UNDERWATER SPELEOLOGY

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CAVE DIVING SECTION OF THE
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FIRST BRITISH CAVE DIVING RESCUE

A recent copy of Descent Magazine contained news of what is believed to be the first rescue through a sump ever carried out in Great Britain. On Jan. 19, 1974, Lindsey Smith fell 5 or 6 feet and broke a leg in the Approach Passage of the Black Hole Series of Swildon's Hole. In order to transport Smith to the surface the Mendip Rescue Organization found it necessary to transport him through the completely flooded passage in Sump One.

A telephone link was installed through the sump so that rope assistance could be coordinated from both sides. Fortunately, due to Smith's slef-control and calm cooperation he was able to pass the sump virtually unaided. Since breathing apparatus was not necessary it is assumed that the sump was relatively short.

The biggest problem in the rescue, which involved about 50 cavers and took a total of nine hours, was vertical movement in the cave. A 50-foot descent was surmounted by one of the rescuers rapelling down with Smith on his back.

DIVER'S FLAG LAW PASSED IN FLORIDA

Among the multitude of bills passed by the Florida state legislature at the close of the 1974 session was a new law regarding the use of the diver's flag in state waters.

The new law calls for display of the diver's flag (a red flag with a diagonal white bar) on the surface by any diver in salt or fresh water where boat traffic exists, such as a lake or stream, unless the diver is in an area especially designated for swimming. Although it is doubtful that the new law would affect most cave diving sites, theoretically a number of locations would come within the limits described by the law. Some of the cave diving sites where display of the flag could be required would include all subchannel springs (in the bottom of streams), submarine springs (in the bottom of the ocean, gulf, bay etc.), and many tributary springs where the run from the spring to the river would be navigable to boat traffic.

An exact copy of the bill was not available to the NSS CD Section at presstime; however, it is understood that the penalties for breach of this law are quite strong. Visiting divers should contact local law enforcement agencies, the Marine Patrol, or the Florida Fresh Water Game and Fish Commision when in doubt as to the application of the new law.

While the new law makes mandatory a safety procedure which many divers would observe anyway, many local divers opposed the bill because of the fact that it sets a precedent for legislating safety into scuba diving by a body (the state legislature) which for the most part is totally ignorant of the sport.

NEW INTERNATIONAL CAVE DIVING MAGAZINE

Cave Diving Developments, the official publication of the world cave diving organization (Cave Diving Commission of the International Speleological Union), is now accepting prepaid subscriptions to the first issue, slated for fall 1974.

The magazine will be published semi-annually by cave divers in Spain. The photographs and paper will be similar in quality to Skin Diver Magazine. However, Cave Diving Developments will be much longer, with more than 100 pages of articles and photographs on every aspect of cave diving activity from virtually every part of the world. Interested contributors should submit material to Esteve Petit Llongueres, Secretary ISU CD Commission, Grupo de Estudios Technologicos Avanzados, c/Mauricio Serrahima 20, Barcelona, Spain. Subscribers should make out $8.00 check to "Cave Diving Developments" and mail to Sheck Exley, 2889 College Street #4, Jacksonville, Fla. 32205. Official language will be English.

THE DIVE LOG:

CD SECTION NEWS

Welcome to new members: Dick Bishop (NSS 1365), Eugene Dodelin (Subsciber), and David C. Heath (Subscriber). (For addresses see page 22.)

Lewis Holtzendorff, chairman of the Public Relations Committee of NACD, has been busy trying to convince several Florida land owners to reopen their springs to cave diving for research purposes.

Bob Nadich has helped map 7 ½ miles in Grady's Cave (a large underground watercourse with several syphons in it) in Hart County, Kentucky. He is a member of the Cleveland Grotto and also a certified diver.

David Jagnow was ,co-discoverer of Iowa's longest and most interesting cave, which was found by cave diving into Cold Water Spring near Decorah, the site of the 1974 NSS Convention. He has planned a talk on this epic exploration at the Convention.

Sheck Exley and Court Smith recently discovered a large room in Florida's Alachua Sink at a water depth of 200 feet, 2550 feet from the submerged entrance to the cave. The dive was technically difficult because of the very long decompression required - 353 minutes total. A dye test is planned on the next dive to identify the resurgence, suspected to be Hornsby Spring over three miles distant.

Bill Cate and Dana Turner are in Honduras investigating springs as part of the Central America Expedition.

Dave Fisk and Sheck Exley will be working with the US Geological Survey in Tampa soon to further their research with Florida's springs.

Ron Spong writes that the Cave Diving Group of the Minnesota Speleological Survey is being reactivated. Ron has been diving since 1963.

WORLD'S LARGEST UNDERGROUND LAKE??

According to Descent Magazine, a British expedition to Iran in summer 1973 found a very large cave north of Hamadan containing an extensive lake of undetermined size. There are reports that a Japanese party in 1971 paddled in rubber rafts for 24 hours without finding an end to the lake.

Two very large underground lakes in the United States include the "Lost Sea," in Tennessee, 600 ft. x 300 ft., and "Devils Well," in Missouri, which is approximately the same size. Both of these sites claim to be the largest in the Western Hemisphere, and the Lost Sea even claims to be the largest in the world.

LONGEST UNDERWATER CAVE CLOSED

Recently Cattle Breeders, Inc., owners of Peacock Springs near Live Oak, Fla., posted the property, closing it to swimmers, divers, and cave divers. Peacock Springs System is the longest known underwater cave in the world, with almost four miles of passage explored via its seven entrances, all of which are completely submerged. It is also Florida's longest cave, exceeding dry Warrens Cave by at least half a mile so far.

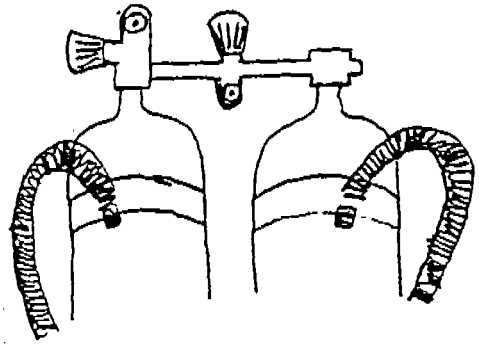
Several members of the NSS CD Section, including Lewis Holtzendorff, have been in touch with Mr. Nelson, president of Cattle Breeders, Inc., with regards to re-opening the site. Mr. Nelson has indicated that he hopes to sell the property to the State of Florida for use as a state park. By closing the property he hopes that divers will write the legislature and apply pressure on the state to buy it.

Already six of Florida's state parks contain cave diving sites of note, including Manatee Springs, Suwannee River, Florida Caverns, Blue Springs, Ichatucknee River, and Wekiwa Springs. At this time only Wekiwa Springs cave is closed to cave divers. Divers at Blue Springs must have clearance through the Orlando Otters or another local club.

NEW CAVE DIVING EQUIPMENT SAFETY INNOVATIONS

by Sheck Exley (NSS 13146)

Just when cave divers had finally discarded "J" valves and double hose regulators in favor of double tank "K" manifolds and octopus regulators, a newer and safer scuba configuration has come along to make all older systems obsolete. The two new innovations that have recently become popular with Florida NSS CD Section members are the ideal manifold and the buddy hose. Both have come about as the product of the continuous search by experienced cave divers for safer and more reliable systems.

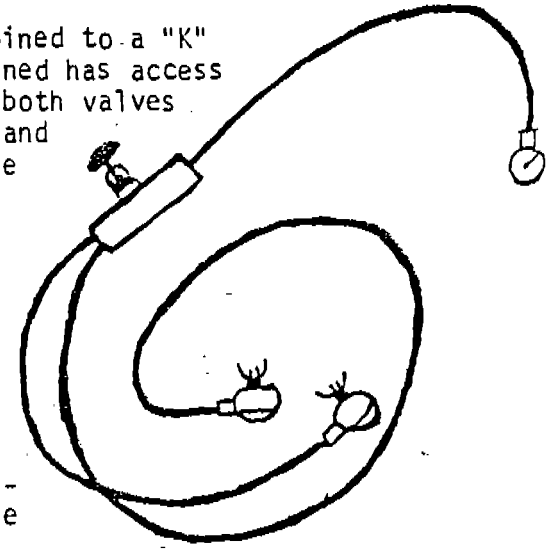


"IDEAL MANIFOLD"

The ideal manifold, probably originally suggested by Tom Mount of NACD (see Safe Cave Diving) involves several modifcations of a rig that has been used by George Benjamin, the famous NSS Blue Hole explorer, for several years. It surmounts three possible emergencies that have worried underwater cavers for years: (1) ruptured or cut air hose, (2) breakage of head of air pressure gauge, causing rapid air loss, and (3) rapid loss of air from second stage malfunction. This latter problem cost the life of Dutch Vande Noord, an experienced cave diver who drowned at Tarpon Springs, Florida, in May 1973. Before the ideal manifold the only things that could be done in the aforementioned emergencies were (1) regulate supply of air to diver by reaching back and opening and closing tank valve, or (2) use of a completely separate scuba, or "pony rig". Unfortunately, in the former case the action was tiring and difficult at best, wasting a lot of precious air, and in the second case only the air in the small pony bottle would be available to the cave diver to make good his escape, for the air in his main tanks would be inaccessible save by the first procedure outlined. Not only this, the pony bottle also made balancing in the water difficult, increased drag resistance, increased vertical clearance making many narrow areas impassible, and became a likely candidate for line entanglement during the dive.

The ideal manifold consists of a "K" manifold joined to a "K" valve below the valve so that either valve when opened has access to the air in both tanks. It is not necessary that both valves be opened. In an emergency one valve may be closed and the other opened to easily surmount any of the three problems mentioned above.

The buddy hose is merely a five-foot-long hose that is substituted for one of the conventional two-foot hoses used in an octopus. Experimentation has shown that the extra length greatly facilitates buddy breathing in caves. The hose is available from Scubapro. The ideal manifold is available from Underwater Designers Co. in Jacksonville (see Skin Diver) or can be homemade from a design by Court Smith, NSS 15394. It is also available from Nemrod, but only with a "J" valve attached.



"OCTOPUS REGULATOR WITH BUDDY HOSE"

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Guidelines

CAVE DIVER'S LIGHTING

by David W. Fisk

In cave diving, light is essential. Without proper lights, the diver is limited to that portion of the cave where the sun's rays penetrate. Using the proper criteria, a safe, dependable and durable lighting system can be obtained from many different sources within the diving industry. The lighting system used by a properly equipped cave diver will include a primary light and one or more backup or safety lights. When selecting a lighting system, the diver should anticipate purchasing both parts of the system and judge each accordingly. If a little common sense is used, a good working system will be the result.

The primary light is the workhorse for the cave diver. It must be capable of providing a good bright light for the entire time the diver is in a cave, yet stay within realistic boundaries of size and cost. For most cases, a light of thirty watts of greater can be considered a primary light if it has an acceptable burn time. The minimum burn time for any light (primary or backup) must be not less than the dive times the diver anticipates; usually not less than one hour. In common use at present are a variety of sealed beam lamps about the size of a motorcycle headlamp ranging in power from thirty to one hundred watts. These lamps when coupled with the proper power supply make a most acceptable primary light that will give years of good service. Almost anything from a bunch of flashlight batteries to liquid Nickle-Cadnium batteries can be used depending on the amount of use the light will receive. Lead-acid and the Nickle-Cadnium batteries are the most desirable as they may be recharged many times, cutting the cost of replacing batteries from the cost of upkeep. These batteries also have a better shelf life than most other types and in the long haul are less expensive. The more ambitious diver may wish to investigate new developments which have been made in the use of quartz-halogen lamps. Many learned cave divers feel that this lamp coupled with a rechargeable liquid Nickle-Cadnium battery pack is the most advanced step yet taken in underwater lighting systems.

The backup or safety light(s), while being just as important, must meet a different set of criteria. First, the backup need not be as bright as the primary. Ideally the backup would never be turned on. The backup should only be used in case of a failure in the primary lighting system. For that reason, the backup need only supply enough light for the diver to maintain visual contact with his safety line and his buddy. A minimum lamp intensity equal to a standard household flashlight is desirable with the maximum intensity depending on individual preference. Because the backup can be less powerful than the primary, it can be smaller. Often the backup can be clipped to the weight belt and should always be reached easily when needed. The only maintenance on a backup is to be sure that the batteries are in good working order.

Compare the characteristics of each light before purchase to see that they meet your standards. Remember that a well-equipped cave diver should carry two (or more) completely independent lighting systems and that goes for each team member.