



# the month's

# GUANO



**May 1994**

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The Month's Guano  
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## June Photo/Art Contest

This is your chance to show off your stuff whether you draw or shoot pictures. Win prizes and be published in *This Month's Guano*!

Categories to include prettiest speleothems, cave buddies in and out the caves, party animals at the campgrounds, etc. Bring your enlargements and snapshots.

### Kansas City Area Grotto Minutes April 13, 1994

The meeting was called to order by President Richard Cindric at 7:05 pm in the M.A.G. Hall. About 35 cavers in attendance (some drifted in late).

#### Trip Reports:

- ◆ Randy Bruegger and Bob Younger took a Boy Scout Troop to Bat and Tunnel Caves on March 19th. Scouts went to Berry Cave on Sunday while Younger, Mike Kirch and Mike McKinney went to Peque Cave.
- ◆ Vertical Safety Workshop on April 2 in Mary Williams barn. Led by Mary, Richard Cindric and Tom Howell. Topics included vertical etiquette, rope care, safety, change-over demonstration.
- ◆ Speleo Weekend trip to Lake Eucla, Okla. on March 11. Caves small and hot but good time had by all.
- ◆ March 11-13 Richard and Jerry Cindric and Richard Pyles searched out more pits in Arkansas for the May yo-yo trip.

#### Planned Trips:

- ◆ April 15-17—Spring MVOR in Perryville
- ◆ April 16—Peddie Heinze and David Foran leading Boy Scout trip to Mushroom Cave.
- ◆ April 30—Randy Bruegger leading trip to Smittle.
- ◆ May sometime—Bruegger is planning a carbide-only trip someplace nice and wet.
- ◆ May—3 day yo-yo trip to climb 1000 feet of pits. Must have own vertical gear and be familiar in its use. Richard Cindric leader.
- ◆ John McQuire will check on a trip to Ozark Underground Labs.
- ◆ June—Cindrics will finish survey of Virgin Cave. Will rappel cliff face to pit. Need wet suit.
- ◆ June 20-24—NSS Convention, Bracketville, TX.

#### Old Business:

- ◆ Memberships are due—\$10
- ◆ Treasurer Report \$ ~~100.00~~
- ◆ MVOR Committee Report—Bob Younger and Mike McKinney checked out Columbia area for sites. Bid flyers will be passed out at MVOR. Bid speech to be given by Richard Cindric and Rick Walk.

#### Meeting Program Schedule:

- ◆ May 11 at Shawnee Mission Park
- ◆ June 8 at MAG Photo/Art Contest
- ◆ July 13 at MAG Paul Johnson reports on his relative who won a Pulitzer Prize in 1927 covering the story of Floyd Collins.
- ◆ August 10 Geologist Bob Younger (who now has a real geology job) talks on hydrology.
- ◆ Sept. 14 Tentative vertical session at Cliff Drive.

Respectfully Submitted,  
Kate L. Johnson, Secretary

#### May 1994

The Month's Guano published monthly on second Wednesday.  
Editor/Secretary/Treasurer: Kate L. Johnson, 1705 Safari Dr.,  
St. Joseph, MO 64506

Articles due: Submit to editor 10 days prior to meetings.

President: Richard Cindric, 913-262-2008

Vice President: Bob Younger, 913-583-3902 (DeSoto, KS)

Equipment Chair: Richard Crabb, 816-483-2831

Membership Chair: Randy Bruegger, 913-829-3943

Kansas City Area Grotto is affiliated with the National Speleological Society, The Missouri Speleological Survey, and a Founding Member of Missouri Caves & Karst Conservancy.

Meetings held every second Wednesday at 7 p.m. (alternate site in May), M.A.G. Hall behind Midwest Research Institute, Volker Blvd, Kansas City, Missouri.  
Annual dues: \$10

## Humanity vs. Nature

by Evelyn W. Bradshaw  
Editor of NSS Administrative Memo

More than once your editor has pondered the philosophical dilemma: whether caves are made for people or people for caves? It was intriguing to find this same split in attitude described in the July/August issue of *Sierra*. There are so many arguments on both sides of the question that it may not be possible to reach a resolution in our time.

Where do I stand? Well, I am not one of those who blithely ignore the overpopulation problem in the confident hope that we will eventually establish colonies elsewhere in the galaxy to absorb the excess population. I can define infinity (as a mathematician) but I don't believe the resources of the planet Earth are infinite. The following comments are based on the feature in the *Sierra Club's* magazine mentioned above.

Of all modern social movements, environmentalism is the most science-driven. It was scientists who detected the thinning of the ozone layer and who discovered that DDT was wiping out songbirds and asbestos was killing shipyard workers. Yet the historic symbiosis between science and environmentalism is threatened by a by a schism within the scientific community.

Those who put humanity's needs first have voices on the editorial page of *Science*, the weekly journal of the AAAS. Editors regularly bash environmentalists as panderers to a naive public desire to be protected from risk, and as advocates of "illogical alternatives" driven by emotionalism and indignation." Many prominent scientists have endorsed a declaration asserting that environmentalism is impeding efforts to advance technology and improve living standards. They feel that science can control the results of its manipulations.

But there are other scientists, including Nobel laureates, who have spoken out on the need to preserve biological diversity, to stabilize human population growth, to promote sustainable development, and to take early action to forestall global warming.

These scientists believe that nature is too complex and too precious to be regarded as simply

an endless source of raw material for technological experimentation. They are skeptical of unlimited scientific meddling, recognizing that well intentioned work has often had disastrous consequences.

(Reprinted from *NSS Administrative Memo*, Vol. 16, No. 3.)

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## TEN MILES ADDED TO MAPPED LENGTH OF LECHUGUILLA

NPS News - Bob Crisman

A total of 10 miles was added to the know length of Lechuguilla Cave in Carlsbad Caverns NP during 1993, bringing its total surveyed length to 69.2 miles at the start of 1994. The new rooms and passages were discovered during 11 separate expeditions that were conducted during the year. Six of the expeditions were by the newly formed Lechuguilla Exploration and Research Network, which is an organization of volunteer cavers from throughout the U.S. The group's most recent expedition concluded January 2, 1994.

Among significant discoveries in 1993 were: (1) an area called the Needle Park Maze; (2) a section called Neverland; and (3) a large room named Blanca Navida Room, which is 300 feet long, 50 feet wide, and 50 feet high. According to Park Superintendent Frank J. Deckert, this highly decorated room contains several pools with subaqueous helictite formation growing in them. Deckert also stated that other extensions were made in the North Rift, the Western Borehole, and the Far East section.

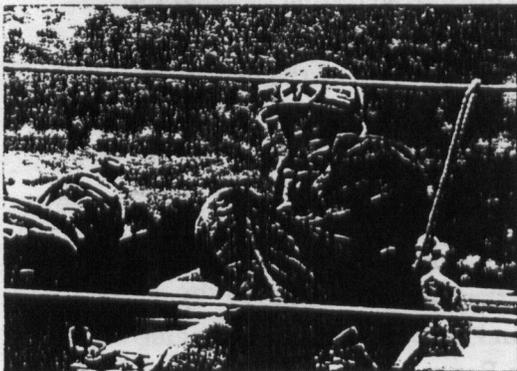
Most of the exploration in 1993 was directed toward leads heading north toward the park boundary and the new cave protection zone bordering the park, which was designated under PL 103-169, known as the Lechuguilla Cave Protection Act.

**KCAQ To Host  
Fall 1994 MVOR**

## Cave Man

"Spelunkers" are folks who see a nifty cave in the ground, are equipped with not much more than a flashlight and proceed to explore the depths of the earth. That's why experts call them "flashlight cavers." "When their flashlight goes dim, that's when they turn around to come out," says Gene Harrison of ASTM Committee F-32 on Search and Rescue. "That's like taking a drive and deciding to turn around when you run out of gas."

It's so dark down there that even the most experienced cave explorers (they just call themselves "cavers") would have a hard time finding their way out if they lost their light sources. When cavers or spelunkers find themselves in the dark or run into trouble underground, there's skilled cavers who can help. Gene Harrison has been helping trapped and injured cave explorers for over a quarter century. He's been doing that not just by going to real rescues, but by developing training classes and founding the National Cave Rescue Commission (NCRC).



Gene Harrison 1,100 feet (335 metres) up on the Canadian National Tower, Toronto, Canada, for the world record 4,800-foot (1,463-metre) high-line demonstration. (The following year he participated in the new world record of 5,200 feet (1,585 metres) at Mt. Arrowsmith, Vancouver Island, British Columbia.)

Harrison is at the forefront of cave rescue technology and technique. Since his days as an electronics engineering student at Virginia Polytechnic Institute (VPI), Harrison has been improving existing methods of rescue, developing new ones, and trying to get the word out to the caving and rescue community in a standardized and useful fashion. "No single person can be credited with developing all the techniques of cave rescue," he says. "But what I've been doing is taking principles of physics and engineering, applying them to rigging and rescue and putting it all in a form people can use."

Along with two fellow cavers, Harrison recognized the need for a grass roots training program for cavers. They formed a team that developed cave rescue training not only for cavers, but also for professional rescuers. They conducted classes in the mid-Atlantic area and were certified by several state organizations. "We trained cavers in how to rescue themselves, help their buddies on the trip and how to work together if they get called in to be part of a large rescue operation," says Harrison. The secret to the success of the program, he says, was taking cavers and putting them together with rescue professionals. "Once they trained, worked and succeeded together, they built a strong relationship."

All of this was informal until Harrison and several other cavers persuaded the National Spe-

leological Society to form the NCRC in the late 1970s. Upon helping found the Commission, he served for several years as its first coordinator for the Eastern Region (Middle Atlantic states). Today, the NCRC serves as a developer and presenter of nationwide training programs and as a resource coordinator to get trained rescuers on site when a caver is lost or injured. "The response teams go at the request of public safety agencies. Sometimes they get there and give expert advice or are asked to take over the underground portion of the rescue. Sometimes they call for more support if needed for tougher rescue projects." Cave rescues can take from five minutes to a whole week to complete and may involve anywhere from one caver to 200, Harrison says.

The ASTM member figures he must have taken part in hundreds of actual cave rescues over the years. Getting to and treating injured cavers is only half the battle. Fighting hypothermia and carrying them out of the cave, usually strapped to special litters, is the hardest part. Often rescuers have to pass through cracks and crevices, haul litters up deep pits or even lift them across chasms on mid-air high lines. It is these simple and advanced techniques for quick rescue with available resources that Harrison has spent decades perfecting and teaching. "It's amazing what you can do with your head and your hands and your heart. If you teach people to use those, they don't need a lot of other things. But it helps to have a van full of gear, too!"

That seems to be Harrison's objective in his professional life as well. He believes in solving problems by improving existing techniques, and only creating entirely new technologies if necessary. Harrison works for the federally funded research and development center, MITRE Corp., where he advises the government on emergency communications for military and civil use. He sees a link between his search and rescue (SAR) philosophy and his job. "Having all this experience with SAR operations and disaster assistance is extremely valuable in this profession because I can give the government good, real-world advice—not just theory," he says. Harrison also founded and runs Search and Rescue Communications, a nonprofit organization dedicated to developing emergency response communications, primarily for cave and mountain SAR operations. While his schedule may seem a bit overwhelming, Gene Harrison is one of the lucky few who get to live out his philosophies in both his personal and professional spheres "that others may live."\*

Maryann Gorman

\*Search and rescue community motto.

by Gene Harrison



Gene Harrison is chairman of ASTM Subcommittee F32.07 on Search and Rescue Communications and Electronics, part of Committee F-32 on Search and Rescue. He is a founder and the first president of the Appalachian Search and Rescue Conference and a founder and the first Eastern Region coordinator of the National Cave Rescue Commission. Harrison also serves as chairman of the Cave Rescue Section of the National Speleological Society. He has been a volunteer rescue medic and is presently an instructor for the Wilderness Emergency Medical Services Institute.

Reprinted from March 1994  
ASTM Standardization News

# Standards for Search and Rescue

## A Formula for Teamwork and Success

### The Mountain Incident

Paul didn't know how long he had been unconscious, but he soon began to recognize his prison. He was upside down with his body curled in a ball, deep within a dark, cold and snowy tomb. Fortunately, a small pocket of air had formed in the concave space between his body and the snow. He could barely move his arm to see his watch, but he was buried so deep that there wasn't enough light to read it anyway.

Paul remembered that he had started cross-country skiing with his friends just after dawn. By midmorning, they had started crossing a steep snow field—a long clear slope running down the side of an otherwise heavily wooded mountain. He recalled how curious the clearing had seemed at the time. Suddenly he found out why. The shouts of his friends reached him about the same time as he noticed the sudden roar of the avalanche. Then it hit him hard, tumbling him violently within its white fog into the darkness of unconsciousness.

What Paul knew was that he had only one hope: his avalanche beacon. Like each of his friends, he was wearing a small transmitter that should still be broadcasting a special signal for a several-hundred-foot radius. In theory, all his friends had to do was switch their own units to receive and listen for his beacon signal, which would lead them to his tomb and indicate where they should dig. What Paul didn't know would probably have crushed his hopes: sometimes the theory didn't work in practice.

Many avalanche beacons sold within the United States were not compatible because they operated on different frequencies. Therefore they were essentially useless for locating buried friends (who were using the "wrong" frequency). The group had unconsciously trusted that all of the beacons were the "same," even though their various units had been bought or

**"In theory, all his friends had to do was switch their own units to receive and listen for his beacon signal, which would lead them to his tomb and indicate where they should dig."**

borrowed from a variety of sources over several years.

Paul began to wonder if the group should have tested the beacons before they started their trip that morning.

### The Forest Incident

Deputy Jim Rogers felt that he was in almost as much trouble as little Carol Barr.

Carol Barr was only five years old, and she had been missing from her family's camp in the forest for over a day. Although the fall weather had been mild the night before, the temperature was dropping rapidly, and it was going to rain that night. Unfortunately, Carol was lightly dressed and had no training in surviving in the woods. When Carol's preschool class had given a "Hug-a-Tree" class, which taught basic things children can do to help themselves when lost, she had been out sick. There was a good chance that Carol would not survive the night, so it was essential that she be found that day.

Deputy Jim Rogers was a fairly new officer who had been assigned responsibility for the search by Sheriff Peach, the responsible agent for search and rescue (SAR) in their county. Jim had a genuine concern for the safety of the little girl, and all of the more experienced officers were committed to other critical cases.

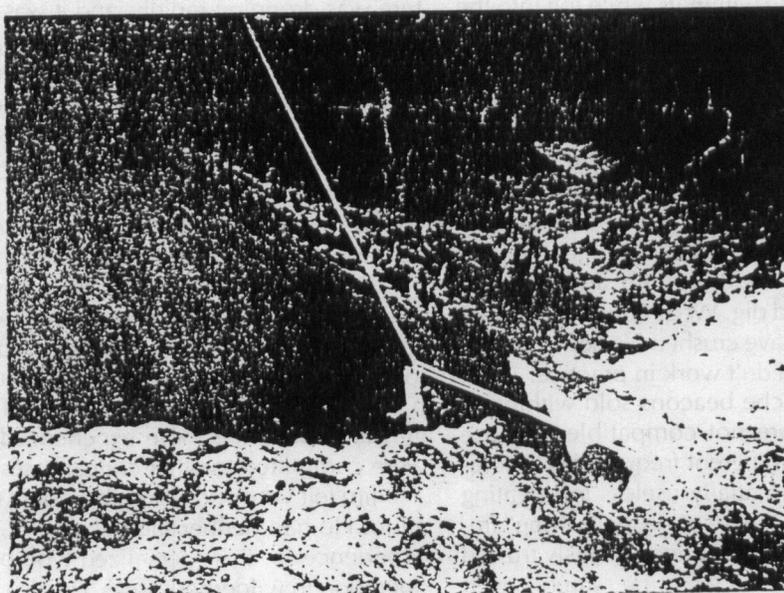
Jim felt very uncomfortable about this situation. He had neither the training for, nor the experience in, this specialized type of search operation in wilderness areas. He also recalled an unsuccessful search several years ago that

ness, but badly for the officer in charge. Jim had conclusions about his own career prospects in search and rescue that were repeated.

At least he had lots of well-intentioned volunteers and many offers of supplies. Frankly, what Jim didn't have was a clue about how to organize the effort! What both he and Carol needed was good guidance in planning and managing his resources, time and activities, both effectively and efficiently, in order to find Carol alive.



(Above) The team prepares to transfer a "patient" in a SKED litter across the mile-long highline. The rappel rack (below the pulley) is rigged for prompt lowering to a road below.



The "patient" and litter attendant are on their way across the highline — only 5,000 more feet (1,500 metres) to go!

### What About Standards?

Before we continue relating these incidents, there is a question: What about standards in search and rescue?

Almost all search and rescue operations require significant investments in planning, training, resources and coordination. Such emergencies are, by their very urgency and onset, team activities involving the combination of several critical functions, which may be spread over several people or organizations. The situation requires the team members to rapidly gather and work together with a minimum of misunderstanding and a maximum of effectiveness and efficiency, even though they may be totally unfamiliar with each other.

Please note how these essential factors apply to incidents such as the two described here.

### The Mountain Incident Concluded

Paul and his friends would probably never realize that one of the primary reasons that Paul would be successfully rescued in time, using beacons on the "right" interoperable frequency, was a small piece of paper from Philadelphia. This document is ASTM Standard F 1491, Specification for an Avalanche Beacon Frequency, published in October 1993.

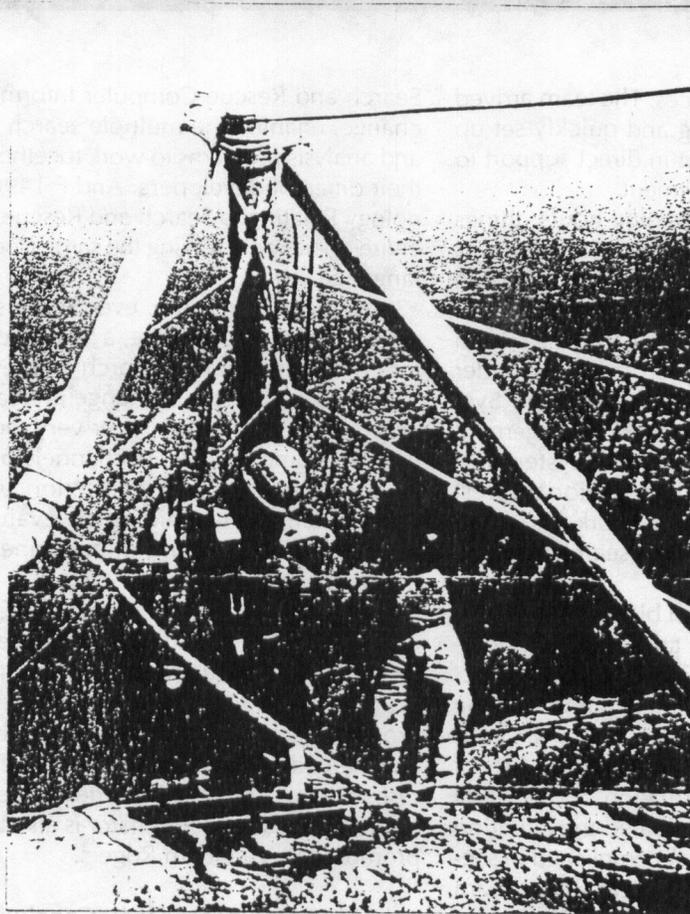
F 1491 mandates the use of 457 kilohertz (kHz) for avalanche beacons immediately and recommends the discontinuance of all other frequencies after 1995. The 457 kHz frequency is presently available in units sold in the United States, and it matches the frequency now standardized in Europe and Canada. For the first time, compliant units employed in Europe and most of North America will now be interoperable.

F 1491 also allows the temporary continued use of one of the other widely deployed frequencies, 2.275 kHz, until the end of 1995, provided it is simultaneous and does not interfere with the effective use of the mandatory 457 kHz. Such dual-frequency units ensure the safety of compliance with the new standard frequency, while allowing backwards interoperability with older units while they are phased out of operation.

### The Forest Incident Concluded

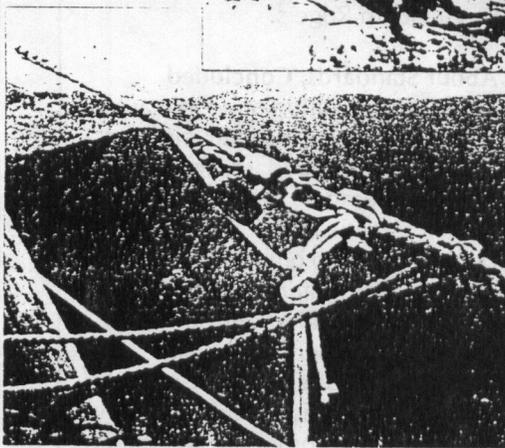
Fortunately, Sheriff Peach was experienced at helping young officers learn fast, and he had help on the way. When Jim had been assigned the difficult task of finding Carol, the sheriff had also requested that a search management "overhead" team be dispatched through the State

“What Paul didn’t know would probably have crushed his hopes: sometimes the theory didn’t work in practice.”

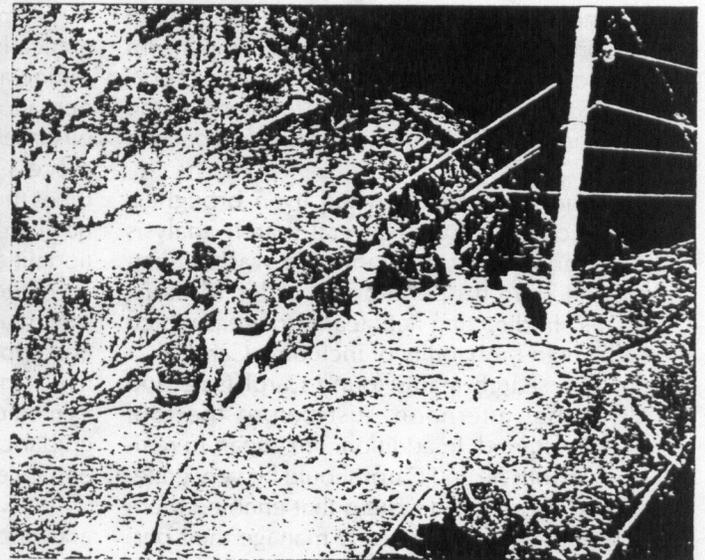


Using standardized techniques, a multinational rescue team sets up a world-record (5,200-foot/1,600-metre) highline across a valley on Vancouver Island, British Columbia. A tripod supports the rescue rigging and lifts the highline clear of the cliff edge.

Advanced techniques are used for monitoring the tension in the world-record highline.



(Below) More advanced techniques are used for controlling the “load” using a tag line (so long that it needs multiple moving supports).



(Left) Preparing to take the ride, the author (red shirt) and a fellow rescue worker must trust the rig and the riggers.

Office of Emergency Services. The team arrived before dawn that morning and quickly set up a search command system in direct support to Jim and the sheriff's department.

During those early morning hours, things seemed to start coming together. The team was composed of experienced searchers from both volunteer and paid teams in the state who had also been specially trained in managing search operations. They had divided the work under a system called the Incident Command System (ICS). ICS was a paramilitary management framework originally based on a system developed for fighting multijurisdictional forest fires. However, the ICS framework had been adapted for managing civilian search and rescue operations.

By employing a careful blend of overhead team members and local talent, several now-obviously essential functions were being accomplished in a coordinated manner. One team volunteer with the title of "Plans," consolidated clues, reports from searchers, lists of resources and other information about Carol and the area. Then he evaluated the situation and developed tasks to be accomplished in segmenting and searching the area. Other team members, called "Personnel" and "Logistics," assigned appropriate or available people and equipment to small teams that would perform each of the needed tasks. "Operations" coordinated the teams in the field, followed up on clues and fed the resulting information back to "Plans."

One team member had even brought a laptop computer with several search analysis and management programs. He was evaluating the search operation in order to assist "Plans" in directing field teams to areas which had a high probability of including Carol.

The search teams found Carol (safe and alive) that afternoon, just before the foul weather started. In addition, Jim began to realize that both he and Carol should be very grateful that there was a system that enabled them to effectively and efficiently manage their personnel and resources to find people like Carol and to save their lives.

It was only later that Jim found out the secret to some of their success. It was several pieces of paper published in Philadelphia (again). In this case, ASTM F 1422, Guide for Using the Incident Command System Framework in Managing Civilian Search and Rescue Operations, helped to create organization out of chaos. ASTM F 1382, Specification for

Search and Rescue Computer Information Exchange, enabled the multiple search planning and analysis programs to work together, despite their different developers. And F 1490, Terminology Relating to Search and Rescue, kept the entire operation speaking the same (specialized) language.

At the present time, even more standards are being developed. One, a Standard Practice for Phonetics, will help search and rescue personnel to accurately exchange critical spoken and printed information over very weak radio or other communications channels by the use of error detection and correction protocols. Others define the training or evaluation of search and rescue teams or personnel, including search dogs.

After the successful search for Carol, Jim continued to study and learn about search and rescue. With the support of the sheriff and the fire and rescue departments in his area, he brought special training courses into the county and helped form the new county search and rescue team. And the newly designated county search and rescue coordinator is also the newly promoted Sergeant Jim Rogers.

#### What About Standards, Concluded

Almost every organization of people automatically, and perhaps even instinctively, starts setting actual or de facto standards for the cooperation of their members and the accomplishment of their organizational mission. This process appears to apply to organizations from tribes through megacorporations, despite their having different educational backgrounds, nationalities, purposes or other variations.

One of the critical elements of reliable search and rescue services is the development and application of such appropriate and effective standards. Just as in other disciplines such as medicine and fire fighting, standards provide guidance, set goals, enable cooperation and enhance the quality of service.

A well-managed organization with a clear and relevant mission, supported by appropriate and effective standards that are embraced by motivated members, can usually achieve two very desirable goals: teamwork and success!

*(Author's Note: The rescue stories in this article are fictional, but based on real-life incidents and experiences. This article is dedicated to the search and rescue community and to the people who help it function, including those who help create good standards.)*

SX

WE WERE BOB-BOB-BOBBIN ALONG by R. Cindric

This was my first yo-yo trip. I've climbed several pits before, but this was the first time I had no other purpose than to get to the bottom and back. If there was horizontal passage at the bottom ... that was nice but it sure didn't keep us from the next pit.

My feelings on yo-yoing? It's a lot of fun. I've never been on rope so many times in one weekend. I didn't find it challenging like I thought I might (the benefit or curse of practicing in trees), but it was an interesting experience.

I also wondered beforehand if it might be physically challenging, but found that wasn't true. Actually, I was very tired at the end but that was from prowling through the woods and from lack of sleep, not from climbing (more on that later).

Nearly every caving trip I've been on for the last several years had some "useful" goal; usually mapping, ridgewalking or learning/teaching some caving technique. This trip's stated purpose was to climb 1000' but it was really just to have a good time. It felt frivolous but I liked it.

Participants - Jerry Cindric, Richard Cindric, Tom Howell, Brett Jarret, Richard Keith (the antidote to conventionality), Kate Johnson, Mike McKinney, Mary Willey and Richard Pyles. Three Dicks on one trip! How about that!

Here's the short version:

**FLITTERIN** - Jerry and I had been there once before under less "vegetative" conditions. "It's a jungle out there." We found it fairly quickly but the group spent a long time climbing. My impressions from Flitterin are:

- Mary and Mike did very well for their first pit;
- My memory from six years ago suggested the pit was about three times wider than it really was; - The heavy rain from the night made the climb a very wet one and the gear was slimed out - a maxim for the whole weekend;
- There was a remarkable speed difference between those with sit-stand ascending systems versus ropewalkers.

**JANUS** - We rigged two ropes but one was 10' short. Tom was near the bottom when we discovered this. No problem - he switched to ascending, went to the first landing, then pulled the rope up to there. We were still able to climb two at a time: One on the lower level while another was on the upper.

**BIG HOLE** - This cave was the killer in several ways:

- We got to the area later than planned;
- We drove around needlessly while I tried to find a shortcut;
- We arrived at the parking area after dark and couldn't find the cave (over one hour spent looking on a cloudless, misty night in the woods);
- It rained again that night, but the gravel road we pitched our tents on shed the water quickly;
- We spent too long looking for it in the morning;

- There was a dead deer at the bottom. The aroma could occasionally be discerned at the top of the 115' pit, so you can tell it was industrial strength. Did I mention the live copperhead as well?

Did the pit itself pose any unusual problems? No. Did the amount of time spent on it screw up our schedule? You bet.

**BRIDGE PIT** - Easy 50'. Avoid it if you and poison ivy don't get along.

**SLOT PIT** - About 60'. Avoid it unless you're going for distance (which we were).

**DARK HOLE** - Actually, we never found this. We were likely walking over it - but that would only have counted toward the depth total had someone fallen in. I've been told there's 150' with multiple levels.

**FIVE ASH** - This one would have made the trip worthwhile by itself. I can't say why I enjoyed this 150' pit more than the others, but that was easily the case. This was my first time in there: I'm going back some day.

**GUM DROP** - This is a two stage drop with the first one being about 70' and the second about 80'. What's most interesting about the first drop is a cascade of flowstone that starts at a small ledge about 30' from the top. It was about 30" across and about 6" deep all the way to the bottom. There was a leaf toward the top that was partially encased. The bottom of the first stage was broad and flat.

Chimneying about 30' through a tall, narrow slot on one side led to the second pit. I was the only one who did this one because I was the only one who trusted the rigging points - a cedar log that someone wedged in the slot backed up by two pre-existing bolts and hangers.

**DOUBLE PIT** - About 60' of pit; nothing unusual.

The pits we didn't do (besides Dark Hole) were two in Cave Mountain Cave. The reason we didn't do those on Sunday is that those of us who went to Gum Drop and Double Pit on Saturday night got lost in the woods and spent the night there. We made a zig or a zag when all we had to do was walk straight. I felt particularly foolish in the light of the next morning when we discovered the place we spent the night was about 200' from the field where our vehicles were.

This was a first for me. Not getting lost - I'm frequently that way - but having to spend the night in the woods as a result. It was mid-May and the temperature that night was in the 60's, so it wasn't bad. We were all a little cold because of the climbing and the previous rain so we put on our rain suits (trash bags) and broke out the candles, heat tablets and food. Later, using the candles as a starter, we were able to start a fire with wet wood.

The ride to KC never seemed so short: I slept for about 4 1/2 hours of the 5 1/2. There really is a silver lining!