FALL 1981

SEARCH & RESCUE

MAGAZINE

CHIEF BOATSWAIN MATE J. O. TORRES FAMILARIZES HIMSELF WITH ONE OF THE VARIOUS TYPES OF EMERGENCY POSITION INDICATING BEACONS (EPIRB) AVAILABLE TO BOATERS

U.S. Coast Guard Photo
by PA1 F. T. EYRE

SEARCH AND RESCUE MAGAZINE
P.O. Box 153
MONTROSE, CA 91020

PUBLISHER'S FORUM

By DENNIS E. KELLEY

There are a number of famous search and rescue (SAR) organizations such as the U.S. Coast Guard, but who are the SAR companies? This editorial is to bring to my readers' attention the low profile of this nation's SAR companies. Why is it that one has difficulty naming companies that are dedicated to only SAR? I would like to take a few lines here to explore this question.

Why are there so few companies dedicated solely to SAR? I suspect the first answer lies in the nature of SAR itself. It is unspoken that SAR is the backwash and misfits of many agencies and organizations. It is unspoken, but well known, that beauacracy and apathy suppress the natural excitement and enthusiasm of much of the SAR community. To quote Stan Bush, "Is the Victim at the top of your organization chart?"

Are there any of this nation's top 500 companies in the business of SAR? Yes, I am sure there are, because someone must build Coast Guard cutters and Air Force Aerospace Rescue and Recovery Service (ARRS) helicopters. Apparently these massive corporate giants do not relate to the ground pounding volunteer SAR team. I don't know of any of these giants funding the Mountain Rescue Association for example. But then maybe nobody asked them to.

Can you buy common stock in a SAR company? I suspect not very many of us are even interested. However, it might be a very interesting pulse of this nation's SAR health if historical data on SAR company stock prices were followed. That is if SAR company stock prices were rising compared to the average for all stocks. In addition, if one segment of the SAR community's stocks were rising while another was falling it might give us insight into a rise or fall in activity.

Have product liability decisions by the courts driven important SAR hardware off the market? I think so! I know of one case personally. A terrific field hypothermia treatment unit was judged un-insurable and dropped in its development stage.

Do volunteer units which characteristically are fragmented and unorganized under one umbrella organization at the national level suppress the growth of formal SAR products and services? Does your organization prepare a yearly budget for new gear? Do you actively engage in research and development into new SAR techniques and equipment? Funding on a catches-as-catch-can basis frequently results in poor and outdated equipment. Five year plans fulfill an important function in this respect! So it is that some SAR organizations are more like charity supported social clubs than operational institutions.

In summary I do plan to identify this community of SAR companies and as this list emerges I will pass it on. SAR

CALENDAR

September ?
IMCO SAR SEMINAR FOR CARIBBEAN COUNTRIES
Barbados
Contact: A. J. McCullough, ICSAR Secretary,
U.S. Coast Guard G-OSR-4, 400 7th Street, SW,
Washington, DC 20590 202/ 426-1932

September 4-7
QUALITY ASSURANCE IN THE EMERGENCY DEPARTMENT
American River, Sacramento
Contact: Jim McKesseck, Educational Dimensions,
P.O. Box 4746, Long Beach, CA 90804 213/ 439-6833

September 9-13
NASAR ANNUAL CONFERENCE
Marc Plaza Hotel, **Milwaukee, Wisconsin**
Contact: Wes Reynolds, NASAR Secretary,
P.O. Box 2123, La Jolla, CA 92028 714/ 268-3266

September 10-12
ILLINOIS 10th ANNUAL TRAUMA-CRITICAL CARE SYMPOSIUM
Radisson Chicago Hotel, Illinois
Contact: Karen Mintz, RN, Illinois Division of
American Trauma Society,
P.O. Box 837, Champaign, IL 61820

September 11-13, 14-15
SWIFTWATER RESCUE I, II
King County, Washington State
Contact: Rescue 3, P.O. Box 4686,
Sonora, CA 95370 209/ 532-7915

September 11-18
1981 ACEP SCIENTIFIC ASSEMBLY
Marriott Hotel, **New Orleans, Louisiana**
Contact: Kay Barkin, Public Relations Director,
American College of Emergency Physicians,
P.O. Box 61911, Dallas, TX 75261

September 14-18
AIRCRAFT CRASH SPECIALIST SCHOOL
AMFAC Hotel, **Los Angeles, California**
Contact: Bob Whempner, Embry-Riddle Aeronautical
University, Star Route Box 540
Bunnell, FL 32010 904/ 672-3439

September 18-20
WASHINGTON STATE SAR CONFERENCE
Central Washington University, **Ellenberg, Washington State**
Contact: Rick LaValla, Washington State Emergency
Services, 4220 E. Martin Way,
Olympia, WA 98504 206/ 763-5255

September 18-20
PARA-SCOPE 81: THE CRISIS CONNECTION
Marriott Hotel, **Bethesda, Maryland**
Contact: Captain Mary Beth Michos, RN,
Montgomery County Department of Fire/Rescue Services,
10025 Darnestown Road, Rockville, MD 20850
301/ 279-1834

September 21-25
SAR MANAGEMENT COURSE
Criminal Law & Justice Training Center,
near Sea-TAC Airport, **Seattle, Washington State**
Contact: Rick LaValla, Washington State Emergency Services,
4220 E. Martin Way, Olympia, WA 98504
206/ 753-475-5563

September 26-27
SAR RESOURCE MANAGEMENT SEMINAR
Guilderland Community Center, **Albany, New York**
Contact: Dave Ogsbury, 76 Search & Rescue, Inc.
P.O. Box 176, Guilderland, NY 12084 518/ 869-7676

September 30 - October 3
PARAMEDIC CONFLICT: EXPECTATION vs REALITY
Glenwood Springs, Colorado
Contact: Health Search Inc.,
4869 N. Harrison, Suite 108, Fresno, CA 93704
Ellen Taliaferro, MD 303/ 751-3996
Ann Cullen 209/ 228-0920

October ?
U.S. COAST GUARD CARIBBEAN SEMINAR
St. Petersburg, Florida
Contact: A. J. McCullough, ICSAR Secretary,
U.S. Coast Guard G-OSR-4, 400 7th Street, SW,
Washington, DC 20590 202/ 426-1932

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SEARCH & RESCUE

MAGAZINE
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WHAT YOU SHOULD KNOW ABOUT BURNS

Reprinted from January 1981
International Civil Defense
10-12 chemin de Surville,
CH-1213 Petit-Lancy/Geneva, Switzerland
Tel. 22/934433.

Man is a fragile creature, intolerant of even quite moderate heat. In general, temperatures about 65°C (150°F) are tolerated for only limited periods, the length of time depending on the dryness of the air, the amount of protective clothing worn, and the exertion required. Above 95°C (203°F), the tolerance time drops sharply so that while 120°C (250°F) can be tolerated for 15 minutes, 145°C (294°F) becomes intolerable in 5 minutes, and at 175°C (348°F), irreversible injury occurs to the skin in less than one minute. These tolerances compare unfavorably with the heat generated by a fire, which may reach temperatures of 150°C 10 feet ahead of the blaze and over 543°C (1000°F) above the fire.

HOW EXTENSIVE IS THE BURN PROBLEM?

The National Commission on Fire Prevention and Control, in its Report to the President and the Congress, said that 300,000 Americans are seriously burned each and every year. "Seriously burned," in this Report, was considered to be a burn of 15 percent of the body surface or more, although from the point of view of life survival, physicians in this country consider a 15 percent burn life-threatening only in toddlers and in the ill and elderly, unless the wounds become infected.

Doctors refer to the severity of burns as first, second, and third degree. The most severe are third-degree burns and the least severe, first degree. This is exactly the opposite of legal terminology, in which first-degree murder is the most serious.

BURN DEPTH

In a first-degree burn, the skin is reddened but there is no blistering. Most of us have had first-degree sunburns at one time or another, and some of us have had sunburns that blistered.

A second-degree burn includes both redenning and blistering, but does not destroy the full thickness of the skin. With the possible exception of the soles of our feet, we don't think about skin as being thick, since it is so easy to cut through with a razor, but the thickness of the skin is important. If only the upper layers of the skin cells are destroyed, new skin can grow from the uninjured cells below. An analogy can be made with a lawn. If you cut the grass, it will grow again from the roots. If you destroy cells in the upper layers of your skin (whether by burning or by skinning your knee), the wound will repair itself from the cells that are not damaged. If, however, you bring a bulldozer into your yard and plow up all the grass by the roots, the lawn will not regrow until it is reseeded. Similarly, if you destroy all the skin cells by heat, the skin will not regrow but must be replaced by a skin graft.

The severity of a burn is determined by many factors, some of which are the intensity of the heat (°C), the length of exposure, the size of the body area burned, the thickness of the skin, the age and health of the victim, and the speed of subsequent cooling. Two burns that look identical on the surface may have different outcomes, depending on whether or not the full thickness of the skin has been destroyed. If you have ever cooked a chicken, you are aware that it takes time for heat to penetrate. Skin that has been exposed briefly to high-intensity heat may look like a full-thickness burn, with the surface charred yellow-brown or whitish, but deep cells may still be intact. A longer exposure to more moderate heat may result in a wound that cannot heal without grafting because the heat has had time to penetrate, and all the underlying cells were destroyed.

IF IT HURTS, REJOICE

If you burn yourself in your kitchen or while fighting a fire and the burn hurts, it is a good sign. A full-thickness (third-degree) burn destroys the nerve endings and does not hurt. If properly cared for, a wound that hurts will probably heal without the necessity for grafting.

CONVERSION OF SECOND-DEGREE TO THIRD-DEGREE BURNS

Even with good care, a deep second-degree burn can become infected. Pathogenic bacteria (germs that can cause infection) are everywhere — on the victim's skin, in the air, your mouth, on the page you are reading, on floors, tables, and especially on your hands. If a burn becomes contaminated with bacteria, there is a good chance that the bacteria will invade the burned tissue. Intact skin resists bacterial invasion, an important service of which most of us are unaware. Without skin to protect us, we are all vulnerable to infection. When a burn becomes infected by bacterial invasion, the last remaining islands of cells from which skin can regrow can be destroyed. Pus is little more than dead bacteria, dead white blood cells (which come to do battle with the bacteria) and cell debris. A neglected burn is much more likely to become infected than one that is cared for.

KEEP YOUR FINGERS OFF THE BURN WOUNDS

Your fingers, which go to dirty places, are loaded with bacteria and so is your mouth. The heat that causes a bad burn may kill many of the bacteria on a burn wound, but contact with human hands can re-establish them there. Bacteria may spread through the tissues, killing cells, creeping through the body to the bloodstream, causing fever, debilitation, and death. Protect burn wounds from germs while in transit by covering them with the cleanest material available. If sterile dressings are not at hand, a clean sheet or pillowcase will do.

Every time you speak, you spray the people around you with bacteria. The germs are so small that we can't see them, but they are there, and many of them can wreak havoc in an open wound. If you have a cold or sore throat, you are a menace to the burned patient. Let someone else take care of him, if anyone else is available. In any case, cover the wound early.

WHAT ABOUT COLD WATER ?

You can actually decrease the severity of a burn if you cool the skin quickly. If you wait five minutes and put cold water on broken blisters, you may do more harm than good, introducing bacteria into the wound with the water. Don't waste time trying to get ice out of ice-cube trays. If you burn your finger in the kitchin, put you hand under the stream of water from the cold-water tap. If blisters are already broken, forget the water; put a sterile dressing or the cleanest material available on the burn, and seek medical care.

HANDS ARE LIKE MONEY IN THE BANK

Your hands feed you, dress you, save you from falling, help you over rough terrain, carry your burdens, and serve you in a thousand ways. Be kind to them. Medical attention is wise for all but the smallest burns of the hands. Even little burns of the hands should be covered with sterile dressings, since hands can readily become contaminated with bacteria.

WHAT ABOUT SURVIVAL ?

The size of the body area burned is important in determining the victim's chances of survival. In general, for adults, if you add the patient's age to the extent of his burn, the patient will have better than a 50-50 chance of surviving if the total is under 100.

Like the elderly, infants and toddlers are more vulnerable to fire than those in the middle years. They have more difficulty escaping from flames and are less aware of what they should do, and thus tend to be more severely burned than older children. Once in school, children learn quickly that they should drop and roll if their clothes catch fire, but this instruction comes much late. It should be given to two-year-olds. It is a mistake to sell the little ones short and assume that they are too young to learn or understand, for the ***best burn treatment is prevention.***

(Article by Dr. Anne W. Phillips, Executive Director of the National Smoke, Fire and Burn Institute, Inc., which appeared in the *Fire Journal*, of the National Fire Protection Association, Boston, Mass., USA)

He's Out There Somewhere . . . . .

By PA1 F. T. EYRE,
Photo Lab, Bldg. 108,
3rd Coast Guard District,
Governors Island, NY 10004
212 / 668-7115

July 13, 1978— Forty-seven thousand feet over the Atlantic, Air France's Concorde Flight #002 was reaching its cruising speed of 1350 miles per hour enroute to Paris when they heard it: BEEP-BEEP-BEEP.

The sound was coming from a speaker tuned to monitor 121.5 mhz Very High Frequency (VHF) distress frequency, and it meant someone was in trouble and had activated an emergency location transmitter.

The Concorde's crew noted the time and position when they started hearing the signal and monitored it until it couldn't be heard any longer. That information was radioed back to the North Atlantic Air Traffic Controller.

Lieutenant Tim Doherty, the duty officer at the Coast Guard's Atlantic Area Rescue Coordination Center (RCC), Governors Island, NY, was advised of the distress signal. He had the duty HC-130 aircraft standby for take-off at Elizabeth City, North Carolina while he began plotting the reported position. The signal was coming from an area approximately 370 miles due east of Boston.

This signal could be from a vessel or aircraft in distress. The Emergency Position Indicating Beacon (EPIRB) for vessels broadcasts on two distress frequencies: 121.5 mhz VHF, the civilian international distress frequency and 243.0 mhz Ulta High Frequency (UHF) for military aircraft in distress.

Instead of scrambling the duty aircraft, Doherty was able to divert a Coast Guard HC-130 from a training flight to check out the source of the signal. These search and rescue aircraft have the equipment aboard to monitor and track both distress frequencies. The HC-130 checked for the signal. It searched the area, flying an extensive search pattern before returning to home base, having heard nothing.

RCC checked other leads. There was an oil rig approximately 90 miles from the position. They were radioed to see if they had heard anything. They hadn't.

The Coast Guard's Automatic Merchant Vessel Report Center was contacted for a computer surface picture of all merchant vessels in the vicinity. Those vessels were notified to be on the lookout for a vessel in distress.

A relief HC-130 arrived on scene at 6:25 p.m. and it started tracking the signal. All was going well when suddenly they lost it abruptly, "as if turned off," said one frustrated aircrewman.

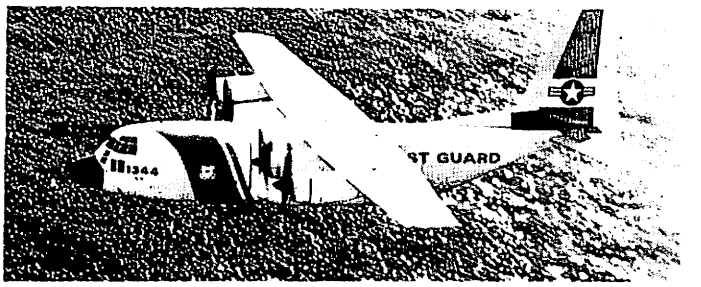
The HC-130 continued to search the area for three more hours before returning to Elizabeth City.

"The EPIRB is an important piece of equipment to have if any long trips are planned. But it shouldn't necessarily be the only emergency type of equipment on board. A good UHF-VHF radio offers voice communication, which can be a great aid in times of distress," Doherty said.

The Canadian Coast Guard's RCC in Halifax alerted its patrolling aircraft of the situation. At 1:39 a.m. on the 14th another Coast Guard HC-130 was airborne, enroute to search for the missing signal. Nothing was seen or heard.

At 10:50 a.m., July 15, the North Atlantic air traffic controller called RCC New York with another report of a distress. A Canadian Argus aircraft was in the vicinity of the previous day's search and had sighted a vessel. The Argus, unable to contact the vessel on the radio, had the information relayed to RCC New York for further investigation.

Captain Bob Pulsiver, aboard the 178-foot Canadian Cutter DARING, was radioed to divert from his off-shore patrol and proceed to the scene 80 miles away. When the DARING arrived at 6:08 p.m. it found the sailing vessel CARLA MARIA. It had been demasted and its propeller fouled with the sail's line. Later the DARING confirmed with Carl Jackson, the only person on board, that he had activiated his EPIRB when he lost his mast and engine. However, he also indicated that he had turned the EPIRB on only from midnight to 2 a.m., his time, to conserve the batteries.



COAST GUARD HC-130 SEARCH AIRCRAFT
The aircraft is equipped with radio direction finding gear. This enables it to home in on distress signals when making high altitude electronic searches. Low level visual searches are flown at 500 feet above the water. The aircraft's normal range is 2500 miles at 300 knots, between 20,000-29,000 feet, and can carry approximately 20,000 pounds of cargo.

"What Jackson didn't realize," Doherty said, "was that by doing this he made it very difficult for us to locate him. The Search aircraft were only arriving on scene when he was turning it off. Once a situation warrants activating your EPIRB — ***leave it on.*** It takes time for someone to hear it, report it, for search aircraft to be launched, and then arrive on scene. "Carl Jackson is a very lucky man. If he had been injured this may have been a tragic story."

Doherty added that the use of ELT's on aircraft and EPIRB's on vessels can save lives, but if misused they can cause the waste of valuable time and money if a search is launched for no reason. "The EPIRB on your vessel should be in an accessible location and tested prior to long trips," Doherty said, "and keeping an extra battery aboard in a waterproof container is a good idea. These emergency transmitters shouldn't be the only preventative measures one takes. The EPIRB and a reliable radio provide a great conbination in times of need and may save your life." **SAR**

SKI YOU CAN DO IT

STAIR JUMPS

In order to avoid sore muscles on your first day of ski touring this winter, tune them up with some preseason exercises.

One good exercise is stair jumping. Start at the bottom of the stairs. Balance on the left foot with the right foot poised in back of you. As you swing your right foot forward, spring off from the ball of your foot to land two or three steps up the stair. After springing off the left foot, the left leg should be straightened to simulate the extension of a ski stride. As you land on the higher step, your right leg should remain bent at the ankle and knee. Then, the left leg should be swung forward and the cycle repeated.

Try one jump at a time until you have mastered the motion. Then gradually work up to a series of 10-15 jumps. You need not feel confined to stairs for this exercise. Any incline will work well. As you become more adept at stair jumping, try it on steeper slopes to help strengthen the muscles as well as loosen them.

Technical assistance provided by Eastern Professional Ski Touring Instructors.

LETTERS TO THE EDITOR

2 May 81

Sir:

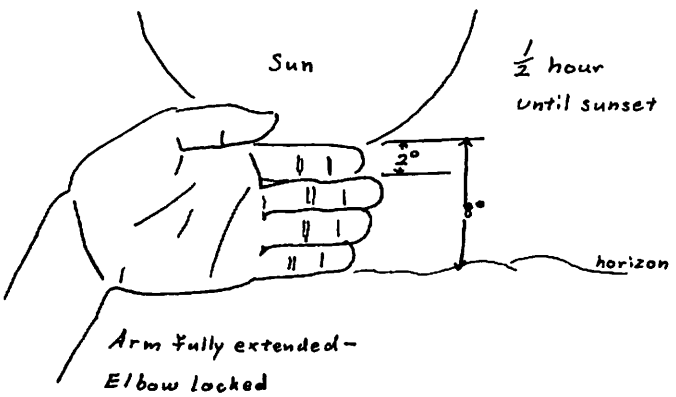
I'm a new subscriber and received my first issue (Winter '80) today. Outstanding!

I believe I can explain the "scout trick" mentioned on page 7. The apparent width of fingers, held at arm's length from the face, are commonly used in the military to estimate the width of an arc — usually for artillery adjustment. The same technique can, however, be used to estimate time from the sun's position, precise direction from the north star, or time remaining until sundown.

To do the latter, one fully extends the arm with the fingers at a right angle to the arm and parallel to the horizon. Since each finger will block about 2° of vision and the sun moves 15° each hour each "hand width" between the sun and the horizon indicates about ½ hour of daylight. (see drawing below)

If one pilot was farther west than the other the sun would appear to be farther above the horizon — so, by comparing "finger width" measurements the pilots could determine their relative positions. I hope the drawing makes this understandable.

Sincerely,
2Lt Hugh Henry
Corps of Engineers
United States Army
709 W. Church St.
Champaign, IL 61820



Dear Dennis:

As I was (finally) getting around to renewing my S&R subscription I thought I'd drop you a few lines. Enclosed is an article from an area newspaper that might be of interest. This sort of thing happens a couple of times each Spring in the general area. It was of more than passing interest to me as I've hiked along that same stream on a number of occasions, although not with the same results. On the other hand I've had a few scares hiking through swamps or along other streams. While I've never been in any mud that I couldn't get out of in a few minutes, the possibility of real trouble does exist.

I was wondering if your magazine had ever published any survival and/or rescue information or articles dealing with mud or quicksand. If possible drop me a note on which back issue(s) are involved and I'll order them. Or if you know anyone with personal experience(s) in this area I would like to get in touch with them.

Thanks for any information you may provide, and keep up the good work in publishing S&R.

Yours,
Richard Pero
P.O. Box 74
University Station
Syracuse, N.Y. 13210

Richard, We thought that "Race Against The Tide" by Mary Jane Beck in the Summer 1977 SARM interesting. — Editor.

2 YOUTHS FREED FROM MUD — One gets stuck helping other . . . .

April 22— George Kostarellis was stuck waist-deep in fr[illegible] Penfield mud yesterday when he found he had company. didn't even know he was there," Kostarellis said last night. "I turned around and said, 'Oh, you're in here, too.'"

Kostarellis' companion in the sticky situation was Kevin Berg, 13-years old who waded into the mess along the bank of Iondequoit Creek in Linear Park, Penfield, near Rochester to try to free Kostarellis, 15.

"Kevin came in to save me, and he got in more danger than I was." Kostarellis said he was walking along the side of the creek when he slipped into the mud and sank to his navel. Although Berg had never met Kostarellis, he quickly jumped in to save him.

"I thought he was brave," Kostarellis said.

Kostarellis said a girl tossed a tree branch to him to pull him out. He was able to escape, he said, because he kept his legs moving. Berg, however, couldn't be rescued because he had a cramp in his leg and couldn't move. "I felt sorry for him," Kostarellis said. "I thought it was my fault because he went in to help me."

Berg became trapped as well. At first, he was chest-deep in the mud, but when police and firefighters later worked to save him, Berg sank to his shoulders.

"They don't have any broken bones or anything," said Deputy Douglas Nordquist of the Monroe County Sheriff's Department. "The doctors are just checking them over because they were in the cold mud so long." Both boys were treated at Strong Memorial Hospital's emergency department. Kostarellis said emergency room workers put sheets over him to warm him but had to use a machine to warm Berg, who was in the mud 40 minutes.

The two youths were in the park with a dozen others when Kostarellis slipped in about 3:30 p.m. and Berg went to help.

"It was nice of him to do it since he didn't even know him," Nordquist said, "but while Berg got Kostarellis out, he got trapped and sank up to his chest." Nordquist said Berg was i[illegible] mud for 15 minutes before police and firefighters were ca[illegible].

"He probably was more scared than in trouble," Nordquist said. "The mud was up to his chest already, and he wasn't sure how far down he could go, but the mud just sort of settled there."

Tammy Roberts, 13, of East Rochester, said she and some other youths tried to pull Berg out while others ran for help. Some park workers tried to pull Berg out with a rope, but couldn't move him, Miss Roberts said. When police and Penfield firefighters did arrive, it took 25 minutes for them to dig Berg out of the mud with shovels, Nordquist said.

"The boy was just shivering there so I gave him my sweatshirt to put on," Miss Roberts said. "At first he didn't want it, but then he took it. He was wearing it when they took him in the ambulance. I'm not sure if I'll get it back, but I'd like to. It's black with red stripes and it's my only sweatshirt. I really don't want to have to wear my winter coat out again."

By Gary Gerew, Staff Writer, Rochester Democrat & Chronicle

March 16, 1981

Dear Mr. Kelley,

I have to compliment you and your people on a superb SAR magazine. You really have everything together. My third issue just came the other day and there is a definite improvement in just these three issues. I like to see progress, especially in SAR work, and you people are showing it to me.

I started out in SAR while in the Army stationed in Texas during 1958 and 1959 and have been in it ever since in one way or another. Two years ago we started up a SAR dog team here in Wisconsin which is doing very well if I may brag a little.

In spite of these 23 years behind me, I am still learning and [illegible]r magazine is doing a lot of the teaching. Keep up the good work!

Very sincerely,
Donald R. Held
2189 Hwy 17, Phelps, WI 54554

SURVIVAL TIMES WHEN WEARING PROTECTIVE GARMENTS

On Scene — *The National Maritime SAR Review,*
Commandant, U.S. Coast Guard,
Washington, DC 20590

Search planners are being faced more and more with the question of "How long might a person survive in cold water if wearing one of today's anti-exposure garments?" Figure 7-3 in the National SAR Manual, which gives survival times for a person wearing a wet suit or a dry suit in cold water is not valid for modern suits and, in fact, will be removed shortly. A replacement, in similar handy form, has not yet been designed. A table of estimated survival times will be given at the end of this article.

Although much is known about today's survival garments, actual experiments have been conducted only at a limited number of different water temperatures. Furthermore a wide range of individual differences have been observed among persons of different weights and body types. To a great extent, uncertainties of this nature exist for all data dealing with survival times in cold water, even for that which give estimates for persons without survival garments, such as figure 7-2 of the National SAR Manual.

General Types of Protective Garments

Water survival garments today fall into three general categories. These are:

1. Dry suits with foam liners;
2. Wet suits of foam, or with foam liners; and
3. Dry suits without foam liners.

The dry suits with foam liners are bulky and cannot be worn during work situations. Their purpose is to act as a quick-donning abandon-ship suit. These have been called variously: Survival suits, exposure suits and immersion suits. The latter term is being used internationally. As might be expected, these provide the longest survival times of the three general types. Some even more effective suits have been designed which provide a layer of insulating air, but these are not yet in general use. The Coast Guard has approved a number of the dry foam suits for abandon ship purposes on Great Lakes vessels.

Wet suits of foam are modifications of divers' wet suits. They are intended for constant wear in certain work type situations such as on the decks of ships or boats, or in the cockpits of helicopters. They are worn next to the skin or with thermal underwear. The most common of these, used in the Coast Guard for many years, are the foam neoprene two-piece wet suits, usually equipped with comfort zippers. More recently manufacturers have produced a suit worn over clothing which is a fairly loose fitting coverall and which has a foam liner that protects in the water by the wet suit principle. It serves nicely as a work garment on the deck of a ship or oil rig during cold weather. Unfortunately these are also sometimes referred to as survival suits, confusing them with the dry foam suits described above for abandon-ship purposes. They can be kept separated mentally by thinking of them as deck suits rather than as abandon ship suits. A condition which modifies the wet suit type of protective capability is the fit. The looser the fit, the less protection it will provide. An experiment with a two-piece foam wet suit demonstrated a significant increase in cooling rate, and thus a decrease in survival time, when the suit was loosely fitted. A set of the wet suit category is given in the table. This consists of grouping of partial wet suits of the shorty type, wet suit tops worn alone, and float coats with hypothermia protection.

The third general category of protective garments is the dry suit without form. These suits are designed for constant wear in situations where comfort is needed in the working environment and where there would be no chance to put on a quick-donning suit in an emergency, such as is the case with a fighter pilot.

GARMENT	WATER TEMP. 35°F	WATER TEMP. 53°F
Dry Suit with Foam	12.6 to 46.3 hrs.	[20] to [92]* hrs.
Wet Suit of, or with Foam	5.2 to 24.6 hrs.	9.4 to [49]* hrs.
Partial Wet Suits of foam, wet suit tops only, and float coats with hypothermia protection	2.0 to 17.7 hrs.	3.9 to 33.3 hrs.
Dry Suit Without Foam	2.6 to 16.5 hrs.	4.5 to 32.7 hrs.

*Figures in brackets are merely best guesses. Other figures are based on experiments and mathematical manipulation of experimental data.

Qualifying Notes to Table

1. Survival times will vary within the extremes given according to the types of garments within general categories and according to the weight of the individuals. The more insulation a garment, the greater will be the survival time. The heavier the person, the greater will be the survival time.
2. Dry suits with heavy winter-type undergarments may provide survival times similar to dry suits with foam.
3. At water temperatures greater than 53°F, survival times will become progressively longer with increasing water temperature.
4. The data on which this table is based was obtained in calm water. Rough water may decrease survival times.

SURVIVAL IN COLD WATER

A recent case in which a fishing vessel sank is a good example of the two methods of provising protection from the cold if you have to enter the water. When the Coast Guard helicopter arrived on scene the crew found both survivors in good condition. One of them had donned a survival suit and thus protected himself with protective clothing. The other sat on an insulated fish box that helped keep him out of the water and thus protected himself by keeping as much of his body out of the water as possible.

Remember, if you have to enter cold water, protection from the cold can be had by wearing protective clothing and/or using whatever means are available to keep as much of the body out of the water as possible. **SAR**

A TEST BY FIRE

By Col. DAVID BURKETT, USAFR,
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Magazines & Books,
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202/ 695-5331

Photos by USAF

They say the test of a man is what he does when the chips are down, when he's between a rock and a hard place, when fate deals an unplanned hand.

For 11 men of the Air Force Reserve's 302nd Special Operations Squadron at Luke AFB, Arizona, their special test came early on the morning of November 21, 1980, a week before Thanksgiving.

SSgt. Dan Jaramillo remembers.

He was just returning from breakfast at the mess hall when he heard the news.

Capt Mike Martin remembers.

He was just stepping into the shower at the Visiting Officers Quarters at Nellis AFB, where the 11 and their three Jolly Green Giant helicopters were participating in a tactical readiness exercise.

The test was to be a test by fire, for on the morning of November 21, one of this country's most tragic catastrophes claimed more than 80 lives and injured more than 300.

That night, on television, in the safety of their homes, millions of Americans would see for themselves in living color the towering smoke that marked the sprawling MGM Grand Hotel on the strip in Vegas, and would be reminded once again that life is frail.

Heavy smoke envelops the MGM Grand Hotel, Las Vegas, NV, 22 Nov. 80.

But for Dan Jaramillo, Mike Martin, and the others of the 302nd, fate that morning was sending them scurrying for their choppers to answer an urgent call from the Las Vegas Metropolitan Police Department.

They were destined to spend the next seven hours on the edge of death themselves, as they plowed their aircraft though swelling smoke to pluck men and women from the roof and balconies of the MGM Grand.

It should be noted that none of the 11 that morning set out to become the heroes they became.

Jaramillo, in his late 20s, was a Phoenix police officer called to active duty for the exercise, Red Flag. Martin, in his 30s, was working for the Air Force as an Air Reserve Technician. Others in the group included a quality control inspector for Lockheed, a corporate pilot, a postal supervisor, a grandfather, a manufacturer of waterbeds, and an Air Force Academy graduate who had seen action in Vietmam.

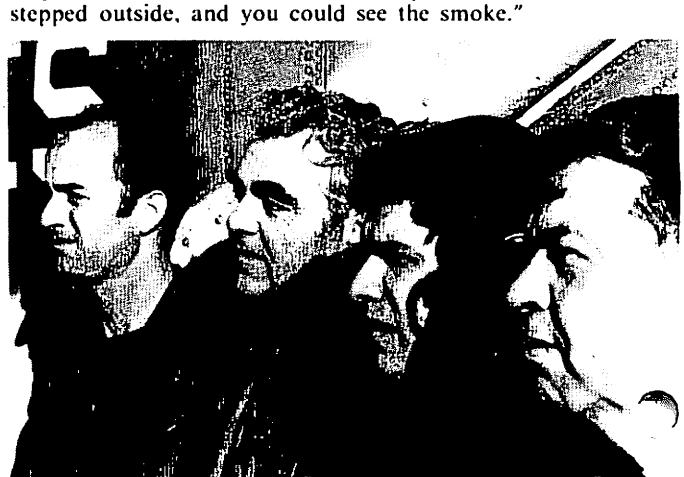
They were all Air Force Reservists with years of active duty experience, now assigned to the 302nd and dedicated to the squadron's mission of airlifting troops and equipment into and out of hostile territory.

But nothing could have prepared them totally for this particular morning in Nevada. Their years of experience, of practice, and their appreciation for human life came together at a special point in time.

Disaster has a way of changing all the rules, and the new rules on November 21 were to improvise and innovate.

But the story is best told by the events of that day.

Captain Martin: "I had just gotten out of the shower when they called. When he said the MGM, I just looked at him. Then I stepped outside, and you could see the smoke."



Four members of the 302nd SOS who took part in the rescue operation: Capt. Michael Martin, MSgt James Connett, TSgt Daniel Jaramillo, and MSgt William Reynolds.

TEST BY FIRE (Cont.)

Captain Dave Ellis: "I remember Colonel Wood coming by saying 'get up, the MGM's on fire.' I thought it was a joke, he said 'it's no joke, it's for real'."

Lt Col Bruce Wood is the 302nd's commander. He had been alerted by the Nellis consolidated command post, and now he was getting his crews together for whatever they could be called upon to do.

Wood's three CH-3E Sikorsky Sea King helicopters were in the air by 8:45 on their five-mile run to the MGM. They joined three Bell UH-1N Hueys from the 1st Special Operations Wing at Hurlbut Field, Florida, also at Nellis for the tactical exercise.

Three additional Air Force helicopters used were Hueys based at Indian Springs Air Force Auxiliary Field, about 40 miles north of Las Vegas.

Throughout the next several hours, Air Force helicopters made dozens of trips to the MGM Grand and rescued more than 90 survivors from the roof. The Hueys also carried firemen and rescue people to the hotel roof and down again when they became exhausted.

A parking lot nearby served as a helicopter landing pad and air operations command post.

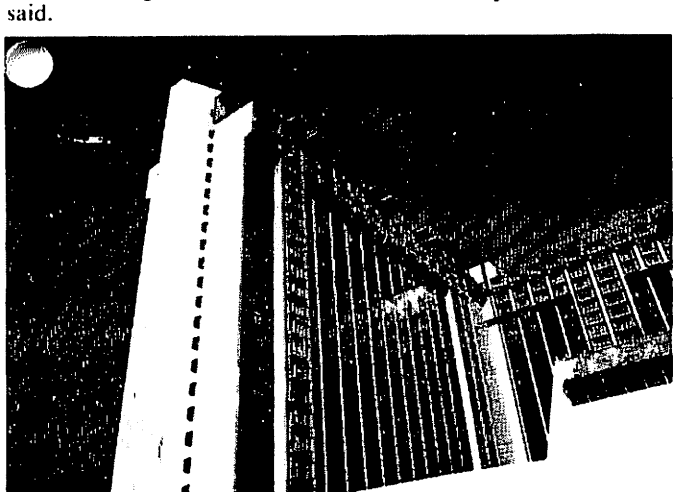
First helicopters on the scene could have been just as easily landing in a combat zone, according to 302nd pilot Captain Lester Smith.

Captain Smith: "There was a lot of smoke obscuring our vision, and we weren't able to get in on our initial passes."

The billowing black smoke was surging from parts of the roof, through vents, and streaming from windows.

Captain Ellis remembers thinking how much the hotel looming above the city that early morning resembled an erupting volcano.

"It looked real bad, real bad, and I could see people waving towels and signs from the balconies where they were stuck," he said.



In moments when the clouds of smoke dissipated, there were few telltale signs of the battle for life going on inside the huge hotel.

Dozens of hotel guests stood on their balconies, holding signs calling for attention and begging for help.

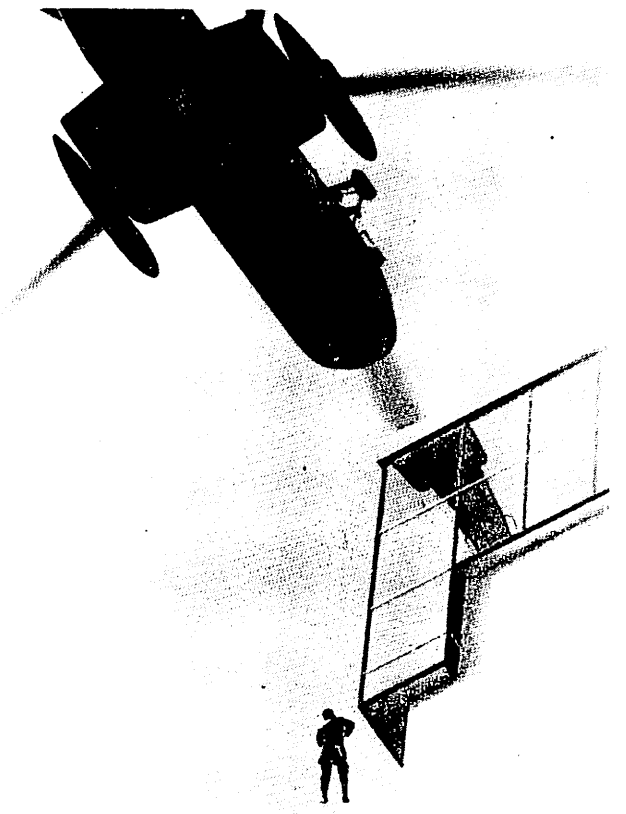
The signs were poignant in their simplicity: "My husband had a heart attack . . . My wife is pregnant."

At first the 302nd helicopters were used mostly to fan away the perilous smoke so that the other, lighter choppers could rescue those people who had managed somehow to reach the roof. The Jolly Green Giants moved as close to the structure as they could without slamming their 31-foot rotor blades into the hotel.

Someone suggested that their rescue hoists be used, but the balcony overhangs prevented the choppers from moving close enough to the building to drop the vertical slings.

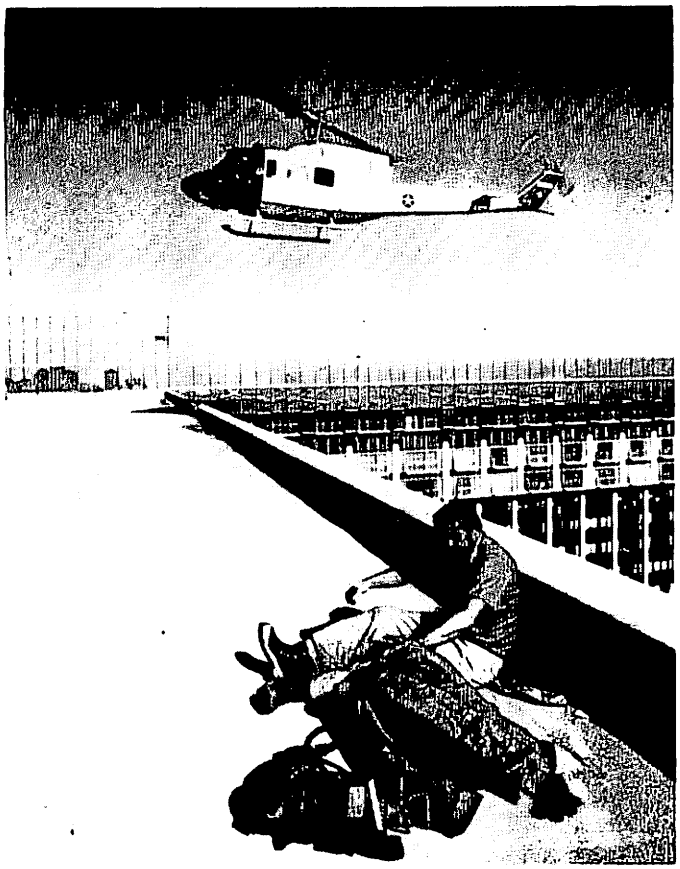
Necessity, which — fortunately — often mothers invention, supplied a solution as the helicopters inched closer and closer to the structure.

Continued

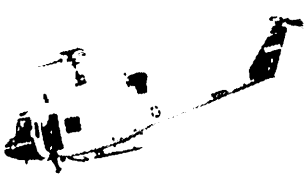


TSgt Jerry Fletcher of the 302nd Special Operations Squadron, a reserve unit from Luke AFB, Arizona, is lowered near a balcony.

TEST BY FIRE PHOTOS



Huey approaches roof where exhausted firefighter rests.



UH-1N Huey from Det. 1 of the 57th Fighter Weapons Wing circles near the MGM (not in photo).

Maj Larry Doege piloted the first Air Force helicopter to arrive on the scene.

Woman survivor is reeled into a CH-3C helicopter.

Patrolman Tom Mildrew (L) and Sgt Harry Christopher of the Las Vegas Police Dept. Air Support Unit.

TEST BY FIRE (cont.)

Captain Martin: "I had my guy carry a cargo strap down on the hoist and as he pulled level with the balcony, he tossed one to the people. They would pull the strap and start the sling swinging like a pendulum. Once close enough, my guy would grab the balcony railing and scale it."

Two flight engineers aboard the Martin chopper rode the hoist downward.

First, MSgt Bill Reynolds went.

Five times the hoist came back.

Five people saved.

Then, MSgt Jim Connett, a grandfather, went down.

Two times the hoist returned.

Two more people saved.

"When I'd get on the balcony, I'd get out and strap the people in, one at a time," Sergeant Connet said.

"It was the only way we could be sure they were in securely, and we didn't want to drop anyone once they cleared the edge of the balcony," he added.

In their fear and confusion, some of those who pleaded to be rescued from their balconies had to be coaxed into the slings for their ride a hundred or more feet to the hovering choppers.

Sergeant Connett: "Some of the older people, especially, wouldn't budge from where they were. One said she was scared of heights. So I sweet-talked her. Told her it was the only way out."

Captain Dave Ellis, helping with the hoist in Captain Martin's helicopter, said there were mixed reactions when people finally reached the safety of the chopper.

"One of them went straight to a corner of the aircraft and cried. For another, it was like a family reunion - lots of hugging and kissing," he said.

TSgt Jim Hodges and TSgt Jerry Fletcher were flight engineers on the chopper piloted by Captain Smith and Major Larry Lybarger.

Hodges said one lady rescued took from her dress a set of wings I tried to give them to him.

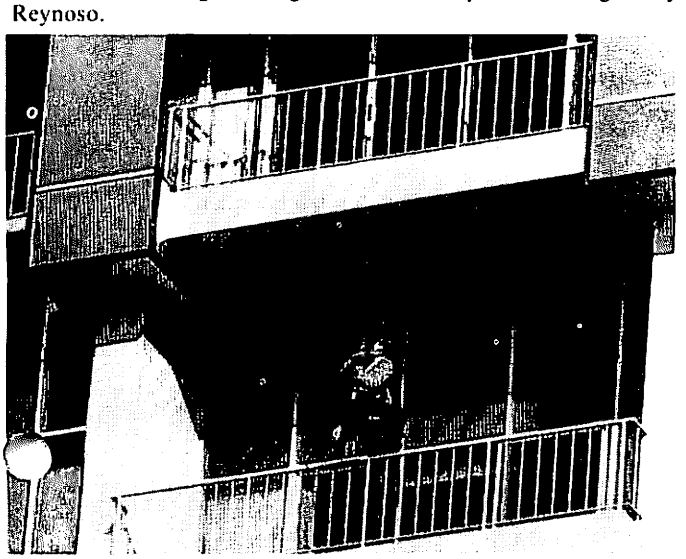
She was so happy, she just wanted to give me something, anything," he said.

Fletcher was at the end of the hoist.

Two more people saved.

During the long morning hours, as many as 30 helicopters from as far away as Southern California sliced through the heavy black smoke on their spontaneous shuttle flights to take as many survivors from the hotel as possible. Sergeant Harry Christopher, chief helicopter pilot for the Las Vegas Metropolitan Police Department, controlled air traffic from his chopper, as Air Force helicopters and those from other law enforcement agencies and private businesses churned between danger and safety.

Sergeant Jaramillo was the flight engineer aboard one of the 302nd's Sea Kings, along with hoist operator MSgt Ray Reynoso.



Flight engineer from the 302nd straps survivor onto a forest penetrator.

Det 1 crewmen offload emergency medical equipment on roof of the hotel.

Jaramillo would ride the sling down, clamber onto one of the balconies, then strap people in for the ride back up. Once everyone was aboard, he would take the sling topside himself.

Jaramillo's second lift was a pregnant woman.

The MGM Grand experience was indeed a special test for all those, who, by fate or by fortune, happened to be there, and who willingly gave their time and talents.

Those who did have been officially praised for their participation. But for the men of the 302nd, no award could equal the genuine appreciation of those who were lifted from their private hell and into waiting arms.

They above all, had survived their test by fire. **SAR**

HELICOPTER AND MOUNTAIN RESCUE

By BILL MARCH
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In the Western National Parks of Canada over 90% of the mountain rescues are supported or carried out by helicopter, including many technical alpine rescues. There is little doubt that helicopters have made a significant contribution to mountain rescue, but many people are not always aware of their full potential, their operational limitations, or the correct procedures to follow when working with these complex expensive machines.

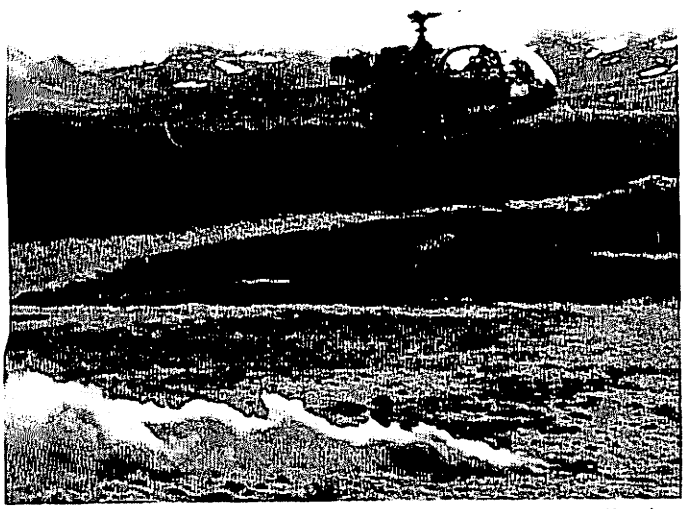
The helicopter is capable of playing many roles in mountain rescue. Three of the most common are:

i) As a search vehicle where speed and mobility are vital
ii) Transportation of equipment and personnel to difficult and remote areas, especially rescue teams and paramedics.
iii) Evacuation of seriously injured casualties in remote or hazardous situations where other means of evacuation are expensive, time consuming and dangerous.

It is the latter role in North America and Europe that has seen the most spectacular success with difficult evacuations carried out at high altitudes on Mount Logan and north faces such as Mt. Bryce, the Eiger and the Grand Jorasses. The helicopter is very maneuverable, can land in confined spaces, hover close to the ground or with one skid in contact and air drop emergency supplies with precision. Specially equipped engines can sling, or lower and raise by winch, rescuers and victims in locations too steep or too confined to attempt a landing or skid touch.

Helicopters cannot do everything one might wish for, since they are subject to inherent limitations. It is useful for every wilderness user to be aware of these limitations in the event of an emergency situation requiring helicopter assistance.

1) A helicopter can rarely hover high over the ground and descend vertically. It flies somewhat like a fixed wing aircraft and normally requires approach and take off space.
2) There are inherent range limitations defined by fuel capacity. Greater amounts of fuel are consumed with heavy loads and increased maneuvering required in mountainous terrain.
3) There is a loss of power with altitude due to thinner air which requires a greater work output. This can be compensated by reducing payload. Hot air is also thinner air and reduces the effective payload.
4) Weather conditions in the mountains can create air turbulance which can affect the handling of the helicopter. Gusty winds, sudden down drafts and wind speeds in excess of 15-20 knots can cause problems over rugged terrain. However, a light wind of 10 knots or less is more advantageous to the helicopter than still air.
5) The majority of helicopters have only visual flying capability and consequently cannot operate in cloud or darkness. Instrument flying is not possible in mountainous terrain.
6) Restricted landing areas will reduce load capabilities.



Alouette Helicopter loading with green smoke grenade indicating wind direction. Cloud based at 3500 in the Cairgorm Mountains behind. Photo by Bill March

In view of the above factors when requesting helicopter assistance it is desirable to give current weather and topographical information of the rescue areas: i) The wind speed and direction and whether it is steady or gusting. ii) The amount of cloud cover, the height of the cloud level and whether hilltops are in cloud and/or the main valleys clear. iii) Information on the nature of the pick-up point — surface rough, smooth or soft; the narrowness of the valley; steepness of slope; amount and type of vegetation cover; significant landmarks, power lines, towers other obstacles, and nearby reference points.

The selection, preparation, marking and control of a landing point are all very important factors which must be considered in wilderness emergency situations. The best helispots are located on exposed knobs and ridges allowing take off and landings from all directions. Ideally the site should have a clear drop-off (land sloping away and down from the take off site) to facilitate helicopter take off. Vertical take offs require considerable power, whilst with a drop off, less power and fuel is used and greater loads may be carried. The helispot should be located so that take offs and landings can be made into the prevailing wind which will give better lift. This is especially so at higher elevations. Landing sites situated on level or bottom land are not as good as down sloping terrain since they provide no drop off. A take off path at least 300 feet in length with an area allowing room to maneuver is desirable on level terrain — wide clearing may have to be found or constructed. Care should be taken when using meadows with high grass which may dissipate the helicopter ground cushion of air and hide rocks, logs or swampy grounds. Deep canyons are also dangerous as they may contain 'dead air holes' or have strong downdrafts from nearby ridges. A helicopter will require a long forward run in order to pull out of a deep canyon or a wide spot where it can circle safely.

Rarely is there a perfect helispot available in an emergency and often the casualty has to be transported to the most favorable location and the site prepared to capability. The minimum dimensions of a landing site will vary according to the size of the helicopter — a helispot of 100 feet (30 metres) in diameter should be sufficient for most rescue helicopters.

The landing site should be as level as possible and on solid ground. On snow, pack down a level area at least 12 feet (4 metres) square. A temporary pad can be constructed using stout logs at least 12 feet (4 metres) long, laid parallel 3 feet (1 metre) apart, as level as possible. Avoid sites with loose ground cover which will be blown up by the prop wash and obscure visibility.

Smoke is the best indicator of your location and wind condition. The smoke source should be located at the windward end of

the landing area and well away from the landing site. When ke is not available the person in charge of controlling the site must indicate wind direction by standing near the landing site with back to the wind and arms outstretched in the direction the wind is blowing to. (Feel the wind with the back of your ears.

All other persons should be gathered together on the low side of the landing area, clear of the landing site and within the pilot's field of view. Do not move toward the machine until instructed by site commander who will receive clearance or other orders from the helicopter crew.

In some situations the machine may not be able to land at your site. If a nearby accessible site cannot be located by the pilot, a rescuer may be lowered to the site by means of a winch or static sling. When a rescuer is slung into a site he will automatically take control of the situation. Do not attempt to over-rule ground personnel, they are professionals at what they are doing. A pilot will never lower a rope or cable to anyone not trained or accompanied by a person trained in helicopter rescue techniques.

SAFETY AROUND HELICOPTERS

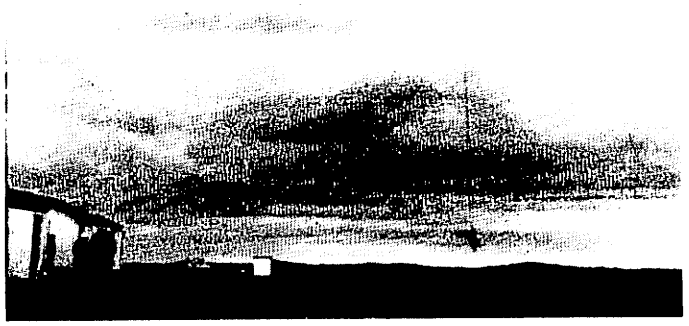
Helicopters are very noisy machines and it is difficult to communicate verbally with the pilot. A crewman may leave the helicopter to obtain information and explain the working procedure. The pilot's word is final in any matter concerning the helicopter use since he is responsible for the craft and its occupants.

Approaching and Leaving the Helicopter:

1) Keep in the pilot's field of vision. Stay away from the rear of the helicopter and tail rotor.
2) Proceed in a crouching manner for extra clearance from main rotor.
3) Don't touch the bubble or any moving parts, tail, rotor linkage, etc.
4) Drag skis, avalanche probes, ice axes, etc. horizontal below waist level, *never upright* on your shoulder.
5) Remove hat unless chin straps are used — *never reach up or chase after* hat or other articles which blow away.
6) If disembarking while the helicopter is at the hover, get out and off in a smooth unhurried manner.
7) On sloping ground *always* approach or leave on the downslope side for maximum rotor clearance, ***NEVER*** toward the rear of the machine.
8) When the helicopter engine is running down in windy condition proceed with caution due to rotor blade sailing a blade will drop down low without warning. If the machine is equipped with a rotor brake, wait for the pilot to give the proceed signal before getting out.
9) Ensure there are no straps or seat belts hanging out of the doors.

Landing, Take Off and Loading Operations:

1) Keep helipad clear of loose articles — water bags, ground sheets, cans, etc.
2) When directing pilot for landing stand with back to wind and arms outstretched pointing the direction the wind is blowing to. Move accordingly when the wind changes.
3) Ensure there are no loose straps, cords or clothing around the casualty or equipment to be loaded.
4) Inform the pilot if heavy objects are put in or removed from the cargo compartment.
5) When directing pilot by radio, give simple instructions which require no acknowledgement.
6) When transporting personnel, the loading staff should ensure:
   a) Passengers are briefed as above.
   b) They are grouped together and well back at the low side of landing zone.
   c) They face away from helicopter during take off and landing.
   d) Each man looks after his own gear.
   e) They are paired off and ready to board in turn as soon as pilot gives signal.



Wessex helicopter practicing a 300ft lift-off using nylon tape extension to winch at R.A.F. Valley, North Wales Mountain Rescue H.Q. This is an experimental technique which is liable to develop a severe oscillation and has not been used in actual rescue. Photo by Bill March

7) When hooking up cargo sling, move forward and to side to signal pilot. Ensure sling is not across skid. Never ride on the sling or skid.
8) Fasten and adjust seat belt on entering helicopter and leave it fastened until pilot signals to get out.
9) Keep calm and proceed efficiently *DO NOT RUSH*
10) Remain stationary in marginal visibiliby situations or on snow fields. The pilot may be using you for visual references.

The most important consideration to bear in mind is that a helicopter may not always be available to come to your assistance. Weather conditions may prohibit flying or the machine may be tied-up elsewhere. It is incumbent upon all mountaineers to attempt a ground evacuation, or if self rescue is not possible, to be prepared to set-up camp and make the victim as comfortable as possible while waiting for help to arrive. Independence in the wilderness carries a heavy weight of responsibility for each wilderness user.

The author wishes to acknowledge the advice and assistance of Jim Davies Helicopter Pilot and Rick Kunelius Banff National Park Warden.

SAR

GUIDELINES FOR FORT CARSON HELICOPTER SUPPORT

I. REQUEST

A. Business hours — (AC) xxx-xxxx (Ft. Carson, G5).

B. After 1630 weekdays and all non-work days — call Ft. Carson's Staff Duty Officer at xxx-xxxx or call Contact of Colorado Springs and ask for either pager #zzzz.

Continued

FT. CARSON HELICOPTER SUPPORT (Cont.)

C. Then call Scott AFB at 1-800-www-wwww and request military assistance. Get a mission # from the controller on duty. Relay this mission # back to Ft. Carson's G5 duty officer.

D. If you have a subject in hand and they need immediate medical relief or medical evacuation, call the MAST Hotline at vvv-vvvv, 24 hours a day. The MAST UH-1H's will not do any searches, nor will they come on a body recovery. Call G5 for these exceptional missions.

E. When you call a mission in, be prepared to give as much information as possible from the Emergency Helicopter Request Form (below).

F. Make your initial call to G5 or MAST as soon as possible to help cut down on the log time caused by crew alerts and flight planning. Fort Carson would much prefer to receive a standby alert and then to be turned off, than to receive a call late.

G. As a general rule, Ft. Carson helicopters will not fly in the mountains at night.

II. CAPABILITIES.

A. Fort Carson has three helicopters suitable for SAR use. They are the OH-58 (Kiowa), the UH-1H (Huey), and the CH-47 (Chinook).

B. Proper utilization for these helicopters would include the following missions: Air search over broken terrain with up to moderately dense timber (thick timber is not good search terrain), team insertion to high altitude landing zones (LZ), medevac from wilderness environment, small sectors of prairie search, rescue from slopes via vertical hoist (within limitations of aircraft performance, weather and natural hazards such as avalanches), and body recoveries from inaccessible areas. Other missions are negotiable.

C. Passengers on Army Aircraft:

1. Any person that is transported aboard an Army helicopter during a search and rescue mission *must* be prepared in case the aircraft has to set down in the wilderness. As a minimum, this would require the following emergency equipment: Emergency bivouac shelter, sleeping bag or substitute, fire starting equipment, signalling device, spare clothes suitable for the environment, food and water. Blue jeans will not be permitted. No exceptions will be made!

III. CONSTRAINTS.

A. Helicopter operations are affected adversely by icing, heat (density altitude), high winds, clouds, altitude, mechanical problems, and lack of crew rest.

B. When a crewmember states that a given mission is unsafe -- accept it and don't try to talk them into doing such a mission. They won't agree and it will cause hard feelings.

IV. OTHER COMMENTS.

A. Other Army assets that might be made available upon request are: Paramedics, rubber rafts (local area), tents, etc.

B. The G5 is always available to discuss actual mission requirements or training exercises.

Whirlwind Helicopter making an approach in Snowdonia, North Wales. Note downdraft defelecting marker smoke.
Photo by Bill March

Wessex helicopter hovering with one wheel on the slope above a sea cliff on the Isle of Anglesey, North Wales, Rescue personnel exiting *should* move *down* slope to avoid rotor.
Photo by Bill March

EMERGENCY HELICOPTER REQUEST INFORMATION

Date_____ Time_____ Mission #_____AFRCC # _____
Name of requestor & Title_____
Agency _____ City_____ Phone_____
On Mission: Name of Contact _____ Phone_____
Emergency & Reason for request (serious threat to life & no civilian equipment available _____
Type of assistance needed in addition to helicopter (medical personnel, rescue gear, etc. _____
Number & Names of persons in incident_____
_____
Extent of injuries & condition, if known_____
Mission Coordinator_____ Base Camp Site_____
Estimate of persons & equipment boarding _____
Number boarding_____ Type of equipment boarding _____
Other persons at incident site _____
Will they need airlift out_____ other information_____
Location of incident site. Coordinate and/or any other means of locating the area _____
Pyrotechnics available at site or base_____
Elevation of site/LZ above sea level _____ Above ground
Is suitable LZ near incident site? If so, how far away, describe terrain, degree of slope, type of surface (snow, dirt, etc.), size of area:
_____
(Above 10,000 feet pilots must have oxygen — above 14,000 feet passengers must have oxygen)
If no LZ nearby can subjects be hoisted out safely_____ Have people at site worked with penetrators_____ Have people at site worked with helicopters_____ Describe hazards in incident LZ area (trees, power lines, cliffs, etc. _____
Weather at incident/LZ site. Wind direction & velocity_____
Cloud cover_____Height of clouds above ground and/or peaks_____
visibility:_____ Current precipitation:_____ Approximate Temperature:_____ degrees F., Snow Depth:_____Other _____
_____
Where are subjects to be transported (hospital, base camp, etc. If not closest hospital, why not): _____
How will landing area be marked: (panels, pyrotechnics, mirrors, strobes, etc.) _____
Are emergency medical personnel at the incident site_____ If not, will they be there by the time helicopter arrives _____ Will emergency care personnel be at the delivery site to receive patients _____
Weather conditions in delivery area_____
Details of Alternate LZ (location & similar information as above) _____
Radio communications on the ground (Frequencies and call signs)_____
_____
Enroute rendevous point with other SAR personnel _____
Requested ETA at incident site/LZ_____
Other information _____

NEW SURVIVOR SYSTEM

Capt. DAVID J. SCHMIDT
Aeronautical Systems Division
Wright-Patterson AFB, Ohio
c/o *Rescue Review*,
SSgt. Jim Katzaman, Editor,
MAC/PALP, Scott AFB, IL 62225
618/ 256-5003

AIRCREWS SAFER IN FUTURE CONFLICTS

"Jolly Green O-one, this is Hammer three-five, acting as on-scene commander for downed pilot. I have his wreckage in sight, and his beeper is strong on Guard channel."

During the Vietnam conflict, that was an all-too-common scenario.

Many times forward air controllers would be the first to find a downed aircraft because their job was to control fighter aircraft and direct them into targets.

If an aircraft was hit, they would have the most information about the downed airman.

When a search and rescue was called, it took the HH-53 Jolly Green Giants anywhere from a half to two hours to get to the scene. Pilots were taught how to hide themselves and make radio contact on Guard — the emergency radio frequency that everyone monitored. Any aircraft in the area that could help went to the victim's aid.

Control 'bad guys'

It was important to keep aircraft over downed pilot for two reasons. First, it kept the bad guys from getting too frisky. Second, the jungle of Southeast Asia looks all too similar from the air, so it was an almost essential part of pinpointing the survivor's location.

But, there was also another reason. The enemy had captured any number of survival radios — the type all aircrews carried in their survival kits. The radio had two modes of communication: First, through voice contact, but at limited range. This was normally used if the situation was not "hot" on the ground, after the helicopter had overflown the downed airman.

The second way was through the "beeper." The beeper would automatically begin when the person ejected from an aircraft, and would continue until the downed airman turned it off or changed to voice mode.

It had longer range than the voice circuit, but wasn't very trustworthy because every beeper in Southeast Asia sounded the same. Until voice contact was established no one could be sure that it was a downed airman or a "flak trap" with enemy gunners waiting to shoot at a defenseless rescue helicopter.

Sandys to rescue

So, when the Jolly Greens went to a rescue, they went armed. That meant two A1-E Skyraiders, nicknamed Sandys. The Korean War-vintage Sandys were located down with a variety of munitions, giving them some flexibility when they got to the target area. Their primary job was to "sanitize" the rescue area for the helicopter. With the help of the survivor, they would lay down gunfire and munitions to "clean out" the area around a downed airman.

There was no more naked feeling in the world for a chopper crew than hovering in a 20-ton craft 100 feet over a known hostile area. The enemy had learned that the smart thing was to withhold fire until the rescue had begun, but the Sandys many times defeated that. After the area was sanitized, the chopper would go in and pinpoint the survivor. Through voice communication he talked the chopper to him. A series of verification questions, known only to the pilot and the rescue squadron, had to be answered. These were questions that only the survivor could answer — a wife's nickname, type of car, favorite football team — so that the rescuers could be sure that they had the right man.

It wasn't difficult for someone who spoke English — even poorly — to successfully get a chopper to respond. Because of static and radio noise, communication was usually marginal, especially if the pilot had been on the ground any time at all. His batteries would be dangerously low.

Smoke signal

So, after verification the downed airman would "pop smoke," or release a smoke grenade allowing the helicopter crew to pinpoint his location. If all went well, the penetrator was lowered to the victim, and up he came to the safety of the helicopter as another successful pickup.

At his home base, everyone would relax. When the chopper returned, a hose-down with water and champagne was in order.

If the attempt wasn't successful, the chopper came home sad, usually with bullet holes to repair and perhaps, people wounded.

They were heroes, the crews of the Jolly Green Giants.They couldn't buy a drink at the Officers Club. They were heroes, because if there was any change of getting a guy out, they would take it. A Medal of Honor and many Air Force Crosses were won by rescue crews in Southeast Asia.

On the next battlefield, heroism may not be enough. New sophisticated ground weapons make rescue attempts much more dangerous. The enemy knows if it can stop rescue people from bringing back a downed airman, the effect on aircrew morale will be severe.

A new system is being developed by Aeronautical Systems Division, Wright-Patterson AFB, Ohio, to limit the greatest threat to the helicopter and improve communication between victim and rescuers. That communication beyond anything else is the greatest factor in a successful pickup — being able to talk to the victim and verify identity and location.

Two-part system

The system is the Survival Avionics System and consists of two parts. On board the helicopter, a computerized system can locate downed airmen at greater distances and then display data to the pilot on a cockpit console. The other part of the new system is a hand-held radio, much like the ones used in Southeast Asia, but with significant and sophisticated differences. Each radio has a unique identification code to which it alone responds. When the chopper tries to locate a downed airman, the avionics system in it transmits a coded signal, including the survivor's personal code. The survivor's radio, when it picks up this code, responds, thereby telling the helicopter crew they are after the right radio.

The avionics system then displays on a console the distance and bearing to the target radio. Rescuers can ignore any other signal they receive — a common occurrence during a rescue in combat — and home-in on the downed airman. Radio contact can verify that the enemy hasn't captured him and is using his radio to set a trap for the rescuers.

Least hazard

With the exact location known, the helicopter can fly directly to it, taking the least hazardous route, instead of "trolling" for the downed pilot in a search pattern that dramatically increases exposure to enemy groundfire. Also, the system only transmits intermittently, reducing the enemy's opportunity to home-in on the downed airman and get to him first. This, according to program manager Richard E. Robbins, is one of its greatest assets.

The system is designed to operate in all weather, day or night, over all types of terrain. It can store information on the position of six survivors, enhancing the rescue helicopters *same-mission* capability. The system will be installed in selected Air Force search and rescue aircraft, including the H-X being procured under the combat helicopter modernization program. Cubic Corporation received a $5.1 million contract to begin development of the SAS. Testing of the system is expected to begin in July when the avionics subsystem is installed on an HH-53 helicopter and an HC-130 aircraft for flight testing. **SAR**

CALENDAR Continued

October 1-4
NEW YORK STATE VOLUNTEER AMBULANCE & FIRST AID ASSOCIATION ANNUAL CONFERENCE
Mt. Airy Lodge, **Mt. Pocono, Pennsylvania**
Contact: Jane French, RFD 2,
Brewster, NY 10509 914/ 227-3556

October 2-4
BARSTOW DESERT RESCUE SQUAD 9th ANNUAL SEARCH & RESCUE SCHOOL
Barstow, California
Contact: Barstow Desert Rescue Squad,
P.O. Box 108, Barstow, CA 92311

October 7-9
BORN OF NECESSITY II — FIRE SERVICE EMS MANAGEMENT SEMINAR
North Park Inn & Convention Center,
Dallas, Texas
Contact: Brad Smith, Program Manager,
ACT Foundation, Basking Ridge, NJ 07920
201/ 766-2273

October 8-10
4th ANNUAL TACDA SEMINAR-CONFERENCE
Pentagon City Quality Inn, **Arlington (Washington, DC)**
Contact: The American Civil Defense Association,
P.O. Box 1057, Starke, FL 32091 904/ 964-5397

October 10
MARYLAND STATEWIDE EMERGENCY CARE COMPETITION
Rimonium Fairgrounds, Maryland
Contact: Committee Chairman Robert Lynch,
4227 Colchester Drive, Kensington, MD 20795

October 11-15
30th ANNUAL USCDC CONFERENCE
Plaza Cosmopolitan Hotel, **Denver, Colorado**
Contact: Office of Emergency Preparedness,
City and County Building, Room 3, Denver, CO 80202

October 12-14
2nd INTERNATIONAL CONFERENCE ON EMERGENCY MEDICAL SERVICES
Hotel Meridien, **Montreal, Canada**
Contact: Helene Lamontagne, MD
514/ 844-7192 or 273-3697

October 12-14
1981 RIVER RESCUE CONFERENCE
Hilton Inn-North, **Columbus, Ohio**
Contact: Jim French 614/ 466-3066

October 21-23
BORN OF NECESSITY II — FIRE SERVICE EMS MANAGEMENT SEMINAR
Carrousel Inn, **Cincinnati, Ohio**
Contact: Brad Smith, Program Manager,
ACT Foundation, Basking Ridge, NJ 07920
201/ 766-2273

October 23-26
DIVE RESCUE SPECIALTY SEMINAR
Catalina Island, California
Contact: Dive Rescue, 1449 Riverside Drive,
Fort Collins, CO 80524 303/ 482-0887

October 29-31
2nd ANNUAL CONFERENCE FOR PROGRAM AND MEDICAL DIRECTORS OF EMT-PARAMEDIC PROGRAMS, Sheraton Airport Hotel,
Denver, Colorado
Contact: JRC EMT-P, P.O. Box 405,
Newton Highlands, MA 02161 617/ 894-7179

November ?
INTER-AMERICAN NAVAL SAR CONFERENCE
Washington, D.C.
Contact: A. J. McCullough, ICSAR Secretary,
U.S. Coast Guard G-OSR-4, 400 7th Street, SW,
Washington DC 20590 202/ 426-1932

November 1-6
NATIONAL AVALANCHE SCHOOL — Phase I
Pioneer Auditorium, **Reno, Nevada**
Contact: National Avalanche School,
USDA Forest Service, 240 West Prospect Avenue,
Fort Collins, Colorado 80526

November 4-6
BORN OF NECESSITY II — FIRE SERVICE EMS MANAGEMENT SEMINAR
RMS Queen Mary, **Long Beach, California**
Contact: Brad Smith, Program Manager,
ACT Foundation, Basking Ridge, NJ 07920
201/ 766-2273

November 7-8
BANFF FESTIVAL OF MOUNTAIN FILMS
Banff, Alberta, Canada
Contact: Banff Festival of Mountain Films,
The Banff Centre, P.O. Box 1020,
Banff, Alberta, Canada TOL OCO.

December 6-10
SAFE SYMPOSIUM
Hotel Sahara, **Las Vegas, Nevada**
Contact: Jeani Ralston, SAFE Assoc.,
7252 Remmet Avenue, Suite 203, P.O. Box 631,
Canoga Park, CA 91303 213/ 994-6495

December 7-11
MANAGING THE SEARCH FUNCTION
Columbia Junior College, **Columbia, California**
Contact: Jim Mendonsa 209/ 532-3141

December 7-11
AIRCRAFT CRASH SPECIALIST SCHOOL
Treasure Island Inn, **Daytona Beach Shores, Florida**
Contact: Bob Whempner, Embry-Riddle Aeronautical University, Star Route Box 540,
Bunnell, FL 32010 904/ 672-3439

SEARCH AND RESCUE MAGAZINE provides a way for rescuers from coast to coast to keep current with significant SAR events. Every issue we run a 'Calendar' column that simply lists SAR related conferences, schools, seminars, and events sponsored in your local area. Lead time is important so let us help you by keeping us abreast of current events in your area early. **SAR**

SEARCH & RESCUE MAGAZINE INDEX

FALL 1973
★ Washington State SAR Conference ★ A Visit with Jon Wartes ★ A Child is Lost, by Lena Reed ★ Chapter 1 of Mountain Search for the Lost Victim.

WINTER 1973
★ A Rescue Worth Mentioning ★ The use of String Lines for Subject Confinement, Search Area Segmentation, and Grid Sweep Control, by Jon Wartes and Bill Rengstorf ★ Mountain Rescue Association Spring Business Meeting ★ Fort Jackson Search and Rescue Squad, by PFC Larry Strawther ★ Part 2 of Mountain Search for the Lost Victim.

SPRING 1974
★ Driver Survives 500 Foot Plunge ★ National Association of SAR Coordinators Annual SAR Conference ★ Simulated Plane Crash ★ Heated Oxygen Hypothermia Treatment ★ Part 2, Chapter 2 of Mountain Search for the Lost Victim.

SUMMER 1974
★ Surf Rescue, by Bill Wagner ★ 1st National SAR Council, by Blair Nilsson ★ National SAR School Graduation Speech ★ The Rescue People, by George Sibley ★ Part 1, Chapter 3 of Mountain Search for the Lost Victim.

FALL 1974
★ A Tribute to Hal Foss, by Dyer Downing ★ Harold A. Foss Obituary, by Rick LaValla ★ Land Search Organization, by Lois McCoy ★ How State Conferences Began, by Lena Reed ★ International Mountain Rescue Conference, by Judy Bechler.

WINTER 1974
★ The Rescue Group Nobody Knows—SAROC, by Lois McCoy ★ Search Theory, by Dennis Kelley ★ The role of the State SAR Coordinator, by Paul Koenig ★ Developing a Search Plan, by Andrew Hutchison ★ Caldwell Search ★ Utah SAR Seminar, by Paul Koenig.

SPRING 1975
★ Federal Agency Roster ★ A Visit with Peter J. Pitchess Los Angeles County Sheriff ★ 6th Annual National Association of SAR Coordinators Conference ★ Mt. Stuart Rescue, by Paul Williams ★ Man-Tracking, by Lois McCoy ★ INLAND SAR '75.

SUMMER 1975
★ Rappelling, by Bill March ★ Oregon SAR Conferences, by Galen McBee ★ NASARC Advisory Council Minutes, by Paul Koenig ★ Aerial Reconnaissance in SAR, by Lt.Cdr. Scott Ruby, USN ★ National Jeep SAR Association Convention ★ Anatomy of a SAR Conference, by Wes Reynolds and Lois McCoy ★ LANTSAR '75, by Lois McCoy ★ NASARC Awards Program.

FALL 1975
★ How to Teach Yourself Tracking Techniques, by Jack Kearney ★ The Dilemma of Helicopter Rescue, by Paul Williams ★ Snowmobile Rescue Units in Northeast Support CD, by Vincent J. Tuscher ★ The Changing Face of SAR in Baja California, by Lois McCoy ★ Northern California SAR Seminar, by Jim Presentati ★ Avalanche Recovery, by Blair Nilsson.

WINTER 1975
★ National Association of Search and Rescue Coordinators 6th Annual Conference ★ Communications - The Visible Part of Planning, by Lois McCoy ★ Emergency Preparedness Bibliography, by Skip Stoffel ★ Search and Rescue Dogs, by Kenny MacKenzie.

SPRING 1976
★ Vehicle Tracking, by Gar Salzgebar ★ Establishing Search Areas, by Robert J. Mattson ★ Mountain Flying ★ River Crossing, by Bill March ★ Northwest Bloodhounds Search and Rescue, by Lena Reed ★ Flight For Life, by George L. Seaton.

SUMMER 1976
★ The Rumplestilskin Effect, by Lois McCoy ★ Safety in Helicopter Operations, by Lt.Com. L. B. Beck, USN ★ Search and Rescue in Oregon, by John Olson ★ Uniform Map System, by Ev Lasher ★ NASAR Spring Advisory Council Meeting ★ "Go the Second Mile," by Stan Bush ★ Basic Living, by Mike Humfreville ★ CB Radios for SAR Communications, by Lt.Col. Homer Dillow, USAF.

FALL 1976
★ Nicaraguan Jungle Survival, by S. Wicker-Guerrero ★ That Faithful Old Albatross, by Jerry Hagan ★ Medical Emergency Triage Tag, by Robert Blodgett and W. Murphy ★ USAF Search and Rescue Films ★ Plane Crash!, by Skip Carnes ★ Teach Yourself Tracking, by Jack Kearney ★ Emergency Transmitter Location, by Bruce Gordon and Lou Dartanner.

WINTER 1976
★ One Walked Away, by Bruce Schweiger ★ Glacier!, by Bill March ★ Editor Wild Plants, by Dan Hensley ★ Health Foods vs C-Rations for Survival ★ Cheyenne, Editorial.

SPRING 1977
★ Basic Snowcraft, by Bill March ★ European Search & Rescue, by Robin Burton ★ Fruit Salad Caper, by Lois McCoy ★ Use of a Metal Detector in Avalanche SAR, by Jon Gunson ★ EMT Plan for Mountain Search & Rescue Teams, by Lyn J. Morgan.

SUMMER 1977
★ Ground Anchors, by Bill March ★ Salt Tablets. . Yes or No?, by Sandy Bryson ★ Tornado! Funnel of Fury, by Grover Brinkman ★ Search and Rescue is Going to the Dogs!, by Bob Koenig and Marcia Koenig ★ Pikes Peak. . .Colorado's Longest Vertical Rescue, by Mike Taigman ★ Race Against the Tide, by Mary Jane Beck ★ Survival in Cold Water, by Robin Burton.

FALL 1977
★ Comptroller General's Report to the Congress, by GAO ★ California SAR Support Program, by Wayne Kranig ★ Summary of Federal SAR Conference, by Col. Bruce Purvine ★ Interrogation: Remember Your P's and Q's, by Tom Valenzuela, Jr. ★ Improving SAR Proficiency, by Lee Lucas.

WINTER 1977
★ The Nashville Experience, by Donald Irwin ★ The First Rescue, by LCDR John Ebersole USCG ★ CBS Strives for Realism, by Skip Stoffel ★ The Multi-Agency SAR Plan, by Lt. T. P. Hart USCG ★ The Pocket Scanner, by Jon Gunson.

SPRING 1978
★ New York Fire Department Auto Rescue, by Wayne T. Parola ★ Lloyd K. Mosemann Speech ★ Deep Water Rescue Breathing, by Albert L. Pierce ★ East Meets West, by Dick Sale ★ The Cass Cave Incident, by Bill Clem ★ The First Step in the "Second Mile," by Stan Bush ★ The U.S. Coast Guard Auxiliary, by LCDR John Ebersole ★ Mountain Rescue in Britain, by Bill March ★ The Ambulance in the Valley, by Joseph Malines.

SUMMER 1978
★ Man Lifted Off Flaming Silo in Daring Helicopter Rescue, by Millie Ball ★ ICSAR = The Interagency Committee on SAR, by Lois Clark McCoy ★ Alaska Plane Crash!, by Rollo Pool ★ The ELT is the Best Search Tool Currently Available, by Robert J. Mattson ★ Emergency Locator Transmitters, by NTSB ★ Air and Ground E.L.T. Direction Finding, by Bruce Gordon.

FALL 1978
★ Rescue on Mt. Watkins, by Tim Setnicka ★ Belaying, by Bill March ★ Ascenders in Rescue, by Eric Fuller ★ SAR Stats: Fact or Fiction ★ Altimeter Evaluation, by Ray Hague ★ The Rescue Pack, by John Wehbring.

WINTER 1978
★ Introduction to AFRCC, by Col. Butera, USAF ★ Selected SAR Missions ★ Computer Applications ★ Communications ★ State Organizations ★ Volunteer Organizations ★ ELT ★ Weather ★ Data Collection ★ Federal ★ ITAP.

SPRING 1979
★ Mtn. Rescue Saves Trucker, by Steve Blakely ★ The Shepherds vs the Hounds, by Sandy Bryson ★ Dogs in Disaster Search, by Bill Dotson ★ How the Bloodhounds Do It, by Lena F. Reed ★ They Sniff Out Drugs, by Tom Alex ★ Bloodhounds, by James T. Beck ★ Ranger Service Dogs, by Sandy Bryson ★ What Goes Down Must Come Up, by Bill Clem.

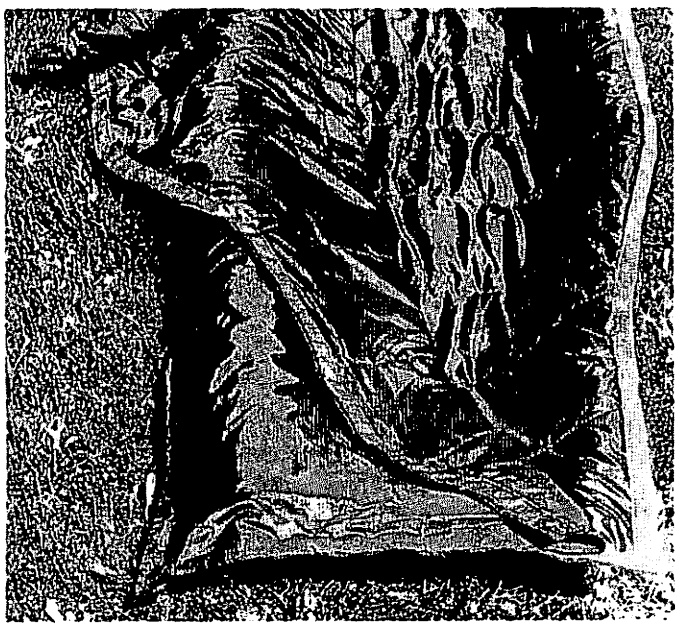
NEWS & RUMORS

FIVE HUGS ARE NEEDED FOR SURVIVAL

New York (UPI)— A California social scientist says hugging is good medicine. It transfers energy and gives the person hugged an emotional boost.

"You need four hugs a day for survival, eight for maintenance and 12 for growth," says Virginia Satir in a magazine for teenagers. She says a hug makes people feel good because "the skin is the largest organ we have, and it needs a great deal of care. A hug can cover a lot of skin area and give the message that you care." It's also a form of communication, the scientist says, because it can say things you don't have words for. And, "The nicest thing about a hug is that you usually can't give one without getting one."

ARALUEN SUPER-SACK



A new patient sack which speeds and eases the task of caring for and transporting accident victims is offered by ARALUEN INC. The ARALUEN SUPER-SACK is made of separate upper and lower halves joined around three sides by velcro. The patient is placed on the bottom half, the top half is placed over him or her and the two halves are joined with the velcro. Thereafter, EMT's or physicians can gain instant access to any part of the patient without the need to unwrap or unstrap him, by merely separating the velcro near that part.

The filling material is 3M's new THINSULATE® Thermal Insulation which 3M claims has considerably greater insulating power than down or synthetic fabrics. The THINSULATE® is enclosed in ripstop nylon. The side facing the patient is waterproof, providing a vapor barrier for patients suffering from hypothermia. The outside layer is of breathable nylon, permitting machine washing or dry cleaning.

12 OF 21 SURVIVE 2-MONTH ORDEAL AT SEA

Twelve survivors of an ill-fated voyage in the Pacific were reported in "good shape" despite two months adrift in which nine fellow passengers died and their cabin cruiser drifted 1,300 miles off course. At least three of the 12 were being treated for malnutrition en route to the island of Truk in the U.S. Trust Territory of the Pacific after they were picked up by the Trust Territory vessel Micro Dawn. The cabin cruiser disappeared March 26 on what should have been a two hour voyage between the Gilbert Islands of Abaiang and Tarawa. The initial food supply on the boat was not known but the survivors said their last meal was a shark caught two weeks ago. All passengers aboard the vessel were believed to be residents of the Gilbert Islands.

NAEMT ANNOUNCES MAJOR AWARD RECIPIENTS

The National Association of EMT'S (NAEMT) has presented its 1981 awards during its annual eductional conference held Portland, Oregon. More than 700 EMTs from 33 states attended the conference.

The Robert E. Motley EMT of the Year Award, which carries a $1,000 cash stipend from the Dyna-Med Company, was presented to Murl Gallagher of Waverly, Minnesota. She is the Secretary-Treasurer of the NAEMT House of Delegates.

The Leo Schwartz EMS Service of the Year Award was presented to the Dallas (Texas) Fire Department. The honor carries a $1,000 cash award from the Horton Company.

The A Roger Fox Founders Award was presented to Jeffrey S. Harris of Waltham, Massachusetts. Harris is one of the original incorporators of NAEMT, and has served as the Association's Executive Director since its founding. He has recently resigned to become President and Chief Executive Officer of Page Industries, Inc.

The J. D. Farrington Award of Excellence went to Nels Sanddal of Boulder, Montana. Sanddal is Chairman of the National Council of State EMS Training Coordinators and serves as EMS Training Coordinator for the State of Montana.

NAEMT's President's Award was given to Joseph D. Hansen of Big Timber, Montana, for his contributions to NAEMT as Secretary-Treasurer and for the leadership he has demonstrated during his first term on the Board of Directors in plotting a firm financial course for NAEMT.

The first Stephen A. Frew Award, presented to that member of the NAEMT Board of Directors that has most contributed to the success of the Association, was also awarded to Hansen.

Don Stamper of Columbia, Missouri, President of the Missouri Association of EMTs and Chairman of NAEMT's Education Committee, became the first recipient of the Jeffrey S. Harris Award in recognition of his service to his state association in rebuilding it after a nearly disastrous period two year a[go]. Stamper is EMS Coordinator at the University of Missouri Columbia, a Registered EMT-Paramedic, and was elected to the position of President-Elect of NAEMT.

Gary M. LaBeau of Ipsilanti, Michigan, succeeded Richard Vomacka as President. Joseph Hansen was unanimously re-elected to the position of Secretary-Treasurer.

Continued

DATA on some COMMON DRUGS

Approach - **The National Maritime SAR Review, Commandant, U.S. Coast Guard, Washington, D.C. 20590**

DRUG	"Average" Time Drug Is Still Detectable in Body
Alcohol (wine, beer, "hard" alcohol, mixed drinks, etc.)	1 "standard" drink — 3-4 hours
Opiates (Codeine, heroin, morphine, etc.)	5 days
Barbituates ("downers")	2-10 days (depends on drug)
Hallucinogens (PCP, LSD, peyote, etc.)	48 hours
Amphetamines ("uppers")	48 hours
Cocaine ("snow")	48 hours
Methaqualone (Quaalude)	72 hours
Marijuana (THC) (also hashish)	4 hours to 10 days

EMERGENCY POISON ANTIDOTE KIT OFFERED BY ROCKFORD SAFETY EQUIPMENT

This inexpensive kit provides the two most medically effective antidotes available for treating accidental poisonings: ½ oz. Bottle Syrup of Ipecac, 1½ oz. Bottle of Charcoal Suspension. Complete with teaspoon and instructions, this kit is essential equipment in Paramedic and EMT trauma cases, drug boxes, emergency departments, and especially home medicine cabinets where children are present. The emergency poison antidote kit provides the early treatment necessary to prevent serious complications or even death.

For complete information on Rockford Safety Equipment Company **Emergency Poison Antidote Kit** and our complete line of emergency medical products, all or write today for your free copy of *"Emergency Medical Care Products & Rescue Extrication Equipment"* (EMP-5). Contact Rockford Safety Equipment Company, 4620 Hydraulic Road, P.O. Box 5166, ckford, Illinois 61125. Call (toll free) 1-800-892-9435, (illinois ..counts) or 1-800-435-9451 (rest of U.S.A.).

'MOSTLY LUCK' ATTRIBUTED FOR DISCOVERING SURVIVORS

ST. JOHN'S Newfoundland (UPI)— Nineteen survivors of a sunken research ship were plucked by helicopter from a raft after drifting two days in icy Labrador waters, but the Coast Guard found eight bodies and searched for five missing crew members of the Arctic Explorer.

Officials delayed until daybreak a renewed air search but two Coast Guard ships worked through the night using charts showing the likely drift of the five possible survivors of the sunken ship, a seismological survey vessel. Two Americans were among the survivors.

"Nobody's sure what happened," John Hobert, a 35-year-old engineer from Dallas, Texas, said from his hospital bed i the coastal town of St. Anthony where all 19 men in the lifeboat were sent to recuperate after their rescue. "I was woken up when the boat took on a substantial list," he said. "By the time I got up, the water was already up to the helicopter deck and the order came from the captain to man the lifeboats," Hobert said, calling his survival "mostly luck."

Police would not release any names but Hobert said the survivors included a Briton and another American, Jeff Cunkleman, from Florida. The rest were believed to be Canadians. The 19 survivors were spotted about 9 miles off the northernmost tip of Newfoundland and plucked to safety by helicopters, more than two days after their ship sank early July 3, 1981 in the frigid waters nearly 700 miles northeast of St. John's.

Searchers later found eight bodies in the debris of the 170-foot ship in various spots along the northern Newfoundland coast, Coast Guard Capt. John Robson said.

The seismological survey ship, owned by the Canadian firm of Carino Company Ltd., was leased by Geophysical Services Inc. Coast Guard officials said they did not know why the company kept silent for almost 24 hours after the ship failed to report. Hobert said "one or two people" chose not to get into the two life rafts, but the vessel disappeared beneath the water, 20 minutes from St. Anthony, within 20 minutes.

Continued

ZUKOSKI APPOINTED NATIONAL SALES MANAGER OF GENAVE, INC.

Genave, Inc., Indianapolis, Indiana, announces the appointment of Ron Zukoski as National Sales Manager, Airport Communications and Government Contracts Divisions. Zukoski will manage Genave's Airport Communications Sales Division and be responsible for supervising all government sales under Genave's GSA contract #GS-OOC-90121. Retired from the United States Air Force, he has more than 20 years experience in communications, radio and radar. His background includes five years as an instructor in the Air Force electronics school and experience as a commercial pilot and flight instructor. Ron is married and has three children. Originally from Detroit, he has been an Indianiapolis resident for five years.

Genave is a multi-line manufacturer of land mobile and airport communications equipment. All Genave products are manufactured in the U.S.A.

The company recently introduced two economical handheld transceivers. The new ECOM 40 is available in UHF-FM and VHF-FM configurations, and the AirCom is an aircraft band unit. Both the ECOM 40 and the AirCom retail for $295.00.

BLIZZARD HALTS SEARCH

PARADISE, Wash. (UPI)— The search for 11 climbers entombed under tons of glacial ice on Mount Ranier was called off because the search team was being exposed to too much danger.

Search team leaders advised Mount Ranier National Park Superintendent Bill Briggle that there was no hope for an early recovery of the bodies of the victims of the nation's worst mountain climbing incident. Team leaders said the site was buried under ice and snow, and added that searchers were endangered by the possibility of additional avalanches of glacial ice.

Briggle said the search team was being withdrawn. Searchers found no trace of the 11 missing climbers Monday as gusting winds and snow severely hindered their efforts.

On Oregon's Mount Hood, searchers aided by survivors recovered four bodies of climbers killed in another accident — a chain-reaction fall of 3,000 feet, caused by a misstep — that took five lives. The Mount Hood rescue team, as in the other case, battled winds of 50 mph and 2 foot snowdrifts to bring out the bodies. The fifth victim died in a Portland hospital after suffering a heart attack during her helicopter rescue from the 11,235-foot mountain.

The searchers on Mount Rainier spent about two hours among the icefall rubble probing for bodies and looking for their belongings. A 24-hour blizzard that followed the tragedy had deposited 2 more feet of snow, burying personal items and making the task even more difficult. Led by veteran mountaineers Lou and Jim Whittaker, the team waited through a blinding snowstorm in three stone huts at the 10,000-foot level until the skies cleared at 4 p.m. They then quickly made the 1-mile climb from Camp Muir to where chunks of ice the size of cars suddenly fell on the climbers about 3,400 feet from the volcanic peak's 14,408-foot summit.

The five others who died in the Mount Hood accident, were in a group of 17 climbers. They were linked by ropes and fell on Elliott Glacier at the 8,500 foot level of the mountain 100 miles to the south of Mount Rainier. The injured — including the woman who later died — were rescued by ground parties and helicopter. "Our group — either one person or the entire group — just lost their footing," Robert Vreeland, 35, Portland, recalled from his room at The Dalles General Hospital. "They were up above all but two of the top teams. They just came down and wiped us out — we went for a 3,000-foot ride on the snow and ice."

GENAVE NEW UHF-FM HANDHELD TRANSCEIVER

A new UHF-FM handheld transceiver, the *ECOM 40U*, is available for under $300 from Genave, Inc., Indianpolis, Ind. The ECOM 40U is ideal for business, farm or public safety applications. Battery, antenna and charger are included with the $2.. retail price of the unit.

Featuring four channel capability, the ECOM 40U operates on the 450-512 MHz frequency range and provides one watt minimum output power. The base price of the ECOM 40U also includes one frequency of your choice (Additional frequencies — up to a total of four — are $42.95 each.)

Housed in a rugged Lexan case, the ECOM 40U is designed to withstand years of rough handling in hostile working conditions. This touch, durable cover protects the unit from damage while maintaining the lightweight of the transceiver. The unit's low price is especially appealing to construction workers, survey crews or material handlers — wherever the wear and tear on a transceiver is especially great. Low cost enables the user to replace a lost or severely damaged ECOM 40U and still save money.

A single, two-sided printed circuit board eliminates time-consuming and costly repairs. Ready access to both sides of the printed circuit board keeps down-time to a minimum and makes the ECOM 40U especially easy to service.

A compatable add-on for existing systems, the ECOM 40U allows the convenience of two or more back-up units at the same price of one of the existing handhelds. Other portable UHF communications from Genave include the GHT-6U, a six channel, two watt handheld enclosed in a shock-proof metal case. Genave, recently announced a new leasing program that will enable customers to lease any radio in the Genave product line. Ideal for customers on a restricted budget, the new program will cover Genave's entire line of land mobile and airport communications equipment from $200 and up. Walnut Equipment Leasing Company, Inc., Ardmore, Pennsylvania, has been appointed as Genave's leasing agent. Dealers interested in taking advantage of the new leasing program should contact the Sales Departme... Genave, Inc.

Genave is a multi-line manufacturer of land mobile and airport communications equipment. All Genave products are manufactured in the U.S.A.

THE TEMPERATURE IS RISING !!!

Once again we in Imperial Valley are facing our 'balmy' summer season. For those of you unacquainted with our weather this means temperatures of 100° to 115° *plus* for about three months. It is a time that we dread as a rescue team because almost without fail people continue to take chances with the heat and find themselves in trouble. The odds for survival are very slim. For this reason our primary advice is always "if you don't have to be on the desert, don't go!" There are approximately eight months of moderate weather in which to enjoy our desert, but now is the time to find your recreation elsewhere, in the mountains or by the seashore. If you travel across the desert or *must* be out in our summer heat, we ask you to take the following precautions. Carry a sufficient amount of water, our recommendation is 5 gallons per person, per day. Always make sure someone knows exactly where you are going, ***do not deviate from these plans,*** when to expect your return, and have them call for help ***immediately*** should you not be back when expected. It is not necessary for you to be in the wilderness areas to get into trouble. We have had persons die by the side of heavily traveled roads when they got stuck and suffered heat stroke before they even realized they were in danger. Should you find yourself in trouble on a roadway be sure to get help immediately, before you become disoriented due to dehydration and start making illogical decisions that could affect your survival. If you are in an isolated area and in trouble — ***stay with your vehicle!*** Even when vehicles have been hidden we h... always found them first. If you are carrying water as recommended, ***drink it!*** Do not conserve your water, better to run out before we find you than to die with a full canteen.

Reprint from De Anza Rescue Unit publication

Continued

MAN USED HEAD, BEATS GRIZZLY

GLACIER NATIONAL PARK, Mont. (UPI)— A charging grizzly bear is such a force that many experts wouldn't face one even with a gun, but Dave Reynolds of Martin City, Mont., found his umbrella to be an effective defense.

Reynolds, an experienced hiker, used his umbrella to repel a sow grizzly that charged him and three companions on a trail in Glacier National Park. They came across the sow and her cubs while hiking near Granite Park Chalet.

"We watched her for three or four minutes," Reynolds explained. "Then she caught sight of us, laid her ears back, woofed and charged."

Reynolds stood his ground on the trail while his companions climbed trees. He said when the grizzly was nearly upon him, he popped open the umbrella and ducked down behind it.

While crouched behind the embrella, Reynolds had no way of knowing what the grizzly was up to. His friends told him that when the umbrella sprung open, the bear stopped, walked slowly to it, sniffed and suddenly turned and ran away. The bear and cubs took off down the trail at a lively pace.

71st BEST RESCUE UNIT

ELMENDORF AIR FORCE BASE, AK— The 71st Aerospace Rescue and Recovery Squadron (ARRS) was named as the outstanding rescue squadron for the Air Force in 1980.

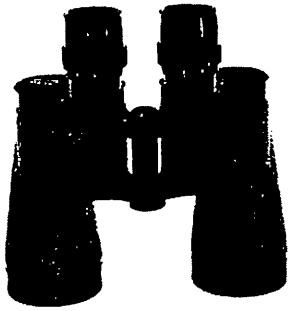
Announcement was made by Gen. Robert E. Huyser, Military Airlift Commander-in-Chief, for outstanding service and achievement during 1980. The 71st provides search and rescue coverage for the Alaskan theater as well as helicopter logistical support to the Alaskan Air Command.

Last year the squadron was credited with saving 126 lives and assisting 440 persons in search and rescue operations. Equipped with three HC-130 Hercules aircraft and six HH-3 Jolly Green Helicopters the 71st flew 353 hours of life-saving rescue missions last year.

General Lew Allen, Jr., Chief of Staff Air Force, visited the squadron to award decorations to those involved in the rescue of 519 passengers and crew from the luxury vessel PRINSENDAM last October, called the largest peacetime maritime rescue recorded. Squadron members are active in community affairs such as presenting briefings and seminars on winter survival skills to schools, industry and service organizations. The 71st is on alert every hour of every day. Their motto is their mission . . . "These things I do that others may live."

Continued

SAILOR'S "MATE"



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The large 7.14mm exit pupil and very relative light efficiency (84.2) allow tremendous light transmission — so essential at dawn, dusk, or in that sudden squall that could prove so hazardous to the unprepared sailor. With its field of 393 feet and hard magenta coating on all air-to-glass surfaces, this glass is also great for the bird watcher or duck hunter who uses binoculars under even the most adverse conditions. New rare earth prisms filter out harmful violet rays for safe viewing. The Sea Hawk is water immersion tested in one meter of water for five minutes.

For further information, contact Dennis Kunian, KK&M Inc., 1616 Soldiers Field Road, Boston, Massachusetts 02135, Phone (617) 787-0330.

SHARKS MISTAKE HUMANS FOR SEA LIONS

SAN FRANCISCO (UPI)— Great white sharks that attack swimming humans may be confusing them with struggling sea lions, biologists report. The scientists' study indicated sharks attack boats, swimmers, and even surfboards because they are blind just before they strike. Apparently they are attracted by faint, electrical impulses they have learned to associate with seals and sea lions – favorite shark delicacies.

"The maniacal boat-attacking behavior of great whites is well known, and I suspect is explainable in bio-electrical terms," said John McCosker, Director of San Francisco's Steinhart Aquarium Before striking, great whites engage in "aggressive posturing," virtually warning the potential victim of possible attack, said Daniel J. Miller of the State Fish and Game Department. He made the shark study with colleague Ralph S. Collier of the Shark Research Center in Van Nuys.

The shark lowers its pectoral fins, arches its body and swims in figure-eights or S-patterns, they said Monday. "These postures and displays warn an intruder not to approach further," said the report by researchers.

McCosker says in a typical shark attack, the beast rolls its eyes upward as it closes in on its victim and a protective membrane covers its eyes. The shark is thus blind and guided to its prey by heading toward weak electrical fields picked up by nerve ends which act as receptors.

The biologists studied the rocky Farrallones Islands, a bird sanctuary off the San Francisco coast, where they report observing sharks attacking seals and sea lions 36 times over the past 12 years. Thirty of the sharks were great whites and the victims were most often elephant seals. At Ano Nuevo State Park, north of Santa Cruz, an elephant seal rookery that has grown from 460 elephant seals to 3,600 since 1968, shark attacks have increased dramatically.

University of California researcher Burney LeBoeuf said shark attacks on humans were 10 times more frequent in the area from Ano Nuevo Island to Bodego Bay than along the rest of the state's coastline. Most of those attacks, he said, occurred in Bodega Bay, Tomales Bay, around the Farallones and Monterey Bay. Twenty-six of the victims were skin divers, 11 were swimmers, six were surfers and four were abalone divers with snorkels. In two other cases, small boats were attacked and there were six instances where sharks bit off a piece of a surfboard.

COPTER CRASH KILLS INFANT, FIVE OTHERS

A medical evacuation helicopter staffed with doctors, a nurse and a medical technician and carrying a critically ill premature baby crashed in the hills west of Banning, California on May 1981, killing all six aboard. Authorities said the Sikorsky S- helicopter, in effect a flying intensive care unit, was rushing the newborn girl to San Bernardino County Medical Center just after midnight. The pilot, apparently trying to fly under the fog that often blankets the area, flew into a low hillside. A search was launched when the helicopter failed to arrive but fog hindered efforts until about 8:30 a.m. when a San Bernardino County Sheriff's helicopter was able to take off. The wreckage was soon located near the intersection of Interstate 10 and California 60.

There, rescuers found the bodies of:

Dr. Constance Geierman, 36, a specialist in the care of premature babies and the associate director of the medical center's neonatal unit, which specializes in the care of infants.

Dr. David McKee, 26, a resident physician at the medical center who was aboard, to assist Geierman.

Linda Butler, 34, a respiratory therapist at the medical center's neonatal unit.

Mark Symonds, 24, a mobile intensive care nurse and flight assistant for Loma Linda University Hospital, which owned and operated the helicopter.

Mel Cooper, 41, one of Loma Linda's helicopter pilots.

The girl, less than 5 hours old, who, because she weighed only 3 lbs., 11 ozs, was being taken to the Medical Center for specialized care. She was born six to eight weeks premature at San Gorgonio Pass Memorial Hospital to a couple whom hospital authorities identified as Mr. and Mrs. Robert Hein.

Dr. Francis Comunale, medical director of the medical center, said such helicopter trips had become commonplace. The medical center and Loma Linda University Hospital are the only two neonatal units with heliports that serve San Bernardino, Riverside, Mono and Inyo counties, he said. The helicopters — Loma Linda had three of them — are not only faster but, statistically, safer than ambulances, he said.

(A spokesman for the Loma Linda hospital said that since May, 1972, when its helicopters began flying, 2,040 flights had been made with only one accident – a crash in September 1976, that killed four, including a patient.)

Comunale said that the deaths cast a grim pall over his "close-knit" hospital staff, but he said the loss of Geierman is particularly difficult. "It devastates us right now," he said, "I'm not sure we'll ever find one as dedicated as Connie was." Geierman, he said, not only was working a 24-hour shift every other day at the medical center but was, in affiliation with UCLA and the University of California, Riverside, instructing medical students in her specialty. She was also training nurses at other hospitals to help care, for less seriously ill premature babies and was helping organize, under a federal grant, a four-county emergency medical care system, Comunale said.

He said that other hospitals already had offered to lend staff members to help keep the medical center's neonatal unit going. A spokesman at Loma Linda said the hospital's helicopter service will continue with the remaining aircraft and crews.

SEVEN RESCUED FROM MOUNT ST. HELENS

SELFRIDGE ANGB, Mich— It was almost like a repeat performance -- Mount St. Helens rumbled and the 304th Aerospace Rescue and Recovery unit swooped in to pull people off the mountain. A geological survey team had departed from Vancouver, Washington from Mount St. Helens in a light helicopter. The aircraft carried no known survival equipment so when the team failed to return, the Skamana County, Washington Sheriff's Department alerted the Portland Reserve crew.

Major William Andresevic and his UH-1N crew spotted the seven people in the northwest slope of the mountain, mad recovery, and delivered the survey team to a local air park.

For the 304th ARRS, the rescue ran their yearly total to 13 saves, ten of those involving Mount St. Helens. Last year the Reserve squadron made 62 saves during the eruption.

The unit was also involved in backup contingency plans for the recent Space Shuttle launch and recovery.

From USAF *News Release*, April 22, 1981

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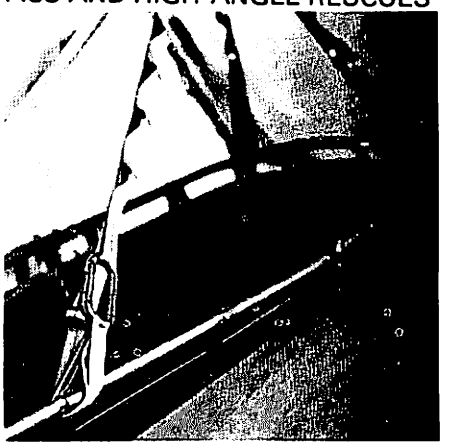

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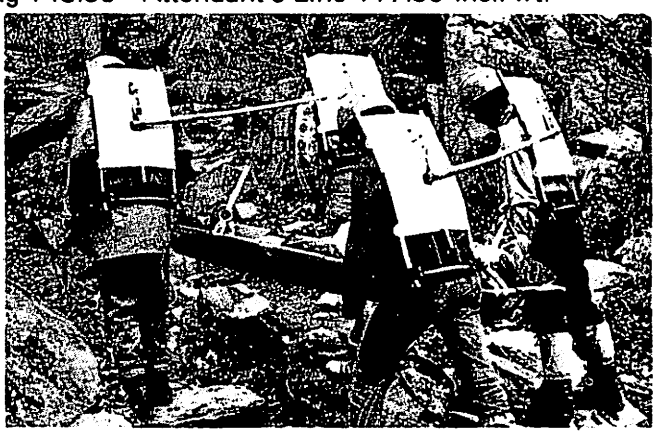

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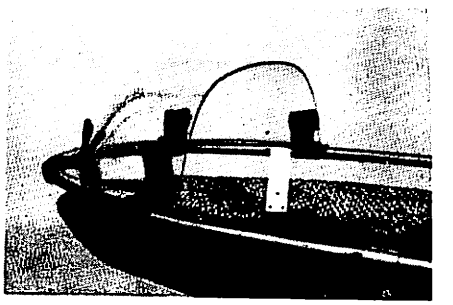

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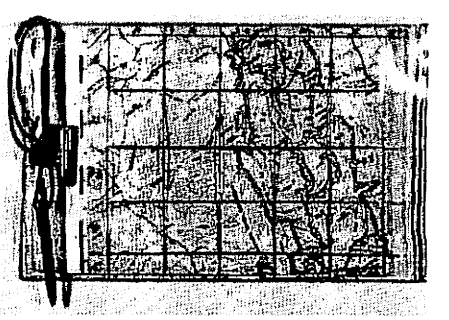

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