the HUSKIE on the mission. Aboard the HH-43B were Capt Bert E. Cowden, pilot; Capt Thomas Preston, copilot; Captain Knoop, and SSgt T. Valenzuela, crew chief. In the CH-3C were Capt Thomas E. Decatur, pilot; Capt Allen W. Hopkins, copilot; A2c Wallace Spivey, Jr., crew chief; and A1c Erwin Martell, medical technician.

## Old Friends

Capt Clifford E. Brandon of Det 16, WARC, Williams AFB, Ariz., recently logged his 1000th-hour in Kaman helicopters. He also has a unique relationship with one of the aircraft manufactured by the company. On 2 July, 1959, Captain Brandon accepted HH-43A 58-1839 at the Kaman facility in Bloomfield, Conn., and flew it to Greenville AFB, Miss. In October of 1960 the entire unit was transferred to Williams AFB and the captain flew -839 to her new home. Then, on 12 Jan., 1962, Captain Brandon filed the final flight clearance on Air Force helicopter 58-1839 and flew it to Davis-Monthan AFB for storage. During her Air Force career -1839 flew 271 rescue missions.

## Timely Tip



The blade warning streamer above was designed by A1c Hubert O. Marsh of this unit. They are slipped onto the blade tips whenever the HH-43B is parked in a congested area and are especially valuable when installed on aircraft in a hangar where there is other maintenance activity.

ARS Det 4 36th Air Rescue Squadron (MATS) Osan AB, Korea



## Report From Yokota

Personnel attached to recently activated Det 2, 36th ARSq, PARC (MATS), were called on soon after starting operations at Yokota AB, Japan. The alert HH-43B crew scrambled when an F-105 lost its nose wheel while making an emergency landing and a few seconds later a fire in the plane's left main brake was extinguished by the hovering HUSKIE. First Lieutenant Lawther O. Smith was RCC; Capt Juan H. Migia, copilot; SSgt Willie Flemming and Alc Willard J. Blair, firemen.

During the next few weeks: A detachment HH-43B flew to Mt Fuji to evacuate an ill airman to the hospital. Captain Migia was RCC and 1stLt Marvin A. Cleveland was copilot on the mission. Two injured men were taken to the hospital in a HUSKIE manned by Lieutenant Cleveland, RCC; TSgt L. P. Meadow, medic; and Alc Richard D. Long, crew chief. In a night evacuation, a seriously injured man was taken to the hospital in an HH-43B pi-



**VISITS NEW DETACHMENT**—Col W. F. Derck, commander, Pacific Air Rescue Center, chats with Maj C. R. Carpenter, left, commander of newly designated Det 2, 36th ARSq, Yokota Air Base, as LtCol R. R. Dyberg, commander of 36th ARSq looks on. Colonel Derck visited Det 2 as part of an inspection tour of all rescue units in the Pacific area. (USAF photo)

loted by Lieutenant Cleveland. Maj Charles R. Carpenter was copilot, SSgt Billy L. Autry, medic; and SSgt Willie Lovins, crew chief. An injured airman was evacuated from Mito Range, 75 miles from Yokota, in a HUSKIE flown by Captain Migia with Lieutenant Cleveland as copilot, Sergeant Lovins as crew chief

and Sergeant Autry, medic. Departure time from Yokota was 1305 and return at 1525. The unit also responded when an F-105 crashed 18 miles from the base. Aboard the HUSKIE were Captain Migia, RCC; Alc Thomas W. Wages and Alc Herman O. Steward, firemen; Alc Feters, medic. **K**

## Community Asset

McCHORD AFB, WASH., Base Information Office Like a giant flying bug, flitting in and out among the tree-tops, a Det 5, WARC helicopter descended slowly above the swift current of the Stuck River. A hoist was lowered into the water to a cold, numbed fisherman, Elmer Jarvis of Auburn, Wash., who had just suffered a nine-hour ordeal in the freezing water after his boat had overturned. Capt Edwin Henningson, detachment 5 commander, had maneuvered his HH-43B HUSKIE as close to Jarvis as possible. The proximity of the tree-tops made a direct rescue impossible, so Captain Henningson's crew chief, SSgt Howard Lord, lowered the hoist from the maximum hoist altitude of 100 feet. The length of the hoist wasn't the only problem. At 100 feet, maximum power is needed to keep the helicopter steady. And the hoist must be maneuvered within reach of the victim. "The HUSKIE is the only helicopter that could do this trick," Captain Henningson explained. "It has enough power to remain steady and operate the hoist, even at 100 feet."

This rescue, heroic in the eyes of the victim or an observer, is a frequent occurrence for detachment rescue experts. This particular rescue did require more skill than

usual, but some missions are even more daring. Just recently, detachment 5 pilot Capt Harold Solberg piloted a HUSKIE between fir trees near the summit of Mount Ladd to rescue injured Civil Air Patrol pilot, 1stLt Leslie Mercer, 63.

In another daring rescue, detachment 5 rescuers landed in an almost inaccessible crevasse near Wilmon Peak, and rescued a woman who had fallen 40 feet from a ledge and broken her leg. On another occasion,



**TYPICAL**—A HH-43B HUSKIE from McChord's rescue detachment rescues a downed flyer. (USAF photo)

an emergency call came for a rescue of an injured youth on Mount Garfield. The pilot was given erroneous information as to the location, but he searched until he spotted a tiny wisp of smoke from a fire built by a rescue party at the scene. The injured youth was in a forest where trees prevented the helicopter from reaching the ground party. The pilot dropped his craft into a narrow gorge carved by a stream running through the forest. There the rescue team delivered the injured and he was rushed to the nearest hospital.

To these daring Detachment 5 rescuers, called upon day or night in all kinds of weather, mercy flying is simply their job. These men "scramble" their HUSKIES approximately 20 times a month, most of the time on ordinary alert missions, to stand by in case of need. "Only two or three times a month are involved in actual rescue attempts," Captain Henningson said.

But two or three such rescue missions a month can mean two or three lives saved. Detachment 5's contribution to the local community was summed up by Jack Ryan, Tacoma News Tribune aviation writer in this way: "It is safe to say that there is a considerable number of people in this area alive today who would be dead if it were not for the men of Detachment 5, McChord AFB." **K**





*In the last issue of Rotor Tips the topic of adjustments and rigging was dealt with under the heading of Non-Routine Maintenance. Limited repair and changes, which fall in the same category, are now considered.*

### Limited Repair and Changes

Here again a thorough understanding and appreciation of the function and operation of the respective helicopter components is essential to avoid incorrect treatment. The basic structure - fuel and oil systems, electrical systems, instruments and fixed equipment - is very similar to the fixed wing equivalents and most of the same aircraft maintenance and repair rules apply.

Structural attachment points for drive system components are somewhat more critical due to normal rotor vibration, imposed stresses and suspension loads. Control system cables, control rods and links are similar, but depending on the location and type of helicopter, loads may be significantly greater than in related fixed wing components. This is especially true in the upper control system which is subjected to continuous cyclical operation and in many cases centrifugal forces. Drive system components, though apparently similar to fixed-wing power plant nose sections, are also subjected to quite different loads and perform more vital functions. Main transmission shafts not only carry the high torsional lift loads, but are continually subjected to varying cyclical bending loads imposed by the rotor plane, depending on the control applied. In tail rotor installations, directional control obviously depends on the integrity of associated gear boxes and shafting. Failure of a propeller shaft, even on a single-engine, fixed-wing aircraft, does not necessarily mean catastrophe if a suitable landing area is available for an emergency landing. Conversely, failure on the output side of a helicopter main transmission, in the rotor retention system or any place in the tail rotor drive system usually results in strike damage. And lastly, to complete our illustrations of the differences between fixed-wing aircraft and helicopters, we come to the most unique component - the rotor blade. Many elementary aerodynamic books compare rotor blade lift to that produced by an airplane wing. This is where the major similarity ends. Although certain aspects of some rotor blade construction resemble aircraft wing construction, the high centrifugal whirling loads and continuous flapping loads require significantly different structural design and repair considerations.

# LINE LEVEL HELICOPTER MAINTENANCE

by Robert J. Myer  
Customer Service Manager

## Part VII

The point of this comparison is to have maintenance personnel develop an awareness of the importance of the various helicopter components and treat them accordingly. Some specific guidelines relative to helicopter repair are:

1. Follow the book! By this is meant the specific component or model manuals as well as the general repair guides. No one is better qualified to establish critical repair limitations than the designer and manufacturer.
2. Use care in handling components such as those mentioned above. Dents, gouges or abrasions made by inadvertent slips with tools, or scribe lines made by sharp instruments in critical areas can be the nucleus of a fatigue-generated failure. Many highly stressed components are being shot peened to lessen their susceptibility to fatigue. Arbitrary defacing or even careful smoothing out of defects in this finish, which is only .002"-.003" deep, can not only undo the benefits of the finish but create stress raisers as well.
3. As indicated under the Inspection Section, pay close attention to the security of doors, panels or any components that could become detached in flight and end up entangled in the main or tail rotor systems. Insure that related fasteners are properly installed and, where specified, properly safetied. Whenever possible, adhere to the long-established requirement to have bolt heads positioned up, forward or inboard.
4. Take extreme care in replacing bearings and rod ends to avoid contamination or damage from incorrect installation or removal practices. One very vulnerable area is the replacement of hollow shank rod ends riveted to solid or tubular control rods. Unless the old rivet holes in the control rod are accurately transferred to the rod end shank, hidden elongation and weakness can result. One method of accomplishing this transfer is to locate the control rod hole under a drill head and clamp the control rod to the drill table. When the rod end shank is slipped on and drilled in place, a true hole transfer will be accomplished.
5. Use the specified material. This applies to standard hardware as well as raw material. It used to be that one aircraft bolt was as good as another and if it fit the hole, it was good enough—but not any more! Bolts, nuts and other fasteners of any given size can vary radically in shear and tensile strength depending on the material manufacturing and heat treating processes used. Weight and space considerations are forcing the use of increasingly sophisticated materials.



The structural integrity of the unit is based on the use of the materials specified. Unauthorized substitutions are strictly taboo!

6. Adhere closely to corrosion preventative practices such as the use of specified dielectric materials between dissimilar metals, application of specified finishes and elimination, where possible, of moisture traps. The severity of this concern obviously depends on the environment. However, due to the extensive use of magnesium and aluminum in most helicopters, corrosion problems can be expected if they operate anywhere near salt atmosphere. The problem is naturally most severe with helicopters when missions require operation at low altitudes over open bodies of salt water, as the turbulence created by the rotors causes salt spray to permeate every opening and crevice.

On the subject of change incorporation, it often takes the same understanding of component function to know what minor deviations, when required, are permissible. This point is raised due to the numerous problem reports received from field activities when some part of a change kit does not exactly fit the respective part of the aircraft. Most manufacturers face this problem due to the continuing design changes that are incorporated into aircraft at different production effectivities. When a field retroactive change is conceived, much consideration is given to the various configurations delivered, but sometimes we miss or the variations are such that it is not practical to cover them all. In such instances the related

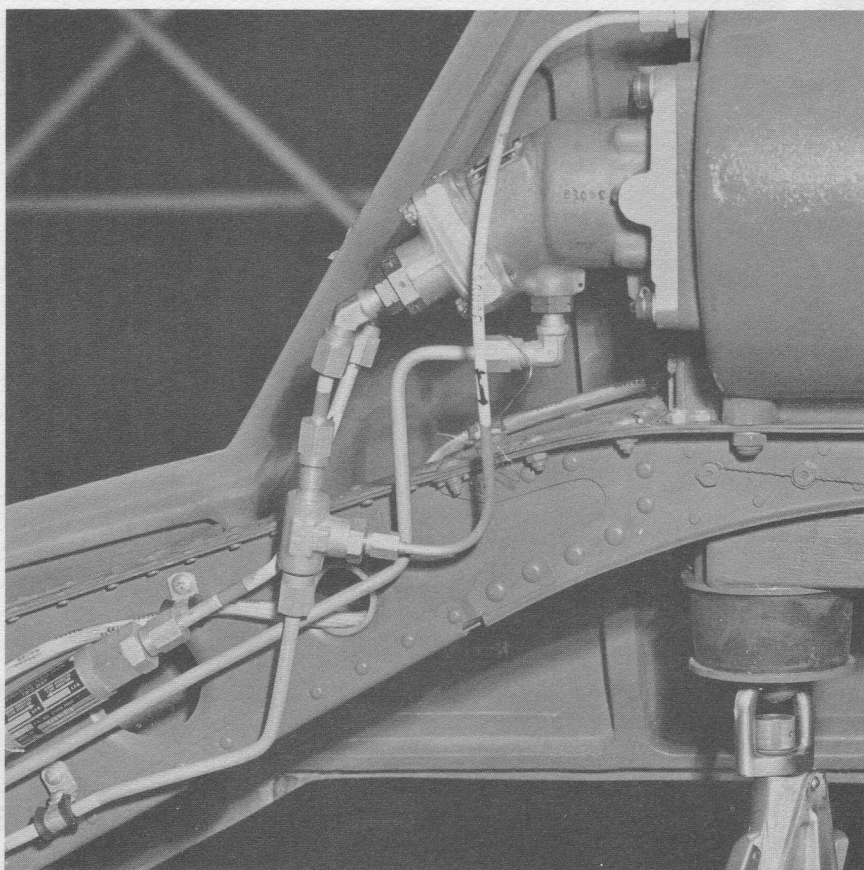
bulletin usually indicates that the kit should be installed to achieve the intent of the change, thereby authorizing the required installation variations to do so.

Another item relative to changes, which is only remotely related to the practical aspects of repair and change incorporation is offered here. This is the means by which a desired change can be brought about. Numerous suggestions or requests for changes are received via contractors' representatives or during other informal discussions with using agency personnel. As a result, letters are sent by the contractor to the appropriate procuring agency office, requesting permission to submit these changes. Unless the changes offered resolve a potential safety-of-flight concern, correct a formal UR project, or are utterly irresistible in other respects, the answer is usually, "No thanks, we have received no formal requirement for this change from our operating units." The procuring agencies must take this position to insure that available dollars cover necessary areas of support, reduce unnecessary maintenance man-hour expenditure that would otherwise be required to incorporate these changes and reduce the aircraft down time such incorporation of excessive changes would create. In summary, if you want to initiate a change in a weapon system which does not remedy a safety-of-flight condition or correct a significant UR concern, it must have formal operational justification and support. The days of casual approval of improvement-type changes are rapidly drawing to a close. ❧

## FOD FACTS

How good are you at finding FOD? To check yourself, study the photograph and then see the inverted answer. Four loose objects are shown which could cause foreign object damage if ingested into the engine. It is doubtful, however, if every KRT reader will spot all four since one is particularly difficult to distinguish—but then FOD often is.

The safety wire is fairly obvious but the cotter pin and two nuts are easy to overlook although resting in full view on the hoist boom only two or three inches beneath the hydraulic motor mounting pad. The ability to blend with its surroundings, even though in plain sight, is FOD's "secret weapon." Take time to look for small objects such as these for, if drawn into an air inlet, they could damage an engine and possibly cause an in-flight power failure. As in last month's issue, this is a photograph of the hoist compartment of a UH-2, but FOD awareness should be extended to all other jet-powered aircraft including, of course, the HH-43B. ALWAYS CHECK YOUR WORK AREAS FOR FOD!





# Huskie Happenings



...HH-43B crew from ARS Det 9, AARC (MATS), Moron AB, Spain, aids Navy during intensive search for survivors of P2V crash 24 miles offshore. Seven destroyers, another helicopter and three planes participate, but only wreckage sighted. Aboard HUSKIE are 1stLt R. L. Blaydes, RCC; Capt R. E. Lee, copilot; SSgt J. B. Conn, Jr., crew chief; and MSgt T. L. Payne, medic. Air Force crew's services recognized in letter from Navy commander reading: "Your quick and very cooperative response to our call for assistance in searching for our downed ship-mates is greatly appreciated by all officers and men of this unit. The pilots and crewmen from your detachment are to be commended for their professionalism and sincere desire to help as much as possible."

... Lt Kenichi Ishikawa, 3rd Fighter Interceptor Sq., Hachinoe AB, Japan, rescued from Pacific after parachuting from F-86 75 miles from base. HH-43B crews from Det 1, 36th ARSq., Misawa AB, Japan, sight survivor and alert chopper makes basket pickup. Aboard one HUSKIE are 1stLt David E. Mullen, pilot; 1stLt David N. Young, copilot; A1c Joe Taylor and SSgt Dale C. Curtis, firemen; and A1c Lester S. Wright, medic. Capt Chase and 1stLt Donald D. Metzinger aboard second HH-43B. ... Three campers, stranded on sand bar at mouth of Kenemau River 13 miles east of Goose AB, Labrador, rescued by HH-43B crew from 54th ARSq. Capt Lucius F. Hallett pilot of HUSKIE, A3c Charles L. Hill, crew chief; and A3c John D. Annable, medical technician.

... Crew of HUSKIE from Det 12, WARC (MATS) from George AFB, Calif., hoists youth to safety from precarious spot in middle of crumbling slate after trail collapses and he slides 400 feet down mountain. Capt David E. Longnecker, HH-43B pilot; Capt Jay M. Strayer, copilot; A1c Cecil A. Boothby, crew chief; and SSgt Bill E. Workman, medic. Letter from boy's parents afterward says, in part, "Our many thanks to you and your crew for the fine work and returning our Dave to us. May we have the opportunity of returning your favor some day."

... Two sailors from Whidbey Island Naval Air Station stranded on gravel bar in middle of surging river after boating accident rescued by HH-43B crew from ARS Det 5, McChord AFB, Wash. Capt Edwin Henningson, pilot of HUSKIE; Capt Harold Solberg, copilot; SSgt McCrea Parker and A1c Max Gentzler, crewmen. ... 1stLt Sydney E. Gurley of Det 1, AARC, Spangdahlem AB, Germany, subject of three-page article on helicopter pilot in recent Sunday magazine section of St. Louis, Mo., newspaper.

... ARS Det 2, AARC, Laon AB, France, scrambles when RF-101 catches fire shortly after take off. Less than five minutes later, fighter pilot in HH-43B and on way to hospital for treatment of minor injuries. Capt David D. Glick, pilot of helicopter; SSgt William Gamble, crew chief; SSgt Glenville L. Bush, medical technician; and A2c Daniel L. Lang, rescue technician.

... HH-43B crew from ARS Det 5, WARC (MATS), McChord AFB, Wash., flies over rugged mountainous terrain to evacuate teenager with serious head injuries suffered when struck by falling rock. Heavily forested rescue site, at 4000 feet, on shore of small lake at bottom of two peaks. Hover established but trees too tall to allow use of hoist. With crew members calling out position and proximity to trees, 1stLt Thomas D. Precious lands HUSKIE in small marsh. Survivor examined by A2c Charles Lintz, medic, then loaded aboard and helicopter heads for hospital. Copilot on mission, 1stLt Donald M. Welsh and A2c Richard H. Landry, crew chief. ... In another mission, HH-43B crew from Det 5 flies through severe turbulence to land on Mt Rainier and evacuate two injured climbers from 10,200-foot level. First aid given by TSgt Joseph J. Mscichowski, medic, on way to hospital. Capt Harold A. Solberg lands helicopter in small clearing near building. Capt Warren K. Davis, copilot on hazardous flight and A1c Max L. Gentzler, crew chief.



**SCROLL OF HONOR**—BrigGen Adriel N. Williams, ARS commander, right, awards Kaman Scrolls of Honor to three members of HH-43B crew from Det 15, WARC (MATS), Luke AFB, Ariz., for Grand Canyon rescue of woman seriously injured after being thrown from horse. Recipients are: Capt Dale L. Potter, RCC; Capt Andrew J. M. Archer, copilot; and CMSgt Glenn E. Moore, rescue crew chief. (USAF photos)



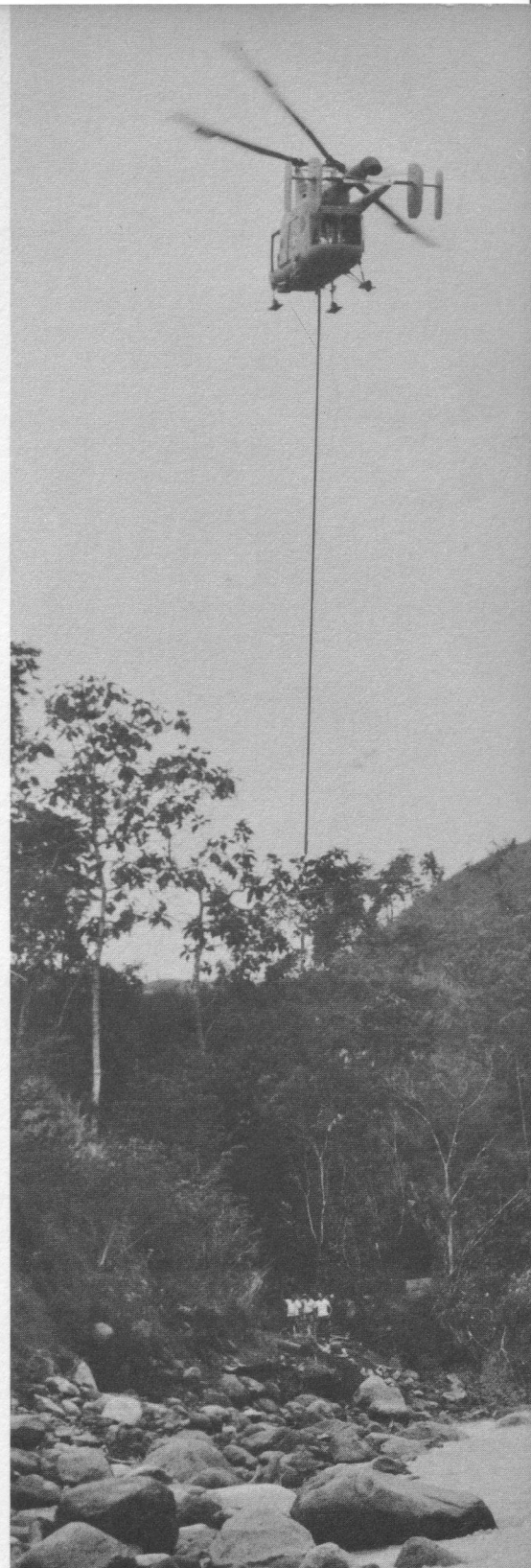


**USAF SECRETARY VISITS**—Secretary of the Air Force Eugene M. Zuckert is aided by Capt John F. Lapham of Det 4, CARC, before takeoff in HH-43B from Duluth MAP, Minn., to inspect remote radar site. On right is BrigGen Joseph L. Dickman, commander of the Duluth Air Defense Sector. The secretary visited the sector to gain first-hand knowledge of a typical Air Defense Command operation. (USAF photo)



**OSAN ANGEL**—HH-43B from Det 4, 36th ARS flies over Korean rice paddies on typical mercy mission. Seven sick or injured airmen and Korean Nationals were recently evacuated to hospitals in detachment HUSKIES which have carried out scores of such missions during the last year. (USAF photo)

**ARS AIDS BASE**—HH-43B crew from 31st ARS, Clark AB, P. I., delivers one of several 700-pound water pipes to almost inaccessible ledge at bottom of cliff in rugged Zambales mountains. The pipe lengths were attached to a 150-foot cable, lifted vertically, to the small ledge. The HUSKIE was called on after pipes supplying base housing were broken by a landslide during typhoon "Winnie." A critical water shortage developed and the road leading to the water reservoir had been washed out. Aboard the helicopter were Capt David J. Wege, pilot; Capt Marvin L. Palmer, copilot; Capt David E. Allen, observer; and TSgt David D. Dere, helicopter mechanic. (USAF photo)



**PHILIPPINE RESCUE**—Shown after successful rescue of F-102 pilot from jungle-covered slope in Zambales Mountains are, left to right, TSgt Robert L. Shumway, medical technician; Capt Larry C. Evans, pilot; Capt David E. Allen, copilot; and TSgt Forrest W. Farley, crew chief. The HH-43B crew, from the 31st ARS at Clark AB, P. I., located the fighter pilot 25 minutes after he ejected from his crippled plane about 30 miles from the base. As the rescuee was being hoisted aboard, the hoist motor malfunctioned so Sergeants Shumway and Farley pulled him the last few feet to safety by hauling in on the cable manually. Later, after taking the pilot to the hospital, the HUSKIE was utilized to airlift accident investigators to the crash site. (USAF photo)



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