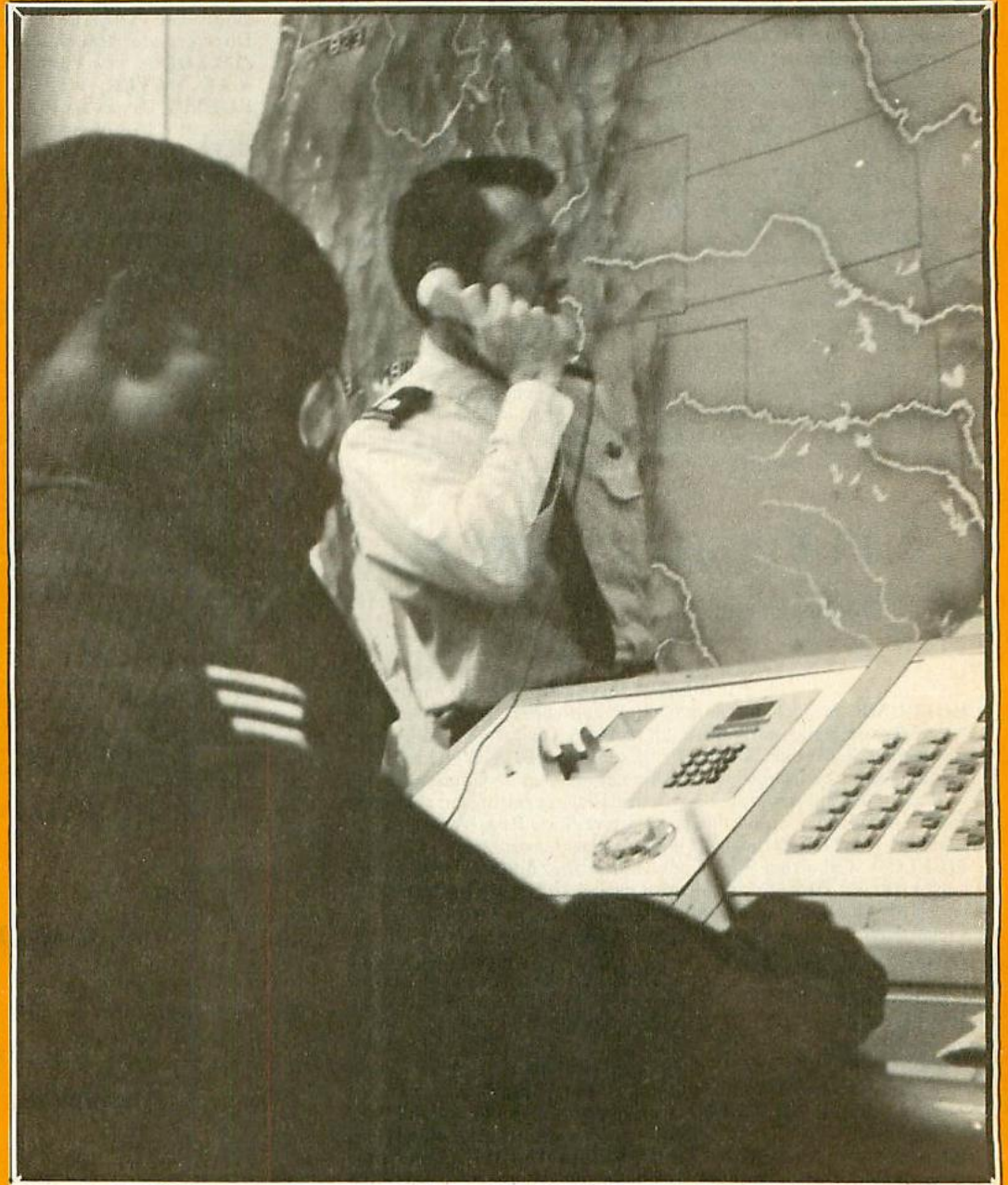


WINTER 1978

Search & Rescue

MAGAZINE

THE OFFICIAL PUBLICATION OF THE NATIONAL ASSOCIATION FOR SEARCH AND RESCUE



A SPECIAL REPORT:

THE AIR FORCE

RESCUE

COORDINATION

CENTER

SEARCH AND RESCUE MAGAZINE

P. O. Box 153
MONTROSE, CA. 91020

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

COMMENT ON THIS ISSUE: The U.S. Air Force's responsibility for search and rescue is defined in the 1969 National Search and Rescue Plan as that of Regional Coordinator for the Inland Region, i.e., the lower 48 states. In addition, resources are to be made available for civilian SAR use on a non-interference basis with military missions. Up front, I must say that the USAF has come a very long way in meeting this responsibility in the last few years. Significant improvements are: One central rescue coordination center, the Air Force Rescue Coordination Center (AFRCC) Scott Air Force Base. Transportation for SAR volunteers both to and from the SAR scene. Installation of VHF/FM radios in USAF Aerospace Rescue and Recovery Service (ARRS) aircraft for coordination communication with civilian SAR agencies. Taking under its wing the National Association for Search and Rescue (NASAR). Initiating SAR Symposium such as the one detailed in this issue. Providing national data on the aircraft Emergency Locator Transmitter (ELT) problems. Establishing cooperative interface agreements between the AFRCC and the States. Significant personalities in these improvements are: Assistant Secretary of the Air Force **FLOYD MOSSMAN II**, Commander of the ARRS, **Major General RALPH SAUNDERS**, and Interagency Committee on Search and Rescue (ICSAR) representative for DOD **Major RAYMOND HUGNAGEL USAF**. On the other hand it is not all a bed of roses. The AFRCC Director of Inland SAR **Col. JAMES L. BUTERA USAF** is struggling to get the cooperation of some states on individual interface cooperative agreements. These agreements establish the guidelines for a State to secure military SAR resources through the AFRCC. The AFRCC has diligently sought to consummate these agreements for the victim's benefit but has difficulty finding State officials with this stated responsibility. Most of the 48 States don't have a reporting State SAR Coordinator position. Another problem for the AFRCC is the lack of funding for Ground SAR research. Is there a lack of awareness of SAR at all levels of some Federal, State and local agencies? In conclusion, I must say that the improvements that I have seen in the USAF SAR responsibility are impressive, considering the primary role of this Department of Defense organization. The USAF AFRCC deserves our moral and public support for its efforts which I see as continuing and improving for the SAR victim's benefit.

PUBLISHER' FORUM

Dennis E. Kelley

PETER JENSEN of RECRO and **TOM HOLCOMB** of Defense and Civil Preparedness Agency left the NASAR Conference early to attend the State Civil Defense Director's Conference in Mobile, Alabama. . . Colorado's **BLAIR NILSSON** is planning to retire in New Mexico but commented on Conference that several State Representatives do not feel they are getting fair treatment from NASAR and would like to see more State Rep. workshops for example — **ART JONES**, he sz, is addressing this problem. . . **Col. JIM BIGELOW**, California Wing Civil Air Patrol, sz different SAR groups must make the effort to complement each other. . . **PAUL KOENIG**, past NASAR Secretary/Treasurer, is retiring in New Mexico. . . U.S. Coast Guard's National SAR School **Maj. RON MERINO**, USAF, supports NASAR. . . **GENE HARRISON** of Virginia is still looking for unallocated SAR frequencies. . . **BILL MOFFAT**, Ventura County Sheriff SAR, was part of a very large representation from Centura Co. at Albuquerque. . . **STEVE HUDSON** was at Albuquerque showing his new Pigeon Mountain Industries rescue rope. . . **SAMMY SNIDER** of Pennsylvania Aeronautics sz he didn't have a heart attack, he was mistreated for hyperventilation. . . Famous first ascender of the Teton's Grand **PAUL PETZOL** is a major proponent of wilderness leadership. . . **GENE FEAR** of Survival Education Association is into mini-computers. . . **TOM KILJAYCK**, University of Denver, is the first to define SAR as a subset of Emergency Response. . . **DENNIS ROSSBACK** of New Mexico Mountain Rescue won NASAR's 1st 10KM fun run and **AYRS 'HENRY' HUIZINGA**, Department of Commerce, was among 21 who paid \$2 to get up at 4:30 AM and run 6.2 miles in 40°F temperatures at 6000 feet. . . **BILL & BETH SQUIRE** among many others from New Mexico's SAR Council made NASAR's 10th Annual Conference super. . . **JOHN OLSEN**, Oregon SAR Coordinator, sz he and his family really enjoyed their AMTRAK vacation to Disneyland. . . **GARY WILLIAMS** of New Mexico SAR was a great Master of Ceremonies at NASAR's banquet. . . **ED SNYDER** sz all mail order SAR purchases will automatically credit NASAR 5%, where credit first goes to a NASAR membership for

SKIP STRATTON of Idaho sz he signed up Idaho's Governor **JOHN EVANS** in his new SAR Management Course. . . **GERRY WELLMAN**, Salt Lake City Civil Air Patrol, just built a new house. . . The new 'bible' on mountain rescue will be **TIM SETNICKA's** who is a Yosemite SAR Ranger. . . Taking the initiative on NASAR's Finance Committee is **BOB SKAGGS**, New Mexico SAR Council. . . **JAN LARSEN USAF** helped out with this AFRCC issue as did the Director of Inland SAR, **Col. LARRY BUTERA USAF** (who incidently nearly got the pie at Albuquerque). . . The National Park Service Washington DC SAR Specialist **TONY ANDERSON** is pressing ahead with SAR statistics. . . NASAR election results: President is **ART JONES**, Louisiana Aviation Safety Officer. . . First VP is **PETER JENSEN**, Minnesota RECRO. . . Second VP is **BILL WADE**, Great Smokey National Park, Tennessee. . . Secretary/Treasurer is **TOM STAADT**, representing **E. ERIE JONES**, Illinois Emergency Services & Disaster Agency. . . This is an impressive NASAR Executive Committee! . . . NASAR Board of Directors are: **RICK GOODMAN**, New Mexico SAR Council. . . **JIM LORD**, New York Environmental Conservation Department. . . **MAC McIVER**, Washington State Div. of Aeronautics. . . **BOB KOENIG**, Texas SAR Dog Assn. . . **J. HUNTER HOLLOWAY**, Colorado SAR Board. . . **BOB SKAGGS**, New Mexico SAR Board. **GLEN BRAND**, Colorado Region, Mountain Rescue Assn. . . **WES REYNOLDS**, San Diego Mountain Rescue Team. . . **AB TAYLOR**, U.S. Border Patrol. . . **SCOTT RUBY**, NASAR Membership Services. . . **DENNIS KELLEY**, Montrose Search & Rescue Team. . . NASAR Awards: **STAN BUSH**, Hal Foss Service Award 1978. . . Fellows: **RICK GOODMAN**, **WES REYNOLDS**, **BILL KRATCH**, **BILL WADE**, and **PETER JENSEN**. . . **DAN HENSLEY**, Montrose Search & Rescue Team, **WILL TAPP**, San Diego Mountain Rescue Team and **GEORGE BARNES**, Bay Area Mountain Rescue Team were all separately caught by killer hurricane "Stormin' Norman" in the Sierras and lived to tell their stories. . . **DON BEST** of San Diego County Sheriff's SAR is back into Training. . . Team Captain **DAVE TRUEMAN**, San Dimas Mountain Rescue Team, has got an excellent recruitment program. . . Mayor **RAY HUFNAGEL**, ICSAR USAF Representative, is actively seeking support for his Emergency Response Communications Program (ERCP). . . Surprise! Congressman **DON YOUNG** of Alaska plans to introduce a bill in the next session of Congress to establish a national ERCP. . . **LAF ARNET** got promoted to Kentucky's Environmental Energy Office. . . **Cmdr. KENN CUTLER**, USCG, NASAR Liaison, sz the Coast Guard is increasingly supporting NASAR. . . **JOE McKINNEY**, New Mexico Explorer SAR Scouts, sz certification should work both ways. . . **ERIC HUGHES** may see the application of astrology to SAR but NASA's Hq. **DICK SPRINCE** is skeptical. . . **SCOTT RUBY** is into computer systems with his new job since leaving the U.S. Navy. . . **BUDDY ADOLPHSON** is the one with the Hawaiian shirt. . . **TOM STAADT** and ex-NASAR President **RICK LA VALLA** are the ones with half a mustache and beard respectively. . . **LOIS CLARK McCOY**, NASAR-Administrator has prepared NASAR's most complete budget to date. . . **NANCY ADAMS**, New Mexico SAR Dogs is helping to collect Albuquerque Conference photos. . .

ANNOUNCEMENT

The following prices, postage included, are effective:

NOVEMBER 1, 1978

| | | |
|-----------------|-------------|------|
| Subscriptions — | one year: | \$12 |
| | two year: | \$21 |
| | three year: | \$30 |

Newstand and Back Issue: \$3.50 ea.

Advertising rates on request.

MOUNTAIN SEARCH FOR THE LOST VICTIM: \$9.95

*Foreign mailing add \$1.60/year

Search & Rescue

MAGAZINE

Table of Contents

WINTER 1978

FEATURES

| | | |
|------------------|----|-------------------------|
| COL BUTERA, USAF | 4 | INTRODUCTION TO AFRCC |
| | 5 | SELECTED SAR MISSIONS |
| | 10 | COMPUTER APPLICATIONS |
| | 11 | COMMUNICATIONS |
| | 12 | STATE ORGANIZATIONS |
| | 12 | VOLUNTEER ORGANIZATIONS |
| | 14 | ELT |
| | 15 | WEATHER |
| | 16 | DATA COLLECTION |
| | 17 | FEDERAL |
| | 18 | ITAP |

DEPARTMENTS

| | | |
|---------------|----|-----------------------|
| Dennis Kelley | 2 | PUBLISHER'S FORUM |
| | 20 | NEWS AND RUMORS |
| Stan Bush | 24 | BUSH ON SAR |
| Art Jones | 25 | PRESIDENT'S MESSAGE |
| | 26 | LETTERS TO THE EDITOR |
| | 28 | EDITORIAL |
| Dennis Kelley | 29 | BOOK REVIEWS |
| | 30 | CALENDAR |

SEARCH AND RESCUE MAGAZINE, WINTER 1978. All rights reserved. Reproduction without consent of the Publishers forbidden. Search and Rescue is published Quarterly. Return Postage must accompany all manuscripts, photos and drawings if they are to be returned. All above items are solicited for submission to the editor. Desirable articles include but are not limited to: Survival or dramatic situations, first hand search and rescue experience, technical and "how to" articles of interest to the search and rescue community; photographs of rescue operations. Contributors payment rates are defined in Writers Market or are available from the Publisher, Copyright 1978. Advertising rates on request.

Publisher Dennis E. Kelley
 Consulting Editor Lois McCoy
 Advertising Vicki Richardson
 Leonora Chirico
 Marie Murphy
 Production Marion Christner
 Ernest Cook
 Circulation Manager ... Sandy Augustinus

SEARCH AND RESCUE MAGAZINE
 P.O. Box 153, Montrose, CA 91020
 (213) 248-3057

MANUSCRIPTS
 SUBMITTED FOR
 SPRING ISSUE
 MUST BE RECEIVED
 BY THE EDITOR
 NO LATER THAN
 FEBRUARY 1

COVER: The AFRCC in action showing the 'big board.

EDITORIAL BOARD

Lois Clark McCoy — Administrator
 National Association for Search and Rescue
 (NASAR)*

Arthur G. Jones — President, NASAR
 Louisiana Aviation Safety Officer

Peter R. Jensen — 1st Vice President, NASAR
 RECRO, Wisconsin

Bill Wade — 2nd Vice President, NASAR
 Assistant Chief Ranger, Great Smokey
 Mountains National Park, Tennessee

Tom Staadt — Secretary/Treasurer NASAR
 Illinois State SAR Coordinator

ADVISORY PANEL

Emergency Medical —
 Stan Bush, Colorado SAR Board
 President

Training —
 Bill Wade, Great Smokey National Park
 Assistant Chief Ranger, Tennessee

Communications —
 Rick Goodman, New Mexico SAR
 Coordinator

Survival —
 Gene Fear, Survival Education Assn.
 President, Washington State

Data Collection —
 Maj. Bob Mattson, USAF, CAP Liaison,
 Alabama

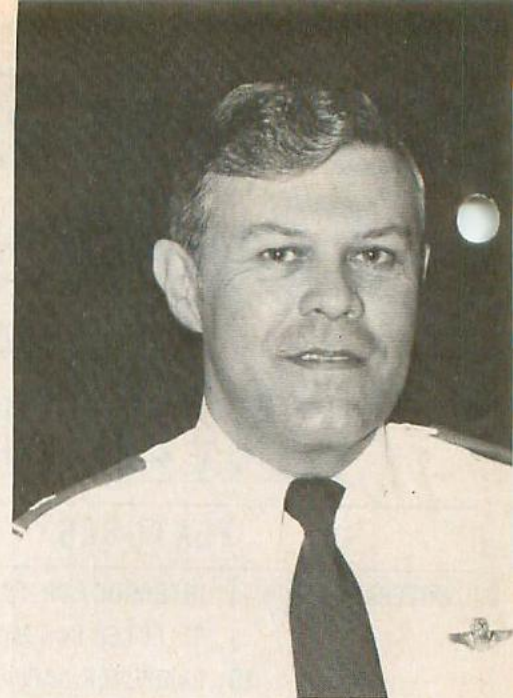
Equipment —
 Jon Gunson, Summit County Rescue
 Group, Colorado

Mountaineering —
 Bill March, University of Calgary,
 Physical Education Facility.

Cave —
 Tom Vines
 Appalachian Search & Rescue Conference

*The NATIONAL ASSOCIATION FOR SEARCH AND RESCUE (NASAR) is a national organization, non-profit and non-political, dedicated to the support and assistance of the national SAR community.

AIR FORCE RESCUE COORDINATION CENTER QUARTERLY SAR REPORT



INTRODUCTION

BY JAMES L. BUTERA, COLONEL, USAF
DIRECTOR, INLAND SAR

Beginning with this issue, the format has been rearranged in an effort to make the report more readable. The lead paragraph is now the Director's Comments, which allows him to set the theme for the particular issue. In reviewing your suggested changes, it became apparent that no two agencies, or even departments within an agency, have the same interests. Therefore, our initial effort will be rearrangement, followed by modifications as necessary. We continue to encourage all recipients to forward suggested changes or additions to make our report more effective.

In reviewing 1976-1977 data comparing average overdue aircraft notification and location time vs flight plan, some interesting facts arise. The average notification time in the instrument flight rules (IFR) category has decreased slightly from an average of 42 minutes to 34 minutes; the average time to location has gradually increased and seems to be stabilizing at four hours. In the visual flight rules (VFR) category, the notification time climbed from three hours to five and a half hours; average time to location rose from 27 and a half hours to just slightly over 38 hours. For aircraft without a flight plan, a definite improvement is noted. Notification time dropped from almost 50 to 35 and a half hours; average time to location dropped from an initial four and three quarter days to just under three days, ten hours. This is encouraging since the number of missions in the past two years involving aircraft without a flight plan equals the combined total of those in IFR and VFR flight plans.

Tied closely to notification and location times is survivability. The percentage of survivors who filed flight plans is almost twice the number who did not. This is understandable in view of studies which reveal that injured survivors will generally survive about 24 hours while survivability of the uninjured decreased rapidly after three days (under the best of conditions).

Our 1977 SAR symposium was oriented towards a better awareness of search and rescue at the executive level and included federal, state and local agencies. In mid-July the AFRCC hosted the 1978 symposium which was aimed at the working level and problems with the present system. Attendees included representatives from the Federal Aviation Administration (FAA), Department of Transportation, National Aeronautics and Space Administration (NASA), Federal Communications Commission (FCC), National Weather Service, Office of the Secretary of the Air Force, National Transportation and Safety Board (NTSB), U.S. Coast Guard, U.S. Air Force - Civil Air Patrol (USAF-CAP), NATIONAL HEADQUARTERS, CANADIAN FORCES, STATE OF NEW MEXICO, STATE OF WASHINGTON, NATIONAL ASSOCIATION FOR SEARCH AND RESCUE (NASAR), Civil Air Patrol, and Aircraft Owners and Pilots Association (AOPA). Working seminars concerned themselves with SAR communication, Federal Agency Interface, Data Collection, State SAR and volunteer SAR organizations, Computer Applications, ELTS, Weather Satellites, and the ITAP program.

COLONEL JAMES L. BUTERA USAF, DIRECTOR INLAND SAR

Colonel Butera is Director of Inland Search and Rescue and the Air Force Rescue Coordination Center at Scott AFB, Illinois. He assumed the directorship 15 July 1978.

A native of San Diego, California, Colonel James L. Butera entered the Air Force in January 1951, following his graduation from High School. He served in Texas, California, Germany and France. His European tour was cut short to attend Officers Candidate School, graduating in September 1958.

He entered pilot training and received his wings in October 1958. Following helicopter training he helped organize a local base rescue helicopter pilot, maintenance officer and operations officer. Assigned to Eglin AFB, Florida, in April 1964, Colonel Butera helped organize a helicopter Test Squadron at the Tactical Air Warfare Center (TAC). He participated in the three Indian River exercises and Gold Fire I.

In October 1965, Colonel Butera was assigned to SEA as initial cadre of the first long-range Combat Aircrew Recovery Squadron. As an instructor pilot and training officer, he was instrumental in developing the tactics and procedures used by the Jolly Green Giants for their long-range rescue activities in North Vietnam. He completed his SEA tour flying 117 combat rescue missions, 56 in North Vietnam.

Returning to Eglin in August 1966, Colonel Butera was assigned to the Rescue Training Center where he instructed other pilots for the combat aircrew recovery mission in SEA. Completing Air Command and Staff College in 1969, he was assigned to Scott AFB, Illinois, as Rescue's HH-53 Helicopter Standardization Pilot.

In August of 1970, he led a flight of two helicopters on a 9,000 mile ferry mission from Florida to SEA. This was the first Trans-Pacific crossing for helicopters.

He returned to SEA for his second tour in June 1971. As Chief of Aircrew Standardization for 3 ARRG he brought his total combat rescue missions to over 200.

Returning to Scott AFB in June 1972, he served as Director of Current Operations for HQ ARRS. During his period he also attended McKendree college thru Operation Bootstrap, obtaining a BA Degree in 1974.

He served as Commander of the 76th ARRS, Hickam AFB, Hawaii, from 18 July 1974 until its deactivation in July 1975. He then assumed command of the 33 ARRS, Kadena AB, Okinawa Japan, where he served until entering the Industrial College of the Armed Forces, Ft. McNair, Washington, DC, in August 1977. He graduated from ICAF 15 June 1978 and moved to his present duties as Director of Inland SAR and the AFRCC.

His decorations include the Silver Star, Distinguished Flying Cross, Bronze Star, Meritorious Service Medal with two OLC, Air Medal with six OLC's and the Air Force Commendation Medal with three OLC's.

Colonel Butera is married to the former Wilma R. McMillan of San Diego, California. They have two children, Laurie Butera Young, and Scott Michael.

SELECTED SAR MISSIONS

SUMMARY OF MISSIONS

In the course of processing non-aviation related incidents and SAR missions during the second quarter of 1978, the AFRCC compiled the following data:

| | |
|--|-----|
| Ground or personnel oriented incidents resolved without becoming AFRCC coordinated missions: | 40 |
| Ground or personnel oriented missions: | |
| MEDEVACS (Medical Evacuations) | 90 |
| (a) Number of people involved: | 97 |
| (b) Number saved: | 89 |
| (c) Flying activity: 210 sorties, 191.4 hours | |
| Missing Persons, personnel recovery missions: | 95 |
| (a) Total number of people involved | 123 |
| (b) Recovered injured: | 2 |
| (c) Recovered deceased or died enroute | 13 |
| (d) Remain missing | 35 |
| (e) Number saved | 46 |
| (f) Flying activity: 552 sorties, 1007.4 hours | |

SUMMARY OF AFRCC MISSIONS

Aviation related missions coordinated by the AFRCC are as follows:

General breakdown:

Non-distress — aircraft located safely on the ground after SAR resources had been alerted and dispatched. Circumstances indicated a valid concern for the safety of the aircraft and occupants when SAR efforts were initiated.

Military

SAR mission without aid of ELT/TAP — confirmed distress situations in which the crash sites were located visually.

SAR missions completed with the aid of ELT or TAP — confirmed distress situations in which crash sites were located with the aid of the ELT or analysis of FAA ARTCC recorded radar data. Attachments 2, 3 and 4 summarize these missions.

SAR efforts expended by mission categories:

| Type | Missions | ACFT | Sorties | Hours | Personnel |
|-----------------|----------|------|---------|--------|-----------|
| Non-Distress | 19 | 110 | 157 | 395.2 | 729 |
| Military | 11 | 23 | 45 | 64.0 | 125 |
| SAR w/o ELT/TAP | 28 | 767 | 1434 | 3120.4 | 3435 |
| SAR with ELT* | 14 | 66 | 114 | 179.4 | 455 |
| SAR with ITAP* | 16 | 304 | 638 | 1181.9 | 1761 |

* Includes three missions in which both ELT and ITAP were used to locate the crash site and are shown in both categories.

A total of 185 personnel was involved in the actual distress missions. 70 died in the accidents; 96 survived the crashes and were recovered; 20 persons were aboard aircraft for which search efforts were suspended and are still missing.

For the past 24 months the AFRCC has compiled statistics comparing response time from the last known position to AFRCC notification of an overdue aircraft. The following are results of the 24 month statistical sample and deal only with those accidents that resulted in active searched. These figures do not include accidents in the immediate vicinity of airports that were resolved without AFRCC participations.

RESPONSE TIME vs TYPE OF FLIGHT PLAN

| Type | No. of | Avg. Time From | Avg. Time |
|-----------------|---------|----------------|---------------------|
| Flight Plan | Mission | LKP to AFRCC | From LKP to |
| | | Notification | Location |
| IFR Flight Plan | 113 | 0 hrs 34 min | 3 hrs 58 min |
| VFR Flight Plan | 170 | 5 hrs 36 min | 38 hrs 10 min |
| No Flight Plan | 274 | 35 hrs 30 min | 3 days 0 hrs 56 min |

SURVIVABILITY vs FLIGHT PLAN

| | IFR/VFR | No Flight Plan |
|------------------|-------------|----------------|
| | Flight Plan | |
| Persons Involved | 475 | 387 |
| % Survivors | 41.1% | 22.5% |

NOTE: Data time span is 1 Jan 77 through 30 Jun 78 and involves actual distress missions that the AFRCC became involved in.

SUMMARY OF ELT MISSIONS

Emergency locator transmitter (ELT) Statistics:

| | |
|---|------|
| Total incidents reported: | 1219 |
| Signals reported, but terminated before being located: | 749 |
| Signals reported, located and silenced: | 470 |
| Crash sites located with the aid of ELTs: | 14 |
| Crashed or forced landing activated ELT signals (handled by local authorities): | 20 |

Agencies reporting ELT incidents to the AFRCC were:

| ARTCC | Reported | Located |
|-----------------|----------|---------|
| Albuquerque | 46 | 19 |
| Atlanta | 37 | 23 |
| Boston | 32 | 9 |
| Chicago | 28 | 11 |
| Cleveland | 57 | 32 |
| Denver | 16 | 9 |
| Fort Worth | 87 | 27 |
| Houston | 75 | 21 |
| Indianapolis | 34 | 12 |
| Jacksonville | 53 | 11 |
| Kansas City | 33 | 13 |
| Los Angeles | 171 | 64 |
| Memphis | 63 | 27 |
| Miami | 64 | 23 |
| Minneapolis | 33 | 21 |
| New York | 80 | 19 |
| Oakland | 47 | 25 |
| Salt Lake City | 24 | 12 |
| Seattle | 169 | 67 |
| Washington D.C. | 56 | 16 |
| Other Sources | 14 | 8 |

There were 124 missions initiated to locate ELT signals. No aircraft were known to be overdue at mission inception; four were found to be on crashed aircraft. Frequently more than one signal was located by one mission.

Non-distress signal sources located

Distress activated signals located

Signals terminated before being located

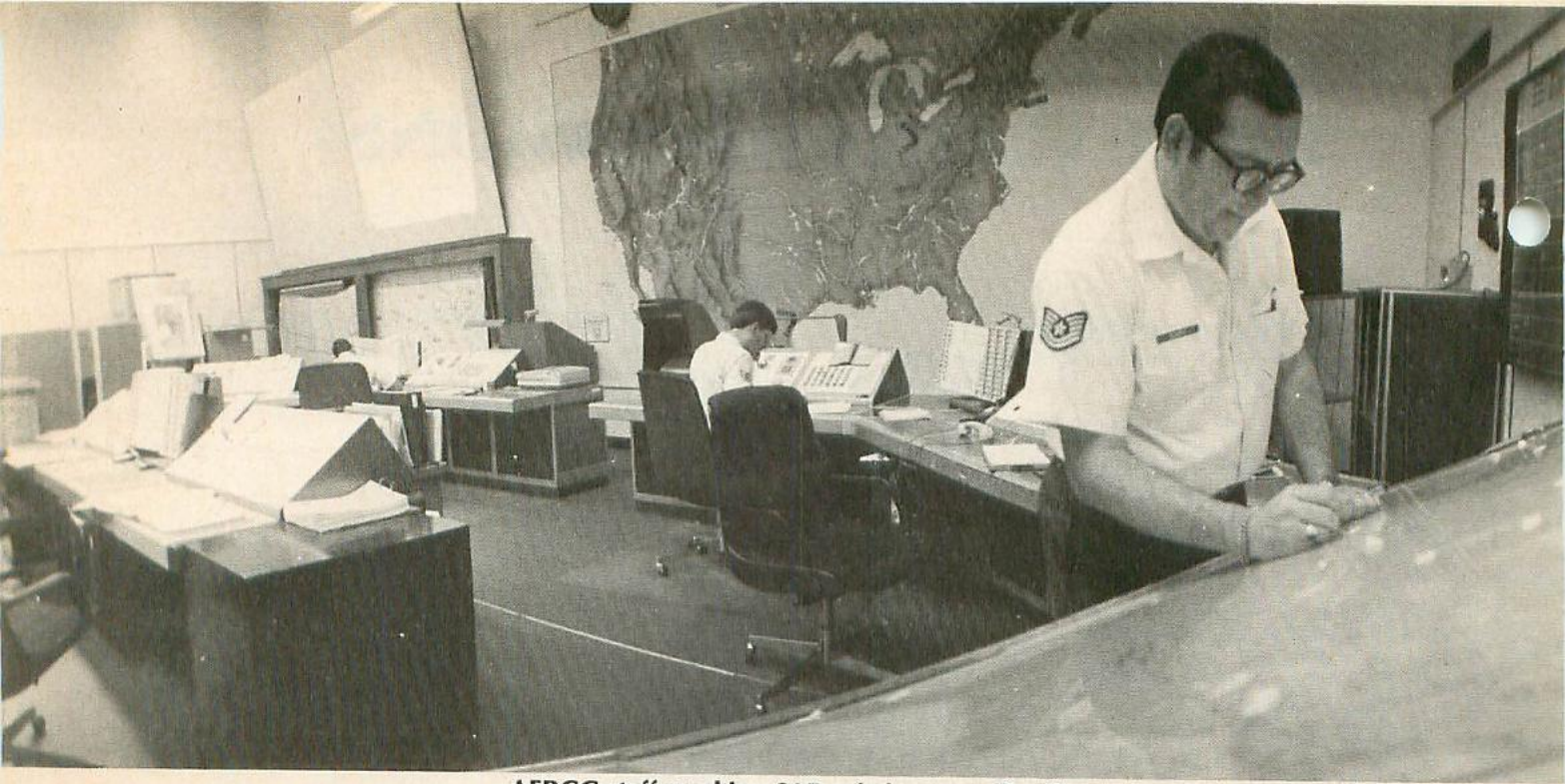
Over 465 flying hours were logged in support of these SAR missions. Selected successful SAR efforts resulting from ELT signals are summarized in Attachment 2.

Mission-8-382A 16 April 1978 ELT Assistance

The Piper Aztec, piloted by a highly experienced and qualified professional pilot, left the San Francisco Bay area with an ultimate destination of Santa Ana, California. The pilot filed IFR out of the Bay area, but cancelled enroute to make a visual survey of the countryside as part of his business interests. He then continued VFR. Prior to the issuance of the Alert Notice by Los Angeles Flight Service Station, the FAA and the AFRCC were working together attempting to resolve several ELT's being reported in the Los Angeles area. A 41 ARRS HC-130, flying on another search mission, pinpointed a signal source to San Diego Peak east of El Toro MCAS. Minutes later the AFRCC received an alert notice and a SAR mission was immediately opened with the California CAP. In the meantime, the AFRCC was also coordinating directly with the Orange County Sheriff's department. During the night hours a combined sheriff and CAP ground team was airlifted to the area by U.S. Marine helicopters from El Toro. After two unsuccessful attempts were aborted, due to weather, the ground team was inserted and located the crash site using hand held direction finding equipment. Unfortunately, the pilot of the Aztec had been killed in the crash.

SAR Effort: 4 aircraft, 12 sorties, 17.4 hours, 34 personnel.

Continued



AFRCC staff working SAR mission coordination.

Continued.

Mission 8-425 29 April 1978 ELT Assistance

The 55 year old pilot and his wife departed at noon from San Jose, California for the Death Valley airport in a Beech Musketeer. The pilot had received his private license ten days prior to the flight and was reported to have no mountain flying experience. A SAR mission was opened in the early evening after initial investigation failed to turn up the aircraft and the family indicated its concern. While the FAA continued checking records, the California CAP launched a signal direction finding (DF) equipped aircraft on a route search. A strong ELT was received and tracked to the Kearsarge Pass in the Sierra Nevadas. The Sequoia National Park was notified since the Park Service has jurisdiction within its boundaries. The SAR helicopter unit at Naval Air Station (NAS) LeMoore was contacted to provide support for the Park Rangers at first light. At 0500L, the helo departed, picked up two rangers and attempted to fly to the source of the ELT. Weather turned them around within ten miles of the source; at that point they heard a "Mayday" being transmitted. Shortly before 0900L, the helicopter attempted again and was able to locate the crash site and found that the pilot had survived the crash. The man's wife had perished. The pilot was extracted and transported to the Bishop hospital in critical condition. Extremely bad weather, associated with an approaching front, hampered recovery efforts and the remains were not extracted until the following day. It was only through the skill, experience and professionalism of the Navy helicopter crew and an ELT that the pilot of the light aircraft survived.

SAR Effort: 5 aircraft, 11 sorties, 18.9 hours, 29 personnel.

Mission 1-694 26 June 1978 ELT Assistance

A family concerned ALNOT was issued by the Concord, N.H. flight service station. The missing aircraft was a Grumman American Yankee with two persons which had departed Laconia, New Hampshire on a photographic flight. Weather was no factor and no flight plan was filed. The pilot was an instructor with the fixed base operator. A mission was opened with the New Hampshire CAP. The first day's efforts were hampered by having no route of flight, thunderstorm activity and low visibility. Weak and sporadic ELT signals were reported. Law enforcement agencies relayed reports of flare sightings in the general area of the ELT signals. Weather during the evening and night cancelled visual search operations; however, ground teams comprised of the law enforcement officials and the CAP personnel, continued to work the area without success. The AFRCC coordinated with DET 18, 39 Aerospace Rescue and Recovery Wing (ARRW),

Plattsburg AFB, N.Y. for an UH-1N helicopter to join the search. Early the second morning one of the search aircraft spotted what was believed to be a crash site in a mountain bowl. The ARRS helicopter homed in on the ELT signal, confirmed that it was the missing aircraft, and deployed a pararescueman. The pilot of the light aircraft survived but suffered two broken ankles, back, chest and head injuries. His passenger had not survived. The survivor was hoisted aboard the helicopter in a stokes litter and taken to the Laconia Airport where an ambulance was waiting.

SAR Effort: 20 aircraft, 29 sorties, 46.5 hours, 129 personnel.

SUMMARY OF NON-AFRCC MISSIONS

The following is a summary of aviation related incidents that were resolved without becoming AFRCC coordinated missions:

| | |
|---|-----|
| Alert notices (ALNOTS) reported by the FAA..... | 646 |
| Located safely on the ground | 552 |
| Located by radio while airborne | 72 |
| Located crashed by local authorities | 3 |
| Located after forced landing..... | 1 |
| Miscellaneous | 18 |
| Inflight emergencies (IFE's) reported, all landed | |
| safely except as noted | 184 |
| Military | 140 |
| Commercial aviation | 11 |
| General aviation | 33 |
| Crashes and crash sites, investigated and | |
| confirmed | 58 |
| Previously known crash sites reconfirmed | 11 |
| Previously unknown crash sites identified | 0 |
| Forced landings, crashes reported by witnesses, | |
| sites found and handled by local authorities | 47 |
| Aircraft lost from radar or radio contact | 0 |
| Assistance to incidents prosecuted by other agencies | 0 |
| Possible distress situation reported but unsubstantiated by | |
| followup investigation | 45 |
| Low flying aircraft suspected to have crashed | 56 |
| Distress signals, maydays — no missing or | |
| downed aircraft identified | 9 |
| Miscellaneous | 0 |

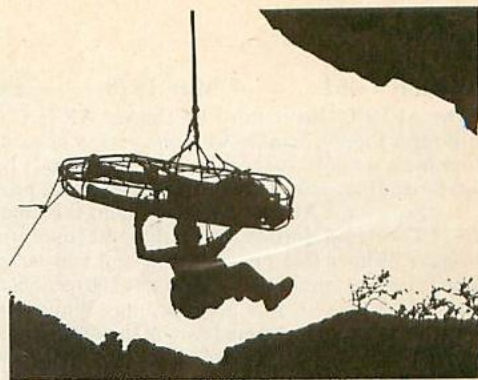
Continued

California Mountain Company

P. O. Box 6602 Santa Barbara CA 93111 (805) 964-2462

WE CARE
WE SPECIALIZE
WE'RE INVOLVED
ASK FOR OUR FREE CATALOG

Equipment for Mountaineering and Mountain Rescue



DESIGN VERSATILITY



**THE GREATEST LOST
WILDERNESS THRILL
IS NOW YOURS -
MANTRACKING!**



MANTRACKING is the first book ever to teach you the ancient skill of tracking and signcutting. Famous frontiersmen of yesteryear dazzled the city slicker with this lost search tool, and now you can too! MANTRACKING carefully takes you through the unique Step-by-Step Method to trailing perfection and the greatest sense of satisfaction you've enjoyed in years. 120 pages, 36 illustrations, softbound.

Order now and save \$1.00 off the regular price of \$8.95
Mail to: SEARCH & RESCUE MAGAZINE
Box 153B, Montrose, CA 91020

Send me _____ copies of **Mantracking** at the Special introductory Price of \$7.95 each.
Name _____
Street _____
City _____
State _____ Zip _____

Check Enclosed
 Master Charge
 BankAmericard
(Calif. residents add 6% sales tax)

Card No. _____ Exp. Date: _____

DEALER INQUIRIES WELCOMED

The new CAMP7 line of PolarGuard* sleeping bags is truly versatile. Take the Summersault (right)—here's a bag that flips for flexibility! It's designed with a single layer of PolarGuard polyester insulation on one side and a double layer on the other. When it's cold use the double layer up, and not so cold, single layer up. When the temperature changes, just roll over!

Part of our unique system concept, these 3 bags are designed to be used by themselves and in combination with our other bags. This creates a very efficient, versatile system that can handle almost any climatic condition.

Learn about these innovative sleeping concepts from your quality sports specialty shop or from our beautiful new catalogues. Send for a set—they're free!

**Innovators in
staying warm!**

CAMP7

Dept. S, 802 S. Sherman St., Longmont, Co. 80501

*PolarGuard is a trademark of Fiber Industries, Inc., a subsidiary of Celanese Corp.

Continued

Mission 7-462 7 May 1978 ITAP Assistance

The AFRCC was notified by Denver ARTCC that they had been working a Piper Cherokee with one person aboard that had been lost from radar 40 miles east of Denver. The aircraft had been on an IFR flight plan from Iowa City to Denver when the pilot reported running out of gas. As the AFRCC was scrambling the Colorado CAP, Denver ARTCC relayed further word that the pilot reported through a Frontier airliner that he was down and had suffered some injuries. Weather at the time of the incident was 500 feet obscured, fog, visibility one mile; darkness was approaching. While Denver Center data automation personnel were running their radar tapes to refine the last known position, a Frontier Airlines Convair continued circling over the area talking with the downed pilot who reported he had crashed in a very muddy field. While ground teams from the Morgan and Adams county sheriff departments and the CAP were enroute, helicopters from the Army National Guard and a commercial ambulance service were forced to abort due to the icing conditions, low visibility, and darkness. By midnight all the ground vehicles were mired in deep mud. The Interim Track Analysis Program (ITAP) position was relayed to all agencies; the rancher who owned the property was able to flounder through the mud in his tractor and find the crash site shortly after dawn. The injured pilot was transported by ground vehicles (those not stuck in the mud) to the nearest hospital.

SAR Effort: 7 ground teams, 44 personnel

Mission X-XXX Date N/A ITAP Assistance

An alert notice was issued by the FAA at the request of concerned family and business associates for a Bellanca 14 with two men aboard. The men had departed three days prior on a flight from the Kansas City area to Tempe, Arizona. No flight plan was filed. Investigation revealed that the aircraft had landed and refueled at Tucumcari, New Mexico. After being briefed that bad weather existed west of the Albuquerque area, the pilot indicated he would follow the Flight Service Station's recommendation of detouring south to El Paso and southern New Mexico to avoid the deteriorating weather. A SAR mission was opened with the Arizona and New Mexico CAP; data personnel at Albuquerque Air Traffic Control Center (ARTCC) began analyzing their radar data. Starting with only the departure time, they were able to provide a track from Tucumcari, paralleling the airway towards Corona VOR, diverting north for a short time, then south towards Riodosa through the mountains and then back through the pass towards the small town of Carrizozo, N.M. It was obvious the pilot knew where he was and was aware of the mountain terrain, even though he was flying through a dark, clear and moonless night. The crash site was located approximately three miles north of the airport at Carrizozo. There were no survivors.

SAR Effort: 65 aircraft, 131 sorties, 300.8 hours, 274 personnel

Mission 3-682 24 Jun 1978 ITAP Assistance

The object of this search was a Beech Bonanza with three persons aboard. The pilot flew for one of the major U.S. airlines. He and a friend had departed the Kansas City area for Paducah, Kentucky, to pick up the pilot's five year old son. After flying through severe weather, they arrive safely at Paducah. The pilot did not refuel nor did he check weather; had he done so, he would have been able to determine that by taking a short detour to the south he could have evaded the severe weather that continued to build throughout the day. The mission was opened as a result of family concern after the aircraft failed to return to the Kansas City area. Ultimately, search forces included the Missouri, Kansas, Arkansas, Illinois and Kentucky Civil Air Patrol, U.S. Army helicopters from Ft. Leonard Wood, Missouri, and local law enforcement agencies. Kansas City ARTCC data personnel took the departure time from Paducah, dead reckoned ahead to where the aircraft should have entered their airspace and located a target. It was tracked northwest on track to where the heaviest weather was located; the beacon target was lost, but a primary (skin paint) was picked up in a turn reversing the direction of travel. The signal was lost in the vicinity of Potosi, Missouri. An Illinois CAP aircraft located the crash site within a quarter mile of the ITAP position. There were no survivors. An NTSB accident report indicated the aircraft's tail had separated in flight due to severe turbulence.

SAR Effort: 47 aircraft, 105 sorties, 173.2 hours, 168 personnel

Mission 8-418A 26 April 1978 ITAP & ELT Assistance

The mission was opened as the result of an ELT being monitored immediately after Seattle ARTCC lost contact with a Beech Bonanza on flight from Ontario, Oregon to Hoquiam, Washington. The pilot had indicated to Seattle ARTCC that he was experiencing airframe instrument problems; he was in instrument conditions having tried unsuccessfully to climb above the clouds and circled for forty minutes. Last radar contact was approximately 30 miles southeast of Pendleton, Oregon in mid-afternoon. Military, state, and local authorities were all notified and efforts were initiated to locate the missing aircraft. Weather limited helicopter operations from the western side of the mountains. The AFRCC contacted Mr Home AFB, Idaho and an F-111 was launched to DF the ELT signal source, the F-111 pinpointed the position but stated the weather was right down to the tree tops. Weather and darkness halted all search and recovery operations until the following morning. Two helicopters from the 304th ARRS (Reserve) had deployed to Pendleton to be closer to the crash site, and departed at first light. Weather had lifted slightly, and armed with the latest ITAP data from Seattle Center as well as the coordinates of the ELT fix from the F-111, the helicopters were able to locate the crash site shortly before 0700 local. The pilot had survived, but was suffering from multiple lacerations, possible internal injuries, hypothermia and shock. He was treated on scene, then evacuated by helicopter to the Pendleton hospital. Once again, a pilot owed his life to the untiring efforts and professionalism of FAA data automation personnel, active duty and reserve Air Force personnel, as well as state and local officials.

SAR Effort: 5 aircraft, 15 sorties, 20.8 hours, 30 personnel

Mission 6-707 29 June 1978 ITAP & ELT Assistance

Two elderly gentlemen departed Harlingen, Texas for Las Vegas, Nevada on a pleasure trip. No flight plan was filed. Two days after their departure, the McAllen Flight Service Station (FSS) was contacted by concerned family members. An ALNOT was issued and after it was confirmed that the Piper Cherokee was not on the ramp at Las Vegas, a SAR mission was opened with the Arizona, New Mexico, Texas CAP and Texas Department of Public Safety. Absolutely no leads had been received when Houston ARTCC started analyzing their radar data based upon the 0500L departure time from Harlingen. They were able to identify a target departing Harlingen and tracked it in a northwesterly direction until the target made a left turn and dropped off the scope approximately 45 miles southeast of Laredo, Texas. Texas DPS and CAP were notified immediately; the AFRCC requested assistance from U.S. Coast Guard who launched an HC-131 and HH-52 from NAS Corpus Christi. The fixed wing HC-131 proceeded to the area and picked up a very weak ELT which led them to the crash site. The helicopter was directed to the scene and deployed a corpsman who confirmed the aircraft's tail number. Both occupants had died in the crash. Local law enforcement authorities were contacted and removed the remains.

SAR Effort: 8 aircraft, 10 sorties, 19.2 hours, 46 personnel.

Mission 8-530A 21 May 1978 Involving SAR Dogs

The Tuolumne County Sheriff, California, requested assistance from the AFRCC in moving SAR dogs from the Lake Tahoe area. The sheriff was involved in searching for a 10 year old boy who was missing since the previous afternoon. The AFRCC coordinated with the El Dorado County Sheriff and the California Civil Air Patrol to transport two dogs and two handlers. While the team was enroute the Tuolumne Sheriff's department continued tracking the elusive boy who was "moving faster than the trackers." Just before the dog team arrived, the boy was located by the sheriff's department and reunited with his parents.

SAR Effort: 1 aircraft, 2 sorties, 5.5 hours, 33 personnel

Mission 7 June 1978 Involving SAR Dogs

An 18 month old boy wandered away from his home near Tucson, Arizona. The Pima County Sheriff requested the use of specially trained search dogs located in Albuquerque, New Mexico. The AFRCC coordinated with the 1550th ATW to transport a dog team by ARRS HC-130, from Kirtland AFB to Davis-Monthan AFB, where Det 1, 37 ARRS would airlift the team to the scene via helicopter. Unfortunately, three days of intensive search effort failed to turn up the young child and the sheriff's department suspended further efforts. The AFRCC then coordinated with the ARRS units to re-locate the dog team to Albuquerque.

SAR Effort (flying only): 4 aircraft, 6 sorties, 9.6 hours

GOING -- GONE!

THIS MAY BE YOUR **LAST CHANCE** TO GET INCREASING SCARCE BACK ISSUES OF

SEARCH AND RESCUE MAGAZINE

Mall Order TODAY to:

SEARCH AND RESCUE MAGAZINE
P. O. Box 153
Montrose, CA. 91020 USA
(213) 248-3057

Please send the issues of **Search and Rescue Magazine** that are circled below:

| | |
|-------------|-------------|
| FALL 1973 | WINTER 1973 |
| SPRING 1974 | SUMMER 1974 |
| FALL 1974 | WINTER 1974 |
| SPRING 1975 | SUMMER 1975 |
| FALL 1975 | WINTER 1975 |
| SPRING 1976 | SUMMER 1976 |
| FALL 1976 | WINTER 1976 |
| SPRING 1977 | SUMMER 1977 |
| FALL 1977 | WINTER 1977 |
| SPRING 1978 | SUMMER 1978 |
| FALL 1978 | WINTER 1978 |
| SPRING 1979 | SUMMER 1979 |
| FALL 1979 | WINTER 1979 |

I am enclosing \$ _____

(All issues are \$3.50 each postpaid)

Name _____

Address _____

City _____

State _____ Zip _____

ENCLOSED IS:

Check VISA Mastercharge

Card # _____

Expiration Date: _____ / _____

defy the COLD!

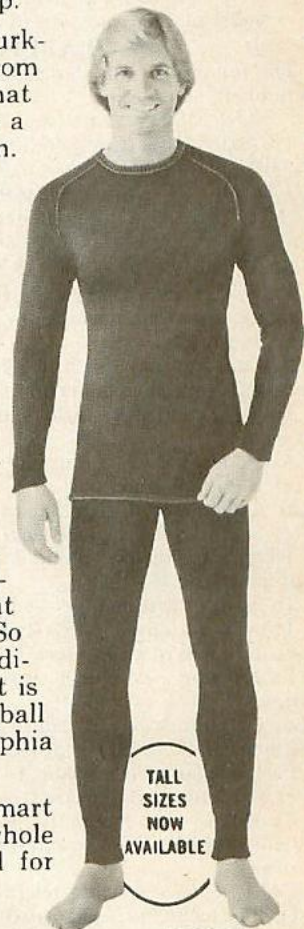
It's 10° outside . . . Even getting colder. So you bundle up in layers and layers of heavy clothes. First with long underwear . . . then bulky, restrictive thermalwear on top.

Oh, you were warm, all right. Like in a Turkish bath. Because you began to perspire from all your activity. And perspiring in that mountain of clothes is like perspiring in a plastic bag! The perspiration is locked in. So there you are. Wet and miserable.

But now, at last, Damart has solved the problem. Because Damart invented underwear that keeps you *warm, dry and comfortable* no matter how cold it is or how long you stay out. Underwear that's soft and light so you can move easily. Underwear that *lets the perspiration evaporate through* so you always stay warm and dry next to your skin.

Damart does this with a new miracle fabric—Thermolactyl. It not only retains and reflects your natural body warmth, it's knitted to let *perspiration out!* No other underwear does this! Damart Thermolactyl is so comfortable that the Mount Everest climbing expedition wears it. So does the Mt. McKinley Bicentennial Expedition and the U.S. Bobsled Team. Damart is also worn by the Chicago Bears Football Club, New England Patriots and Philadelphia Eagles.

Our free color catalog tells the full Damart Thermolactyl story and displays the whole Damart line for men and women. Send for your **FREE** copy now!



TALL
SIZES
NOW
AVAILABLE

THE PROOF IS IN THE WEARING!

Damart Thermawear, Inc.

WHEN IN THE BOSTON AREA, VISIT OUR
PORTSMOUTH, N.H. STORE. (603) 431-4700



THERE IS NO WARMER UNDERWEAR MADE!

Fill out and send to:
DAMART, INC. Dept. 12078
1811 Woodbury Ave.
Portsmouth, N.H. 03805

YES! Rush me your **FREE DAMART** Catalog . . . I want to enjoy the fantastic warmth of Thermolactyl Underwear, a **DAMART®** exclusive. (I understand there is no obligation.)

PRINT NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP © 1978, Damart, Inc.

COMPUTER APPLICATIONS FOR SEARCH AND RESCUE SEMINAR

PURPOSE

To discuss various computer programs currently available for search and rescue (SAR) applications, and to explore future uses for the computer. Problem areas will also be discussed.

GOALS

Upon completion of the panel discussion, participants will be:

- Aware of the current SAR related computer programs.
- Aware of additional applications for SAR.
- Aware of problems which may be encountered when developing programs for general use.
- Aware of some methods of overcoming the problems.

AVAILABLE APPLICATIONS

The following computer programs available on large computers were briefly discussed:

- SARP-USCG (Search and Rescue Planning)
- CASP-USCG (Computer Assisted Search Planning)
- SARSYM-USCG (Search and Rescue Simulation)
- SPRB-USCG (Emergency Position Indicating Radio Beacon)
- AMVER-USCG (Automated Mutual Assistance Vessel Rescue)
- SARDAB-ARRS (Search and Rescue Data Base)
- ITAP-FAA (Interim Track Analysis Program)

MINI COMPUTER APPLICATIONS

Computer programs available for SAR on mini and micro computers were discussed.

A demonstration and briefing of CASAR was given by Mike Freeman. In the current version CASAR can be used as follows:

To gather and store various items of information pertaining to a lost victim.

As a complete log for all information pertaining to a mission:

- (a) Radio messages.
- (b) Assignment of search and rescue units.
- (c) Special notes such as leads and weather information.

To identify high probability areas and to help keep track of which areas have been searched.

To assist in determining the location of an ELT.

To maintain a list of all SAR resources and to be able to identify the closest resource to an incident.

To generate a complete mission recap and log at the end of a mission.

Bob Gregoire briefly explained the programs he has developed and how they can be used. His programs are:

For calculating visual and ELT probability of detection (POD) tables and multi-search POD tables.

CEASAR — An interactive program used to assist in briefing and debriefing crews sent on search sorties. Data can be retained for up to 50 sorties.

CASPPLUS — Used to determine the high probability areas using the Delphi technique, and to assist in the determination of PODs for a given search. The program calculates the mathematically best search areas.

BITCASP — Essentially the same program as above with the addition of adding a BITPAD for allowing graphic inputs for the calculations. The use of the BITPAD greatly simplifies the entry of data, both before and after searching.

CASPGAME — A program designed to help train mission coordinators and operations personnel in allocation of available resources.

Rick Goodman's and Chris Kelly's program, designed to plot bearings to an ELT was briefly mentioned. The program will give the most probable location of an ELT when more than one bearing is entered. This same program and a simplified version of the CASP programs are available for use with the HP-67 calculator.

NEW APPLICATIONS

The discussion then focused on what additional or expanded programs could be developed for computerizing SAR. Following are some of the ideas expressed by the group:

Use the computer to make the combined expertise of many highly qualified mission coordinators (MC) available to the new MC. Do this by using interactive programs to prod the MC to find answers to

questions which must be asked. The program can be designed to keep the MC informed of what must be accomplished and to help establish priorities to accomplish the tasks.

Use historical data of local incidents to assist the MC in establishing a search plan. Combine historical data, current factual data, and subjective judgment to determine the best search plan.

Use the computer to keep track of clues, leads and ideas which may affect the search.

Use the computer to bring the latest search theory into every search. The mathematics of optimal search can be "hidden" in the "black Box" and the mission planner would only need to enter the known facts to receive the best estimate of where to search next.

Present to the mission coordinator a graphic picture of what areas need to be searched next.

CDR Discenza recommended a new method of calculating the priority for each search area. The method is very simple and solves the difficulties previously encountered with an addition or deletion of probability areas.

Use the computer to assist in the training of mission management personnel. Various games and exercises can be developed to stimulate and improve the training of personnel.

It was generally concluded that almost unlimited uses could be found for the computer in SAR. The personnel from the AFRCC could envision many uses for the programs demonstrated and discussed.

PROBLEM AREAS

Problem areas which could be expected were discussed and some ideas for overcoming them were explored.

The major problem with any computer system is to insure that the program satisfies the needs of the user. For SAR the initial programs must be designed to help the users solve what they perceive to be the problem areas. Many of the programs will be used by relative inexperienced mission coordinators with little or no computer background, and it is imperative that their initial contact with computer programs for SAR be a pleasant one. To achieve this it is recommended that much effort be expended to present simple to use and well tested programs to the users. As the users gain confidence in the capability of the computer to assist them, they may be more receptive to more advanced programs and may tolerate some debugging time. But, if the first experience is a bad one, the user will be very hesitant to try future programs.

There is a need to exchange programs, but there is no common language which can be used at this early date. Because of the wide variety of equipment and languages being used, it is the consensus of the group that the only viable method of exchanging programs will be to have each programmer include many explanatory comments, all formulas and equations, and their name, address and phone number in the listing of the program.

Another problem identified is the need to establish a clearing house to disseminate information about current programs and to maintain a list of programs which need to be developed. Additionally, the clearing house could maintain a list of references which could be useful in developing new programs.

There is a need for additional computers and programmers if there is to be widespread use of computers for SAR at the local level. To achieve this it was recommended that current programs be made available to the computer clubs being formed throughout the country.

Continued



These clubs have many members who are looking for something worthwhile to do with their computers, and we can offer them a humanitarian project. Possibly one of the clubs would take over as the clearing house for all computer SAR programs.

Other problems such as reliability and security of the computers and of information gathered were not discussed due to time constraints.

RECOMMENDATIONS:

The AFRCC should investigate the use of various computers and programs for assisting the AFRCC controllers. Complete a status report by 30 September 1978. ACTION: AFRCC

Establish an initial clearing house for existing SAR programs. Publish a list of available SAR programs in Civil Air Patrol and NASAR publications. ACTION: HQ CAP-USAF/DOSS

Establish a list of desired programs and reference material which may assist in developing the new programs. Make this list available to interested personnel. ACTION: HQ CAP-USAF/DOSS

All programs should contain many comments to enable other programmers to modify the program as needed to run on other

computers. All formulas used and the programmer's name, address and phone number should be entered as part of the program listing. ACTION: Each Programmer

Attempt to enlist the cooperation of computer clubs to support local SAR operations. Offer each club the available SAR programs and explain the SAR mission and how they may be of service. ACTION: HQ CAP-USAF/DOSS, Mike Freeman.

PARTICIPANTS:

- | | |
|---------------------------|-------------------------------------|
| CDR JOSEPH H. DISCENZA | U.S. COAST GUARD, NYU |
| MR MICHAEL W. FREEMAN | Volunteer, State of Washington |
| Major ROBERT GREGOIRE | Civil Air Patrol, Pennsylvania Wing |
| LtCol ROBERT J. MATTSON | Hq CAP, USAF/DOSS (Moderator) |
| Ms LOIS CLARK McCOY | NASAR |
| Major RON MERINO | National SAR School |
| Major DANIEL A. NICHOLSON | ARRS/AFRCC |
| Mr RICHARD SHINPAUGH | FAA, Washington D.C. |
| Mr JOHN J. WOODRUFF | NAS/GSFC |



SAR COMMUNICATIONS SEMINAR

GOALS

This working group met to achieve the following goals to improve SAR communications effectiveness and efficiency:

- Resolve commercial telephone line overload delays.
- Investigate use of satellite communications for SAR.
- Standardization of rescue frequencies and radios.
- Status of VHF-FM ARRS radios.
- Better use of existing facilities.
- More support on a national level for REACT and ham operators.
- How to more effectively utilize NAWAS system.

WORKSHOP SUMMARIES

The AFRCC frequently experiences delays in contacting SAR officials during holiday peak telephone usage periods. With the requirement for the AFRCC to pass information of a life or death nature to SAR personnel in the field, these delays are unacceptable. Seminar participants recommended that the AFRCC discuss this problem with the Air Force Communications Service (AFCS) and the Defense Commercial Communications Office (DECCO). Another possible solution to this problem is expanded use of the National Alert Warning System (NAWAS). ACTION: AFRCC

Another area discussed in the working group was future use of satellites for SAR communications. A very informative briefing was given by the NASA representative, Mr. John Woodruff, on "state-of-the-art" capabilities and current experiments, and demonstrations in progress today utilizing the ATS-6 satellite. In addition, a briefing was given by Major Raymond Hufnagel, Chairman of the ICSAR working group, concerning emergency response communications. Major Hufnagel stated that the ICSAR working group's goal is to identify potential user's needs and develop a user program to satisfy these needs. Meetings with state and local emergency response officials have been held in Washington D.C., California, and Iowa with the next meeting in Orlando, Florida in November. AFRCC continues to support these meetings as a prospective user, and will attend the Orlando meeting. ACTION: AFRCC

Standardization of rescue frequencies and radios continues to be a very serious problem on a local, state and federal level. Most existing equipment cannot be changed for monetary reasons; however, follow-on systems should be carefully evaluated to assure compatibility with the SAR mission. The AFRCC will be publishing and distributing the revision of ARRS Operations Plan 9506 soon. The plan will have a communication annex outlining recommended SAR frequencies. ACTION: ALL

The ARRS request to install VHF-FM radios, with standard civil SAR frequencies, on ARRS HC-130 aircraft is still being staffed at Hq USAF. DOD funding is complicated by the fact that the radios have no

combat application. The AFRCC will continue to work with the Air Staff to resolve this issue. ACTION: AFRCC

Another topic of discussion in the working group was how can we better utilize existing capabilities such as specialized equipment and unique ground teams scattered around the United States. NASAR agreed to provide AFRCC with a listing which would assist AFRCC in locating and utilizing some of this specialized equipment and teams. ACTION: NASAR

AFRCC is initiating letters to REACT and amateur radio operator groups to let these organizations know what our mission is and to explore the possibility of their participation in search and rescue on a nationwide basis. ACTION: AFRCC

In reference to the final goal concerning how to more effectively utilize the NAWAS system. The AFRCC has already met with representatives of DCPA and expanded use of NAWAS by AFRCC for SAR communications has been authorized. Directories of NAWAS contact points are on file in the AFRCC and the NAWAS system will be utilized for SAR when the AFRCC is experiencing communications difficulties or when a large number of agencies are required to be notified of a search and rescue operation or related incident. ACTION: DCPA/AFRCC.

PARTICIPANTS:

- | | |
|---------------------------|------------------------|
| Mr NEWEL R. ANDERSON | FAA |
| LCDR J. L. BARTH | USCG |
| Major MARTIN H. BETZING | AFCS/XPQS |
| LtCol JAMES BIGELOW | CAP, California Wing |
| Mr EUGENE EHRLICH | NASA |
| LtCol GEORGE E. ELDRIDGE | ARRS/AFRCC |
| Capt J. V. ELLIOTT | Canadian Forces |
| Capt ELDEN M. GEORG | AFCS/XPQS |
| Mr RICK GOODMAN | State of New Mexico |
| Mr KING T. HALL | FCC |
| Capt WILLIAM D. HARVEY | FAA/AAT |
| Major RAY HUFNAGEL | SAF/AL |
| Capt PETE KALISKY | ARRS/AFRCC (Moderator) |
| Capt WAYNE LINDSTROM | ARRS/AFRCC |
| Dr BERNARD LOEB | NTSB |
| Mr D. H. LUZIUS | USCG |
| Mr PAUL J. NEUMANN | FAA |
| Col BRUCE PURVINE | ARRS/AFRCC |
| LtCol GEORGE STUTTS | |
| Mr JAMES C. TEDDER | FAA |
| LtCol PATRICK W. WHITAKER | AAC/RCC |
| Mr PAUL WREN | NASA |

STATE SAR ORGANIZATIONS SEMINAR

State SAR Organizations Seminar

GOALS

This working group met to achieve the following objectives:

- Identify the elements of an effective SAR organization.
- Develop a model state SAR organization that incorporates these elements, to be used as an example at the upcoming State SAR Awareness Symposium.
- Develop a proposed agenda for the State SAR Symposium.

WORKSHOP SUMMARIES

To achieve the goals established for this seminar, the group started by comparing and contrasting the organizations in California, New Mexico, Tennessee, and Alaska. As a result, a number of elements were identified that were common to effective SAR organizations. These included:

- The need for a written SAR plan.
 - An over-all agency responsible for the implementation of this plan.
 - A training and standardization program for participants in SAR operations.
 - A plan for certifying resources and defining their capabilities.
 - A system for reviewing and critiquing each individual operation.
 - An effective and rapid alerting system.
 - An easily accessible resource file, containing all available resources in and near the state.
 - Standardized communications.
 - Budget dollars, specifically allocated for SAR operations.
- Time restraints made it impractical to attempt to build a useable model SAR organization, but the group did discuss, and agree to use the model being developed by NASAR, as an example for the State SAR Symposium. ACTION: NASAR/AFRCC

The items that the group felt warranted further discussion, and were therefore, selected as proposed agenda items, included:

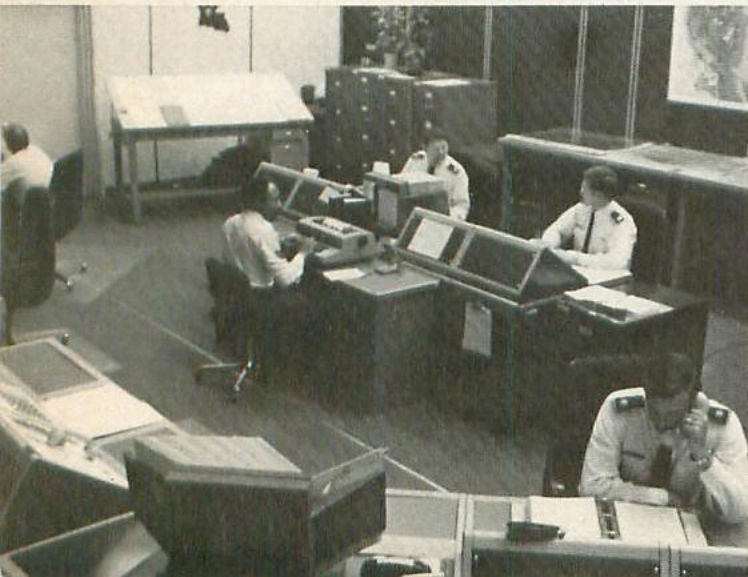
- Development of a standardization and certification program acceptable to different volunteer ORGANIZATIONS. ACTION: NASAR
- Responsibility and liability for SAR. ACTION: NASAR/AFRCC
- How to demonstrate a need to state government for SAR organization and; therefore, for budget dollars. ACTION: NASAR/AFRCC
- Possible use of a regional SAR group, responsible for SAR over a several state area, with each contributing a share of the budget, resources, and manpower, based on their proportionate need, or use, of the group's assistance. ACTION: AFRCC
- Identifying the elements of a good state SAR plan. ACTION: NASAR/AFRCC

PARTICIPANTS:

| | | |
|-------|------------------|------------------------|
| LtCol | JAMES BIGELOW | CAP (California) |
| Col | JAMES BUTERA | Director of Inland SAR |
| Mr | MIKE CAUDILL | State of Tennessee |
| Mr | EUGENE EHRlich | NASA |
| Capt | ED FRYE | ARRS/AFRCC (Moderator) |
| Mr | RICK GOODMAN | State of New Mexico |
| Capt | WILLIAM HARVEY | USCG/FAA |
| Major | SHEP HAYMAN | ARRS/AFRCC |
| Major | RAYMOND HUFNAGEL | SAF/AL |
| Major | RON MERINO | National SAR School |
| LtCol | PATRICK WHITAKER | Chief. AAC/RCC |

VOLUNTEER SAR ORGANIZATIONS SEMINAR

The AFRCC in action



GOALS

- The goals of this seminar were:
- To devise a means to establish AFRCC volunteer SAR organizations data base.
 - To insure volunteer SAR organizations meet accepted standards.
 - To establish single points of contact for various types of volunteer SAR organizations.
 - To determine disability insurance implications for states.
 - To provide for an efficient and effective means of disseminating SAR resource information to user agencies - federal - state - local.

WORKSHOP SUMMARIES

A definite requirement for additional SAR resource information was established. Three avenues of action to expand the existing SAR resource information files were recommended.

- Mr. Rick Goodman from New Mexico volunteered to provide the AFRCC names and numbers of contacts within the Amateur Radio Relay League and REACT. ACTION: AFRCC/Rick Goodman
- Ms Lois McCoy, a representative of NASAR, offered to furnish information on volunteer organizations throughout the nation. The AFRCC will provide Ms McCoy an outline to assist in delineating the type and depth of information required. ACTION: NASAR/AFRCC
- The seminar members also suggested that we draft a letter which would

Continued

Continued

in turn be sent to each state's SAR organization. Those states not having a SAR structure will be contacted through the Governor's office. The general content of the letter would be:

To identify the AFRCC and their purpose.
To explain how the AFRCC can help the states in fulfilling their SAR commitments.

To suggest how the states may assist the AFRCC. One area would be to supply to the AFRCC a listing of available SAR resources with the respective state.

A proposal by the working group recommended that all possible SAR requests be coordinated through a state agency. Processing a request for resources would:

- (1) In essence, provide a single point of contact.
- (2) Involve the state in the SAR effort.
- (3) Lend additional credibility to SAR effort.

ACTION: AFRCC

Presently, no organization exists that is qualified to establish standards and to evaluate the performance of the various volunteer SAR organizations. The consensus of the seminar is that the standards of the national volunteer SAR organizations will have to be accepted in lieu of no standards. **ACTION: NONE (Info only)**

The Seminar working group suggested several means by which information may be disseminated to the user agencies:

The AFRCC briefings for special groups from various states could be tailored to each group's state. This should promote a greater SAR awareness within the public of the state. **ACTION: AFRCC**

Again, the AFRCC will initiate a letter to each state stating the services that are available from the AFRCC. This would be an excellent opportunity to summarize the past year's SAR effort in each state. **ACTION: AFRCC**

The SAR meetings in Iowa in August and Florida in October also represent excellent situations in which to approach the representatives from the various states and to brief them thoroughly on the availability of SAR resources. **ACTION: AFRCC**

Lastly, the State SAR Awareness Conference, slated for early 1979, also represents an opportune time to again meet with the various state SAR representatives. **ACTION: AFRCC**

PARTICIPANTS:

| | | |
|---------|------------------|------------------------|
| LtCol | JAMES BIGELOW | CAP. California Wing |
| Mr | MIKE CAUDILL | State of Tennessee |
| Captain | JOE ELLIOTT | Canadian Forces |
| Mr | RICK GOODMAN | State of New Mexico |
| Captain | WILLIAM HARVEY | USCG/FAA |
| Major | SHEP HAYMAN | ARRS/AFRCC (Moderator) |
| Major | RAYMOND HUFNAGEL | SAF/AGL |
| LCDR | JOSEPH KENNEDY | ARRS/AFRCC |
| Mr | DONALD LUZIUS | USCG |
| LtCol | ROBERT MATTSON | CAP - USAF |
| Ms | LOIS CLARK McCOY | |
| NASAR | | |
| Major | RONALD MERINO | National SAR School |
| LtCol | PATRICK WHITAKER | AAC/RCC |
| Mr | PAUL WREN | NASA |

Find yourself!

Join NASAR.

P.O. BOX 2123, LA JOLLA, CA 92037

Conquer some of the toughest terrains in the world in a Scrambler.

Mountains. Rivers. Desserts. Swamps. Forests. Snow. Lakes. Mud. All the challenges of world terrains and seasons must be dealt with in the North American continent.

Scrambler, a proven industry leader, will get you there and back, each and every time.

All Scrambler ATVs (2, 3 and 4 passenger) are proven high-performance machines that require almost no maintenance. Features include: • almost indestructible, watertight fiberglass bodies • speeds to 30 MPH on land, 4 MPH in water • exclusive, patented hydraulic steering and brakes • rugged, simplified, low-maintenance transmissions • electric starting • push button reverse • many performance and utility options to suit individual work or recreational needs.

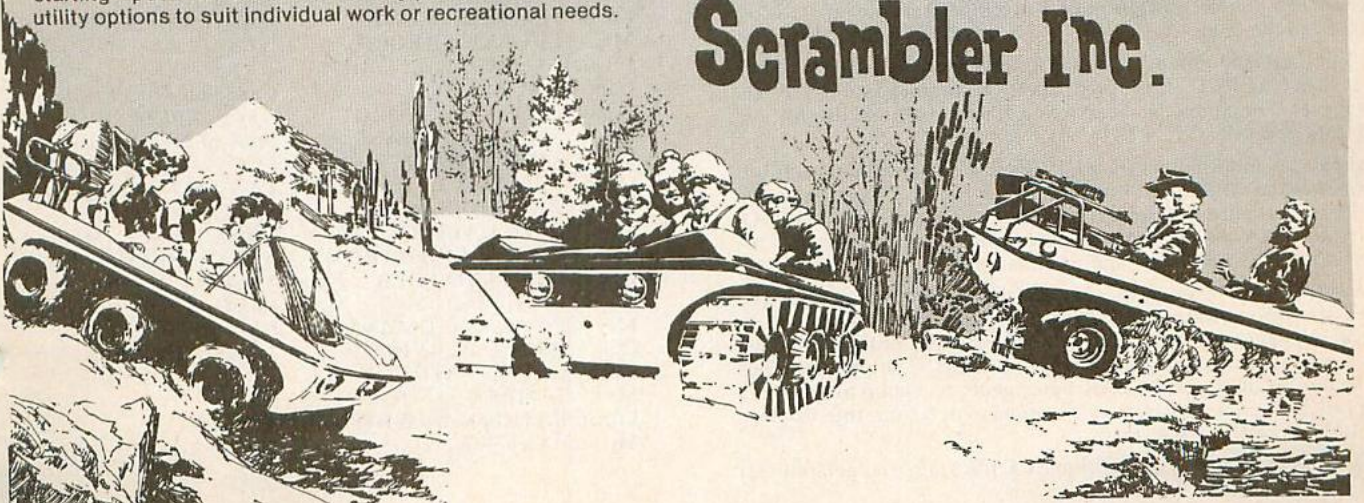
For highest performance in deep snow, sand and swamps, Scrambler's exclusive "Tuff Tracks" are easily mounted or removed in five minutes.

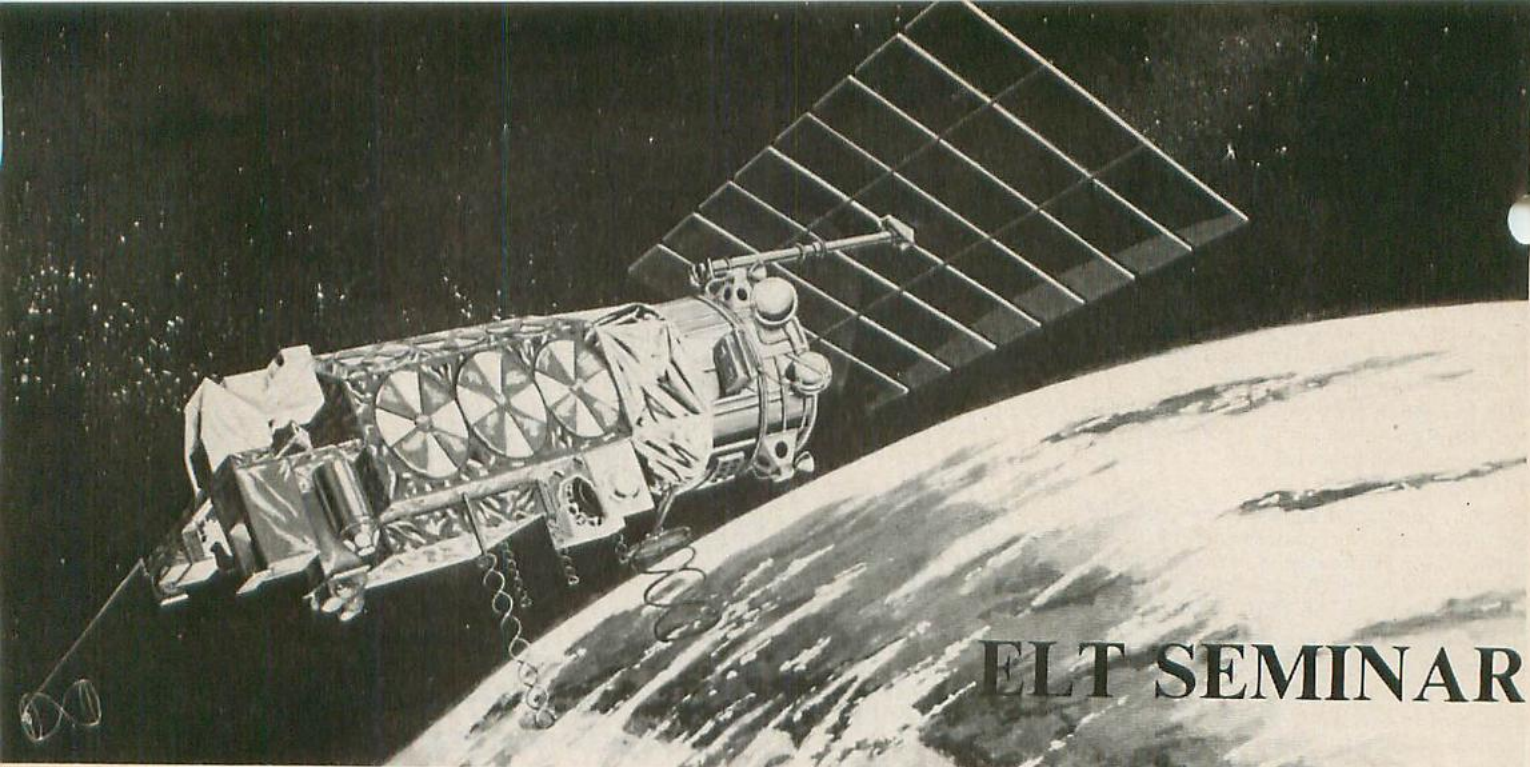
A wide variety of Scramblers (standard and custom) are in service around the world in diverse governmental and armed forces operations.

Scrambler. A reputation built on performance dependability.

| | |
|---------------------|---------------------|
| Eastern: | Western: |
| Scrambler, Inc. | Scrambler Pacific |
| 111 Seventeenth St. | 4825 El Cajon Blvd. |
| Genoa, OH 43430 | San Diego, CA 92115 |
| (419) 855-7711 | (714) 286-1001 |

Scrambler Inc.





ELT SEMINAR

GOALS

This working group met to achieve the following objectives:

- Discuss methods of minimizing false alarms.
- Determine FCC/FAA/RCC/FBO responsibilities for ELT location.
- Evaluate other stations or sources for ELT tracking/triangulation.
- Determine methods of improving the image of the ELT as a location device.
- Discuss the possibility of federal subsidy for a 2nd generation ELT.
- Obtaining status report on the ELT satellite program.

WORKSHOP SUMMARIES

In discussing methods of minimizing false alarms, the seminar group agreed that elimination or significant decrease of false signals is not a viable goal until the new generation ELT emerges. Colonel Purvine put before the group two ELT proposals that the Interagency Committee for Search and Rescue had submitted to the FAA. The FAA responses to these proposals were considered inadequate. These proposals were considered of vital importance to the present ELT program and they were being resubmitted to the FAA for reconsideration. This letter has been drafted and submitted to the FAA. The two most important points of the letter were:

The FAA must specifically identify the ELT as an inspection item in the aircraft 100 hour inspection rather than rely on the inexact language of the pertinent regulation that requires a check of aircraft avionics. Specific mention of an ELT operational check and a check of the ELT batteries must be incorporated in the specific regulation.

The FAA should go to Congress to change the law to allow the use of "Aviation Trust" fund money to make available hand held DF's and to purchase new second generation ELT's to expedite removal of the old ELT's from the field.

The ELT seminar group unanimously endorsed the intents of this letter. The AFRCC forwarded these recommendations to the Interagency Committee for Search and Rescue for final disposition. ACTION: ISCAR

Concerning responsibilities for ELT location and termination. It was agreed that the AFRCC will be responsible for ELT location until it has been determined the signal is nondistress. Then, if it is on an FAA facility, the FAA will locate and terminate the signal. If not on an FAA facility, the FCC will locate and terminate the signal.

Consideration was given to what actions could be taken to enter a locked aircraft emitting an ELT signal and the owner could not be located. All agencies agreed that they did not have authority to enter locked aircraft. It was suggested that the AFRCC should approach each state through its state SAR agreements to obtain authority to enter locked aircraft or determine a method to overcome this problem. ACTION: AFRCC/FAA/FCC

While evaluating other sources for ELT tracking/triangulation Mr

Proposed ELT detection and locating satellite.

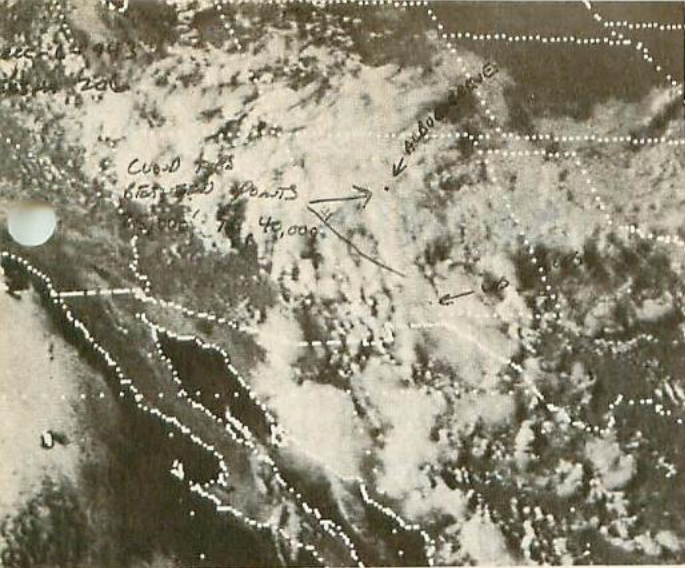
Rick Goodman from New Mexico discussed his ground National-ELT team that includes a DF van and a rescue team that can be transported on a C-130 aircraft and can locate and get to an ELT signal in the most adverse weather conditions. He also discussed a mountain top ELT DF system he has established in New Mexico. Lt Col Bigelow of the California CAP discussed a \$250 DF unit that has been placed on microwave towers in the Los Angeles basin to aid ELT location. It was also mentioned that the state of Nevada has a similar system. These items will be briefed at the forthcoming State SAR Awareness Conference. ACTION: AFRCC

Publication of facts, figures, and articles that display the favorable aspects of ELT's was determined to be the best method of enhancing the image of the ELT. The AFRCC agreed to keep pushing to get its articles published in aviation magazines. The USCG and FAA agreed to publish information and articles that demonstrate the favorable aspects of ELT's. ACTION: AFRCC/FAA/USCG

Discussion of the ELT satellite program centered on a report by Mr Paul Wren from NAS who presented an update on the ELT satellite demonstration program concerning expected capabilities, system function, and the proposed timetable. The problem of not collocating the mission control center with the local user terminal at Scott AFB, TX was raised. Operational employment of this system will be monitored by NASA, DOD, and the AFRCC. ACTION: NAS/AFRCC

PARTICIPANTS:

| | |
|---------------------------|------------------------|
| Mr NEWEL R. ANDERSON | FAA |
| LCDR J. L. BARTH | USCG |
| Major MARTIN H. BETZING | AFCS/XPQS |
| LtCol JAMES BIGELOW | CAP, California Wing |
| Mr EUGENE EHRlich | NASA |
| LtCol GEORGE E. ELDRIDGE | ARRS/AFRCC |
| Capt J. V. ELLIOTT | Canadian Forces |
| Capt ELDEN M. GEORG | AFCS/XPQS |
| Mr RICK GOODMAN | State of New Mexico |
| Mr KING T. HALL | FCC |
| Capt WILLIAM D. HARVEY | FAA/AAT |
| Major RAY HUFNAGEL | SAF/AL |
| Capt PETE KALISKY | ARRS/AFRCC (Moderator) |
| Capt WAYNE LINDSTROM | ARRS/AFRCC |
| Dr BERNARD LOEB | NTSB |
| Mr D. H. LUZIUS | USCG |
| Mr PAUL J. NEUMANN | FAA |
| Col BRUCE PURVINE | ARRS/AFRCC |
| LtCol GEORGE STUTTS | |
| Mr JAMES C. TEDDER | FAA |
| LtCol PATRICK W. WHITAKER | ACC/RCC |
| Mr PAUL WREN | NASA |



AFRCC-6-943 CESSNA 306, Cloud tops between points Albuquerque and Las Cruces are 25,000 to 40,000 an area of thunder storms.

An area of Thunder Storms

WEATHER ANALYSIS SEMINAR

GOALS

The goals of this seminar were:

- To determine how to overcome geographical limitations.
- To discuss weather data analysis responsibility.
- To develop better field access to weather analysis.
- To discuss future employment of weather analysis for SAR.

WORKSHOP SUMMARIES

The four goals were discussed with recommendations proposed for each goal. It was decided that a demonstrated 1-2 hour response requirement exists at the RCC for historical weather data and in particular a quality satellite photo. A proposal was made that the AFRCC obtain two Harris Laserfax receivers through local base procurement funds and that two communications lines be run from Kansas City, MO, to Scott AFB, IL. This would give the RCC instant access to quality satellite photos with the one mile resolution required for national coverage. The cost of the project would be approximately \$35,000 for the receivers plus approximately \$4,000 a year for use of the communications line from Kansas City. It was also decided that, in the interim period between now and the actual installation of the receivers, the possibility of using the Missouri CAP or adjacent state CAP to transport quality photos on an as-required basis now be explored. **ACTION: AFRCC/CAP-USAF**

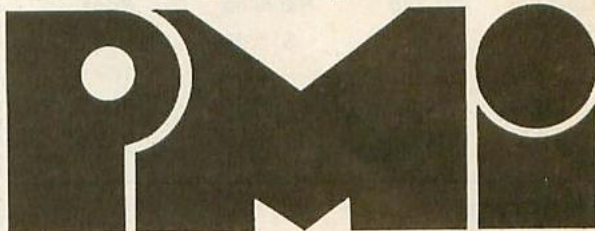
The decision was also made that with the availability of quality photos, the AFRCC controllers should have basic training in the analyzing of satellite photos. This training, however, would not negate the need for expert analysis from the facilities in use today. The National Environmental Satellite Service (NESS) in Kansas City volunteered to instruct an eight hour concentrated course to give the RCC controllers the basic knowledge required. **ACTION: NESS/AFRCC**

The seminar delineated the requirement for quality satellite photos for use in the field. The requirement exists to give the AFRCC and the SMC common grounds with which to discuss search planning. National Weather Service (NWS) stated that photos and weather sequence reports could be made available through the state Weather Service Forecast Office (WSFO). **ACTION: AFRCC/NWS**

Future goals were also discussed and it was decided that a controller with a weather background would be a definite asset to the AFRCC. The AFRCC will look into that possibility. In the meantime, MAC/DOW is presently conducting a study to determine the possibility of employing a weather specialist to ARRS. Another future goal that will be looked at is the possibility of using the emergency response communications program as a means of getting weather data to the in-the-field searchers. This could be accomplished by the use of a suitcase unit and using all existing agencies such as NESS, NOAA, NWS, and AWS. **ACTION: AFRCC/MAC/DOW**

PARTICIPANTS:

| | | |
|---------|------------------|------------------------|
| LtCol | JAMES BIGELOW | CAP, California |
| Mr | EUGENE EHRLICH | NASA |
| Mr | EDWARD FERGUSON | NESS |
| Captain | ROBERT HANSON | AWS |
| Major | RAYMOND HUFNAGEL | SAF/AG |
| Mr | JOHN KUHN | NWS |
| LtCol | ROBERT MATTSON | CAPP, USAF |
| Ms | LOIS CLARK McCOY | NASAR |
| Major | RONALD MERINO | National SAR School |
| Mr | PAUL NEUMANN | FAA |
| Captain | MICHAEL SOTAK | MAC/DOW |
| Major | ROBERT WALTON | ARRS/AFRCC (Moderator) |
| LtCol | PATRICK WHITAKER | AAC/RCC |
| Mr | JOHN J. WOODRUFF | NASA |
| Mr | PAUL WREN | NASA |



Makes High Quality Rope

7/16" diameter, braided sheath, nylon rope, with high abrasion resistance and low stretch characteristics, designed especially for rappelling and ascending.

- 5,000 lbs. breaking strength on a bowline knot
- PMI also offers:
Rope packs, Rope washers, and Rappel devices.

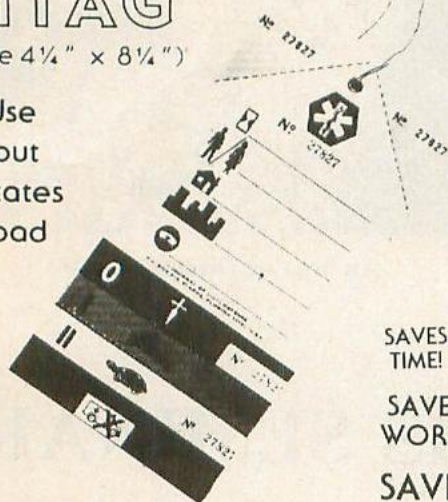
Write for free catalog:
PIGEON MOUNTAIN INDUSTRIES, INC.
Dept. R
P. O. Box 803
Lafayette, Georgia 30728 • (404) 638-2181

America's Standard Field Triage Tag

METTAG

(actual size 4 1/4" x 8 1/4")

Now In Use
Throughout
United States
and Abroad



SAVES
TIME!

SAVES
WORK!

SAVES
LIVES!

For more information
contact: **METTAG**

SIMPLE: SYMBOLS ONLY — INDEPENDENT OF LANGUAGE — COLOR-CODED (Red, Green, Yellow, Black)

RUGGED: TOUGH WEATHER RESISTANT CARD-STOCK, METAL GROMMET, STRONG 30-INCH TIE

FAST: SERIAL-NUMBERED TAGS & TEAR-OFF PROVIDE INSTANT RECORDS AND EMERGENCY IDENTITY

HANDY: SEE-THROUGH PACKS OF 50 WITH INSTRUCTIONS

SAMPLE PRICES — 1979 (U.S. Dollars)

| Quantity | Price Per Tag | Shipping/Handling | Total Price |
|----------|---------------|-------------------|-------------|
| 100 | 33¢ | \$ 1.45 | \$ 35.25 |
| 500 | 21¢ | 4.50 | 109.50 |
| 1,000 | 20¢ | 8.90 | 208.90 |
| 5,000 | 19¢ | 31.65 | 931.65 |

To: **METTAG**
P. O. Box 910
Starke, Florida 32091

- Please send information and sample tag.
- \$ _____ (or copy of purchase order)
for rush shipment of _____ METTAGs
to _____

Name _____

Address _____

City _____ State _____ Zip _____

(To place phone order call 904/964-5397)

DATA COLLECTION SEMINAR

GOALS

The working group met to achieve the following objectives:

Improve the AFRCC data product for users.

To develop commonality for the ELT satellite data base.

To make AFRCC data available to other agencies having potential uses for the data.

WORKSHOP SUMMARIES

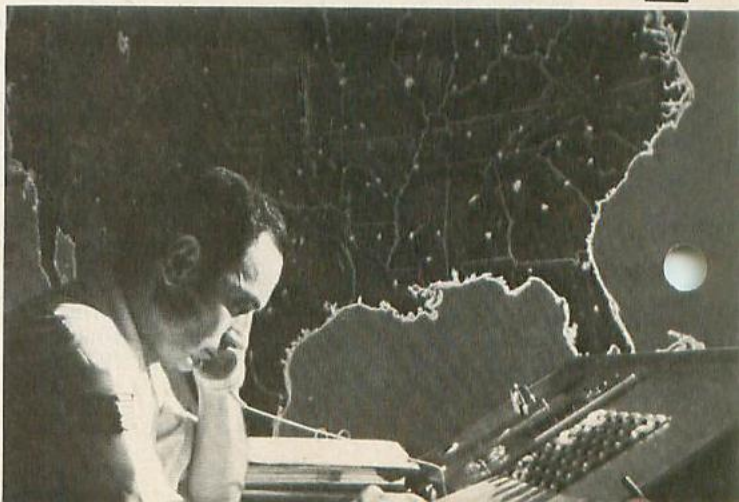
The first goal was to improve the AFRCC data product for users. It was decided to emphasize survivability data by modifying the format. Dennis Wright of the AOPA felt that the paragraphs concerned with SAR mission breakdown, SAR efforts, basic ELT statistics (total numbers), flight plan data, survivability vs flight plan, and the AFRCC comments were of value. He and several other seminar members thought the mission synopsis attachments were very enlightening and should be retained. The FAA representative, who was not associated with air traffic control, questioned the value of breaking down the ELT data by Air Route Traffic Control Center and recommended eliminating the data from the report. ACTION: AFRCC

The second goal was to develop commonality for the ELT satellite data base. There was extensive discussion without result. It became apparent that no attendee was really knowledgeable of the topic nor were they in a high enough position to make a decision on the requirements for the data base. Possible time sharing, and identifying the benefits and requirements of the data base, were also discussed. Ultimately, it was agreed that the item would be elevated back to a higher working group such as ICSAR. ACTION: ICSAR

The third goal was to make AFRCC data available to other agencies having potential uses for the data. The time scheduled for the seminar ran out before this topic could be explored fully; however, the seminar leader talked with Dr Loeb and Mr Paul Neumann of NTSB and the FAA respectively. They agreed that possibly their agencies could use AFRCC data gathered during prosecution of a SAR mission to aid their accident investigations. They agreed to check with their agencies and let the AFRCC know of their desires. ACTION: AFRCC/NTSB/FAA

PARTICIPANTS:

| | | |
|---------|------------------|------------------------|
| LiCol | JAMES BIGELOW | CAP, California |
| Mr | EUGENE EHRLICH | NASA |
| Mr | EDWARD FERGUSON | NESS |
| Captain | ROBERT HANSON | AWS |
| Major | RAYMOND HUFNAGEL | SAF/AG |
| Mr | JOHN KUHN | NWS |
| LiCol | ROBERT MATTSO | CAP, USAF |
| Ms | LOIS CLARK McCOY | NASAR |
| Major | RONALD MERINO | National SAR School |
| Mr | PAUL NEUMANN | FAA |
| Captain | MICHAEL SOTAK | MAC/DOW |
| Major | ROBERT WALTON | ARRS/AFRCC (Moderator) |
| LiCol | PATRICK WHITAKER | AAC/RCC |
| Mr | JOHN J. WOODRUFF | NASA |
| Mr | PAUL WREN | NASA |





Major General Ralph Saunders, Commander Aerospace Reserve and Recovery Service (ARRS).

FEDERAL AGENCY SEMINAR

GOALS

This working group met to achieve the following objectives:

- Improve mission coordination.
- Standardize grid system.
- Identify additional federal search and rescue resources.
- Dissemination of alert notice and information requests.

WORKSHOP SUMMARIES

This working group decided to combine goals one and three. AFRCC will initiate letters to the Chief of Naval Operations, Commandant of Marine Corps, and U.S. Army Forces Command, requesting a list of all units with a potential SAR resource and a point of contact. Each identified resource will be contacted for details on their capabilities and proper procedures for requesting their assistance.

ACTION: AFRCC

ICSAR has invited the Department of the Interior to become a signatory of the National Search and Rescue Plan. If and when they join the SAR team, their nationwide organization could contribute a great deal to the SAR effort. Employment of these resources will be coordinated by the AFRCC. ACTION: AFRCC

AFRCC's air grid search system, though used by many organizations, is not published in the National SAR Plan. AFRCC will have the grid system incorporated into the National SAR Plan as an addendum.

ACTION: AFRCC

Alert notice (ALNOT) prosecution requires a great deal of time from Air Force rescue coordinators and FAA personnel. Many times our efforts are thwarted because published FAA procedures are not followed completely. Three items were discussed:

Insure radar facilities along the route of flight are contacted and informed of the ALNOT.

Insure AFRCC is called by the issuing authority of an ALNOT to confirm receipt.

Establish a more reliable, productive system for ramp checks. The vast majority of ALNOTs are issued because a flight plan was never closed. Most of these aircraft are found at their destination airport or one nearby. Many times these ramps were checked with negative results only to find the aircraft there on subsequent checks. Mr. Goodman of New Mexico will develop a pilot program in the State of New Mexico to study the feasibility of using REACT and/or American Radio Relay League to conduct ramp checks for overdue aircraft. ACTION: FAA/Mr Goodman

PARTICIPANTS:

| | | |
|---------|-------------------|------------------------|
| Colonel | JAMES BUTERA | ARRS/AFRCC |
| LtCol | BERNARD CLARK | Dept. of the Army |
| CDR | EDWIN DEVALOIS | Dept. of the Navy |
| Mr | RICK GOODMAN | State of New Mexico |
| Major | SHEPPARD HAYMAN | ARRS/AFRCC |
| Captain | PETER KALISKY | ARRS/AFRCC |
| LCDR | JOSEPH KENNEDY | ARRS/AFRCC (Moderator) |
| Mr | PAUL J. NEUMANN | FCC |
| Mr | RICHARD SHINPAUGH | FAA |
| MSgt | ROY TAYLOR | National SAR School |

COMPACT, LOW COST, DESK-TOP RECORDERS

AUTOMATICALLY DOCUMENT PHONE & RADIO CALLS

Omnicon cassette recording systems connect to your telephone or two-way radio system and provide a tape of all conversations with instant playback. *Undisputed Proof!*

VOICE ACTIVATED — Automatically starts recording the moment a message is received and stops at the conclusion of each message.

NEW OMNICON TALKING CLOCK:

Automatically places verbal time announcement at the end of each recorded message.

- All solid state • Synthesized male voice

Can be used in other application where continuous or on-demand audible time is required.

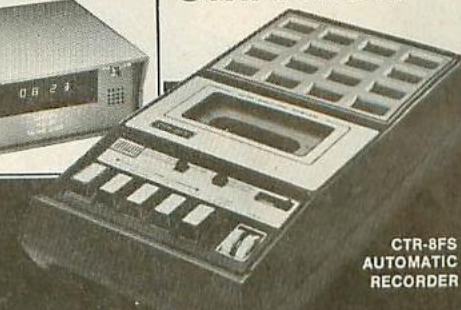
127 Grove Street, P. O. Box 623, Putnam, CT 06260

Tel. (203) 928-0377

OMNICON



TCE-124
TALKING
CLOCK



CTR-8FS
AUTOMATIC
RECORDER

INTERIM TRACK ANALYSIS PROGRAM (ITAP) SEMINAR

GOALS

The goals of the ITAP workshop were:

Discuss the present status of the ITAP program and future developments in FAA aircraft search and rescue tracking capability.

Evaluate current ITAP policies and procedures to develop improvements which would enhance the over-all responsiveness and life saving capability of the ITAP program.

Determine alternative means for analysis of recorded radar data when ATC priorities or computer non-availability preclude timely analysis.

Use of the Automated Radar Terminal System (ARTS) recorded data as a supplemental aid to ITAP.

Promote increased interface between key SAR agencies and Air Traffic Control Centers for familiarization with ITAP capabilities and limitations and user requirements.

Increased ITAP use by U.S. Coast Guard and Canadian SAR forces within their areas of responsibility.

Discuss ITAP radar and computer limitations and determine methods to manage these limitations to increase SAR capability.

WORKSHOP SUMMARIES:

Richard Shinpaugh, representing the FAA Air Traffic Control Automation Division, briefed seminar members on the capabilities and limitations of the 20 Air Traffic Control Centers (ARTCC) across the United States for providing SAR target tracking assistance. Five ARTCCs do not have ITAP capability, but can provide very limited assistance for tracking only computer-tracked, beacon-equipped aircraft. Past successes in locating downed aircraft with historical recorded radar data have prompted a program of on-going track analysis refinements. The FAA has initiated program development for the National Track Analysis Program (NTAP), which should be operational September 1979. All ARTCCs will possess identical target tracking capability with this improved program. In contrast to ITAP, NTAP will feature an improved data printout which will require less expertise for operation and analysis. ACTION: FAA

Summary of the discussion on current ITAP policies and procedures as follows:

The primary purpose of Air Traffic Control Centers is the separation and control of airborne aircraft. This has first priority, followed by other air traffic system support functions, equipment maintenance, and program development/modification functions. The ITAP program is secondary to these, and will be performed on a non-interference basis as determined by the discretion of each ARTCC chief. Due to the absence of published FAA guidance establishing a priority for ITAP, the AFRCC recommended that FAA set a priority comparable to that for assisting an inflight emergency. ITAP requests would then receive the same response from all ARTCCs, reducing data

processing delays. The AFRCC strongly urges this action, and will work directly with ARTCC chiefs to minimize data processing delays. ACTION: FAA/AFRCC

Specific guidance for ARTCC data systems specialist to determine what ITAP data was required by the AFRCC and searchers in the field caused delays in receipt of SAR data. FAA Order 7840.1, published in June 1978, establishes standardized policy and procedures for use of computer data for SAR. Standardized copy formats and instructions prescribed by this new directive will resolve this problem when used by AFRCC and ARTCC personnel. ACTION: AFRCC

Manning, training, and standardization of personnel within the ARTCCs were discussed at length. The FAA does not teach track analysis techniques at the ATC school in Oklahoma City. This training is provided at each center, where normally a maximum of 3 personnel are trained to process ITAP requests. The AFRCC proposed an increase in the number of personnel capable of ITAP processing and analysis, and inclusion of track analysis into the air traffic control school for training standardization. FAA representatives stated that due to low ITAP usage rates, the volume of other ATC duties, and impending implementation of the NTAP program, this proposal is not feasible. AFRCC suggested that as an alternative, FAA initiate a centrally coordinated "crosstell program" whereby each ARTCC could share the benefits of its experience, based upon the successes, failures, problems, and lessons learned during ITAP missions, with all other ARTCCs. AFRCC will coordinate directly with each ARTCC to promote such a program. ACTION: FAA/AFRCC

A recent search mission in which ITAP was a key aid to crash location, was seriously hampered because FAA procedures did not provide for search notification of all air traffic control agencies along the flight plan route. Although flight service stations and centers were notified, terminal area approach control and tower control and tower facilities which talked to the aircraft had no knowledge that a search was in progress. This caused a delay in location of the crash. Mr. Shinpaugh agreed to coordinate procedures which insure that these agencies receive notification and check their logs or tapes along possible routes of flight beyond the last known position of missing aircraft. ACTION: FAA/AAT-520

Discussion of alternate methods for ITAP data analysis to minimize processing delays:

Although two computers exist at Oklahoma City and Atlantic City, current FAA programs preclude their use as an alternate ITAP processing facility. This function can best be accomplished by another ARCC which possesses the capability. AFRCC will coordinate directly with the centers involved to provide processing capability, and will coordinate air transportation of computer tapes and data analysis on an individual case basis. Civil Air Patrol and military aircraft can provide this transportation. ACTION: AFRCC/FAA

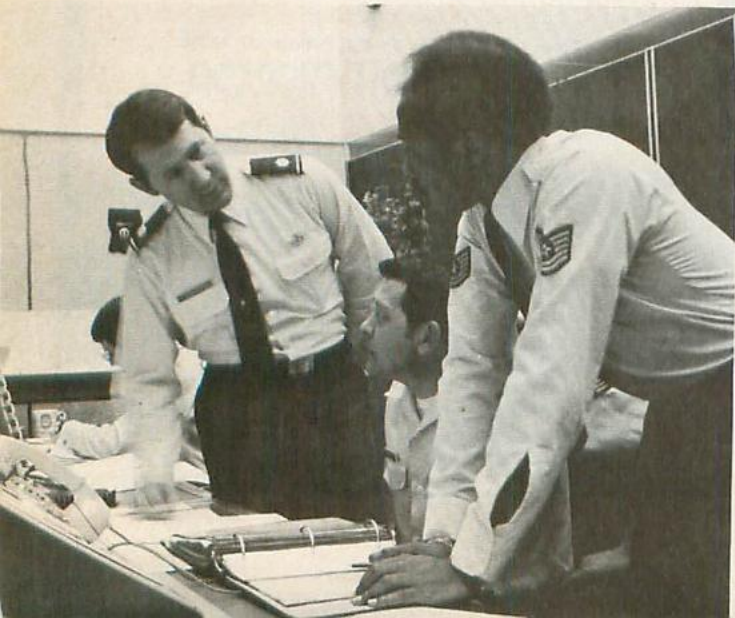
No means for remote transmission of recorded data by wire to an alternate ARTCC for ITAP analysis presently exists. AFRCC encourages FAA development of this capability in future data processing programs. ACTION: FAA

In the near future all ARTCCs will process a mini processor capability known as direct access radar channel (DARC) which will provide limited standby computer capability. It is hoped that availability of this system may allow the necessary computer availability to provide more timely ITAP processing. Time constraints prevented in-depth discussion of this additional computer capability and possible SAR applications. ACTION: NONE (Info only)

FAA has not existing or planned capability to replay recorded radar data on a video display, such as a controller's scope, for analysis. ITAP and NTAP data outputs will be in a printed paper format. AFRCC recommends that FAA incorporate a video playback and analysis capability into future automated SAR data programs. Visual motion detection with such a system could enhance detection and tracking of primary return targets in areas such as mountains where extensive ground clutter returns tend to obscure aircraft targets on a printed computer product. ACTION: FAA

Time constraints prevented in-depth discussion of the automated radar terminal system (ARTS) and use of future radar data recordings as a

Continued



Continued

SAR aid. However, a cursory discussion indicates that the program will have only limited value for SAR. Only transponder-equipped targets can be tracked by this system. AFRCC will coordinate further with FAA to exploit the full SAR capability of ARTS.

ACTION: FAA/AFRCC

Several centers have developed outstanding orientation programs to acquaint local and regional SAR agencies with the capabilities, limitations, and procedures for use of ITAP. These programs have been highly successful, producing numerous mutual benefits and enhancing over-all SAR capability. These agencies have also developed cooperative arrangements for conducting joint SAR training exercises based on realistic search scenarios. Data systems specialists in these centers obtain ITAP training by tracking a "missing" exercise aircraft. The AFRCC recommends this program be employed by all centers or if not feasible, at least in those centers with high SAR mission profiles. AFRCC will coordinate directly with each center to urge initiation of similar programs, and will serve as liaison for increased interface between centers and SAR agencies.

ACTION: FAA/AFRCC

Due to limited representation by Canadian and U.S. Coast Guard representatives, discussion of ITAP use by these agencies was restricted. Captain Harvey, USCG, stated that guidance has been disseminated to Coast Guard field units to become involved with ITAP. Feedback from ARTCCs is that few Coast Guard RCCs request or use ITAP data. This may be largely due to unfamiliarity with ITAP. ITAP orientation similar to that outlined in the preceding paragraph, could increase SAR effectiveness in Canadian and USCG areas of responsibility where ITAP capability exists. AFRCC will assist these agencies to more fully utilize ITAP if requested to do so.

ACTION: CF/USCG/FAA/AFRCC

Discussion of radar and computer limits:

There are presently 100 long range radar sites across the nation with an additional 8 sites to be added in the future. Radar antenna locations and areas of radar coverage were discussed. There are numerous gaps in radar coverage. Some of these will be closed by relocation of radar sites. ACTION: NONE (Info Only)

AFRCC stressed that whenever radar or computer limits become a factor affecting target tracking ability, i.e., antenna location, sort box selection, minimum radar altitude, crossing center boundaries, etc., the data systems specialist must recognize these limitations and relay this information to SAR forces through the AFRCC in a timely manner. Additionally, he must coordinate with adjacent centers to insure continued tracking of targets across center boundaries. Also, techniques such as ITAP search in high probability areas, based upon dead reckoning down track from the point where a radar target is lost, must be actively pursued. FAA representatives stated that when the ITAP program was developed there was no intent for data systems personnel to perform such SAR coordination or data evaluation and analysis tasks. The original intent was for data systems personnel to process a specific request, analyze recorded data and provide the specific information requested without further evaluation of data reliability, radar or computer limits, etc. Major Nicholson, of AFRCC, stated that these additional functions are essential in the life saving potential of ITAP if it to be effectively realized.

ACTION: FAA/AFRCC

PARTICIPANTS:

- | | | |
|---------|--------------------|------------------------|
| Mr | NEWEL R. ANDERSON | FAA |
| LCDR | JIM BARTH | HQ USCG |
| CDR | EDWIN W. DEVALOIS | MAC/LNN |
| CDR | JOSEPH H. DISCENZA | U.S. Coast Guard, NYU |
| Mr | ED FERGUSON | Kansas City NESS |
| Mr | KING T. HALL | FCC |
| Captain | W.D. HARVEY | FAA |
| Major | RON MERINO | National SAR School |
| Mr | PAUL J. NEUMANN | FAA |
| Major | DANIEL NICHOLSON | ARRS/AFRCC (Moderator) |
| Mr | RICHARD SHINPAUGH | FAA |
| Mr | JAMES C. TEDDER | FAA |
| Mr | JOHN J. WOODRUFF | NASA |
| r | PAUL WREN | NASA |

SARA mountaineering
SAR EQUIPMENT SALES

CATALOG



FREE
\$1.50

DEC. '78

SEARCH AND RESCUE ASSOCIATES

3819 EAST ACORN COURT • SIMI VALLEY, CA 93063 • (805) 527-7248

SARA mountaineering
SAR EQUIPMENT SALES

SEARCH AND RESCUE MAGAZINE
ADVERTISEMENT #2

Send us your name and address. We will send you - free - our incomplete catalog. INCOMPLETE! Yes, and we hope it will never be finished. We've been manufacturing the SARA Rescue Pulley for a little over a year now and it is time to go to the next phase of our idea for SAR people. We want to offer you the ability to go to one source for your SAR equipment.

Right now our catalog is too heavy in mountaineering, and we know it. As we gain expertise from you, the SAR person, we will be expanding our organization to fit your needs.

At the present time we are looking for items to catalog that fit your needs, so write us and tell us. Our criteria is safety, reliability, and common sense. Obviously we have to have a profit motive, but we do not look to high volume sales, so if we can find an item that meets your standards, we will include it in the catalog.

Then there is NASAR. We support NASAR, its goals and objectives. One of the ways we want to demonstrate our support is this: 3% of every purchase you make will be put into a special account and regardless of how long it may take, when you have enough credit built up SARA will purchase in your name or in any name you request, a NASAR membership. If you have any credit left over you can order items from the NASAR Catalog Store and we will buy it for you.

NASAR needs support, both yours and ours. Let's all do what we can to increase membership and lend support in any other way possible. We can all contribute in our own way.

PLEASE, write us, ask for the catalog, THEN write us again and TELL US what you want.

As an opener we will send you a SARA Rescue Pulley, bushing model, for \$6.50 shipping included. (California residents add 3% state sales tax.)

WRITE TO: SEARCH AND RESCUE ASSOCIATES

3819 EAST ACORN COURT • SIMI VALLEY, CA 93063 • (805) 527-7248

FIREMEN SUE CITY OVER UNIFORM COSTS

United Firefighters of Los Angeles, Local 112, went to court Monday to try to force the city to pay for new flame-resistant uniforms now required by the state.

The union, in a suit filed in Los Angeles Superior Court, claims that to require fire fighters to purchase their own uniforms is unlawful.

A dispute over uniforms has been brewing since new state standards came about after hearings involving local firemen and the city. The union claimed, and the state agreed, that burns of some firemen were worsened in at least one major blaze because polyester uniform pants tended to melt.

The union claims that the city Fire Department should replace polyester uniforms by paying for new flame-resistant uniforms. The city requires fire fighters to either provide their own new uniforms, or wear the "turn-out," or heavy-duty protective clothing.

The union claims the turn-out uniforms are not appropriate for brush fire fighting or daytime warm weather responses to normal structural fires because they are "excessively warm and cumbersome."

Fire fighters who are unable or unwilling to purchase the new lightweight uniforms are exposed to heat stress and exhaustion, the suit claims.

The union bases its claim on the California Labor Code, which calls upon employers to provide equipment and uniforms "reasonably necessary to protect the life, safety and health of employees."

Defendants in the suit are the city, the City Council, Mayor Bradley, city Controller Ira Reiner, city Treasurer Robert Odell, the Los Angeles Fire Department and John C. Gerard, chief engineer and general manager of the department.

—Los Angeles Times, Sept. 29, 1978

EMERGENCY RESPONSE COMMUNICATIONS PROGRAM (ERCP)

The Interagency Committee on Search and Rescue Working Group on Emergency Response Communications Program has made significant gains since we last met. Much, I can say was due to your input. We have constructed out of four subcommittees, a list of tentative users with articulated user requirements. We have developed a Concept of Operations to include Federal, State, and Local interfaces which will guarantee privacy of use and an orderly escalation of response. Also, we have prepared a draft technical solution to the problem using a satellite with composite pencil beams and internal switching. Finally, we have requested a grant from HEW to perform a one year demonstration using NASA's ATS-6 Satellite and suitcase technology. This demonstration will be managed by the National Association for Search and Rescue with the assistance of Federal, State and Local Personnel.

I invite you to have any late requirements ready for presentation at the National Association on Search and Rescue Annual Convention, which will be held in Albuquerque, New Mexico the first week in October. I will present an over-all status briefing of the Emergency Response Communications Program as part of the luncheon program. That afternoon, I will also conduct a two hour workshop to hear individual state and local requirements. This meeting will be the last chance for the Midwest and Western states to input to the draft report on satellite communications requirements.

We hope to meet with the Southeastern states in late October and Northeastern states in November thereby making our December deadline for presentation of the Ad Hoc Working Group Report. If I can be of any further assistance please do not hesitate to contact me.

Raymond J. Hufnagel
Chairman, Interagency Committee on Search and Rescue
Ad Hoc Working Group on
Emergency Response Communications

CALIFORNIA VOLUNTEER EMERGENCY SERVICES CORPS

Robert J. Horigan, Southern California Emergency Services Association President, says, "Governor Brown is very, very strong on the use of volunteers. He has instructed his Office on Volunteers to contact OES with the mandate that OES specifically and all of the local jurisdictions make a concerted effort to enroll the maximum number of volunteers to be used during disaster operations. Presumably much more about this in the very near future from OES."

NEWS & rumors

POSTHUMOUS AWARDS FOR VIETNAM HERO

Military Airlift Command, Scott Air Force Base, Ill. (22 Sep 1978) — The nation's second highest medal — along with four other prestigious decorations — will be posthumously awarded to an Air Force hero killed during the Vietnam Conflict.

The Air Force Cross, second only to the Congressional Medal of Honor, will be presented to the family of the late Chief Master Sergeant Charles D. King, a pararescuer. Other decorations include the Silver Star, the Distinguished Flying Cross, the Air Medal, and the Purple Heart.

The medals will be presented to the late hero's father, Charles L. King, and sister, Sherry L. King, by Major General Ralph S. Saunders, commander of the Aerospace Rescue and Recovery Service with Headquarters at Scott Air Force Base, Ill. The ceremony will be held in the Air National Guard Armory, Muscatine, Iowa, the family's hometown, on September 23.

According to the citation accompanying the Air Force Cross, Sergeant King "in an extraordinary display of courage and valor placed his comrades' lives above his own." The citation refers to the 1968 Christmas day incident which took his life while he was rescuing a downed pilot in a hostile fire area.

Descending from the rescue helicopter to the ground, Sergeant King freed the pilot from his parachute harness and was attempting to recover the pilot when enemy gunfire opened up. Sergeant King was hit. Aware that the helicopter crew was also endangered, Sergeant King radioed that he had been wounded and asked the aircraft crew to "pull away." They did so. From that point Sergeant King was listed as missing in action.

The department of the Air Force recently declared Sergeant King killed in action. At the time he was listed as "missing in action," he was a member of Detachment 1, 40th Aerospace Rescue and Recovery Squadron at Nakhon Phanom Royal Thai Air Base, Thailand.

Sergeant King had a history of heroic deed. He earned the Silver Star Medal on Sept. 19, 1968. Under circumstances almost identical to those which earned him the Air Force Cross, Sergeant King descended under enemy gunfire to the ground on a rescue hoist to help a downed flyer. This time he cut the pilot loose from his parachute harness and immobilized several fractures the man had suffered. He then dragged the injured man to the forest penetrator (a device used to penetrate from above through heavy tree limbs) and the pilot and Sergeant King were hoisted to safety.

Just 19 days before the fatal mission, Sergeant King was aboard a helicopter which flew into heavy anti-aircraft fire to rescue another downed pilot. During the time the aircraft was in the area, it was hit repeatedly by enemy fire. Chief King remained in a fully exposed crew position firing his weapon at the enemy. His action permitted the helicopter crew to make the rescue.

CMSgt Charles D. King was a hero. While a member of the Air Force he, like the other men of the Aerospace Rescue and Recovery Service, lived — and he died — under the motto of his command: "That others may live."

AF, NAVY MAY UP SARs

Washington — AF and Navy may increase their maritime Search and Rescue operations to help the Coast Guard and reduce the loss of lives.

Congress has requested that the Defense Department cooperate with the Department of Transportation so that more federal resources are available for search and rescue (SAR) operations.

The House Appropriations Committee, in a recent report, said that it may be possible through better coordination to make additional use of DoD capability without increasing Defense costs.

The majority of maritime SAR work is performed by the Coast Guard. AF and Navy participate when SAR does not interfere with military requirements.

The General Accounting Office has said that the AF and Navy could become more involved in civil maritime SAR operations.

—Reprinted from the 28 August 1978 edition of *Air Force Times*

ESCAPED KILLER FOUND DEAD IN ARIZONA DESERT

CHUICHU, Ariz.—The manhunt for escaped killer Gary Gene Tison, 42, ended Tuesday when his body was found under a clump of desert brush.

It had been overlooked by scores of searchers who combed the area after Tison fled a roadblock shootout in which his oldest son Donald, 20, was killed Aug. 11. The elder Tison's body was found about a mile from the scene of the gunfight.

Tison and Randy Greenawalt, 29, both convicted killers, escaped Arizona State Prison July 30 when Tison's three sons smuggled in shotguns and held guards at bay. The three surviving members of the Tison Gang—Greenawalt, Ricky Tison, 18, and Raymond Tison, 19, are in custody.

Tison's body was found in a ravine concealed by heavy brush. A loaded and cocked .45-caliber pistol was found partly buried near his body.

Authorities said Tison apparently died of heat stroke, possibly on the same day as the shootout. Ground temperatures in the area could have been in excess of 115 degrees, officials said.

The 265-pound Tison had dug out a shallow hole at the bottom of a wash on the slope of the Tat Momoli Mts. about 20 yards from a road.

No food or water was found.

Tison fled into the desert after the predawn shootout with Pinal County sheriff's deputies, touching off the biggest manhunt in Arizona history.

During the brief existence of the Tison gang, six persons died or disappeared along the gang's twisting escape route. The three surviving members have been charged with the murder of a Yuma marine and his wife, 22-month-old son and 15-year-old niece.

A honeymooning Texas couple whose van the men were using when they drove into the roadblock shootout are still missing.

Officials of the Papago Indian tribe said the Tat Momoli Mountains had water enough to keep a man alive. The low, sprawling mountain is honeycombed with caves and old copper mines.

—Los Angeles Times, August 12, 1978

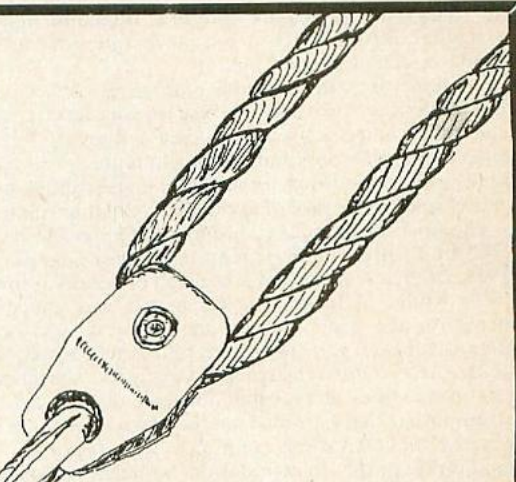
Lauren Elder Author

On Monday, April 24, 1978 the NBC Today show had as guest Lauren Elder who survived a plane crash where two others died in the Sierras two years ago to the day. She has written a book, "And I alone survived" about her personal fight for survival. Search and Rescue Magazine featured her story in the Winter 1976 issue, "One Walked Away" and in the Spring 1977 issue, "More On—One Walked Away."

Continued

B & B

FOR THE FINEST GEAR IN SAR



- GIBBS
- PMI rope
- GOLDLINE II
- carabiners
- slings & webbing
- climbing helmets
- racks & brake bars
- pulleys & flashlights
- electric headlights
- and much more

WRITE
FOR
PRICE LIST

B & B
P.O. Box 441-R
Lewisburg, WV 24901
(304) 772-5049

FEDERAL COMMUNICATIONS COMMISSION DOCKET NO. 21495 REPORT AND ORDER

(Proceeding Terminated)

Monitoring of emergency locator transmitter signals to improve safety communications on the aeronautical emergency frequencies.

By the Commission:

1. A Notice of Inquiry in the above-captioned matter was released on December 5, 1977. It was published in the *Federal Register* on December 13, 1977 (42FR 62508). On petition of the Civil Air Patrol the time for comments and reply comments was extended by Order released on February 17, 1978. This time has now expired.
2. Since 1971, in accordance with the provisions of Public Law 91-596 (49 USC 142), most general aviation aircraft have been required to carry emergency locator transmitters (ELT). These transmitters, operating as beacons on the aeronautical emergency frequencies of 121.5 and 243 MHz are designed to be activated automatically on crash of the aircraft or manually in the event of other emergencies where assistance is required. They transmit a distinctive tone modulated signal which is used by search and rescue facilities to locate the aircraft in distress. These emergency frequencies are normally monitored by control towers, Flight Service Stations, direction finding stations, radar facilities, military aircraft and others interested and involved in search and rescue of downed aircraft.
3. For some time, the aviation community has been plagued with false or inadvertent activations of these transmitters. It has been found that the ELT can be activated by such actions as "hard" landings, slamming of aircraft doors and equipment failure. This has resulted in thousands of hours being expended in attempting to locate the transmitter and in the case of accidental activation shutting the ELT down. The Air Force Rescue Coordinating Center (AFRCC) reported that 6603 ELT activations were reported to the center during calendar year 1975. Of these, only 54 were the result of a crash or forced landing.
4. The Notice of Inquiry in this matter was intended to solicit comments on the proposal that aeronautical advisory (Unicom) stations located at airports not served by a control tower be required to monitor the aeronautical emergency frequencies. The intent was to add more stations to those already monitoring in order to assist in locating those transmitters that were inadvertently activated. Since the majority of the inadvertent activations occur on or near airports, it was thought that monitoring by the Unicom stations would be of some assistance in locating the source of the transmissions and determining their validity more rapidly.
5. A list of those parties who filed comments in this proceeding is contained in the Appendix. No reply comments were received. Of those commenting, 85% were against the proposal.
6. Nine persons commented in favor of the proposal. For the most part, they indicated an agreement with the concept in principal, but offered no specifics on method of implementation. Those who suggested specifications for monitoring receivers all felt that the technical standards should be stringent enough to insure reliability. The suggested operating characteristics can be found on equipment available today. The cost of obtaining the equipment was not specifically discussed by those submitting favorable comments, but a wide variance in this cost was presented by those opposed.
7. Most of those commenting against the proposal gave two predominant reasons for their objections. These were the cost to the Unicom licensee with no appreciable benefit to the public and the possibility of legal liabilities being incurred by the licensee. They felt these two reasons were most important. Additionally, a number of persons expressed concern over the necessity of making personnel available to monitor and search, the real value of the monitoring and the necessity to train operators.
8. Alternative solutions were not presented by the majority of the respondents. However, those who did make a suggestion were unanimous in pointing out that equipment unreliability was the major source of trouble, therefore, upgrading the minimum performance standards of the ELT's was of the utmost importance.
9. In our Notice we indicated that we did not anticipate that the monitoring requirement would impose a significant economic burden on the station licensee. The commenters almost unanimously disputed this. They pointed out that the station equipment would either have to be capable of simultaneously monitoring at least two frequencies or separate receiving equipment would be required. In either case, the estimates ranged from a low of \$100 to a high of \$2500 in additional costs. They pointed out that the receiver would have to be reasonably

sophisticated and, with a limited market, the cost set by manufacturers would be understandably high. The Unicom operators claim that theirs is a marginal operation at best and the mandated expense of additional radio equipment is more than they should be asked to assume. This is particularly onerous to them when the Unicom station is looked on as a convenience to the flying public rather than a profit making venture. Although we did not specifically discuss the required monitoring periods in the Notice, but rather asked for comments on this, the Unicom licensees appeared to presume that continuous monitoring during their hours of operation would be required. They feel that having personnel available for this purpose would also be an unwanted and non-productive expense. They indicated that in the normal course of their doing business there are many times when no one is near to monitor or answer the radio.

10. Many of the parties who commented expressed concern over the liabilities the licensee might assume once he is assigned the responsibility for monitoring the emergency frequencies. In the event a malfunctioning ELT is found in a locked aircraft, they are not willing to accept responsibility for forcing entry in violation of local laws and possibly damaging the aircraft to disable the transmitter. Additionally, the fixed base operators question the extent to which a search should be pursued. Since their area of interest and responsibility generally lies within the confines of the airport, they question whether they should search beyond its boundaries and to what extent they would be liable if they chose not to. Although it was not our intent that the party hearing and locating the source of the signal take any direct action, the possibilities of legal liabilities cannot be ignored.

11. Inadvertent activations of ELT's is a serious problem and one which cannot be easily solved. As stated in our Notice, our purpose in proposing monitoring was to enable local people to more readily detect the presence of emergency signals on the frequencies. However, we are persuaded by the comments made in response that mandating such a procedure is treating the symptom rather than the cause. We are in sympathy with the efforts expended by the AFRCC in locating and attempting to locate these transmitters, but do not feel that mandatory monitoring is the proper solution. Although it may be of some assistance in reducing the time required to locate a small percentage of the malfunctioning ELT's, the unreasonable burden placed on the Unicom licensees to accomplish this is not warranted. The statistics provided by AFRCC indicated that 4503 out of 6603 reported activations were located and silenced before search procedures could be instituted by the rescue center. This in itself shows that the aviation community is aware of the problem and is already providing assistance. Efforts by the Federal Aviation Administration, the Aircraft Owners and Pilots Association and similar interested parties to make the flying public more aware of the problem and what can be done about it are continuing. Many of the persons commenting stated that voluntary monitoring programs by both pilots and airport personnel are being carried out in various parts of the country. A number of individual pilots remarked that they routinely check the emergency frequencies on shutting down the airplane and this has the effect of monitoring for the field.

12. The Radio Technical Commission for Aeronautics, of which the Commission is a member, is close to finalizing improved performance standards for what is known as the next generation of ELT's. When these standards are finalized, appropriate regulatory and manufacturing steps will be considered to improve the quality of the equipment in use. It appears obvious that equipment malfunction is the major source of the number of false signals. In addition, the proposed satellite monitoring program which is currently being considered will be of considerable assistance in locating and determining the validity of emergency signals.

13. The Commission staff is continuing to work with governmental, industry and user groups to assist in arriving at a solution to this problem. However, in the meantime, we feel that no substantive benefits can be derived by imposing the burden of mandatory monitoring of the emergency frequencies on a small segment of the aviation community.

14. Regarding questions on matters covered in this document contact J. E. Jacobs, Telephone (202) 632-7197.

15. In view of the foregoing, IT IS ORDERED, that this proceeding IS TERMINATED.

FEDERAL COMMUNICATIONS COMMISSION

William J. Tricarico, Secretary

Continued

Continued

What Do People Fear Most in the California Desert?

A recent statewide survey of recreational use in the California Desert delves into changing use patterns and asks what people fear about the desert, as well as seeking more traditional information.

The survey on "California Public Opinion and Behavior Regarding the California Desert" was conducted by the Field Research Corporation for the Bureau of Land Management at a cost of \$9,700.

The study was made as part of information gathering to assist in developing a comprehensive use plan for the California Desert Conservation Area.

The statistical sample totaled 514 males and 544 females in 120 areas throughout the state. They were selected to represent the California population of 18 years of age and older.

Both those who have visited the desert within the past year or so and those who have not visited it recently, listed these fears, in descending order of importance:

Car breakdown; unexploded military shells and bombs; flash floods; unfenced abandoned mine shafts; snakes, insects, etc.; getting lost; fear of other recreationists.

BLM Newsbeat May 1978

VISITOR SAFETY AND PROTECTION

Protection of the visitor, and park and concessionaire employees, from violations of laws and regulations and from hazards inherent in the park environment, is a prime responsibility of the National Park Service. The saving and safeguarding of human life takes precedence over all other park management activities, whether the life is of the visitor, concessionaire, or park employee. The Service will work closely with other responsible Federal, State, and local agencies in carrying out this responsibility.

Reference: *Health and Safety of Park Visitors*, NPS Special Directive 76-9, October 5, 1976

SAFETY

The Service, in the operation and management of the parks, will provide for the safety of park visitors in their use of park facilities and services.

EMERGENCY PREPAREDNESS AND SEARCH AND RESCUE

The National Park Service will develop and execute a program of emergency preparedness (and search and rescue) in accordance with the Federal Civil Defense Act of 1950. (P.L. 81-920, 64 Stat. 1245), as amended, and other considerations, as pertinent, at the Washington and Regional Offices and the parks. This program will include a systematic method for alerting visitors to potential disasters. In addition, an educational program should be instituted to prepare visitors to safely enjoy and utilize the various units of the National Park Systems.

EMERGENCY TRANSPORTATION

It is the responsibility of the Service to insure that adequate emergency transportation services are available for visitors who become injured or ill.

NAVY RESCUES 7 FROM DOWNED COPTER ON KAUAI

HONOLULU (UPI)— A navy helicopter hoisted seven persons to safety Monday after the sightseeing helicopter they were aboard went down near the top of a steep ridge in Waimea Canyon on the island of Kauai earlier in the day.

A Coast Guard spokesman said that none of the passengers suffered serious injuries. Pilot Donald Ballard and six passengers were flown to Kauai Veterans Memorial Hospital, where they were treated and released.

The Coast Guard spokesman said the Kenai Air Hawaii helicopter, a Bell Jet Ranger, left the Sheraton — Kauai Hotel's Koloa landing at about 10:30 a.m. on a sightseeing trip around the island but apparently ran into mechanical trouble.

When the copter did not return, the Coast Guard was notified. Five helicopters and four airplanes joined the search. The copter was sighted, apparently intact, on Puu Kapele Ridge.

—Los Angeles Times, Oct. 11, 1978



A curious Don Harris at work in 1973!

IN MEMORY OF DON HARRIS

Don Harris, NBC Correspondent, was one of the first victims of the Jonestown, Guyana massacre. I had met Don several times on search and rescue related activities over the years. On one occasion in October 1973 he and I were both covering a local agency's simulated plane crash workshop. At the time he was on the staff of a local TV station. He became involved in an actual rescue when one of the hundreds of young simulated victims actually suffered from heat exhaustion. Don jumped right in and helped with the first aid and evacuation. His sincerity and thoughtfulness made a lasting impression upon me. I believed him to be a good person and assured of success. (DEK)

RICO



SUCTION

EMERGENCY

MEDICAL

ASPIRATORS

SIMPLICITY — DEPENDABILITY

Available From All Leading Emergency Vehicle Manufacturers, Their Distributors and Emergency Equipment Supply Companies.

RICO SUCTION LABS
 P.O. Drawer 2508
 Burlington, N. C. 27215, U. S. A.
 Telephone: (919) 584-1826

BUSH ON SAR

STAN BUSH, NASAR'S 1978 HAL FOSS
AWARD WINNER

Under the sponsorship of Jay M. Kranz, M.D. an incredible meeting was held in Colorado Springs, CO during the spring of 1978. Entitled, "The Medical Side of Rescue" it was a major breakthrough for the SAR community. *Not* a series of lectures, it brought together top people in the medical profession with SAR personnel to make a start on a direct interface between the medical community and search and rescue. They interacted during two and one-half days of hard workshops to see just what could be done to provide information, direct support and guidance in developing parameters and protocols for the SAR team in the field. The entire attitude was constructive. Members of the medical community realized that SAR personnel *want* their help and they responded.

The conference was jointly sponsored by: Washington MAST Committee, Washington American College of Surgeons-Committee on Trauma, Washington Chapter American College of Emergency Physicians, NASAR, Mountain Rescue Association, ACT Foundation, American Trauma Society, Emergency Medicine Committee-NASAR, National Registry for Emergency Medical Technicians.

Panelists included: Commander Robert Cheney, M.D., William Mills, M.D., Stan Bush, NASAR, Dick Mitchell, EMS, Pete Van Hee, first DHEW MAST Coordinator, Rick LaValla, NASAR, Jay Kranz, M.D., Elliott Salenger, M.D., Ronald Holloway, M.D., MPH, Captain Gary Hedberg, MSO, James O. Page, J.D., Robert Lash, M.D., Rick Tullis, M.D., James A. Wilkerson, M.D., Greg McDonald, NASAR, Norman E. McSwain, Jr., M.D., James B. Borden, M.D., Gary Bunce, NSPS, Don E. Black, NASAR, Marvin Wayne, M.D., Gene Fear, NASAR, Barry Rumack, M.D., and Cameron Bangs, M.D.

At the end of the workshop it was decided that the group should identify unmet needs for the medical care of the victim, derive recommendations to meet these needs, recommend methods of implementing these recommendations, define areas where agreement is not possible, determine what can and can't be done with medical intervention and plan for continuing future support of the SAR community.

To start on this massive undertaking, they compiled the materials set forth here. They then asked that each representative present take the information back to their respective organizations and have the organizations evaluate the material and provide feedback so that they could revise their recommendations and begin to develop methods of implementing them.

NOW it is the task of SAR personnel to do the evaluation and provide the feedback. Included here is an outline of their recommendations.

Identified Unmet Needs For SAR Personnel

1. Dehydration — fluid deficit and management.
2. Hypothermia — exposure.
3. Assessment of the injured person.
4. CPR on ski slopes, in litters and difficult locations.
5. Psychological needs of patient and rescuers.
6. Serious allergic reactions.
7. Management of Pain.
8. First Care in off road emergency situations.
9. Airway management.
10. Patient packaging.

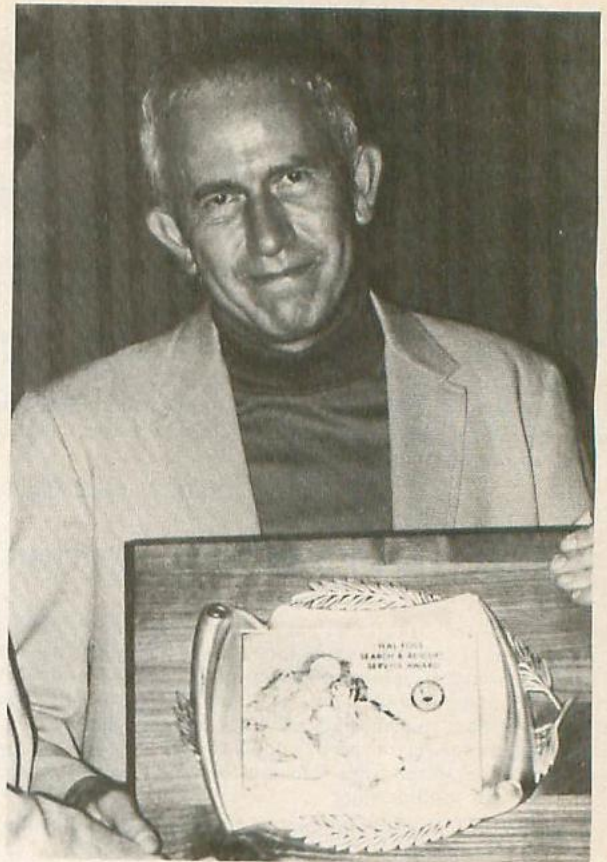
Recommendations

1. **Dehydration** — the ideal recommendation was the use of IV's along with MAST trousers with careful fluid management. MAST trousers considered excellent as long as field personnel *AND* emergency room personnel know how to use them. Definitely help with IV's.

2. **Hypothermia** — considerable discussion/debate. A new technique proposed involving aggressive core rewarming for the mildly hypothermic, mild core rewarming for the semi-conscious and none for those in a coma. Proposed that knowledge of core temperature is not important. Experts in this field (Cameron Bangs, et al) will get together and come up with a protocol.

3. **Assessment** — Agreed on the need for accurate assessment by first in, check sheets, data collection, training, follow-up and feedback.

4. **CPR** — The topic of considerable debate. Percentages show that those 4 minutes from care stand a 25% chance of recovery. One hour from definitive care the percentage is less than 4%. SAR personnel should try, but keep success in perspective. Very heated debate on this subject. New products are available but are still too expensive and



heavy for extended field use.

5. **Psychological Needs** — This area will be developed to include the needs of victim and rescuer. Stressed that it is as important to manage fear and pain as it is to bandage the victim. Shock management is a part of this area.

6. **Serious Allergic Reactions** — Generally a self-help problem of the victim. However, must be considered by the rescuer.

7. **Management of Pain** — Reservations about the use of narcotics unless under medical direction. However, morphine still the best if no head or respiratory problems. Recommend hyperventilation, fracture alignment and psychological help.

8. **First Care** — This developed into a major discussion of safety education. What is considered here is the care provided by the members of the party prior to the arrival of SAR personnel. It was agreed that a major thrust of the group would be the promotion of safety education through many different groups and techniques.

9. **Airway Management** — Extensive discussion of different techniques. Recommended to stick to the basics and that most management can be done effectively with a jaw lift and bag mask breathing. Next use the oral or naso pharyngeal airway. Use other techniques only as equipment and properly trained personnel are available.

10. **Patient Packaging**, Mentioned only as an area for continued research and study. The group was urged to keep looking for new techniques.

Challenge

The group was challenged to do all of their research, recommendations and writing of protocols oriented toward the extreme situation in which the rescuer might find himself — i.e. the swamp, high cliff, extreme cold, etc. Then it will be applicable to all types of rescue environments.

Medical Criteria for Rescue Teams

The group proposed the following criteria for *evaluation* only. *W* do you think? (Not in any order)

1. Each team must have an identifiable physician advisor.
2. Members of the team must be adequately trained in basic life support skills.

Continued

Continued

3. The team must have fluid replacement capability.
4. When needed the team must be able to manage the hypothermic victim. (An algorithm is being prepared).
5. They must be capable of maintaining core temperature, controlling pain, controlling allergic reactions and monitoring basic vital signs.
6. They must be capable of opening, establishing and maintaining an adequate airway.
7. There must be a continuing medical education program with emphasis on practical stress situational medical problem training.
8. There must be awareness and training for proper patient packaging and continuing patient care during evacuation.
9. The physiological changes inherent in the victim's environment during transport should be noted, understood and provided for.
10. The rescuer must be in condition to be able to perform effectively when he reaches the victim.
11. The rescuer must understand how the environment will affect the patient.
12. The rescuer must be aware of the legal implications of his work.
13. The rescuer must record the details of emergency care given to the victim and maintain a continuous record of vital signs.
14. The rescuer must have adequate equipment to manage the victim.
15. There must be an evaluative system for critiquing the care given by the rescuer — including self-evaluation, evaluation by others on the mission and by an outside source.

NOW, it is up to NASAR to evaluate this material and provide feedback to the medical community.

CONTACT

If YOU wish to present your ideas about this material, send them to:

Stan G. Bush, Chairman
 Emergency Medicine Committee
 National Association for Search and Rescue
 2415 East Maplewood Avenue
 Littleton, Colorado 80121

Help us to help you AND the victim —REACT!!

portable airborne mobile fixed

DIRECTION FINDERS

By L-Tronics

NEW PRODUCTS INCLUDE:

- * magnetic-based antenna system for your vehicle gives automatic fore-aft and/or left-right DF with our Little L-Per
- * remote meter and alarm light for space-saving aircraft DF installations
- * 12-channel aircraft DF for those who need additional capability

PLUS OUR BASIC DF UNITS:

- * Little L-Per Portable DF, base price \$175
- * Aircraft DF, base price \$190

Factory-built, complete units—not kits. Warranty, money-back trial. Hundreds in use by SAR teams like yours! Write today for free brochure.

L-TRONICS, 5546 Cathedral Oaks Road, Santa Barbara, CA 93111 Attn: SAR Dept.

Find yourself!

Join NASAR.

P.O. BOX 2123, LA JOLLA, CA 92037

MESSAGE FROM THE PRESIDENT: ART JONES

Now that we have streamlined the organizational element of the National Association for Search and Rescue (NASAR) and reduced the size of the Board of Directors to 15, I have the mechanism to personally know and readily communicate with each member and carry on the necessary business transactions which are so vitally important to the future of NASAR.

Our organization has already grown to such a size that it would be impossible for a single individual to manage all the necessary functions and respond to every need of the membership. I believe that with the streamlined structure we can now do that.

In previous correspondence to your Board, I have challenged each of them to get out and communicate with the people that elected them... you.

Any large organization has this communication gap between the people that make the decisions and those who have to live with those decisions. That is why we must address this problem and resolve it. The mechanism is in existence, but we need the support of everyone.

Please help us respond to your needs. NASAR is not you or me, it is us, together.



ART JONES, NASAR PRESIDENT

LETTERS TO THE EDITOR

THE FACTS!

Dear Dennis

I read your publisher's forum draft and, as we discussed, I was pleased with the majority of the article. I hope we cleared up the misconceptions you had on our problem areas. To elaborate somewhat, I would like to address each problem you listed.

The fixation with SAR dogs is not completely accurate. We have frequently employed mountain rescue and also cave rescue teams. However, due to our high success rate with SAR dogs, and the rapidity and ease of deployment we do, in fact, use them more than others. I might add that use of volunteer groups is at the discretion of the local civil authority responsible for the mission, i.e., Sheriff, OES, State Police. We only suggest resources and do not dictate SAR mission management.

Regarding ground SAR training; in the past, our coordinators have been only minimally qualified to perform this aspect of the search mission. However, in the past year we have sent coordinators to the National Park Service Ground SAR School and the Canadian Searchmaster Course. At present, our USAF representative at the National SAR School (NSS) has attended both and has incorporated ground search into the NSS training schedule. We anticipate having all SAR coordinators checked out in this area in the very near future.

The statement that AFRCC coordinators are the "backwash" of the USAF is wrong. I briefed you on my own qualifications and the screening process I employ in selecting my SAR coordinators. You may be interested in some additional data relating to their qualifications. We currently have 17 officers assigned. All are experienced aircrew members with an average flying hour experience level of over 3000 hours of cockpit experience in search and rescue, transport, helicopter and fighters. Seven of my eight officer reservists are commercial airline captains. In addition to flying and military background, seven of my sixteen active duty officers have Master's degrees and the remainder are enrolled in off duty programs leading to a Masters degree. I'm sure if you talk with some of the SAR coordinators in California, they will confirm that they are top notch people.

My enlisted controllers have an average of over 14 years' experience in the Air Operations career field and are all dedicated professionals. Most are graduates of an NCO Academy or USAF Leadership school. In short, my people are all exceptionally well qualified and would serve, with distinction, in any USAF specialty.

As I mentioned, you are right in that our research in ground SAR is lacking. This is not because we haven't tried, but because we've met with considerable indifference from state and local officials in our attempt to conduct research.

I hope my conversations and this letter clear up any misconceptions you may have about the AFRCC. Please feel free to contact me should you have any further questions. I appreciate the opportunity to tell our side of the question, thanks.

Sincerely

James L. Butera, Colonel, USAF
Director, Inland SAR

THE WHITE HOUSE

Dear Ms. McCoy:

As you are undoubtedly aware, the President's decision under Reorganization Plan No. 3 of 1978 to reorganize Federal emergency programs into a new Federal Emergency Management Agency went into effect on September 16, 1978. For your convenience, I have enclosed a copy of the White House Fact Sheet summarizing the key features of the reorganization and a copy of the Senate and House Reports on the Plan.

In the next few months, the Reorganization Project staff, working closely with the affected agencies and departments, will be developing implementation plans to activate the new agency in early 1979. As these activities proceed, we will keep you informed of our status and seek your views on issues of particular interest to your association. I want to take this opportunity to express our appreciation for the active interest and support you provided during our study process and while the plan was in Presidential and Congressional review. Your efforts to improve the performance of these important programs and willingness to share your views in a candid and cooperative manner were instrumental in

the plan's approval and help set the stage for a successful beginning for the new agency.

Again, thank you for your active interest in this important effort.

Sincerely,

L. Nye Stevens
Project Director

FACT SHEET

President Carter's plan to reorganize the Federal Government's emergency preparedness and disaster response programs goes into effect today.

The President submitted the plan to the Congress June 19. Under reorganization authority adopted by Congress last year, it becomes effective automatically unless either House votes to disapprove it within 60 legislative days. The House rejected a motion disapproving the plan September 14 by a vote of 327 to 40. The Senate allowed the measure to become effective today without considering a formal motion of disapproval.

Congressional acceptance of the reorganization plan clears the way for consolidation into a single agency of federal programs involved with preparedness, mitigation and response to national emergencies ranging from natural and manmade disasters to nuclear attack. The current fragmentation of these programs has caused redundancy and inefficiency in the federal effort and confusion on the part of states and localities.

The reorganization establishes a new Federal Emergency Management Agency which will replace five existing federal agencies and assume six additional disaster-related responsibilities. The agencies include:

- The Defense Civil Preparedness Agency (Defense Department), which administers the national civil defense program.
- The Federal Disaster Assistance Administration (Housing and Urban Development), which coordinates and funds federal natural disaster relief operations.
- The Federal Preparedness Agency (General Services Administration) which coordinates civil planning for national emergencies.
- The Federal Insurance Administration (Housing and Urban Development), which manages the flood insurance and hazard reduction programs.
- The National Fire Prevention and Control Administration (Commerce Department); which administers the federal fire prevention program in coordination with state and local governments.

The six additional responsibilities to be assumed by the Federal Emergency Management Agency are:

- The community preparedness programs for weather emergencies, administered by the National Weather Service (Commerce);
- The Earthquake Hazard Reduction Program, Office of Science and Technology (Executive Office of the President);
- The Dam Safety Coordination Program, Office of Science and Technology (EOP);
- The Federal Emergency Broadcast System oversight responsibility, Office of Science and Technology (EOP); and
- Emergency functions not now assigned to any specific federal agency: (1) coordination of emergency warning and (2) federal response to consequences of terrorist incidents.

Objectives

The reorganization will achieve the following objectives:

- Make a single agency, and a single official, accountable to the President and Congress for all federal emergency preparedness, mitigation and response activities;
- create a single point of contact for state and local governments, who have strongly urged consolidation of federal emergency programs. (The Carter reorganization plan was endorsed unanimously by the National Governors' Association).
- Enhance the dual use of emergency preparedness and response resources at all levels of government by taking advantage of the similarities in planning and response activities for peacetime and attack emergencies.

Savings

The reorganization will lead to cost savings of \$10-15 million annually through consolidation of agency headquarters, regional facilities and staffs. A decrease of 200-300 personnel, through attrition, is also anticipated.

Continued

Continued

NASAR INTERNATIONAL MEMBERSHIP

itor

For Blair Nilsson: We are in the process of negotiating SAR agreements with the various nations of the Pacific and Indian Oceans. If memory serves me, I think Indonesia and Taiwan have attended the annual conferences. Names of individuals, with addresses, from any of the countries in this region would be most helpful. Additionally, any topics of interest these individuals have previously expressed an interest in would be enlightening.

For Lois McCoy: I see, by official Air Force correspondence, that we have won the fight for the VHF-FM radios on the HC-130's, with a couple of spares for the 303rd jeep. Articles such as your report on the Federal SAR Symposium in the August 1978 *Gazette* are hard to ignore (even if you get little to no feedback). I think it put a little starch in their drawers. Now for the helicopters — press on!

Looking forward to Baton Rouge, NASAR Conference.

Peter W. Warn, Lt. Colonel, USAF
 Chief of Rescue Plans
 Det 3, Hq ARRS (Mac)
 Hickam AFB, Hawaii

Dear Mr. Kelley;

My name is Ed and I am currently a resident of the Washington Corrections Center in Shelton, Washington.

Recently one of your magazines (Spring 1978) fell into my hands and I haven't wanted to put it down from that point on. I am a past member of Civil Air Patrol and Explorers. I spent about seven years in the C.A.P. and two in the Scouts with a diving group, along with two years as an ambulance technician (EMT).

I would like to request past issues of *Search & Rescue* for my own knowledge and keeping up with what is happening in the SAR field while I am unable to participate in any active search activity.

I was very enthused with your S & R Magazine Index and the topics that your publication has covered and I will be looking forward to your response in this area.

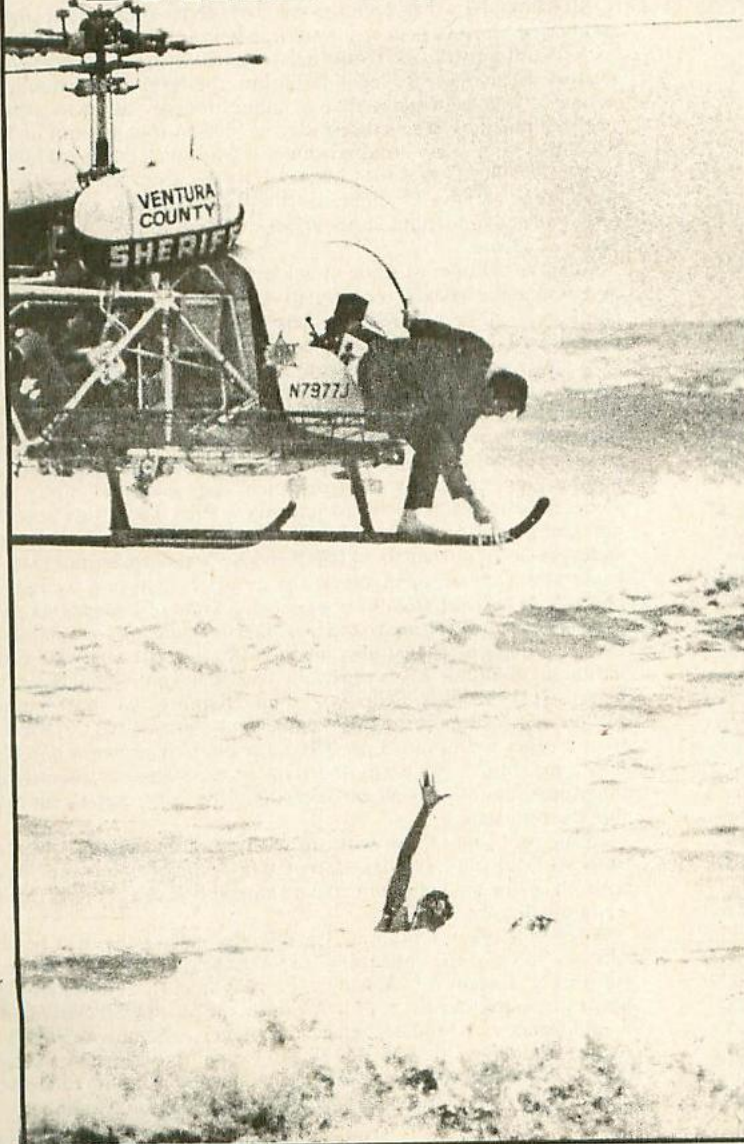
I am also interested in all of the new equipment that has come out in the past four years or so and I would like to re-educate myself a little if at all possible. If you have anything that could be of assistance, please send it.

I would just send the finances if I had them, but as of this time I am currently aiding this community by volunteering my program time to the Chapel here and the Corrections Center community through service.

I would appreciate your reply,
 Sincerely yours,

EHS

DARE TO BE THE PURSUER



Don't be the prey — helpless in emergencies! Prove your power potential by saving others!

SEARCH AND RESCUE MAGAZINE teaches you the search, survival and rescue skills that mean the difference. Subscribe now to our quarterly and add a super new dimension to your life!

Mail to: **Search and Rescue Magazine**
 Box 153
 Montrose, CA 91020 USA

Order now and **SAVE** up to **\$15.00** over newstand prices!

- SAVE \$15.00** on a 3 year \$30 subscription, enclosed is **\$27**
- SAVE \$ 9.00** on a 2 year \$21 subscription, enclosed is **\$19**
- SAVE \$ 3.00** on a 1 year \$12 subscription, enclosed is **\$11**

Name _____

Street _____

City _____ State _____ Zip _____

Enclosed is: Check, VISA, Mastercharge
 Card # _____

Expiration Date: /

EDITORIAL:

THE SAR PROBLEM IN THE UNITED STATES

Is there a SAR problem in the United States? Yes, I definitely think there is a SAR problem, not to the extent of our capabilities to respond to emergencies, but in the communication exchange of information, ideas and techniques and resources used throughout the United States.

As you well know, SAR is not new to the United States. SAR has been with us ever since life began. Adam had to find Eve somewhere.

What is new, is the different concepts and techniques used to accomplish SAR objectives. This is where the problem lies. How do we effectively communicate these improvements throughout the United States so that others can capitalize on the new technology and "not have to re-invent the wheel."

I think the answer to that problem has been found, but still requires tons of refinement and money before we are able to say we have accomplished our objective. Of course, that answer is NASAR.

This is no simple answer. NASAR must be able to effectively communicate between numerous organizations from Federal Government agencies, including the military, to state agencies, to local entities who are actually responsible for directing the rescue effort down to "Sam Saver," the individual performing the rescue. NASAR must provide the medium of exchange for all. How we accomplish this, will be up to all parties concerned. We at NASAR must "sell" NASAR to all concerned. To succeed, we must all support the objectives of this organization. NASAR has not yet received support from all agencies or individuals involved in SAR.

The support we need must be financial as well as active participation of those involved in SAR. Without either one, we will not succeed or survive.

Caution, many of those not closely involved look upon NASAR as a regulatory type of organization. We must change that image. We do not want to regulate or dictate policy or techniques. NASAR wants to provide an exchange of information ideas and techniques "so that others may live."

Thomas A. Staadt
Chairman - NASAR Membership Committee

WALK SMALL — — STAND TALL

The National Association for Search and Rescue! A Search and Rescue System (SARSYM) for the Nation! Are they the same??

They *could* be. Then we'd be "Standing Tall" — not for ourselves, but for those in need.

But we need a clear picture of just what we mean by such a system. Yes, it must include the individual units throughout the country — that vast army of volunteers that ARE search and rescue. It must include state agencies and the staff of NASAR itself.

However, that is not enough. We cannot afford duplication of efforts, and the interesting (?) incidents where several agencies are 'running the show' unknown to or in competition with other groups.

So to achieve our goal let's look at some real challenges and "walk small" — take them one at a time and develop a true SARSYM.

First, we must have commitment to our own units. But we must accept the need for a very real additional commitment to NASAR and this must be not just the few key people who are on national committees or attend annual workshops, but it must be a recognition and acceptance by ALL unit members of the value of a national program. So, **SELL IT.**

Second, we must interface with other emergency oriented agencies. Such an interface at the American Trauma Society Houston conference was fleeting, but exciting. We need to work with the medical community, the National Safety Council, the communications people, the American National Red Cross, the International Association of Fire Chiefs, the military, the federal community, the Civil Air Patrol, the National Jeep Association, the spelunkers, the National Ski Patrol, mountain clubs, disaster management personnel, conservation groups, survival training groups and many, many others. Let's take the initiative and get involved with them.

Third, we must combine, compile and invent. Share our techniques and develop new ones. Provide input to different committees and answer questionnaires. We may not agree, but let's agree not to disagree! Merely *share.*

Last, we must build carefully — "walk small." Not take on too much at a time. Not overburden those willing to work, but recruit others to help.

Yes, you've heard all of this before, but let's put it bluntly — The goal *IS* a functional National SARSYM. But only *YOU* can achieve that goal. Time and again we read in NASAR publications that call for 'help' and that "silence means consent," but is there anyone out there listening?

Will *YOU* accept responsibility and be a part of the development of this national system by accepting the four objectives above? That's the challenge. Push these objectives, join a committee, **RESPOND.**

With hundreds of you in the SAR community "walking small" — doing your part — WE can "stand tall."

Stan G. Bush, President
Colorado SAR Board

ON SAFETY AND WILDERNESS

Throughout the National Park system, today's visitors include ever-increasing numbers who voluntarily place themselves in high-risk situations. And when injuries or deaths occur in wild areas, today's judges and juries grant ever-increasing awards for what used to be called acts of God. A man wins a settlement for damage from the Forest Service because a tree blew down in a campground during a windstorm. Relatives collect from the National Park Service (NPS) because a man was killed by a bear in Yellowstone. A girl with a permanent spinal injury caused by misuse of mountain climbing equipment collects from the retailer. The same legal climate that has made medical malpractice insurance rates skyrocket threatens to affect everybody's wilderness experience. Nowhere is there more evidence than in Alaska's Mount McKinley National Park.

McKinley Park has been the scene of the most expensive and most publicized air rescues of any American wild area. Imagine the dilemma of NPS administrators. Court decisions have forced them to consider visitors as invitees. By legal definition, the NPS invites hundreds of people a year to a place that is unquestionably hazardous to one's health and safety: the subzero-degree, 20,320-foot summit of Mount McKinley. For every hundred climbers who reach the top of McKinley or neighboring 17,400-foot Mount Foraker, three die. In 1976, there were ten fatalities, eighteen frostbite victims involving five amputations, and nine cases of serious high-altitude pulmonary or cerebral edema.

At stake is the most basic of wilderness values: the right to risk life and limb in the wilds. It is central to skiing, river running and mountain climbing — to name a few. It is less obvious, but just as important in educational outdoor programs that put new twinkles in children's eyes by removing them from a dull routine of rote learning and placing them instead in situations where they must actively question their surroundings and seek answers for themselves. This very process — of questioning, of learning — makes activities such as climbing defy statistical analysis. Outlaw leather boots on McKinley because a high number of climbers were frostbitten last year and along comes someone who wants to try to improve leather boots this year. Set a maximum rate of climb to avoid altitude illness, and along comes someone acclimatized to 14,000 feet who wants to ascend fast. . . A wilderness experience involves a state of trust in oneself and one's abilities. It is diametrically opposed to a state of dependence, where trust is transferred either to other people or to technology. The level of this trust determines just how far the wilderness traveler will push. In mountain climbing this is especially true. Each individual is regulated by self-trust. Mountain climbing, unlike tennis or baseball, has no set rules or regulations because it is dependent on trust. In most ways, this trust escapes definition. Like love or religion, it grows in one's heart over a period of time; many shortcuts to happiness are advertised for those unwilling to expend the necessary effort of commitment to gain this trusting state.

In the past, only those with sufficient trust in themselves ventured onto Mt. McKinley's slopes. Half of today's climbers, however, pay for their place in a guided group, and all have access to a chopper ride only a radio call away.

After much soul-searching, I personally believe that it is better to sacrifice some of the appearance of wilderness in order to regain self-sufficiency. Except for McKinley, every frequently climbed mountain in the world has some sort of living or rescue facilities at closer hand would rather see a modest cache of a stretcher, a rescue winch and a few oxygen bottles in the rocks at 17,000 feet so that expeditions could quietly evacuate their sick, rather than depend on a radio call to bring noisy chase planes and helicopters in the mountain fastness.

Galen A. Rowell

BOOK REVIEWS

DENNIS KELLEY

ENJOY YOUR ROCKCLIMBING

by Anthony Greenbank

150 pages \$8.95

Search & Rescue Magazine

P. O. Box 153

Montrose, CA 91020

This unique approach to teaching rock climbing is very refreshing and entertaining. Its distinguishing step-by-step systems approach assures solid fundamentals are achieved before beginning the next more difficult climbing. In addition, the format of reliving specific climbs enhances the lessons learned from absolute novice to lead climber. Interestingly, the English dialogue and viewpoint of climbing adds a new perspective which includes the double-knotted bowline, routefinding, building block learning philosophy and a wrap on the belay braking arm for increased friction.

WHAT TO DO ABOUT BITES AND STINGS OF VENOMOUS ANIMALS —

by Robert E. Arnold, M.D.

1972, The Macmillan Company

866 Third Avenue, N.Y., NY 10022

122 pages, \$1.95

This definitive document on snake, insect and other poisonous animal bites and stings, attempts to assess the medical significance of venomous animals in the U.S. It puts to rest the varied treatments often heard such as ice, tourniquet, alcohol, cut and suck, etc. This book describes the animal, the bite, the wound, first aid, clinical treatment and sources for antivenom. This book is a must reference for any SAR group as it may become the only source in your town for that rare event of exotic snake or spider bite.

COMMON SENSE IN DESERT TRAVEL

by Carl and Barbara Austin

Maturanog Museum Inc. — 1967

P. O. Box 5514

Cinca Lake, CA. 93555

36 pages \$1.49

This little book typifies the common sense approach that I have found in another book by the Austins. This is a very easy reading book with an abundance of common sense tricks and facts for travel which is a must for outdoorsmen.

This little book covers such basics as: it's better to carry your water in your stomach rather than your canteen. To more sophisticated ideas such as straightening a bent tie rod.

'WE SUPPORT SAR'

Police Call Radio Directory

Lebanon, NJ 08833

(201) 236-2296



Oh, goodie! They're giving up the search for us!

BEST PHOTO-CONTEST

SEARCH AND RESCUE MAGAZINE

IS PAYING

\$25.00 Each

FOR THE

BEST

ACTION RESCUE PHOTOGRAPHS

FOR PUBLICATION IN OUR

ISSUES

DON'T PROCRASTINATE —

DIG INTO THAT OLD PHOTO FILE OF YOURS AND GET THEM IN THE MAIL **TODAY!**

Please enclose a self-addressed stamped envelope if you want them returned.

Mail to:

Editor, Search and Rescue Magazine

P.O. Box 153

Montrose, CA 91020

CALENDAR

DECEMBER 9-10, 1978

Colorado SAR Board Avalanche Rescue Seminar
Colorado Mountain College, 103 S. Harris Street,
Breckenridge, Colorado
Summit County Rescue Group
P. O. Box 1794
Breckenridge, CO. 80424

DECEMBER 12, 1978

Interagency Committee on Search and Rescue (ICSAR) Meeting, Department of State, Washington, D.C.
A. J. McCullough
HQ USCG, SAR Liaison
400 - 7th Street SW
Washington, DC 20590
(202) 426-1933

JANUARY 15-19, 1979

Managing the SAR Operation
Student Union Building, University of Idaho, **Moscow, Idaho**
Office of Continuing Education
University of Idaho
Moscow, ID 83843
(208) 885-6486

FEBRUARY 5-9, 1979

National SAR School for State Coordinators
Governors Island, New York
Office in Charge, USCG National SAR School
Governors Island, New York, NY 10004
(212) 668-7421

FEBRUARY 21-24, 1979

Symposium of Hypoxia and Man at Altitude
Baniff, Alberta, CANADA
The Arctic Institute of North America
University Tower
2920 - 24th Avenue NW
Calgary, Alberta T2N 1N4 CANADA

FEBRUARY 28-March 2, 1979

Paramedic Paramotors '79 National Conference on Pre-Hospital Care,
University of Southern California School of Medicine
Beverly J. Johnson, Program Assistant
USC School of Medicine, Postgraduate Div.
2025 Zonal Avenue
Los Angeles, CA 90033
(213) 226-2466

MARCH 15-18, 1979

NASAR Spring Business Meeting
USCG Academy, **New London, Connecticut**
Lois Clark McCoy
NASAR Administrator
P. O. Box 2123
La Jolla, CA 92038
(714) 276-7228

APRIL 26-29, 1979

National EMT Conference
Denver, Colorado

Events of interest to the SAR community should be sent 2 months early to: **Calendar, Search and Rescue Magazine**, P.O. Box 153, Montrose, CA 91020 (213) 248-3057

APRIL 28-30, 1979

Saddleback SAR Team Tracking Seminar.
Caspers Regional Park, San Juan Capistrano, California
Rad Mays
P. O. Box 5222
Orange, CA 92667
(714) 661-3367

MAY 4-6, 1979

Triage in Trauma VII
Ramada Inn, **Waterloo, Iowa**
Terry M. McGrane, Chairman
Iowa Trauma Seminar Planning Committee
P.O. Box 442
Denver, IA 50622

JUNE 23-30, 1979

Northern California SAR School
Donner Mines Scout Ranch
Marysville, California
Ken Anderson
P. O. Box 1351
Marysville, CA 95901
(916) 742-3215

JULY 29-AUGUST 4, 1979

Cave Rescue Operations and Management
Headquarters New York Department of Environmental Conservation, **Albany, New York**
National Cave Rescue Seminar
834 Louise
Petaluma, CA 94952
(707) 763-4884

IT TAKES GUTS....

... TO ASK FOR HELP!
STREET WISE, SAR WISE, THERE ARE NO SECRETS IN SAR IF YOU KNOW WHO TO ASK.

SEARCH AND RESCUE MAGAZINE'S EXPERTS DELIVER A UNIQUE CONSULTING SERVICE THAT MAKES YOU BOSS. WE ARE A PHONE CALL AWAY....

213-248-3057

OR WRITE ...

EXPERTS
SEARCH & RESCUE MAGAZINE
P. O. BOX 153
MONTROSE, CA 91020 USA

ASK.



UPI

OFF BELAY

THE MOUNTAIN MAGAZINE

A Journal of Communication for Active Mountaineers, Rock & Ice Climbers, and Off-Trail Wilderness Buffs since 1972

"You seem to have broken the glory trend which is so prevalent in the climbing publications today."—Salt Lake City, Utah

"I want to repeat what I said at the A.A.C. banquet, that I think you have the best of all the mountaineering magazines."—Seattle, Washington

"Your magazine is, in my opinion, making a real contribution to mountaineering. I particularly enjoyed the articles on equipment and the detailed route maps of Mounts Rainier, Adams, and others."—Fairfield, Ohio

"I have become an avid reader with only one complaint—that it is only published six times annually!"—Spring City, Pennsylvania

"It's great to read articles of such variety and instructional interest, rather than the typical 'our trip' accounts."—Vancouver, B.C. Canada

"I have often read ALPINISMUS, a prestigious German publication. Your magazine is at least equal in quality and is certainly more relevant."—Issaquah, Washington

"A good mountaineering magazine should have regular departments with well illustrated articles. I'm glad you are presently doing this."—Macomb, Illinois

"I reviewed last year's issues and decided that OFF BELAY was too valuable a magazine to drop. It is not only the best U.S. climbing magazine; it is also a good magazine."—Wellesley, Massachusetts

"The articles on climbing areas have been excellent. Thoroughness is their greatest asset. You really treat an area well, including history, climate, geology, trails, and routes."—Pittsburgh, Pennsylvania

"We have too many mountain magazines whose main purpose is the ego aggrandizement of the climber. This isn't entirely bad, but route descriptions, times, and comments are needed to complement this material. I hope that your magazine will continue to do so."—Yosemite, California

"You have, far and away, the best climbing mag on the market, and I think a lot of it is due to your philosophy of keeping the sport a 'doer' thing. Keep it up!"—Huaneayo, Peru

"As North American correspondent of YEH-WEI—a leading mountaineering monthly in the Republic of China, I am requesting permission to translate certain articles into Chinese."—Columbia, South Carolina

"The newest magazine on the market and by far the best. Several times more technical articles than other magazines. If you subscribe to one, this should be it."—Mountaineering Periodicals, Physical Ed. 124, University of Nevada.

In each issue—

-56 pages -50+ photo's

HERE'S A SAMPLING FROM BACK ISSUES . . .

(Some are still available)

- On Rating Climbs • Padded Hip Belts on Pack Frames • Securing a Rappel • Rock Glaciers • UIAA Belaying Report • Cold Water Treatment of Burns • Frostbite—Treatment and Protection
- What's New About Avalanches • Yeti • Analysis of a Winter Survival Situation • The Idaho Sawtooth • Equipment Tests by the German Alpine Club • Climbing Fitness • Rope Failure • The California Palisades • Sunlight Deterioration of Climbing Ropes
- A Caver Looks at Ascending Safety • Alpine Dangers in the Sixteenth Century • The Columbia Gorge • Notes on Equipment and Technique • Searching for Avalanche Victims • What did Bonneville Climb? • A Lighter for Camp Stoves • Chock Talk
- Improvising a Rope Stretcher • Conrad Kain • Impressions of the Alps • High Altitude Pulmonary Edema • Berg Lake and Mount Robson • The Gearfreak Caper • Horsts, Grabens, and Wild Horses in Nevada • Mount Hayden—The True First Ascent of the Grand Teton? • Nutrition, Fluids and Salt • Mount Baker
- Mountain Sickness • Cold Related Injuries • Baffin Island • The McKinley Crisis • The Questionable Prusik Safety • Climbing in Russia • A Review of Ski Mountaineering Equipment • Yoga Breath Training for High Altitude Mountaineering • Ring Avulsion Injuries • Fremont's Climb in the Wind Rivers • Field Tests of Chocks • Body Fluid Management • Mountain Weather • Is that Water Safe to Drink? • Duke of the Abruzzi • Gore-Tex®—An Evaluation • Medical Round Table • The Efficiency of Rescue Pulleys • Pinnacles National Monument • A Glossary of Avalanche Terms • Chief Mountain, Glacier National Park • Avalanche!—Victims and Survivors • Abalakov Cam Nuts • Rock Climbing among the Ancient Greeks and Romans • Mountain Rescue—A Victim's Viewpoint • Four Footed Feats—A Canine Hall of Fame • Red Snow • Shock!—A Life Threatening Emergency • On "Space Blankets"

... AND THERE'S A LOT MORE COMING



OFF BELAY

15630 S.E. 124th STREET
RENTON, WASHINGTON, 98055

S&R

NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

Renew my subscription

1 Year \$7.50 (\$7.91)

Enter my new subscription
Start with the issue dated

2 Years \$14.00 (\$14.76)

3 Years \$20.00 (\$21.08)

5 Years \$30.00 (\$31.62)

Check inclosed

Bill me

Foreign subscriptions (except Canada) add \$1.00 per year.

Washington State subscriptions must include the 5.4% sales tax noted in the parenthesis

SIX ISSUES PER YEAR — FEBRUARY, APRIL, JUNE, AUGUST, OCTOBER, DECEMBER

Books for SAFETY AND ADVENTURE



SEATRAMPS, Five Years of Ocean Life



Norman and Sheila Martin sold their car business and at the ages of 59 and 48 took to the sea as a way of life in their 42 foot steel ketch Shebessa. With an idiosyncratic sequence of humankind as crew, depending increasingly on their trade in seashells and fish caught in mid-ocean, they met and befriended a rich variety of primitive islanders from the South Pacific atolls to the Maldives in the Indian Ocean. Follow with them on an incredible five year odyssey which took them far from industrialized civilization.

Illustrated, cloth, 224 pages **\$9.95**

THE A-Z OF CHEAPER BOATING, A Practical Guide



All boatowners will be able to pocket substantial savings by following the practical advice on a wide variety of economies. For the do-it-yourselfer there are detailed plans for a hundred and one simple gadgets that can be easily constructed. All recommendations are tested by time and experience. Cost saving projects include: how to earn money through chartering, how to make five navigation aids for under \$5.00, how to make masts, sails and rigging, notes on insurance, Houseboat living, and shared ownership.

Detailed illustrations, cloth, 128 pages **\$8.95**

WHERE THE TRAILS RUN OUT



Blashford-Snell is best known as an organizer and leader of expeditions, having organized 60 expeditions to all parts of the world. Underwater archaeology in the Mediterranean and treks across North African deserts were followed by ventures into Ethiopia, the Great Abbaï Expedition, and expedition to the little known Dahlak Islands of the Red Sea, and the British Trans-Americas Expedition of the Darien Gap in Panama and Columbia. Illustrates the truth that leaders must be cool in crisis and decisive in action and allows you to share the experience of what happens where the trails run out.

Illustrated, cloth, 267 pages **\$10.95**

PEAKS AND PIONEERS



Enjoy the spellbinding two hundred year drama of mountaineering—the story of how a gallant company of very different men and women—dukes, cowherds, biologists, literary critics, economists, artists, prospectors and plumbers—reacted to the mountains they climbed, how they met difficulties and danger with comradeship, joy and unbelievable courage. This authoritative text frames and introduces the accounts of the pioneers themselves, who speak in their own words from their own time.

260 illustrations, 40 color plates, cloth, 192 pages **\$19.95**

SEA SURVIVAL, A Manual



Learn the do's and don'ts of facing a crisis at sea from this handy, absolutely reliable safety manual. Having been captured and lost at sea the author draws on personal experience to share the best in survival techniques. No one who ventures beyond inshore waters can afford to ignore this valuable handbook of essential survival knowhow. Includes compass and charts of the world's oceans for handy reference on board.

Illustrated, cloth, 160 pages **\$9.95**

SWIMMING AND WATER CONFIDENCE



Learn how sinkers and learners of all ages can become completely water-proofed and drownproofed—totally safe, at ease and happy to be immersed in water. In contrast to the conventional preoccupation with specialized swimming for competition, stress is placed on the importance of learning water confidence, natural buoyancy and elementary propulsion. The fresh, informative text will be equally useful to both teachers and parents.

Illustrated, cloth, 128 pages **\$8.95**

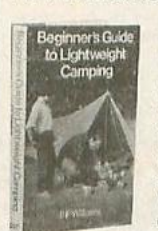
ENJOY YOUR ROCKCLIMBING



Beginners and experts alike will gain a world of information from this comprehensive handbook. Shows how to hand-jam, where to lay-back and which way to pad up slabs. Techniques are discussed by progressive difficulty showing how to use two ropes, slings, and karabiners. Photographs and drawings amplify the text and combine to make this a must for any rock-climber's library.

Illustrated, cloth, 160 pages **\$8.95**

BEGINNER'S GUIDE TO LIGHTWEIGHT CAMPING



All you need to know to become thoroughly proficient at lightweight camping whether on foot, canoe or bicycle. Learn about pre-camp planning, types of tents, equipment, site selection and the basic techniques of setting up camp. Covers backwoods camping, winter camping, canoe camping, invaluable advice on cooking and first aid and much more. Valuable for the novice and seasoned camper alike.

Illustrated, cloth, 192 pages **\$8.95**

YOGA OVER FORTY



Discover simple techniques for slowing down physical aging, repairing a body that has already been allowed to deteriorate, and improving your health. Easy-to-read text and many clear illustrations emphasize the importance of positive thinking and of complete character development. Learn how to delay the infirmities of old age and how to greet age with dignity, grace and serenity.

Illustrated, cloth, 165 pages **\$7.95**

IN THE STEPS OF STANLEY



Follow the hazardous Zaire River Expedition of 1974-75 in this fascinating account based on the official log of its leader. This dramatic story includes excerpts from the diaries kept by Henry Morton Stanley in the course of his own historic exploration. A remarkable tribute to the spirit of adventure itself, and a clear indication that this spirit flourishes as strongly today as it did in Stanley's time.

Illustrated, cloth, 175 pages **\$8.95**

CAMPING AND HILL TREKKING



Your comprehensive reference on camping and trekking whether ramble or expedition enthusiast. All details of camping and trekking are covered including the merits of various equipment, camp organization, camp arts, map and compass instruction, walking techniques, and dress. Stress is placed on safety and attention is paid to mountain safety and route planning. Provides a syllabus of training for those concerned with the instruction and organization of expeditions for young people including pre-camp training and equipment practices.

Illustrated, cloth, 188 pages **\$4.95**

SMALL BOAT AGAINST THE SEA



King and Bird are the only oarsmen ever to have attempted to row around the globe. This extraordinary expedition required two years of fitting out, renovation, testing and training. The personal drama which evolves is a story in which human responsibilities and the implacable hostility of the elements considerably mature two idealistic young men. A story of the grittiest sea adventure, and of a refreshingly original kind.

Illustrated, cloth, 224 pages **\$9.95**

YES, I'm intrigued by adventure and concerned about safety. Please send me the books I've checked below. I understand that if not completely satisfied I may return any of the books within 15 days for full refund.

- Sea Survival \$9.95
- Yoga Over Forty \$7.95
- Seatramps \$9.95
- Swimming and Water Confidence \$8.95
- In the Steps of Stanley \$8.95
- The A-Z of Cheaper Boating \$8.95
- Enjoy Your Rockclimbing \$8.95
- Camping and Hill Trekking \$4.95
- Where the Trails Run Out \$10.95
- Beginner's Guide to Lightweight Camping \$8.95
- Small Boat Against the Sea \$9.95
- Peaks and Pioneers \$19.95

- Enclosed please find a check in the amount of \$ _____ for the books I've checked.
- Please charge my MasterCard # _____
4 digit interbank # () () () ()
- Please charge my VISA (BankAmericard)# _____

Name (Please Print) _____

City _____ State _____ Zip _____

Signature _____

Send orders to: **Search and Rescue Magazine**
P.O. Box 153 • Montrose, California 91020