SEARCH AND RESCUE MAGAZINE

SUMMER 1976

OFFICIAL PUBLICATION OF THE NATIONAL ASSOCIATION OF SAR COORDINATORS

CONTENTS

FEATURES:

DEPARTMENTS:

SEARCH AND RESCUE MAGAZINE is published four times each year by Dennis E. Kelley, P. O. Box 153, Montrose, California 91020, USA. Telephone (213) 248-3057

Subscription price if $7.00 per year and $12.00 for 2 years. The individual price is $2.25 each.

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

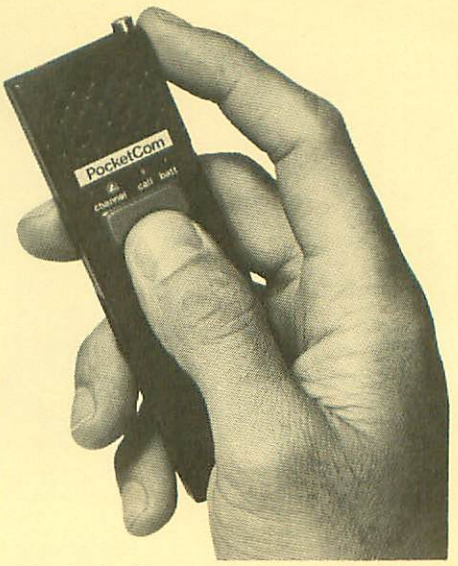
POSTAGE GUARANTEED FOR FORWARDING AND ADDRESS CORRECTION

NASARC
Capt. Jerry Wellman
Civil Air Patrol
1977 South Chestnut
Casper, Wyoming 82601

BULK RATE
U. S. POSTAGE
PAID
PERMIT NO. 181
Montrose, Ca. 91020

Pocket CB

New integrated circuit technology and a major electronic breakthrough brings you the world's smallest citizens band transceiver.



The PocketCom measures approximately ¾" x 1½" x 5½" and easily fits into your shirt pocket. The unit can be used as a personal communications link for business or pleasure.

SMALL ENOUGH FOR YOUR POCKET

Scientists have produced a personal communications system so small that it can easily fit in your pocket. It's called the PocketCom and it replaces larger units that cost considerably more.

MANY PERSONAL USES

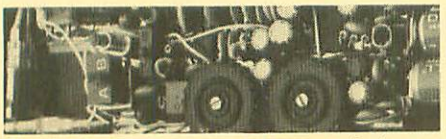
An executive can now talk anywhere with anybody in his office, his factory or job site. The housewife can find her children at a busy shopping center. The motorist can signal for help in an emergency. The salesman, the construction foreman, the traveler, the sportsman, the hobbyist—everybody can use the PocketCom—as a pager, an intercom, a telephone or even a security device.

LONG RANGE COMMUNICATIONS

The PocketCom's range is limited only by its 100 milliwatt power and the number of metal objects between units or from a few blocks in the city to several miles on a lake. Its receiver is so sensitive, that signals several miles away can be picked up from stronger citizens band base or mobile stations.

VERY SIMPLE OPERATION

To use the PocketCom simply turn it on, extend the antenna, press a button to transmit, and release it to listen. And no FCC license is required to operate it. The PocketCom has two Channels—channel 14 and an optional second channel. To use the second channel, plug in one of the 22 other citizens band crystals and slide the channel selector to the second position. Crystals for the second channel cost $7.95 and can only be ordered after receipt of your unit.



The PocketCom components are equivalent to 112 transistors whereas most comparable units contain only twelve.

A MAJOR BREAKTHROUGH

The PocketCom's small size results from a breakthrough in the solid state device that made the pocket calculator a reality. Mega scientists took 112 transistors, integrated them on a micro silicon wafer and produced the world's first transceiver linear integrated circuit. This major breakthrough not only reduced the size of radio components but improved their dependability and performance. A large and expensive walkie talkie costing several hundred dollars might have only 12 transistors compared to 112 in the Mega PocketCom.

BEEP-TONE PAGING SYSTEM

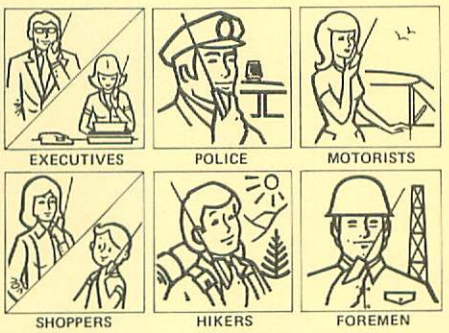
You can page another PocketCom user, within close range, by simply pressing the PocketCom's call button which produces a beep tone on the other unit if it has been left in the standby mode. In the standby mode the unit is silent and can be kept on for weeks without draining the batteries.

SUPERIOR FEATURES

Just check the advanced PocketCom features now possible through this new circuit breakthrough: 1) Incoming signals are amplified several million times compared to only 100,000 times on comparable conventional systems. 2) Even with a 60 decibel difference in signal strength, the unit's automatic gain control will bring up each incoming signal to a maximum uniform level. 3) A high squelch sensitivity (0.7 microvolts) permits noiseless operation without squelching weak signals. 4) Harmonic distortion is so low that it far exceeds EIA (Electronic Industries Association) standards whereas most comparable systems don't even meet EIA specification. 5) The receiver has better than one microvolt sensitivity.

EXTRA LONG BATTERY LIFE

The PocketCom has a light-emitting diode low-battery indicator that tells you when your 'N' cell batteries require replacement. The integrated circuit requires such low power that the two batteries, with average use, will last weeks without running down.



The PocketCom can be used as a pager, an intercom, a telephone or even a security device.

MULTIPLEX INTERCOM

Many businesses can use the PocketCom as a multiplex intercom. Each employee carries a unit tuned to a different channel. A stronger citizens band base station with 23 channels is used to page each PocketCom. The results: an inexpensive and flexible multiplex intercom system for large construction sites, factories, offices, or farms.

NATIONAL SERVICE

The PocketCom is manufactured exclusively for JS&A by Mega Corporation. JS&A is America's largest supplier of space-age products and Mega Corporation is a leading manufacturer of innovative personal communication systems—further assurance that your modest investment is well protected. The PocketCom should give you years of trouble-free service, however, should service ever be required, simply slip your 5 ounce PocketCom into its handy mailer and send it to Mega's prompt national service-by-mail center. It is just that easy.

GIVE IT A REAL WORKOUT

Remember the first time you saw a pocket calculator? It probably seemed unbelieveable. The PocketCom may also seem unbelieveable so we give you the opportunity to personally examine one without obligation. Order only two units on a trial basis. Then really test them. Test the range, the sensitivity, the convenience. Test them under your everyday conditions and compare the PocketCom with larger units that sell for several hundred dollars.

After you are absolutely convinced that the PocketCom is indeed that advanced product breakthrough, order your additional units, crystals or accessories on a priority basis as one of our established customers. If, however, the PocketCom does not suit your particular requirements perfectly, then return your units within ten days after receipt for a prompt and courteous refund. You cannot lose. Here is your opportunity to test an advanced space-age product at absolutely no risk.

A COMPLETE PACKAGE

Each PocketCom comes complete with mercury batteries, high performance Channel 14 crystals for one channel, complete instructions, and a 90 day parts and labor warranty. To order by mail, simply mail your check for $39.95 per unit (or $79.90 for two) plus $2.50 per order for postage, insurance and handling to the address shown below. (Illinois residents add 5% sales tax). But don't delay.

Personal communications is the future of communications. Join the revolution. Order your PocketComs at no obligation today.

$39.95 NATIONAL INTRODUCTORY PRICE

CREDIT CARD BUYERS CALL TOLL FREE

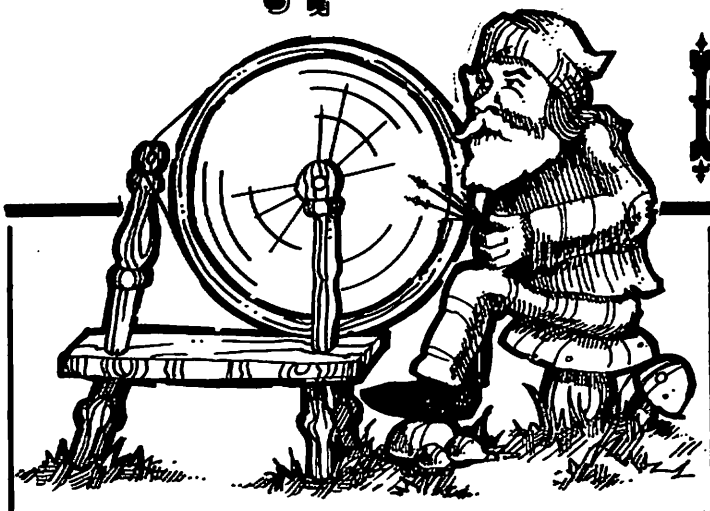
JS&A NATIONAL SALES GROUP

DEPT. SE JS&A Plaza
Northbrook, Illinois 60062
CALL TOLL-FREE . . 800 325-6400
In Missouri call. . . . 800 323-6400

A 3 PART FABLE FOR SEARCH AND RESCUE

the RUMPLESTILSKIN EFFECT*

or – "IF YOU CAN GIVE IT A NAME, IT WILL DISAPPEAR"



Lois Clark McCoy

FABLE 1

PART I – Separating the GoldDust Twins

Traditionally, both the elements of Search and of Rescue have been considered together. For example, a ship is overdue, a search is launched, the people aboard are rescued.

Or an aircraft is unreported, its fuel presumed exhausted. Again a search is launched and we hope it is a rescue, rather than a recovery operation.

In both aeronautical and maritime operations, Search and Rescue are two parts of one story.

But today, for Land SAR, it might be appropriate to think of *Search* and *Rescue* separately – as functions in many ways dissimilar although related.

An injured hiker, a "car-over," an allergic beesting, a fallen climber – all are typical Rescue operations.

They take a ready response, quick action and, sometimes, removal to definitive medical care. They take only a few people, but a high degree of training. They take dependable communications and rapid safe transportation. They require a true emergency system but relatively little Search.

Now let us examine Search. To search for the 6-year-old who went to the pond before breakfast, the 9-year-old who tried to climb the mountain while his folks pitched their tent, the 11-year-old who wanted to see a bear like her brother had. Here is an entirely different situation that needs strategy and tactics and management.

Presumably these children (or lost adults for that matter) are not yet "in extremis." They are disoriented and "lost" and need to be searched for. They need to be "rescued" from themselves, and from the situation in which their lack of knowledge has placed them.

They are also in as much potential danger as those who needed Rescue in the traditional sense.

Searching for *disoriented* (and therefore "lost") persons is not an historical problem. It has developed within the last 30 years but is almost unrecognized as a new and separate SAR problem caused by cultural changes. In more primitive societies, "land animals" do not get lost on land.

This last sentence may need some explanation. Let us put it this way. How many people got lost from the Lewis and Clark Expedition? How many got "lost" on the Spanish Emmigrant Trail? Killed, yes. Dead of pneumonia and measles, yes. But "lost"? No.

Even the Donner party was not lost. They were in the wrong place on a new and unwise route when an early winter struck.

It is true that Rescue has been with us since the first man put to sea. A man overdue on the water is a land creature in an alien environment.

And once we invented the airplane (and now space vehicles) land animals became "birds" and rescue was again needed.

Obviously, "to rescue" included some elements of search in order to reach those in need.

*"Powers of Mind" by Adam Smith

(continued on next page)

THE "RUMPLESTILSKIN EFFECT" *(continued)*

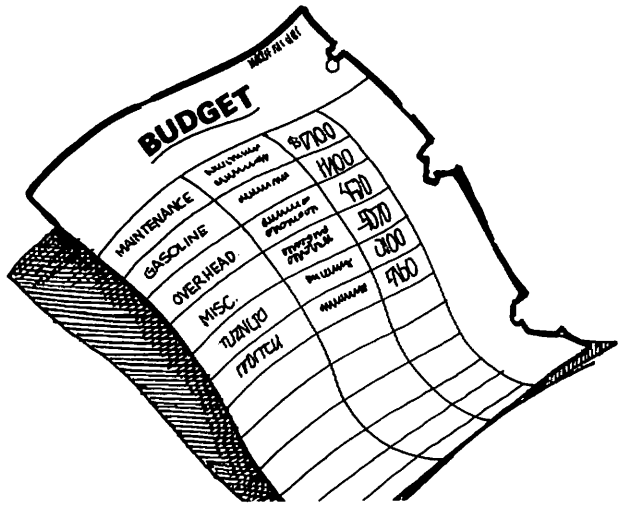
But *Search* in its present connotation–that of someone "lost" and disoriented on land being in true, life threatening danger–that is a new concept. It is a product of successive generations living in artificially controlled environments.

It is today's problem happening Now, and hastened along by electricity and the light switch.

By breaking Search away from Rescue in the theory of Land SAR, we may now see what is unique in today's search problem. We can consider Search as separate from Rescue, as two different elements needing different emphasis and solutions.

So, by recognizing today's *Search* as essentially a new problem–by in effect speaking the word "Rumplestilskin," we begin the problem's solution and its ultimate resolution.

FARM 2



PART II – It's not a "line-item"

Local government is the traditional authority which has assumed the function of prosecuting Search and Rescue on land. Historically, it is local government who is tasked with the preservation of life and property within its geographic boundaries.

If we accept the foregoing concept that today's type of search is not an historical but a new problem, it should be no surprise that Search and Rescue is not a line-item in most local governments' budget.

But today the incidence of lost persons within local jurisdictions is escalating.

Cross country skiing and back-country "dirt-bike" riding are only two of many new recreational enthusiasms that have helped this escalation along.

Usually the local authority–with or without a budget–is no longer even looking for persons residing within its own geographic boundary.

But such is the United States ethic, the pioneer heritage, that we continue to search, and attempt to rescue all within our territory.

This is the "American Connection"–one of the intangibles that make up the fiber of our country.

So we see that while Search and Rescue may not be a line-item in the budget, local government continues to try to carry out its escalating task, someway–somehow.

Food for the Search and Rescue forces may be commandeered from the jail, money for reimbursement of gasoline (or the fuel itself) may be obtained from the road department, etc., etc.

How much, then, did this search cost the local government? Ah, but no one knows or can even find out.

So, is Search and Rescue to be an item in next year's budget? Do the county supervisors say, "Here is 'X' number of dollars for SAR operations for the next fiscal year?" Do they say, "Here is money for radios to supervise and control those forces available to you to look for lost persons?"

No–why should they? Land Search and Rescue "didn't cost the county anything last year."

Let us look a little further into the "Rumplestilskin Effect"–into why we cannot give our Search and Rescue problems a *name*, and so make them disappear.

It the local government has been funding SAR operations by taking from one pocket to pay for another, how many records are being kept as to how many times a year this was necessary?

–Or even how many persons were involved, how many victims, let alone how many searchers?

What records are there to show whether these persons were children? Were they hunters, berry pickers, mushroom pickers? Were they retarded? Were they well-to-do? Could they have afforded to repay the cost of their own search? Or were they indigent?

Were they the cause of their own problem or was it, by legal definition, "an act of God?"

Today we do not know the national size of the problem, the national cost of the problem–and some people even say "what problem?"

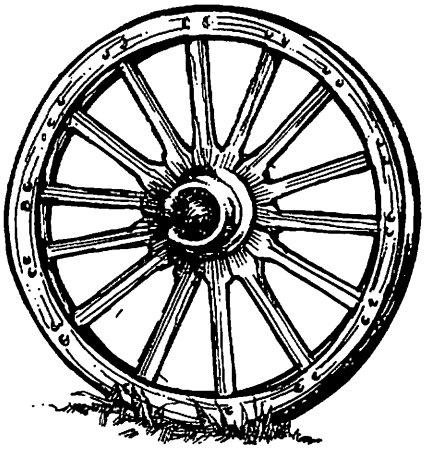
THE "RUMPLESTILSKIN EFFECT" *(continued)*

What a puzzling situation we have here. While some of the largest enrollments in high school adult education programs are courses in "Small Boat Handling" there is no comparable demand or even a recognized need for instruction in "Handling Yourself in the Wild Outdoors."

And the problem of *land people* lost on land continues to grow.

Until we can begin to answer some of the basic questions such as who, what, when, where and why, we really will not know the extent of the Land Search and Rescue problem today. And we certainly cannot begin to guess its solutions.

FABLE 3



PART III – A Hub for Our Wheel

Deeply involved today in research and development projects addressing Land Search and Rescue are, among others, the United States Air Force Aerospace Rescue and Recovery Service, in its role of coordinator for Inland SAR. Also involved are the National Park Service as manager for large areas of park land, and NASARC as a source of SAR expertise.

While these three are federal agencies or national organizations, the private sector is also hard at work. Individuals, unnamed because we would surely and accidentally leave someone out, are cooperating on long range projects with Land SAR applications. In some instances there are parallel efforts along similar lines.

We view these various projects as oeing spokes in one wheel. However, at certain times, the spokes of our wheel more closely resemble a pile of JackStraws rather than parts of a device for motion.

Perhaps what we need is a hub for this wheel–to tie together the energy within these spokes so we can roll forward in Land Search and Rescue.

As a suggestion, would an appropriate hub be an Inter-agency Search and Rescue Center?

This Center might be jointly funded by those tasked or involved with Inland SAR. It could address phases of mutual interest–and could include interested States as well.

This Inter-agency SAR Center might be patterned after the concept of the Inter-agency Fire Control Center at Boise, Idaho.

At least here exists a model for a concept of this type from which we could pull appropriate and applicable ideas.

We would like to voice one cautionary note–our reason for proposing such an idea as an Inter-agency SAR Center is to create a HUB to unite our existing effort–not to create another wheel. ◀

SAFETY IN HELICOPTER OPERATIONS

Lieutenant Commander L. B. BECK
U.S. Naval Reserve, Naval Air Reserve Unit
Naval Air Station, Point Mugu

Delivered at:
National Association of Search and Rescue Coordinators Conference – December 6, 1975 – Denver, Colorado

A few fluffy, cumulus cotton balls drifted at 17,000 feet, but other than that, nothing but clear, cool, blue December sky from the mountains, across the plains, and out to the sea where the fog bank sat and waited for evening and the cooling of the land so it could slip back in for the night. "Yes," thought Sam, as his light plane lifted from the runway. "This is just perfect for a short flight before dinner. I think I'll head up toward Mount Bernie and see if I can spot any deer."

Twenty minutes later Sam, with only a broken ankle, crawled out of the wreckage of his once shiney red and white plane, hoping that his "Mayday" had been heard after the engine quit. That was his only hope of getting off the side of the mountain that night because he had left his ELT on his boat. "Never going to do that again," thought Sam, "Boy, was that ever dumb! Almost as dumb as not filing a VFR flight plan."

Unlucky Sam? No, lucky Sam, because his "Mayday" had been heard and passed on to the local Flight Service Station, from there, the local Sheriff was notified and the SAR effort commenced.

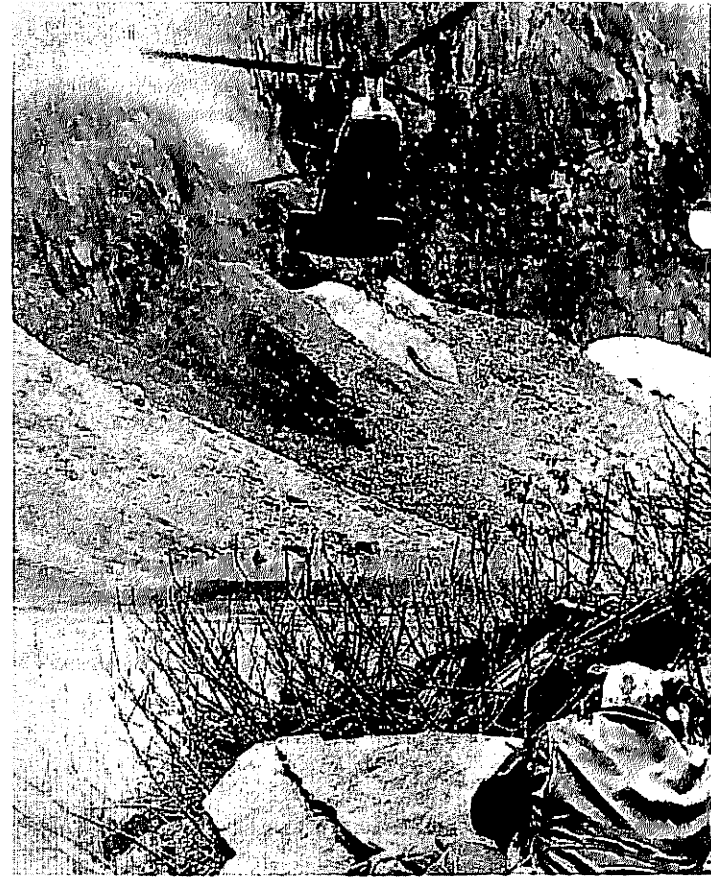
About an hour before darkness, the crash scene had been located through the efforts of the local CAP Squadron and it was determined that the only way to get Sam out, before dark, was to get a helo in. Deputy John picked up his phone and called the local military base and requested a helo for the emergency. The duty officer at the base was given the grid coordinates of the crash, number of survivors involved and the hospital to which the injured was to be taken.

The helo was launched and arrived in the area just at dusk. Due to the accurate description and location of the crash scene, no time was lost in finding the site. Because the terrain precluded a landing, a hoist from a hover had to be utilized to get Sam into the helicopter and off to the hospital.

Sam was late for dinner, but he did get home with his ankle in a cast before midnight that night. Just another routine emergency? Yes. . . But, only because everyone, and every piece of equipment functioned "as advertised," that is, if you do not consider Sam's malfunctioning engine. Wouldn't it be nice if we could have every mission run as flawlessly as the one just described? Unfortunately, this routine rescue is not the normal SAR routine.

There are many areas of concern in a SAR effort where a mistake, misjudgment, or an equipment failure could mean the difference between the saving of a life or the loss of additional lives. The unconscionable realization is that errors or failures that have happened before are not publicized, therefore we cannot learn from others' mistakes and avoid them in the future. I will not go into reasons for this, nor do I wish to point an accusatory finger in any direction. I do hope some thought will be given to this problem and a solution found. It would be so much better for both the rescuer and rescuee if a problem would only happen once, a solution found, and everyone be adequately prepared so that it would never be permitted to occur again. An idealistic approach to Search and Rescue? Maybe, but justifiably one which has a part in "SAR Life Saving – The Greatest Expression."

As an example of problems that have happened in the past, and could occur again, I will relate some incidents involving helicopters which actually happened. Please consider that they ***might*** happen again, maybe on the next mission in which ***you*** are involved in working with a helicopter to save a life. These incidents have been gleaned from various sources, principly: "The MAC Flyer," a safety publication of the Military Airlift Command of the Force; "Approach," the Naval Aviation Safety magazine; various rescue reports; and personal experiences, both my own and others'.



U.S. NAVY PHOTO

CH-46D from NAS Whidbey Island – LCDR BECK making an approach to pick up 17 year old male injured in fall from cliff. Unable to land due to 40° slope so an hoist pickup was made.

A Jet Ranger was cruising along, at night, from Point A to Point B and about the only lights they saw were those from the cars on the interstate highway below them. Suddenly the engine chip detector light illuminated and the pilot started to descend so that he could land while the engine still had power. At about fifty feet above the ground, he eased the helo back down and at 20 feet he spotted some high-tension lines and added power. After clearing them he eased the helo back down and at 20 feet he heard a loud snapping sound but continued his landing without further difficulties. After landing he discovered that he had flown through a half-inch telephone wire but had not damaged the helicopter.

Consider what might have happened if the helo going in to get Sam had run into some wires that would have caused damage. Now you have to get not only Sam but also the helo crew.

Wires and rotor blades do not mix! One point to consider: In the area where you are sending a helo, are there any wires, cables, etc. that ***might*** cause a problem? If you are not personally familiar with the area, can you find someone who is?

Another "wire" incident but one where the helicopter pilot knew what he was getting into happened one summer:

Towards the end of a Saturday afternoon, a young pilot who had finished his duties at a static recruiting display, set course for his base in his single-engined Sioux when he received a radio call for help. A free-fall parachutist had become entangled in high-tension wires about 110 feet AGL. The location was nearby, so the helo pilot diverted to examine the problem of rescue.

Reaching the scene, he made three orbits to take stock of the situation. After landing, the pilot conferred with police and fire brigade officials. His initial reaction was that he would be unable to help, but after hearing that the parachutist was weakening and that alternative rescue plans were not readily available he decided to attempt the rescue.

The available fire brigade ladders were inadequate in that they were either too short or could not be extended on the relatively soft stubble field beneath the parachutist.

The local electricity board would probably have been able to carry out a successful rescue using a pulley and trolley running along the topmost wire. But this would have required considerable time to allow for charge dissipation following switchoff of power and for mustering the rescue party and equipment.

Other helicopter assistance had been requested, but owing to communication delays, a nearby helicopter field wasn't informed until almost 2 hours after the parachutist had become suspended. Faced with a non-working day and no SAR standby commitment, attempts had so far failed to raise a scratch crew to attempt rescue.

So, with pressure on all sides mounting for him to take action, the pilot of the Sioux — which isn't equipped with a winch — agreed to attempt the rescue.

The rescue plan involved the use of a 200-foot, 1-inch diameter nylon rope with a harness at one end. The rope was to be secured to the aircraft's forward, starboard anchor point, and coiled on the cabin floor. With the starboard door removed, the rope and harness were to be lowered to the parachutist from a high hover above the wires. Once in the harness, he would be lifted clear of the cables and then lowered to the ground.

After securing the rope, removing the door, and briefing his observer, the pilot took off and established a high hover into the wind at a right angle above the cables. The parachutist was suspended by his drogue parachute from the central earth wire; below him and on either side, were live cables. Although the power was switched off, the helo pilot had been briefed that there could still be a high voltage residual charge in the wires that could be lethal. (At the time the rescue was attempted, there was no residual charge.)

Once in the hover, the observer payed out the rope to the man below, directing the pilot as he did so. The pilot could not see what was happening beneath his helo and had to rely on information supplied by the observer. The parachutist having grabbed and climbed into the harness, appeared ready for a lift between the wires. The observer informed the pilot accordingly.

A gentle climb was commenced, but the rescue rope became entangled with the discarded parachute that was still attached to the power cables. Within seconds, the helo began to roll to starboard, and the pilot reached a point where he had insufficient left cyclic control. A gentle descent re-established adequate cyclic control, but the pilot remarked he had run out of control. It is at this point that things really started to go wrong.

The observer misunderstood the pilot's remark and thought the aircraft was out of control. The pilot was directed by the observer to move forward and down, slowly. Here, again, there was some misunderstanding because the observer claimed that he said "backwards" and that his intention was to lower the man through the wires to the ground before (as he thought) the aircraft crashed. The pilot inquired whether the man was clear of the wires and the observer said "yes." At this stage, the pilot assumed that the parachutist was hanging free below the the aircraft, having cleared the wires from above. He continued the forward and downward movement.

He then asked if the man was on the ground and was told "nearly." More misunderstanding had occurred. As the helo descended with the rescue rope across the top wire, and the angle between the rope and tail rotor was decreasing.

Not surprising, a point was reached where the aircraft's descent was momentarily arrested. The pilot assumed that this was because the man was on the ground and causing the rope to drag. He pulled back on the cyclic and BANG — violent yaw as the tail struck the rope, then rapid descent, 360-degree spin, and impact with the ground!

The pilot told the observer to get out, closed the mixture control, switched off the master switch, and vacated as quickly as he could. A fire broke out in the engine, but was rapidly extinguished by the firemen in attendance.

Meanwhile, the helpless parachutist had fallen to the ground, narrowly missing a safety blanket. He was seriously injured.

A sad ending to what might have been a very different story if the lack of clear communication between the pilot and observer, albeit in a stress situation, had not given rise to such major misunderstandings.

It was a complicated and unusual task — the likes of which the crew had never previously experienced. A full and thorough brief and complete communication and understanding between all concerned was a fundamental requirement that would have improved the chance of success.

The lesson of the accident is only too obvious. Without adequate communication of ideas and information, a difficult operation will seldom reach a successful conclusion.

The pressure, necessity or demand to get a job done may force decisions to be made that are in error. The following incident is a result of "Pilot Error" a phrase that sends cold chills down the back of any aviator. When another pilot makes an error in judgment, as this pilot did, you can't help but say, "There, but for the grace of God, go I." Almost every rescue involves some danger, this recognized, and every effort is made by the pilot to counter the known hazards with reasonably prudent actions. However, when it is a truly "life or death" situation for the survivors and the pilot knows that only his skill and the skill of his crew can save that life. . . THE PRESSURE IS ON!

What do the Caribbean Islands, the Gulf Coast, the Eastern seaboard, and the Pacific Islands have in common? Well, for one thing, they have all been damaged by hurricanes or typhoons, and the residents of these areas are indebted to helicopter crews who have provided poststorm relief. One other common item these farflung geographical areas may have, in the aftermath of these disasters, is damaged helicopters.

It's an odds-on bet that after a natural disaster, helicopter rescue crews working the area will have a major accident. These are several reasons:

Pilots operate at low levels where exposure to collisions with obstacles is great.

Pilots operate in unfamiliar areas where landing zones leave much to be desired.

Pilots will accept aircraft with marginal discrepancies to get the job done.

Maintenance of aircraft frequently is delayed or is non-existent due to the urgency of operational requirements.

Refueling of aircraft is often performed utilizing improper strainers or filters.

Aircraft are often haphazardly loaded with people and/or articles of unknown weight, thereby exceeding center of gravity limits.

Let's follow the chain of events of an H-46 rescue crew involved in flood relief.

Two pilots and two crewmen checked in with mission control at 0600 and were assigned a resupply mission. The pilots noted an outstanding gripe or two on the yellow sheet. The one gripe that caught their eyes was "SAS (stability augmentation system) light stays ON in BOTH." (That meant only one of the two systems was operating correctly.)

After takeoff, the pilot made a quick check of No. 1 and 2 SAS and discovered the yaw channel of No. 1 to be nonfunctional and the roll channel to be weak. No. 2 SAS operated satisfactorily and was the system selected. The ASE (automatic stabilization equipment) also checked OK. After the first mission was completed, they were assigned a second. It too, was accomplisted routinely. During both missions, however, an occasional kick in the controls was felt as the aircraft whirled along. Rain had been falling steadily for 3 weeks, so the pilots were used to these kicks.

The third mission of the day was also successful, except that the pilot experienced additional control problems (resistance in lateral cyclic movement and rudder action). A satisfactory inflight control check was made on the way back to base. After landing and shutting down, the pilot instructed his crew chief to unbutton the aircraft and make a visual check of the flight control system while he discussed the problem with an experienced postmaintenance inspection pilot. The crew chief's inspection revealed no discrepancy, and the discussion between the pilots was inconclusive.

Then followed the fourth and last mission the aircraft would ever fly. This mission involved delivering 3000 pounds of supplies, carried internally, to another village. The pilot made a low pass over the village to select the most suitable landing zone — and chose a churchyard. Unlike the other missions, there were no native policemen in sight, so they decided to land and ask a priest to take charge and dispense the supplies.

The landing zone was a clear area, 225 x 162 feet, with a couple of trees in the zone, but these were at the extreme edge and were not considered obstructions to operations. As things turned out, one was.

After landing, the priest agreed to take charge and asked that the supplies be unloaded and stored in the church. The aircraft had been parked facing the church, so the pilot decided to fire up and make an 180-degree turn-on-the-spot to facilitate unloading through the aft ramp. The pilot hovered the aircraft and then began a left turn. The area was under water, so the pilot had poor surface reference. During the turn, the crew chief noticed that the after blades wouldn't clear the tree and advised the pilot. The pilot tried to move forward away from the obstruction, but the helo would not respond to control inputs and drifted backward just enough to chop off the top of a tree with the after blades. Blade imbalance ensued, and the aircraft rolled onto its starboard side and burned.

The crew escaped the burning helicopter without injury, and no one in the crowd of 200 onlookers was hurt — even though pieces of rotor blade shrapnel zinged into nearby buildings.

The AMB's (aircraft mishap board) conclusion, with which one endorser agrees, was cause undetermined. Other endorsers disagreed and blamed the pilot for failure to maintain clearance

(continued on next page)

SAFETY IN HELICOPTER OPERATIONS (continued)

from obstacles in the landing zone and for flying with a known control discrepancy.

It's easy to put yourself in the pilot's position and appreciate his preoccupation with being considerate of those who would muscle the supplies into the church. Nevertheless, it was his undoing.

On every mission, command decisions, of some kind are necessary. They may be made without much thought, they may be made after consultation with others, or they may be made alone after much deliberation. In any event, all factors must be weighed, and the possible consequences considered. This is the essence of command responsibility.

Lack of pressure will also cause problems. However, this was a case of lack of atmospheric pressure:

A light aircraft was down in the nearby mountains of Colorado. An H-53 Super Jolly Green Giant was launched and headed for the crash site located some 11,200 feet MSL at the closed end of a box canyon.

When they arrived at the scene, around 1600 local time, one of the first things they noticed was the sheer cliff, rising 1,200 feet above the canyon floor. An overcast at the top of the wall created an illusion, making the terrain features in the canyon below seem flat and dull.

It was cold and below six inches of powdered snow blanketed the canyon floor. At the end of the canyon, near the sheer cliffs, was a frozen pond.

They started up the canyon at 300 feet and 35 knots. About a mile from the canyon wall they started a shallow approach, descending at 200 feet per minute and hoping to find a suitable landing spot at the bottom. If they couldn't find a place to land, they would hover high enough to avoid the blowing snow that the rotors would kick up. From that point they would lower the PJs down the hoist.

The plan seemed good enough until they were halfway through the apprcach. Suddenly, the pilot realized that he had full power pulled in. The collective was all the way up and he was still descending at 200 feet per minute.

It was time for a drastic change of plan — this time to save their own skins. The pilot's thinking speeded up — push the nose over, get more airspeed, climb out! But that wouldn't work because the canyon walls were too high! Now what? Look for a landing spot for the inevitable approach to a touchdown! But where? The only place he could think of was the pond at the end of the canyon. It was frozen solid and surely would support the weight. But it was smooth, ice! An approach to touchdown on that hunk of glass would turn the 30,000-pound helicopter into an oversized ice skate skimming across an ice rink to a guaranteed meeting with the canyon wall!

There was one other option — a quick one-eighty and back out of the canyon the way they had come. By this time they were so low that the powdered snow was swirling around them and they were about to go blind. The pilot looked down at the altimeter again and he was just 75 feet above the snow. Banking hard left, he kicked full left rudder. Left turns rob power, but the canyon was narrow and the cliff was coming up fast.

U.S. NAVY PHOTO

CH-46D NAS Whidbey Island, Oak Harbor, WA. — Landed on a loose rock field and shut helo down to wait for ground team to locate victim and bring him to a place where an hoist could be made. Mt. Challenger in background.

He had no sooner started the turn when the blowing snow enveloped the helicopter in a white bubble. He couldn't see anything outside and was trying to figure out how far he had turned and the direction of the canyon wall. Suddenly the wall appeared at two o'clock and he knew he was too close. So close, in fact, that he decided to lower the collective and make a running landing on the side of the canyon wall as a last ditch effort at survival. He turned as hard as he could and, when he rolled out, the rotor tips were within 20 feet of the canyon floor. But he had missed the cliff. The ground effect at that altitude allowed them to stay airborne, and he had no doubt that the ground effect off the canyon wall prevented him from crashing into it. They made their way out of the canyon and the rest of the trip out was uneventful and very quiet.

The Air Force conducted a survey of helicopter pilots and found that twenty-three percent of those surveyed believed that working at high density altitudes (a very hot, humid day at ground level, or high in mountainous terrain) presented the greatest hazard. The prospect of "settling with power" loomed as a very real threat to them. Operating with minimum power reserve also caused concern:

An HH-3 turns on final approach to a remote landing site. The pilot has planned to avoid terrain hazards by using a steep approach with low airspeed. After beginning descent, he sees he's going to overshoot. He eases in aft cyclic and reduces collective, attempting to salvage the approach. As the big chopper nears the correct descent angle, the pilot increases collective — but the rate of descent increases! The pilot applies more power but the helicopter goes down faster, almost falling. With full power on, the chopper smashes into the ground, short of the landing site.

There have been no equipment failures in this hypothetical accident. The helicopter and every system on it operated perfectly, right up to impact. Why was the pilot unable to stop the descent?

The answer lies in one of the most insidious and least understood hazards of helicopter flying — "Power Settling." This condition is almost always the result of poor pilot technique. If rapid corrective action is not taken, the situation will deteriorate until corrective action is impossible.

Power settling is a condition of flight in which air displaced by the rotor system recirculates in a toroidal (donut) shape. In effect, the transfer of air from beneath the rotor system, around the edge of the tip path plane and back through the rotor disc, in analogous to a helicopter flying safely in a vast container — but the container may be falling at a fatal velocity. The helicopter is no longer entering a body of "fresh" air each second, but is flying (or falling) through its own downwash. As the situation deteriorates, the airflow develops a periodicity (oscillation) which demonstrates the instability of the condition and often produces control difficulties nearly impossible to overcome. Few pilots have ever survived power settling developed to this point so this instability is a conclusion resulting from wind tunnel observations.

The greatest tragedy is that power settling generally isn't apparent until too late, since it occurs on an approach which has been botched and on which a salvage attempt is in progress. Most helicopters fly three types of approaches: shallow, normal, or steep. The choice is up to the pilot and normally depends upon obstacles and degree of precision necessary. Power settling is not a common phenomenon, but is a potential hazard to the operation of most helicopters. Like many of the inherent hazards of flight, it poses no threat when met with understanding, good technique, and sound judgment.

Briefing the pilot, or his representative, the duty officer, ***before*** a mission can be the most important part of the mission. True, it is the responsibility of the pilot to determine if his men and the machine can do the job required, but without your help and information he will not be able to arrive at a correct conclusion. What information does he need? Everything he asks for. If you do not have an answer, tell him; if he needs the answer in order to accomplish his mission, get it!

A couple of months ago, a pilot attempted to hover an "overloaded" CH-53D. The gross weight was within the max gross weight limit of the aircraft, but because of the altitude of the zone (over 6000 feet), the power available was at the limit for ambient conditions.

The pilot had picked up to an altitude of 15 feet in a 5-knot downwind when the helo began to lose RPM. He landed, ground taxied into the wind, and lifted a second time. This attempt was successful because the pilot ran the speed control levers full forward and the RPM to 105 percent. The rotor speed dropped to 102 percent and then stabilized.

The pilot noticed that all was satisfactory and decided to air taxi from the helo pad to the runway. (Because of rock forma-

tions and no taxiway, an air taxi is the only way to get from the pad to the runway.) Prior to reaching the runway, while air taxiing sideways to keep the nose into the wind, the RPM drooped below 100 percent. The aircraft settled to the deck with one main gear in a drainage ditch and the other on the edge of the runway in such a manner that the lip of the runway slipped between the gear, cracking a hydraulic brake fitting.

There followed the greatest game of pass-the-buck you ever saw. The CO and OPs blamed everyone from the cargo officer (who didn't request sufficient aircraft to handle the cargo and passengers) to the Group helo officer (who didn't notice the load was too much for one CH-53D) to themselves (for failing to notice the too-heavy load). It was then pointed out by the safety officer that the load was within limits of the helicopter for the ambient conditions at the altitude of the zone.

The real problem was that the cargo load was 2000 pounds more than listed and more passengers boarded than were listed.

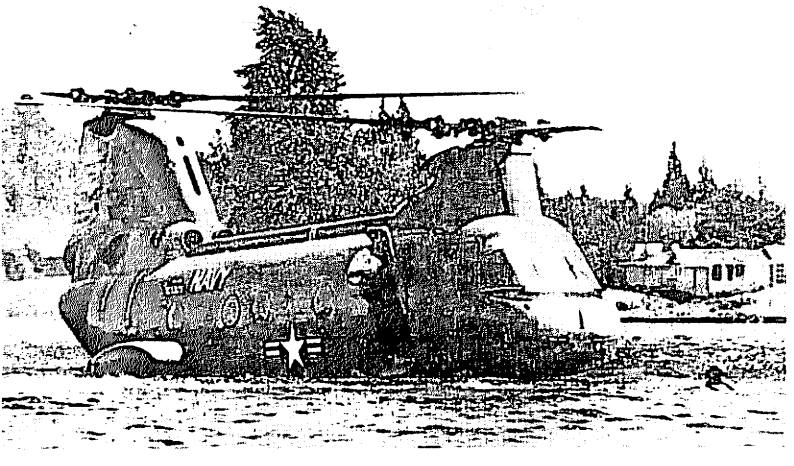
Mission briefing cannot be overemphasised, however, there is one aspect of preparation which will pay great dividends in time and lives, and that is pre-planning helicopter missions.

Back in November 1972, Capt. William Young of the Fresno, California County Sheriff's Department, published a document for agencies involved in Search and Rescue missions. In this treatise Captain Young said:

The advantage of local recruitment (of helicopter assets) is again in the knowledge the pilot will have of local conditions which affect the use of the craft. Wind currents, weather conditions and altitude requirements are not unknown qualities, for the men and machines will have been used in contact work with other agencies or private enterprises in the very same areas that you will need them. Local pilots will allow you to train your men in the safety requirements of helicopter use, resulting in safer and more efficient coordination between pilot and ground crew.

Although Captain Young was referring to commercial helicopter operations, the same is true of military helicopter operations. Under provisions of the National SAR Plan, military agencies are permitted, and urged, to provide requested assistance in the areas of their capabilities as long as operational commitments do not preclude the use of the requested assets. In line with this, and in the interest of providing the safest possible means of operation most all military facilities will be more than happy to provide training and orientation to the requesting agency in preparation for Search and Rescue missions. Ask your local military helicopter operations officer and I am certain he will be very happy to assist you, and provide coordination training for your people.

This will provide your teams with the training before the missions and create an air of mutual respect and understanding of each other's needs and capabilities which will make missions evolutions much easier and safer to successfully complete. ◀



U.S. NAVY PHOTO

CH-46D from NAS Whidbey Island, Oak Harbor, WA. – Water taxi practice on Lake Stevens Snohomish County Wa. All pilots have a chance to see how the helicopter handles on water in the event they have to land, or chose to land deliberately to effect a rescue. The practice is done on fresh water to prevent corrosion.

HELICOPTER OPERATIONS AND PERSONNEL SAFETY
(Helirescue Manual)
Available from: (a) Single copies, free;
Washington State Department of Emergency Services,
4220 East Martin Way, Olympia, WA 98504
(b) $50 for 100 copies
Survival Education Association,
9035 Golden Given, Tacoma, WA 98445

APPROACH
(The Naval Aviation Safety Review)
Available from: Division of Public Documents
Washington, D.C. 20402 Price: $11.70 per year

THE MAC FLYER
Available from: The Superintendent of Documents,
Government Printing Office
Washington, D.C. 20402 Price: $7.90 per year

SEARCH AND RESCUE IN OREGON

by JOHN H. OLSON

Oregon SAR Coordinator and NASARC Vice President

In 1975 there were 402 Search and Rescue Missions conducted in Oregon and reported to the Emergency Services Division. This is an increase of 106 missions over 1974. Increased use of the outdoors and better reporting procedures result in the skyrocketing SAR incident rate.

The Oregon State Sheriff's Association and the Emergency Services Division are attempting to reduce the SAR incident rate by using a combination of education and training.

Survival education courses are being taught by the Oregon Museum of Science and Industry through their Outdoor Education Department. OMSI is also offering lectures, speakers and training that educates the public in outdoor safety. Many school districts and community colleges offer similar programs.

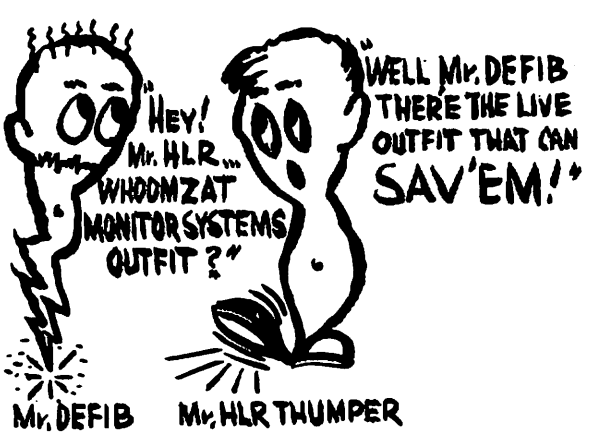
Search and rescue training is offered by each sheriff through the OSSA-ESD Policies and Procedures for Minimum Training. Upon completion of training in the SAR training minimums each SAR unit is encouraged to increase its knowledge and capabilities through technical training applicable to the unit and area. The six minimum training subjects are:

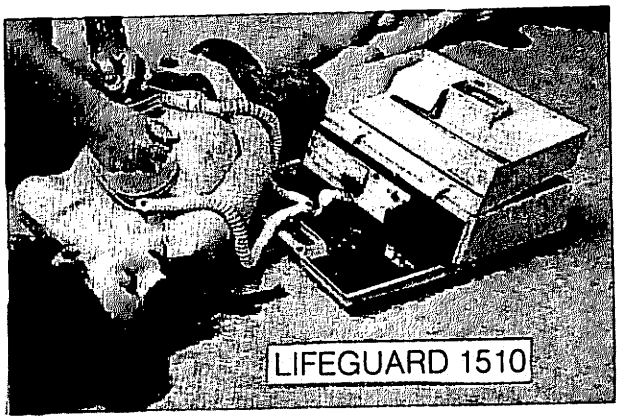
1. Search Procedures
2. Map and Compass
3. Communications
4. Protection of Crime Scene
5. Survival
6. First Aid

East of coordination and over-all search efficiency are the net results of this program. SAR volunteers now have a better understanding of the over-all SAR mission. Once initial prejudices are overcome units find that this training is helpful in building continued interest. SAR proficiency is maintained by participating in a minimum of 30 training-hours per year.

Upon completion of the minimum standards training each person must pass a written examination with a minimum score of 70 percent. They must also demonstrate their proficiency by satisfactorily completing a skills test that amounts to a field examination of their SAR ability.

When all requirements are satisfied a Patch and I.D. Card are issued in recognition of many hours of hard work. The Patch is worn on the external SAR garment and indicates to SAR Coordinators who has the minimum training. ■





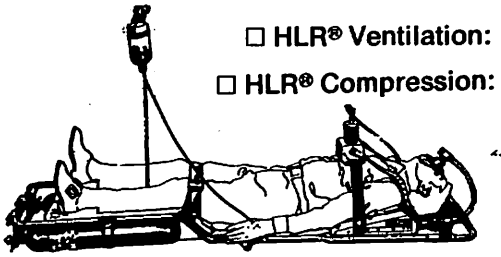
26 lbs. • Non-fade ECG • Sync Marker Heart Rate Display • Outputs for . . . . Telemetry • Recorder • Telephone

SurTech

Life Support Litter

The Life Support Litter is especially suited for ambulances, mobile intensive care units and hospital emergency carts.

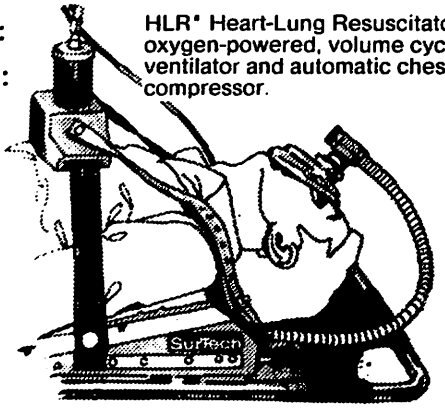
New Self-Contained Transportable Resuscitation System



☐ HLR® Ventilation:

☐ HLR® Compression:

HLR® Heart-Lung Resuscitator, oxygen-powered, volume cycled ventilator and automatic chest compressor.

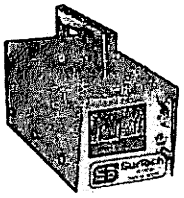


SurTech

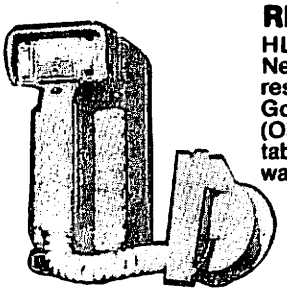
RESUSCITATION SYSTEMS

A complete line of self-contained life support systems:

- **Life Support Litter**, lightweight, ideal for rescue squads, fire departments, ambulance.



Memory Scope companion unit



RESUSCITATION

HLR®QUICK-FIT®RESUSCITATOR
Newest model of the familiar heart-lung resuscitator.
Gordon DonMichael ESOPHAGEAL (OBTURATQR) AIRWAY® for quickly establishing and maintaining a positive airway.

The SurTech Mini Defib

☐ **Weight:** 7½ lbs.

☐ **Output:** up to 360 Joules

TRAINING AIDS

The CPR® MANI is a life-size resuscitation training mannikin with visual indication of performance.

CPR® ANALYZER, an electronic timing and totalizing instrument for testing CPR® ability.

PLEASE CLIP AND MAIL TO...!

NAME _____

Monitor Systems, Inc.

3033 N. Central Avenue, Suite 211, Phoenix, AZ 85012
(602) 264-5751

ADDRESS _____

CITY _____ STATE _____ ZIP _____

Mr. DEFIB AND..... Mr. HLR THUMPER BOTH THANK YOU!

INFORMATION ON—

☐ ***PORTABLE DEFIBRILLATORS***

☐ EMERGENCY MEDICAL TECHNOLOGY

UNIFORM MAP SYSTEM

by EV LASHER

The name came before the system. After a "typical" operation where helicopters left teams on the wrong ridges, where teams gave locations like "my little finger above the V in river," where everyone had a different map – if you are an old timer, you know. Anyway, the feeling was that there must be some way of locating a position on a map so all concerned in an operation would know exactly where that point was on the ground.

The first idea came when it was found that the Civil Air Patrol military used their Sectional charts broken down into a grid. It seems that the old charts were lined in 15 minute rectangles. They had further broken this down into four additional rectangles, each 7½' on a side. The 50' blocks were numbered from left to right starting at the top of the chart. The 7½ blocks were lettered A, B, C and D in the same manner. So far, so good. We could talk to the military and at least get the right topog map. A number and a letter would at least get us into the same 40 square mile area.

On military maps, they have a metric grid laid out on them and by starting at the lower left corner you read the grid coordinates "right" and "up." Well, topog maps, forest service maps and Sectional charts don't have a metric grid laid out. (Range and Township is also not common, so this was thrown out long ago as a "universal" possibility.) Latitude and longitude is also a little difficult to handle; mainly because they are different lengths, (in our part of the world anyway.) However, most maps do have a mileage scale. If we could measure mileage "right up," we might have a system that would work on almost any map.

Great, but with a sectional map or with a 15' topog map it is very difficult to locate the lower left hand corner of a 7½ imaginary block. Curses. But wait, if we have the four corners of the 15' block well marked, why not use them? Too confusing: you'll never be able to teach it, was the general feeling of many. But lo! Rescue people aren't all that dumb and with a little practice most are doing it easily with some instruction and practice.

So, starting with the "Firm Corner" (the one with both the Latitude and Longitude reading 0', 15', 30' or 45') you can measure horizontally and then vertically in miles and tenths of miles to come out with a four digit number that will pinpoint an area within a tenth of a mile. Luckily none of the readings go over ten miles, so you always have a four digit number.

The ideas were put together in the spring of 1964. By November of 1965 the Mountain Rescue Association had adopted the system. Problems arose, like a new series of Aeronautical charts that required new numbering and as late as 1972 there was a drive to come up with a better system. However, when the system was first devised, I was looking for something that could define an area, further that pinpoint a spot within that area, and lastly have a method of filing maps that would allow finding the correct one quickly, So far, at least, UMS seems to be doing the job. ■

THE NASAR EXECUTIVE'S MESSAGE

by NASAR President Blair Nilsson

We wish to announce to our NASAR members and to the Search and Rescue Community at large, that several changes have been made in NASAR's Constitution and By-Laws.

These changes reflect the phenominal growth of interest shown by all segments of our membership: State, federal, local, government and private organizations and their members.

The first of these changes has been to drop the word "Coordinator" from our name. As of our 8th Annual Conference, September 9-12 in Cheyenne, Wyoming, our new name will officially become "The National Association for Search and Rescue, Inc."

We anticipate a certain amount of confusion but we hope you'll bear with us as we exhaust our present stock of stationery, decals and cards. We are now incorporated as a non-profit, tax exempt corporation in the State of Utah.

Of much greater importance to our members is the fact that we have now become more democratic in our voting structure. Where previously only State SAR Coordinators were voting members – now 40% of the Board of Directors will be elected from within the individual and organization membership of NASAR.

Our first election under these new procedures will be at the Cheyenne Conference in September 1976. We urge all of you to attend – both to vote and to run for office as a representative on the NASAR Board.

And something new has been added – we have established a Department of Membership Services with an office in San Diego, California. Listed here is some of the assistance that NASAR members may not obtain.

- A model for establishing a Search and Rescue Unit.
- A model for establishing a State SAR Coordinators Program.
- A sample curriculum for a SAR Training Course.
- A Beginner's Training Manual, for Basic Search & Rescue Techniques.
- Free consultive services for members on your SAR or Preventive SAR Programs.

In addition these benefits are included in your NASAR membership:

- Discounts on Registration Fees for members at NASAR seminars, trainings, and conferences (including Cheyenne of course).
- A year's subscription to NASAR's official publication SEARCH AND RESCUE MAGAZINE.
- Membership discounts on publications of NASAR.

As you can see, we are growing by leaps and bounds. In these days of escalating prices, we regret that our's too have escalated.

Our membership year will now run from October 1st to September 30th in conjunction with our Annual Conference.

If your membership is due between now and October 1st you will be hearing from us so that your Search and Rescue Magazine will not be interrupted.

Otherwise the new annual membership for individual voting members will be $19.50* as of October 1, 1976.

The membership for state agencies will be $50 annually.

There will be two types of organization memberships, an organization membership with two designated voting members will have annual dues of $50. The non-voting organization membership will increase from $15 to $25 a year.

In spite of the cost of continuing our developmental program, our publishing program and our consultive services, NASAR is committed to the maintenance of a realistic dues structure so that we don't squeeze out the little fellow.

We look forward to continued work with you toward attaining our mutual goals.

Please make use of our NASAR Membership Services. They will be happy to hear from you. The address is P.O. Box 2123, La Jolla, California, 92038.

"To Hope is to Persevere, That Others May Live"

NASARC SPRING ADVISORY COUNCIL MEETING

April 2-4, 1976 Scott Air Force Base, Ill.

The following message was sent to:
George L. Jones, Director of Virginia Civil Defense and President of the National Association of State Directors of Defense Preparedness.

From: Blair Nilsson, Colorado State SAR Coordinator and NASAR President.

. . epitomizes the thrust and productivity of this NASARC meeting gratituously hosted by the USAF's General Ralph Saunders and the Aerospace Rescue and Recovery Service:

The National Association of SAR Coordinators has been following with interest National Association of State Directors of Defense Preparedness and U.S. Civil Defense Coordinators efforts and presentations before the Congressional Civil Defense Committee. We have been informed that another important hearing (Budget Committee) will be held the 24th and 25th of March in Washington and that there is in draft process a document addressing the combining of the three Federal agency responsibility under one supervising Federal agency. We agree wholeheartedly with this concept. However, we are concerned that in all of these presentations there is the statement made that the programs are to prepare to save lives and property. Yet there is no mention of the way this is done by trained Search and Rescue teams. In NASARC's opinion too long a time has passed in which the general public, including those persons directly responsible for emergency and disaster response, have operated under the concept of the "Rescue Doctrine" that evolved in the frontier days, that is of mutual assistance to persons in trouble. This SAR tradition is so strong that it is a foregone conclusion that it will happen. But NASARC finds that it doesn't happen in the proper manner. Let's face the fact that we are no longer trained in a frontier environment and that we are a sophisticated urban society. We do not inherit the frontier knowledge of our ancestors. That every emergency situation, not just those in the wilderness, demand search, rescue or recovery. The first thought in any emergency plan is to save lives when a disaster arrives through search, rescue, or recovery. What goes on during an emergency or disaster? Search, rescue or recovery. It is about time leaders woke up to the fact that many lives are lost or imperiled by shoddy haphazard search, rescue or recovery done by untrained volunteers or SAR teams with limited training and capability. It is about time that the Federal Government recognized that the most prominent thing in any emergency or disaster situation is the saving of lives through search, rescue or recovery by trained SAR teams. We ask you as a staunch member of NASARC to submit this position for us in these hearings and to make it a prominent part of your draft proposal.

Point out that in order to serve a nation properly in all instances of disaster or emergencies be they in metropolitan areas, rural areas or in the wilderness search, rescue and recovery needs to be done by trained teams and these teams need the following: Funding. Support for their communications equipment. Funding for air and ground transportation equipment. Funding for training material. Reimbursement for expenses during disaster and emergency missions. Not one Federal agency supports SAR. It is fragmented among a number of agencies that give token support, i.e., DCPA, excess and surplus property which has to be paid for. HEW, EMT, training only. DOT, rescue vehicles for highway response only. U.S. Air Force, reimbursement to CAP only for fuel oil and telephone calls during a mission. The U.S. Coast Guard and Air Force National SAR School, if they pay their own way. Point out that each state needs to have a SAR Coordinator appointed and supported by Federal funding for his day-to-day emergency rescues and disaster Search and Rescue program.

Our public expects and demands high quality Search and Rescue. Let's see that it is recognized at the Federal level. ■

"GO THE SECOND MILE"

Extract of a talk to HEW National EMS Rural/Wilderness Symposium in Denver, Colorado — 2 February 1976

by STAN G. BUSH

President, Colorado SAR Board, Inc.

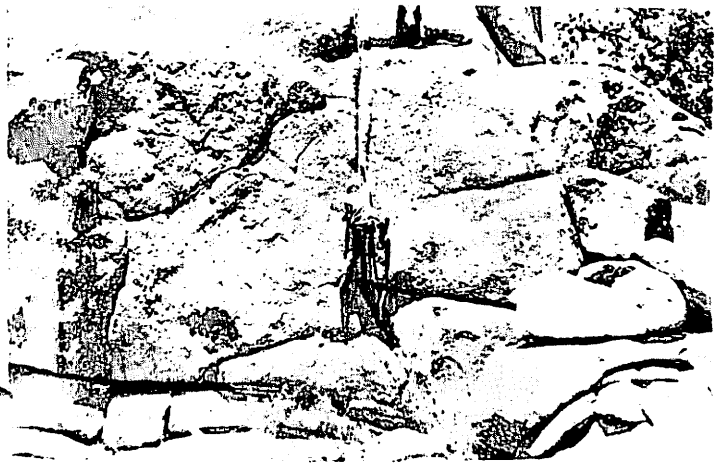
STAN BUSH
Director of the
Emergency Planning
Department,
City of Littleton,
Colorado

It is a pleasure to be here with you today to talk with EMS people, learn about your programs and share with you some of our programs and problems in the wilderness areas. I am learning, as I talk to people around the conference, about the EMS program and it's impressive. It has the structure, communication and coordination to be effective. But as I have studied the program and talked to people around the convention I wonder about the input you have received from search and rescue people who work way back in the wilderness to bring victims out to your ambulances and emergency care facilities. So, that's what I will address today in the hope of opening up some lines of communication between search and rescue teams who work in the back country and you people who are on the receiving end of our efforts.

You see, we describe wilderness in our work as an area where it is at least 12 hours to the nearest vehicular access. This means that we can't put the $85,000 ambulance to the victim. We have to bring the victim to the ambulance, or to you. To do this we have, here in the State of Colorado, over 230 rescue teams of all of the types you can imagine from technical rock rescue to underwater recovery to cave rescue to avalanche rescue and many others. Thousands of individuals — it's over 5,000 — are members of these teams and they are almost all volunteers. They are people who work at regular jobs. (That's why you don't see very many of them here at this conference.) They are willing to take time off from their work to go into the back country to help someone in need.

Someone is hurt, or lost, and the call goes out to our Division of Emergency Services, the Search and Rescue Boards, the local authorities and to the team leaders. The nearest team is called to respond and the members leave their homes and jobs, grab their equipment and head for the scene. They have to get to the roadhead first and this sometimes is quite a problem with bad roads, insufficient vehicles or inclement weather.

Once they reach the roadhead then it's often hours hiking in, traveling on snowshoes or doing technical rock climbing to reach the victim. Once they reach the victim THEIR ambulance is a 20 pound pack on their back and a basket stretcher! They have very little sophisticated equipment for they can't carry it. They don't have the items we normally consider as being necessary for life support in the ambulance or hospital emergency room. All they have to work with is a pair of hands, their brains and what they are carrying with them. They have to sustain that patient for hours; sometimes it's more than 24 hours, before they can get him out to where an ambulance can take him to the nearest hospital. Then they can relax — mission completed — and let you people take over.



Rock rescue training for CSRB members in a coordinated exercise in the Buffalo Valley area of Central Colorado

The point is that these are the conditions that we encounter on a day-to-day basis in wilderness rescue and we have to get that victim out to you before your EMS program can function effectively. It's necessary work and it requires devotion, equipment and training. It particularly requires a very high level of training to become skilled in wilderness rescue.

Let's picture an incident. It happened not too long ago when a climber fell some 50 feet while climbing a 600 foot cliff. There he was on a ledge — injured and inaccessible. The rescue team was called, reached the roadhead and packed in to the base of the cliff. Two members climbed to the victim and began to give emergency care. A storm with high winds and heavy snow hit the area. Idealistically, it would be nice if the rescuers were in radio contact with a doctor in a hospital and if a helicopter was enroute to evacuate that victim, but that was not the case. The cliff was in a deep mountain valley and there was ***no*** radio communication. The storm kept any helicopter from flying. And so the rescuers had to manage the patient, stabilize him and do an evacuation down the face of the cliff. Then there was a five mile carryout to the roadhead. it took 24 hours from the time the team started at the roadhead until they had the victim back there to a waiting ambulance and this isn't anything exceptional. It happened in a similar manner over 200 times last year just here in Colorado.

Remember that I'm talking about mountain rescue and the Colorado Rockies, but it's the same in other parts of the country — the everglades, the rain forests of the Olympic Penninsula — wherever there is a true back country wilderness area. And in each case you can't get the equipment to the victim, you have to bring the victim to the equipment and medical personnel.

Sometimes it doesn't even have to happen in the back country. Right up here near Boulder, Colorado there is a mountain called Bear Peak. It's close in so that you can see the city from the top. A climber fell near the summit and broke his ankle. It took the rescue team 12 hours to get the climber down to an ambulance in a basket stretcher because a storm came in that eliminated an aerial evacuation.

And so this is a different aspect of EMS, but it must be a part of it. We understand that it is a small part because where you handle hundreds of patients we may only handle 10 or 12, but it is just as important if we are truly victim oriented.

We have a lot of problems. One of our problems is training. Virtually all of our people who go into the back country have had the EMT-A course and many of them are now trained in the EMT-Paramedic program. But they don't go far enough and they presume equipment we just don't have. When you are alone up there with that victim you don't have instructions on what to do. You have to handle him by experience, improvization and by guesswork because there aren't those advanced training courses in wilderness medicine and you can't contact a doctor.

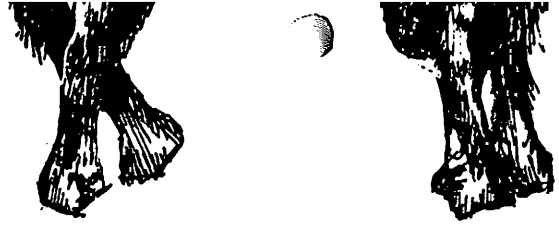
(continued on page 18)

bicentennial SAR conference

NASARC GAZETTE

VOL 1. NO. 1 SALT LAKE CITY, UTAH PRICE: FREE

There are Two Sides To Our Story



SEARCH & RESCUE

management, strategy

tactics, techniques

WORK SHOP OVERVIEWS FOR MANAGEMENT

KEEPING THE LID ON–*Administration/Organization/Coordination*

RADIOS, REPEATERS AND OUTER SPACE–*Communications*

QUALIFYING–*Training/standards–minimum requirements. Getting it all together–*

IT'S NOT A "LINE-ITEM"–*Funding Budget problems–Capital expenditures, operations–*

A HUB FOR THE WHEEL–*Inter-agency Coordination*

NATIONAL ASSOCIATION OF SEARCH & RESCUE COORDINATORS

WORK SHOP OVERVIEWS FOR THE FIELD

TIME–*The Enemy of Search and Rescue–response/*

THE SIXTY-FOUR DOLLAR QUESTION–*Interrogation, developing the true situation*

THE BORDER PATROL, INDIANS AND VISUAL TRACKING–TRACKING TODAY

"DON'T FOOL WITH MOTHER NATURE"–*can education keep land people from becoming lost on land?*

GO THE SECOND MILE–*Emergency Medical Services Beyond the Road Head.*

NASARC'76 Bicentennial SAR Conference

September 9-12, 1976 Cheyenne, Wyoming

BICENTENNIAL CONFERENCE

INTERNATIONAL SYMPOSIUM ON THE CHALLENGE OF SEARCH & RESCUE IN THE WILD OUTDOORS

SEPTEMBER 9,10,11 & 12, 1976

Sponsored by:
National Association of Search and Rescue Coordinators

Wyoming Disaster & Civil Defense Agency and Wyoming SAR Organizations

HITCHING POST INN
CHEYENNE, WYOMING

THE CONCEPT: This 8th Annual NASAR Conference will provide experience and information for the development of Search and Rescue systems and the improvement of SAR techniques. The program will follow two simultaneously presented themes, (1) SAR Management, (2) SAR Tactics and Techniques.

ORGANIZATION: NASAR provides a forum wherein representatives of government, industry, state, international and national SAR organizations, local SAR groups and SAR volunteers may address matters of mutual interest. Here we may evaluate the state of all mediums of SAR lifesaving; through identification of persistent problem areas, critiques of existing procedures and discussions of newly developed technology.

GOALS: NASAR goals are evoluntionary but at present are dedicated to developing increased state, federal, local and volunteer coordination; improved SAR management, strategy, tactics and techniques; full application of the newest technologies to SAR; and greater expertise and effectiveness in saving lives.

PROGRAM: Plenary Session - National statements will be made by interested federal and state agencies in their SAR programs, future development goals and performance objectives.

WORKSHOPS: SAR Tactics and Techniques (concurrent sessions)
Increased interest in more potentially dangerous kinds of recreation such as mountain climbing, sky diving, scuba diving, skiing and many other active sports, carried on in remote areas where access and communication are difficult, require special SAR operations. These activities as well as the need for specialized training, special equipment needs and environment problems will be among the subjects covered in this half of the workshop discussions.

SAR Management (concurrent sessions)
Increasing incidence of SAR operations makes necessary a more efficient and cost effective utilization of available SAR resources. How to create inter-agency coordination, models of state SAR programs, recently developed SAR management curriculum evaluation guidelines, qualifications and minimum standards and exploration of the present impact on SAR in areas which lack coordinated programs will be covered in this half of the workshop sessions.

ATTENDANCE: You should plan to attend if you are involved in Search and Rescue in federal, state, international, local or volunteer status in any capacity.

EXHIBITS: The focus of the exhibits will be on Search and Rescue services, assembling manufacturers of all forms of equipment, supplies and services.

The newest and most innovative equipment will be displayed and manufacturers anxious to meet your specific needs will be on hand to explain and demonstrate their products and to discuss your ideas on what they can do to improve their service to you.

8th NASARC SAR COORDINATORS

SEPTEMBER 9-12 CHEYENNE, WY.

PRE-REGISTRATION: Complete and mail to NASARC CONFERENCE, c/o JAKE HERZOG, P.O. Box 1709, Cheyenne, WY 82001

Your registration will be held for you at the pre-registration desk at the conference site, "The Hitching Post Inn, Cheyenne, WY, September 9-12, 1976.

NAME _____

(As you wish it to appear on badge)

POSITION _____ **ORGANIZATION** _____

ADDRESS _____ **CITY** _____ **STATE** _____ **ZIP** _____

Please register me as follows:

☐ NASARC Member Registration	$35.00	_____
☐ Non-Member Registration	$45.00	_____
☐ Special Commercial Exhibitor	$20.00	_____
☐ Late Registration Fee (after Sept. 1st) add	$ 5.00	_____
TOTAL CHECK ENCLOSED		_____

Special Spouses Registration $20

Name as you wish it to appear on badge

Fold Here

Fold Here

For room size planning purposes, please indicate sessions and other events you plan to attend.

☐ *Send me preliminary program for description of sessions and events.*

AGENDA: *(In Brief)*

THURSDAY–Sept. 9th

- ☐ Delegate's & SAR Advisory Council Meeting

FRIDAY–Sept. 10th

- ☐ General Session–A.M.
- ☐ Registration, Welcome, Plenary Session
- ☐ Pioneer Lunch
- ☐ Workshop overviews–P.M.
- ☐ Plenary Session
- ☐ Exhibitors Reception
- ☐ Caucus & Elections

SATURDAY–Sept. 11th

Concurrent Workshops–A.M.

- ☐ Workshops on SAR Management
- ☐ Workshops on SAR Tactics & Techniques
- ☐ Lunch–No Host
- ☐ Outdoor Demonstrations–P.M.
- ☐ Workshops–Specialty Sessions
- ☐ Chuck-Wagon Buffet–Awards, Installation of Officers

SUNDAY–Sept. 12th

- ☐ Annual NASAR Business Meeting
  State Coordinators Reports
  SAR Advisory Council Meeting
  New Board of Directors Meeting

Please check 3 workshops you plan to attend:

- ☐ Keeping The Lid On
- ☐ Time–Enemy of the Rescue Team
- ☐ Communications, Satellites and Outer Space
- ☐ It's Not A Line-Item
- ☐ Getting It All Together
- ☐ Qualifying: Minimum Standards
- ☐ A Hub For Our Wheel
- ☐ The $64 Question
- ☐ Go The Second Mile
- ☐ Don't Fool With Mother Nature
- ☐ Human Ice Cubes
- ☐ Border Patrol, Indians and Tracking Today
- ☐ Multipath & ELT-DF
- ☐ Wings for SAR

Clip Here

Clip Here

Complete and mail to

638-3301

HITCHING POST INN

MOTOR HOTEL AND RESTAURANT

P.O. Box 1263 Cheyenne, Wyo. 82001

Please Reserve the Following Accommodations for _____ **Person(s)**

Arrival _____ **Departing** _____ **, 19** _____

$17–$18 _____	Single Bedroom (1 Person)
$21–$22 _____	Double Bedroom (2 Persons)
$21–$22 _____	Twin Bedroom (2 Persons)

Name _____

Address _____

City _____ **State** _____ **Zip** _____

Rooms will not be held after 6:00 p.m. unless prior arrangements have been made with the management

8th NASARC SAR CONFERENCE

GO THE SECOND MILE (continued)

There are costs. The costs of taking training. And the search and rescue team members pick up the tab not only for their food, gear, transportation and time off work but also for the training courses offered. And then there is the time when training courses are offered for they are generally presented during the hospital work day when we have to take time off work to attend – like this symposium. Then there is the problem of acceptance by emergency professionals. One of our top rescue/wilderness men was taking an EMT class and was the only volunteer in the class. He was severely criticized for taking the class. He was told that the course should be for professionals only! And there is the lack of adequate training manuals for EMT-Wilderness. We need books and special training classes adapted to that situation where we just don't have the equipment available and where we have to make our own decisions. We need information on on-the-spot improvizations that will work – such as how to make a cervical collar from a coat or how to do suction. Many field team members have developed improvizations that are terrific, such as a plastic bottle clamped on the leg that can be used with two tubes to suction the patient, but this information is not generally known to all. What about backboards? We don't have a scoop stretcher that exists that can be used to bring someone down the face of the cliff. What about diagnosis? We are told that we cannot diagnose, but we're out there with the patient and need some guidelines. What about our instructions from doctors? One will tell us it is all right to use a certain procedure or medication. Talk to a second and you receive the opposite response. Talk to a third and it's different again. He says they're both wrong.

When we are back there in the wilderness we are generally able to make radio contact with a doctor, but when we can't what do we do about Iv's and drugs and other medications? We need guidelines and training in that EMT-Wilderness course. You see, we're still there and have the responsibility for keeping that victim alive.

That leads into another problem area – communications. How do we secure communications in all parts of our wilderness areas.

One approach, since paramedics and nurses are highly trained, would be to let them take care of wilderness rescue. But this kind of work requires emergency care and rescue/recovery procedures that are essentially unique. We have to give search and rescue teams extensive field training. From our experience it is a lot easier to take a good technical mountaineer and train him in wilderness medicine than it is to train doctors, nurses and paramedics to become skilled mountaineers.

We have the problem that our basic mode of transportation is our two feet. We must be in top physical condition and capable of moving over very difficult terrain.

Evaculation of an injured climber in the Lost Creek Wilderness Area – 5 mile carry out.

Testing a tyrolean traverse lowering line during rock rescue training.

We have the high altitude problem. Our team members may be working for long periods of time over 10,000 feet and must know the special problems this creates.

We have very serious hazards that we encounter every time a rescuer goes into the field – such as rock falls, avalanches, lightning, blizard conditions and many others.

We must have with us the equipment to care for the victim, but we must also be able to survive ourselves and not have to be rescued. Therefore we must carry at least 20 pounds of personal gear, including sleeping bag, food, weather gear and technical climbing gear so that we may be self sufficient under all conditions for at least three days. So we're carrying 40 pounds of gear – 20 pounds for the victim and 20 pounds for ourselves.

We have to know how to provide our own shelter for the victim if he must be managed before he can be moved and this involves additional equipment as well as considerable skill in designing snow caves and anchoring tent-like shelters to cliffs.

We have additional problems for the victim because of environment. In many cases the victim may have a traumatic injury and by the time we get to him he has other problems brought on by illness or the weather. We have a time factor. The paramedic teams that are around the Denver Area pride themselves in being able to reach a patient in 4 minutes or less. And it would be considered totally unacceptable if they took an hour. We generally take several hours. As a result, when we reach the victim he either isn't injured too badly or he has reached his survival limit. Then is when the rescuer is fully taxed to to save the victim.

The communications problems are obvious. I have mentioned the need for improved radio communications. But there is a second communications problem and that is the interpersonal one that can be solved by meetings such as this. We have to understand you and you have to understand us and we have to be able to communicate with each other. We can solve our communications problems if we are working toward that common goal of victim orientation.

One of the best ways to establish channels of communication would be for you to work directly with the National Association of Search and Rescue Coordinators. They do tremendous work in coordination of search and rescue efforts, providing information and training guidelines and can be a channel through which we can work.

We also have a problem with power. If emergency care equipment requires much power we can't use it on the cliff. We don't have power sources, or they are too heavy and they are particularly susceptible to lightning.

We have a problem with the size of equipment. much of it is too bulky and when we miniaturize it the cost goes up so that we can't afford it. Basically, our modern day equipment just doesn't meet the needs of the modern day wilderness rescuer. Even the hot oxygen equipment that has been developed recently is too bulky to handle.

We have the problem of funding. We are volunteers and don't mind devoting our time and money, but we just can't spend from our own pockets for very expensive items of medical or radio gear.

Calls are a problem, too. Many medical and law enforcement agencies do not understand the role of the search and rescue team or that they are needed. Maybe it's an unwillingness to call paraprofessionals or maybe just lack of person to person communications. A case last summer in Colorado illustrates the point. An ambulance company was called to the scene of an accident. When they arrived they found the victim trapped on a cliff. No call had been made for a search and rescue team. The ambulance personnel could not scale the cliff and they had to wait at the bottom while a call was made for a rescue team. Three hours later the victim was brought to the ambulance for transport. In another case the ambulance arrived at a roadhead and found that the victim was 5 miles back in the wilderness. They tried to get a pram in along rough mouhtain trails to the victim but were unable to do so. They then called a rescue team. The team was able to get the victim out the next day.

And a final problem is weather information. We need instant access to good current weather information and predictions that will enable us to plan our field strategy. It is difficult to secure and we have to work through many different sources. This could be correlated through the EMS program. And it would also be of value to the rural ambulance driver.

There are a lot of problems, but we're not complaining. We'll do the work, but we're asking for help in solving them. Our needs correlate with these problems and we mention them so that you will have a better picture of what we have to do to bring the victim to YOU. We need training. We need an EMT-Wilderness program complete with classes, manuals and a central data bank of knowledge on how to manage the patient with limited equipment and under adverse conditions. We need the training classes given at times when paraprofessionals can attend. We need more frequent refreshers on EMT-A and EMT-P programs. We need to have the medical profession get together on recommended treatments, IV's and medications that we can use out in the wilderness. We'd like to have some form of reimbursement — not for ourselves but for equipment and training. However, we realize that this may be difficult unless we tie the rescue teams directly into the EMS program.

More than ever we need research. For new equipment and the miniturization of present equipment. We need a spinal cervical immobilization litter that can be used in difficult terrain. We need an IV system that will work at high altitude and very low temperature. Rescuers saved a life on Long's Peak. A doctor was present and they were able to do neurosurgery in the Chasm Lake shelter cabin, but they couldn't run an IV because it froze and they had to give 500cc in 1cc units with a syringe. We need new equipment to field manage the hypothermia victim. But beyond equipment we also need technique research. We need to know how to do CPR in a basket litter. What do you do if six rescuers are carrying a litter down a mountain train and the patient cores? Do you ineffectively try CPR as they keep walking or do you wait indefinitely? We don't know. In many other areas we need a coordination of ideas and plans that can all be channeled directly to the rescuer.

Removal of a climbing fatality on the sandstone cliffs at the entrance to Deer Creek Canyon — Douglas County, Colorado

I'd like to also urge that as you work with us through the National Association of Search and Rescue Coordinators you also consider working with the National Council for Survival Education. They are a fabulous group and are doing a tremendous job right now in trying to help prepare people so that they will know what to do in the back country if they get into trouble. They are teaching wilderness survival and medicine and also need your help in knowing just what to teach. You also need them for their preventive work helps to reduce your case load.

I could continue, but I believe you see the picture. You have a marvelous program and are developing an Emergency Medical System that is greatly improving the care given to patients by ambulance attendants and in the emergency room.

I propose that we now work together to 'go the second mile' in helping to solve the problems of the wilderness rescuers who bring the patients to your service. ■

Rescue Training Exercise with Alpine and Arapahoe Rescue Patrols doing an 110 foot vertical evacuation near Idaho Springs, Colorado. Basket "victim" is Governor Richard Lamm of State of Colorado

BASIC LIVING

by MIKE HUMFREVILLE

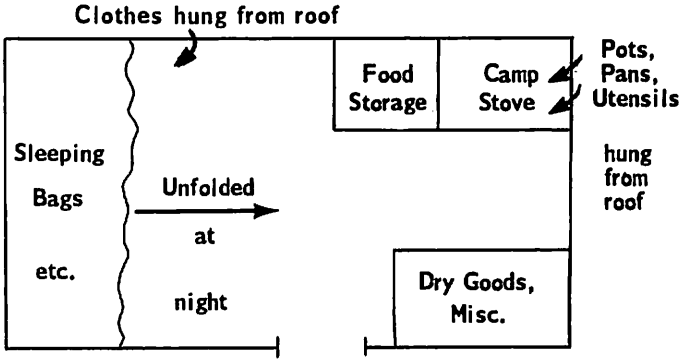
In May, 1974, my wife, Mary Ann, and I packed as many belongings as possible into the back of an old Toyota Land Cruiser, stuffed in our dogs and ourselves, and drove south for the Mexican border. For the three ensuing months we lived in a variety of conditions and were exposed to a number of not dangerous but unusual circumstances. This is a capsulized report of that time.

It took us just less than a week to find the climate we were looking for. Basically, Baja climates in the summer vary from cool and damp in the northern west, warm and windy on the southern west coast, hot and humid in the southeast, to hot and dry on the central and northern east coast. Our choice was originally the vicinity of Santa Rosalillita (west of Punta Prieta) on the west coast in central Baja. Evening dampness and morning fogs quickly changed our minds. Further south, still on the west, near Guerrero Negro, there was usually a stiff breeze and this discouraged us. Thirty miles north on Laguna Manuella there were bogs and shallow waters but no sandy beaches.

After several days of traversing the central peninsula we struck out for Bahid de Los Angeles (L.A. Bay) where neither of us had been before. We found the bay to be hot, dry, with a slight breeze from the north. The waters were protected and calm and the beaches sandy and shallow. The actual settlement of Los Angeles consisted of twenty or so families and a small store with limited supplies. Water was available from a spring just above town, at the base of the Sierra de Calamajue y San Jose mountains. The setting was more what we'd been looking for than anything else we'd seen and we selected an isolated stretch of beach six miles south of the settlement and made camp.

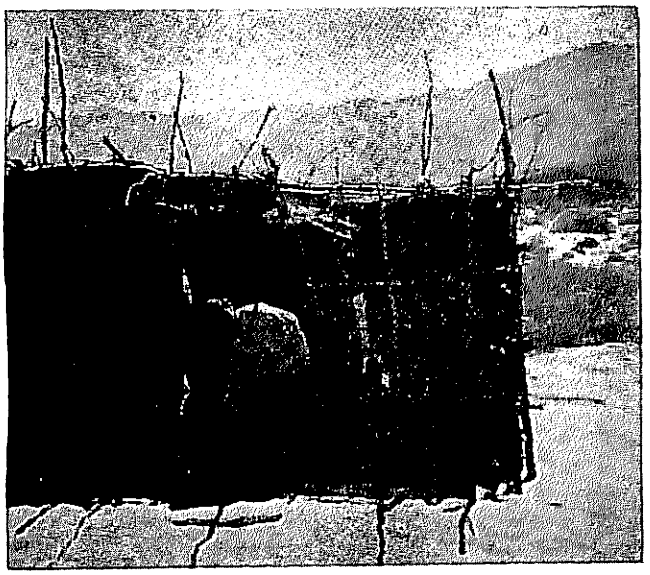
Our first project was to build some form of protection from the elements, specifically the sun. We decided a small hut would provide maximum protection and comfort. The next day we drove into the surrounding desert and collected cirio cactus plants ranging from five to fifteen feet in length. These were to form the framework of the hut. We had no shovel, but the sand was soft; I "dog-paddled" holes in the sand about two feet deep and Mary Ann pushed the limbs in each hole before it filled with the loose sand. We marked off a rectangle about eighteen feet by ten feet and sunk uprights about every one to two feet around the perimeter. Then, while Mary Ann stitched three tarps together for the roof, I interwove more cirio limbs horizontally through the uprights of the walls for support. I laid a few limbs along the length and the width of the top of the frame to support the canvas roof. We put the tarps on top of this, and more cirio limbs on top of the tarps. We tied the tarps to the limbs where the roof met the uprights. We used blankets, other tarps, cardboard boxes, scraps of wood, anything we had that was flat, tied to and woven in the upright cirio limbs, to form walls. On the northern, windward side we placed the material outside the supports, to blow into, rather than away from, the walls. We did the same on the leeward side. This offered greater strength in the wind. If the wind grew too strong and endangered the walls, we would raise the blankets and tarps and allow the wind to blow through.

The construction of the hut took roughly three days and once it was completed we were anxious to move in. The front of the hut faced east. In the north end we set up the kitchen and in the south end our sleeping and living quarters. This provided for less sun in the early morning hours. Once established, and after considerable rearranging, we had generally what is shown in the illustration below.

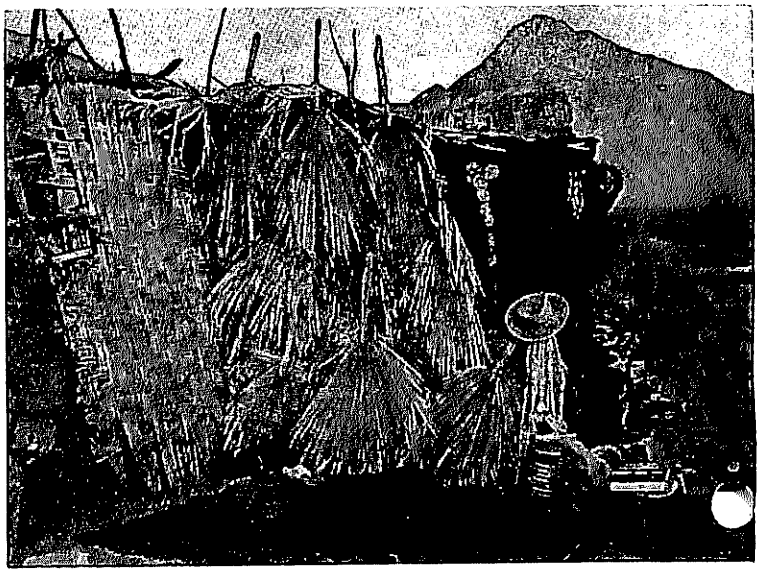


We fashioned crude tables out of two pieces of flat driftwood, using cirio for legs; one supported the stove, the other dry goods. Two fruit crates which washed up with the tide we fastened to the wall at shoulder height and used for food storage.

On a scrounging run down the beach we found several palm trees and used the fallen fronds and some more cirio limbs to build another room in front of the kitchen. Later, when another piece of driftwood was washed up we built another table and found two old wooden captain's chairs at an abandoned ranch in the desert. These, along with the table, furnished our new room. The hut was far from bug proof, and spotlights of sun poured through holes in the tarps and palm fronds, but it was home and we had built it. There was plenty of time for improvement.



The basic hut, constructed from Cirio limbs, tarps, scraps of driftwood.

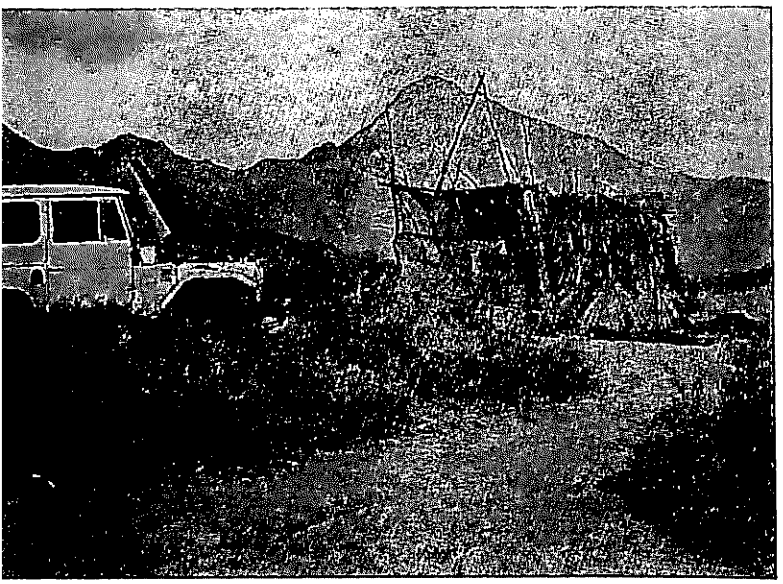


The completed project, which was never quite finished.

With completion of the basic hut we concentrated our efforts on secondary comforts. We were driving on the beach and found an old bucket that had washed up. We bored holes in the bottom and then buried an upright next to the hut and hung the bucket on a crossbar, forming a shower. We had brought several brands of bath soap with us, and shampoo. The soap didn't work well in sea water until we heated the water, and then it still didn't really do the job. In the village, Dove soap was the only brand sold and this proved to be the best for the ultrahard sea water. Our dishes we washed in cold water, but for the laundry and bathing we heated the water over the campfire in the fire ring we had built in front of the hut.

In the desert nearby we found an old rusted cast iron box, measuring roughly four inches high by 16 inches wide and 24 inches long. Using mud from a nearby lagoon for sides, we fashioned a second fire pit in the sand beside the first. On top of the pit we laid the box and covered the entire box, except the mouth, with mud leaving an access point to the fire pit in the front and a hole for ventilation in the rear. When the clay had dried the next day, we started a fire under the box and waited for the coals to form. I made a door for the mouth of the box out of a scrap of wood. When we guessed the temperature was right, Mary Ann mixed up a batch of biscuits and slipped them on a tray and into the box. Fifteen minutes later we were eating hot biscuits and butter. We later baked cake, bread and muffins, all successfully.

Dog food soon became a problem. The scraps from our table weren't adequate, and the village store didn't carry dog food. I took to fishing more than before. The sun rises at 5:30 a.m. in those months and I would follow shortly. In front of the hut in the early morning I could catch six to eight fish in an hour or two. When we needed more, we would go to one of the two or three places on the bay where the fishing was the best I've ever seen. We could catch a five gallon bucket full of fish from the shore in fifteen minutes. The bait we used was fish or octopus, but the latter worked best. We ate the octopus once, but it was parboiled and not tasty. The fish we caught were almost exclusively rock bass and trigger fish; both good eating. Rock oysters are in abundance in the bay and we ate them also.



Backdrop of the Bay – the Sierra de Calamajue y San Jose. Preparing the Toyota for a run to Ensenada

After we'd lived at the bay a month we decided to make a trip to Ensenada for supplies. Our old Toyota was tired from the many dirt miles of other trips; before moving to the bay we put in a 283 Chevy. The engine cost $15 from a friend and was in poor shape; it burned a quart of oil every eighteen miles. Every 100 miles we had to clean the plugs. Ensenada was roughly 400 miles to the north, and we burned two cases of oil on the round trip. The car gave us continued minor problems but we learned that the people are prepared to deal with most anything in stride.

One of the purposes of the trip to Ensenada had been to seek out some form of refrigeration more reliable than the ice which was occasionally available at the bay. In Ensenada we found that camping refrigerators were too expensive, and we'd given up the idea but, passing through San Quintin, we had another thought. The electricity had just been extended south to this town and the Mexicans seem to prefer electric refrigerators to gas. We spent a day bargaining with various people and finally bought a small, twenty year old gas refrigerator and a tank of butane for $50. The trek back to L.A. Bay with all the supplies, the refrigerator, the 35 gallon butane tank, the dogs and Mary and I was quite a trip, but we drove slowly through the desert and had no serious problems.

Once back at the hut we somehow managed to push, pull and twist the refrigerator through the sand and into the kitchen. We spent several anxious hours after we connected the butane and lit the flame, waiting to see if the box still worked. Eventually we heard the freon beginning to bubble and the tiny freezer got cooler and then cold. The refrigerator proved to be our one conventional luxury and we used it to the hilt. If we were careful to keep the door closed during the heat of the day, it would produce three ice cubes every 24 hours (we used three small bowls in the freezer section because we had no ice tray). In the evenings we would celebrate the relaxing of the heat over a gin and tonic, with ice!

With some visitors, the added room and kitchen, with the refrigerator.

The refrigerator changed our eating habits significantly. a fruit truck came to the village every eight days and we bought fresh fruit and vegetables each time. We bought eggs from the village store. There was no beef available but we ate fish and eggs for protein. We made tortillas for enchiladas and tacos, and when chilis and cheese were available we ate chili rellenos.

The days passed quickly. In the mornings we would fish, eat breakfast, cook the extra fish and feed the dogs, clean the camp, wash dishes in cold salt water with shampoo or dish soap, using the sand as an abrasive. In the heat of the day we would lay in the shade of the hut reading and dozing. In the afternoons we would go on a scrounging run down the beach, fish for dog food or drive into the village to visit with several families with whom we'd become acquainted.

In time we made several improvements to the hut. We brought a load of beach gravel in and formed a floor for the kitchen to keep sand out of the food. We fortified the

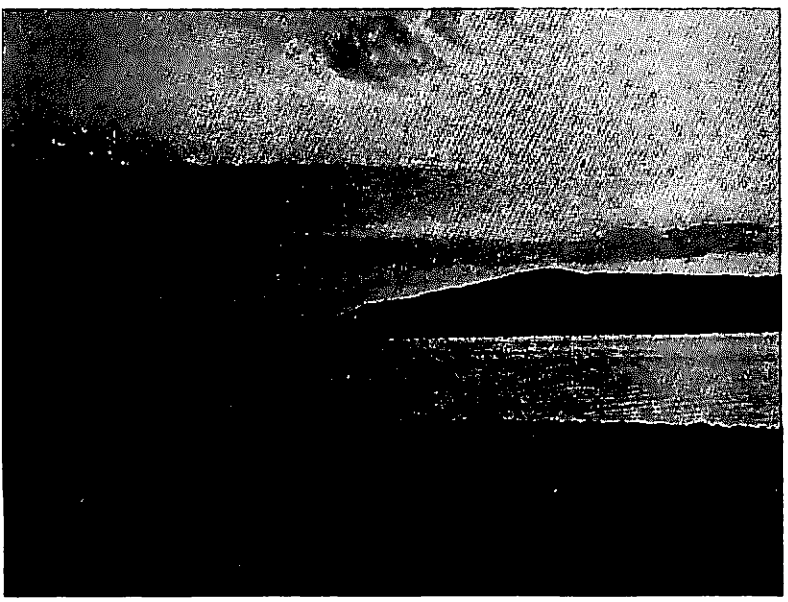
(continued on next page)

BASIC LIVING (continued)

walls with more palm fronds and woven grass mats. Virtually everything that washed up in the tide we put to use. In the evenings we bathed and washed clothes. After dark we sat reading by kerosene lamps. Any light after dark attracted a multitude of bugs of all sizes, but none were harmful. The climate was dry and there were no mosquitos. The only creatures which might be considered dangerous that invaded our living area were scorpions and rattlesnakes.

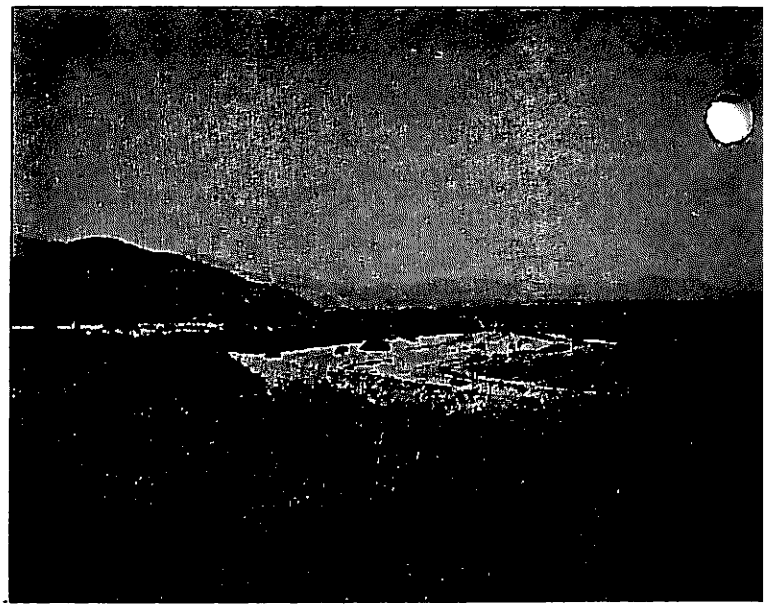
The weather varied little and it was always hot. Twice, late at night the wind came up, blowing from the south very hard. Both times, by coincidence there was a full moon. We were in bed and were awakened by the shaking and swaying of the hut. The walls were designed for north wind; wind from the south was a problem. We raised the cloth walls and spent several anxious hours holding the hut together, but the wind passed and the walls held.

Once there was a furious rain, lasting most of the day; by mid-afternoon the sky was clear but the earth was saturated. Just after the rain stopped, we were standing in front of the hut and heard a deep, low, continuing roar from the desert behind us. The voice grew louder and louder and we had no idea of its source. It grew so loud that we had to shout to hear each other. I looked out to the bay in front of us and there was a huge brown streak pushing its way out into the usually blue water. We ran down to the shore. Water was pouring from gullies on both sides of the hut, down from the mountain and into the bay. We were in the midst of a flash flood! The hills and foothills behind the bay had absorbed all the water they could use. The remainder was washing over the valley and into the sea, rushing, tearing, pushing anything in its path. Within minutes the road from the village was washed out. New gullies were formed twenty feet across and eight to ten feet deep. Huge rocks were moved from mountains to the edge of the water. When the water subsided several hours later, we surveyed the damage. Our hut was safe on its sanddune, but the road to the village was gone. But by maneuvering around the ravines cut by the rushing water we could still negotiate the road. The only real damage was the brown smudge in the blue water which took weeks to dissipate.



At the Bay our priorities were changed.

At the beginning of our stay we were busy with filling our various needs: the hut, cooking, washing, learning to live with the environment. By the time we were settled in, we grew less busy with daily affairs, but we were never bored. We began to identify more with our surroundings,



We grew closer to all that surrounded us and became an integral part of the world we lived in.

and somenow, performing significant accomplishments every new day seemed unimportant or perhaps our concept of what was significant changed. We never became lethargic but we did noticably slow down our typically North American pace. After a time it took very little to occupy our interests. For the first time I can remember I was completely relaxed; nervous habits were dropped by the wayside; we grew truly comfortable in our own world; we saw another side of each other we'd never seen. It's something not to be described but to be felt first hand, and something neither of us will forget.

Basically, that's the story. Nothing particularly dramatic happened the whole trip. We learned a lot about the country and the people of Baja. We learned to identify with the elements and to feel more as an integral part of the world we live in, severe as it sometimes is. And we learned the sound and feeling of true solitude and tranquility deep about sitting in our battered old captain's chairs in a house built of palm fronds with your own hands. The sun sets behind the Sierra de Calamajue y San Jose and a sky filled with golden and orange hued clouds turns to a brilliant pink. The heat and starkness of the desert during the day fades, and the colors return to the land and the water. The dogs come out of the shade to run in the sand. The sounds of the water lapping at the shore drift to the hut and a faint breeze stirs our seashell wind chimes. The crabs on the beach scavenge for tiny pieces of food and the sand fleas and smaller bugs take the leavings. The pelicans fly low along the shore and over the hut, the sound of their wings moving the air.

I've often thought that no matter what happens to me in later life, regardless of the trials, the problems, the hardships, if I could return to the Bay of Los Angeles and our beach it would overcome everything. The sun would still set at the same point over the mountains, the waves would lap at the shore and the pelicans would still laze their way along the beach to settle for the night at the south end of the bay.

LETTERS TO THE EDITOR

Dear Dennis,

I really look forward to receiving SAR Magazine and only wish it could be a monthly publication.

In any case I think you're doing a great job and I hope you'll keep it up. The following is in response to your request for "help" in your last issue and is not in any way meant to be a criticism of the present format.

In reviewing all the past issues of SAR Magazine, the articles I used and enjoyed most were:

Fall '73 – *A Child is Lost* (well written)
Winter '73 – *Use of Spring Line* (new concept, very informative)
Spring '74 – *Use of Heated Oxygen* (new equipment, innovative)
Fall '74 – *Land Search Organization* (exchange of ideas or methods)
Winter '74 – *Search Theory* (great article, new thoughts)
Developing a Search Plan
Spring '75 – *Man-Tracking*
Summer '75 – *Rappelling*
Letter to Editor (Fred Camphausen shares more helpful info.)
Fall '75 – *Teach Yourself Tracking* (great article)
Dilemma of Helicopter Rescue (stirred up some new thoughts, good points)
Winter '75 – *Communications* (Lois is terrific)
Emergency Preparedness Bibliography (just what we needed)
Search and Rescue Dogs (other search tools)

So all in all you've had a lot of good articles and a lot of good ideas and exchange of information. Now as for what I would like to see in the future issues; here are some ideas for sections or departments each issue on:

1. Different equipment with plans on how to make it or an address of where to buy it. Rocky Mountain Rescue Group has a great design for a break plate that really simplifies cliff evacs. Riverside has a neat litterwheel that gives a smooth ride to the victim. One of your California groups (I'm still trying to find out who) has a pulley transport system that I saw at the Idylwild Conference. Riverside has a nice portable map table. Alpine has some good pulleys, etc. You get the idea; I'll bet almost every group has some neat little goody or method of doing things that we could all benefit from. The article on string lines was a good example.

2. Different Methods of Doing SAR – theory, strategy, planning, tracking, dogs, etc. Also communications. We need much more exchange of this type.

3. Group Profile – feature article on a different group: what they do, how many missions, history, members, affilliations, etc. (Type of training also.)

4. Featured Manufacturers Article – Thompson Toboggan, Cascade Equipment, ELT's, Heated Oxygen, Medical Equipment, etc.

5. Product Testing Results – Fail test information on rope types, pulleys, 'biners, helmets, etc.

6. Brief Book Review – Even on older books that many of us don't have or are out of print. Such as Mountain Rescue Techniques (Wastl Mariner) or Improvised Techniques in Mountain Rescue (Bill March), National SAR Manual, etc.

7. Running Quarterly and Yearly Score on SAR Missions from State Coordinators including rescues, searches, call outs only, specialized etc. This might even help get National statistics and prompt groups to send mission reports to their State Coordinators.

8. War Story Of the Month – Might be a tender tear-jerker like "A Child is Lost" or an informative "how to" account of an evacuation. Alpine just had a dandy with an ice fall, cliff evacuation, and Tyrolean combined. We all like this type of thing and we might even learn something. "Snowy Torrents" is a good source for avalanche rescue. The story should also contain an account of how the victim got into the situation to begin with.

9. Letter to the Editor
10. Calendar
11. News and Rumors
12. Rick LaValla's Column

} ALL GOOD

13. Preventative S.A.R. – Why, how to, methods, training aids, put a collar on Gene Fear and get some articles out of him and Tim Kneeland.

14. Special Articles that may not be a regular feature such as conferences or conventions or related SAR articles.

15. You might have a regular feature on "Ideas From Left Field" such as using infrared to find search subjects or metal detectors to find avalanche victims or computer SAR from Bob Matson. These might stimulate thinking among SAR people. I'm constantly amazed at the excellent quality of brain power involved in SAR groups. These don't have to be (in fact shouldn't be) well thought out, fully developed ideas but rather could be the "what if" type of brain teasers.

16. You could put 1 or 2 of the better papers from the NASARC Conference in each issue for those who didn't make it to the Conference.

17. I like your previous one color cover format better and it was probably less expensive.

Well, there are a few ideas. I hope they might help. I'm sure you've thought of most of them and I realize that they're a lot of work. Please excuse the rambling thoughts.

I want to say once again what a good job you're doing and keep up the good work. The publication doesn't have to look super professional with slick paper, multicolor, etc. You might even consider raising your subscription rates. I'd be glad to pay $6 or even $8/yr. for it. The content of the material is what counts.

JON GUNSON
Summit County Rescue Group
Breckenridge, Colorado

Dennis,

We had a rather enjoyable experience on a search last month. Since you and Jack Kearney are partly responsible for the success, I wanted to pass it on to you.

On the late afternoon of January 1, 1976, two boys (ages 8 and 9) lost the trail while descending Mt. Si (about 20 miles east of Seattle). About 8:00 PM, several Seattle ESAR teams were called in for a night search. The boys were known to be wet (they had been playing in the snow) and the temperature was sub-freezing.

On the theory that the two boys probably missed a switch-back in the trail, the teams concentrated on looking for those switch-backs which would be most easily missed by a down-hill hiker and looking for clues at these switch-backs.

About 10:00 PM one team member found some scuff marks in crusted snow off to the side of the trail. For the next half hour a 19 year old team leader Steve Krigbaum, followed those marks. It was not a continuous trail – just a scuff mark here and there. When he found a few whole tracks, the size and tread conformed to what we knew about the two boys. They were huddled together, very cold, conscious but not too responsive.

The team filled them with hot cocoa and exchanged their wet clothing for dry wool and down. The boys perked up rapidly and were carried down the trail on the shoulders of team members. They were met at the trail end by their parents and other family members. It was a gratifying experience.

In talking with the team leader who did the tracking, he described how he had read Jack Kearney's article in the last SAR Magazine, and that he felt it had sensitized him to the use of tracking on this search. It wasn't that he had used the specific techniques described in the article, nor were the conditions here as tough as would usually be found (occasional scrape marks in hard snow stand out much better to the unskilled tracker than would corresponding marks if there had been no snow), but it was an awareness that he had gotten from the article that caused him to give it a try.

I know it has been your objective in publishing SAR Magazine to help get information out to the widest possible audience so that lessons learned in one place may be utilized in another. That is precisely what happened here – it worked well. It is quite clear in my mind that you and Jack Kearney shared in this rather gratifying search mission.

Thanks,
JON WARTES

Letter to Jon Wartes, Operations Chairman
Explorer Search and Rescue, Seattle, Washington

We would like to extend our appreciation to the members of Seattle ESAR for their excellent performance in the rescue of two boys lost on Mt. Si, January 1, 1976.

As a result of their expedient efforts, Scott Sifferman, age 9 and Joseph Petschl, age 8, were found in good physical condition. This quick recovery could well have saved the lives of the two victims.

LAWRENCE G. WALDT, Sheriff-Director
MAJOR FRED A PINGREY
Emergency Services Division

Editor:

More comments on the **"Dilemma of Helicopter Rescue."**

The episodes outlined in my article (Fall 1975 issue) all took place in the State of Washington and all were experienced with military helicopters within the last three years. We predominantly used military helicopters based upon the following factors:

(1) They are readily available; (2) It allows the military to provide assistance to civilians to justify their ownership of such expensive equipment; (3) It provides operational experience to the crews.

Twenty-three years ago, when I first started rescue activity, a helicopter rescue was a rare thing and was limited to altitudes below 5,000 feet. Generally, we did most of our rescues with large manpower groups and carried the victims out long distances. Today it is rare that a helicopter is not involved in every operation and frequently there are two or three of them.

The use of helicopters has drastically altered the effectiveness of rescue, greatly shortened the time span, and has undoubtedly brought with it great savings of life. It has, however, also brought with it related problems, a few of which I will touch upon:

1. **COMMUNICATIONS** – Mt. Rescue Association, in most states, on a coordination basis, now operate on 155.16 megacycles. All members of the Mt. Rescue Association, our national association, including those within Washington and California, operate on this frequency. This

(continued on next page)

LETTERS TO THE EDITOR (continued)

is not a normal military frequency and seldom, if ever, do we have direct ground-to-air communications. Our general solution is to send a portable aloft with the helicopter, but it is generally manned by a crewman and not by the pilot. Accordingly, even under these circumstances, messages are relayed to the pilot.

When you as a rescueman fly with a helicopter, there never seems to be an extra helmet so that you can get on the intercom with the crew. in theory you can borrow the crew chief's helmet, but he will only reluctantly surrender it, since it will place him out of communication with the pilot and will leave his ears ringing.

I would hope, some day, to see 155.16 as a necessary part of the aircraft instrumentation and that an extra helmet be a standard part of aircraft equipment.

2. LACK OF DIRECT CONTACT. The pilot and co-pilot very seldom have any contact with the ground team, and in time of emergency, there is frequently a very brief discussion – just enough to evaluate what is going to have to be done in broad terms to effect the rescue.

If seminars could be scheduled, which would involve both ground crews and air crews, it would allow the personnel time to evaluate each other and develop direct relationships. In addition, additional time must be spent at the time of an accident to discuss, in detail, possible problems that might evolve during the course of the operations, so that all parties understand the risks involved.

3. TERRAIN EVALUATION. Presuming that the helicopter cannot land at the site of the accident, it is frequently difficult for the trained mountaineer/rescuer to evaluate the terrain over which the helicopter flies. A safe landing zone may be a substantial distance away from the accident site, and depending upon terrain and climatic conditions, the time to go from the LZ to the site may take 10 minutes to 10 hours. If the trained Mountaineer/rescuer has trouble making this evaluation, it is almost impossible for the pilot to make this evaluation.

A trip downhill, in knee-deep snow may take an half an hour one way, but four hours in the reverse direction. A rocky cliff may provide simple, careful scrambling; on the other hand, it may present time-consuming obstacles requiring repeated belaying. The pilot, when faced with this problem, will push the aircraft to the closest LZ, even though it means great hazard and even though a safe LZ is only 10 minutes away. This is a product of the communication gap set forth above and can be minimized only by careful communication between a knowledgeable rescue leader and the pilot.

4. LACK OF GROUND RULES. The rules of when and where we fly vary from time to time. A cable equipped helicopter will be extensively used until someone falls from the cable and is injured or killed. Then the ruling becomes a prohibition except in life or death circumstances. The pilot then becomes reluctant to use the cable for fear of after-criticism, and will take unnecessary risks. Then the rules begin to relax until, again, someone is hurt and we begin the cycle over.

On occasion, we have used a tag line (rope tied to the helicopter) to lift out a body, utilizing a helicopter without cable capacity. I am told this is extremely dangerous and that if the pilot cannot control the oscillations, it will flip the bird and cause it to crash. To my knowledge, no ground rules have even been established for the utilization of tag lines.

On occasion, when a stretcher is being lifted, it will rotate under the bird and it is possible to prevent oscillation simply by using a line tied to one end of the stretcher. On the other hand, when you release the rope, it's possible that it might be sucked into the tail rotor and we have not received adequate instructions of how and when to use this line. Basically. I feel that ground rescue personnel should have better instruction as to the critical capacities and abilities of helicopters under stress circumstances.

I've been through many so-called helicopter schools which talk about how you get in and out of a horse-collar or ride a jungle penetrator, or how a winch works, but I've never attended one where we really got down to the nitty-gritty of helicopter capacities.

5. OLD-BOLD HELICOPTER PILOTS. We all know that there are no old-bold pilots and we must recognize, as a fact of life, that the further we get away from the Viet Nam conflict, the more conservative our pilots will become. Hopefully this is a trend in the right direction – I, for one, would rather walk for another half hour than make a hazardous landing.

6. RESERVE EQUIPMENT. The further we get away from the Viet Nam war, the older the equipment becomes, and we should recognize that much of this equipment is not in first class repair, nor are the personnel utilizing it nearly as experienced as they were in war time. I personally was involved in an episode where I could have been seriously injured in the malfunction of a winch. I don't know whether the equipment was malfunctioning or whether he didn't know how to control it, but when he pushed the button, it would allow 40 or 50 feet of cable to spool off the drum. I finally refused to utilize the winch, although he was willing to keep on trying to lower me. They found a place to get back up with the Chinook to an outcrop of rock where I could safely dismount. I'm not critical of the man, but the situation did not warrant a risk of life or injury.

I hope that my rambling comments are of some use. I'm in the process of redrafting a small publication on rescue leadership, which will incorporate these comments. The redraft, when done, will be available through Mountain Rescue Association, Vance Yost, Executive Secretary, P. O. Box 396, Altadena, California 91001.

PAUL M. WILLIAMS

NEWS AND RUMORS

SATELLITES AND SPEED TICKETS? — from Sacramento Bee (CA)

The California Highway Patrol and the nation's space agency are studying the feasibility of using a satellite to cover "blank spots" in the law enforcement unit's vast communications system.

Alva Cooper, CHP deputy commissioner, confirmed he has been in contact with Eugene Erhlich of the National Aeronautics and space Administration in Washington D.C. to see if a satellite could help fill the gap in remote areas in the state where accidents often occur.

Cooper said Friday the study is still in the "think" stage but that the VHP will at least observe and possibly take part in an exercise sometime after September in Yosemite National Park.

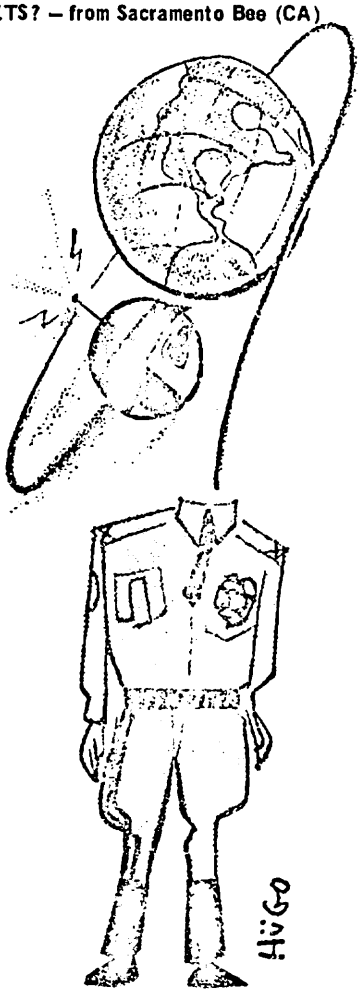
A satellite, now over India, which is beaming birth control information to that nation's populace, will be involved in the exercise planned by the National Association of Search and Rescue Coordinators.

Cooper said it is possible unmanned automatic CHP stations could be placed in remote areas of the state and could beam accident or disaster situations to base offices, pinpointing particular areas and locales.

Last month, the state and NASA agreed to employ a satellite and automatic sensors in the fight against the state's forest fire problem.

It results from a one-station, three-year experiment and calls for 24 automatic weather stations in operation by June 1 throughout the north coast.

In about three years, a decision will be made whether to go ahead with a statewide system of fire-weather stations. ■



WHIDBEY ISLAND, WA.—A sudden snow pack thaw in the Cascade Mountains followed by heavy December rains triggered the worst floods in Western Washington history, and brought glory to Navy helicopter crews.

Helicopter crews from the Whidbey Search and Rescue unit rescued 114 people from the flood area, including one woman who suffered a heart attack. (She later recovered.)

By far the most dramatic moments were the helicopter rescues where CH-46D "Seaknights" hoisted entire families, including pets, to high ground and safety. The rescues by the ten pilots and 24 crewmen of the SAR unit were often exciting, sometimes humorous.

"These guys are the heroes of the peacetime Navy," said Cdr. Bernie Minetti, officer-in-charge of the SAR unit.

Usually the SAR unit considers itself busy if it makes a dozen rescues a month. Compare that to the 114 rescues in 40 hours of flying time during the flood. Two seaknights were constantly on the go during the flood. Each is capable of carrying 25 people. Sometimes they were asked to make dangerous nighttime rescues in unfamiliar territory.

"We worked with the Snohomish County Sheriff's Office and had a deputy on each flight who helped make things go smoothly with the rescues," said Lt. Dick Stanton, one of the helicopter pilots. He said he was impressed by the crewmen who would plunge into a dangerous situation to rescue people without worrying whether they themselves were in danger.

A crew usually consisted of two pilots, a crew chief, an air rescue crewmen and a medical corpsman. Often LCdr Richard Imes, a Navy doctor, would make the flights. Fortunately, he was along when the woman suffered the heart attack and administered aid at the scene.

ADJ2 David Rathbun made one of the wettest rescues when he jumped from a helicopter to get a couple that appeared to be standing on their front porch of their home surrounded by water. "It was after I went under about eight feet of water that I realized they were standing on the second floor porch of their home," Rathbun said.

Helicopter crews continually had to improvise, especially to rescue small children. One family that included three small children and a 4-month-old baby was plucked to safety minutes before a dike broke and sent water rushing through their home. The baby was lifted after being zipped up in a parachute bag.

AT3 Ivan Moors said people were quick to catch on how to use the hoist and collar. "I usually only had to demonstrate once," he said.

The Navy preferred to land the helicopter on dry ground and walk the people to safety but often had to hover over water surrounding homes and hoist people up sometimes 90 feet or more. "The children were usually quite frightened. There was this little girl crying and I told her it was just like a roller coaster ride and she started to smile," a crewman said.

One of the more unusual rescues was an elderly man who told the sailors "I was a Marine in World War I and you can't tell me what to do." "He had a broken leg which complicated the rescue." said HM3 Jeff Wright. His home was surrounded by water five feet deep, so the Navy landed on a nearby railroad track and took a small boat to the ex-Marine's house where a deputy sheriff convinced him to go with them.

The Navy also rescued five Marines who had been stranded in an amphibious craft while trying to rescue some people. A pregnant woman was rescued by ADJ2 Rathbun who hooked the collar around her and then held onto the hoist, comforting the woman on the way up.

PH1 Douglas Dobbins, who had lived through a few floods of his own in Oregon, said he knew what it was like to be forced to leave your home because of a flood.

Most of the people waited until the last minute to call for help according to Cdr. Minetti. The pilots were forced to take risks they normally would have avoided. Lt. Bryce Graham hovered under a power line to rescue one man. The after-dark rescues were extremely hazardous with only flashlights and the aircraft's landing light to show the way. One man was rescued from his truck after it had been swept off a road and was propped precariously against two fence posts which kept it from being swept down river.

All of the rescues were accomplished without injury. "I've never seen anything like it. All our training paid off. We didn't even scratch the paint on the helicopters," Cdr. Minetti concluded. ■

NOTICE TO CONTRIBUTORS!

CONTRIBUTIONS TO THE FALL ISSUE OF SEARCH & RESCUE MAGAZINE MUST REACH YOUR EDITOR BY –

JULY 15, 1976

MONTROSE, CA.–Members of the Montrose Search and Rescue team retrieved a 45-pound Australian shepherd dog that had fallen about 100 feet down the side of a cliff in the Big Tujunga Canyon area while walking with its owner, John Gardetto, 22, of Eagle Rock. Gardetto telephoned the sheriff's department to report the mishap and four Search and Rescue team members were dispatched to the scene. One climbed down the canyon and secured a line to the animal, which was then hoisted back to the trail. The dog was treated for an injured paw and minor muzzle cuts. ■

ACKNOWLEDGEMENTS!

LOIS McCOY – Consulting Editor
MARION CHRISTNER – Production Consultant
BONNIE SIDWELL
DIANNE STERN
PHYLLIS KOCHAVI

NEWS AND RUMORS

LEAVENWORTH, WA.–A nine-man team of outdoor survival experts from the Chelan County Sheriff's office did "the real thing" instead of a scheduled training exercise this week.

The "hasty team", as it's known, had planned to hike into the snowy wilderness Wednesday with snow gear and tents for an overnight stay to to test new procedures learned in 12 hours of recent course work. Instead, the team found itself called into action for real Monday after a climber fell to his death near Colchuck Lake and his body had to be recovered.

With about half a dozen posse members using snowmobiles to transport them and their gear to the Stuart Lake trail head, the nine deputies hiked off into the wilderness in gusty winds and freezing temperatures Monday afternoon.

They were after the body of Donn Heller, 31, Seattle, who died Sunday when his ice axe lodged in his head after a fall while climbing near the west end of the lake.

The team camped overnight in the chilly weather in three-man tents at the Colchuck-Stuart trail junction, and proceeded to Colchuck Tuesday morning.

Team members walked across the frozen lake to retrieve the body, carried it out, and returned to Leavenworth about 3:30 p.m.

(Note from Tom Magwire, Dept. of Emergency Services, Olympia, WA.– This hasty team is composed of 9 paid professional Chelan Co. Sheriffs office personnel. The county has invested $3,000 this year for equipment, training, etc. It's a one-of-a-kind up here, and we're quite proud of them. They learned quite a bit from their "1st" mission under these new arrangements . . . mostly the need for a more suitable litter. (A civic group is raising money for this purpose right now.) ■

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 1, Chapter 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.

CB RADIOS FOR SAR COORDINATION

To: Air Force Rescue Coordination Center

1. With the increased popularity and use of Citizen Band (CB) Radios, many law enforcement agencies and civilian SAR organizations are acquiring this equipment.

2. The CB radio channels have a corresponding HF frequency that would allow an MF equipped aircraft to communicate with ground personnel with CB equipment.

3. The following frequency conversion table could provide a valuable coordination capability between air and ground SAR forces:

CH-1 = 26.965 AM	CH-13 = 27.115 AM
CH-2 = 26.975 AM	CH-14 = 27.125 AM
CH-3 = 26.985 AM	CH-15 = 27.135 AM
CH-4 = 27.005 AM	CH-16 = 27.155 AM
CH-5 = 27.015 AM	CH-17 = 27.165 AM
CH-6 = 27.025 AM	CH-18 = 27.175 AM
CH-7 = 27.035 AM	CH-19 = 27.185 AM
CH-8 = 27.055 AM	CH-20 = 27.205 AM
CH-9 = 27.065 AM	CH-21 = 27.215 AM
CH-10 = 27.075 AM	CH-22 = 27.225 AM
CH-11 = 27.085 AM	CH-23 = 27.255 AM
CH-12 = 27.105 AM	

NOTE: When passing these frequencies to aircrews, insure they understand that they have to set AM not Upper Side Band (USB) in order to be on the correct frequency.

From: HOMER G. DILLOW, Lt. Col., USAF
Dep. Director, Inland SAR

CALENDAR

June 10-13
NATIONAL JEEP SAR ASSOCIATION NATIONAL CONVENTION
Grants Pass, Oregon
Contact: Dave Miller, Commander, NJSARA
6742 North 43rd Avenue, Glendale, AZ 95301 (602) 937-2061

June 21 - August 19
EMERGENCY/SURVIVAL EDUCATION WORKSHOP
Washington State Fee: $850-1000
Contact: James A. Black, Eastern Washington State College, Rec. Ad.
Cheney, WA 99004 (509) 359-7097

June 26-27
MOUNTAIN RESCUE ASSOCIATION, SPRING NATIONAL MEETING
Vancouver, British Columbia, CANADA
Contact: Vance Yost, MRA Executive Secretary
P. O. Box 396, Altadena, CA 91001 (213) 357-4918

July 25-30
CIVIL AIR PATROL ANNUAL SAR COURSE
National SAR School, New York
Contact: Gary Crosby
National SAR School, U.S. Coast Guard Training Center
Governors Island, New York, NY 10004 (212) 264-3313

August 1-7
COAST GUARD AUXILIARY ANNUAL SAR COURSE
National SAR School, New York
Contact: Gary Crosby
National SAR School, U.S. Coast Guard Training Center
Governors Island, New York, NY 10004 (212) 264-3313

August 5-8
UNIQUE SURVIVAL OPPORTUNITY #2
U.S. Air Force Survival School, Fairchild AFB
(near Spokane, Washington State)
Contact: Rick LaValla
Washington State Department of Emergency Services
4220 East Martin Way, Olympia, WA 98504 (206) 753-5255

August 14-22
SEARCH AND RESCUE MAGAZINE 2nd ANNUAL BAJA TRAIL AND TERRAIN FAMILIARIZATION, ENDURO
Baja, California
Contact: Dennis Kelley
P. O. Box 153, Montrose, CA 91020 (213) 248-3057

September 3-7
NPS MANAGING THE SEARCH FUNCTION
Camp George West, Golden, Colorado
Contact: Jim Brady
P. O. Box 477, Grand Canyon, AZ 86023 (602) 638-2691

September 9-12
NASAR 8th ANNUAL CONFERENCE
Cheyenne, Wyoming
Contact: Lois McCoy, Executive Secretary, NASAR
P. O. Box 2123
La Jolla, CA 92038 (714) 276-7728

September 16-19
CIVIL AIR PATROL BOARD MEETING
Sheraton Philadelphia Hotel
1725 John F. Kennedy Blvd., Philadelphia, PA 19103 (215) 568-3300

October 2
CALIFORNIA REGION MOUNTAIN RESCUE ASSOCIATION MEETING
Orange County
Contact: Vance Yost, MRA Executive Secretary
P. O. Box 396, Altadena, CA 91001 (213) 357-4918

October 22-23
NATIONAL MAST CONFERENCE
Olympia Hotel, Olympia, Washington State
Contact: Rick LaValla SAR Coordinator
Washington State Department of Emergency Services
4220 East Martin Way, Olympia, WA 98504 (206) 753-5255

November 20-21
MOUNTAIN RESCUE ASSOCIATION FALL NATIONAL MEETING
NPS, Albright Training Center, Grand Canyon, Arizona
Contact: Vance Yost, MRA Executive Secretary
P. O. Box 396, Altadena, CA 91001 (213) 357-4918

(**SEARCH & RESCUE MAGAZINE** invites listings of meetings associated with Search and Rescue. Please send to: **CALENDAR**, Search and Rescue Magazine, P. O. Box 153, Montrose, CA. 91020)

PILOTS! Here's the D. F. for you!

VHF-DF Receiver & Indicator - $150

IF YOU HAVE BEEN PUTTING OFF D.F. INSTALLATION IN YOUR AIRCRAFT BECAUSE OF HIGH COSTS AND COMPLEX INSTALLATION – WE HAVE THE ANSWER!

The L-Tronics Aircraft DF is a complete, **INDEPENDENT RECEIVER AND INDICATOR,** at less than the cost of most attachments. You won't have to modify your existing radio or lose part or all of your communications capability while using this DF. You will have more freedom to chose a mounting location for our unique antenna. You will also be able to monitor continuously for ELTs with our built-in Alarm System without annoyance. And you will have a larger choice of options to match this unit to your particular needs than with any other unit we know of, regardless of price.

Our options include special or practice frequencies, UHF (253.0 MHz), and Auxiliary Receiver DF, as shown in the illustration. Aux DF allows you the flexibility to home on any signal from your comm receiver, as well as ELTs.

GROUND SAR UNITS: Join the growing number of teams equipping their personnel with our Little L-Per portable DF. See our ads in past issues of ***SAR Magazine*** or write for more information.

Both our Aircraft DF and the L-Per offer optional reception on 148 or 155 MHz for DFing on other members of your team or your aircraft. We also offer a 15-day money-back trial on our DF gear!

WRITE OR CALL TODAY FOR DETAILS!

L-TRONICS
5546 CATHEDRAL OAKS ROAD
SANTA BARBARA, CA 93111
Phone: (805) 967-4859