

SEARCH AND RESCUE

AND

MAGAZINE

WINTER 1974

OFFICIAL PUBLICATION OF THE NATIONAL ASSOCIATION OF SAR COORDINATORS

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LETTERS TO THE EDITOR

ON VOLUNTEERS -

I am writing to inform you of a group that I feel is deserving of your recognition. I have been in the field of Law Enforcement for over fifteen years and over the past four years of my career, as Chief of Police. During the past year it has been my personal pleasure to be associated with a group of civic minded men that are second to none, the Mini-Cassia Search and Rescue Team.

This group of men, made up of residents of Minidoka and Cassia Counties, have during the past year coordinated and directed the search and rescue efforts of many volunteers who were attempting to locate a group of lost children in the desert. This search effort lasted over a period of three weeks and employed the use of motorcycles, motorvehicles, aircraft and many hundred hundred volunteers. All during this operation the members of this unit never gave up hope of locating the children in distress.

Many of the members of Mini-Cassia Search and Rescue Team are also members of the Burley, Idaho Special Police Reserve and attend regular training seminars and sessions with the sworn officers of the Burley Police Department.

The City of Burley recently required the emergency services of the Special Police and all members responded and were present in uniform within thirty minutes for assignment in the field. Of course, we only hear of the efforts of these men when it becomes news. We do not hear of the regular weekly and sometimes daily calls that the members of the many fine *volunteer* search and rescue teams located across these United States unstintingly answer without question. They volunteer their time, equipment, and all too often money many times without a word of thanks.

I want to be one who says THANKS to each and every one. Sincerely,

G. L. Booth
Chief of Police, Burley, Idaho

EDITOR: Thanks so much, Chief Booth, for letting the world know.

ON MINE SEARCH -

Noted a serious error on page 116, paragraph 5.4.3 on cave and mine search in your book, *MOUNTAIN SEARCH FOR THE LOST VICTIM*. A carbide lamp is not adequate to test for dead air and CO₂. Use a candle instead. A candle will fail to burn at 16% oxygen, the start of human dangerous hypoxia is at 15% and severe hypoxia at 12%. A carbide lamp will not burn at 8-10% and rapid human death occurs at 7-8%.

Doug Rhodes, SPELEOBOOKS, Albuquerque, NM.

EDITOR: Right you are. The atmosphere normally contains 21% oxygen.

ON UNDERWATER CAVE SAR -

I am very glad to see interest shown by your magazine in the problems of *underwater* cave search and recovery. Cave diving is an extremely specialized art, and experience and expertise in the general area of SCUBA diving cannot be negotiated into cave diving competence except through a long, rigorous training program. A problem that consequently presents itself is that of having unqualified people attempting to effect body recoveries themselves, thereby creating a more dangerous situation and the possibility of more deaths. The National Association for Cave Diving (NACD) has done much to rectify this situation by developing relationships with sheriff offices in counties where most cave diving accidents occur. This should be put on a more formal state-wide basis in the near future. At the present time, the only agencies in Florida involved in diving are, the Bureau of Archives and History, and the Florida Marine Patrol, and they rely totally on the NACD for advice and aid in cave diving matters.

Daniel J. Lenihan, Instructor, NACD.

EDITOR: This very worthwhile SAR specialty should be represented at the next convention of the National Association of SAR Coordinators. However, for those seeking additional information, Tex Chalkley, 803 Chestwood Drive, Tallahassee, Florida 32303 is NACD Secretary and Roy Dickens, 7212 Eudine Drive North, Jacksonville, Florida 32210 is NACD President. ■

ANNOUNCEMENT!

EFFECTIVE JANUARY 1, 1975 THE FOLLOWING
SEARCH AND RESCUE MAGAZINE RATES WILL APPLY.

Subscriptions: One year = \$4.00
Two years = \$7.00

The Rescue Group Nobody Knows - "SAROC"



The Search & Rescue of the Californias (SAROC) is a little known rescue group that exists on the borders of Southern California and Baja California, Mexico. It continues to go quietly about its business of rescuing persons (regardless of nationality) when they become lost or in danger in those vast and lightly populated areas from below the border towns of Tijuana and Mexicali to the tip of Cabo San Lucas and La Paz.

The Search & Rescue of the Californias is a loosely knit organization made up of rescue groups from both the United States and Mexico who informally work together as an effective volunteer Search & Rescue organization. The fact that it is little known to others (outside of those whom it has assisted) is a concern to the various groups who make up this rescue effort. They worry that their assistance is often dangerously delayed since people in trouble do not know how to reach them as soon as help is needed.

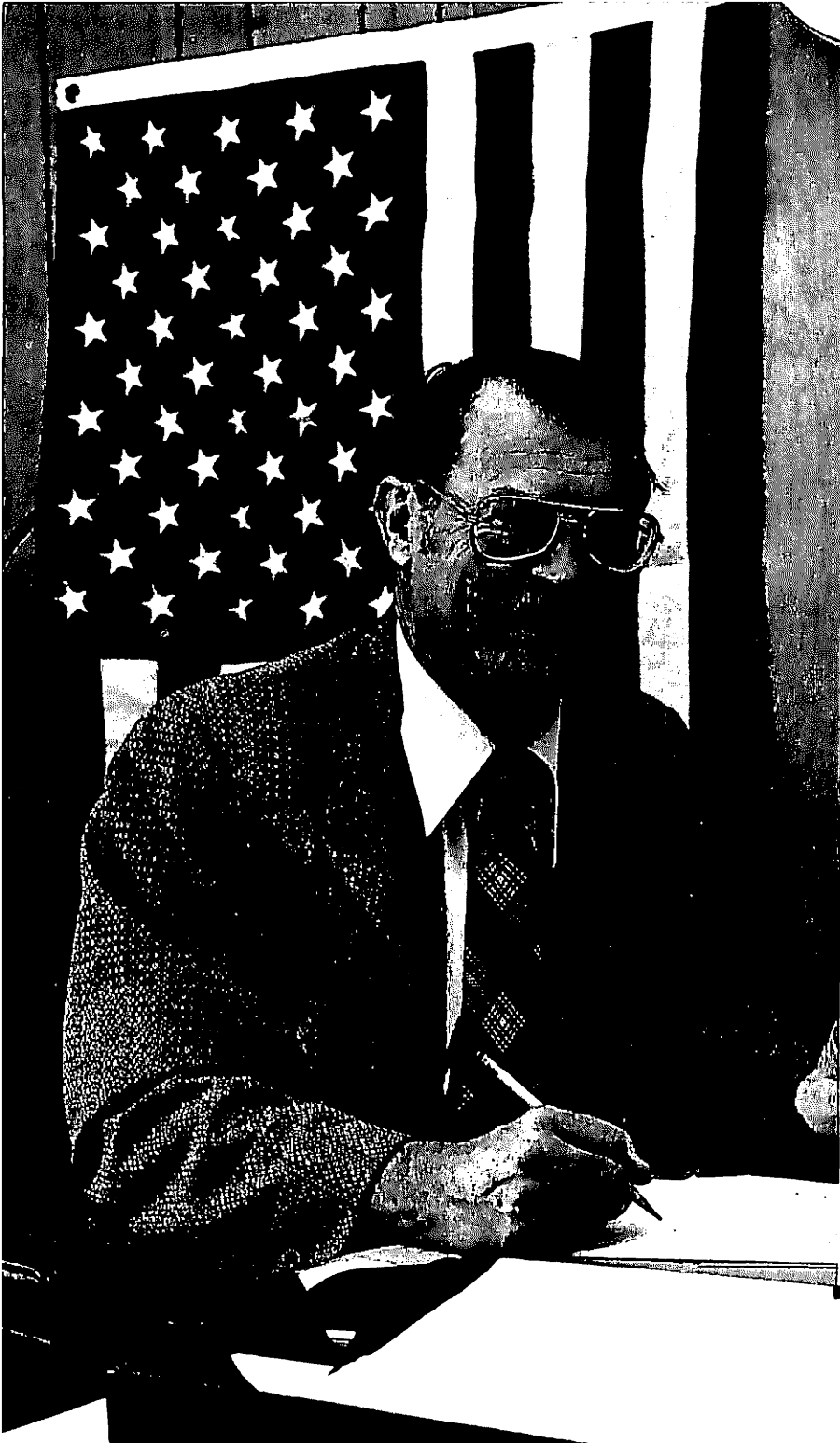
In an effort to let the Search & Rescue community know about this group, and also because of the interesting problems and novel solutions engendered by SAR missions within a bi-national, bi-lingual, bi-cultural organization, Search & Rescue Magazine is doing a two-part article on the Search & Rescue of the Californias. (Part II on the Future of SAR in Baja California will appear in the next issue.)

PART I - THE SAR PICTURE IN BAJA CALIFORNIA - PAST & PRESENT

Baja California is variously referred to as The Last Frontier, The Last Wilderness and other colorful, ear-catching and exaggerated phrases. It does remain, in spite of its amazingly rapid development in the last few years, a land of relatively wild, non-populous mountains and deserts. These areas are easily accessible to the recreationally-minded U.S. tourist. He can suddenly find himself and his limited wilderness knowledge over-committed in the extremes of climate and terrain.

If he finds himself in trouble, the bi-national Search & Rescue of the Californias stands ready to help. This group is under the joint direction of the Mexican Coordinator, C. Commandante Alphonso Esquer S., Chief of the Mexicali Fire Dept. and the U.S. Coordinator, Lt. Robert A. Morse, Officer-in-Charge of the Aviation Division of the San Diego County Sheriff's Department.

When a request for assistance is received by the Mexican Government and



THE COORDINATOR
FOR THE U.S. AGENCIES

Lt. Robert A. Morse brings 21 years of experience in both aviation and law enforcement to his job as SAROC Coordinator for the U.S. agencies. He presently is officer-in-charge of the San Diego County Sheriff's Aviation Div. at Gillespie Field. His biography includes: licensed pilot since 1941, 3 years in the Air Force in WW II, then a commercial pilot until 1951 including non-scheduled airlines, crop dusting, and flight instructor.

He currently holds a commercial pilots' license, with multi-engine, instrument and rotor-craft ratings.

He has coordinated the San Diego Sheriff's Aero Squadron for 10 years and was one of the original founders of the Search & Rescue of the Californias.

His proven abilities in search operations have earned him the greatest respect from all the involved SAROC agencies.

it is determined that additional help is needed, either or both coordinators are contacted for their full assistance and the cooperation of their member units.

Many of the SAROC volunteer units on both sides of the border go

back to 1966 and the Slight-Bunch search in the Vizcaino desert which has never been resolved.

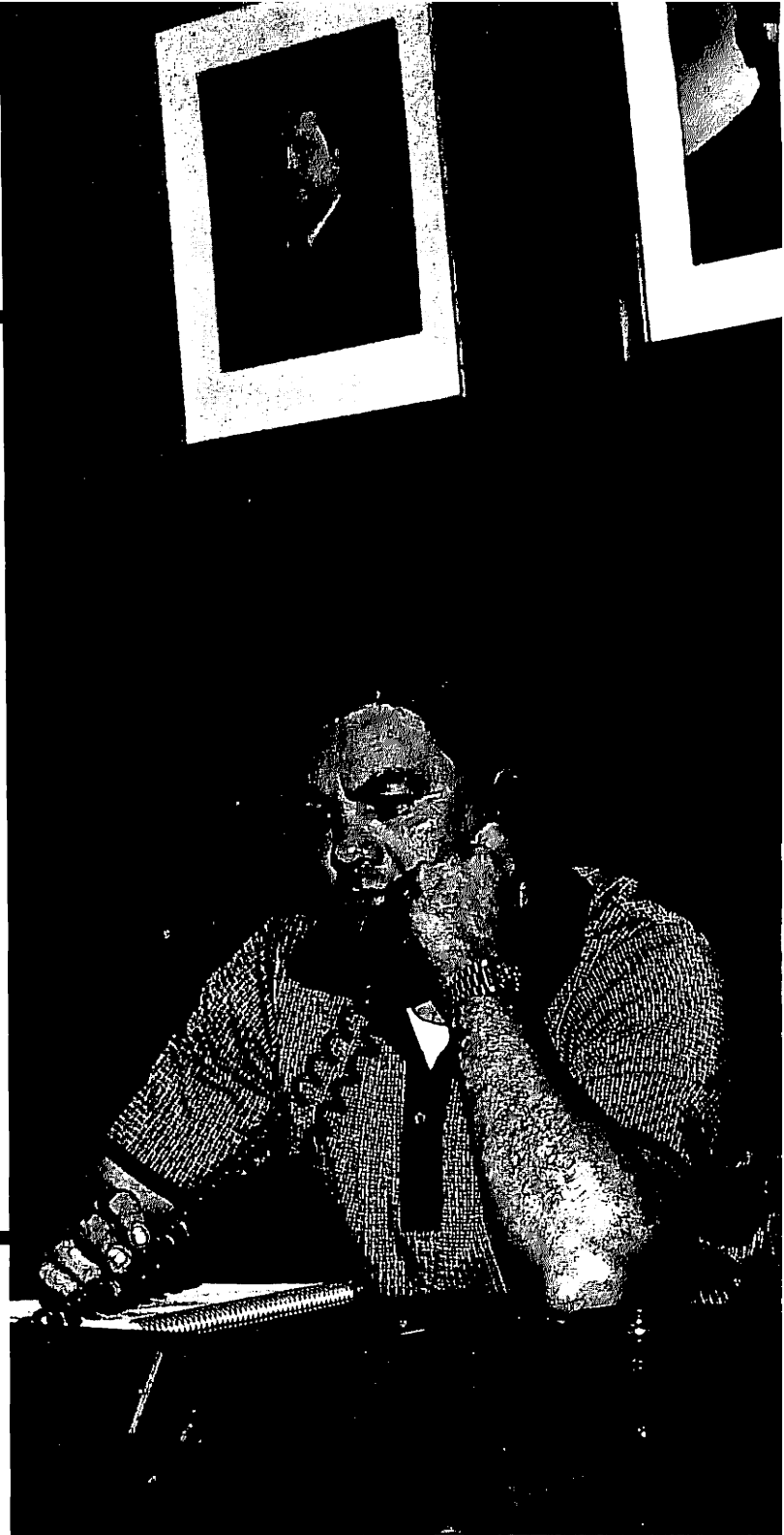
It was after 1967 and the successful Kellogg-Dart rescue on Picacho del Diablo that the formalization of the Search & Rescue of the Cali-

fornias took place. One of the prime movers in the organizational effort was Dr. Arthur W. Feldman, then principal officer for the U.S. Consulate in Mexicali. The Mexican Departamento de Turism and both of the present Coordinators, Jefe Esquer and Lt. Morse, were all part of those early efforts to

THE COORDINATOR FOR THE MEXICAN AGENCIES

C. Commandante Alphonso Esquer S., SAROC Coordinator for the Mexicali Regional Fire Dept. brings an impressive list of credentials to his position as Mexican Coordinator of the Search & Rescue of the Californias. He has had 26 years experience with the Mexican Fire Dept., the last 9 years as Chief. He is also President of the Fire Chief's Association of Mexico. As such he has worked closely with the California Association of Firechiefs in the cross-training of Mexican Firemen in the latest techniques in fire schools in the United States. He, himself, is an instructor in the Texas A&M University.

One of his and Dr. Feldman's hopes is to found a rescue training school on the border where SAR personnel from both the United States and Mexico can train for the special problems presented by the rigorous climate and terrain of Baja California.



provide a bi-national group to undertake the prosecution of SAR missions in Mexico. They built well and we owe a great deal to their foresight, years before the new Trans-Peninsula Highway seemed a possible reality.

Before the formalization of SAROC, the land owners and officials of Baja had voluntarily assumed the un-official responsibility for the safety of guests in their land, much as did the ranchers and town marshalls of our own early west.

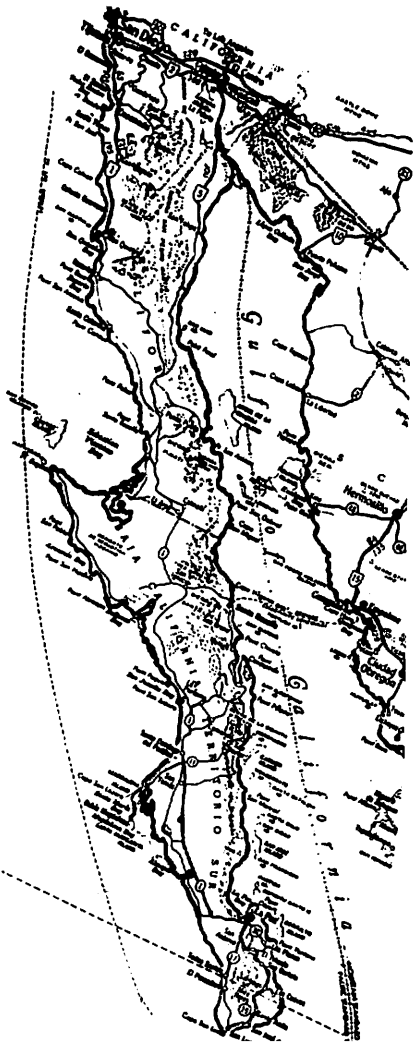
Obviously the rapid increase of tourism in Baja meant that the problems were out-growing the hospitality of the old approach. One of the families of Mexico who has figured largely in early rescue efforts such as the Kellogg-Dart Search and who is still active as

THE MEXICAN RANCHERS HELP

Photo by Eve Ewing



The Meling Family, including the 4 children of Bertie and Salve Meling of Rancho San Jose, carry on the traditions of old Mexico in helping rescue lost and stranded persons on the slopes above their ranches in the foothills below Picacho de Diablo. Phil and Andy, as well as Aida and Mary, are all expert horsemen and trackers. They and their cowboys have combined with many rescue efforts throughout the years on the western side of the peninsula of Baja California. They were born and raised in these wild regions and have ridden and herded their cattle on the slopes of the San Pedro Martir. They know the terrain, the trails, the water holes and springs, the cabins and places of refuge throughout the area. The fact that all the family speaks English and Spanish fluently makes them invaluable as interpreters, where bi-lingual communication is a must in a search situation. Aida is also an amateur radio operator and the ranches' "Ham Shack" and airstrip have made it the base of operations for many air and ground searches.



a member of units of SAROC is the Meling family of Rancho San Jose on the slopes of Picacho del Diablo.

The extreme cold of the 10,000 foot snow-capped mountains, the intense heat of the deserts and the "Chibasco" swept waves and 22 foot tides of the Sea of Cortez are all part of the problem-causing climatic conditions of Baja California.

In addition, poor flight planning and pilot ability involving in-flight fuel shortage, running out of daylight and navigation take its toll of aircraft travelers.

Consequently, many different rescue teams, both volunteer and federal, with various specialties are called upon, to handle the kinds of SAR problems where SAROC is called to coordinate.

Since Mexico and the United States are separate countries, all sorts of diplomatic

priorities are involved and the fact that the SAROC group has satisfactorily integrated its federal facilities in addition to its volunteer facilities is a tribute to the dedication of all people involved in life-saving operations regardless of national boundaries.

One of the many federal U.S. agencies routinely involved in SAR operations in Baja California is the U.S. Coast Guard.

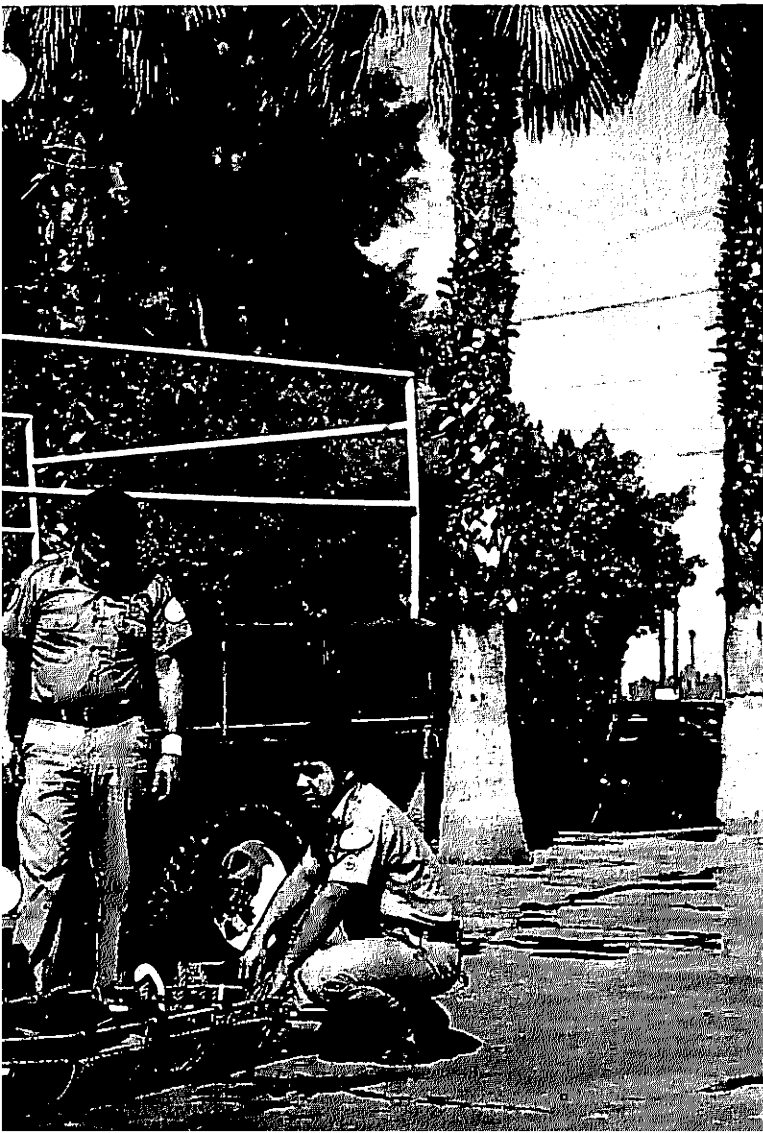
THE MEXICAN RESCUE GROUPS

The "Cruz Roja," the "Bomberos" of the Mexican Fire Departments, the officials of the Department of Tourism, and the "Radioaficionados" (Mexican Ham Radio Operators) with the cooperation of the Federal Judicial Police, form the strong nucleus of rescue capability that provides the Mexican side of the Search & Rescue of the Californias.

The photograph below shows one of the rescue trucks of the Mexicali Fire Dept. with Lt. Roberto Martinez, officer-in-charge of the rescue section, and a few of his men.

The Mexicali Regional Fire Dept. includes all the area from Mexicali to Puertocitos, including San Felipe, and has 14 fire stations. The radio net of these fire stations is tied into a complete Baja California Fire and Emergency Net on amateur radio and provides the only communication other than Maritime Radio or the very limited telephone service available.

These rescuemen of the Mexican people provide the finest in their capabilities, strength, knowledge of their areas, terrain and climate, and typify the best in rescuemen. Their courage and dedication go far in overcoming the problems of a land which is scarcely populated and remote and where travel and communication is difficult.





COAST GUARD HELICOPTER

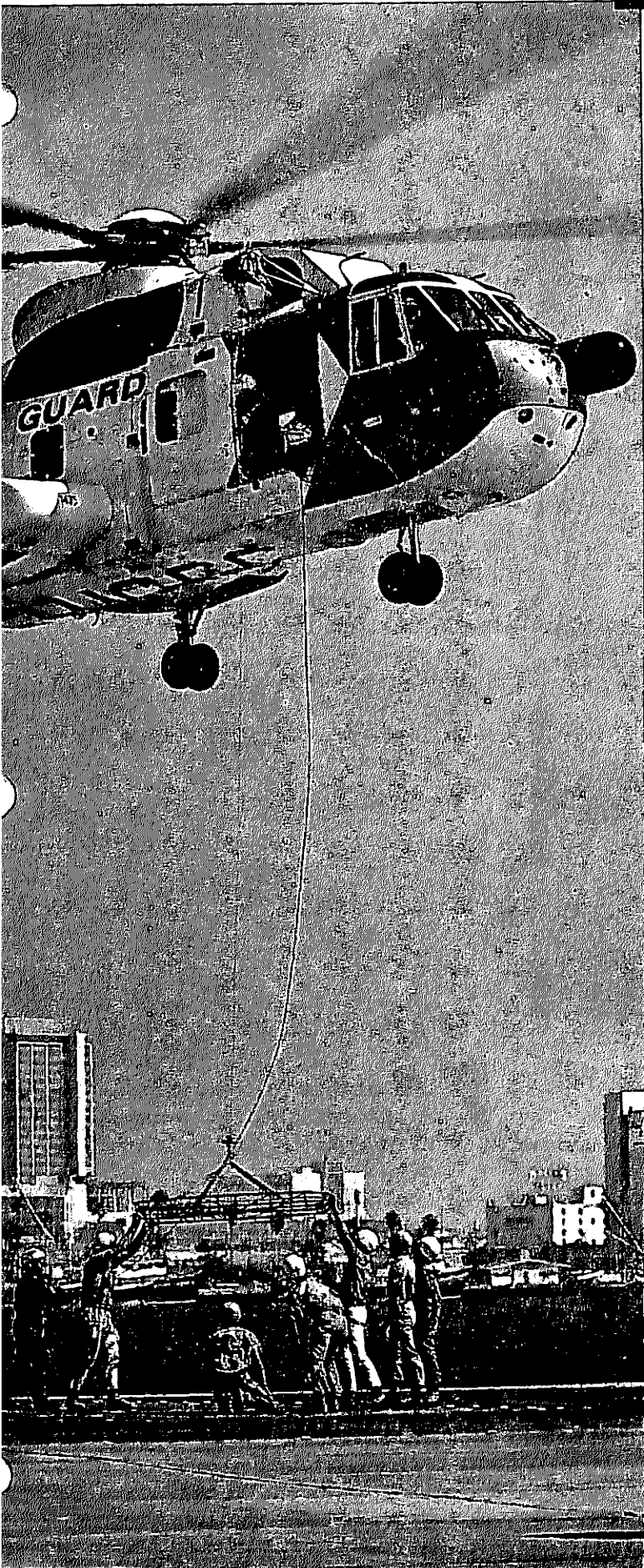
The U.S. Coast Guard is one of the most visible of the Federal agencies involved in Search & Rescue in Baja California. Their dedication and skill is in the finest tradition of their service and its motto "Semper Paratus" -Always Ready.

They assist on many searches for lost boatmen and fishermen off the Pacific Coast of Baja as well as in the Gulf of California.

The subject of our next article for the Search & Rescue Magazine will be to present the proposed reorganization by the Mexican Federal Government of its Search & Rescue involvement in Baja California. This is being undertaken by Lic. Mario Casco, Director of the "Comision Coordinadora para el Desarrollo Integral de la Peninsula de la Baja California."

An interesting jurisdictional difference between the two countries is that, traditionally, the preservation of life and property in the western U.S. is under the wing of the County Sheriff. Contrarily, in Mexico this protection is the responsibility of the Fire Chief of the Region. These Mexican firemen known as "Bomberos," are greatly respected in their country. They and the Mexican Red Cross (Cruz Roja) have provided the basis for the Mexican side of the Search & Rescue agencies.

The United States volunteer agencies who make up the California side are a cross-section of California Mountain Rescue Association teams, desert rescue teams and Sheriff's rescue teams including Aero Squadrons from San Diego and Orange counties.



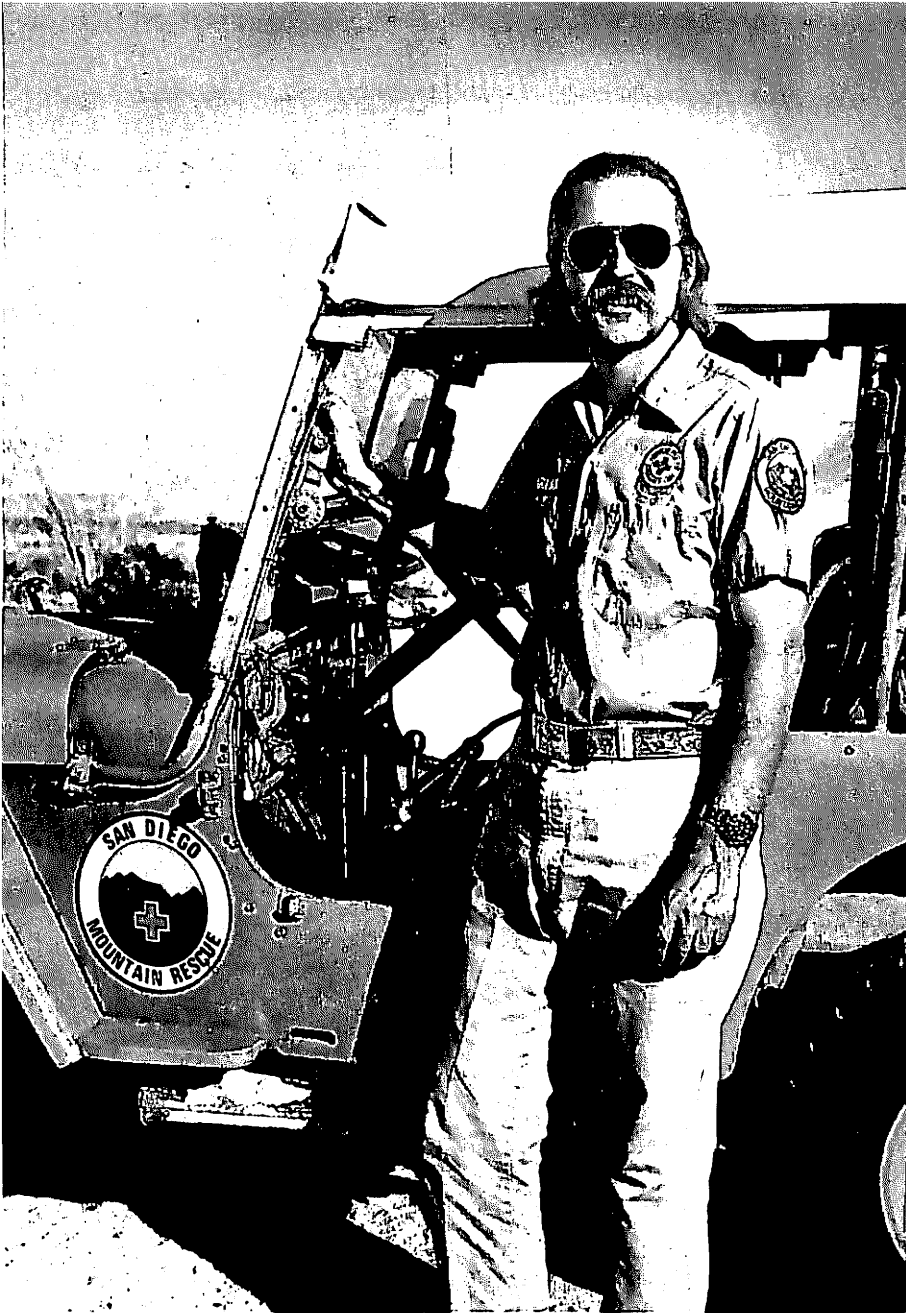
DR. ARTHUR W. FELDMAN

Dr. Arthur W. Feldman, former U.S. Consul to Mexicali and one of the original organizers of the Search & Rescue of the Californias. As a career State Dept. officer from 1942 to 1972, Dr. Arthur W. Feldman had already had an interesting career spanning three continents when he was first assigned to the Consulate in Mexicali as principal officer in 1964.

One of his first actions in the Consulate was to volunteer as the guide for a U.S. Government helicopter involved in a search for a small child in the Laguna Hansen area of Baja California. Unfortunately the helicopter crashed in the rough air and extreme weather conditions and although there were no injuries, this event triggered a consuming and still active interest on Dr. Feldman's part in all Search & Rescue related activities.

He is, to a large extent, responsible for the present form of the organization of the Search & Rescue of the Californias. Although now retired from the State Dept., he continues to assist, through the Commission of the Californias and within his other areas of influence, in maintaining the cordial and cooperative atmosphere within which this bi-national SAR effort operates.

One of Dr. Feldman's new interests, in addition to his present position as Chairman of the "Travel Industry for the Environment," is to develop the possibility of a joint training facility for Mexican and United States rescue personnel to train in the special problems presented by Baja California's extremes of climate and terrain.



CALIFORNIA REGION MOUNTAIN RESCUE TEAMS

Altadena Mountain Rescue Squad
 Bay Area Mountain Rescue Unit
 China Lake Rescue Group
 Montrose Search & Rescue Team
 Riverside Mountain Rescue Unit
 San Diego Mountain Rescue Team
 Sequoia-Kings Canyon Search
 & Rescue
 Sierra Madre Search & Rescue Team
 Sylmar Mountain Rescue
 Yosemite National Park Search
 & Rescue

THE MOUNTAIN RESCUE TEAMS

Ron Carlson, 1974 President of the San Diego Mountain Rescue Team, personifies the "old Baja Hand" who has spent the last 10 years in Baja operations and who was involved in SAR long before the formal organization of the Search & Rescue of the Californias.

In 1966 he participated, along with Montrose Search & Rescue Team, in the search in the Vizcaino desert for 2 young men from the Los Angeles area. His 4-wheel drive background includes more than 10,000 miles off-road in Baja. He was one of the original members of the San Diego group of 4-wheel drivers who provided the beginning nucleus of man-power for SAROC.

Now, by 1974, he has added the talents necessary for technical mountain rescue and is the Chief of Operations for the San Diego Mountain Rescue Team. This group is

one of the 10 member teams of the California Region Mountain Rescue Association, all of whom are included as cooperating agencies in the Search & Rescue of the Californias. These teams of the California Region/MRA have more than 25 years of organized rescue experience. They are a resource which provides the Search & Rescue of the Californias with a SAR capability for high altitude, snow and ice, and technical rock problems. They also have the depth of trained personnel and stores of rescue equipment and material to carry out extended and prolonged desert search operations.

THE DESERT RESCUE TEAMS

REPRESENTATIVE COOPERATING AGENCIES OF SAROC

On one recent search, the following agencies, both volunteer and federal, were involved. This is by no means all of the units who have assisted in searches in Baja California, but it does give and insight into the massive problems involved in conducting SAR operations in wilderness areas under difficult climatic extremes:

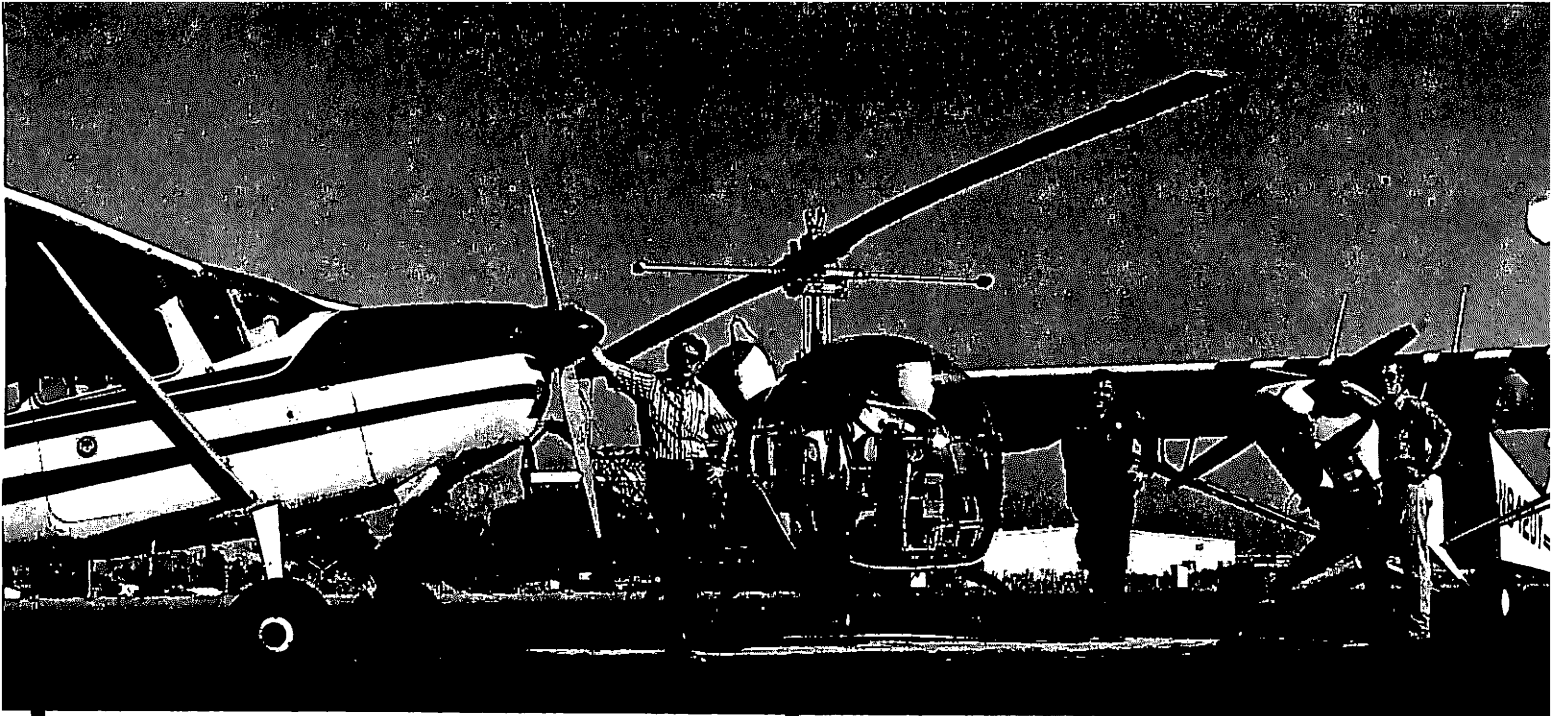
Calexico, California, Fire Dept.
De Anza Rescue Unit
Ensenada Judicial Police
Joliffe Ranch
Los Padres Search & Rescue Team
Melting Ranch
Mexicali District Attorney
Mexicali Fire Dept.
Mexican Emergency Radio Net
Orange County Sheriff's Aero Squadron
Radioaficiados de Tiajuana, Mexicali y Ensenada
Riverside Mountain Rescue Unit
San Diego County Sheriff's Aero Squadron
San Diego County Sheriff's Dept.
San Diego Mountain Rescue Team
Sierra Madre Search & Rescue Team
U.S. Border Patrol, El Cajon
U.S. Coast Guard Air Station, San Diego
U.S. Ham Radio Operators (AREC)
U.S. Marine Corps Helicopter Detail Yuma, Arizona
U.S. Navy Helicopter Squadron 2, Imperial Beach
U.S. Navy FPF 63, Miramar NAS, San Diego
Valle Trinidad Delgado

Other rescue units of SAROC have desert rescue capability, but one of the outstanding desert rescue efforts is provided by the De Anza Rescue Unit of Imperial Valley, CA. Their proximity to the fierce arid regions of the Laguna Salada keeps them active in responding to calls for assistance from the Mexican Coordinator, C. Commandante Alphonso Esquer S. Their trained desert search team specializes in tracking and 4-wheel drive operations which are ideally suited to the desert areas of the eastern side of the peninsula of Baja California.

They operate in conjunction with the "Bomberos" of the Mexicali Fire Department and have several bilingual rescue members. Their volunteers provide their own vehicles, radios, airplanes and fuel out of their own pockets and with the help of their concerned community of Imperial Valley.

Ed Goodell, one of the founders of the De Anza Rescue Unit and President of the Unit in 1974, typifies the dedicated volunteer who devotes his time, money and energies to Search & Rescue and to SAROC. He has been associated with SAR since 1968 when he first joined a mountain rescue team. He also helped organize the De Anza Rescue Unit when the need for a SAR team in the Imperial Valley was demonstrated through a tragic search for a young boy on Mt. Signal on the Mexican border.





THE SAR PILOTS

Routinely, one of the first rescue groups called into action is the aero squadrons and air units of the Search & Rescue Teams who comprise SAROC.

The usually sketchy original information on someone reported lost or overdue, as well as the vastness of the probable area of location combine to often make air-search a first requirement. The pilots of the Mexican Pilots Association and the pilots of the California agencies are closely knit in the brotherhood of pilots everywhere and cooperate in this bi-national SAR organization.

One of the achievements of SAROC has been to facilitate the border crossing in and out of both the United States and Mexico of Civilian Search aircraft.

The SAR capability of aircraft to make the initial search as well as to provide an early reconnaissance of the terrain and document initial reported information is of inestimable value. An additional capability of the SAROC air units is that they provide a communication link via amateur radio between the Coordinators and the reconnaissance units.

Several independent volunteer specialty teams also provide their assistance such as the Council of Diving Clubs for scuba body recoveries and the Amateur Radio Emergency Corps for communications over the long distances from deep inside Baja back to the United States.

Certainly, where life is concerned, money is inappropriate to mention. Suffice it to say that the cost of all search and rescue SAROC efforts, including those from the Coordinators on down, are donated and volunteered. To even attempt to figure the cost in terms of logistics and man hours contributed of just one search for an overdue sport fisherman, staggers the mind.

Let's all salute the Mexican and American volunteers who provide this service, not only for the U.S. tourist in trouble, but for anyone lost and in danger in the vastness of Baja California or its waters.

by Lois Clark McCoy
Photographs, Ken Benson, Idyllwild

SEARCH

THEORY

by

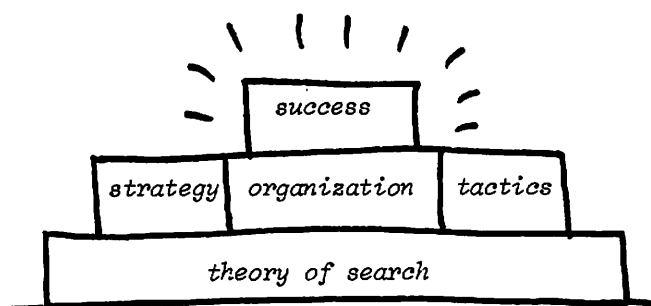
Dennis Kelley

This article was taken from an original lecture given to the National Search and Rescue School, 1974 State Administrators Class, at the U.S. Coast Guard's Governors Island, New York. It was prepared and presented then and now in this author's belief that SAR activities should be rooted primarily in strong fundamental theory in addition to good strategy, organization and tactics.

The purpose of this article is to review what is already standard operating procedures for most U.S. SAR teams.

You might say that it is what land search is all about because this procedure or theory is the underlying principle or universal method of search. It is the basis for searching for missing persons in wilderness areas because it is independent of victim, terrain, weather or resources.

This independence makes this theory applicable to almost all searches, and as such, should be the 'commandments' for strategy planning, organization and management, and all tactics utilized such as tracking.(1)



Search success is ultimately based upon the theory of search.

In summary, the theory of search is:

- I. Search is an emergency, because the victim may require emergency care and also a quick searcher response lessens the search difficulty.
- II. Know that the search area contains the victim, because a search without the victim is a useless effort that could cost him his life.
- III. Search at night, because the victim's survival time may be short and also his negligible mobility gives searchers a jump on his wandering.
- IV. There are no searchers in base camp, because the eyes, ears and nose of a searcher must be in the field to be effective.
- V. Search for clues instead of the victim, because there are more clues than there are victims.

(continued)

The reality of land search is that frequently there are no clues to be found. That is the time for grid sweep searching. A guideline for the commencement of this grid searching as a change in strategy is when the victim is assumed immobile and is unable to leave fresh clues. Reference (1), gives charts for estimating specific times for victim immobility.

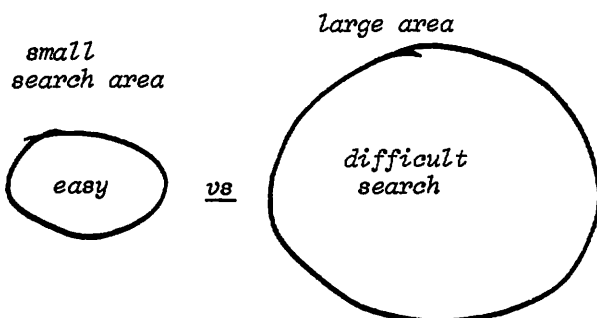
It is this author's opinion that grid searching is frequently begun much too early. Grid sweep searching should be a last resort because there is never enough time and resources to fully implement gridding of the whole search area. The early commitment to gridding before the victim is assumed immobile grossly consumes searcher resources. Resources that could better be utilized confining the victim's movements and patrolling natural tracktraps such as trails, dirt roads, streambeds, etc., in the search for clues.

For those of you interested in grid sweep searching, Jon Wartes and Bill Syrotuck have both done some very original research in this area and published the results. I would highly recommend any serious student of land search to study their efforts.(2,3)

QUICK SEARCHER RESPONSE

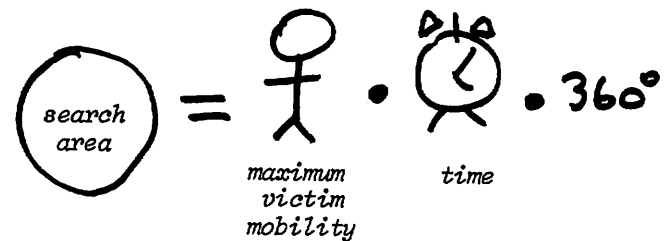
The fact that search is an emergency and requires a quick searcher response, is based upon two considerations. First, the victim may need emergency care. This emergency care could be medical, as in the case of sickness or injury, or it could be protection from the environment and himself, such as in a threatening storm or his own bad judgement, respectively.

Secondly, quick searcher response lessens the search difficulty, because search area size increases rapidly the longer the victim is missing and mobile, potentially. To elaborate on this important point, we will say for simplicity that the size of the search area is directly related to the search difficulty. Obviously, there are many other considerations in the difficulty of a search, but search area size is the most dominant.



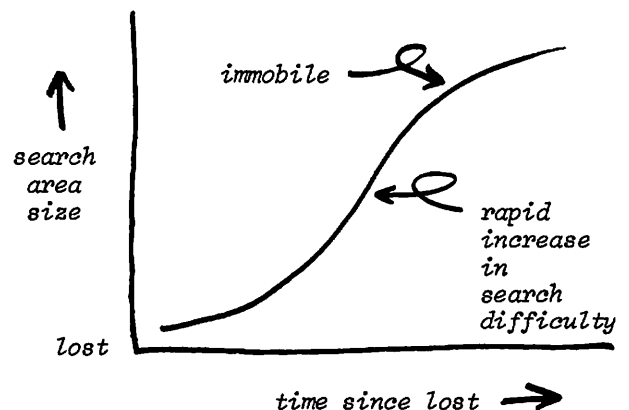
Search difficulty is directly related to search area size.

The definition of search area is that it is the area of potential maximum travel by the victim in 360° from where he was last seen. This potential search area is generally very large and extends in every direction. Interestingly, a common search strategy error is searchers assuming an area of search less than 360° simply because the victim was last seen heading in only one direction.



Search area size is directly related to victim performance and period lost.

Now because the victim can generally move in 360° from where he was last seen, the size of the search area not only increases, but accelerates until the victim becomes immobile.



Search difficulty increases rapidly until victim becomes immobile.

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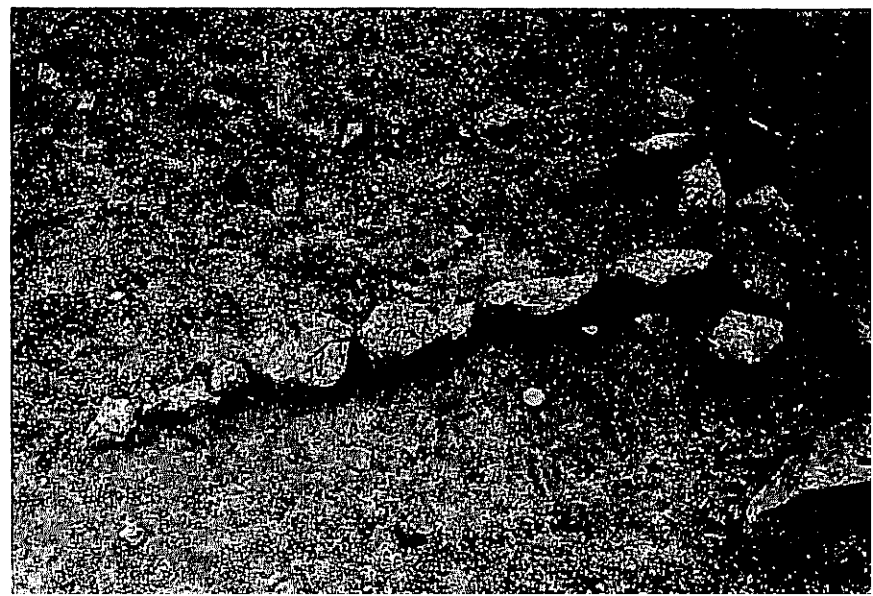
A quick searcher response meets the potential emergency care needs of the victim.

Night searching gives searchers the advantage in rescuing a victim with limited survival time.



Clue detection is frequently the significant breakthrough in a successful search.

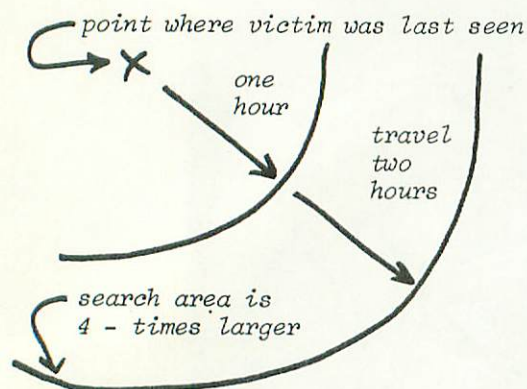
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All searchers instinctively recognize this situation and are accordingly overwhelmed by the problem of finding the missing adult out several days. This rapid increase in search area size demands quick searcher response to minimize this growth and resultant increase in search difficulty.

There are many contingency activities that a SAR team can do to help increase its search response time. Stickers with search emergency telephone numbers can be distributed to remote and wilderness telephone locations. Also a public relations program can include a reminder for visitors to wilderness areas to check with someone directly or by phone before venturing into the field for recreation. The potentials are many.

For example, if the victim can potentially travel one square mile in one hour, then in two hours, he can travel in 360° potentially four square miles. This is an increase in search area size of 400%.



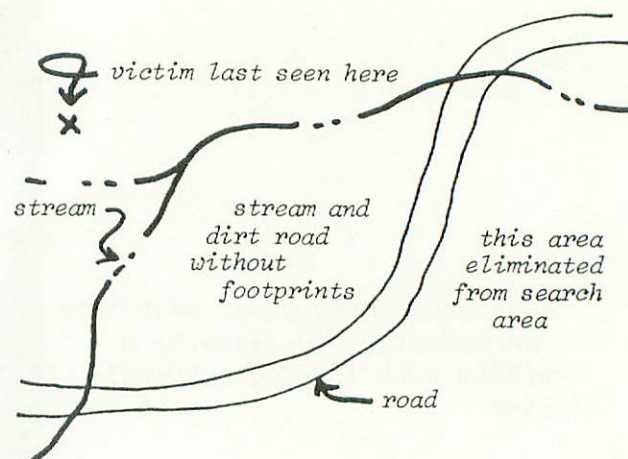
A quick searcher response lessens the search difficulty by minimizing the growth of the search area.

VICTIM CONFINEMENT

As was previously stated, searchers have a responsibility to assure that the victim does not leave the search area undetected. Otherwise, the victim will not be found. This responsibility is not absolute because terrain and resource problems prohibit total confinement. However, any confinement is worthwhile.

One confinement technique recommended is track-traps. Here the victim's movements are detected by his footprints traversing an area of high clue enhancement and visibility. Such an area should be checked periodically day and night.

The specific techniques and tactics of confinement are many, but a judicious selection will optimize resources.(4) One reoccurring period of time when searchers are assured a negligible amount of victim mobility is at night. This is a time frame of grace when searchers can get the jump on the victim before he can continue his wandering at daylight.



Victim confinement is based upon periodic checks of natural track traps such as stream beds and dirt roads.

NIGHT SEARCH

With the quick response, a search should be executed 24-hours per day. This requires night searching which should be standard operating procedure. The Montrose SAR Team of the Los Angeles County Sheriff's Department in Southern California finds more than 60% of its victims at night. This percentage translates into an awful lot of night searching.

Typically, travelling cross-country at night is slower and more demanding on the searcher's eyes, therefore, special training and practice is required to achieve proficiency. However, night search success easily repays this extra effort, because the victim's survival time is generally limited and no time for searching should be thrown away.

(continued)

SEARCHERS

Searchers must be deployed into the search area to be effective. As stated, there are no searchers in base camp, enroute to the search area, in the mess kitchen, or anyplace else except in the search area. This fact explains the continued embarrassment to searchers, that victims are found by the public hiking through the search area.

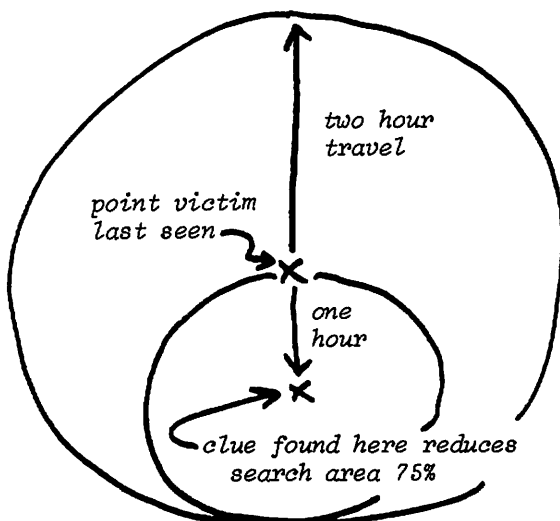
Optimally, searchers should be quickly deployed, supported and maintained in the search area for as long a period as possible. For example, it is far better to take the field kitchen to the searchers than to remove the searchers from the field to feed them.

CLUE DETECTION

The importance of clue detection in the expedient execution of a successful search cannot be over emphasized. It is important that searchers are track conscious. This importance is based upon the fact that there are a great many more clues from the victim than there are victims in the field. Clues are defined here as impacts on the environment such as footprints, dropped clothing and gear, smoke, lights, noise, food wrappers, and even an abandon car.

In practice, the victim is found soon after a significant clue is found. This is particularly true when the SAR team seriously practices man-tracking. Clue detection drastically reduces the search difficulty.

For example, in using our previously mentioned 2-hour search area size, if we detect a clue one-hour from the point where the victim was last seen, the resultant new search area size is 75% less than before. This vast reduction in search area accounts for the soon to be followed success in finding the victim.



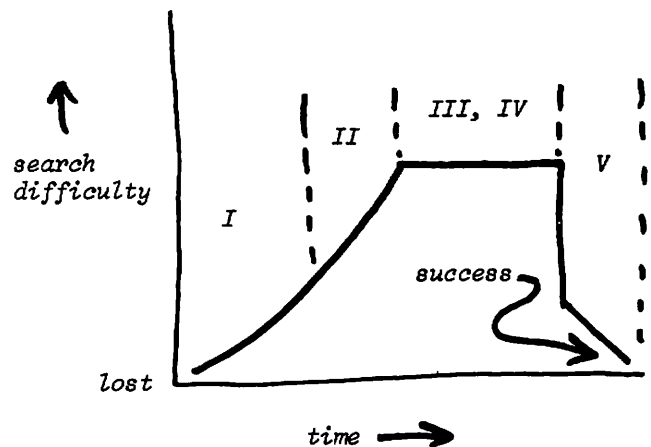
Clue detection significantly reduces search difficulty.

Clue detection and track consciousness is a sub-set of man tracking. Man tracking must be an integral part of a SAR team's tactics.

SUMMARY

In summary, the five theory of search commandments are:

- I. Search is an emergency.
- II. Know the search area contains the victim.
- III. Search at night.
- IV. There are no searchers in base camp.
- V. Search for clues, not the victim.



REFERENCES

- (1) Kelley, Dennis, "MOUNTAIN SEARCH FOR THE LOST VICTIM" 1973, 283 pages, SAR Magazine P.O. Box 153, Montrose, CA. 91020. \$5.00.
- (2) Wartes, Jon, "AN EXPERIMENTAL ANALYSIS OF GRID SWEEP SEARCHING" March 1974, 50 pages, Western Region Explorer Search and Rescue 790 Lucerne Dr., Sunnyvale, CA. 94086.
- (3) Syrotuck, William, "SOME GRID SEARCH TECHNIQUES FOR LOCATING LOST INDIVIDUALS IN WILDERNESS AREAS" 1974, Arner Publications Inc. 8140 Coronado Lane, Rome, NY. 13440. \$1.75.
- (4) Wartes, Jon, and Rengstorff, Bill, "The Use of String Lines for Subject Confinement, Search Area Segmentation and Grid Sweep Control", SAR MAGAZINE, Winter 1973, pages 7 - 16.

SAR MAGAZINE

THE ROLE OF THE STATE SAR COORDINATOR

by Paul Koenig

The rapid expansion of search and rescue efforts in western states has necessitated the appointment of State SAR Coordinators in several of the states. The purpose of the coordinator is to provide assistance to local officials when it is needed.

A number of states have passed legislation establishing the position of SAR Coordinator in the Office of Emergency Services, Civil Defense, or another department close to the Governor's office. The purpose is not to take away any of the local functions, but rather to obtain any assistance you might need and to provide liaison between the many agencies now involved in search and rescue. The only time we become involved in searches at the local level is when requested by the sheriff or other local authority, or possibly when a downed aircraft is involved. We may become involved in SAR operations when a large area or a large number of SAR agencies is involved.

In most respects the State SAR Coordinator is more a business manager for the SAR personnel and units in the state than he is a SAR coordinator as such. During an average SAR operation that requires our assistance we are most often chained to our desk and at our telephone making arrangements for outside assistance, answering news media questions, or answering questions and problems of relatives of the subject. The real SAR experts and hard workers are the sheriffs, their deputies, and the volunteers they call on for assistance, in ground searches; or the State Director of Aeronautics and the Civil Air Patrol in air searches. In some areas the sheriff has an aero squadron available for some air activities.

In most western states the sheriff has the legal responsibility for any ground SAR actions in his county. This is not to say that he must conduct the SAR operations, but that it must be done under his guidance and permission. Conversely, he is not required to conduct SAR in all cases of reported lost or missing persons. If he were, he could be held legally responsible for all lost persons. SAR volunteers must be registered with the sheriff, and in some states with the State Civil Defense agency, and they work officially only when called out by the sheriff.

may enter an aircraft search, particularly in the area of soliciting clues and leads, and may conduct actual ground search in an area in which a crash site is strongly suspected. Many ground SAR personnel are also CAP members, and this has a major advantage in that the CAP member is eligible for reimbursement for fuel used, and other legal benefits, in a mission numbered search.

The Air Force Rescue Coordination Center (AFRCC) at Scott Air Force Base, Illinois, has a role in all aircraft searches, and in ground searches or rescues when Civil Air Patrol aircraft or military aircraft are authorized. Federal regulations restrict the use of these assets, therefore, the AFRCC prefers to coordinate through a State SAR Coordinator to assure that requirements have been met. A mission number is not required for authorization of National Guard or Reserve military unit equipment and personnel, but requirements of Federal regulations must be met. *Department of Defense regulation 4515.13-R applies to the use of military assets in search and rescue operations.*

The role of the SAR Coordinator will vary considerably with states, and with the type of SAR units utilized in the state. There are, however, several areas in which the State SAR Coordinator should become involved, and a few in which his actions are limited. He may:

- . Assist in obtaining support, such as helicopters for rescue, when needed.
- . Alert appropriate agencies when a search or rescue is required.
- . Conduct training seminars on subjects needed to qualify personnel for SAR operations.
- . Assist in coordination when large area, multi-agency searches are required.
- . Provide interface communications when outside agencies are involved.
- . Establish a State SAR Council, if appropriate, to monitor SAR activities in the state.
- . Represent the state on the National SAR Council.

(Continued)

Multi-agency SAR operations require a mutual respect for complementing proficiency in behalf of the subject.



SAR is a coordinated activity that requires people to sit down at a table and solve problems other than those found in the field.



PAUL KOENIG is the Secretary/Treasurer of the National Association of SAR Coordinators and is also the Utah state SAR Coordinator.



- . Prepare State SAR SOP's and other coordination documents.
- . Assist in providing legislative support when needed.
- . Maintain records of SAR activities, and of SAR resources in the state.
- . Interface with Federal agencies, and assist in mutual aid agreements.
- . Provide survival education to support state and local needs.
- . Assist in obtaining specialized training, when required.
- . Assist in obtaining communications equipment for SAR units and agencies.
- . Screen Excess/Surplus property, and assist in obtaining for units.
- . Publish memorandums and letters advising of pertinent information, and keeping agencies in the state abreast of actions in the field of SAR.
- . Keep the Governor advised of SAR situations in the state.
- . Provide appropriate news releases and publicity.

These are areas in which the SAR Coordinator can assist you, and since he is paid by the state, he is there to assist you. On the other hand, the SAR Coordinator does not direct or require things to be done, instead he advises, assists, coordinates, and responds to your needs.

SAR MAGAZINE

DEVELOPING A SEARCH PLAN

by

Andrew E. Hutchison

The search for lost or missing persons is one of the prime responsibilities of the National Park Service operations. Search operations are often carried out under stress circumstances due to the uncertainty of the outcome, the emotional involvement of the family and friends, and the potential for wide public interest. Search operations must be based on a sound foundation of planning and preparation and followed up with an objective and penetrating critique.

The development of a "search plan" is composed of at least seven elements:

1. Knowledge of the environment,
2. Inventory of resources,
3. Method for collection and analysis of data from incidents,
4. Development of an action plan,
5. Collection of information of subject,
6. Critique of the operation,
7. Method for prevention of future incidents.

I. Knowledge of the Environment

Essential to formulating a search plan, is a thoroughly documented inventory of the physical environment involved.

Documents should include topographic maps, charts of rivers and lakes, road and trail maps, and vegetative cover maps.

Maps should be of sufficient quantity to permit field use. Indicated on the maps should be such items as:

High Danger Areas: Areas that pose immediate threat to a visitor, included should be: cliffs, water falls, sink holes, swamps and bogs. Water areas of high danger should include rapids, area of extreme currents, tides, etc.

Roads and Trails: Roads should be listed as to type of vehicle passable, such as all vehicles, 4 wheel drive and trail bike. Gates and barriers should also be indicated on the map. Trails, likewise, should be listed as to type such as horse, bike, foot, etc.

Also of prime importance in organizing a search is information on visitor use patterns. Information should be available as to frequency of trail use, location of points of visitor interest, such as outstanding scenic spots, wild flower areas, etc. If hunting and fishing are visitor uses, information on prime areas should be available. Hiking times from various points throughout the area should be approximated so as to estimate the overdue time.

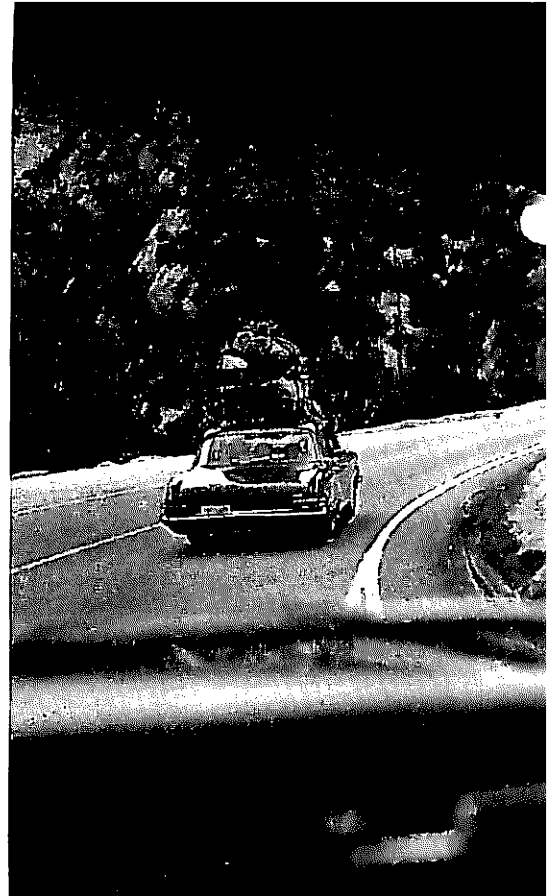
Structures, shelters and other improvements should also be indicated on the maps.

(Continued)

ANDREW E. HUTCHISON was born at Honesdale, Pennsylvania and attended college at New Mexico State and Pennsylvania State. He entered the National Park Service in 1961. Having been assigned primarily to the eastern states, his latest field assignment was Chief Ranger of Delaware Water Gap National Recreation Area. In that assignment he had considerable exposure to the problem of the urban oriented person using the rural environment for recreational purposes. He has been involved in search and rescue operations involving cliffs, land and water. Mr. Hutchison is now assigned as Assistant Chief of Protection for the National Park Service with a primary responsibility for Search and Rescue.



The good search plan anticipates the Park visitor and his potential problems.



II. Inventory of Resources

Implementing a search operation generally involves utilizing resources that can be classified into two general categories. These are human resources and physical resources. A listing of these resources should be available and frequently updated. Items included in the inventory should be as followed, with a phone number. These would include such items as:

Human Resources: Rangers and National Park Service (NPS) employees familiar with the area, other Governmental employees familiar with the area or with search operations. NPS employees familiar with search operations, State police or county sheriff, rescue squads, Civil Air Patrol, Mountain Rescue Association, scuba divers, search and tracking dog teams, and National Guard.

Physical Resources: Light plants, vehicles, boats, all terrain vehicles (ATV's), planes, snowmobiles, helicopters, communications gear, food services, first aid equipment, sleeping bags, tents, ropes, litters and specialized equipment.

(Continued)

Human resources are previously identified in the search plan so that when an incident occurs there is a quick response.



It is essential that there is a firm understanding of the capability of all resources.

III. Method of Data Collection and Analysis from Incidents

Information essential to search operations is in two types. (1) That information pertinent to any search. (2) Information pertaining to the specific area. Information and data should be collected from each reservoir of information. Some of this information is of Service-wide concern such as subject action's following becoming lost, distance located from last point seen; how was subject found, condition of subject when found, and weather conditions at time of incident, other information pertaining to the area that should be recorded is time of year of most incidents, specific location of most incidents, activity of subject prior to becoming lost and familiarity of subject with local environment. Information of this type is essential not only for planning the search, but also in formulating information and signs for visitors to prevent future accidents.

IV. Development of the Action Plan

The method that the resources are deployed to cover the environment is essentially the search plan. There are necessarily two facets to the planning, one is the organization of the search, the other the progress plan.

Organization Plan: Paramount to the search operation is proper organization, from the very onset it is essential that one agency take over all responsibility for the search operation. This should of course be determined by cooperative agreements so that at the time of the incident there is no doubt which agency is responsible. Within that agency, there should be a strict chain of responsibility so that as the search progresses there is always "one person" in charge. The organization plan should indicate the flow of responsibility and authority when the search progresses to a major operation. The organization should be similar to a major fire with special officers for supply, air operations, communications, press relations and investigation, along with other specialists as required.

Progress Plan: The progress plan is essentially a flow chart which depicts the various search options open to the search director. Time is depicted on the horizontal. The rate of progress through the chart as well as the option selected is determined by the specifics of the incident, such as weather conditions, characteristics of the victim and availability of resources. A model progress plan should be drawn up and then modified if necessary to fit the particular incident.

V. Collection of Information on Subject

One of the most essential and yet most sensitive tasks of the Search Director is the collection of information on the subject. Forms for the collection of this information should be available at all park offices as well as in the patrol vehicles. It is necessary that all essential information be gathered at first contact with the person reporting the incident. It is also important to collect information on the person giving the report and his relation to the subject. Also establish his projected whereabouts so that he can be contacted in the future. The longer the search progresses, the more important it is to investigate the subject. Information should be gathered from sources outside the immediate family. This could include his home town police, friends, etc. If possible, one person should be designated as the investigating officer. His responsibility would be to work solely on the collection of information. This is a very delicate sensitive task and finesse and diplomacy are essential. Items to be considered other than a concise description of the subject are the condition of his physical and mental health, information relative to the use of drugs and alcohol. Possibilities of foul play and suicide should be considered also, as should financial and marital problems. His outdoor skills as well as unusual habits should be also investigated. The investigating officer should be accurate and concise in recording this information and it should be re-checked with those supplying it. When possible, a tape recorder should be utilized in conducting interviews.

VI. Critique of the Operation

Following each search operation, regardless of the outcome, an objective, penetrating critique should be made. This is the responsibility of the area manager and the extent of the critique is dependent on the characteristics of the search.

The critique can be accomplished from within the operating staff on a small search. However, on a major operation outside assistance may be essential.

The purpose of the critique is to assist in developing better search plans and to evaluate resources and methods employed. It is a fact finding appraisal.

VII. Method for Prevention of Future Incidents

Following the critique of each search operation, the question should be raised, "what can management do to prevent future incidents?" The questioning of the subject is quite often very enlightening in explaining the cause of the incident.

Signs, trail guides, area folders and interpretive and informational programs should be evaluated, to see if they can be improved to prevent future incidents. *SAR MAGAZINE*

CALDWELL SEARCH

Cover photo by David Urbanczyk shows Lynn Caldwell shortly after she was found. Note the difficult ground cover of trees, rocks and logs.

Lynn Caldwell being casually interrogated by Ranger Janet O'Brien as they awaited evacuation. (Photo by David Urbanczyk)



Los Angeles Times

Sat., Sept. 7, 1974—Part I 17

Girl Missing in Yosemite Saved

From a Times Staff Writer

YOSEMITE—Searchers Friday afternoon found a 17-year-old Carson girl who had disappeared Tuesday evening while on an outing at Tuolumne Meadow with 28 other persons from the Hamburger Home School in Hollywood.

A Yosemite National Park spokesman said Elizabeth Cadwell, who requires special medication for a mental condition, was "cold, nervous and hungry but in good shape."

by

Dennis

Kelley

Lynn Caldwell, 17-years old, was found safe after being missing 4 days and 3 nights in Yosemite National Park. She had become lost from a group outing in Tuolumne Meadows, where temperatures were dropping to freezing at night, though the days were pleasant. To make matters worse, Lynn was barefoot and dressed in shorts and halter.

This successful search was very reassuring and satisfying to all concerned, but perhaps even more so for the National Park Service. This NPS satisfaction comes from an extraordinary effort made in behalf of the public, when last May 1974, Bill Wade of the NPS Albright Training Center created and conducted a confernece, "Managing the SAR Function". This NPS school conference was the first ever dedicated totally to the search for missing persons in wilderness areas. As such, this week long conference was the beginning of the transformation of land search from an art to a science. Thereafter, all Park visitors will benefit, including Lynn Caldwell.

Now, instead of guessing how long to search for Lynn in the freezing nights of the nearly 10,000 foot high Tuolumne Meadows, her survivability can be estimated from published data. This is important because most guesses underestimate the subject's will to survive.

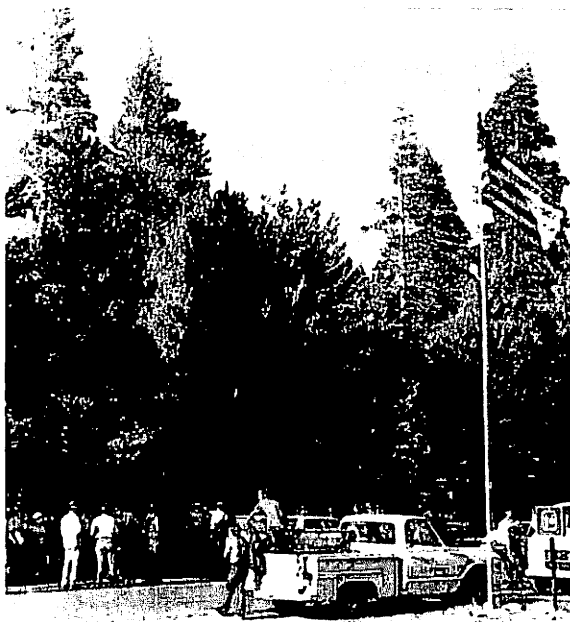
Now, instead of blindly searching for just the subject, searchers are in the field very much aware of the environment and are very conscious of 'clues', such as footprints, articles of clothing, food wrappers, etc. This is important because there are more clues than there are subjects.

Now, instead of relinquishing control, the NPS manages the entire search operation with an overhead team similar to that used in fire-fighting. This is important because the NPS personnel are all experienced with the overhead team concept and it can be quickly applied to the search operation.

(continued)



A helicopter view of one part of the search area. 12,000 foot White Mountain in the background. Delaney Creek below. Lynn was found approximately 2-mile east (to the right) from this location.



Base camp briefing at Tuolumne Meadows Ranger Station. The elevation in this part of Yosemite National Park ranges between 8,000 to 12,000 feet.



Every barefoot track left after the busy summer season in Tuolumne Meadows had to be thoroughly checked out.



Lynn Caldwell in the litter on the helicopter ready to be flown to the hospital. The strain of the experience reflected on her face.

The 'overhead team' for the Caldwell search was directed by Rangers Rick Smith and Herb Ewing. Tony Anderson was responsible for logistics. Bob Johnson had communications. Fred Koegler was the Mountain Rescue Association coordinator.

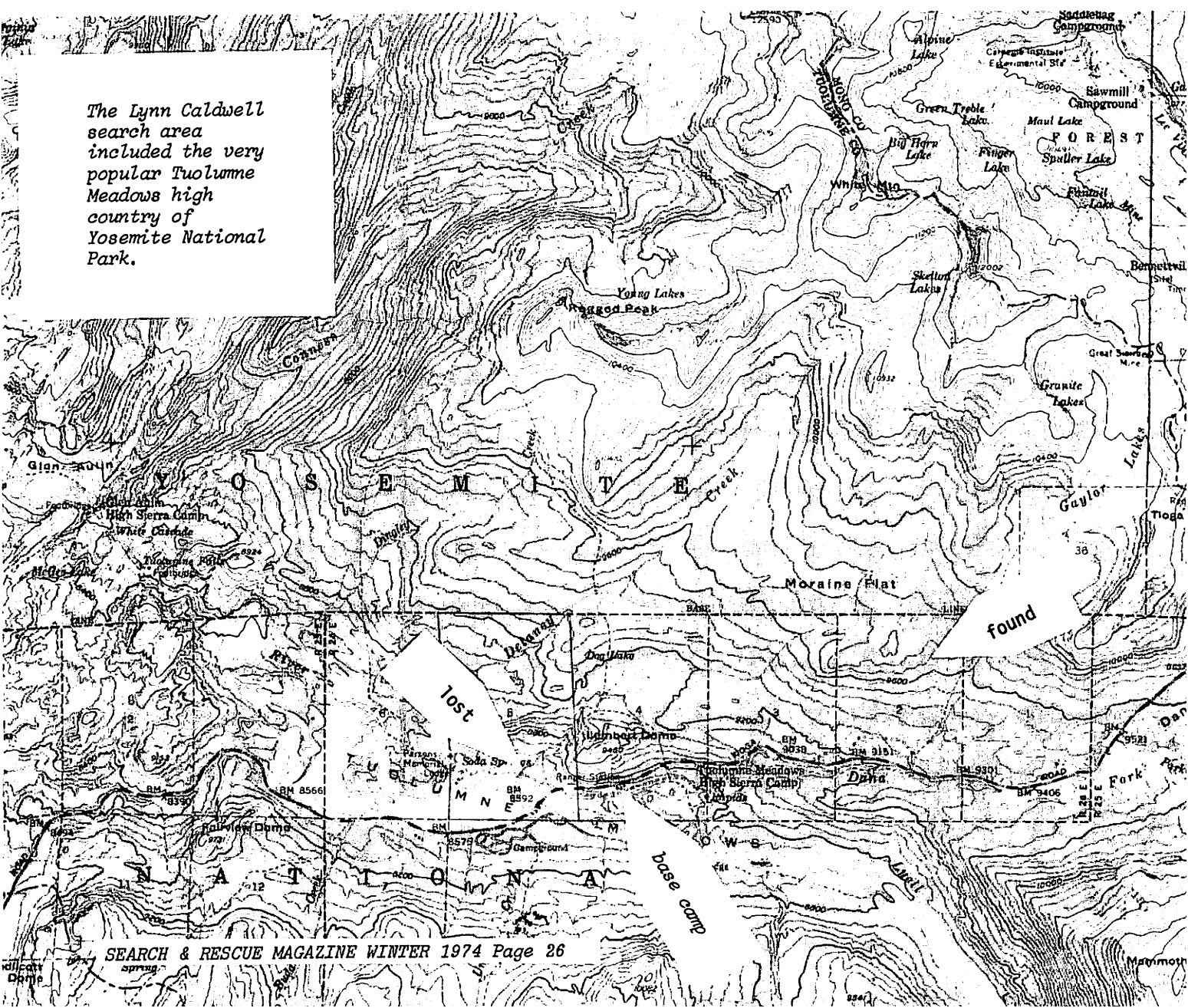
In addition to Park personnel, the Calaveras Ecology Corps, the June Lake SAR Team, the Mt. Bullion Team, the Fresno County Sheriff's Office, and the American Search Dog Association, the following Mountain Rescue Association teams were used,

Bay Area Mountain Rescue Unit
China Lake Mountain Rescue Group
Montrose SAR Team
San Diego Mountain Rescue Team
Sierra Madre SAR Team

The Mountain Rescue Association is a highly professional group of volunteers specializing in mountain search and rescue. Also, this was the first application of the American Search Dog Association in California, and the NPS felt they worked well.

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The Lynn Caldwell search area included the very popular Tuolumne Meadows high country of Yosemite National Park.

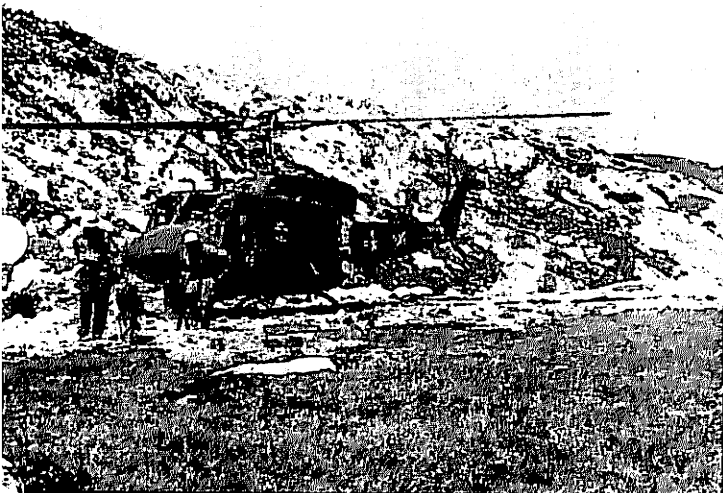




*A very happy 'search boss'
Rick Smith, a man credited
with a successful search.*

*The long hours in the field
inevitably leads to searcher
casualties, even if only
blisters.*

*The U.S. Navy delivers
two members of the
American Search Dog
Association to the
Skelton Lake area
of the search.*



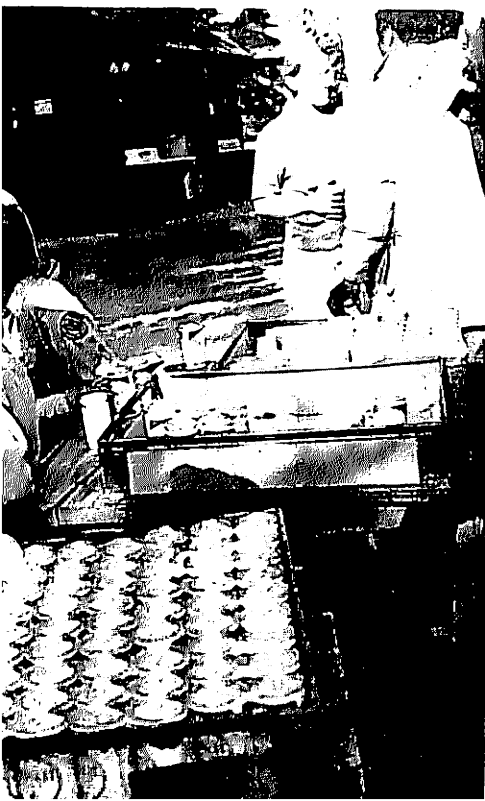
A very interesting aspect of the search was the actions of Ranger Janet O'Brien when Lynn was found. Janet took it upon herself to establish a close rapport with the bewildered and suffering Lynn immediately by giving her a long and friendly hug. (Editor's note. Since the Lynn Caldwell search I have personally tried Janet's idea of the hug twice with subtle but excellent results. First was an elderly lady and the other was a couple of young boys. In both cases the subjects seemed to be put at ease by the gesture. I would highly recommend this friendly procedure.)

After Janet took care of Lynn's immediate needs of warmth, water, and some candy to eat, Janet casually interrogated Lynn about her experience as they waited for evacuation. Some of the fascinating facts of Lynn's survival experience were;

1. After the second day, she was basically immobile.
2. At night she was awake and moving around in a small area trying to keep warm.
3. She had torn up a small scarf she carried making a pointer to where she was staying.

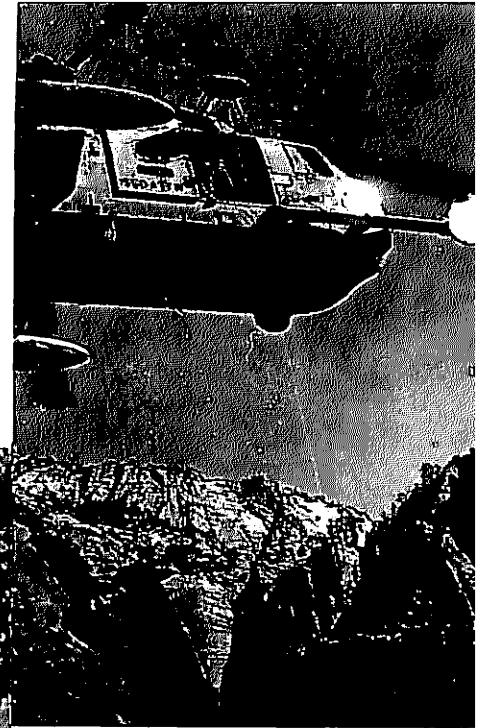
This was an excellently executed and managed search. The National Park Service, their overhead team, and especially Rick Smith should be congratulated. SAR MAGAZINE

*Every searcher agreed that
the successful search
celebration was one of
the best.*



UTAH SAR SEMINAR

Article by Paul Koenig and
photos by William Wilson.



"Jolly Green Giant" helicopter
evacuation in Zion NP cliffs.

L-R: Paul Koenig, Utah SAR
Coordinator, Madelene Wilson,
SAR Newspaper Editor, Bob
Heyder, NPS, and Bob Buskirk,
Utah OES.

Over 100 search and rescue personnel from Utah, Arizona, Nevada, and California congregated at Zion National Park on the weekend of 27-29 September 1974 for a SAR training seminar.

Paul Koenig, Utah State SAR Coordinator from the Utah Office of Emergency Services, and the National Park Rangers from Zion co-hosted the affair. Weather arrangements were outstanding, and the grandeur of Zion provided an inspirational background for the work sessions.

Ab Taylor and Jack Kearney of the U.S. Border Patrol, San Ysidro, California, conducted several hours of tracking instruction and practical sessions. They were assisted by Ron Carlson, Joe O'Dell, and Wes Reynolds from the San Diego Mountain Rescue Team. Lois McCoy from SDMRT provided moral support.

Bill Wade, National Park Service, Albright Training Center, and NPS delegate to the National SAR Council, conducted a technical rope and cliffside operations workshop. The outstanding feature of this operation was when Enid Howard, from Desert Magazine, volunteered to be first to learn to rappel down a sheer cliff. After her safe descent, none of the men could back out. Congratulations Enid.

The 1550th ATTW from Hill Air Force Base, represented by Captains Marty Martindale and Randy Smedley, Lt. Mokri, SMSGT C. J. Fischer, MSGT James Scott, and SSGTS Goodlett, Noxon,

and Touchet, put on some excellent demonstrations. They conducted a vertical cliff evacuation of a live patient in a litter by one man, and some other sensational acts among the spectacular cliffs of Zion. They arrived in a "Jolly Green Giant" helicopter, and demonstrated its effectiveness in cable evacuation of litter patients.

Lionel Drage, Director of Emergency Services of the Intermountain Regional Medical Program, discussed aero-medical evacuation problems. Lionel implied that a catheter installed at sea level might become a little uncomfortable at 10,000 feet.

Russ Batemen, Utah Office of Emergency Services discussed communications problems, and Bob Buskirk, Mobilization Designee to the Utah OES lectured on hazardous materials.

A highlight of the program was a speech by Don Anderson at the Saturday evening banquet in Zion Park Lodge. Don, who is Director of Communication at Mountain Fuel Supply Co. in Salt Lake City, sketched cartoons as he talked. The subject was "Help is a four-letter word". Ab Taylor laughed so hard at one of Don's jokes that he fell off his chair (really, Ab).

Certificates were presented following a critique at the end of the seminar, and active and reserve law enforcement officers will be given training credit for the seminar.

SAR MAGAZINE



P. O. BOX 8100 SALT LAKE CITY, UTAH 84108

BLAIR E. NILSSON
President

JOHN H. OLSEN
Vice President

PAUL H. KOENIG
Secretary/Treasurer

The National Association of Search and Rescue Coordinators (NASARC) is organized to support, coordinate, develop, inform, promote and implement search or rescue capabilities with the underlying principle of protecting life and property. It provides a medium for the liaison between State, Federal, local and volunteer search and rescue agencies and organizations. In addition, the Association promotes and coordinates survival education programs to better equip the general public for physical and mental compatability with their environment, both from natural and man-made disasters.

State SAR Coordinators are primary members and delegates to the National Board. Organizations and individuals involved in SAR activities may apply for associate membership. Organization memberships are \$10 per year and individual memberships are \$5. per year. Membership includes a years subscription to Search and Rescue Magazine. To apply for membership, fill out the attached form and foreward, with your check, to your State SAR Coordinator, or directly to the NASARC. Organizations please indicate skills included among members.

APPLICATION FOR ASSOCIATE MEMBERSHIP

New___ Renewal___ Individual(\$5.)___ Organization(\$10.)___ Date___

NAME___ ADDRESS___

CITY___ COUNTY___ STATE___ ZIP___

SAR AFFILIATIONS___

ORGANIZATIONAL SPECIALTY___

SAR SKILL SPECIALTIES: Advance Red Cross___ EMT___ Para-Medic___ Doctor___

Pilot(Rating)___ Communications License___ Nat'l. SAR School Grad. ___

Law Officer___ Parachutist___ Scuba Certified___ Mtn. Rescue Certified___

4WD Operator___ Tracker___ Snowmobile Operator___ Dog Handler___ ESAR Qual. ___

Other(Describe)___

APPLICANT OR ORGANIZATION OFFICER SIGNATURE___

Approved for membership by___, ___ State SAR Coordinator.

(Membership includes one year subscription to Search and Rescue Magazine)

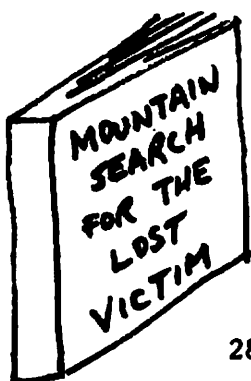
NASARC decals, as shown above, are available from your State Coordinator or NASARC. The decals have a silver-blue center and red border. Prices are: 3" dia. Scotlite (\$.35 ea.) ___
12" dia. non-Scotlite (\$2.50 ea.) ___

STATE SAR COORDINATORS

The known State SAR Coordinators, or contacts, for NASARC member states, and other western states, is provided below. For those states not listed, we suggest you contact your State Department of Emergency Services or Civil Defense, for SAR information.

ALASKA Don Lowell	Alaska Disaster Office, 1306 East Fourth Ave., Anchorage, Al. 99501
ARIZONA Leonard E. Fitzgerald	Division of Emergency Services, State Capitol Bldg., Phoenix, Arizona 85007. (206)271-4671.
CALIFORNIA Bob E. Hill	Office of Emergency Services, 2800 Meadow View Road, Sacramento, California 95832. (916)421-4990.
COLORADO Blair E. Nilsson	Division of Emergency Services, EOC, Camp George West, Golden, Colorado 80401. (303)279-1101.
DELAWARE*	Emergency Planning & Operations, P.O. Box C, Delaware City, DE. 19706.
IDAHO Merlin Tebbs	Idaho Bureau of Disaster Relief & Civil Defense, Len B. Jordan Office Building, Boise, Idaho 83720. (208)384-3460.
MONTANA*	Jack Wilson, Montana Aeronautics Commission, Helena, Montana 59601. (406)449-2506. (Air Searches) Gil Gilbertson, Montana Civil Defense Division, P.O. Box 1157, Helena, Montana 59601. (405)449-3034. (General Information)
NEVADA Lou Murphy	Civil Defense & Disaster Agency, State Capitol Building, Carson City, Nevada 89701. (702)882-7473.
NEW MEXICO Sgt. Whitehouse	New Mexico State Police, 2501 Carlisle Blvd. N.E., Albuquerque, New Mexico 87110. (505)842-3082.
NEW YORK Jim Lord	Dept. of Environment Conservation, 50 Wolf Rd., Albany, New York 12201
NORTH DAKOTA J. F. Monroe	North Dakota Civil Defense, Box 1817, Bismarck, ND. 58501. (701)224-2111/2113.
OREGON John Olson	Department of Emergency Services, Room 8, Capitol Building, Salem, Oregon 97310. (503)378-4124.
SOUTH DAKOTA Richard Trankle	Civil Defense Division, Dept. of Military Affairs, State Capitol Building, Pierre, SD. 57501. (605)224-8256.
UTAH Paul H. Koenig	Office of Emergency Services, P.O. Box 8100, Salt Lake City, Utah 84108 (801)328-5271.
VIRGINIA George L. Jones	Office of Emergency Services, 7700 Midlothian Turnpike, Richmond, Virginia 23235. (804)272-1441.
WASHINGTON Rick LaValla	Department of Emergency Services, 4220 East Martin Way, Olympia, Washington 98504. (206)753-5255.
WYOMING*	Marvin Stevenson, State Aeronautics Commission, 200 Eighth Ave., Cheyenne, Wyoming 82001. (307)777-7481. (Air Searches) Jacob Herzog, Disaster & Civil Defense Agency, 5500 Bishop Blvd., Cheyenne, Wyoming 82001. (307)777-7566. (General Information)
PUERTO RICO Jose A. M. Nolly	Office of Civil Preparedness and Defense, Box 5127, San Juan, Puerto Rico 00906.
BRITISH COLUMBIA Bjarne Thorshaug	Provincial Emergency Programme, Parliament Buildings, Victoria, British Columbia, Canada. (604)387-6613.

* No designated SAR Coordinator.



283 pages



This is the how-to book on mountain and wilderness search for a missing person. It was written for search and rescue teams, law enforcement and government agencies, students of search theory and youth groups.

This book addresses the following questions with specific answers.

When to start searching.
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How many searchers to use.
How to search.

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 3. Responsible agency
 4. Strategy
 5. Tactics
 6. Base camp
 7. Searcher
 8. Training
 9. Contingency analysis
- Appendix (includes extensive bibliography and an index)

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NEWS AND RUMORS



(U.S. Air Force photo)

REST IN PEACE - - Taps are sounded by Staff Sergeant Richard M. Horn concluding formal dedication ceremonies recently (September 27, 1974) for Rescue Memorial Park at Scott Air Force Base. The park was dedicated to the more than 275 airmen who have lost their lives in efforts to save the lives of others. At the dedication, a monument was unveiled revealing a bronze plaque inscribed "Rescue Memorial Park, Dedicated to the Airmen Who Gave Their Lives 'That Others May Live'." General Paul K. Carlton, Military Airlift Command Commander, Major General Ralph S. Saunders, Aerospace Rescue and Recovery Service Commander, were the dedication speakers. The memorial park is sponsored by the Jolly Green Pilots Association, a national organization of those involved in search and rescue operations worldwide.

GOVERNORS ISLAND, N.Y., Oct. 7, 1974 -- At a recent ceremony at the Sahara Hotel in Las Vegas, Nevada, Commander, Atlantic Area's Information Systems Div. received the Coast Guard unit of the year award from the National Defense Transportation Association.

Chosen by the Commandant, the Information Systems Division, located at Governors Island, N.Y., was cited for establishing an outstanding record of performance in support of the world-wide civilian and military transportation systems.

Accepting the NDTA's award on behalf of the Coast Guard unit was CDR Henry N. Helgesen (right), Chief, Information Systems Division. The presentation was made by VADM Thomas R. Weschler, USN Director for Logistics, Organization of the Joint Chiefs of Staff.

THE AWARD BELOW WAS GIVEN FOR 'THE AMVER SYSTEM' CALLED 'LIFESAVING COMPUTER OF THE SEAS'.

(U.S. Coast Guard photo)



NEWS & RUMORS (continued)

Stan Bush, Colorado Search and Rescue Board, reported on a follow-up of a search for a missing man at Frisco, Colorado. The man came out of the area a few days after the search. Sheriff Erickson was able to determine that he had NOT been in the area. The man was sentenced and fined for the actions in this 'false alarm' search.

Ron Green of Pocatello, Idaho SAR says that, Bill March, climber and author of the book, "Improvised Techniques in Mountain Rescue", is in Idaho giving excellent lectures on Winter mountain rescue. Bill March has a Physical Ed. Assistantship at Idaho State University where he is getting his Masters Degree.

A fringe benefit of receiving the De Anza Rescue Unit newsletter is Tomas Bozack's serialized book, "Physiological Aspects of SAR in the Desert". One chapter has already been circulated in this way.

Daryl White is the newly elected President of the San Diego Mountain Rescue Team. Ex-President Ron Carlson celebrated his newly acquired freedom of time with a long overdue trip to Baja.

Rick LaValla, Washington State SAR Coordinator has done a search and rescue mission cost data study. Individual cost data has been compiled for all SAR resources such as individual specialties, equipment and gear.

★ Los Angeles Times Tues., Nov. 12, 1974—Part 3

2 Boats Sank in 2 Months but Fisherman Feels Lucky

SAN DIEGO (UPI)—Tuna fisherman Don Igo considers himself the luckiest man in town.

He and two Mexican nationals were returned to San Diego late Sunday by a Coast Guard helicopter after three-and-a-half days in an open boat without food or water off Baja California.

Their tuna boat Cape Beverly sank about 550 miles southwest of here last Wednesday. Twelve other crewmen made it ashore in a large life raft equipped with oars, but Igo and his companions, Alvaro Peralda and George Velasco of Ensenada, drifted helplessly in an unequipped skiff.

It marked the second time Igo had been rescued from the sea in less than two months. His \$100,000 fishing boat Lone Wolf sank off Pismo Beach Sept. 22. He and six crewmen made it ashore, but a seventh man died in that incident.

"I've been fishing for 20 years, and I've never been superstitious," Igo said, "But now I'm beginning to wonder."

In describing Wednesday's incident, Igo said he was sleeping but

was awakened by a tremendous jolt.

"The whole bulkhead just caved in next to me," he said. "The next thing I knew I was standing waist-deep in sea water and it was rising quickly."

He struggled topside and unleashed the small skiff just before the Cape Beverly went under. He saw Peralda and Velasco in the water and helped them into the boat.

"It was just barely light," he said, "but we could see the other crewmen in a larger skiff. The only trouble was, they had oars and we didn't, so we didn't attempt to join them."

They drifted to open seas, where they baked four days in 95 deg. heat and shivered through three cold nights.

"We had no water and no food," Igo said, "but we determined we could hold out for 20 or 30 days."

The other 12 were rescued by a tuna boat and were being taken to Cabo San Lucas in Baja California.

Igo and his companions were sighted by an Air Force rescue plane Saturday, and two paramedics were dropped to supply food, water and medical care.

ANNOUNCING A SEARCH AND RESCUE COURSE FOR STATE SAR COORDINATORS

NATIONAL SEARCH AND RESCUE SCHOOL

Governors Island
New York, New York

February 10-14, 1975

....NOMINATIONS....

This offering is open to State Boating Administrators, Aeronautical Administrators, Civil Defense Coordinators, Public Safety Directors and other public officials responsible for the organization, planning or coordination of search and rescue activities within their respective states and to representatives of recognized National Volunteer Organizations.

Nominations should be submitted either by using the enclosed card or by letter from an authorized official. The letter nomination should include: course title, nominee's name, agency, position title, business address and telephone, and the address of the office to which a confirmation notice should be sent.

All nominations should be addressed to the Officer in Charge, National SAR School, US Coast Guard Training Center, Governors Island, New York, N.Y., 10004 to arrive not later than December 20, 1974. Nominations may be accepted after that date on a "space available" basis. A maximum of twenty-four nominations will be approved. Further information may be obtained from the National SAR School by calling (212) 264-3313.

....COST....

There is no tuition for attendance at the National SAR School nor is there a charge for attendees residing in the Governors Island Bachelor Officers Quarters. Cost for transportation to the school and meals must be borne by the attendee or his organization. Registration fee is \$3.00. Meals are available at the Officers Club (dining room or grill room) and at the Base cafeteria. Laundry and dry cleaning services are also available.

14 Part I—Thurs., Sept. 12, 1974 Los Angeles Times ★

Some mountains aren't for amateurs. Some amateurs don't know that. That's where the Rangers come in.



"Sierra"—the peak of excitement! Hold on tight! (Check TV pages)

36 Los Angeles Times
Part I—Wed., Sept. 4, 1974

Boy Smothers in Ice Chest

From a Times Staff Writer

SAN JACINTO — The body of a 3-year-old boy missing since last Wednesday was found Tuesday in a small ice chest on the floor of a storage shed less than 100 feet from his family's mobile home in a trailer park near here.

The formal search for Tracy Lynn Salsberry had

been called off Sunday after a massive search of the San Jacinto area proved fruitless.

Riverside County sheriff's deputies said volunteer searchers had noticed the small, 30-inch-long, metal chest when they searched the shed earlier, but they did not open it because they figured the youngster was too big to fit inside.

Investigators theorized the boy wandered into the shed while he was playing and crawled inside the chest, which locked with a snap lock on the outside.

FRIDAY, NOVEMBER 8, 1974 Los Angeles Times ★

A \$2 million damage suit was filed in Riverside County Superior Court by the widow of a Riverside pharmacist who lost his way and died of exposure while competing in the Baja 100 motorcycle rally east of Ensenada last May. Mrs. Virginia Mundy, widow of Fred Mundy, alleged in her suit that the organizers of the rally were negligent in marking the route. Named as defendants were the Riverside Board of Realtors and the California Land Title Co., which sponsored the event, and four individuals who served as route markers

* CORRECTION!
*
* My apologies to Judy Beehler
* for miss-spelling her name
* in the credits for a recent
* article she did for SAR
* Magazine.
*

18 Part I—Sun., Nov. 10, 1974 Los Angeles Times 2★

Divers Told Not to Use Spray on Scuba Air Units

MIDLAND, Mich. (UPI) —The Dow Corning Corp. has warned scuba divers to stop using one of its aerosol sprays to clean and lubricate diving equipment because it could be dangerous.

A Dow spokesman said the firm learned that its "4-X" spray, which contains a chlorinated sol-

vent, is being used to clean air-passage components of scuba-diving units. The spray is recommended for use as a protective coating for automotive, electrical and ignition systems.

"Chlorinated solvents can detrimentally affect a variety of plastics, especially polycarbonates, used in airway components which will create a risk to the user," the company said.

CALENDAR

1975 February 10-14

NATIONAL SAR SCHOOL, Special SAR course for Emergency Service Coordinators, Public Safety Directors, Sheriffs, Sheriff's Dept. Poses and SAR Volunteers.

Contact: Officer in Charge, National SAR School, U.S. Coast Guard Training Center, Governors Island, New York 10004, (212) 264-3313.

1975 April 22-25

LANTSAR'75, Atlantic International Air and Surface SAR Seminar (Maritime SAR).

Biltmore Hotel, New York City.

Contact: Executive Secretary, LANTSAR'75, U.S. Coast Guard, Governors Island, NY 10004, (212) 264-8858.

1975 May 2-4

WASHINGTON STATE SAR CONFERENCE.

Central Washington State College, Ellensburg. Contact: Grant Smith, Chairman, P.O. Box 7092, Tacoma, Washington 98407, (206) SK9-7257.

1975 May 17-18

CALIFORNIA STATE SAR CONFERENCE.

Idyllwild, California

Contact: Wes Reynolds, Chairman, 4317 Santa Monica Ave., San Diego, California 92107, (714) 276-5360.

1975 June 19-22

NATIONAL JEEP SAR ASSOCIATION NATIONAL CONVENTION.

Reno, Nevada

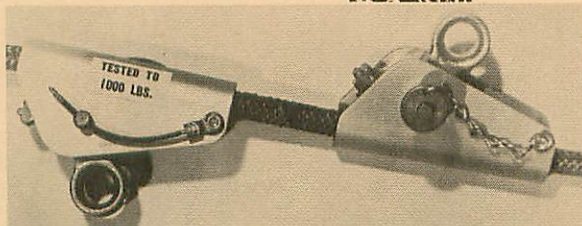
Contact: National Commander 'Doc' Dickson, 1225 - 35th Street, Ogden, UT 84403.

ESAR certification committee visiting California teams, L-R: Jim Bell, Jim Macartney, Chris and Tom Miner.



GIBBS ASCENDERS

Each Ascender is tested to 1000 pounds. Its smooth rounded teeth produce little or no rope damage. Especially applicable to equipment haulage, group ascents, fixed rope and rescue operations. Operates on icy or muddy ropes.



ASCENDERS with spring wire \$8.75

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SALT LAKE CITY, UTAH 84108

CALIFORNIA ESAR:

Post 12 of San Mateo, Northern California and Post 156 of Van Nuys, Southern California, Explorers of Boy Scouts of America have been certified by the Western Region as California's first Explorer Search and Rescue (ESAR) teams. Maurice Ducasse is the Post 12 advisor and John F. X. Handy and Pete Arnet are the Post 156 advisors. The certification exercise was a rigorous 2-day event taxing the two teams ability in an operational environment to find a missing person in a wilderness area. In addition, the individual team members were tested on their ability to function in the wilderness environment.

Over two years of technical training was pursued by these two teams in preparing for the exercise. Now that these two teams are certified, additional periodic training is part of the ESAR responsibility.

The certification committee (pictured above) was composed of Jim Bell, Jim Macartney, Chris and Tom Miner, all from Washington State. All of this certification committee were on similar committees in the Seattle area of Washington State and have significant experience in SAR. ■

SKI PATROL EQUIPMENT

* Avalanches "Pieps 1" — An Electronic Detector For Persons Buried by Avalanche.

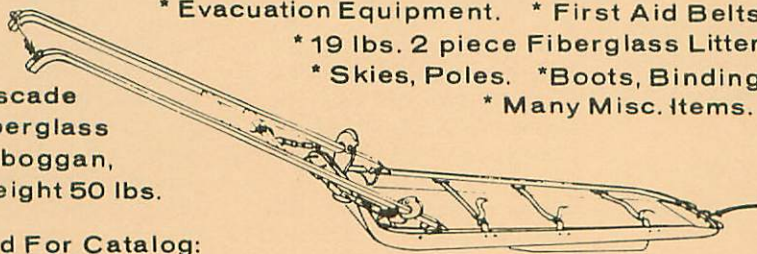
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* Many Misc. Items.

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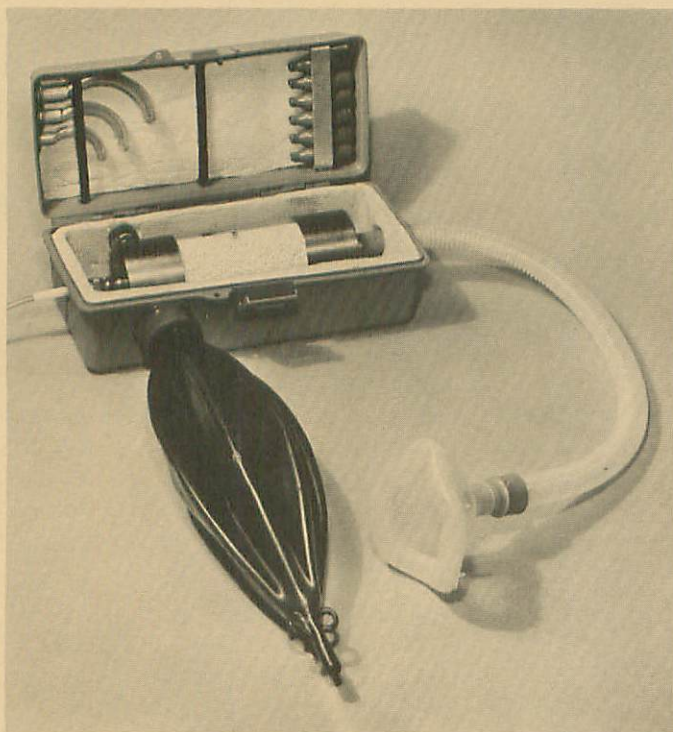
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25802 W. Valley Hi-Way, Kent, Washington 98031 (206) 852-0182

EMS O₂ THERMO-GEN*

AN EFFECTIVE AND SAFE SYSTEM TO REWARM THE CENTRAL CARDIO-PULMONARY CORE IN THE TREATMENT OF HYPOTHERMIA



FEATURES:

- PROVIDES HEATED O₂ FOR INSPIRATION
- ELIMINATES RESPIRATORY HEAT LOSS
- FAST, EFFECTIVE HEAT PRODUCTION
- SAFE, MAXIMUM REACTION TEMPERATURE
- COMPACT AND LIGHT WEIGHT
- SIMPLE TO OPERATE
- LOW COST — RELIABLE DESIGN

DESCRIPTION:

The EMS Model HK-1 O₂ Thermo-Gen* provides heated, inspired oxygen for rewarming the central, cardio-pulmonary core of the hypothermic patient. This heated, inspired O₂ offers a rapid and important heat gain to the mediastinum and the interior of the heart. The mediastinum is heated by way of the surrounding lung tissue and the interior of the heart receives heated blood from the pulmonary artery. Heated O₂ also has the advantage that it eliminates the critical heat loss due to respiration in the hypothermic patient.

A soda-lime heating element, in reaction with carbon dioxide, is used in the EMS Model HK-1 O₂ Thermo-Gen* to provide a maximum reaction temperature of 60°C to heat the inspired O₂. The temperature of the O₂ at the face mask is typically less than 50°C and this is considered safe and tolerable for the hypothermic patient. The insulated double lumen O₂ hose that connects the unit to the patient's face mask provides a suitable dead space for the desired CO₂ build-up. Also, since water vapor is produced in the CO₂ soda-lime reaction, the inspired O₂ is richly humidified, further benefitting the hypothermic.

The EMS Model HK-1 O₂ Thermo-Gen* is safe and simple to operate and non-medical personnel can be instructed in its use in a minimum period of time. The unit is portable, compact and light in weight, making it ideally suited for all rescue services. Also, since the Model HK-1 O₂ Thermo-Gen* is a closed-circuit rebreathing system, there is a maximum conservation of heat and O₂. One hypothermic patient can be supported for up to 16 hours on a standard 360 liter, "D" size O₂ cylinder and multiple patients can be supported for proportionally shorter periods on the same O₂ supply**. The Model HK-1 O₂ Thermo-Gen* may be sterilized by any of the cold sterilization methods (Zephiran Chloride 1:1000, Cidex, etc.).

SPECIFICATIONS:

Soda-Lime Volume	500 Grams
Maximum CO ₂ -Soda-Lime Reaction Temperature	60°C
Useable Soda-Lime Reaction Time	3 Hours
CO ₂ Cartridge Volume	5 Liters
O ₂ Reserve Bag Volume	5 Liters

Fittings:

O ₂ Inlet	Standard DISS 9/16 x 18
O ₂ Outlet	7/8" (22 mm) O.D.
O ₂ Reserve Bag	7/8" (22 mm) O.D.

Accessories Supplied:

O ₂ Outlet Hose .. 36" Insulated, Double Lumen, Pressure Compensating	
O ₂ Reserve Bag	5 Liter, Rubber
CO ₂ Cartridges	6 ea., 5 Liter, Medical Grade

Dimensions:

Model HK-1 (excluding fittings)	3" DIA x 9" L
Insulated Case	3 3/4" H x 6 1/2" D x 13" L

PRICE: \$170.00 F.O.B. MONTROSE, CA.

EMERGENCY MEDICAL SYSTEMS CO. P. O. BOX 591 MONTROSE, CA. 91020 (213) 248-3051