UNDERWATER SPELEOLOGY

National Speleological Society • Cave Diving Section

July/August, 1991 • Vol. 18, No. 4

Olivier Isler preparing to dive Doux de Coly. Photo by Oliver Knab. See article p. 7.

UNDERWATER SPELEOLOGY

The official publication of the Cave Diving Section of the National Speleological Society, Inc.
P.O. Box 950 • Branford, FL 32008-0950

TABLE OF CONTENTS

Magazine Submissions — We welcome all news items, articles, Letters to the Editor, photos, slides, cartoons, and other items of interest or importance to the cave-diving community from all members, subscribers, and other interested parties. They should be sent directly to the Editor (see address on left column). We can also use text processed in most IBM-compatible formats. (Please contact the Editor directly for details and arrangements.)

Advertising — The NSS-CDS Board of Directors has approved the reinstitution of paid commercial advertising for *Underwater Speleology*. Please contact the Editor for information and arrangements (see address on left column).

The NSS and Cave Diving — Founded in 1941, the National Speleological Society joins together thousands of individuals dedicated to the safe study, exploration, and conservation of caves. The first cave-diving information ever published in the United States was in a 1947 *NSS Bulletin*. In 1948, NSS divers were responsible for the first cave dives in the United States using scuba. Prior to 1973, cave diving within the NSS was on a purely local level. That year saw the creation off the NSS Cave Diving Section to provide a vehicle for information exchange. Today, with over 750 members, the Cave Diving Section promotes safe cave diving through semi-annual workshops; cavern- and cave-diving training programs; warning-sign installations; search, rescue, and recovery through the National Cave Rescue Commission; cave exploration and mapping; several texts and publications on cave diving; and the bimonthly magazine, *Underwater Speleology*.

NSS Membership — The National Speleological Society welcomes the interest of anyone who has a sincere concern about the safety, study, exploration, and conservation of caves, wet or dry. You may join the NSS either by writing directly to its main office (National Speleological Society, Inc., Cave Avenue, Huntsville, AL 35810) or to the Cave Diving Section. Annual membership is $25.00 and includes subscription to the NSS's monthly magazine, *NSS News*, as well as voting privileges and discounts on publications and conventions.

CDS Membership — As a sub-organization or "section" of the NSS, the Cave Diving Section is subject to the bylaws and ethics of the NSS. Membership in the Cave Diving Section is open to anyone who is a member in good standing of the NSS. Annual membership is $5.00 per year and includes subscription to the CDS's bimonthly magazine, *Underwater Speleology*, as well as voting privileges and discounts on publications and workshops.

Subscription — If you do not wish to join the NSS and CDS, but would like to keep current on cave-diving events, exploration and technology, you are invited to subscribe to *Underwater Speleology* for $15.00 per year.

THE NSS-CDS IS LOOKING FOR A FEW GOOD MEN

And/or women. As per NSS-CDS Bylaws, Chairman Frank Howard has issued an official call for nominations for the election of four Board Members to serve two-year terms beginning Jan. 1, 1991. Both nominators and nominees must be current, dues-paid members of both the NSS and the NSS-CDS. Three of the positions are open to any NSS-CDS member; the fourth position is for Training Chairman and nominees must be current, active-status NSS-CDS Full Cave Instructors.

You are welcome to nominate yourself for any of these positions, provided you meet the appropriate criteria. All relevant memberships and instructor statuses will be verified before the nomination is accepted, and all non-self-nominating candidates will be given the opportunity to decline the nomination if they so desire.

Service on the NSS-CDS Board of Directors can be very demanding and time consuming, and frequently involves taking on tasks no other cave diver will touch with a 10′ pole (and no one in his right mind will touch at all!). But if you love cave diving, it can be one of the most rewarding volunteer positions you will ever undertake. (If you have questions about being on the Board, please feel free to contact any of the current Board Members. Their names, addresses, and telephone numbers are listed on the inside cover page.)

Please send or call in your nominations to the Section Secretary: H. V. Grey, P.O. Box 12, Nokomis, FL 34274-0012, 813-484-7834. Nominations must be received before Oct. 15, 1991. Candidates may submit written platform statements for inclusion with the ballot if they wish. ■

BRANFORD'S STEAMBOAT UNDER NEW MANAGEMENT

To many a veteran cave diver, the Steamboat Inn, located at the junction of US 27 and US 129 in Branford, Florida, half a block from the Suwannee River, has been something of a cave-diving landmark. But the restaurant has been closed for some months now, and the widening of the highway did further violence to the familiar parking lot. However, the property is well on its way to becoming a diving landmark once again.

NSS-CDS Cave Diving Instructor Dustin Clesi has just announced that he is retiring from his successful stock-brokerage business in Tampa, and has purchased a major interest in what is now the "Steamboat Dive Inn." Dustin and his co-owner, Chris Lewis, plan to continue and improve the motel operation, and to open a full-service dive shop catering to cave divers where the restaurant used to be.

They will be offering NSS-CDS, NACD, and NAUI instruction, and specialty cave-diving equipment, DPV repairs, and mixed-gas technology. ■

LAST CHANCE TO WIN COVER PHOTO CONTEST

This is it—your last opportunity to submit photo entries for the front and back color covers of the new NSS-CDS manual, *Cave Diving: an Overview*. The book is proceeding more or less on schedule, with the final chapters now being completed. (And the good news is that the editors have not had nervous breakdowns or killed each other... yet.)

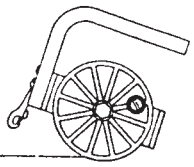
No, in all seriousness, the quality of the material received thus far has been staggeringly good, and clearly reveals the tremendous cave-diving experience and high level of insight that our contributing authors have brought to their writing. There are many exciting chapters which well deserve to and will be expanded into single-topic books.

We extend very grateful thanks to everyone who has contributed to the completion of this project with the generous donation of time, effort, and/or money.

A one-year's subscription to the Divers Alert Network, complete with recompression-chamber insurance, is the award for the slides or photographs chosen for the front and back cover. Runners up will be featured on future covers of *UWS*. Please send a *copy* of any slide or color photo that you wish to submit to:

Joe Prosser
7400 N.W. 55th St.
Miami, FL 33166 ■

THE SAFETY LINE



by Wendy Short (NSS #30802), Safety Coordinator South

Hello. I am your hostess, and I am about to take you on a journey. A journey through space and time, a journey into another dimension, a trip beyond the Safety Zone . . .

Meet Zee, our diving companion for this journey. He's quite an experienced diver, and has made hundreds of dives in different caves. He feels quite comfortable accepting risks, and he does so frequently. We respect his experience and ability, so we allow him to lead us on our dive.

The permanent line begins only 20' inside the cave, so he says there's no need to run a line from the basin over to it. He's been here before and so have we—okay, no problem. There's a little flow and chances of no visibility are slim. Zee is pretty lazy and not adept at using the reel. After all, he never uses one.

We proceed into the cave, down one passage after another. It starts to get smaller and siltier. We come to a junction where the lines go off in several directions. Zee is far ahead, and we can barely see him with our lights. There is an out arrow on the line we came in on, but no clip. Zee does not believe that's necessary. It's already marked as far as he's concerned. We begin to have our doubts. This is not how we were trained. Even though we are as experienced as Zee, we do not violate the rules.

There is no chance to express our concern because Zee is far ahead out of contact with our lights much of the time. We must swim fast just to keep up with him or risk being left alone. We do not have time to notice much of the cave. We come to more T's and a jump in the line. Zee did not gap that. Are we coming back this way, or are we doing a circuit? We did not discuss the dive beforehand.

We are now getting beyond the Safety Zone. What to do . . . ? We try to signal Zee but he's out of sight and does not see our lights. We're a long way back in unfamiliar passage now. We do not know if Zee has been here before or not. He is single minded in making a deep penetration.

Okay. We follow him, not bridging the gap. We motor like crazy trying to catch up to him. He's oblivious to our concerns. We're getting close to thirds, so we call the dive after finally catching up to him. We turn, but the passage is very restricted and silty. Silt billows around us from everywhere, and we're enveloped in a complete siltout. We begin to follow the line out according to our training. We wait for Zee to make tactile contact. He never does. We do spot his light for a second and then the water is filled with silt again. Wait! What's this? One second we're on the line.

The next second we're not.

Is this the jump we did not gap? Great. Visibility is only a few inches. We back up on the line and wait. A few seconds.

Longer.

A few minutes.

It is not clearing very quickly. The flow back here is almost nonexistent. Zee is not with us.

Air! Check the gauge—we cannot see it, much less read it. How long to wait? We decide to do a line search. Tie off and head straight out.

Nothing!

We remember the gap was about 10'. Or was it 20? Think clearly! We have gone too far. Try another direction.

Nothing!

Our hearts start to pound and that anxious feeling of having to get out is becoming overwhelming. Cold fear is clawing at our guts. We start to breathe more heavily. Is this where it will all end? Don't panic, we caution ourselves. Slow down the breathing. We have a long swim out. Don't even think about the long decompression requirements this delay will cause. We did not prepare for that. Just worry about getting out alive!

The water gets a little clearer. We search in another direction. We begin to pray. Desperate pleas. God, if you show us the way out, we promise to be good! We'll stop doing all those things we shouldn't be doing, if You'll just . . .

The line! We found the line. Thank God! The exit now is the only thing on our minds. Where is Zee? We still have not seen him. Oh, well, he got us into this mess. We believe in self-rescue. Our air supply is getting critical. Make tracks fast! Our technique suffers as we bolt out of the cave. All we want to do is get out. It seems to take an eternity. Visibility is still poor.

Finally! Only that one restriction near the entrance and we're out. We've come to the end of the line. Again! Oh, God, no!

Visibility is back to zero. How can we have such rotten luck? Was this shortcut of not running a line from open water worth it? We cannot see the daylight, only blankets of clay and sand floating silently around us. Our heavy breathing is very noticeable. The only sound is our exhaust bubbles roaring rapidly toward the ceiling. We're only 20' from the exit! But we've left our safety reel back in the cave. Fear and terror have been foreign to us until this dive. It's getting harder to breathe. We decide to run for what seems to be the proper way out. Only 20 feet! We swim ahead, but instead of going out we hit a rock wall.

We are totally turned around

Trained cave divers are not supposed to die in caves. Oh, God, one more chance. Please!

We're in another dimension, one without time or space. We have transgressed beyond the Safety Zone.

Case in point. Zee's state of mind had put him above the rules. Worse, he encouraged others to break the rules. Now it is too late to return to the Safety Zone. ■

RECORD U.S. DEEP CAVE DIVE AT RED SNAPPER SINK

by William L. Wilson (NSS #12231 Fellow)

On June 1, 1991, Deep Breathing Systems made a second dive at Red Snapper Sink, 26 miles east of Crescent Beach, Florida. Jim King descended the northwest wall of the sink to a sloping sand floor at a depth of 460'. Laying a guideline, he followed the slope down to the northwest for approximately 80' to a depth of 482'. The slope was seen to continue to a depth of approximately 495' where the rock wall came down to the floor. The floor on the northwest side of the sink is substantially deeper than the 434' floor encountered on the south side of the sink on April 26, 1991.

The 80' of overhang encountered on the northwest side of the sink indicates that the base of the sink could be as much as 310' in diameter. A depths of 150-360' the walls of the sink are approximately 150' wide from east to west and 170' long from north to south. No surface light was visible below 325'.

King spent approximately 11 minutes descending and 8 minutes on the bottom, where he collected one water sample. He had intended to measure the width of the bottom of the sink with a sonar distance meter. However, the Deep Ray 3000 he was carrying imploded on the way down at a depth of 330'.

The presence of a substantial overhang, total darkness, and exceptional depth combine to make the northwest side of Red Snapper Sink a true cave dive. So King's June 1st dive is the deepest cave dive ever done in the United States and the third deepest in North America. Only Sheck Exley's record dives to 780' and 867' in Nacimente Rio Mante, Mexico were deeper.

Of particular hydrologic importance was King's observation at the bottom of the sink, that particles in the seawater were drifting toward the wall at a noticeable velocity, estimated to be 0.1 ft/s. The seawater was siphoning in small caves at the bottom of the slope. The dive was performed at, or near, high tide, so in-flowing seawater at this tidal stage seems hydrologically normal. Other divers have also reported a slight downward flow of water in the sink.

The presence of siphon tunnels at the bottom of the sink indicates that the sink conveys saltwater into the Floridan Aquifer. It is not yet known if the water discharges during low tide, but this seems likely, based on the observed behavior of flow in blue holes. Red Snapper Sink is an important example of a high-permeability pathway that may allow saltwater to enter the aquifer and possibly intrude rapidly, through caves, toward the peninsula as fresh groundwater levels in the aquifer decline.

The record deep dive at Red Snapper Sink was made using open-circuit scuba gear. The gas supplies utilized during the dive consisted of two 104cf tanks of trimix (10% oxygen and 60% helium), one 80cf tank of air, one 80cf tank of nitrox 30, one 80cf tank of nitrox 46, and one 80cf tank of oxygen. The tanks of trimix, one tank of nitrox 30 and one tank of oxygen were worn by King to the bottom of the sink in a back-mounted quadpack configuration. One 80cf tank of air and one 80cf tank of nitrox 46 were carried as stage bottles clipped to the front of his diving harness. King switched to air at 220', nitrox 30 at 140', nitrox 46 at 80' and pure oxygen at 30'.

King was met on ascent, at a depth of 200', by support diver Richard Niccolini. He relieved King of extra bottles and monitored King's decompression, which required 201 minutes. The total time in water for King was 237 minutes. Decompression was successful. The decompression schedule was calculated under a license from Dr. Bill Hamilton.

After the dive, King recorded doppler echoes of his bloodstream for later medical evaluation to determine the adequacy of the decompression schedule. The doppler echo recordings were evaluated by George Carrod, DCIEM (the Canadian military agency responsible for diving research), who determined that the echoes from the chest had an acceptable value of 3- at intervals of 30 minutes and 60 minutes after the dive. The values decreased (improved) to Grade 2 at 90 and 120 minutes. Values of 4 or higher would have indicated unacceptable amounts of bubbles in the bloodstream.

Grading of doppler echoes is somewhat subjective and should be done only by a trained expert. Doppler echoes are helpful in determining the adequacy of decompression, but should always be used in conjunction with other data. After the dive, King breathed pure oxygen and avoided physical exertion as extra safety measures.

A science dive was performed by geologists Victor Sparks, Rick Spechler and Bill Wilson, who collected rock samples from 200' to 134'. The science team was accompanied by Terry DeRouin, Sales Manager of Diver's Supply, who served as a safety diver observing the team's progress.

Greenish-gray, shelly, sandy clay was observed cropping out on the northwest side of the sink at depths of 113-118'. The northwest side of the sink has a much more distinct lip at the top of the vertical shaft than the south side. The lip, at 134' of depth, is supported by a very hard bed of sandy dolomite that is about 1' thick. Numerous hammer blows were required to break off even small chips. When the hammer struck the rock it rebounded with a loud "clang." Immediately below the hard dolomite was the sandy coquina that had also been observed to occur along the south side of the sink. The sandy coquina extended to a depth of approximately 160-180'. It was underlain by sandy clay and siltstone, which extended to at least 200' of depth.

The samples will be described, thin-sections made, and the insoluble residue fraction will be analyzed so that the stratigraphy at the sink can be described in detail. No other stra-

tigraphic section has been described in the immediate vicinity of Red Snapper Sink. The nearest drill holes occur about 26 miles to the west and 51 miles to the north.

DeRouin, Sparks and Wilson dived on a 17/17 trimix, with 60/40 nitrox used from 60′ to 30′ and pure oxygen used at 20′ and above. Spechler dived on compressed air and went to a maximum depth of 190′. Bottom time for the dive was 30 minutes.

The decompression schedule for the next deeper depth (210′) was utilized for a total decompression time of 69 minutes. Each diver wore double steel 104cf tanks or aluminum 100cf tanks and carried a stage bottle of compressed air for emergencies. The nitrox was staged at 110′ and the oxygen was stage at 20′ on the decompression line, which was suspended by a float. Decompression was successfully accomplished.

Donna Welch served as a support diver, and relieved the science team of extra bottles, samples and equipment. The science divers timed their entry into the water so that they and King would finish decompression at approximately the same time.

Two decompression lines were installed by Ken Saunders and Ken Zorilla. They tied the decompression lines onto two 300 lb. concrete weights that were positioned near the edge of the sink. Saunders and Zorilla were also responsible for staging the decompression bottles and retrieving of the lines upon completion of the dives. Rigging the decompression lines properly is difficult and requires a high level of expertise. Without the selfless efforts of Saunders and Zorilla the other dives would have certainly been more difficult or even impossible. The other divers are grateful to them for setting up the lines that made the dives safe and efficient.

The dives were made from the 38′ commercial dive boat, *Giant Stride*, which is berthed at the Mayport Marina near Jacksonville. Tim O'Donnell was captain; George Lebahn and Anna O'Donnell were crew.

Deep Breathing Systems anticipates making additional dives to document the morphology, geology and hydrologic characteristics of Red Snapper Sink. Future dives will explore the ledge at 300-320′ for fossils and speleothems, and will produce maps of the profile and bottom of the sink.

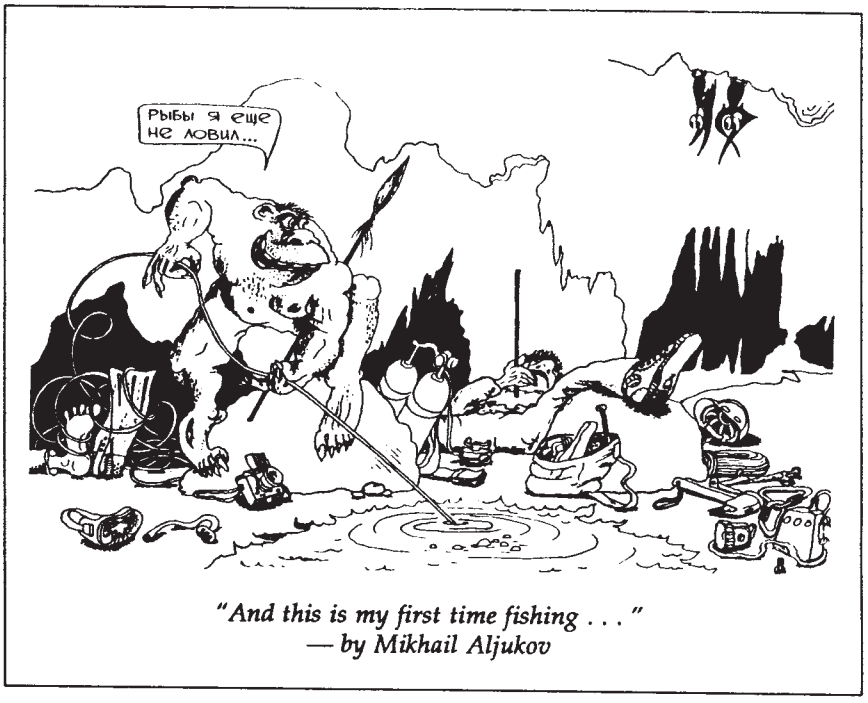
The author wishes to acknowledge helpful review of the article above and contributions of information received from Jim King, Victor Sparks and Rick Spechler. ■

Winter Workshop

Mark your calendars for the NSS-CDS's Winter Workshop, to be held over the weekend of Dec. 28-29 at the High School in Branford, Florida. Last year's Winter Workshop, expertly chaired by Jim Gabriel, was heavily attended and featured many outstanding lectures on exploration, technques, equipment and safety, as well as several very fine seminars, mini-workshops, and audio-visual presentations.

This year's Winter Workshop is being coordinated by Eric Hutcheson, with assistance from Terry DeRouin and Bill Foote, who brought us our outstanding 1991 Spring Workshop. The lecture line-up is starting to take shape, with the promise of some "explosive" underwater-cave video. Plans are also in the works for several purely social events to round out the workshop. The final highlight is the planned release of the Cave Diving Section's new comprehensive manual, *Cave Diving: an Overview.*

Pre-registration forms and additional information will be included in the next issue of *UWS.* ■



"And this is my first time fishing . . ."
— by Mikhail Aljukov

If You Move - Let Us Know!

Unless you make special arrangements to pay the additional postage, the Post Office does not automatically forward bulk-rate mail when you move. Nor does it return undeliverables to us. So please keep us informed if you move. Write or call the CDS Secretary (address on inside front cover) with your new mailing information, or corrections if we have you down wrong. And many thanks to those of you who have done so! ■

SWISS CAVE-DIVING SCENE: 1984 - 1990

by Oliver Knab

The following is an update of underwater-cave explorations by Swiss cave divers in Switzerland, France, Italy, Mexico, and Namibia. All the important dives to great depth were realized by the Groupe Lemanique de Plongee Souterraine, Suisse (GLPS).

EXPLORATIONS IN SWITZERLAND

On Jan. 6, 1986, Olivier Isler dove the Source de la Chaudanne to a depth of -110m (-361'), stopping at the top of a pit which is 575m (1886') from the entrance. On Mar. 13, 1986, Cyrille Brandt explored this completely vertical pit to -143m (-469'). The dive lasted 8 hours and 15 minutes. The explored part of the final pit (3m) is 43m starting at the 328' level, with no bottom in sight (visibility was 12-15') at that point (depth -469'). The divers were using Doris tables and Trimix.

The **Deepest Dive** on air was made in March of 1988 by Jaques Brasey at Emergence de Bellegarde. The extremely cold water and 8' visibility keeps you awake at -262'. The most distant point reached was 250m (820') from the surface.

The **Longest Dive** in Switzerland is still Rinquelle: 930m (3051') to an airbell called Kartenhaus. But this exploration by Jochen Hasenmayer was made in the early '70's.

A divesite with a good depth potential is Gelber Brunnen, near the lakeshore of Thunersee (Berne). A Diepolder-2-type crack from 0 to -130' (more a squeeze than a crack, half the size of Edward's) leads to a steep, elliptical gallery with clear water. On the way back, the explorer of this spring had a full out-of- air incident (two 50cf tanks at -213') just at the beginning of the restriction. He surfaced very close to having a full blackout. This will be noted as Switzerland's **Fastest Ascent** in an underwater cave.

The **Horriblest Cave Dive** in Switzerland is probably Mühlebachhöhle near Zürich, explored by myself and Heiner Kubny in the mid '70's. Recently, the German cave diver, Michael Meyberg, passed the 11"-wide entrance restriction without fins, crawling at -19' (underwater) through a passage half filled with liquid silt to a breakdown. After passing this obstacle he found a small new pit. On the way back a loose stone fell from the ceiling, banging on Michael's head in absolutely zero viz.

Buco del Bossi was explored to a big room at -158' by myself. It is one of Switzerland's **Nicest Places** for cave diving (up to 100' visibility). Olivier Isler used mixed gas to reach -295' in 1984.

EXPLORATIONS IN FRANCE

On July 29, 1987, the second sump of Fontaine de St. Georges (Montvalent, Lot) was traversed by Cyrille Brandt. He passed Sump 1 (395m) and Sump 2 (1180m). The deepest point is 2360' from the last surface and is at -249'. The dive time was 9 hours, 15 minutes.

At Le Ragas, Jean-Jaques Bolanz reached a depth of -117m (-383') on Aug. 6, 1989.

The big spring, Source du Bouillant (LaTouvre, Charente), has a high-flow restriction at -18m, just in the decompression zone. The divers must pull themselves with jumars on a fixed rope through this water vent. Cyrille Brandt dove to -133m (-436') in Oct. of 1989, turning the dive 300m from the entrance. The dive time was 5 hours, 40 minutes, using Trimix (50% He, 15% O_2). In the autumn of 1990, Olivier Isler went to the phenomenal depth of -148m (-485.5')!

At Doux de Coly there have been large expeditions since 1971. Olivier Isler dove 10 hours and 40 minutes to reach 3100m (10,170') in 1984. The last expedition organized in 1989 tested the rebreather, RI 2000. Line was replaced to the point at 1550m. (The Swiss team comprised O. Isler, J. Brasey, O. Knab, G. Favre, U. Rhyner, G. Gandra; there were 7 French and 2 British cave divers as well.) The "big push" is planned for July/August, 1991.

In the summer of 1989, Fontaine des Chartreux (Cahors) was dived. This large spring starts with a 246' pit at a

Olivier Isler and "friends" at Doux de Coly

depth of -82'. At the bottom you will find a steep rockslope and at the end of this one you will read -426' on your depth gauge. But this was only the point from where Cyrille Brandt and Claude Touloumdijan started their exploration dive. They followed a tunnel for another 360' to the terminal depth of -449'.

On Sunday, August 12, 1990, Olivier Isler made his first Traverse-dive with the semi-rebreather RI 2000 at Emergence du Ressel (Marcilhac, Lot). The siphon is 1860m (6102') long. The deepest point is -79.4m (-260'). 16 support divers worked for 14 days in this spring to haul in decompression tanks, aquazepps and new guidelines. The dive with the modified RI 2000 had a duration of 10 hours, 35 minutes, involving a total swim of 12,204'. 6 tanks were used: one each of 18% He, 30% He, 40% He, and surox 48%, and two containing 100% O_2.

EXPLORATIONS IN ITALY, NAMIBIA, AND MEXICO

On Dec. 7, 1987, J. J. Bolanz swam through the gin-clear, 7° C water of the Spring of Gorgazzo (Italy) to a depth of -118m.

The Cenote Timul near Merida, Mexico was explored by myself to -72m (-236') on June 15, 1988. Two days later I reached 70m depth in a giant pit at Cenote Ucil. Ucil has been plumbed to -96m (- 315').

In Namibia (Africa), the Swiss divers, Alain Vuagniaux and C. Rufi reached -90m (-295') in July, 1986, in the biggest underground lake in the world, Dragon's Breath Hole.

A trimix dive was made by O. Isler in the Grotte de Locoli (Sardaigne, Italy). He reached -86m (-282') in the third sump (2362' from the last air).

Cogol dei Veci (Friaul, Italy) was dived by O. Isler with the Rebreather, RI 2000. He explored 2340m (7677') without encountering any airbells. The dive time was 8 hours, 12 minutes, with the deepest point reached being -55m (180'). ■

LIVE! . . . AND LEARN

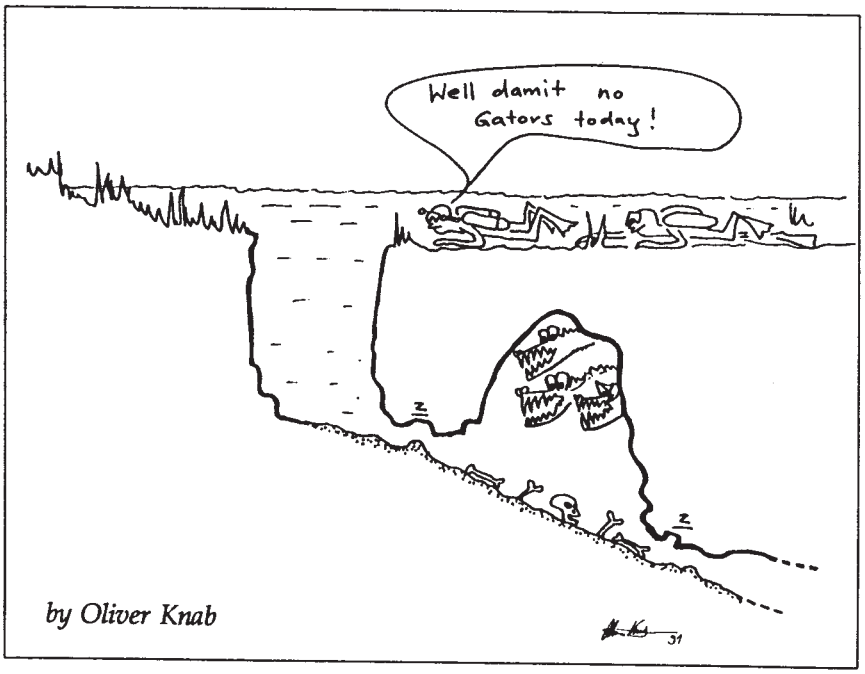
by Diana Oestreich (NSS #32089)

I am always interested in reading a good article, or hearing someone's personal experience in cave diving. We can learn so much from each other. Sit in a room with a group of cave divers and you will hear a number of different scenarios on what to see, what to do, what can happen, how to do it, when you shouldn't, and where!

For example, two of my buddies were recently diving at Ginnie Springs. It was a little cloudy outside, but nothing unusual for a Florida summer evening. Shortly after turning the dive at about a 700' penetration, they were suddenly hit with an electrical shock equivalent to that of sticking your tongue in a light socket! With heartbeat under control, they proceeded out and informed us that we would have to scrap the comment, "Let's get into the cave where it's safe from the storm." Of course, this is rare, but I have since heard of it happening to one other local diver.

Well, I told you a story, now you tell me one. Tell me your innermost thoughts in the innermost parts of a cave system. Do you have a macho diver living in one of your ears, who only speaks to you when you are on the surface, and another small voice who comes along for the dive only to ask you the question, "What in the hell are you doing in here?" I had one of each and decided they both had to go. Either they, or I, had to go, because my mind wasn't right. Being fairly new, but in love, I was determined to go on to more advanced diving. My priorities then became a pursuit of balance where confidence, cautious respect, and love for the beauty of the environment were to be the only motivating factors and forces that I would bring along on the dives. I cannot say that I have completely reached my attitude goals, but I have matured as a diver, and will continue to do so now that I have cornered my foolishness and fears.

Now wait a minute, that was my story, not yours. Oh, well, like I said, we can all profit from sharing experiences. Can you relate? ■



by Oliver Knab

FINNING THE YUCATAN: Adjustments in Techniques

by Gary Walten (NSS #28935)

Much has been written about the underwater caves of the Tulum/Akumal area in the Yucatan. They are extremely beautiful and quite shallow. Most cave diving by visitors takes place in six major systems: Car Wash, Naharon, Mayan Blue, Sac et Tum, the Temple of Doom, and Nohoch. Differences between these caves and the underwater caves of northern Florida are numerous and worthy of note.

Florida caves vary greatly in depth. They are filled with freshwater only (some possible exceptions on the coast) and they have no speleothem formations. Some have minimal flow while others have high flow. Periodically, during flooding, river water washes through some of the caves and renders them undiveable for a period of time.

In comparison, the caves of the Yucatan are predominantly shallow. There are some "basement" passageways, but they are the exception. The halocline (saltwater/freshwater interface) is a prominent feature in many of the caves. If you follow closely behind someone in the mixing area, his fin kicks will disrupt the separation of fresh- and saltwater, and produce a disorienting visual "siltout." Speleothem formations are common and can be quite fragile. Winding around and through them will challenge your technique. Water flow is minimal here. There are no high-flow systems like Little River or Devil's Ear.

These differences in environmental make-up require an adjustment in technique to dive safely and not damage formations. The following is a list of technique modifications addressing various environmental conditions.

DEPTH. When diving at shallow depths, buoyancy control is more critical. Lung volume plays a larger role in vertical positioning. Caution must be used not to damage delicate speleothem formations. If a buoyancy problem occurs, try to stay low rather than high! It's better to kick up a little silt than to break off a stalactite that took millennia to form.

HALOCLINE. When passing in and out of the halocline, good visibility can usually be maintained. The configuration of the passageway dictates which techniques should be used. Wherever possible, try to get off to the side of a leading diver. In some areas it may be better to get below or above the halocline, away from the mixing area. Remember, the object is to stay away from delicate formations and maintain orientation to the line and your buddies. Note: in systems with line T's (i.e., the Temple of Doom) some line junctions will occur in the mixing area. Caution must be observed on penetration and exit to verify direction.

SPELEOTHEMS. When swimming through delicate areas, use common sense and good judgment. Following a line through a speleothem restriction or window requires extreme caution. Critical factors are:

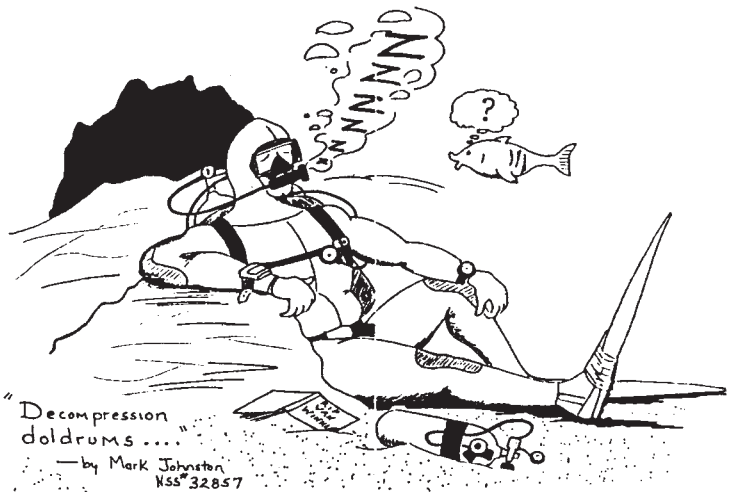
1. Fine tuning buoyancy before entering.
2. Fins not too high or low.
3. Gentle modified flutter preferred.
4. Arms in front (don't pull on weak formations).
5. Take your time, move slowly.

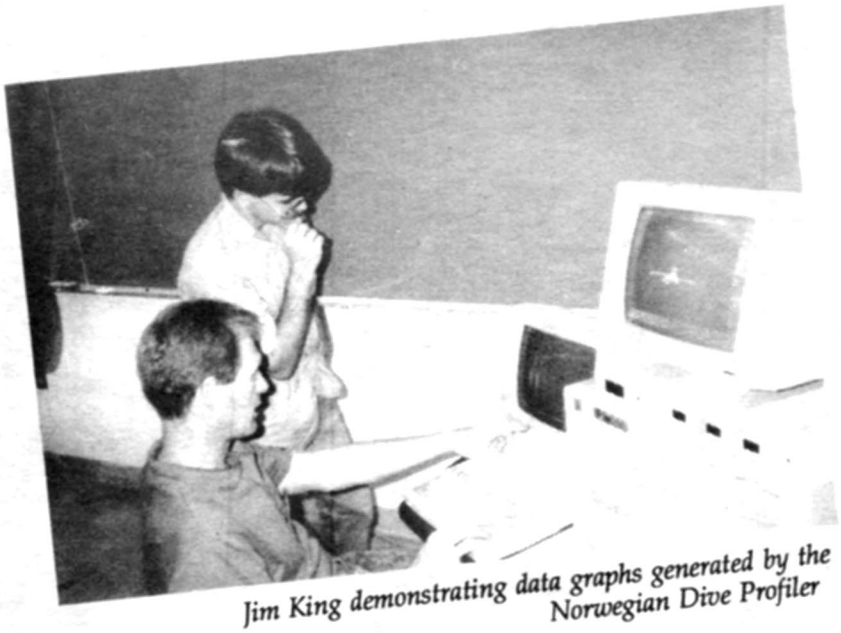
If one can negotiate a restriction well, larger passageways should be easy.

Endurance is also an important factor in order to maintain control. Let's use the mighty Nohoch cave system as an example. Nohoch, translated from the Mayan, means huge or giant, and it's a perfect name. In addition to its size, it is quite shallow. You can swim thousands of feet at 15-20'. Swimming for 90-100 minutes using double 80's typifies a first-time tour of Nohoch. Endurance is key. Pace yourself. Proper technique suffers if you're tired or dehydrated (especially after the 2k hike into the jungle). Drink something before the dive for energy. Believe me, it's worth the effort!

FLOW AND FLOODING. There is very little flow in the Yucatan and no flooding as we know it in Florida. Because of this the cave floors do not repair themselves. As of now there are very few blemishes. When finning, exercise caution in order to preserve their pristine appearance.

Conservation is the key. Respect for the ecosystem. Although our presence is invasive, we can minimize our impact by diving gently with care and control. Emphasis on this attitude will not only help save the caves, but may save some lives in the process. ■

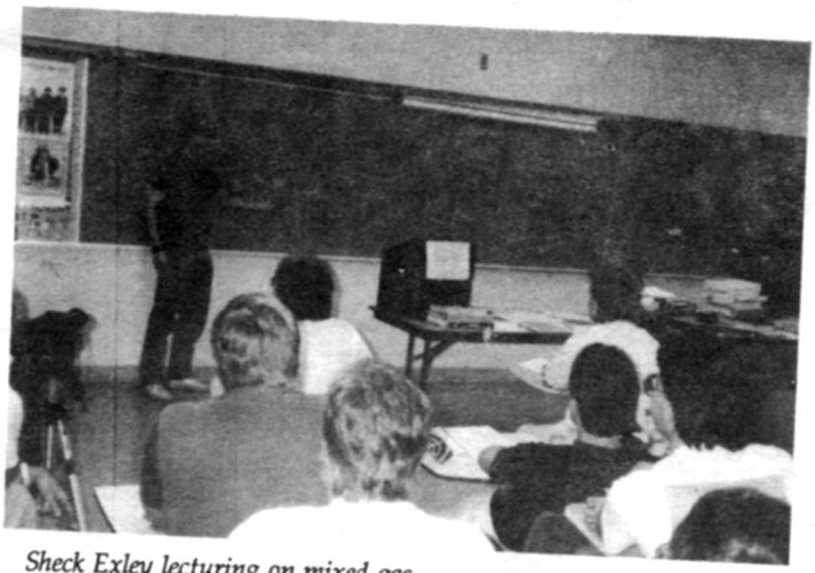




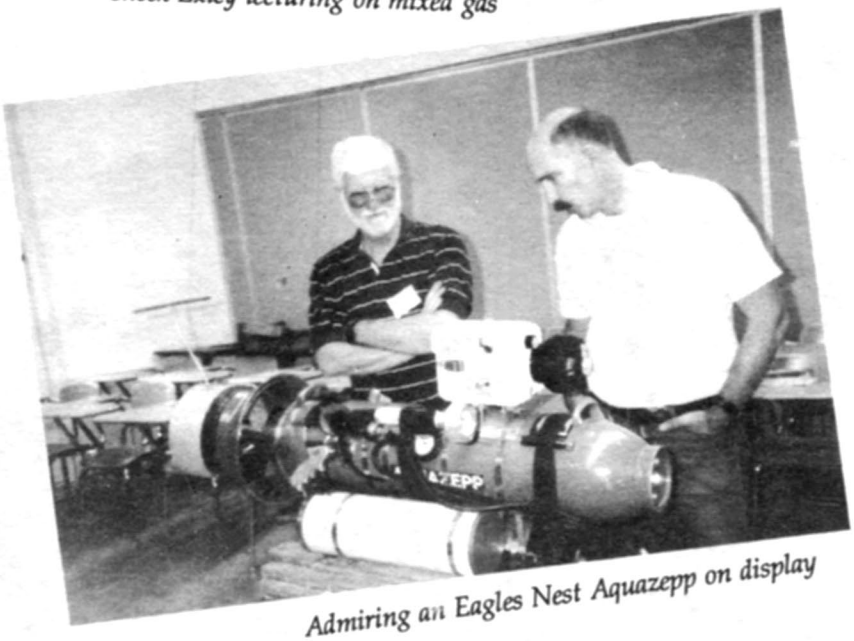
Jim King demonstrating data graphs generated by the Norwegian Dive Profiler

Judy Ormeroid at the CDS T-shirt table

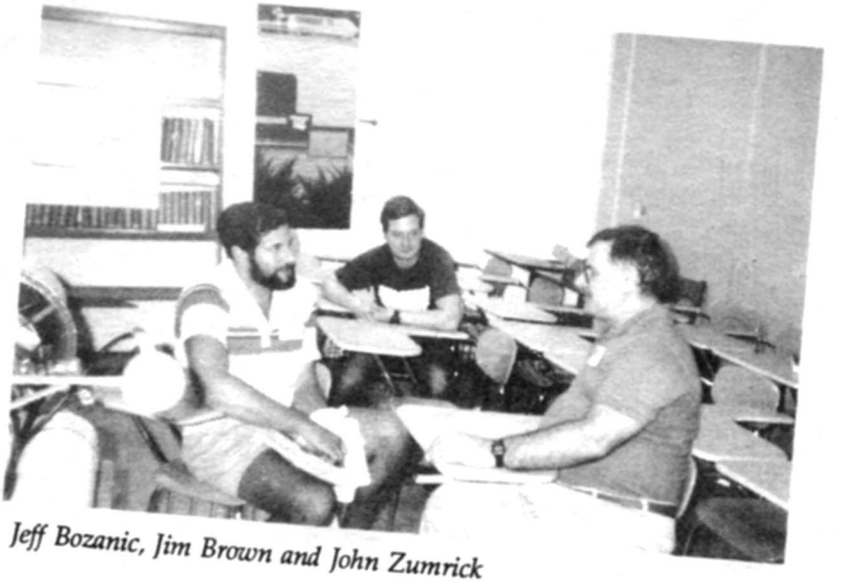
Chairman
Mark Leonard



Sheck Exley lecturing on mixed gas



Admiring an Eagles Nest Aquazepp on display



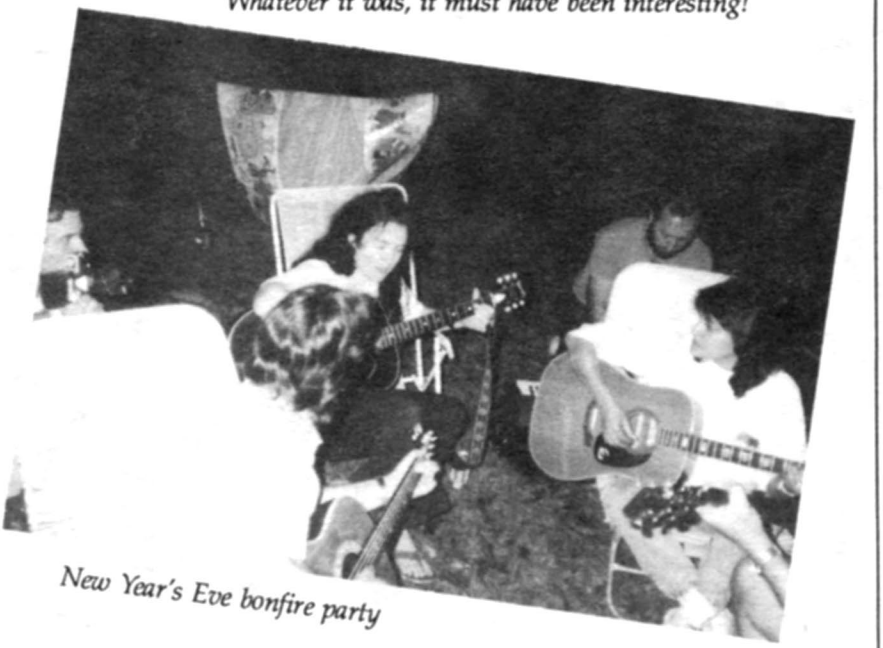
Jeff Bozanic, Jim Brown and John Zumrick

Whatever it was, it must have been interesting!

1990 WINTER WORKSHOP

Photos courtesy of Jeff Bozanic

mp explorer and photographer Ron Simmons



New Year's Eve bonfire party

SAFETY IN CAVE DIVING

by Oliver Wells (NSS #33337)

Reprinted with changes by the author with permission from the Belfry Bulletin, *the journal of the Bristol Exploration Club, Vol. 44, No. 453, Feb. 1990.*

[AUTHOR'S NOTE: In this article I discuss some aspects of safety in cave diving. Many equally important questions such as dive planning or the step-by-step training of cave divers are not mentioned. Members of the Bristol Exploration Club such as Donald Coase and Harry Stanbury, were active in the Cave Diving Group in the 1940's and BEC members continue to be so today. They were very helpful during my return to cave diving with the CDG at Wookey Hole in 1988. Before too long I had written something for their journal . . .]

The arrival of the Belfry Bulletin is always an agreeable moment and perhaps the efforts of the editor and of the regular contributors are too often taken for granted. The happy feeling that this is not really my problem was ended rather abruptly in my case when I found myself talking to this hard-working gentleman in the Hunter's Lodge Inn. He reminded me that as a member of the BEC I was expected to put pen to paper and then send the result to him. So I was wondering whether some notes on safety in cave diving might be of interest. Nothing that I shall say here is new, but I have a special reason for writing this article that I shall describe in a moment.

It has always seemed to me that there are two main schools of thought about training cave divers, depending upon how much mental strain is put upon the trainee. If you join the army (as many of us had to do in the 1950's) then you will find that the training is a rather "heroic" process in which the finer sensitivities of the trainee are ignored. In the same sort of way, when I signed up for an underwater course about ten years ago to see if I could still do it, I was dismayed to find that the instructor seemed to be a frustrated marine sergeant who scattered tanks across the bottom of a really quite deep indoor pool and then expected us to swim from one tank to the next, taking only one breath from a mouthpiece attached to each of them. I have never been so close to drowning in my life. I seem to remember that when I was taught to use an oxygen rebreather by Jack Thompson and John Buxton in 1954 and 1955, the training was equally no-nonsense but was carried out in a more humane way (apart from the physiological tests, that is). The dive store that I do business with these days follows the more humane approach also.

Possibly you may have realized by now that I do not like the "heroic" method for training divers, especially from the receiving end. I prefer a more tranquil approach based on extended periods of time spent underwater gradually becoming acclimatized to the life below. "Exercises" such as mask removal, mouthpiece exchange and so on can then be accomplished without any worry whatsoever (or can even become agreeable if you are on really good form).

An important question is how often you should practice your basic diving skills. There are, it is true, certain individuals who have the unfair advantage over the rest of us in being able to perform underwater to perfection without regular practice. But if you wish to be *really* on form then you should go below the surface at least once a week. In the 1950's I met this requirement by swimming in a flooded gravel pit while a helpful colleague rowed a boat from which a nylon rope come down from the sky, as it were.

Before my visit to England in 1989, I practiced for a total underwater time of about five hours with a thin nylon line laid between weights at a depth of about 9' in a lake behind a friend's house. Such has been the progress with diving equipment that neither a boat nor a safety line tied to the diver were needed. Sometimes while doing this I would deliberately stir up the mud and then keep in contact with the line under conditions of zero visibility. A colleague who tried to do this expressed surprise that the line could suddenly vanish completely—obviously you must concentrate your mind endlessly on this point. At the very least you should practice underwater within two weeks of diving in a cave.

Perhaps I might add that the use of a line along the floor in this way has the shortcoming that it does not exercise the diver sufficiently in the finer points of buoyancy control. It is better to practice with a line about 5' above the floor for that.

Another important point is what I call the "safety reflex" of the diver. If you are an open-water diver, then your idea of safety is the surface. As a cave diver, your reactions must be totally different. You should have two simultaneous responses if a sudden problem should arise. You first automatic reaction should be to check your backup mouthpiece. Your second should be to check your contact with the line. Then you can sort out your problem.

A friend who read the above paragraph points out that the more general idea is of "penetration diving" rather than cave diving if the above ideas are to apply. His interest is diving on wrecks. At one dive site, there is a wreck directly below the channel used by large oil tankers that sail by at regular intervals with their propellers churning and so on. The divers lay lines from the side and employ all of the precautions described above. (Wreck divers generally carry an independent aqualung supplied from a small "pony bottle" that does not have the duration of the backup system carried by a cave diver.)

Constant practice can pay dividends in many ways. For example, during my swim back from Wookey 19 with Bob Drake in September, 1989, it seems that I did not tighten the belt that holds the cylinders around my middle to the degree that was required. (That steep, restricted, muddy rock slope in 19 is not the most comfortable place for putting on cave-diving equipment that I have ever been in.) I knew that I was on good form when I went underwater and the lines appeared to be more "friendly" than the surface. About 15-20' along the line and while I was in a fairly compact section of the passage, the tube from the regulator to my right

cylinder suddenly pulled tight so that the mouthpiece set off at a brisk speed in the direction of my lower right wisdom tooth (possibly the tube was too short). It is amazing how fast the jaw muscles can tighten at a time like that. Possibly I may have turned my head to chase the vanishing mouthpiece, but I cannot be sure about that now. Unexpectedly perhaps, I did not feel alarmed even slightly, and stopped swimming, checked the backup regulator, checked my contact with the line, and *then* pulled the cylinder back to where it should have been (for the first of the many times that I did so on a very agreeable dive).

The "episode" described above was fairly trivial. This sort of problem occurs to cave divers all the time. I only mention it here to emphasize the need for constant underwater practice if you do not wish to be alarmed by such a thing. The final five chapters in Alan Thomas' book, *The Last Adventure*, contain examples of happenings that were more dangerous than the above. In my opinion, if you want to go cave diving, then you should read these chapters, think about these episodes and then practice underwater until you are confident that you can meet such crises in a totally calm way. And even then please do not be in too much of a hurry to "push the limits" until you have been doing it for some time.

Crises that occur underwater can be all the more terrifying for being unexpected. Tony Jarratt told me about a diver who was exploring in an underwater mine, stirring up the mud as he went along. When it was time to return, he found that his line reel was jammed and that he had been pulling the belay block along behind him. There was no line back through the muddy water to air. Tony tells me that he got out successfully. It is a terrifying story, but is useful perhaps in emphasizing that you cannot be too careful.

By "redundancy" we mean that if the respirator should suddenly stop working (or worst of all, release its air) then you can change over to a second mouthpiece on a backup system and reach safety using your own resources alone. Perhaps it should be emphasized that this is a *minimum* requirement since such failures can and do happen. For example, I had a friend in Pittsburgh who lost the O-ring between his cylinder and the regulator at a depth of 70' in open water. In Hawaii, I was in the boat when a diver emerged with a stream of bubbles coming from his pressure gauge. About two weeks later, a diver right in front of me suffered a blowout of some kind from the cylinder valve behind his head and then surfaced in a cloud of bubbles that was larger than any such cloud that I had ever seen. (Later I was outside a dive store when the rupture disk on a tank in their storage room blew out, and I believe it was the same problem here.)

One day when practicing in an indoor pool with a borrowed regulator, I was surprised when the rubber mouthpiece came off and I was connected directly to the water. Oddly enough, in the 1950's we dived regularly in caves without any backup system apart from a second oxygen cylinder that fed into the same breathing circuit, and it is not clear to me looking back on it how we could have felt so self-assured. A totally independent backup system now appears to be absolutely essential, in my opinion.

In response to a question from a non-caving friend, cave divers (or more accurately, sump divers) wear a cylinder on each side ("side-mounts" in the current jargon) with a pressure gauge and a regulator on each of them. You exchange mouthpieces from time to time to maintain equality between the pressures in the two tanks. The idea is never to get yourself into a situation where you cannot get out with the other system.

Head protection was neglected in the 1950's. Bob Davies wore a beret over the thin rubber hood on his dry suit with this idea in mind, but the rest of us did not even do that. Nowadays cave divers (or at least sump divers) generally wear a helmet and with good reason. The only question is how soon the use of helmets will spread to open-water divers also, because even there the diver can (and sometimes does) knock the head.

Another question is whether it is safer to dive solo or whether you should maintain close and continuous contact with a second diver at all times. Obviously it is a good idea to have a second diver not too far away, but it is a delusion to expect that he can help you if anything really serious should go wrong. In fact, the chance of an accident underwater in a cave is probably increased if there is a second diver too closely in contact to delay you and generally cause confusion. Solo diving can be very agreeable if you are on form, and yet I *was* very grateful to Bob Drake when he unwound the guidewire from around my left regulator on the first of my two trips back from 19. We had been operating separately for all practical purposes until I was delayed at that point.

Here the reviewer wrote: "All dive certification agencies emphasize the need to dive with a partner. Your statement will be criticized . . ." Diving with a partner makes very good sense in a very large number in cases, but I still think that in cave diving the problems caused by a companion in continuous close contact in causing delays, stirring up mud and so on can outweigh the advantages. Solo cave diving saves you from all the worries of whether your companion is safe or whether he will do something that you did not foresee. Having a second diver not too far away can be very comforting, however.

Concerning deep diving when breathing air in caves, I am against it. In September, 1958 I went with John Buxton to the *HMS Vernon* in Portsmouth where we went to the equivalent of 200' in a pressure chamber in company with some Naval Officers. We sat on benches along the two sides of a horizontal cylindrical chamber of diameter about 5' while a naval gentleman at one end communicated with the world outside by hitting the wall with a noisy blunt object. We stared at the needle on an oversized depth gauge as it slowly rotated clockwise between us. There was nothing to report down to 170', when nitrogen narcosis came on with about as much subtlety as being hit on the back of the head with a hammer. It was a ghastly experience. I felt as if I was being whirled in a centrifuge at about ten times faster than I wished to go. But the plan was to go to 200', so on we went. By this time the air was so heavy that it was a major athletic enterprise to breathe either in or out, in addition to the narcosis. The Naval Officer told us later about the incredibly stupid things that even experienced divers had done at such depths. Cave diving, anyone?

(Here the reviewer wrote: "Dive certification agencies generally prohibit

dives below 120' . . .)

My final point concerns the *expectation* of the diver. All of us would like to be at the cutting edge of cave diving, and yet nowadays I have been forced by a certain feeling of reality to regard myself as being in the position of a tourist to the Alps who admires the scenery from an easy climb. This does not excuse me from the need to practice my skills, attitude and equipment (you cannot escape from this).

As I said in the introductory note, in this article I have presented one person's view of certain aspects of cave diving, and it is obvious enough that there are many other important topics that I have not covered here.

Oh, yes, why did I write this article? About six months ago I agreed to write a chapter on the history of cave diving (which is more difficult than giving a lecture because you cannot fluff over the difficult bits). So this article is a partial "dry run" in an effort to unconfuse my mind on this subject. The style of my chapter will be somewhat different from the conversational tone that I have used here. So if the reader would like to help me by sending me any comments on the above (especially with reference to the *origins* of these ideas or to alternative points of view) then I shall be very happy to acknowledge any such help in the final version.

Cave Diving has a great future and it will be interesting to see how it is made safer as it continues to advance in all aspects of underwater exploration by human divers, by remotely controlled vehicles and finally by means of autonomous computerized devices that will explore and record data at distances, depths, temperatures and through small holes with fast-flowing water that are far beyond anything that can be done now. ■

THE HIGHS AND LOWS OF FULL CERTIFICATION

by Mike Nelson (NSS #27176)

And random thoughts and insights from the experience . . .

Low Point: Saving pennies for a year and a half.

High Point: Having enough extra for a few scuba items I "really needed."

Low Point: Working 6 hours of my 8-hour shift before spending another 26 hours driving, 200 miles of it on glare ice.

High Point: Shirt, shorts and tennis shoes in January.

High Point: Going for a short easy run, early before our class, to work out all the knots from the long ride down. Feeling the atmosphere, smelling the smells of a very foreign environment.

Low Point: Having to wade through all the trash in the ditches to examine some of the local flora.

High Point: Witnessing the aesthetic improvement that bureaucratic control has had on the Peacock Springs area.

Low Point: Toting gear to various sites in the Peacock Springs area.

Low Point: Suffering two nasty CO_2 hits while trying to accomplish rudimentary requirements of full-cave certification. (I was using ill-fitting borrowed double 80's).

High Point: As my head was pounding something fierce after the second dive, our instructor inquired about my condition and situation. I commented that I had not come to Florida from Iowa to learn what I already knew—that I was a poor swimmer. (This is what I attributed the CO_2 hits to.) Or for that matter, to get certified. I came to learn all I could about side mounting in the hopes of making the sump diving I do in Iowa as safe and productive as possible. Now I have never before met a teacher of any manner of scuba instruction who tolerated criticism of any sort. But our instructor took what I had said into consideration. He borrowed a set of Florida-style cave-adapted 80's for me to use. He rebuilt my confidence by stating that it was a wonder that I had done as well as I had with what I was using. He tailored our class to facilitate our needs as much as possible, while remaining within the guidelines of certification. This was the beginning of my slowly coming to the realization that this instructor is the kind of guy who would have a waiting line of donors should he ever require a kidney transplant.

Low Point: Having to return those 80's after finishing the class.

High Point: Watching our instructor, who had been the epitome of cool, calm confidence, turn to silly putty upon receiving a message that his wife had checked into the maternity ward.

Low Point: False alarm, his wife went home with the baby still in place.

High Point: As we missed a dive while our instructor was at the hospital, I meandered over to Orange Grove Sink. (The fourth man out in our group had an individual class going there with another instructor.) Everyone needs a personal moment of real rest and serenity on his vacation. I got mine sitting on the rock ledge overlooking the sink, contemplating the erratic rise of exhaust bubbles, listening to distant thunder, watching light raindrops pierce dark twinkling stars into the solid green sheet of duckweed below.

Low Point: Then the skies opened up big time and chased my butt back into my car.

High Point: Being on the "telephone decompression" when a friend dropped a telephone into Little River with a note telling our instructor to call his wife as soon as he was

finished decompressing.

Low Point: After everyone else had split to await the "blessed event," watching Dave Ecklund stoop down in the parking lot at Little River and pick up ten pieces of litter within his reach. Nine of these were undoubtedly cave-diver trash.

High Point: The baby is born, everyone is okay.

High Point: Adapting a quicker, handier attachment for my side-mount system. It was an acceptable trade off of stability for simplicity and was worth the trip; indeed, the reason for the trip and classes. This was more important to me than the certification itself. Also, our instructor's set-up was a fine lesson in the logical layout of side-mount accessory gear. The thoughtful placement of equipment makes a good side-mount system that much more efficient, effective and safe.

Low Point: Hearing of and witnessing cave-diving practices and/or procedures that are contrary to the accepted policy of the cave-diving community. Pondering the why's and the wherefore's of the discrepancies, only to later have a friend point out to me that it was not uncommon for the "bottom line" to dictate many an individual's personal policy.

Middle of the Road Point: Realizing that many of my own practices may well be as questionable, though motivated by other circumstances, and seeing that each of us make choices regarding the risks we assume. Hopefully, somewhere in here there is a message. Do I fracture rules of safe cave diving? Do I fracture them because others do it or because I have had experiences, in a protracted manner, that give a reliable indication of personal strengths and limitations? Do the rules apply only to recreationalists and not the hard-core, severely motivated, highly experienced lot? Do these questions really need asking? Should these facts be dragged on out into the light of the rise pool? Maybe. Maybe because if recreational cave divers were intimately aware of the time and effort and commitment dedicated by those at the hub of the sport, they might see where to draw the line and be less tempted to push ever farther and deeper. I see the deaths of trained cave divers in a different light now. Those cave divers doing leading-edge work are there, doing what they do, because experience allows it. Those who meet their maker have obviously gone too far too fast. A select few have perished because they played a risky game to its extremes and simply lost. Another thing my friend told me was, "No one can be arrested for diving over 130', but that doesn't discount one from paying dearly for pushing one's experiences too far ahead of one's capabilities." We found ourselves gauging our "success" by how far and how deep we got during training dives. I would easily assume that this mindset is common among neophytes and it is plain what this kind of thinking may lead to.

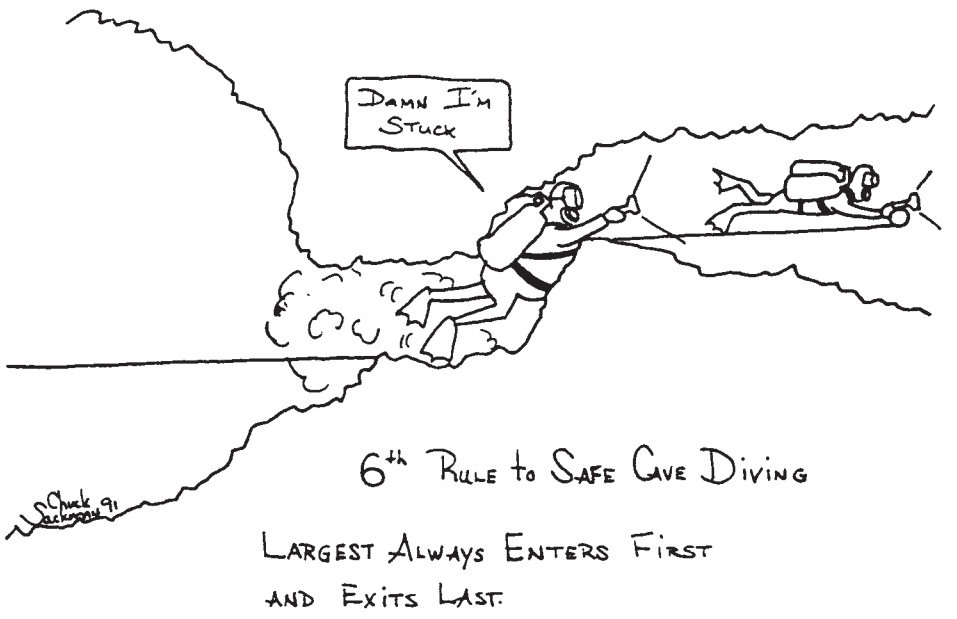
High Point: Side-mount diving upstream Cow Spring.

Low Point: Saying goodbye to all the folks that made the time in Florida so enjoyable. I became somewhat glum knowing how slim my chances of coming back were. My interest in following lines is zip. My ability to participate in undertakings of my liking in the Florida theater, about the same.

High Point: Feeling confident in pursuing side-mount projects back at home.

Low Point: Getting back there, 26 hours of driving into the ice and cold. ■

TALES FROM THE CAVERN ZONE



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Coke, James G., #193, Cave/Cavern Instructor & Sponsor, Recovery Instructor, Surveyor Instructor, DPV Pilot Instructor, Akumal Dive Shop, Postal 1, Playa Del Carmen, Q. Roo, Mexico, 77710
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de Groot, Johanna, #210, Cave Diver Instructor, Excursions Nautica, Postal 1, Playa Del Carmen, Q. Roo, Mexico, 77710
DeRouin, Terry, #238, Cave Diver Instructor, Divers' Supply, 5208 Mercer University Dr., Macon, GA, 31210, 912-474-6790 (bus), 912-471-9730 (res)
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DAN
Divers Alert Network
919-684-8111
Diving Medical Assistance
NCIC
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Continued . .

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Heinerth, Paul, #165, Cave Diver Instructor, Scuba West, 8109 New York Ave., Hudson, FL, 34667, 813-863-6911 (bus)
Hempstead, Jamie, #194, Cave/Cavern Instructor & Sponsor, P.O. Box 6774, Columbus, GA, 31907, 404-323-9363 (res)
Hires, Lamar, #191, Cavern/Cave Instructor & Sponsor, DPV Pilot Instructor, Sidemount Instructor, Rt. 14, Box 162, Lake City, FL, 32055, 904-752-1087 (bus), 904-755-5913 (res)
Howard, Frank, #234, Surveyor Instructor, 334 Portico Ct., Chesterfield, MO, 63017, 314-469-6433 (res)
Iliffe, Dr. Thomas, #156, Cave Diver Instructor, Dept. of Marine Biology, Texas A & M University, Galveston, TX, 77553-1675, 409-740-4540 (bus), 409-763-8707 (res)
Jay, John D., #247, Cavern Instructor, Ginnie Springs Resort, 7300 N.E. Ginnie Springs Rd., High Springs, FL, 32643, 904-454-2202 (bus), 904-454-7604 (res)
Jubb, Peter S., #158, Cave Diver Instructor, 1901 W. Bay Dr., Largo, FL, 34640, 813-585-0938 (bus)
Kolczynski, L. J., #223, Cavern Instructor, 17 Sea Bass Ln., Ponte Vedra Beach, FL, 32082, 904-285-4022 (res)
Kristovich, Ann, #239, Cavern Instructor, P. O. Box 49163, Austin, TX, 78765, 512-480-8840 (res)
Leonard, Mark D., #169, Cavern/Cave Instructor & Sponsor, Recovery Instructor, DPV Pilot Instructor, Rt. 14, Box 162, Lake City, FL, 32055, 904-752-1057 (bus)
Maufroy, Robert, #152, Cave Diver Instructor, 109 Oak Ct., Kingsland, GA, 31548, 912-729-7851 (res)
Menke, Ronald, #209, Cave/Cavern Instructor & Sponsor, Kissimmee Pro Dive Center, 406 E. Vine St., Kissimmee, FL, 34744, 407-933-5090 (bus)
Miller, Marianne, #252, Cavern Instructor, 15204 Omaha St., Hudson, FL, 34667, 813-869-2939 (res)
Mims, R. Lynn, #237, Cave Diver Instructor, The Dive Buddy, 334 Hoover Cir., Toney, AL, 35773, 205-852-6467 (bus)
Murphey, Milledge, #190, Cave Diver Instructor, 1815 N.W. 7th Pl., Gainesville, FL, 32603, 904-392-0584 (bus), 904-373-9234 (res)
Nicholson, Henry, #148, Cavern/Cave Instructor & Sponsor, Recovery Instructor, 5927 Hyde Park Cir., Jacksonville, FL, 32210, 904-786-6363 (res)
Oliver, Peter L., #248, Cavern Instructor, P. O. Box 49591, Austin, TX, 78765
Oestreich, Bill, #253, Cavern Instructor, 8585 N. Pineneedle Tr., Crystal River, FL, 32629, 904-563-2763 (res)
Page, E. Eugene, #245, Cavern Instructor, 205 S.E. 16th Ave. #2-C, Gainesville, FL, 32601, 904-371-3990 (res)
Power, Robert A., #166, Cave Diver Instructor, P. O. Box HM 1643, Hamilton HMGZ, Bermuda
Prosser, Joe, #188, Training Chairman, 7400 N.W. 55th St., Miami, FL, 33166, 305-592-3146 (bus)
Purchase, Dale J., #140, Cave Diver Instructor, 4181 S. Wayside, Saginaw, MI, 48603, 517-791-1707 (res)
Questel, Kelvin, #235, Cavern Instructor, 938 Madison Ave., Wooster, OH, 44691, 216-262-3483 (res)
Rhea, David W., #233, Cave Diver Instructor, Rhea's Diving Services, 313 Whitecrest Dr., Marysville, TN, 37801, 615-977-0360 (bus)
Sirota, Philip, #182, Cave Diver Instructor, Rt. 2, Box 211-U, Wellborn, FL, 32094, 904-963-2904 (res)
Straatsma, Steven, #143, Cave Diver Instructor, 2901 Beeler Dr., Tampa, FL, 33626, 813-920-2908 (res)
Sutton, Carl, #243, Cavern Instructor, 1020 N.E. 7th Pl., Gainesville, FL, 32604, 904-376-0215 (res)
Walten, Gary, #240, Cavern Instructor, 4119 Roland Ave., Baltimore, MD, 21211, 301-467-3503 (res)
Watson, Patton E., #227, Cave Diver Instructor, P. O. Box 250174, Montgomery, AL, 36125, 205-265-2335 (bus), 205-264-3313 (res)
Williams, Dennis, #118, Cave Diver Instructor, 5385 Sand Lake Dr., Melbourn, FL, 32934, 407-724-4922 (bus)
Young, Tom, #215, Cave/Cavern Instructor & Sponsor, 26555 Westwood Dr., Spring, TX, 77386, 713-367-3999 (bus)

BACK ISSUES OF UWS

We have had many requests for back issues of *Underwater Speleology*. Unfortunately, we are not in possession of a complete set of the full 17½ years' worth of the newsletter. However, copies (and we mean that literally is some cases) of the following issues may be ordered through NSS-CDS Publications:

1974 - Volume 1
No's. 1, 2, 3, 4, 5, 6
1975 - Volume 2
No's. 1, 2, 3, 4, 5, 6
1976 - Volume 3
No's. 6
1977 - Volume 4
No's. 5, 6
1978 - Volume 5
No's. 2, 4, 5, 6
1979 - Volume 6
No's. 1, 2, 3, 4, 5, 6
1980 - Volume 7
No's. 1, 2, 3, 4, 5, 6
1981 - Volume 8
No's. 2, 3, 4, 5, 6
1982 - Volume 9
No's. 1, 2, 3, 4, 6
1983 - Volume 10
No's. 1, 2/3, 4, 5/6
1984 - Volume 11
No's. 1, 2/3, 4, 5, 6A, 6B
1985 - Volume 12
No's. 1, 2, 3, 4, 5, 6
1986 - Volume 13
No's. 1, 2, 3, 4, 5, 6
1987 - Volume 14
No's. 1, 2, 3, 4, 5, 6
1988 - Volume 15
No's. 1, 2, 3, 4, 5, 6
1989 - Volume 16
No's. 1, 2, 3, 4, 5, 6
1990 - Volume 17
No's. 1, 2, 3, 4, 5, 6
1991 - Volume 18
No's. 1, 2, 3, 4

We are still looking for the missing issues and hope one day to be able to offer a complete set. If you happen to have any of the missing issues and would be willing to allow us to photocopy them (or to photocopy them yourself and be reimbursed), please let us know!

The price for back issues is $2 per issue, which includes postage and handling. Send your check or money order to:

NSS Cave Diving Section
P. O. Box 950
Branford, FL 32008-0950

Please allow 4-6 weeks for processing, as requests must be processed and forwarded through the Section a couple of times before reaching the appropriate person. ■

GROWING PAINS

The question of increasing membership dues was brought up at a CDS Board Meeting a couple of years ago. (Dues then, as they are now, were $5 per year, which includes six issues per year of *Underwater Speleology*, as well as substantial discounts on publications and workshop entrance fees.)

In the face of inflation and the increased size of the newsletter, it was recognized that dues were not covering the cost of producing and mailing the newsletter—let alone anything else. However, it was also recognized that NSS membership, at $25 per year, is a prerequisite of CDS membership, and that to raise CDS dues would be adding "insult to injury." A past chairman attending the meeting also pointed out that there had been a terrible upcry from the membership when the dues were last raised, back in something like 1981 or 1982. "What were the dues raised from?" someone asked. "From $4 to $5." Everyone laughed. (Who says that CDS Board meetings are dull?)

The question of raising dues was brought up again at a recent board meeting for the same reasons, and was again shot down for the same reasons.

At press time, CDS membership had topped out at just over 750 members, foreign and domestic. In addition, there are subscribers, NSS internal organizations, exchange newsletters, state parks, sheriffs' offices, etc., that bring the total mailing list up to almost 900. Because of the very heavy work load involved, it was decided to split up the jobs of secretary and treasurer, which had been combined functionally some six or seven years ago. This meant separating membership roster lists from finances, and dividing the information between two computers. As was explained in *UWS* 18:2, we were unable to successfully extract data from the primitive program they were stored in and it was necessary for the secretary to rekey the entire mailing list. We are still correcting errors and appreciate your apprising us of any corrections to be made or of changes in your address.

As a convenience to new members, we had made arrangements some years ago with the NSS office to collect NSS dues from people wishing to join the CDS, so that they could join both at once, rather than having to wait until their NSS memberships cleared. But the process is a long and complicated one, and we appreciate your patience.

First the mail arrives at the Section's permanent address in Branford where, after a suitable delay, it is forwarded to our Treasurer, who lives in Ocala. The Treasurer then sorts through the mail and forwards it to the apparopriate coordinators. Checks for memberships are logged into the computer, and then the actual applications are mailed with a check for the NSS, at monthly intervals, to the Secretary for entry into the mailing list. The Secretary then forwards the application information and check to the NSS, where its paid office staff pprocesses the new memberships. We apologize for delays and errors, but it is sometimes late at night when these jobs get done, as they are all volunteer efforts. They are also only a small portion of the duties involved. ■

LETTERS

Emergency Radio Donated by CDS to Peacock Springs State Recreation Area

Letter to the Section

June 27, 1991

Dear Sirs:

I would like to take this opportunity on behalf of the Division of Recreation & Parks, Ichetucknee Springs State Park & Peacock Springs State Recreation Area to thank you for the generous donation of the hi-band radio which will be used for security at Peacock Springs.

I would also like to extend a special thanks to Richard Brady for delivering the radio all the way from Atlanta, Georgia.

Your organization has shown great interest in Peacock Springs SRA. Your support is greatly appreciated not only by me, but also by the Park Service as a whole.

I am looking forward to continued cooperation and support between our two agencies.

Sincerely,
Azell G. Nail, Park Manager
Ichetucknee Springs State Park

* * *

Manatee Springs Dive Policy

Letter to Wendy Short, Safety Coordinator South

February 19, 1991

Dear Ms. Short:

Thank you for your letter dated January 31, regarding the diving policies and procedures used at Manatee Springs State Park.

Diving at Manatee Springs has traditionally been a popular activity and at this time is being carefully evaluated by the Florida Park Service. The primary concern is to find out the extent of the impact, if any, that diving has on the natural resources.

Your comment about the fossilized turtle shell not being disturbed is a good observation, and supports our decision to increase the number of cave-diving parties from one to three groups. Inspections have shown very little vandalism inside the cave system. Most damage has been in the cavern area, where less-experienced divers usually dive. We believe that well-trained cave divers generally respect the unique and fragile underwater resources.

A recent survey revealed that 5,400 divers utilized the park during a 16-month period. At times, as many as 100 divers were in the park in one day. Because of our concern for possible impact on the park's resources, a carrying capacity for diving was recently implemented. We would like to emphasize that the carrying capacity is on a trial basis and will be evaluated over the next two years. The new capacity is no more than 50 divers at the spring at any one time. As part of the 50-diver maximum, no more than three cave-diving groups (maximum of 4 people per group) will be allowed in the cave system at any one time.

We will carefully monitor the number of divers, if any, that are turned away due to the new carrying capacity. If a substantial number of divers are turned away, we will consider a reservation system. Your comments are very timely, since state-park diving fees are currently under review.

It is our understanding that the park manager, Bill Maphis, has requested that the second line be removed from the cave. We understand your concern for the safety of divers and will make sure the second line is removed at the earliest possible date. We will evaluate the survey map to determine its appropriateness for public distribution.

Again, thank you for sharing your concerns and suggestions.

Sincerely,
Tom Gardner, Executive Director
Florida Department of Natural Resources

What Makes a Cave Diver?

I believe that if every trained cave diver answered that question, we would get almost as many different answers. There are several factors which play a part in each person's attitude toward cave diving. The strong desire and the obsession to dive caves and to continually gain knowledge about caves is a leading factor, in my opinion, towards making a skilled, competent cave diver. A diver with a lax attitude towards cave diving does not usually make a good cave diver.

Cave diving has been growing by leaps the past few years, as diving springs, sinkholes, and caverns becomes more popular. This is evident by the increasing number of divers who are signing up for cavern and cave courses. Many of these divers take their cave diving very seriously and actively pursue their cave diving and their cave-diving education. However, many of these divers do not. They receive their training, call themselves *cave divers*, then cave dive so infrequently or beyond their ability that they pose a threat to themselves and to other divers with them, who may also be equally inexperienced. Some of these divers are becoming seasonal or occasional cave divers, with some of them not cave diving for months or years at a time.

I recently dived a small cave system in Pinellas County, outside of Tarpon Springs. One of my long-time dive buddies, who has been diving much longer than I, and who is a highly experienced deep diver, wanted to join in on the dive. I declined his request. Why? He is basic-cave-trained and has not made a bonafide cave dive in over two years. He doesn't even own cave-diving gear any more.

What makes a cave diver? It is that person who is avidly dedicated ot the sport and who continually progresses in his experience, training, and education. That is a true cave diver.

Frank R. Lavallee (NSS #27829)
Plant City, Florida

Broken Speleothems

Letter to the Editor

August 24, 1991

I recently returned from a week-long trip to Akumal. This was my second cave-diving trip there in two and a half years. I got turned on to the area by Jim Coke's fantastic presentations at the workshops. The diving is definitely the best I've ever seen. The water is warm, the dives are shallow, the visibility is fabulous. Everything that Florida springs aren't. No more freezing during long decompression stops! Even better, almost no decompression stops!

As if all that isn't enough, the speleothems are spectacularly beautiful. Well, at least the ones that haven't been broken off. My buddy and I were appalled by the amount of damage done to the systems in the short time since our last trip. Certain areas had piles of stalactites which had obviously been snapped off the ceiling by a diver lacking in buoyancy control. If these areas were limited to the cavern zone, it might be understandable. But a thousand feet back and one or two jumps off the main line? That's hard to understand. This is an extremely fragile environment. Pull and glide is not an acceptable form of propulsion here! What took tens of thousands of years to create takes only seconds to destroy.

The world is definitely getting smaller. With package and group rates being offered to Akumal, anyone can easily get to dive these cenotes. It's difficult to promote something so beautiful, yet to try to protect if from harm.

I wish all cave divers could witness the beauty of these cenotes, but this is not the place for divers with questionable buoyancy skills. Places like Peacock, Madison, and Little River are where these skills need to be honed.

I have already planned my next trip for February. I look forward to the excitement of the diving, happy hour at the beach bar, and dinner at the Xpu-ha Restaurant. But what I really look forward to is seeing the beauty of the speleothems exactly the same as they were on the last trip.

Lenny Kolczynski (NSS #29195)
Ponte Vedra Beach, Florida

* * *

The Song of the Siren

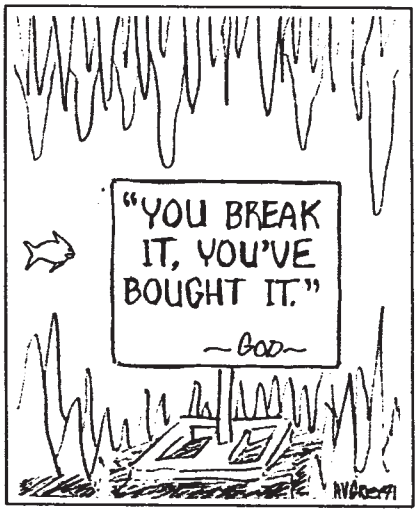
Letter to the Editor

March 16, 1991

... Every time I see an article on the safe handling of chain saws, I read it, though I have handled them safely for years. Maybe if *UWS* readers are assailed enough with the idea of critically assessing their own personal limitations, they would be more conscientious in their determination to expand those limitations, even if only subliminally.

It was accepted, even amongst my own full-cave-course classmates, to elicit pride from how far we had gotten on our dives. Is that really why we do it? Those with the natural talent to excel will discover it, and if circumstances allow it, will fall in with those doing significant work. If not, one can only hope they have the sense to simply enjoy the underwater cave environment without succumbing to the "how far can I get" siren.

Mike Nelson (NSS #27176)
Fertile, Iowa



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