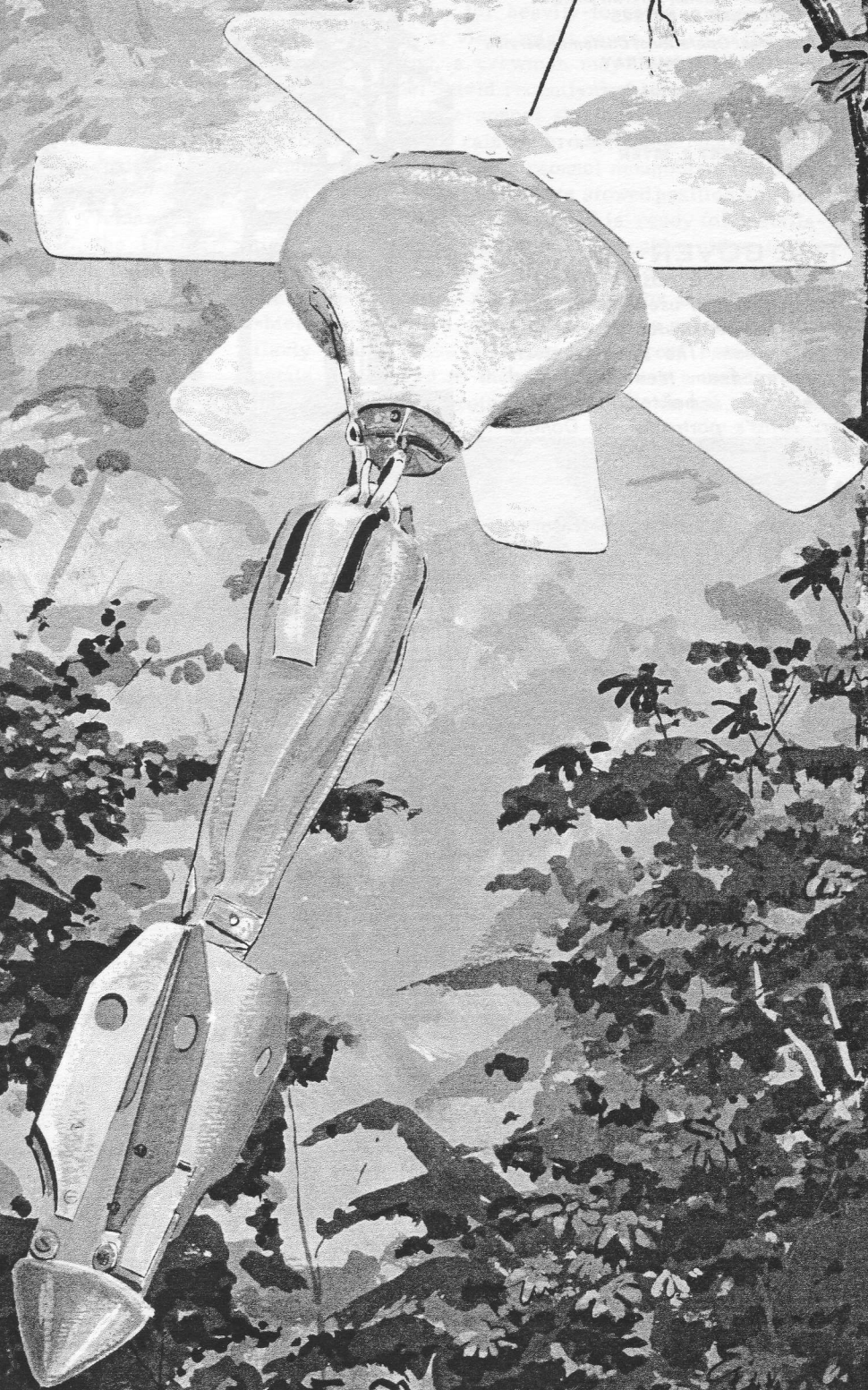


KAMAN

# *Rotor Tips*





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## ON THE COVER

A personnel shield has been developed by Kaman for use with the company's forest penetrator now widely used in Vietnam. The shield protects the rescuee from tree limbs and branches as he is hoisted to the helicopter. Artist's portrayal by Donald Tisdale, Service Publications.

## FEATURES

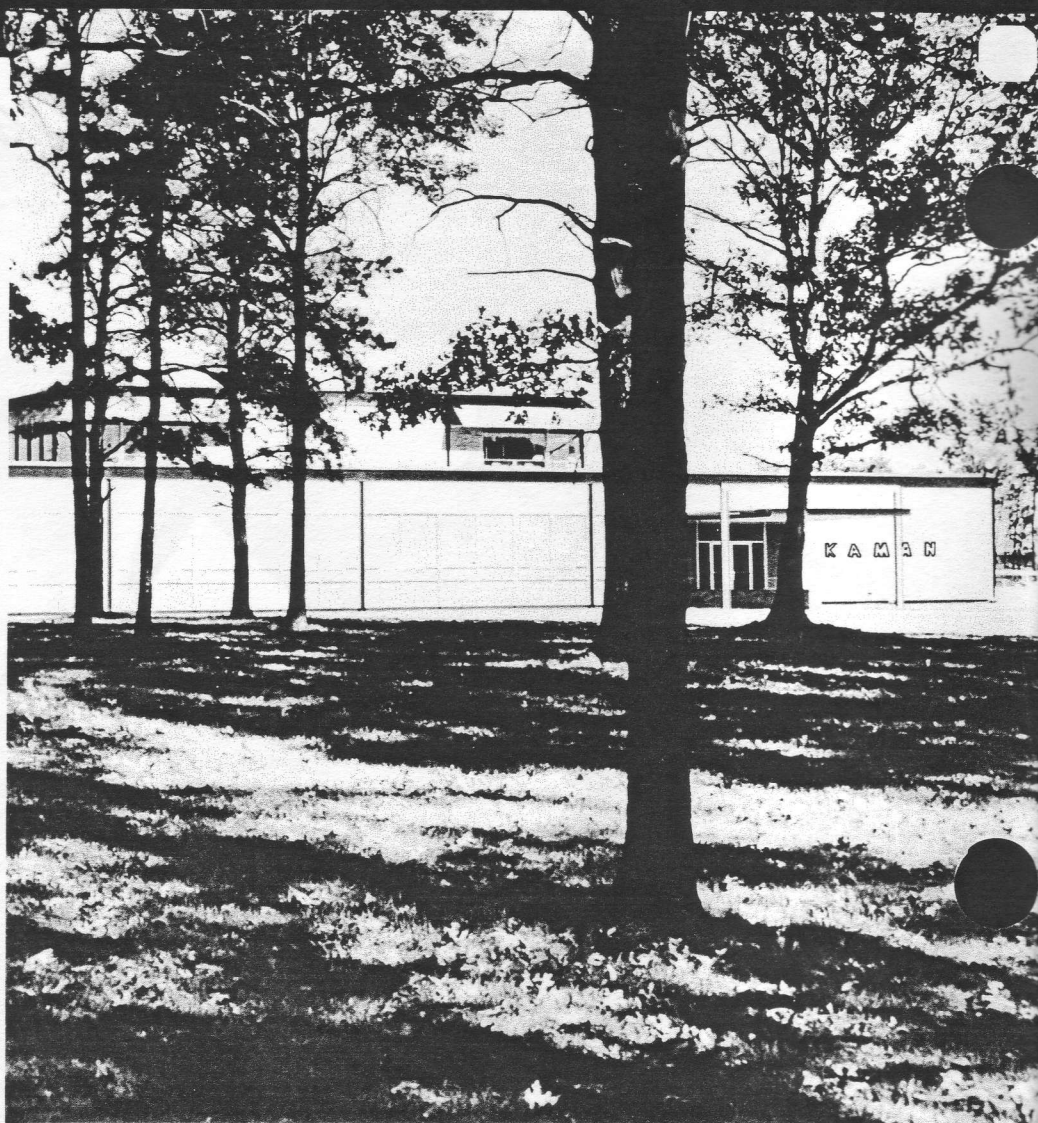
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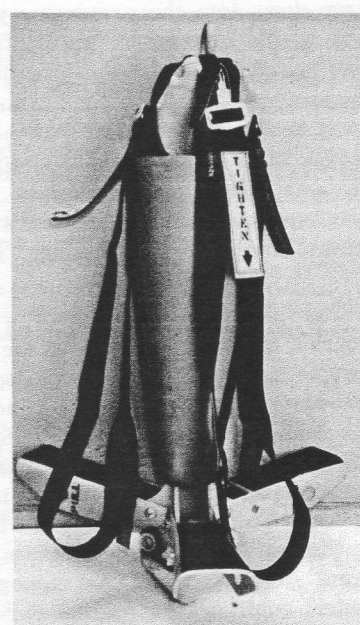
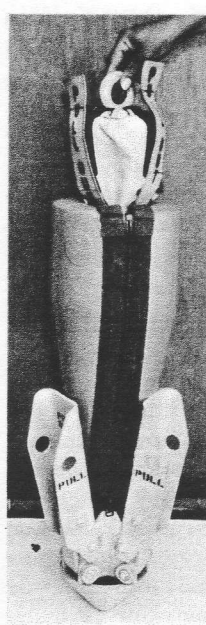
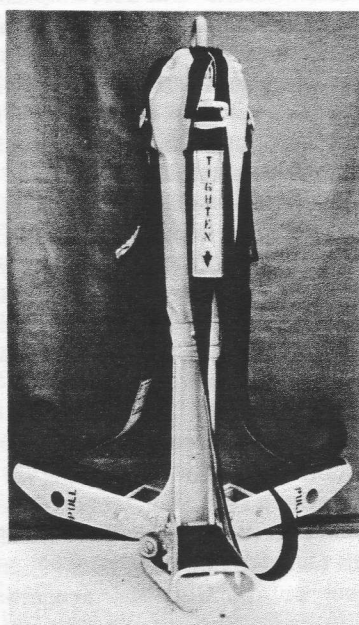
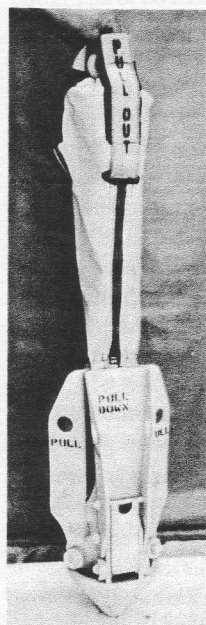
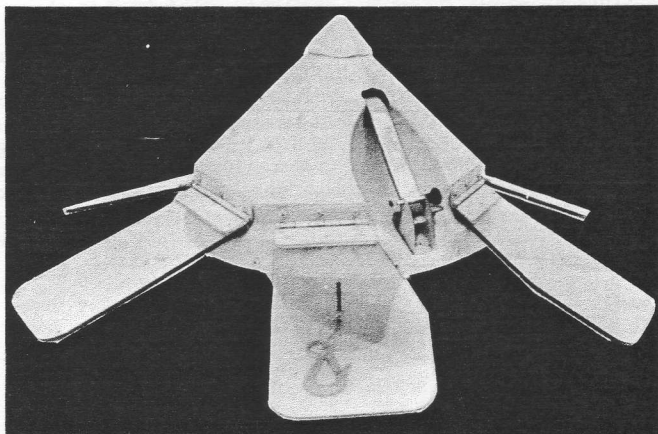
## **The Kaman Forest Penetrator Seat— Backbone for 'Universal Rescue System'**

Because of its proven success in Southeast Asia, helicopter crews have come to regard the Kaman Forest Penetrator Seat as a VIP of their rescue equipment. First introduced by the U. S. Air Force almost four years ago and immediately put to use in Vietnam by ARRS crews flying in the HH-43 HUSKIE, the forest penetrator is now widely utilized by other Services as well. Because of its comparatively small size, and universal adaptability, the penetrator is used in several different types of helicopters operating in that war-torn land. As a result, hundreds of downed airmen or wounded ground troops have been rescued or evacuated from jungle areas. Earlier, before the device came into use, helicopter crews sometimes found it extremely difficult, or even impossible, to lower a sling to a man on the ground. Quite often the sling would catch on the trees—some 200 feet high—which formed the jungle canopy. The penetrator, however, is designed to "thread" its way through the entwining branches to the ground.

Now, continuing its "Design For Rescue Program," Kaman has used an improved forest penetrator as the backbone for a universal rescue system which will give helicopter crewmen even greater latitude in selecting a rescue device to fit a particular topographical situation. For land relatively free of trees or treed areas which would not offer great resistance to a hoisted rescuee, the

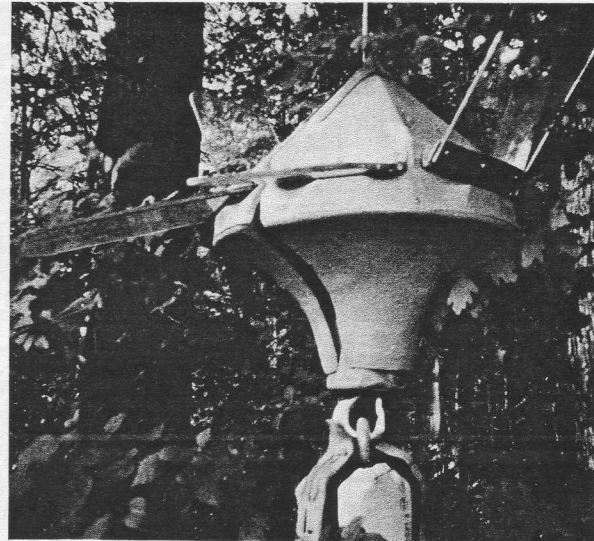
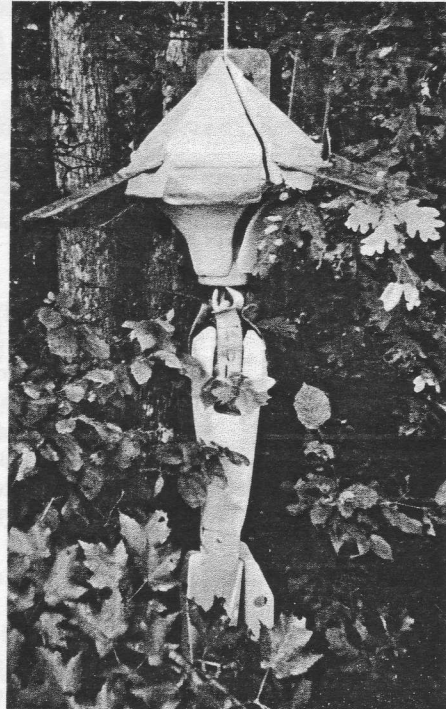
crewman can use the forest penetrator alone; for water rescue, he can use the penetrator with its easily-installed flotation collar; for heavily-forested areas, where limbs, branches or vines might cause injury to the person being hoisted, a crewman may use the penetrator with a Personnel Shield recently developed by Kaman.

The lightweight personnel shield is unique because it can be lowered or raised through thick jungle foliage without assistance from personnel mounted on the penetrator. When removed from its stowed position and held by the locking handle, the shield is ready for installation. It may be attached to the hoist cable, either inside the cabin or while the penetrator and cable are outside the cabin doorway. As can be seen by the photo, the shield comprises a cone-shaped cap, a somewhat similarly shaped base and six transparent petals. The petals are hinged to the shield in such a manner that they protrude in a protective position. In use, the per-



**IMPROVED FOREST PENETRATOR**--First photo, with new-type seats folded, safety straps enclosed within the protective cover and Velcro secured tabs exposed. It is lowered to the ground in this configuration. Second photo, safety straps are exposed and seats extended. Third photo, penetrator is in stowed position with flotation collar installed. Fourth photo, rigged for rescue with straps exposed and seats extended. It is lowered to the water in this configuration.





**THE PERSONNEL SHIELD**—"Rescuee," seated on forest penetrator and beneath protective personnel shield, is lifted from heavily wooded area. Second photo shows the penetrator and shield being lowered through heavy underbrush. Action of the hinged, transparent petals is shown in the closeup photograph at right. During testing, numerous helicopter pick-ups were made with the penetrator-shield combination. A crewman was lowered through entwining tree limbs and branches to the ground, aided the "injured survivor" onto the penetrator and mounted the device himself. With the safety straps in place and tightened, both men were then hoisted up through the trees to the helicopter. The vinyl-impregnated fabric bag used to protect the shield when not in use is shown in the right photo. A tab and Velcro strip combination secures the easily removable top. The bag and its contents can be placed in any position and one of the carrying handles—top, bottom or side—will still be readily available.



sonnel shield is lowered through the trees and, as a branch brushes against one or more petals, the force pushes the petals upright (parallel to the hoist cable). When the branch is passed, the petals automatically drop down into the protective position. On the return trip to the helicopter, the contoured shield makes its way through the trees while the petals, remaining in the protective position, fend branches or other obstacles away from the rescuee. The petals have some flex or spring built in but not enough to be forced down onto a rescuee. The transparency of the petals enables the hoist operator to see how many are mounted on the penetrator, and in combat rescues, whether friend or foe.

The primary objective of a rescue mission is, of course, the safe recovery of the rescuee. Provision of rescue equipment that is as simple as 1, 2, 3, to operate plays an important part in achieving this goal since the man on the ground waiting for rescue or evacuation may be injured, confused, pursued by the enemy or unfamiliar with the recovery devices used by helicopter crews. This 1, 2, 3, rule has been carefully observed by Kaman in development of its universal rescue system. Regardless of the topographical situation, or which configuration of the forest penetrator is being used, the rescuee: 1—Utilizes the safety strap; 2—Sits down; 3—Signals the hoist operator for lift-up to the helicopter. In the event it is necessary to lower a crew-

man to the ground, he mounts the penetrator in the same manner before the hoist cable is let out.

During development of the forest penetrator improvements mentioned earlier, emphasis continued to be placed on further simplification to aid survivors as much as possible. The seats have been redesigned for greater comfort and include larger finger holes with instructions to PULL stencilled beside them. Taking into account that a rescuee maybe hurried or confused, the bottom of the seats also carries instructions, PULLDOWN. The safety straps are instantly available to anyone using the penetrator—all he need do is pull sharply on the tabs plainly marked PULLOUT to completely extract the strap from within its fabric cover. Once the straps are exposed, the instructions TIGHTEN can be seen. When the rescuee has adjusted the straps as required, he is ready to be hoisted to the rescue helicopter.

Kaman Aircraft takes pride in the fact that the rescue equipment it manufactures is being put to such good use by helicopter crews operating all over the world. Every effort is made by the company to anticipate the various conditions and circumstances under which the equipment will be used, however, suggestions for further improvement or simplification are always welcome from the hoist operators, paramedics, aircrewmembers and others who daily use this equipment. Experience gained while operating under actual conditions is invaluable and, if shared, may save a life or lives at some future date.



## VETERAN ENLISTED PILOTS FLY UH-2'S

In the September 1967 issue of *Naval Aviation News* an article appeared under the heading "An Enlisted Man At The Controls." It traced the U. S. Navy's program for enlisted pilots from its inception in 1916 to its termination in 1948, the last time there would be an "AP" (Aviation Pilot) rate assigned in the Navy. Since then the number of enlisted pilots has been gradually decreasing as they either accepted commissions or retired. At the time of the magazine article only 34 of their kind remained and in March of this year, the number had shrunk to 30. BUT, as *Naval Aviation News* points out, "This hardy breed gives ground reluctantly." Their numbers may be diminishing but that doesn't mean they aren't still playing an active part in Naval Aviation. For example, at the present time three AP's are flying in UH-2's and daily engage in either helicopter rescue, test, utility, or other missions.

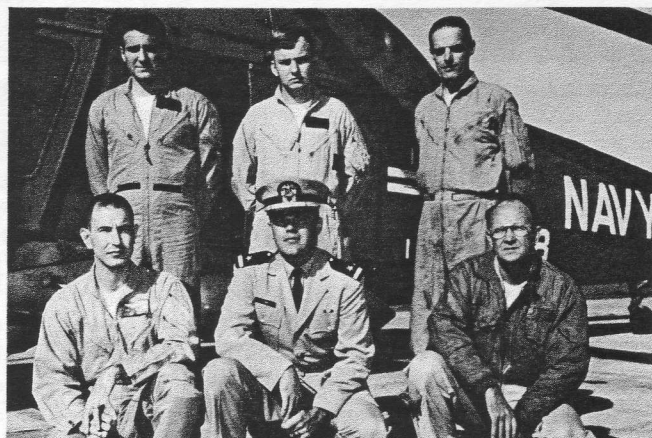
Two of these veteran pilots, Don L. Barnes, ACCS/AP, and George W. Shockey, ADRCS/AP, are attached to the SAR Unit at NAS Pensacola, Fla. The third AP flying UH-2's is John L. Culbert, AFCM/AP, who is attached to the Operations Department at NAS Miramar, Calif. Until a few months ago a fourth AP, Albert P. Metrolis, AFCM/AP, was also flying SEASPRITES with the Pensacola unit. He retired after "26 years and one day" in the Navy. In recognition of their years of service and unique position in Naval Aviation, Rotor Tips asked these four pilots to supply brief autobiographies and reports of their activities while flying the SEASPRITE. This information does not, of course, even begin to tell the whole story of their Naval careers which collectively cover more than a 100 years and many types of aircraft, missions and duties.

### ACCS/AP DON L. BARNES

Senior Chief Air Controlman "Barney" Barnes enlisted in the Navy on 14 January 1940 and received flight training at NAS Pensacola, Fla., from January to June in 1942. Temporarily commissioned from January 1944 to January 1950, he held the rank of lieutenant at the time he reverted to enlisted status. After reverting, Chief Barnes was stationed at Ellyson Field where, in 1950, he unofficially qualified in helicopters. In October and November of 1956 he received formal helicopter training and on 12 April 1965 qualified in the UH-2B at the Pensacola SAR Unit. He has been a member of the unit since November 1963.

Besides being one of the few remaining AP's in the Navy, Chief Barnes has another distinction—he was at PEARL HARBOR when it was attacked. The Chief was serving as a signalman aboard the destroyer tender USS Whitney at the time and, ironically, was due to leave that morning for flight training in the States. In the confusion after the Japanese struck, his orders were "sort of lost" for sometime, a fact he still grumbles about. Chief Barnes' other complaint is that when the "ruckus" started, he was a "little slow to react and wound up on top of the pile of men on the bridge instead of on the bottom!" The Whitney joined other Navy vessels in firing at the strafing and bombing planes flying over the harbor but was not attacked—the enemy was more interested in the big ships than the comparatively tiny Whitney.

Chief Barnes has a total of 5410 flight hours, with 175 of these flown in the UH-2B. The following is a brief account of his rescue or evacuation activities while flying the SEASPRITE:



**RESCUERS AND RESCUED**—Two AP's headed the UH-2 crew which rescued Ens James A. Clark after he ejected from his crippled aircraft and landed in the water 23 miles from NAS Pensacola. Front row, left to right, are Lt D. R. Piatt (MC), flight surgeon, Ensign Clark, and Senior Chief Barnes, who piloted the SEASPRITE. Rear row, ADR3 T. Emma and ADR3 J. L. Godfrey, crewmen and Master Chief Metrolis, who was copilot. In photo below, Senior Chief Shockey checks the controls on a UH-2 SEASPRITE before taking off on a mission. Beside him, in the copilot's seat, is ADR3 J. L. Godfrey. (USN photos)



1965 \*20 May - Pickup of two pilots who had engine failure in H-34 and autorotated into surf at Pensacola Beach. \*1 June - Pickup of pilot of T-28 that crashed. 14 June - Participated in search for two drowning victims. 19 June - Participated in two-day search for missing T-28. Was one of two helicopters which located wreckage. \*31 Aug - Pickup of two pilots from crashed T-34. 1966 2 Jan - Participated in successful search for missing boy. 13 June - Responded to distress call from H-34 forced down by engine failure. 13 July - Located overturned sailboat and directed surface units to pick up two people. \*18 July - As pilot of an H-2 on cross-country flight, was diverted by Coast Guard rescue coordinator to fishing vessel "Glen Roberts." Picked up patient suffering from perforated ulcer and delivered him to hospital. Copilot and plane commander was LCdr J. T. Denny. 24 Aug - Participated in search for small child adrift in Gulf on plastic float. Child picked up by boat. 1967 9 Aug - Participated in search for capsized boat. Directed Coast Guard to scene. \*31 Aug - Was copilot on night mission to pick up injured Navy crash crewman. Pilot was LCdr J. T. Denny. 11 Oct - Participated in three-day search for two persons missing in boat accident. Both bodies located and recovered. \*11 Dec - Pickup of pilot who ejected from T-2B 23 miles south of NAS Pensacola and landed in Gulf of Mexico. UH-2 copilot was AFCM A. P. Metrolis. 1968 20 May - Participated in successful search for pilots of two T-28's which collided in mid-air near Brewton, Ala. Both SEASPRITES from the unit took part.

\*Denotes more than routine effort required in performing the mission, although everything went smoothly. All other incidents listed are what the Pensacola SAR Unit describes as "run of the mill."



#### AFCM/AP JOHN L. CULBERT

Master Chief Aircraft Maintenanceman Culbert enlisted in the Navy on 6 December 1940 and graduated from Aviation Mechanic School, Jacksonville, Fla., 3 July 1941. His class was the sixth to graduate from the school since its commissioning. Chief Culbert graduated from flight school as AP1/c, 21 March 1947 and from helicopter school 7 April 1954. He accumulated about 10 hours in a Kaman HTK and in 1957, while stationed at NAS North Island, made a few flights with AP's testing HOK's at the O&R test line. The chief made his first UH-2B flight in March 1964 with Kaman test pilot Ray McMillan.

Chief Culbert has a total of 6178 flight hours, 727 of them in helicopters. He has accumulated approximately 150 hours in the UH-2B. While he has made no rescues with the SEASPRITE, he has engaged in test work which could be responsible for the saving of many lives in the future. For several years Chief Culbert advocated Navy use of helicopters to fight aircraft fires. In July 1965, largely due to his interest and the cooperation of Fire Chief Hubert at NAS Miramar, the air station was selected to evaluate the use of light water in combating aircraft fires from a helicopter. Chief Culbert was selected to pilot the UH-2B used during the tests conducted by Dr. Tuve and his team from the Naval Laboratory. The evaluation was very successful, the veteran pilot said.

Chief Culbert, who will have 30 years service in December 1970, said he is thinking of making the Navy a career!

#### ADRCs/AP GEORGE W. SHOCKEY

Senior Chief Aviation Machinist's Mate Shockey enlisted in the Navy on 19 February 1941 and received flight training at NAS Pensacola from April 1943 to November 1944. He served as a commissioned officer from January 1944 to January 1950 and held the rank of lieutenant (junior grade) when he reverted to enlisted status. Chief Shockey was recommissioned as a lieutenant (junior grade) in July 1955 and served as a commissioned officer until July 1964 when he reverted to enlisted status. He held the rank of



AP MEETS SEASPRITE—Master Chief Culbert, second from left, is shown during UH-2 introductory briefing by Kaman test pilot Ray McMillan, kneeling. LCdr Jim Gore is on the left and LCdr R. J. Wickman on the right. (USN photo)

lieutenant at this time. He received helicopter training from September 1962 to February 1963, qualified in the UH-2A while attached to HU-2 (now HC-2), NAS Lakehurst, N. J., and made his first H-2 deployment on the USS Independence. Chief Shockey has been stationed at NAS Pensacola since July 1964. He has accumulated 6650 flying hours with 404 of these logged in the UH-2A/B. The following is a brief account of his rescue and evacuation activities while flying the SEASPRITE:

1965 15 May - Participated in search for drowning victim. Body recovered. 16 May - Participated in search for missing SCUBA diver. Body recovered. 13 June - Participated in night search for two drowning victims. 16 Sept - Recovered pilot from crashed T-28 and delivered him to hospital.

1966 \*5 Feb - Evacuated victim of heart attack from fishing boat in Gulf of Mexico and delivered him to hospital. 17 April - Responded to distress call from boat on fire. Directed small boat to scene to pick up personnel. 12 June - Responded to distress call from sinking shrimp boat in Gulf and directed Coast Guard HU-16E to scene. 13 June - Participated in search for disabled small boat. Directed Coast Guard to assist. 6 Aug - Participated in search for disabled sailboat. 8 Aug - Responded to distress call from overturned sailboat. Directed Coast Guard to assist. \*16 Aug - Pickup of pilot from crashed T-28. 30 Sept - Participated in night search for missing boat. \*30 Oct - Copilot on 200-mile night mission to deliver medical supplies for automobile accident victim. Supplies credited with saving life of victim. \*1 Dec - Pickup of two pilots from T-34 crash.

*continued on page 21*

### Former Kaman 'Rep' Dies

Edward J. Polaski, supervisor of service engineering in the Customer Service Department at Kaman Aircraft, died recently at the age of 43. Mr. Polaski began his 17-year career at Kaman with the Manufacturing Department and later transferred to Customer Service as a field service representative. In this capacity, Mr. Polaski served at several Naval Air Stations in the United States and Far East during the HTK and HOK/HUK programs. Later, as an instructor, he conducted classes in HH-43A/B maintenance for USAF personnel attending contractor courses at Kaman's main plant in Bloomfield, Conn. He was subsequently promoted to assistant supervisor of engineering and then to supervisor. Due to his past experience, Mr. Polaski brought to this position a wealth of diversified knowledge and "know-how" regarding aircraft maintenance and integrated support concepts. He was admired throughout the Kaman Aircraft Division and by his many customer contacts for his practical, direct approach to problems, no matter how complex in nature.

Mr. Polaski was the author of "The Synchropter," a technical article which first appeared in Kaman Rotor Tips and then was reprinted in numerous other magazines including two foreign-language publications. The article is still in wide use as a training aid.

A native of Duryea, Pa., Mr. Polaski had been associated with aviation for 25 years, 17 of these being devoted to helicopters. From 1943 to 1945 he served in the USAAF. He was a licensed mechanic and ground instructor and attended the University of Tennessee, as well as the Spartan School of Aeronautics where he completed an Airline Service Maintenance Course. A member of the American Helicopter Society, the Kaman Management Club, and the Kaman Employees Club, Mr. Polaski resided in Thompsonville, Conn. He leaves a wife and four sons.



EDWARD J. POLASKI



# Timely Tips

## Maximum Directional Control (UH-2)

To obtain maximum directional control, rig the controls in accordance with the MIM, then place the directional control pedals in a side-by-side position. Install the tail rotor rigging protractor on each blade in turn. The following angles should result:

UH-2A/B without H-2	Plus 4.5 degrees
AFC93	$\pm 1/2$ degree
UH-2A/B with H-2	Plus 6.6 degrees
AFC93	$\pm 1/2$ degree
UH-2C	Plus 3.5 degrees
	$\pm 1/2$ degree

For further information, refer to H-2 IAB130.

W. J. Wagemaker, Service Engineer

## IPB Applicability (UH-2)

When the UH-2C basic airframe Illustrated Parts Breakdowns were developed, the Navy elected to procure separate IPB's for major components coded "P1R." Components coded in this manner are repairable only at a major Navy rework facility. This meant that only those components coded "P1L" would be covered in the basic airframe IPB's. P1L components are those which may be repaired at squadron level. Since overhaulable component parts details are not covered in the UH-2C airframe IPB's, operating activities as well as Navy rework facilities should refer to their UH-2A/B IPB's for breakdowns of those components which are common to all three models. (A reference opposite the P/N will allow determination of component applicability.) UH-2C main and combining gearbox manuals are currently in process and should be available by early Fall, 1968. Other component manuals will probably be issued from then through the end of the year, pending procurement action by the Navy.

R. H. Chapdelaine, Supervisor, Service Publications

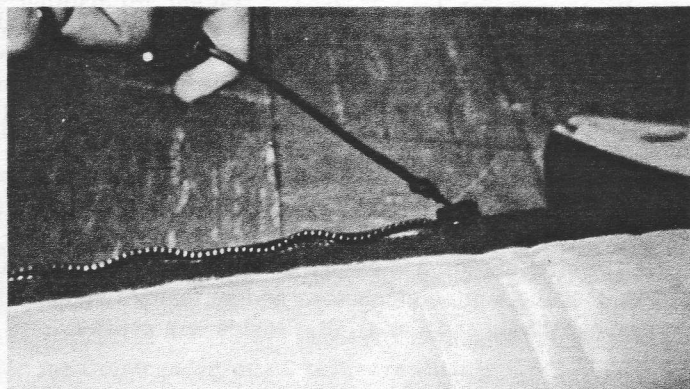
## Rotor Hub Damage Classification (UH-2)

Paragraph 2-6 (NEGLIGIBLE DAMAGE) in NAVWEPS 01-260HCA-3 is to be revised in a future handbook "Change." The information, presented here in quotes, will change the last sentence to read: "Any damage in areas labeled Zone A that penetrates the root of the shot-peened dimpled surface is cause for replacement. Nicks and scratches in areas labeled Zone A which do not penetrate the root of the shot peen dimples are considered negligible and may remain. No rework is permissible in areas labeled Zone A."

R. H. Chapdelaine, Supervisor, Service Publications

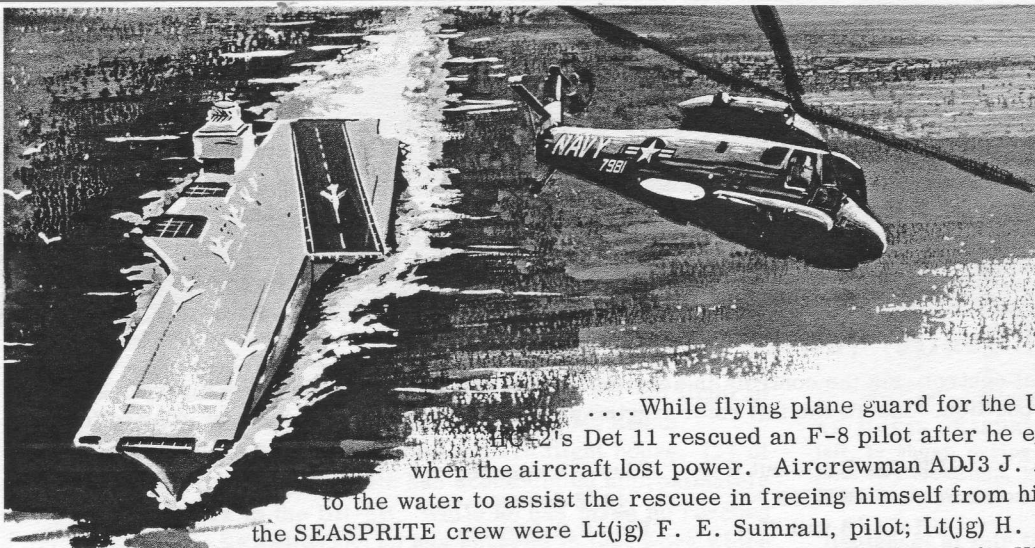
## Forest Penetrator Float (HH-43, UH-2)

The float, P/N K26-1017-1, used on the forest penetrator rescue device is composed of a closed-cell sponge which cannot absorb water even if the painted surface is nicked, scratched or gouged. The surface has been painted so that the rescuee will have a better chance to see it. Maintenance is limited to zipper lubrication and fresh water rinses to flush off salt water. To lubricate the zipper, use beeswax or petroleum jelly, engage the zipper and work up and down to be sure all parts are coated. If the zipper appears to jam when closing, try the following method: Attach a three or four-inch leather thong to the zipper handle, then apply closing pressure while pulling at an angle to the zipper as shown in the photo.



C. D. Morse, Service Engineer





## SEASPRITE ACTIVITIES

... While flying plane guard for the USS Intrepid, a UH-2 from HC-2's Det 11 rescued an F-8 pilot after he ejected 16 miles from the ship when the aircraft lost power. Aircrewman ADJ3 J. A. Vanderheiden was lowered into the water to assist the rescuee in freeing himself from his life raft. Other members of the SEASPRITE crew were Lt(jg) F. E. Sumrall, pilot; Lt(jg) H. B. Clark, copilot; and L. B. Klinehoffer, AT1. ... A UH-2C crew from HC-1's Det 64 aboard the USS Constellation rescued the pilot of an F-4 after it settled into the water near the giant carrier. The SEASPRITE, flying plane guard at the time, was over the survivor within seconds. When he was safely aboard, an intensive search was conducted for the other occupant of the downed aircraft but was unsuccessful. LCdr K. J. Rieder was pilot of the UH-2 and Ens C. J. Jamaison was copilot. Crewmen were Michael W. Crosley, ADJ2 and Brooke P. Drexler, AMSAN. ... In a mercy mission, a UH-2 crew from HC-2's Det 11 aboard the USS Intrepid utilized a litter to pick up an 84-year-old stroke victim from a cruise ship in Guantanamo Bay, Cuba. He was taken to the Naval hospital for treatment. Aboard the SEASPRITE were LCdr Billy G. Blackwelder, pilot; Lt D. L. Matthews, copilot; Larry B. Klinehoffer, AT1, and Donald N. Davis, AE3, crewmen.

... A pilot who ejected after his A-7 went into an uncontrollable spin, landed without incident in an area studded with short pines. He was picked up by a UH-2 from NAS Cecil Field, Fla. SEASPRITE pilot on the 150-mile flight was Lt Richard F. Kincanon and the crewman was S. P. Udice, ADJ2. ... In a similar mission a few months ago, Lieutenant Kincanon and his crew from the Cecil Field SAR Unit picked up an A-4 pilot who had ejected and landed in an open field. UH-2 crewmen with Lieutenant Kincanon were B. Merck, ADJ3, and A. Beauchamp, ADJ1.

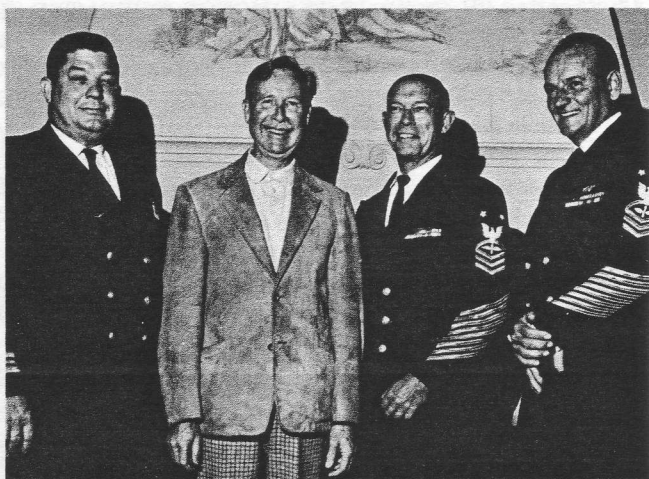
... Flying through darkness and heavy rain showers, a UH-2 crew from the SAR unit at MCAS Beaufort, S. C., rescued a staff sergeant from an island in Port Royal Sound. The 40-minute, pre-midnight search was conducted by UH-2 pilot Capt Hurston Hall and his crewmen, SSgt Arthur R. McCann and LCpl William H. Thomas. The rescuee was hoisted to the SEASPRITE without incident despite the poor visibility and winds gusting to 15 knots. He had made it to the island several hours earlier after the engine on his boat quit. ... In another mission, the same crew airlifted the son of a Marine sergeant from the air station to the Charleston Naval Hospital. The patient, who was accompanied by B. A. Kersetter, HM3, had suffered multiple fractures of the back in a swimming accident.

The two occupants of a light civilian plane that ditched in shallow water on the New Jersey shore were picked from the beach afterward by a UH-2 SEASPRITE crew from HC-4 at NAS Lakehurst, N. J. The survivors, who had been assisted by beach residents, were taken to the Barnegat Coast Guard Station where an ambulance was waiting. A precision approach was made over the trees and wires to a landing in the parking lot. Lt Charles D. Craft was pilot of the UH-2 and Lt(jg) Earl A. Gregory, Jr., was copilot. Crewmen were Arthur A. Maiwald, ADRAN, and Stephen R. Szeglin, ATN2. ... In another HC-4 mission, a UH-2 crew located a downed Marine helicopter which had made a precautionary landing in a small clearing, and directed crash and salvage vehicles to the scene. Lt Dick Johnson was SEASPRITE pilot and the copilot was Lt Earl Gregory. Crewmen were ADJ3 Jim McDowell and ADJ3 Tony Schmaltz.

Operating under instrument conditions at night, a UH-2 crew from HC-2's Det 62 aboard the USS Independence rescued a pilot who ejected from an RA-5. The aircraft had just been catapulted when it leveled off and then nosed over into the water. The survivor was plucked from the three-foot, wind-whipped waves without incident. Lt F. D. Wiggins, SEASPRITE pilot, said that all crewmembers did their respective jobs in an outstanding manner. With Lieutenant Wiggins were copilot Lt(jg) J. A. Bonner, and crewmen L. E. Skrine, ADJ1, and E. D. Thompson, ADJ3. ... In another rescue carried out by Det 62, a sailor who had been blown overboard by a jet blast was rescued by a UH-2 flying plane guard near the carrier. Lieutenant Wiggins hovered the SEASPRITE over the man in the water and the rescue seat was lowered; however, the survivor began floundering. R. C. Locke, AMS3, an aircrewman, went to his aid and helped the survivor onto the seat, then got on himself and both were hoisted aboard. The rescuee was semiconscious and suffering from head and other injuries. UH-2 hoist operator was A. G. Roberts, ATN2, and Ens G. R. Boyles was copilot. ...



## HC-1 VETERANS COMPILE 100 YEARS SERVICE



**THE SECOND HUNDRED YEARS**—Mr. Arthur O'Connell, co-star of ABC's television series "The Second Hundred Years," greets LCdr Arthur W. Snively, AFCH Harry V. Haney, and AFCH Max T. Woodcock. The three Navy men, members of HC-1, have completed a combined total of 101 years military service and are wished success in the second hundred by Mr. O'Connell. (USN photo)

NAS IMPERIAL BEACH(Public Affairs Office)—Over 100 years of Naval Service, and still going strong!

This is the combined achievement of three members of Helicopter Combat Support Squadron One, NAS, Imperial Beach, Calif. Combining their years of service for a total of 101 years are: Lieutenant Commander Arthur W. Snively (30 years), Master Chief Aircraft Maintenceman Max T. Woodcock (36 years) and Master Chief Aircraft Maintenceman Harry V. Haney (35 years).

In April 1938, Seaman Second Class Snively walked through the gate of Naval Training Center, San Diego, heading for his first duty station, the battleship USS Mississippi. While aboard the Mississippi he was promoted to Gunner's Mate Third Class and assigned to the plane catapult. "That was in the days when they used to launch aircraft with a powder charge," he recalls.

As his taste for flying increased he applied for flight training and was among the first "right arm rating" to be accepted. On completion of flight training in late 1941 he became an enlisted pilot. "At that time we had to do all our own maintenance in addition to being a pilot, we didn't have maintenance crews like we have today," he said.

From that point on, it has been an upward climb to the rank of Lieutenant Commander. Lieutenant Commander Snively, now the squadron's administrative officer, has flown practically every type of aircraft in the Navy and when asked what type of aircraft he would most like to fly before he hangs up his uniform for the last time, he settled back in his chair and with a gleam in his eye, said "The Apollo Rocket!"

AFCH Woodcock began his career in October 1932 at the Naval Training Center, Great Lakes, Ill. The first aircraft he completely dismantled and reassembled was an old biplane with a tail skid and no brakes. Today, he serves as the Leading Chief (LCPO) for a squadron that deploys its detachments around the world and uses some of the most expensive, sophisticated equipment in the Navy's arsenal. He has served as LCPO for numerous other squadrons besides HC-1. He was LCPO at VP-18, VP-6, VP-32, VPMS-6 and also for the Commander of

Naval Forces for Korea at Seoul. One of his squadrons was involved with Operation Crossroads when the first atomic device was detonated. He was a crewmember of the first aircraft to fly near the detonation site of the underwater explosion, and remembers looking out the window to see the USS Arkansas—one of the largest ships in the fleet—standing straight up on her stern from the force of the explosion, "...and it was only a small size bomb, too!"

AFCH Haney, now assigned as operations chief, began his career in August 1933 when he joined the Navy Reserve. He was called to active duty in January 1941 shortly after the war broke out. The first aircraft he worked on was the old N3N-3, a biplane built by the Navy at the Naval Aircraft Factory. By 1943 he was in charge of aircraft maintenance at NAS Sangle Point and working on several different types of combat aircraft being used by the Fleet. Since then, he has seen duty from NAS Hutchinson in Kansas to NAS Agana, Guam.

After more than 100 years of Naval service, what is it that these three distinguished Navy men would like to pass on to those who follow in their footsteps? The answer to this question from all three was simple and direct: the educational opportunities. "The educational opportunities available to our young seamen and airmen coming in the service are fantastic. They don't compare at all with what was available back then," Lieutenant Snively said. AFCH Haney added, "You can't compete in today's skills with yesterday's education. Today's Navy is so far more complex and demanding than it was when I first joined." AFCH Woodcock commented that the quality and availability of service schools has improved remarkably since he first joined. "The competent technical training available to Naval personnel is invaluable."

As they begin their second 100 years, isn't it time we consider realizing the potential we have in our first hundred?

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### UH-2 Carries Crabby Passengers

A UH-2 crew from NAS Whidbey Island, Wash., recently had the rare distinction of transporting the crabbiest passengers ever found in a Navy helicopter. There were no complaints, however, for the unusual flight was in a very good cause—assisting the handicapped.

The mission started when Commander Fleet Air. Whidbey, received a request for helicopter transportation from Work Opportunities, Inc., in Lynnwood, Wash. The organization, which provides employment for mentally retarded and physically handicapped persons, had to move 300 live crabs 110 miles in a big hurry. The rush was to have fresh meat for a crab feast being held to raise money for a building to house Work Opportunities. Permission was readily given for the flight so the UH-2 picked up the crusty crustaceans and headed for Lynnwood.

Afterward, Cdr William R. Matthews, the pilot, said, "Generally it feels like the UH-2B moves pretty fast. But it sure seemed slow with 300 sets of pincers in boxes behind me." Other crewmembers were Cdr Robert L. Wheeler, copilot, and ADR 2 Michael F. Connell, crewman.



# 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-2A/B Only) WHAT IS THE CORRECT HARDWARE STACKUP FOR THE HINGES ON THE CROWN PANEL LH AND RH NACELLE DOORS?

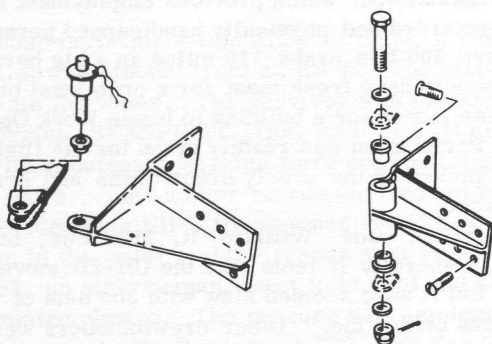
**A.** Except for the bushings, the hardware stackup depends on the hinge pins used. Initially, bolts were used but they have been superseded by lok-pins. Use of lok-pins eliminates the requirement for nuts, washers and cotter pins; but bushings must always be installed. Lok-pin part numbers are listed in NAVAIR 01-260HCA-4-6 under the index numbers for the superseded bolts. (The crown panel illustration in the -4-6, and the text in NAVAIR 01-260 HCA-2-2, will be revised to reflect the lok-pin arrangement.) The accompanying illustration shows the upper hinge hardware on the RH door. On the left is the lok-pin and related hardware; on the right is the superseded bolt and its hardware. Whenever servicing any door, door latch, or hinge, take extra precautions because if the hinge stackup is not correct, the door could possibly open in flight. The following list reflects the latest parts requirements for both nacelle doors:

## RH DOOR (Air Inlet) P/N K636081-9

<b>UPPER HINGE:</b>	<b>LOWER HINGE:</b>
Lok-pin, P/N BLS3BA06S	Lok-pin, P/N BLS3BA19S
Bushing, P/N NAS538-3-14	Bushing, P/N NAS538-3-50
	(2 required)
Lockwire, P/N MS20995CU20	Lockwire, P/N MS20995CU20

## LH DOOR (Transmission Access) P/N K636109-3

<b>UPPER HINGE:</b>	<b>LOWER HINGE:</b>
Lok-pin, P/N BLS3BA06S	Lok-pin, P/N BLS3BA19S
Bushing, P/N NAS538-3-8	Bushing, P/N NAS538-3-50
	(2 required)
Lockwire, P/N MS20995CU20	Lockwire, P/N MS20995CU20



H. Zubkoff, Service Engineer

**Q.** (Applies UH-2A/B) IF THE MOTOR-OPERATED SDG OIL SHUTOFF VALVE INDICATES "ON" OR "OFF" WHEN THE SWITCH IS IN THE OPPOSITE POSITION, WHAT SHOULD BE DONE?

**A.** Replace the valve. The decal, located within the valve, is bonded onto the ball valve shaft and can change position or slip due to deterioration of the bonding agent. If the decal slips, it does not physically interfere with the operation of the valve but verification of proper operation is necessary. Since verification involves draining oil and disconnecting lines, it is recommended that the valve be replaced. Valves now being manufactured no longer have the decal; the words ON and OFF are etched into the shaft.

H. Zubkoff, Service Engineer

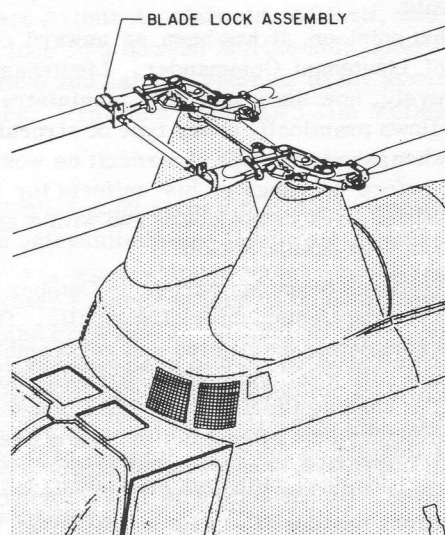
**Q.** (Applies UH-2A/B) CAN THE NEW HIGH-TEMPERATURE CONDUIT USED IN THE FUEL CONTROL TELEFLEX ASSEMBLY BE VISUALLY IDENTIFIED?

**A.** Yes, the new conduit can be visually identified by part number and external covering. The new high-temperature conduit is identified as P/N 24018 and has a strip-wound stainless steel cover. The old, low-temperature conduit, P/N 22696, has a shiny black plastic cover which, in appearance, resembles rubber. For further information concerning these two assemblies, refer to the Timely Tips page of the November-December, 1967 issue of Kaman Rotor Tips.

H. Zubkoff, Service Engineer

**Q.** (Applies HH-43B/F) WHEN SHOULD THE BLADE LOCK ASSEMBLY, P/N K704021-101, BE INSTALLED?

**A.** The blade lock assembly should be used whenever the blades are folded or high winds, 36 knots or greater, are anticipated. The lock assembly, shown in the illustration, is designed to prevent the blades from contacting each other when they are in the folded position. For this reason, it is suggested that the lock assembly be installed immediately after blade folding has been accomplished. Then, if helicopter is towed or a sudden wind gust develops, this will prevent the blades from making contact with each other. The blade lock assembly must be installed along with the high-wind mooring procedures called out in T. O. 1H-43(H)B-2.



R. A. Reynolds, Service Representative



**Q.** (Applies UH-2) COLLAR ASSEMBLY, P/N K616275-1, USED IN AFC 111, CONSISTS OF A DELRIN RING BONDED TO A STEEL COLLAR. IF THEY SEPARATE, CAN RE-BONDING BE ACCOMPLISHED?

**A.** Yes. If the Delrin separates from the collar, re-bonding can be effectively accomplished using the following procedures:

1. Clean and abrade the surfaces to be bonded, using emery cloth, grade 180 or finer.
2. Thoroughly clean both bonding surfaces with air or any type of oil-free solvent.
3. Brush an even coat of EC2126 adhesive (MIL-A-5092, TYPE 3) onto the Delrin and steel bonding surfaces; air-dry for 10 to 15 minutes.
4. Apply a second coat of EC2126 adhesive to the surfaces; air-dry until very tacky.
5. Position the Delrin onto the collar and use C-clamps to obtain 10 to 20 psi for the duration of the cure period. (Several collar assemblies may be placed face to face and clamped together during cure period.)
6. Cure in an oven or under heat lamps for 60 minutes between 250°F. and 270°F.

*R. A. Reynolds, Service Representative*

**Q.** (Applies UH-2) WHAT IS THE CORRECT PART NUMBER FOR THE RESCUE HOIST HOOK?

**A.** The rescue hoist hook, as listed in NAVWEPS 01-260 HCA-4-3, Figure 8, index numbers 66 and 76, is P/N ACEL5-952-1, FSN 9Z4030-863-8596. This hook, which is painted black to reduce glare, is used on UH-2A, UH-2B and UH-2C aircraft and will be incorporated into the UH-2C IPB by a future Change.

*C. D. Morse, Service Engineer*

**Q.** (Applies UH-2) SHOULD THE K604802 RIGGING FIXTURE BE USED WHEN RIGGING THE DIRECTIONAL CONTROL SYSTEM?

**A.** No. It is no longer necessary to use the rigging fixture when rigging the directional control system. It was found during the research which resulted in IAB #130, that optimum rig could be provided without the fixture. The latest procedures, which were introduced by H-2 IAB 130, Part 2, have been incorporated into NAVAIR 01-260HCA-2-2.1, and if followed, will provide maximum available directional control.

*W. J. Wagemaker, Service Engineer*

**Q.** (Applies UH-2) HOW MANY STRAPS MAKE UP A TENSION-TORSION ASSEMBLY IN A MAIN ROTOR BLADE RETENTION ASSEMBLY?

**A.** There is no requirement for a set number of straps. There is a requirement for a total compressed height (or thickness) of 0.870 to 0.880-inch for the whole tension-torsion assembly. Individual strap thickness should be between 0.012 to 0.008-inch and it usually requires approximately 88 straps to make a tension-torsion assembly. Naturally, if all the straps in one assembly are on the low side of the tolerance, the number of straps would increase but the total compressed height would be the same.

*W. J. Wagemaker, Service Engineer*

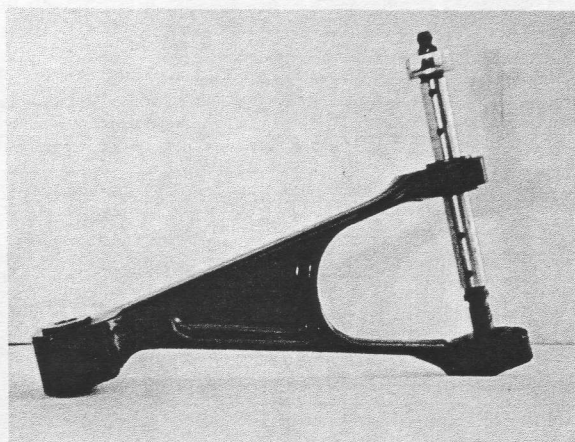
**Q.** (Applies UH-2) HOW MUCH GREASE SHOULD BE PACKED INTO TAIL ROTOR DRIVESHAFT COUPLINGS?

**A.** The required amount of grease, Specification Mil-G-21164, to be packed into tail rotor couplings is as follows: 0.04 to 0.06-pound which is equivalent to 4 to 6 LEVEL standard teaspoons or 1-1/3 to 2 LEVEL standard table-spoons. It is very important that the correct amount of grease be used and that it be evenly distributed on each side of the coupling hub. Excessive amounts of grease will not only cause overheating, but eventually the grease will be thrown out. Coupling overheating due to excess grease will also cause the temperature tapes to discolor. To avoid the tendency to overfill, it is recommended that minimum rather than maximum levels be used.

*R. J. Trella, Service Engineer*

**Q.** (Applies UH-2) IF THE TAIL LANDING GEAR TORQUE ARMS, P/N 611682-101 OR 611609-101, DO NOT EASILY SLIDE INTO POSITION DURING INSTALLATION, WHAT COULD BE THE REASON?

**A.** The most probable reason is that the fork ends are bent and the holes are misaligned. In most cases, this is due to rough handling or improper installation procedures. If misalignment of the holes is suspected, use the 611681-1 pin as an alignment guide. Hold the torque arm so the fork ends are perpendicular to the ground. Insert the pin into the hole in the upper fork and let it slide down to the opposite fork; the pin must slide directly into the lower hole. The accompanying photo shows the pin inserted into a torque arm. Notice that the pin cannot enter the lower hole. This torque arm has a bent fork and MUST not be used on an aircraft. Obviously, if the holes were only slightly misaligned, the pin could be forced into the opposite hole but this should not be done. Correct installation procedures dictate that no torque be applied to the 611681-1 pin or the AN310-6 nut; the pin should turn freely even after cotter pin insertion. If torque is applied to the nut, it will not only restrict torque arm movement but could bend an otherwise perfect part. For further installation instructions concerning tail wheel components, refer to NAVAIR 01-260HCA-2-2.



*J. Bycenski, Group Leader, UH-2 PAR/Mod*



# Southeast Asia

When the UH-2 SEASPRITE from HC-7's Det 104 landed at 0240 on the USS Jouett, it marked the end of a rescue mission which began shortly after midnight aboard another SAR ship. In between times the helicopter crew had been the target of bullets, flak and missiles; made an unsuccessful attempt at a hoist pickup; hit a tree while flying in total darkness; and landed three times in rice paddies while under enemy fire. At mission's end the UH-2 was damaged, vibrating and missing a door but the crew was miraculously unhurt, and two very relieved pilots had been snatched from the enemy in a last minute save that rivaled the very best in fiction writing.

The mission started at 0022 when Lt(jg) Clyde E. Lassen lifted the helo off the deck of the USS Preble in response to a SAR alert and headed through the darkness for the enemy shore. With him were Lt(jg) C. L. Cook, the copilot, and aircrewmen Bruce B. Dallas, AE2, and Donald West, ADJ3. Waiting for rescue were two pilots who had ejected from their F-4 after it was struck by a surface-to-air missile. They had landed about 20 miles inland on a small, steep hill which was flanked by villages and rice paddies on three sides and a mountain range on the other.

As the SEASPRITE neared the area, two "balls of flame" thought to be SAM's streaked by the helicopter. A minute later the flaming wreckage of the F-4 was spotted and the position of the survivors located. Lieutenant Lassen landed the helicopter in a rice paddy below the hill and 200 feet from the downed pilots, but as soon as it touched down the waiting enemy opened up with small arms and automatic weapons fire. Taking off, the UH-2 orbited the area and aircraft flying cover for the rescue mission began dropping flares. The survivors were between two large trees about 150 feet apart and other fairly tall trees were also in the area. As Lieutenant Lassen approached a 50-foot hover between the trees, Petty Officer Dallas began lowering the rescue sling. Suddenly the flares went out leaving the area in pitch darkness and the pilot with no visual reference.

"I started retracting the hoist as fast as possible," Dallas said, "and in the process the helo hit a tree on the right side. In my leaning out I was also hit on the

face as the tree went by. As soon as the limb hit me I yelled 'get up, get up' and we were out of there and climbing. Nothing but the skill and experience on our pilot's part saved us from crashing."

When Dallas yelled, Lieutenant Lassen quickly added power and was just starting to climb when the helo hit the tree, pitched down and went into a tight starboard turn. Somehow he managed to regain control and lifted the SEASPRITE out of the potential death trap. The helicopter developed a fairly heavy vibration immediately after the collision which had damaged the horizontal stabilizer, tail rotor, antenna and door.

Shaken but undeterred by the narrow escape, the UH-2 crew told the survivors they must leave the hill and get to a clear area. As the downed pilots started down the hill through the thick underbrush, the SEASPRITE made pass after pass while the crewmen and copilot fired at the gun flashes below. Then, using the helicopter flood light for illumination, another approach was made to the rice field; however, as the UH-2 touched down it was seen that the survivors were too far away. Enemy fire was also steadily increasing with the light beam as a target. The rescue helicopter took off again, circled the area and headed in for another landing. Another ball of fire went by, narrowly missing the UH-2, but the pilot continued to drop lower until finally he held the helo in a hover with the wheels just touching the soft ground. For three minutes the helicopter hung there as the survivors frantically stumbled and fell their way across the paddy with its criss-crossing dikes. The UH-2 was under fire from two sides at first and then from a third as the enemy closed in on the area vacated a minute before by the rescues. Returning the fire, the helicopter crew silenced at least one position and managed to keep the enemy down until the gasping, mud-spattered survivors clambered aboard.

Lieutenant Lassen immediately lifted off and headed for the sea—for 45 minutes the helicopter had been under fire while pressing the rescue attempt. As the SEASPRITE neared the coast it ran into heavy flak and automatic fire and during subsequent evasive action the damaged door was torn off.

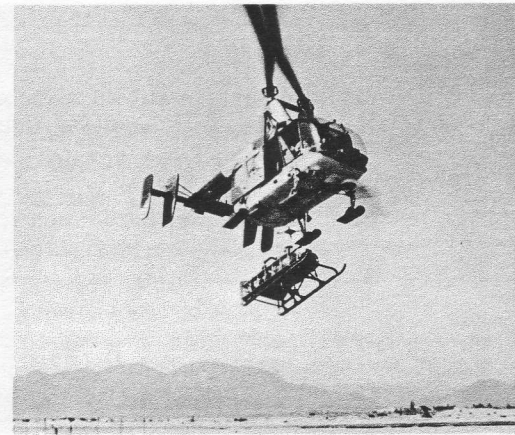
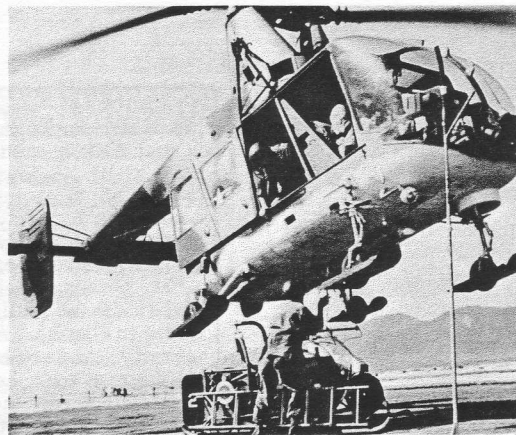
Only 135 pounds of fuel remained when the SEASPRITE landed aboard the Jouett.

*UH-2 Missions continued on page 16*



**RESCUE SPECIALISTS**—Members of HC-7's Det 108 are shown in front of one of the squadron's UH-2 SEASPRITES. Many downed airmen and others rescued in Southeast Asia owe their lives to the efforts of these and other SAR pilots, aircrewmen and mechanics deployed aboard U. S. Navy ships in the Gulf of Tonkin. Front row, left to right, are Lt A. J. Curtin, O-in-C, ATN2 R. G. Timm, ADJ3 G. D. Fiihr, HN2 E. W. Bliss, unit training instructor of Paramedic Rescue Team Number One; ADJ3 F. R. Williams, and Lt(jg) R. K. Doane, asst O-in-C. Rear row, AE2 R. M. Murphy, AMH3 T. D. Burkhardt, ADJ1 R. L. Clemmons, crew leader; ADJ2 V. D. Simpson, and AMH2 R. E. Conrad. Aircrewman training received from Paramedic Team, based at USNAS Cubi Point, R. P., has often been praised by the SAR crews after a mission. A few days before the photograph was taken, Lieutenant Curtin and a UH-2 crew rescued a pilot who had ejected from his battle-damaged aircraft. The SEASPRITE was operating from the USS Halsey at the time. Lieutenant Doane was copilot of the rescue helo and crewmen were Petty Officers Williams and Fiihr. (USN photo)





**DET 8 IN ACTION**—In top photos: Air crew runs toward an HH-43 after receiving a crash call. Left to right are Sgt Richard L. Miller, airborne fire protection specialist; Sgt Peter H. Eyrich, pararescue specialist; SSgt Andres B. Perez, flight engineer; and Maj Armand J. Fiola, pilot. Fireman hooks a fire suppression kit to an HH-43 while a pararescueman, leaning out of the door, prepares to give the "all clear" signal to the pilot. With FSK attached, the HH-43B heads toward crash site. In left photo, pilot of hovering HUSKIE directs cooling rotor downwash toward firefighters who are battling blaze with an FSK. In right photo, LtCol Flavious F. Drake, detachment commander, watches intently as one of his rescue teams scrambles during an alert. (USAF photos)



**Cam Ranh Bay (7 AB)** — More than 2,000 times last year, Air Force men of Det 8, 38th ARRS, Cam Ranh Bay AB, scrambled to save 40 lives and assist in hundreds of inflight emergencies. In the first three months of this year they responded to 455 inflight emergencies and saved 12 lives by their prompt action.

Commanded by LtCol Flavious F. Drake, the seven officers and 20 enlisted men of the detachment are ready to respond to an emergency any time of the day or night. The detachment's pararescue section is augmented by four airborne firefighters, assigned to the detachment from the base Fire Department, and two medical technicians from the 12th USAF Hospital.

The men of the detachment have a dual mission of both

local base rescue and air crew recovery. Locally, the detachment answers all crash calls and inflight emergencies for aircraft landing at the base. It also assists in the evacuation of injured or wounded personnel, both military and civilian. For example: Recently, while swimming in the South China Sea a Navy man was bitten by an undetermined species of sea snake. Beach personnel rescued the unconscious swimmer and gave him artificial respiration. After scrambling, the Det 8 rescue crew was evacuating the victim to the 12th USAF Hospital when his heart stopped! A pararescueman from the rescue squadron immediately began external heart massage on the patient and kept him alive until they landed and 12th hospital physicians took charge of the case.

Hovering over thick brush 4 miles from Bien Hoa AB, an HH-43 crew from Det 6, 38th ARRSq, braved small arms fire to rescue a critically wounded U. S. Army soldier. While three Army helicopters flew a circular pattern low overhead TSgt Donald S. Kearton, II, flight engineer, lowered a semirigid litter to Army personnel below. After securing the wounded man in the litter Kearton began hoisting him aboard when the HUSKIE was hit by small arms fire.

"I immediately relowered him to the ground," said the sergeant, "while the rescue crew commander, Maj James F. Okonek, fought to keep the ship under control."

"The UH-1 behind me immediately began radioing to the others, 'He's taking fire! He's taking fire!' and the

men on the ground dove for cover," said the Major. "My first concern was for the men under the helicopter and I hovered forward in an attempt to avoid crashing onto them. I didn't really expect the controls to work as we had taken several hits, but when they did we maneuvered forward enough to clear the men below.

"After the shooting stopped we re-maneuvered and made the pickup," continued Major Okonek. "The short flight to the 93rd Medical Evacuation Hospital was made and the hospital staff assisted us in the off-loading."

Assessment of damage to the helicopter after returning to Bien Hoa revealed the craft had taken several hits including one by a 7.62mm armor piercing shell. After repairs the aircraft was returned to alert status. Other

*The rescues or evacuations reported here represent only a small number of the many Southeast Asia missions flown in Kaman helicopters during the last few months by U. S. Air Force and Navy crews.*

members of the HH-43 crew were Maj John V. Lepko, copilot, and Sgt Charles F. Salome, rescue specialist.

In another Det 6 mission, at night, a HUSKIE crew evacuated the seriously injured pilot of an Army O-1 spotter plane which had crashed in dense, enemy-infested jungle 22 miles from Bien Hoa. The vegetation in the area was so thick that the smoldering wreckage could only be seen when passing overhead. A hover was established a few feet above the tree tops and the pararescueman, Alc Charles R. Inguilli, was lowered on the forest penetrator. In a few minutes the survivor was located and hoisted aboard in a semi-rigid litter. After a five-minute unsuccessful search in the darkened jungle for the other occupant of the plane, Airman Inguilli was hoisted aboard the HH-43 and the helicopter headed for an Army airfield nearby. During the 15 or more minutes the ARRS helicopter hovered over the crash site, cover was flown by fixed-wing aircraft and an Army helicopter which continually orbited at 200 feet, probing the forest with a search light for enemy activity. Pilot of the HH-43 was Capt Charles W. Burrige and copilot was Maj Andrew E. Kralj. SSgt James P. Baldwin was flight engineer.

Letters from appreciative Army officials said afterward that the actions of the HH-43 were an "inspiration" and in the "highest tradition of the widely known courage and professionalism of the Aerospace Rescue and Recovery Service... that it is men of their caliber who make other pilots confident that they will be rescued if their plane should go down in the jungle." It was also recommended that the crew be decorated for their rescue efforts.

Fire was threatening to do what the enemy could not—force a company of South Korean soldiers to abandon their hilltop position. Ironically, the fire started after an airstrike on the hostile forces. Although the ROK soldiers could withdraw, they could not move their ammunition, weapons and provisions in time to escape the flames.

An HH-43 from Det 12, 38th ARRSq, took off from Nha Trang AB with a fire suppression kit and headed for the area. Aboard the HUSKIE were portable fire extinguishers and shovels. Small arms and artillery fire were reported on one jungle-covered slope of the hill so Capt Melroy Borland, RCC, landed the FSK near the hilltop on the side "sterilized" by the airstrikes and fire. Tall trees bordering the landing zone were a scant ten feet from the rotor blades and gusty winds compli-

**Tan Son Nhut AB (7AF)**—Capt James T. McComsey, an HH-43B pilot with Det 14, 38th ARRSq here, nears the end of his Vietnam duty with nearly 200 rescue missions and 100 combat hours to his credit. He will continue duty as an HH-43B pilot when he reports to his next assignment with Det 12, CARRC at Randolph AFB, Tex.

"My most rewarding mission in Vietnam came when our crew was called to rescue a small Vietnamese boy from a mine field near the base," recalled McComsey. The boy had accidentally wandered off into the field and was injured when one of the mines detonated. We had to hover over him and then retrieve him in a rescue basket that was lowered to six inches off the ground. Fifteen minutes after our alert call came in, the boy was in an ambulance and on his way to the hospital."

Captain McComsey has been awarded the Air Medal during his Vietnam tour.

His squadron is a unit of the 3rd Aerospace Rescue and Recovery Group which is responsible for the search and rescue support of all allied forces in Southeast Asia.

**PLEIKU (7AF)**—Capt Francis B. Gilligan, who recently completed his tour as an HH-43 rescue crew commander with Det 9, 38th ARRSq at Pleiku AB, has been reassigned to March AFB, Calif., following his own rescue in South Vietnam. In one of his final missions Captain Gilligan was picking up wounded U. S. Army personnel when his own helicopter was shot down by enemy ground fire. He was later rescued by another helicopter crew.

"My personal feeling of exhilaration and gratitude in being saved made me realize the feeling that others have for rescue forces in Southeast Asia and it made my job during the past year even more meaningful for me," Gilligan said. During his Vietnam tour, he completed more than 100 combat missions. He earned the Air Medal with four Oak Leaf Clusters and the Purple Heart.

Commenting on his Vietnam duty, Gilligan said, "In a war there are many missions dealing with airpower. But I believe there is none as rewarding or important as the rescue mission. The motto of the Aerospace Rescue and Recovery Service—That Others May Live—gives one some idea of the dedication of the rescue crews and the personal satisfaction I have found in performing an important job."

cated hovering. Sgts Willie R. Johnson and William R. Weidner, firefighters, and a pararescueman Alc Louis C. Felker, leaped out and extinguished a fire burning within 20 yards of the ROK position. Then they moved down the slope and extinguished other fires. The Korean soldiers assisted and provided security. With the threat of fire removed, a landing area was cleared for the HH-43 and the crew and FSK were recovered. Maj Bruce C. Bowden was the copilot on the mission.

In a pre-dawn mission, an HH-43 crew from Det 2, 38th ARRSq, Takli RTAFB, Thailand, scrambled after an F-105 crashed in a rice paddy studded with 20-foot trees. Capt Andrew J. M. Archer landed in a clearing nearby and the fire suppression kit and crew were off-loaded. The Captain then hovered the helicopter and directed his landing light toward the injured pilot, to aid his crew in locating him in the darkness. The downed airman was taken to the helicopter and evacuated to the hospital. After daylight it was found that the FSK had been placed within 20 feet of a large unexploded bomb. LtCol Lawrence W. Heflin, commander of Det 2, pointed out afterward that, to the best of his knowledge, this is the first known instance where an F-105 has flown into the ground at 400 plus knots and the pilot survived. Other members of the HUSKIE crew were Maj Bruce C. Smith, copilot; SSgt Thomas J. Nicholson and Sgt Richard W. Turner, rescue specialists; Sgt Henry A. Moehrke, medical technician.

Capt Bobby L. Meadows and his HH-43B crew scrambled with a fire suppression kit as soon as Det 3, 38th ARRSq, at Ubon AB, Thailand, was notified that an Australian F-86 had crashed in downtown Ubon. The aircraft had exploded on impact and two houses were on fire when the HUSKIE landed in a small garden nearby. Disregarding exploding ammunition in the wreckage, Sgt James M. Payne, medical technician, and Sgts Donald W. Jowers and John L. Tracy, rescue specialists, extinguished the fire in the cockpit area in an attempt to locate the pilot. His body was later found some distance away. When the FSK was out of foam, Sergeants Jowers and Tracy used the remaining air pressure in the kit to put out a small fire in a nearby house. HUSKIE copilot on the mission was 1st Lt John R. Bland, Jr.

In two separate missions during a 15-hour period, an HH-43 crew from Det 10, 38th ARRSq, at Binh Thuy AB, saved the lives of three U. S. Navy River Patrol Boat



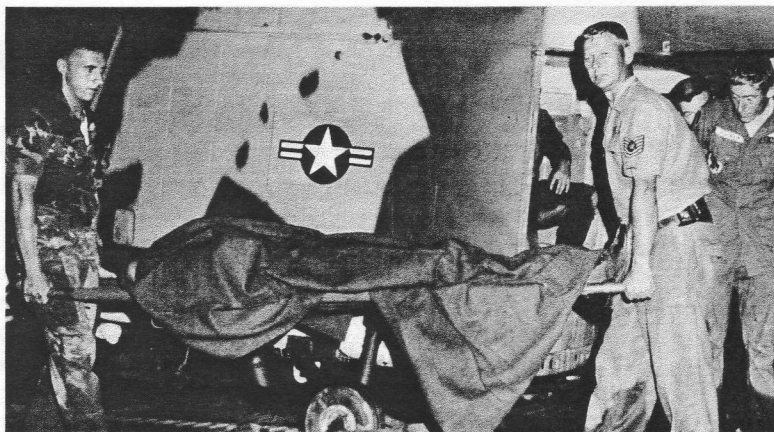
(PBR) crewmen and a Vietnamese Army (ARVN) soldier. The detachment now has a total of almost 30 saves since Jan 1. The first "scramble call" came from a PBR which took a direct hit from a Viet Cong B-40 rocket while patrolling at night on the Ba Sac river; three crew members were seriously injured. Fifteen minutes later the HUSKIE rendezvoused with two Navy UH-1D gunships over the pickup point and then landed in a soccer field just outside the district village of Tra On.

"The most serious problem we faced was the darkness," the HH-43 pilot, Capt Laurence W. Conover, said. "When we approached the soccer field we saw several tracer rounds go across the field and, with no lighting available, we didn't know whether the Viet Cong were in the vicinity."

At noon the following day, the same crew once again carried out a life-saving mission. Another PBR, two miles southeast of Tra On, came under VC fire and an ARVN soldier suffered a serious head wound. By 12:25 p. m. the injured man had been hoisted from the moving PBR and delivered to a Vietnamese hospital near Can Tho city.

With Captain Conover on both flights were Capt Leslie E. Johnson, copilot; A1c Archelous Whitehead, flight engineer; and A1c Larry D. Nicholson, pararescuer. Captain Johnson and Airman Nicholson have both participated in more than a dozen life-saving missions since Jan 1.

In one night, an HH-43 crew from Det 10 also made six combat saves within a three-hour period. The first was made when Army helicopter crewmen and a wounded soldier were rescued after their helicopter was downed by enemy fire five miles from Can Tho. The second combat save was accomplished at 1:45 a. m., about three hours after the first, by the same crew. They picked up an F-100 pilot who was shot down by ground fire one mile north of Binh Thuy. Pilots on both missions were Captains Conover and Johnson. In the photograph the other two members of the crew, Airman Nicholson, left, pararescuer, and TSgt Kenneth Hogan, flight engineer, are shown carrying the wounded soldier. Army personnel are at the right. (USAF photo)



The first night pickup ever accomplished from a moving river patrol boat was made by Maj James F. Okonek while on his first mission involving PBR's. This was Det 10's 20th combat save for '68. The HH-43 crew scrambled after a Navy crewman suffered critical head wounds when the PBR came under hostile fire. With no secure area available, a night stokes litter pickup from the fast moving PBR was called for. As a flight of Sea-wolf gun ships circled overhead, the boat signaled its position and a blackout approach was made. Following direction given by Airman Nicholson, the RCC hovered over the boat and the pickup was made. Despite the possibilities for a navigational error while flying in the total darkness blanketing the Mekong Delta area, the flight to the hospital afterward was made without difficulty. Less than an hour elapsed from time of initial rescue notification until the seaman was safely under the doctors' care. Copilot on the mission was Captain Johnson and Sergeant Whitehead was flight engineer.

To evacuate a sailor with a serious gunshot wound, a Det 10 HUSKIE was landed on an LST which was plowing its way through five-foot swells in the South China Sea. Neither Captain Conover, RCC, or LtCol Roland E. Specman, the copilot, had ever before landed on a ship while it was underway but the pickup was made without incident. On the way to the hospital, the patient was treated by A1c John C. Wilkins, pararescuer. Flight engineer on the 200-mile flight was SSgt Gordon L. Browning.

### Cattle Cowed By Capt Conover



As an HH-43 rescue crew commander, Capt Laurence W. Conover has engaged in many rescue missions—he holds six Kaman Scrolls of Honor and 15 mission awards. Many of these flights were made during his present assignment with Det 10, 38th ARRSq, at Binh Thuy AB which was also the scene of his most unusual mission. Unfortunately, it does not warrant an award but, on the other hand, it certainly can't be allowed to pass unnoticed.

Captain Conover was taking off on a support mission recently when the tower contacted him saying, "Binh Thuy tower would appreciate any assistance you can offer in getting some cattle off the approach end of runway six."

A few seconds later, six Brahma bulls suddenly found their peace and quiet disturbed by a terrifying "monster" which appeared overhead with threatening flapping noises and dust-raising blasts of rotor downwash. One look and the cattle started double-timing it for the edge of the runway as Captain Conover skillfully maneuvered the HUSKIE to direct them in traditional cowpoke fashion.

Naturally, under the circumstances, there was only one thing left for the pilot to do. He punched the transmit button and alerted the tower with an appropriate Western cry... "Yipeeeee! Head 'em up and move 'em out!" Then he asked the question so familiar to late TV watchers, "Where do you want these mavericks?"

## UH-2 CREW IN 7-HOUR NIGHT SEARCH

UH-2 pilot LCdr James T. Denny and his copilot, Lt Howard E. Hoehn, recently flew a total of seven hours during an overwater search at night and in a light rain. The SEASPRITE, from the SAR unit at NAS Pensacola, Fla., launched at 1910 when word was received that a sailor was missing after a boating accident near Santa Rosa Island. With a Coast Guard plane providing flare illumination, and flying intermittently on instruments, the helicopter covered a 10 by 20-mile area during a three-hour flight and a 10 by 30-mile area during a four-hour flight. Both were unsuccessful. Weary but determined the UH-2 crew launched again before dawn and a few minutes later located the missing man on a beach, picked him up and delivered him to the hospital. He had floated in the Gulf all night and finally made it to shore. The survivor had seen the flares and helo but had no means of attracting attention and his dark clothing, lack of signal devices, and the rough seas prevented the rescuers from locating him in the darkness. Sharing in the mission were UH-2 crewmen Jack B. Wink, AMH2, and James C. Garvin, ADR2.

In a two-in-one type mission, Lt Commander Denny and his crew launched despite an approaching thunderstorm to pick up the pilot of a T-28 which had run off the runway at Choctaw Field. The SEASPRITE flew through winds gusting to 50-knots and reached the area just as the thunderstorm did. Visibility by this time was

100 yards. The survivor was placed in the helicopter which then had to wait on the ground for 28 minutes until the storm passed before heading for the dispensary at Whiting Field.

On the flight to Whiting, the UH-2 pilot was advised of two probable crashes—a Florida Highway Patrol plane near Milton and a T-28 at Holley Field 19 miles south of Whiting. The UH-2 searched for the first reported crash but then was notified the civilian plane had landed safely. The SEASPRITE headed for Holley, reentering the thunderstorm to do so, and made the approach to the T-28 in heavy, wind-driven rain. The slightly injured survivor was placed aboard the helo and taken to the dispensary. Other members of the UH-2 crew were Lt Andy E. Kirk (MC), flight surgeon, and ADJ3 Kenneth G. Page and ATN2 John M. Tyson.

In other missions flown by the Pensacola unit: A crash crew member, seriously injured when a tractor overturned at Wolf Field, was evacuated by a UH-2 crew consisting of Lt Bruce E. Miller, pilot, Petty Officer Tyson and ADR3 Anthony J. Poloff, crewmen and Lt Billy A. Buckelew (MC), a flight surgeon. A pilot who ejected from his crippled plane and landed in the Gulf of Mexico was rescued by a UH-2 piloted by Lieutenant Miller. Others aboard the SEASPRITE were Lt Don R. Piatt (MC), a flight surgeon; AMS1 Patrick W. Wells, hoist operator; and ADR2 Billy J. Swick.

*continued from page 12*

In a 10-day period four downed pilots were rescued by UH-2 crews from HC-2's Det 66 deployed aboard the USS America. Earlier, a man overboard was also saved by a detachment helo. Two rescues were made by the same crew: Lt J. P. Meyn, Lt(jg) T. L. Olson, AMH1 F. A. Marr and AN P. C. Carroll. The third rescue was carried out by Lt(jg) J. F. Lecorn, Ens C. M. Hartwell, ADJ3 R. R. Hughes and Airman Carroll. The fourth rescue crew was Lt(jg) R. W. Ahearn, LCdr T. S. Hale, Airman Carroll and Petty Officer Hughes. Manning the SEASPRITE when the man overboard was rescued were Lt Guy M. Maricich, Lt G. C. Houser, Airman Carroll and AN H. R. Patten.

In a congratulatory message after the third rescue in a week, Cdr Jack H. Hartley, HC-2's commanding officer, said, "Well done to Det 66 for HC-2's 1578th, 1579th and 1580th rescues. Yankee Station operations keep this det busy but it is obviously up to the challenge." Commander Hartley made special note of Airman Carroll's role in the rescue operations.

A sailor who fell overboard while working on the flight deck of the USS Bon Homme Richard, was quickly rescued by a UH-2C from HC-1's Det 31. Earlier, all flight deck personnel had received a briefing from detachment personnel as to what they should do if such an emergency arose. Utilizing this knowledge, the sailor required no assistance to get into the sling and he was hoisted aboard without incident. LCdr E. M. Stewart was SEASPRITE pilot and Lt(jg) W. E. Bentley was pilot. Crewmen were G. R. Smith, ADJ3, and R. W. Savoy, AT2. Several days later, a UH-2C crew from Det 31 responded to a second "man overboard" call and another sailor was rescued without incident. Lt(jg) E. L. Murphy was pilot of the SEASPRITE and the copilot was Ens C. L. Sanders. Crewmen were Petty Officer Savoy and F. G. Mitchell, AN.

In what was described as a "flawless" midnight rescue, a UH-2C crew from HC-1's Det 65 plucked two survivors from the water after they ejected from their flaming aircraft. Lt(jg) Thomas A. Matthews was pilot of the SEASPRITE and Lt(jg) Harlan W. Woodward was copilot. The hoist operator was AMS3 Richard L. Wilson and AE3 Barry H. Puckett was the swimmer who went into the water to aid the rescuees. Also aboard the UH-2 was Lt David N. Sim (MC), a flight surgeon. Det 65 is deployed aboard the USS Enterprise.

In another Det 65 rescue, both UH-2C crewmen leaped into the water to aid a downed pilot who was unconscious and being drawn beneath the water by his entangling chute. First the swimmer, AN Frank J. Foreback, went to the aid of the pilot, and then AZ3 Allen J. Fox, the hoist operator, shed his flight suit and jumped into the water. They managed to keep the survivor afloat until a whaleboat summoned by Lt(jg) John F. McMinn, helo plane commander, arrived from a nearby destroyer. Ens Jack L. Berg was piloting the UH-2 at the time.

In two other Det 65 rescues, one at night, four downed pilots were plucked from the water by UH-2C crews. Flying the night mission were Lt(jg) Edward E. Rea, Lt(jg) Jack L. Turner, ADJ3 Paul L. Swartz and AE3 Barry H. Puckett. Manning the SEASPRITE during the other rescue were Lieutenant Rea, Ensign Berg, Airman Foreback and AMH2 Daniel B. R. Miotke.

A sailor who fell overboard from the USS Ticonderoga was plucked from the wake of the carrier by a UH-2 crew less than three minutes after he hit the water. The SEASPRITE, from HC-1's Det 14 deployed aboard the carrier, was on plane guard at the time of the incident. UH-2 crewman D. R. Tracht, ADJ3, leaped into the water to aid the survivor. The hoist operator was J. L. Driscoll, AMH2, and Lt Randall W. Vitek was pilot.



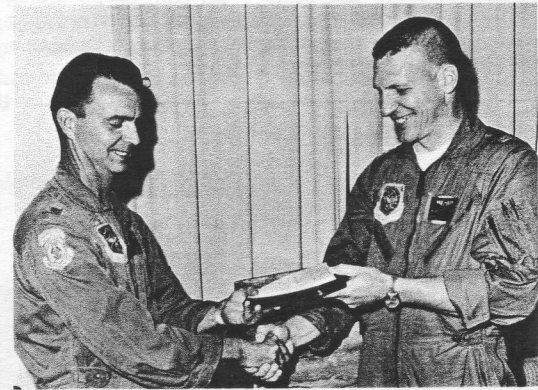
# CURRENT CHANGES

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

	Issue Date		Issue Date
H-2 Airframe Change 132 - IMPROVED CARGO HOOK INSTALLATION	1 July 1968	NAVAIR 01-260HCB-1 - NATOPS FLIGHT MANUAL, Navy Model UH-2C Helicopter	15 March 1968
H-2 Airframe Change 152 - COMMUNICATION SYSTEM, Installation of Juliet 28 Equipment	1 June 1968	NAVAIR 01-260HCB-4-1 - Illustrated Parts Breakdown, Navy Model UH-2C Helicopters, NUMERICAL INDEX AND REFERENCE DESIGNATION INDEX	1 June 1967 changed 1 May 1968
H-2 Airframe Bulletin No. 115, Rev. B - UH-2A/B/C HELICOPTER COMPONENT TIME BETWEEN OVERHAUL (TBO) AND RETIREMENT INTERVALS	1 June 1968	NAVAIR 01-260HCB-4-2 - Illustrated Parts Breakdown, Navy Model UH-2C Helicopters, AIRFRAME	1 June 1967 changed 15 April 1968
NAVAIR 01-260HCA-1 - NATOPS FLIGHT MANUAL, Navy Models UH-2A/UH-2B Helicopters	15 March 1968	NAVAIR 01-260HCB-4-2 - Illustrated Parts Breakdown, Navy Model UH-2C Helicopters, AIRFRAME	1 June 1967 changed 15 June 1968
NAVAIR 01-260HCA-1B - NATOPS PILOT'S POCKET CHECKLIST, UH-2A/UH-2B Helicopters	15 October 1966 changed 15 March 1968	NAVAIR 01-260HCB-4-3 - Illustrated Parts Breakdown, Navy Model UH-2C Helicopters, FLIGHT CONTROLS	1 June 1967 changed 15 June 1968
NAVAIR 01-260HCA-1C - AIRCREWMAN'S POCKET CHECKLIST, UH-2A/UH-2B Helicopters	15 October 1966 changed 15 March 1968	NAVAIR 01-260HCB-4-4 - Illustrated Parts Breakdown, Navy Model UH-2C Helicopters, EQUIPMENT (FURNISHINGS, HYDRAULICS, INSTRUMENTS, UTILITIES)	1 June 1967 changed 15 June 1968
NAVAIR 01-260HCA-2-1 - Manual, Maintenance Instructions, Navy Models UH-2A/UH-2B/UH-2C Helicopters, GENERAL INFORMATION	1 October 1967 changed 15 June 1968	NAVAIR 01-260HCB-4-5 - Illustrated Parts Breakdown, Navy Model UH-2C Helicopters, POWER PLANT AND RELATED SYSTEMS	1 June 1967 changed 15 June 1968
NAVAIR 01-260HCA-2-4.2 - Manual, Maintenance Instructions, Navy Models UH-2A/UH-2B/UH-2C Helicopters, ROTOR SYSTEM	1 October 1967 changed 1 June 1968	NAVAIR 01-260HCB-4-6 - Illustrated Parts Breakdown, Navy Model UH-2C Helicopters, TRANSMISSION SYSTEM	1 June 1967 changed 15 June 1968
NAVAIR 01-260HCA-2-5.1 - Manual, Maintenance Instructions, Navy Models UH-2A/UH-2B/UH-2C Helicopters, INSTRUMENTS	1 October 1967 changed 15 June 1968	NAVAIR 01-260HCB-4-7 - Illustrated Parts Breakdown, Navy Model UH-2C Helicopters, ROTORS	1 June 1967 changed 1 May 1968
NAVAIR 01-260HCA-2-6 - Manual, Maintenance Instructions, Navy Models UH-2A/UH-2B/UH-2C Helicopters, ELECTRICAL SYSTEM	1 October 1967 changed 15 June 1968	NAVAIR 01-260HCB-4-8 - Illustrated Parts Breakdown, Navy Model UH-2C Helicopters, RADIO AND ELECTRICAL	1 June 1967 changed 15 June 1968
NAVAIR 01-260HCA-2-8.1 - Manual, Maintenance Instructions, Navy Model UH-2C Helicopters, WIRING DATA	1 October 1967 changed 1 June 1968	NAVAIR 01-260HCB-4-9 - Illustrated Parts Breakdown, Navy Model UH-2C Helicopters, SPECIAL SUPPORT EQUIPMENT	1 June 1967 changed 15 June 1968
NAVAIR 01-260HCA-4-1 - Illustrated Parts Breakdown, Navy Model UH-2A/UH-2B Helicopters, ROTORS AND CONTROLS	1 December 1965 changed 15 April 1968	NAVAIR 03-65-51 - Manual, Overhaul Instructions, WINCH WITHOUT MOTOR, P/N WE3131A	15 April 1968
NAVAIR 01-260HCA-4-8 - Illustrated Parts Breakdown, Navy Models UH-2A/UH-2B Helicopters, NUMERICAL INDEX AND REFERENCE DESIGNATION INDEX	15 January 1967 changed 15 April 1968		

R. H. Chapdelaine, Supervisor, Service Publications

## — 1000-Hour Pilot Awards —



Capt Donald H. Almanzar of Det 6, PARRC(MAC), Kadena AB, Okinawa, receives a congratulatory cake after logging his 1000th flight hour in the HH-43 HUSKIE. Making the presentation are Capt Joseph T. Herr, left, and Capt Jack C. Moore. Captain Almanzar will also receive a plaque from Kaman Aircraft in recognition of his achievement. In second photo, a 1000-hour plaque is presented to Capt Ronald L. Bachman, right, by Maj Ralph H. Bush, commander of Det 5, AARRC(MAC), Hahn AB, Germany. Other Det 5 pilots who recently logged 1000 hours each in the HH-43 are Maj Robert J. Bennett and Capt David R. Stevenson. Seven other Air Force and five Navy pilots recently qualified for the Kaman plaque. They are: HH-43 HUSKIE, Maj Ralph L. Gaede and Maj Sam J. Scamardo, Det 14, CARRC(MAC), Vance AFB, Okla.; Maj David B. Hightower, Det 17, WARRC(MAC), Davis-Monthan AFB, Ariz.; Maj Hubert M. Berthold, Capt Charles R. Sweet and Capt John B. Goodwin, Det 9, AARRC(MAC), Wethersfield, England; Capt Lewis R. Goodwin, Det 8, AARRC(MAC), Bitburg AB, Germany. UH-2 SEASPRITE, Lt(jg) Thomas Matthews, HC-1, Det 65, USS Enterprise; Lt Gerritt F. Haynes Jr., SAR Unit, NAS Jacksonville, Fla.; Lt(jg) John H. Fraser III, Lt John W. Donaldson, and Lt Robert H. Pasco, HC-1, NAS Imperial Beach, Calif. (USAF photos)

# UH-2 ROTOR OVERSPEED CRITERIA

by G. M. Legault, Asst.  
Supervisor, Service Engineering

The following information reflects the most up-to-date and comprehensive rotor overspeed inspection criteria available for use by Organizational Maintenance level and above. Although this material will be incorporated into the affected handbooks during regularly scheduled changes, it is also presented here in order to obtain maximum exposure. The publications affected by this information are: NAV-AIR 01-260HCA-2-4.2; NAVAIR 03-40KAM-1; NAVAIR 03-95D-11; and NAVAIR 03-95D-14. It should be noted that the main, combining, accessory, and intermediate gearboxes are not affected by pure overspeeds, however, if an overtorque also occurs, refer to the overtorque section in the applicable handbook.

## UH-2A/B HELICOPTERS WITHOUT AFC 73 INSTALLED

### Up to 114% Rotor Overspeed

#### REQUIRED ACTION

No special inspection or replacements required.  
Note: If overspeed recorder is inoperable and overspeed exceeds 110%, comply with REQUIRED ACTION for overspeed in excess of 125%.

### From 115% to 124% Rotor Overspeed

#### REQUIRED ACTION

Main rotor hub: Remove liners and Zyglo.  
Retention assembly: Scrap all bearings and tension-torsion strap assemblies.  
Main rotor blades: Scrap all bearings; scrap flap retaining rod; check leading edge weight fail-safe indicator for protrusion.  
Main rotor control links: Scrap bearings and Zyglo.  
Main rotor control rods (shoestring): Scrap rodends and Zyglo.  
Blade flaps: Scrap flap horn bearing; check outboard bulkhead for deformation.  
Folding pins: Magnaflux.  
Folding pin bracket assemblies: Scrap all bearings and Zyglo.  
Lead-lag pins: Magnaflux.  
Tail rotor blades (including pitch links): Scrap all bearings and rodends; magnaflux pitch arm and pitch link.  
Tail rotor control spider: Scrap bushings and Zyglo.  
Tail rotor blade grip: Zyglo.  
Tail rotor rocking pins: Magnaflux.  
Azimuth assembly: Scrap collective thrust rod assembly and all bearings.  
Azimuth-to-hub rods: Scrap rodends and Zyglo.  
Tracking actuator pitch control beams: Scrap bearings and Zyglo.  
Tracking actuator eccentric: Magnaflux.  
General: Visually inspect tail rotor, engine and accessory drive shafts for straightness; couplings for signs of overtemperature; pillow blocks and supporting structure for deformation, cracks or other damage.

### More than 125% Rotor Overspeed

#### REQUIRED ACTION

Tail rotor gearbox: Scrap hub shaft.  
General: Scrap and replace all components listed under REQUIRED ACTION for rotor overspeed of 116% to 125% except those listed under the visual inspect category. Visual inspect: Same as for overspeed or 116% to 125%.

## UH-2C HELICOPTERS

### Up to 112% Rotor Overspeed

#### REQUIRED ACTION

No special inspection or replacement required.

### From 113% to 122% Rotor Overspeed

#### REQUIRED ACTION

Main rotor hub: Remove liners and Zyglo.  
Retention assembly: Scrap all bearings and tension-torsion strap assemblies.  
Main rotor blades: Scrap all bearings; scrap flap retaining rod; check leading edge weight fail-safe indicator for protrusion.  
Main rotor control links: Scrap bearings and Zyglo.  
Main rotor control rods (shoestring): Scrap rodends and Zyglo.  
Blade flaps: Scrap flap horn bearing; check outboard bulkhead for deformation.  
Folding pins: Magnaflux.  
Folding pin bracket assembly: Scrap all bearings and Zyglo.  
Lead-lag pins: Magnaflux.

## UH-2A/B HELICOPTERS WITH AFC 73 INSTALLED

### Up to 114% Rotor Overspeed

#### REQUIRED ACTION

No special inspection or replacement required.  
Note: If overspeed recorder is inoperable and overspeed exceeds 110%, comply with REQUIRED ACTION for overspeed in excess of 125%.

### From 115% to 124% Rotor Overspeed

#### REQUIRED ACTION

Main rotor hub: Remove liners and Zyglo.  
Retention assembly: Scrap all bearings and tension-torsion strap assemblies.  
Main rotor blades: Scrap all bearings; scrap flap retaining rod; check leading edge weight fail-safe indicator for protrusion.  
Main rotor control links: Scrap bearings and Zyglo.  
Main rotor control rods (shoestring): Scrap rodends and Zyglo.  
Blade flaps: Scrap flap horn bearing; check outboard bulkhead for deformation.  
Folding pins: Magnaflux.  
Folding pin bracket assemblies: Scrap all bearings and Zyglo.  
Lead-lag pins: Magnaflux.  
Tail rotor blades (including pitch links): Scrap all bearings and rodends; magnaflux pitch arm and pitch link.  
Tail rotor control spider: Scrap bushings and Zyglo.  
Tail rotor blade grip: Zyglo.  
Tail rotor rocking pins: Magnaflux.  
General: Visually inspect azimuth assembly, azimuth-to-hub rods and tracking actuator pitch control beams for signs of damage; tail rotor, engine and accessory drive shafts for straightness; couplings for signs of overtemperature; pillow blocks and supporting structure for deformation, cracks, or other damage.

### More than 125% Rotor Overspeed

#### REQUIRED ACTION

Tail rotor gearbox: Scrap hub shaft.  
General: Scrap and replace all components listed in REQUIRED ACTION column for overspeed of 116% to 125%, including azimuth assembly, azimuth-to-hub rods, and tracking actuator pitch control beams. Visually inspect tail rotor, engine, and accessory drive shafts for straightness; couplings for signs of overtemperature; shafts for straightness; pillow blocks and supporting structure for deformation, cracks or other damage.

Tail rotor blades (including pitch links): Scrap all bearings and rodends; magnaflux pitch arm and pitch link.

Tail rotor blade grip: Zyglo.

Tail rotor control spider: Scrap bushings and Zyglo.

Tail rotor rocking pins: Magnaflux.

General: Visually inspect azimuth assembly, azimuth-to-hub rods, and tracking actuator pitch control beams for signs of damage; tail rotor and engine shaft couplings for signs of overtemperature; pillow blocks and supporting structure for deformation, cracks or other damage.

### 123% Rotor Overspeed or Above

#### REQUIRED ACTION

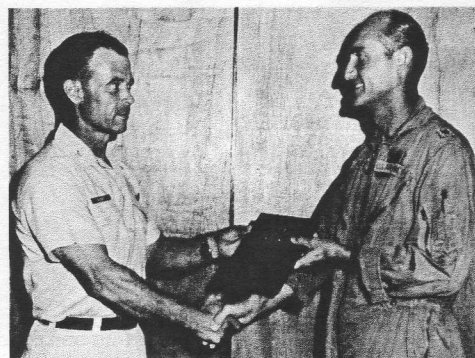
Tail rotor gearbox: Scrap hub shaft.  
General: Scrap and replace all components listed under REQUIRED ACTION for rotor overspeed of 113% to 122% including azimuth assembly, azimuth-to-hub rods and tracking actuator pitch control beams. Visually inspect tail rotor and engine shaft couplings for signs of overtemperature; shafts for straightness; pillow blocks and supporting structure for deformation, cracks or other damage.



## MAINTENANCE AND MISSIONS AT TUY HOA



**RESCUE AND AWARD**—In left photo, Capt Leo F. Dusard III, is rescued after bailing out of a flaming F-100 over the South China Sea. He was in the water only 10 minutes before being picked up by an HH-43 from Det 11, 38th ARRSq, Tuy Hoa AB. Capt James A. Darden, Jr., was RCC, and Maj Delmar G. Worsech, HUSKIE copilot. SSgt Charles W. Prevratil was flight engineer and Sgt George H. Kraft, aero-medical technician. Since his rescue, Captain Dusard has reached a total of 409 combat missions and has a chance to top the 31st Tactical Fighter Wing record of 455 missions during an 18-month tour. The veteran pilot is the son of MajGen Leo F. Dusard Jr., director of personnel, training and education, Headquarters USAF, Washington, D. C. In photo below, LtCol J. Fagner, right, Det 11 commander is presented a Military Airlift Command "Accident Free Year" award for 1967. Making the presentation is Col Abner M. Aust Jr., commander of the 31st TFW. (USAF photos)



Helicopter mechanics—the men who keep the HH-43 HUSKIES flying—play a vital role in Det 11 activities. The same holds true for any helicopter detachment, for proper maintenance and mission accomplishment go hand-in-hand.

The maintenance performed by these mechanics consists primarily of scheduled maintenance inspections called "phase." Every 100 hours of flying time, the helicopter will enter maintenance phase to allow the mechanics to inspect and repair certain areas of the helicopter. A total of 12 phases, each covering different areas of maintenance ensure that the rescue ship is kept in perfect running order.

The helicopter mechanics learn their trade through two phases of intensive training. The first is a 14-week school in basic helicopter mechanical training at Sheppard AFB, Tex. This is followed by six weeks of intensive training on the particular helicopter which they will work on—in this case the HUSKIE.

Time and again this training has paid off—especially in Vietnam. The "can do" spirit of mechanics from the 38th ARRSq has assured that the helicopters will be rescue-ready if humanly possible. The men who man HUSKIES, and the men who maintain them, form an

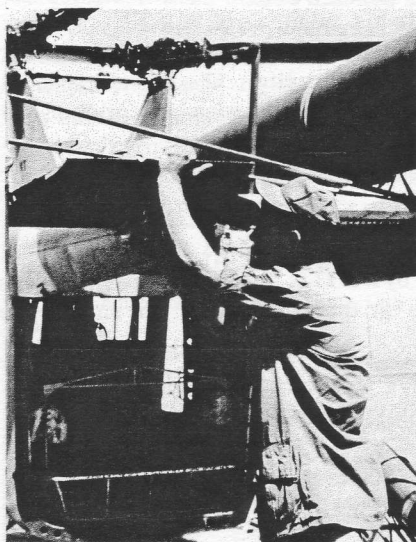
unbeatable team which has established an enviable record of humanitarian service.

In between rescue missions Det 11, 38th ARRSq, Tuy Hoa AB, has been supporting a dental/medical team from the base dispensary. Each week a detachment HUSKIE lifts the team out to the Cung Son Special Forces Camp which sits astride a major VC and NVA infiltration route. The camp is a refuge for several communities of Vietnamese and Montagnards.

On one occasion a 7-year-old Montagnard boy with tuberculosis and heart failure was taken by HH-43 to the base hospital for an X-ray and then returned to the camp—his family did not want the boy to be hospitalized in a place they had never even heard of! The next day, when the child's condition worsened, the HUSKIE launched and arrived at the camp in 20 minutes; however, the boy's father objected strenuously when told that the child

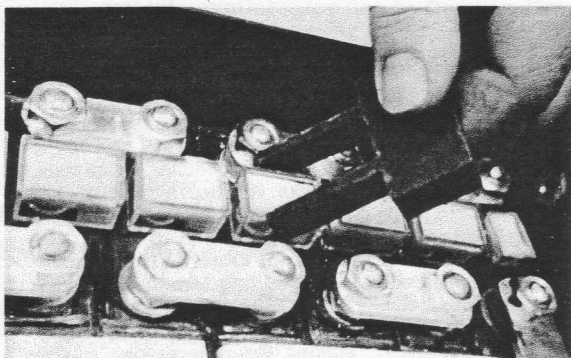


**MEN BEHIND EVERY MISSION**—Sgt Dennis F. Britton, above, and Sgt Guy A. Whaley are shown working on a detachment HUSKIE. The maintenance men of Det 11 undergo intensive technical training before they become members of the rescue team. (USAF photo)

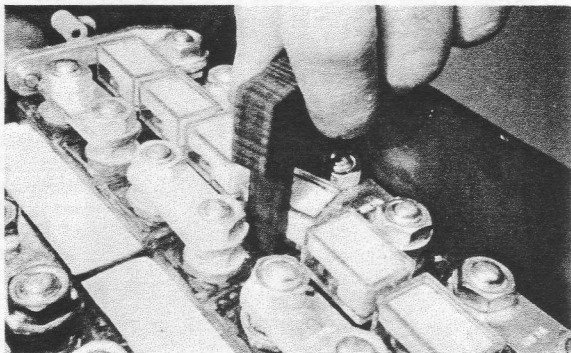


# SILVER CELL BATTERY REMOVAL TOOL

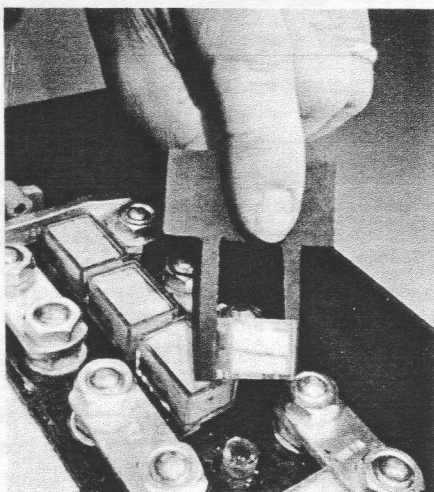
by K. E. Recoulle,  
Flight Test Electrician



A



B

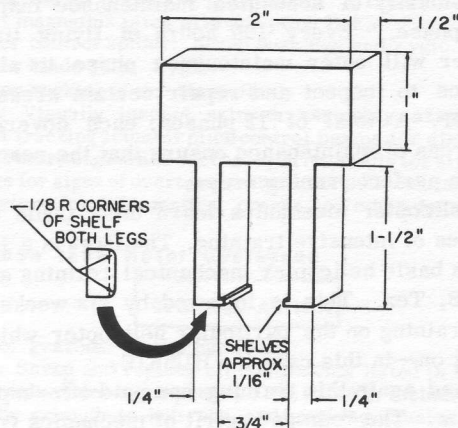


C

The tool shown in the photos helps to prevent battery or cap damage when removing stuck cell vent caps from Yardney silver cell batteries, P/N 8073 or MS18122-1. The slip-fit caps are installed over the vents and when electrolyte spills out, a corrosive bond can form which resists removal efforts. When this happens, the tool may be used to quickly and cleanly remove the caps.

**UTILIZATION:** The solid upper portion is used as a handle to push the legs down over a cap (View A) until the small shelf on the inside of each leg is positioned between the battery surface and the bottom of the vent cap. The spring action of the legs holds the cap securely while a twisting, lifting motion (View B) is applied to the handle. In this manner, the tool both breaks the cap free and lifts it off the vent hole (View C). Because the width of the larger vent caps is the same as the length of the small vent cap, this tool can be used to remove either size cap.

**FABRICATION:** The cap remover may be fabricated from almost any non-conductive material that is fairly rigid. The tool shown here was cut from a scrap piece of phenolic to the dimensions listed. Care should be used when cutting the shelf portion of the legs. Also, cut the material from between the legs before cutting the external shape. After cutting the tool out, file the four edges of the shelves so they slide onto the caps with little pressure.

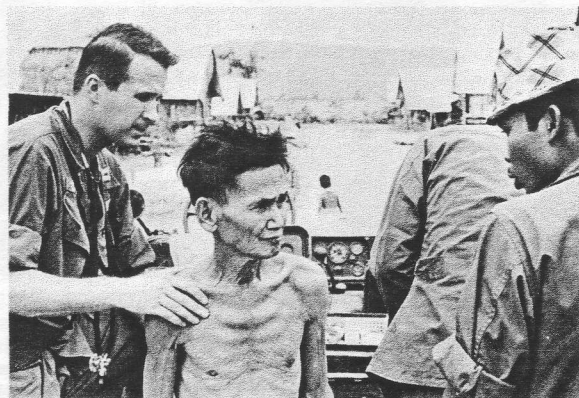


continued from page 19

would have to leave home alone. With concern for his patient uppermost in his mind, Capt Milton L. Bullock (MC), quickly consented to the father going along and the flight was made to the hospital. The boy is expected to recover. Captain James A. Darden was pilot on the mission and Capt David Dean was copilot. SSgt Charles W. Prevratil, flight engineer, and Doctor Bullock formed the rest of the crew.

The Green Berets at Cung Son feel that the medical program supported by Det 11 is one of the most effective weapons they have at their location. On an average

mission the team extracts 40-50 teeth and treats patients for ailments ranging from worms to tuberculosis.



**MOST EFFECTIVE WEAPON**—Capt Milton L. Bullock (MC), is shown with Montagnard elder and interpreter during weekly visit to Cung Son Special Forces Camp. The Captain and other medical team members are taken to the camp by an HH-43 from Det 11, 38th ARRSq, Tuy Hoa, AB. (USAF photo)



## Det 16 Rescues Youth

In a two-day mission, a 15-year-old youth who had fallen 50 feet into a ravine from a cliff on Superstition Mountain, was rescued by HH-43B crews from Det 16, WARRC(MAC), Williams AFB, Ariz. When a HUSKIE piloted by Capt James E. McLain, RCC, and 1stLt Patrick F. Egbert arrived at the scene it was found the helicopter could not be hovered over the youth because of the turbulence and nearness of the cliff. Moving farther down the slope, Captain McLain rested the auxiliary gear on a rock and Capt Donald E. Larmee (MC), a flight surgeon, and TSgt Larry L. Holocker, flight mechanic, leaped to the ground. They worked their way to the youth and administered first aid. The teenager had fallen into a patch of cactus and, in addition to multiple fractures, lacerations, and possible internal injuries, he was covered with cactus spines. Darkness, low fuel, and severe wind currents forced the HUSKIE back to base. Captain Larmee and Sergeant Holocker, who voluntarily remained all night, managed to carry the youth to a small cleared area. At sunrise the next morning an HH-43 piloted by Capt David C. Weber arrived. With him were SSgt James E. Acreman, medical technician, and SSgt Bernard L. Touchette, flight mechanic. The winds had abated and the rescuee, in a stokes litter, and Sergeant Holocker and Captain Larmee were hoisted aboard while Captain Weber hovered the HUSKIE with the rotor tips a scant five feet from the cliff. The HH-43 landed in a parking lot at a Phoenix hospital 30 minutes later. Captain Larmee said afterward that without medical aid and the helicopter airlift, the boy—now on his way to recovery—would not have survived.

*continued from page 6*

1967 5 Feb - Participated in search for missing small boat. 6 Mar - Responded to distress call from Air Force C-123 which crashed. 23 Mar - Routine pickup of two pilots from T-28 crash. \*25 Mar - Responded to T-28 crash. Uncontrollable aircraft fire, pilot still in aircraft. Lowered flight surgeon and crewmen to scene, directed ground party to crash site. \*14 Sept - Pickup of pilot from T-28 crash. 25 Sept - Participated in night search for missing small boat. \*13 Oct - Pickup of two pilots from T-28 crash.

1968 \*19 Jan - Evacuated Navy diver with collapsed lung from salvage tug in Gulf and delivered him to hospital. \*21 Feb - Pickup of pilot from T-28 crash. 19 Feb - Participated in search for overdue small boat.

### AFCM/AP ALBERT P. METROLIS

Master Chief Aircraft Maintenanceman Metrolis enlisted in the Navy on 31 January 1942 and graduated from aviation mechanic school on 21 November the same year. He graduated from flight training on 15 October 1945 and completed helicopter pilot training 31 August 1953. While attached to VRF-31, Chief Metrolis received a factory checkout in the HOK-1 during a blizzard on 15 March 1956. He first soloed in the UH-2B on 2 April 1965 while attached to the NAS Pensacola SAR Unit.

Chief Metrolis holds two Kaman Aircraft Mission Awards. One was presented for the UH-2 rescue on 13 Sept 1965 of a pilot who bailed out of a burning aircraft and landed in a swamp dotted with 80-foot trees. The other was for the SEASPRITE rescue of a pilot who bailed out at sea on 11 December 1967. While a Navy AP, Chief Metrolis accumulated 10,346 flight hours. He logged 1,492 hours in helicopters, including 141 hours in the Kaman HOK and an equal amount of time in the UH-2B.

## Quick Action by Det 1 Crews

By MSgt Mike Switzer Hq AARRC

One look at the spinning plane and Capt John H. Parks barked into his head-set, "Tower! Do you see that aircraft about to crash?"

A voice came right back, "No! Where?"

Captain Parks, a rescue pilot with Det 1, AARRC, at Spangdahlem AB, was turning up the engine on his HH-43B HUSKIE helicopter for a local training flight. He hurriedly replied, "On your right, on your...."

But before the radio transmission was complete and the control tower operator could turn his head, the F-4D crashed and burst into flames. It was 1:14 p.m. at Spangdahlem on March 14. The tower man hit the alarm and set the crash/rescue wheels into motion. Already in high-gear, the captain alerted his crew of the emergency, and they hooked the Fire Suppression Kit beneath the turbine powered HUSKIE. Captain Parks applied power, lifted off and sped towards the crash scene. While his Kaman chopper was being prepared for the training flight, the detachment's second HH-43B had been undergoing a maintenance flight check. Maj Bruce M. Purvine, Det 1 commander, with Capt Larry D. Salmans as copilot, was turning up the engine to take detachment mechanic SSgt Donald L. Clifton on a vibration test flight. Alerted by Captain Parks, Major Purvine had the second HUSKIE airborne almost immediately and heard the tower report, "Two parachutes sighted about three miles out." The Major, knowing the other rescue chopper was going to the crash scene, headed his bird towards the parachute sighting.

He spotted the pilot dangling near the top of a 100-foot tree. As the HUSKIE hovered, Captain Salmans edged out of the copilot seat and onto the flight deck in the rear of the craft. He lowered the forest penetrator seat and threaded it down through the thick branches. The uninjured pilot climbed on the penetrator and was hoisted into the chopper.

At the crash scene, Captain Parks landed on a nearby road. The two airborne firefighters, SSgt Harold J. Hartman and Karl A. McNeil, jumped out and quickly began using the FSK to spray foam on the burning aircraft. The FSK is capable of expelling nearly 700 gallons of the extinguishing fluid. With the arrival of base fire trucks, Captain Parks took to the air again to locate the other uninjured pilot. They found him in a clearing next to a plowed field, set the helicopter down, and picked the pilot up. Less than 10 minutes after they had ejected, both pilots were at the Spangdahlem base hospital for a routine medical check.

Quick response! "Yes," said Major Purvine, "One of the quickest missions I've ever participated in; but, then the circumstances were all in our favor. We were already prepared for action because of the training and test flights. And the men here were really on their toes."

### 13th is Lucky Day

For Capt Roland J. Page, June 13th was a very satisfying day.

While on a local training flight the HH-43B pilot from Det 25, EARRC(MAC), Eglin AFB, Fla., intercepted a distress message and consequently rescued two pilots from the wing of an aircraft that had ditched in Pensacola Bay 150 yards from shore. June 13 was also the day he was promoted to Captain!

Others aboard the HUSKIE were LtCol John H. Schafer, copilot and Sgts Roy D. Wooten, John L. McGee and Albert O. Grant.



# Huskie Happenings



... Two pilots who ejected from a crippled F-111 were picked up soon afterward by an HH-43B crew from Det 14, WARRC(MAC), Nellis AFB, Nev. When the HUSKIE arrived in the area, the wreckage of the F-111 was first sighted and then the two downed pilots standing alongside the F-111 pod. One was treated by Capt Emil Grieco (MC), flight surgeon, and Sgt Carl Trantham, medical technician, before the return flight was made to Nellis. Capt James H. Black was pilot and Capt Walter F. Turk, copilot, of the HUSKIE. Flight engineer was MSgt Jerry C. Marks.... In another mission, a Det 14 crew flew to a motel in Searchlight, Nev., to pick up an airman suffering from appendicitis. He was treated by Sgt William L. Hysong and Sergeant Trantham, medical technicians, on the flight back to the base. Capt Gary E. Robertson was HH-43 pilot and Captain Turk was copilot. SSgt David R. Strehie was flight engineer.

... In a third mission, an HH-43 crew from Det 14 was assisting in a Nellis AFB water survival training school and about to demonstrate a live hoist pickup from Lake Mead when a request was received to evacuate a civilian who had been bitten by a poisonous snake at Temple Bar, Ariz. The snake-bite victim, accompanied by his wife and National Park Ranger Joe Cayou, was picked up and taken to a waiting ambulance. The snake—without its head—was the fourth passenger. Captain Turk was HUSKIE pilot and the copilot was Captain Robertson. Sgt Robert J. Pfannestiel was flight engineer.

... Two HH-43's from TUSLOG Det 84(MAC), Incirlik AB, Turkey, were utilized to airlift three Turkish officers from a hospital to a passenger plane for transportation to a better equipped medical facility. The officers had been critically injured in an automobile accident a few days before. Capt Gary F. Sander-son was pilot and Sgt Gary L. Cottini was crew chief of one HUSKIE. Maj Jay M. Strayer was pilot of the second HH-43. With him were SSgt Frederick L. Meyer, crew chief, and Sgt Arthur J. Beier, airborne firefighter.

... The 25th of May marked the second "ops ready" anniversary of the reactivation of Det 3, WARRC(MAC), Kirtland AFB, N. M. When the unit was reactivated, personnel and related equipment were transferred from de-activated Det 19, EARRC(MAC), at E. Harmon AFB, Newfoundland, to Kirtland. Despite 15 individual personnel TDY assignments during the first year of activation, the unit made many rescue flights and continued this record on through the next year. Det 3 used its two HH-43's in a great variety of missions and under a great variety of circumstances: high temperature, high density altitude, mountainous terrain (highest actual pickup at 11,300 feet), and in field operations. One of the outstanding missions occurred last December when 60,000 Navajo Indians were stranded by blizzards and snow storms. Det 3's two HUSKIES joined other services and ARRS units in evacuating Indians from isolated areas and flying in supplies and food for humans and animals. Capt Edward C. Dillman, unit operations officer, said Det 3 HUSKIE crews could boast of flying more sorties and flight time delivering food and making medical evacuations during this time than any other helicopter unit. Manning the HH-43's were Capt Alex P. Lupenski, Capt Edmund W. Fishbeck and Capt Johnny R. Johnson, pilots; TSgt Benjamin Selph, SSgt Maurice W. Willner and SSgt Norman Edney, crewchiefs; Sgt Donald W. Barnes, medical technician....

... Two F-105 pilots who ejected from their aircraft after a mid-air collision were found together in a field by an HH-43B crew from Det 16, CARRC(MAC), at McConnell AFB, Kan. Before being evacuated, one pilot was given emergency first aid by the flight medical officer and medical technician from the HUSKIE. Capt Walter D. Murphy was HH-43 pilot and Capt Oliver E. Schmoker, copilot. Others aboard were TSgt Raymond J. Champagne, TSgt Homer L. Ramsey, SSgt Melvin C. Smith and Capt Terrence E. Tibbels (MC).... The lone survivor of a two-man canoeing accident on the Salt River was rescued by an HH-43B crew from Det 16, WARRC(MAC), at Williams AFB, Ariz. Maj Walter C. McMeen was pilot of the HUSKIE and Capt David Weber was copilot. Crewmen were MSgt Woodrow Speckles, medical technician, and TSgt Larry Holooker, flight engineer.

... Thirty-five airmen attending the Aero-medical Specialist Course at the USAF School of Aerospace Medicine, Brooks AFB, Tex., recently witnessed a live demonstration of the uses and capabilities of the HH-43B HUSKIE. The instruction began with a helicopter pilot, medic and fireman explaining their duties to the students. This was followed by a demonstration of the hoist procedure used when the terrain restricts a landing. Afterward, each student was taken for a familiarization ride in the HUSKIE. Since their introduction into the Air Force several years ago, ARRS HH-43's have rescued more than 2500 persons.





**20th MISSION AWARD**—Col Walter F. Derck, commander, Eastern Aerospace Rescue and Recovery Center, presents Maj Charles P. Nadler, commander of Det 11, EARRC(MAC), Craig AFB, Ala., with the ruby-starred Kaman "20th Mission Award" pin. Major Nadler is the first U. S. Air Force recipient of the award. In early 1963 at Truax Field, Wis., he had his first flight in the HH-43B and has, to date, accrued more than 1350 hours in the HUSKIE. The Major flew 276 hours of this time from July 1965 to July 1966 while stationed in Vietnam as a member of Det 6, 38th ARRSq, at Bien Hoa AB. During that year he flew 729 sorties and is credited with rescuing 108 persons. He was awarded two Distinguished Flying Crosses for his missions around Bien Hoa and most of the missions required for the Kaman award were also flown there. In addition, Major Nadler has been awarded six Scrolls of Honor by Kaman in recognition of extra hazardous missions he has carried out. (USAF photo)

**HUSKIE MEETS BEN**—Checking their time with "Big Ben" as they fly near the Parliament Building in London is the crew of HH-43B assigned to Det 9, AARRC, RAF Wethersfield, England. Piloted by Maj Hubert M. Berthold, detachment commander, the crew was flying a regular training mission which follows along the River Thames below. The picture was taken from the nearby Shell Building by SSgt Ed Watson, USAF photographer.



**IRANIANS HONORED**—HH-43F pilot 1stLt Ghasem Goljahani, left, and his copilot, 1stLt Tahmaseb Kamrani, of the Imperial Army Aviation Battalion, Isfahan, proudly display Kaman Scrolls of Honor. The Scrolls were presented by Col Hossein Khassian, IIAA commanding officer. Lieutenants Goljahani and Kamrani rescued 18 troops at one time from a mountainside exposed to almost 20° below zero temperatures and swept by 45-knot winds. When it became obvious the soldiers were in danger of freezing to death, all 18 were crowded into the helicopter which was designed to carry only 10 troops. The overloaded HUSKIE made the flight to safety without incident. In bottom photo, Lieutenant Goljahani is shown with the plaque he received from Kaman after logging 1000 hours in the HH-43. The presentation was made by Colonel Khassian, second from left, and Mr. William R. Murray, Kaman vice president, right LtCol Hossein Mirzazadeh, battalion commanding officer, is at left.



# SCROLL OF HONOR

1967

Baguio, Wayne A., A2C, USAF  
 Bahrenburg, Gunther, A1C, USAF  
 Bailey, Forney D., (Civilian)  
 Barrows, Albert E., AN, USN  
 Barry, John M., Captain, USAF  
 Belina, John L., Captain, USAF  
 Bell, Holly G., Captain, USAF  
 Berrio, David R., A2C, USAF  
 Bettis, A. C., HN, USN  
 Bloomer, Billy R., SSgt, USAF  
 Blythe, Arden L., Captain, USAF  
 Borland, Melroy, Captain, USAF  
 Brahney, James H., Captain, USAF  
 Brandau, James F., LCDR, USN  
 Brecka, Joseph, Jr., LCDR, USN  
 Brennan, James P., Lt(jg), USNR  
 Brown, James F., SSgt, USAF  
 Brown, Joe J., SSgt, USAF  
 Browning, Haskell, Jr., A1C, USAF  
 Burridge, Charles W., Captain, USAF  
 Butler, Jack V., Captain, USAF  
 Campbell, Clarence C., Captain, USAF  
 Cantwell, Ronald T., SSgt, USAF  
 Caramanno, Richard, Captain, USAF

Carl, David A., A2C., USAF  
 Carter, Jacob V., SSgt, USAF  
 Caton, Charles A., Captain, USAF  
 Chavis, Clyde E., A1C, USAF  
 Chidester, Ernest J., A1C, USAF  
 Childress, J. R., A1C, USAF  
 Cleland, John A., A1C, USAF  
 Clement, David E., Lt, USAF  
 Clemons, Roger L., ADJ2, USN  
 Cline, William E., Major, USAF  
 Cole, Arthur J., TSgt, USAF  
 Conover, Laurence W., Captain, USAF  
 Cortez, Thomas E., A1C, USAF  
 Cowden, Bert E., Major, USAF  
 Craig, Billy J., SSgt, USAF  
 Crawford, William L., SSgt, USAF  
 Crews, William W., Captain, USMC  
 Cullen, Phillip D., Lt(jg), USN  
 Curtin, Andrew J., Lt, USN  
 Darden, James A., Captain, USAF  
 Davies, Chesley R., Captain, USAF  
 Davis, Frank W., SSgt, USAF  
 Davis, Warren K., Major, USAF  
 Dean, Francis, MSgt, USAF  
 Debevec, John L., Captain, USAF  
 DeBruyne, Henry V., SSgt, USAF  
 Delk, James R., SSgt, USAF

Dole, Paul F., 1stLt, USAF  
 Drangsvet, Erling R., Major, USAF  
 Driscoll, Jay L., AMH3, USN  
 Duggan, William J., ATN3, USN  
 Duncan, Lloyd L., Lt(jg), USNR  
 Durazo, Rene, Sgt, USAF  
 Eiland, Leonard M., Ens, USN  
 Elliff, John, Major, USAF  
 Ewton, Harrison H., A1C, USAF  
 Fagner, Logan J., LtCol, USAF  
 Farrow, Willie L., 1stLt, USAF  
 Felker, Louis C., A2C, USAF  
 Fialco, Leonard D., Captain, USAF  
 Field, Cortland D., Captain, USAF  
 Fiola, Armand J., Major, USAF  
 Fischbeck, Edmund W., Jr., Captain, USAF  
 Fleck, Gary L., AMH2, USN  
 Flurnoy, John C., Captain, USAF  
 Flower, William J., A1C, USAF  
 Ford, Peter K., A1C, USAF  
 Freeman, John W., AMH3, USN  
 Fullerton, Leonard, TSgt, USAF  
 Gaede, Ralph L., Captain, USAF  
 Garvin, Benjamin G., Lt, USNR  
 Gilliam, Edward L., Major, USAF  
 Gillis, Keith R., SSgt, USAF  
 Goljahani, Chasem, 1stLt, IIA

## KAMAN AIRCRAFT

THE PERSONNEL ABOVE WERE HONORED FOR THEIR SKILL, COURAGE AND JUDGEMENT DISPLAYED WHILE PARTICIPATING IN RESCUE OR MERCY MISSIONS PERFORMED UNDER ADVERSE OR HAZARDOUS CONDITIONS WHILE FLYING IN KAMAN HELICOPTERS.