Underwater Speleology

Journal of the Cave Diving Section of the National Speleological Society

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Volume 42 Number 1
January/February/March 2015

2015 NSS-CDS ELECTIONS

In accordance with the By-Laws of the NSS-CDS, elections will be held for the following NSS-CDS Board of Director positions.

Joseph Citelli
Nathan Spray
Cheryl Doran

Jim Wyatt - Training Director Position

The timeline of elections below is presented to membership for their information.

February 7, 2015 is the last date for lor nominations to be submitted.

Article III: Board of Directors
B. Qualifications. Directors and candidates must be current members of the NSS-CDS in good standing for at least one (1) year prior to being nominated for a directorship. The Training Director and candidates for that directorship must also be current and active NSS-CDS instructors in good standing.

February 21, 2015 platform statements are due from all nominated candidates.

March 7, 2015 ballots will be mailed to all members in good standing.

May 2, 2015 is the last date possible for the Election Committee to receive a members ballot and it be counted.

May 9, 2015 election results will be announced.

Please send all nominations to the Nomination Committee Chairman, Kelly Jessop at:

kjessop@bellsouth.net

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Featured Articles

Columns

Cover Photo: Bob Koch reviews decompression cylinders in Roubidoux Spring, MO
Photographer: Jennifer Idol

UNDERWATER SPELEOLOGY TEAM

EDITOR
ART DIRECTOR

Cheryl Doran
cccheryld@aol.com

ASSISTANT ART DIRECTOR
Carl Griffing

ADVERTISING SALES
uwseditor@nsscds.org

DEPARTMENTS

SKILLS, TIPS, & TECHNIQUES
Georges Gawinowski
george@wdtdive.com

CONSERVATION CORNER
Kelly Jessop
kjessop@bellsouth.net

MILESTONES
Shirley Kasser
sskasser@hotmail.com

THE LOOP
Joe Citelli

BEYOND THE PANHANDLE
Jennifer Idol

OFF TO THE SIDE
Rob Neto
chipoladivers@gmail.com

INSTRUCTOR'S CORNER
Carl Griffing
carl@caveandtechdiving.com

EDITORS

SENIOR EDITOR
Barbara J. Dwyer

ASSOCIATE EDITOR
Russell Edge

ASSISTANT EDITOR
David Jones

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Please send address changes to NSS-CDS, 295 NW Commons Loop, Suite 115-317, Lake City, Florida 32055.

Please submit letters and articles to UWS EDITOR, 295 NW Commons Loop, Suite 115-317, Lake City, Florida 32055.

editor's notes

What the new year brings to you will depend a great deal on what you bring to the new year. ~ Vern McLellan

Welcome 2015! Fingers crossed that research and planning of of 2014 will provide a much improved 2015 for the CDS.

Planning for the May Workshop is underway. Plans for clean-ups, work days, trade shows and more are in the works. The bugs in the on-line meeting format seem to have worked out nicely and members can join in and participate in meetings from anywhere in the world. Plans to more effectively manage some of our regular expenses have been researched and presented.

What is needed for the coming year are volunteers to help make these things happen.

One big need is a Midwest Workshop Chairman. If you would be willing to take charge of this event, please contact TJ Muller at:

vicechairman@nsscds.org

In this issue of UWS you will find an update on Roubidoux Spring exploration and a report on a sump dive exploration that we hope to follow through out the year.

There is also a bit of fun with the TBT (Throw Back Thursday) Name That Dive Site, a little game previously used in the web-version of the UWS.

Dive safe,

Cheryl

from the Chairman

Joe Citelli

First and foremost, the Christmas Season is winding down and the New year upon us and your Board wishes all of our friends, supporters and even our detractors a very Merry Christmas, Happy Hanukah and a Happy and Prosperous New Year, no matter what your beliefs may be.

Now, down to business. The main issues your board has been dealing with are the frivolous School Sink Lawsuit, streamlining and modernizing our day to day business, granting awards to fund exploration and conservation and the Annual Meeting and Workshop.

As mentioned before, the School Sink matter is set to go to trial in May. We have also amassed another $3500.00 in legal fees. All I can say is that our legal system is in serious need of tort reform and we need to come up with ways to prevent this sort of thing from ever happening again. The wrong-doings of a midnight interloper have seriously damaged our organization.

We have also been investigating the automation of the C -Card printing process. Individual instructors will be able to process their own cards by logging into a server and filling out a form. Hopefully this will save us the costs we incur by having them processed manually. It will also minimize the possibility of cards being erroneously issued.

We are currently paying rent for a storage facility. Digitizing all of our files and records will hopefully allow us to dispose of several decades' worth of paper and help in our quest to reduce overhead by no longer needing to rent this space. Also, Lamar Hires of Dive Rite has graciously offered to store our trade show equipment in his Lake City facility.

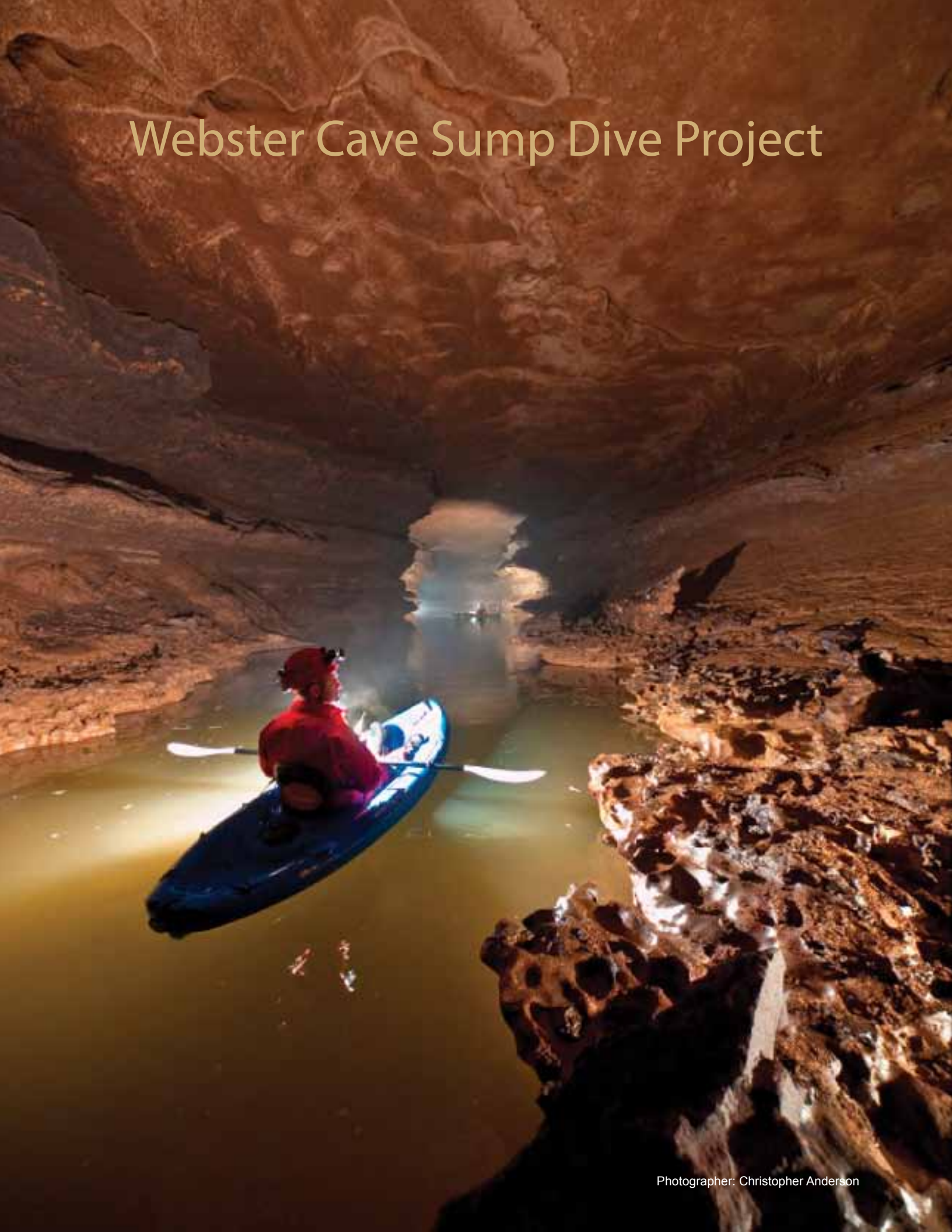
The main roles of the NSS-CDS are to promote safety, conservation and exploration. We are currently reviewing project applications submitted for funding and awards. If you think your project qualifies for consideration we encourage you to apply.

Finally, it has been decided that the 2015 NSS-CDS Annual Meeting and Workshop will be held on May 15 – 17 at the Robert B. Harkness Armory. The workshop will be chaired by Jared Hires who did an outstanding job last year. It is our goal to top last year's workshop, which was one of, if not the most, successful workshops ever.

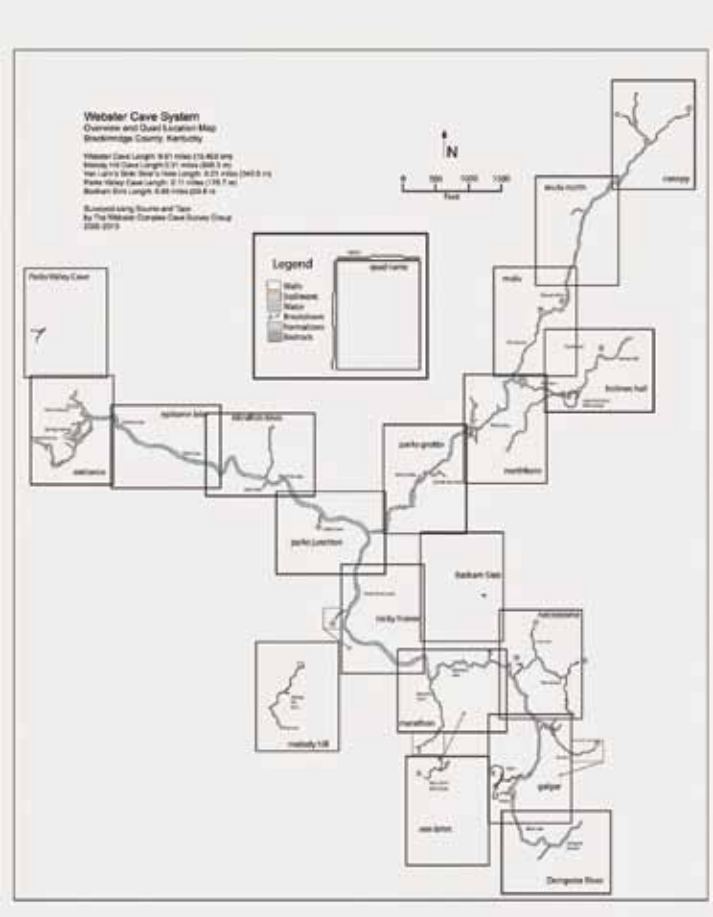
Respectfully submitted,

Joe Citelli
Chairman, NSS-CDS

Webster Cave Sump Dive Project



Photographer: Christopher Anderson



By Adam Haydock

I would like to recognize all of the efforts of WCCSG, WCG, Cave Country Kayaks, experts that I researched with, and all the cavers on this expedition. None of this could have happened without all of the hard work in our collective and the endless pursuit to frontier new places where others have never been. Some may find our roads less traveled to be fraught with danger and the places that we pursue to be something of a horror story, but our vanguard finds comfort, inspiration, and fascination in the places that we seek to discover. We are earnest in our resolve to leave the shores behind so we can find out what is beyond the beyond and experience the journey with our brethren. WCCSG, WCG, Cave Country Kayaks, the landowners that allowed us to access the caves, and the expedition group named in this blog below are what made this trip successful.

Nestled in the heart of Breckinridge County, Kentucky, is a 9.61 mile, semi-dry, kayak accessible river cave system known as Webster Cave which serves as one of the most significant watercourse drainage systems in Sinking Creek Valley. This valley is home to numerous caves in the immediate area including twelve more significant multi-mile cave systems that have all shown some evidence of a connection by a multi-level matrix system of stream and river passages. Webster Cave is the largest and most hydrologically aggressive of the cave systems in the Sinking Creek Valley region. It is home to a 3 mile trunk passage up to 30 feet in height with subterranean lakes and rivers which makes traversing this cave by kayak the best choice. The system has been known to release an impressive amount of water out of the spring entrance in periods of heavy rain fall which is believed to be the main relief conduit for a 30 mile radius. The treacherous and grueling environment demands visitors to be mindful of their surroundings. Everything from boot sucking mud, to the wall to wall 54 degree water, to the drainage potential commands your attention. A few bad choices and this cave will spit you out in fatal water pressure levels or drag you down by your feet while going down the hypothermia trail.

There are also some well kept secrets in the lower bowels of Webster Cave's cold darkness. One of these secrets is a lower level watercourse known as the Dempster Lake Sump. This resurgence relieves a significant amount of water and disappears back underground with little evidence as to where it goes or where it is coming from. For the past 20 years, the Webster Cave Complex Survey Group (WCCSG) has been surveying this well protected karst feature, but efforts have been halted due to the technical and extensive water restrictions that they have encountered, especially the most significant Dempster Lake passage. Only a dye trace and certified cave divers can even attempt to answer the questions as to what is beyond the Dempster Lake sumps. Dye traces have been performed and there is some limited evidence that the water might feed into Penitentiary Cave. The final option was to establish an exploratory trip with the purpose of diving the resurgence at the back of Dempster Lake which is in one of the most remote parts of the cave, 3 miles back from the entrance.

When I accepted this project, I did some research on Webster Cave before establishing a team that would be able to overcome the challenges that this expedition would bring, while having fun doing it.

According to the data that I gathered regarding the Webster Cave system; this complex appears to be an overflow watercourse system that recharges after a significant amount of flood water enters Dempster Lake.

Photographer: Gina Schaefer

The water table rises and the water pressure spills into the remaining cave. The connection to the Dempster Lake passage,resurgence and the insurgence is down a mud slope to a lake with a perennial flow. The resurgence itself was described to me as having a rock bottom, being around 30 x 40 inches in diameter and having a brittle ceiling. This appears to be significant as this region usually has a silt or mud bottom with water visibility not as clear as that described to me. Water appears to flow into the Webster Cave system from other caves in the area and may be a relief watercourse connection. The water also appears to be resurging out of boiling spring to the west/southwest of Webster Cave. As I researched more on this particular piece of evidence, I found that a dye trace appeared to connect the insurgence/siphon of Webster Cave's Dempster Lake into Penitentiary Cave.

The dive site appears to be in St. Gen limestone with various chert layers and the rest of the cave system mainly St. Gen limestone. I believe that this may be a separate system that has connected itself to Webster Cave through the force of water and water pressure controlling Webster Cave's waterworks in high water and flood stage events. Furthermore, I believe that pushing into this resurgence will render a connection that will allow us to resurface into air passage and continue the survey that will bring the distance of the cave up to 10 miles and beyond. Diving into Dempster Lake will be a significant passage as this appears to be one of the more ideal sumps to logistically dive and will hopefully answer a lot of questions regarding the watercourse in this regional area as well as give a better analysis as to how the hydrology affects Webster Cave. As the expedition was taking action, we ALL found more interesting twists and surprises as to what was beyond the Dempster Lake resurgence than we expected!

The next task was to select a group of mentally and physically strong cavers with the capability of enduring the demanding environment that this kind of cave would render as well as finding the right kind of caver that could assist with the delivery of diving gear 3 miles back to the resurgence of Dempster Lake.

Thirteen cavers with solid experience in cave rescue, cave/sump diving, wilderness first response, mountain expedition and karst geology were selected and they gathered at the base camp the WCCSG had prepared for us. The base camp was furnished with a warming station, bulletin board station, campsite quarters, fire-pit, haul system for kayak lowering, porta-potty, generators, medical personnel on standby and a lot of food and water for the participants.

I got to Webster, Kentucky early so I could get ready for

the weekend and visit some of the nearby caves to learn a bit more about what is going on in Sinking Creek Valley. Jeff Gillete and I went to visit some of the local springs and a cave called Penitentiary Cave. We drove up to the landowner's house and got permission to visit this otherwise closed cave as we wanted to see what the lower level looked like in terms of the watercourse. What is interesting about this cave is that during the civil war era, prisoners were held in this sinkhole.

Inside the cave there was a lot of graffiti that the captured soldiers had burned into the walls with dates ranging from the 1850's to after the civil war in the 1880's. There was a large flowstone with a small amount of trickling water coming down from a karst faucet and on the other side of this room was a down climb that took me to a river passage that continued on for quite a distance. I didn't travel the water passage but I noticed a chert level and some interesting water work carved stone formations.

We then went to Gerald's Hole, a recently opened sinkhole in the middle of a corn field. I went down into the entrance and observed a lot of mud crawling and low mud passage. According to Jeff, they think that the cave connects to Webster Cave and might give out some clues as to what is going on under the regional terrain.

We got back to the campsite and the team began arriving. Brian Hunsaker, Chris Parks, Steve Keene, Cody Miller, Laura Sangalia, Kevin Romanak, Justin Thompson, Ken Penguin and Gina Schaefer. It was a foggy, cool night as we discussed our plans for the cave the following day and how we should proceed.

After breakfast we held a briefing, our plan was to bring the kayaks and the gear down a steep 20 foot slope to the entrance of the cave. We had thirteen kayaks dropped off on the ledge so that all we had to do was lower them into the entrance rather than dragging them a hundred yards through the woods. The entrance was a 200 foot dry stoop walking passage that meandered right with another 100 feet of stoop walking, dry mud passage that led us to the Epitome Lake passage and the remaining cave.

The entire team worked together to bring the kayaks with all the gear down the slope and then on to the river junction and Epitome Lake. Once we got all the kayaks lined up and distributed the massive amount of gear evenly among them, we started to kayak upstream through the following quadrants, Epitome, Blindfish Bvld, and Parks Junction. As our fleet of kayaks started moving upstream, the sounds of splashing water echoed throughout the passage with cavers cheering and smiling as we realized that we are actually kayaking inside a cave system!!

We had groups of 4-5 kayaks going in waves in an attempt to prevent traffic at the portages but that was short lived. Our sub groups turned into larger and smaller groups as people took their time and enjoying the cave and each other's company. Eventually we made it to Parks Junction which is a main confluence leading to the canopy to the left and Dempster Lake to the right.

We continued down the kayak river passage and noticed the large and extremely old looking flowstone formations in the cave with some climbing more than 20 feet to the ceiling. One of the flowstones is called the Eiger, and was quite impressive to see. We passed a few active karst faucets raining water down on us and worked our way through The Marathon, The Necronome, and Geiger quadrants, until we got to the Rocky Horror Passage. This is where it got interesting, we had to traverse all of the gear and kayaks across an obstacle course of large slippery breakdown until we got into the last lake section.

Everyone grinded together as we pushed through this challenge and got back to the last water passage leading the Dempster Lake Quadrant. We had finally made it, the mud slope leading down to Dempster Lake.

There was a 45 degree mud down-slope into Dempster Lake with knee high, thick, boot sucking mud before we got to the Dempster Lake passage. I fired up the jetboil to heat up some lunch and Steve, Chris, and I went over the dive plan. We had an idea of what we were going to do before hand but wanted to make our final decisions when we got to this station and modify the plan once we got to the entrance sump. We stationed people at the top and bottom so we could all communicate and move gear around. Kevin took a timeline of notes as the events unfolded and Brian overlooked the warming station as well as acting as the liaison between the dive team and the rest of the group. This is where people can start getting cold, so we made sure we had a lot of heating supplies available. We kitted up our sidemounts and loaded one

Photographer: Justin Thompson

kayak with our regulators and other dive gear packed in pelican boxes and petzl drainage bags.

I noticed that the river was flowing a lot more than I had expected and the visibility of the water was not what we were expecting either. Jeff looked at me in confusion and told me that it shouldn't be like this as it hadn't rained within a hundred mile radius for at least a week. This created even more of a mystery as to what was going on beyond the sump and where all of this water was really coming from!

Once we got all of our diving gear set up, we slogged through the thick mud river passage until it got deep enough to float in and then swam to the last section where the first duck under is located. We checked our gear and buoyancy to ensure everything was in place and tied off to a rock in the ceiling, not needing the snow picket we had brought just in case. Steve, Chris and I explained to our support team our plan to have Steve go through to find the dome room where the sump is located while Chris and I waited for him to come back. Once he had found the dome room we were going to locate the sump and Steve was going to continue to push the sump until he popped up in air passage significant enough to survey, or until he hit his thirds. Steve proceeded into the water and shortly after Chris and I followed.

Once we got into the dome room, the flaking ceiling was accurate with the description we had, but everything else was not. The water visibility was next to zero and the banks of this small dome room were 3 to 4 inches of mud. We tried to follow the description of the location where Jeff saw the rock bottom and 30 by 40 inch entrance, but Steve was not able to find it. The zero visibility conditions made it difficult to see and Steve only found mud banks and walls but no underwater passage or current of water. After fifteen minutes of looking around Chris took the line and continued to search for the entrance. He followed some kind of passage in zero visibility that brought him into a round-about, arriving back out where we started. That was confusing and quite interesting as it helped answer one of Jeff's questions about where that passage was leading, it's leading back into the dome room. In between these dives I looked around the bottom and kept running into mud banks and walls. The total depth was around ten feet and our total dive/search time was around a half- hour. We decided to call the dive and return to the kayak due to the visibility conditions and the fact that we were not able to accurately locate the passage. Because of the round-about passage that Chris found, we felt that this underwater passage might be honey-combed and a maze of sorts, which could cause line entanglements and even have a chance of severing the line.

We found walnuts floating in the water along with a drug prescription bottle which indicated that the water is coming from the surface somewhere, among other places… but where?

We returned to the kayak it so we could travel down to the other sump. The group proceeded downstream to the junction where the mud slope is located and the watercourse continues down under breakdown and into a river leading under the ceiling. I proceeded to walk downstream and check out this insurgence to see if there was a potential to dive the river. Chris joined me in the decision to pursue the sump and we both looked around for where the water was going under the ceiling. It was difficult to locate exactly where the watercourse was continuing as the length of the ceiling was around fifteen to twenty feet, the ground up chert bottom and ceiling was around a height of three to four feet, and the visibility zero. If Chris and I would have pushed this sump, we would be belly crawling, underwater, with our dive gear, going with the current, in zero visibility. We decided that this was something that we did not want to do and instead we poked around with our feet to see if we could feel them splashing around on the other side. It was hard to tell because of the small air-filled dome pockets in the ceiling of this passage. I held on to Chris's foot and slowly worked by way down the sump breathing from the ceiling with splashes of water starting to enter my mouth. I took a deep breath and continued down until I was at a point where I was going to get to far from Chris's foot and felt nothing so I backed up and came back up. Chris and I searched around the area at the end of this passage and could not find anything so we decided to turn back and begin the process to exit the cave.

Soon after, the mud slope we were walking on started to cascade which sounded so loud that we thought water was raging into the cave from somewhere. I took note of the sump, the passage, the mud slope, the siphon, the walls and ceiling and started to think about how the water would actually get up this slope and have enough to blast itself through the Rocky Horror Passage down the main trunk passage and out of the cave. After leaving the passage and walking out through the water and over the breakdown, I told Chris that it felt like were leaving with more questions than we got answers on this trip. The water source doesn't make sense and after being in the Dempster Lake passage I am not sure if the water rises to a point that it floods the rest of Webster Cave. For this to happen, it would take a massive amount of water pressure and the ground, walls, ceiling, and the low siphon ceiling might look a bit more smooth and water cut, and the tops of the mud slope would be soaking wet. The cavers that got a bit cold got a chance to heat back up by carrying and dragging the gear through the Rocky Horror Passage and back into the main trunk passage eventually leading out of the cave 11 hours and 30 minutes from when we started.

Afterwards, as we gathered around the fire with some of Gerald's great food. The bourbon and debriefings flowed. People were sharing stories of their perspective on the trip and it was good so see that everyone had had a blast.

As I was sitting around the fire, I was thinking about the Dempster Lake resurgence. How does Dempster Lake push water through the sump and down the passage, creating enough pressure for the water to rise almost 40 feet and continue upstream? It continues past the 600 foot Rocky Horror breakdown pile and into the main trunk of the cave, then has enough pressure to go for 2 1/2 miles out of the spring entrance with a vengeance. I think that the sump would be a lot bigger due to blown out rocks. If that siphon feeds Penitentiary Cave, I would expect water would blast up and out of that cave. Why were the tops of the mounds not drenched and wet slogging mud? It was wet mud but that mud passage might look a bit different than it looked to us. It also occurred to me that when the mud slope started to run, water was flowing down into the mud slope. A lot of things don't add up. Plus, why was the water murky and why did it have a higher flow in dry conditions? Is this because new sink holes have opened up and mud was introduced into the cave, or is a nearby quarry feeding water back underground and now its finding its way through Dempster Lake?

I am not sure what the answers are to these questions, but the walnuts and the prescription bottles indicate there are tributaries that connect to the Dempster Lake passage and if a ridge walk is able to be established in the proposed area where Dempster Lake is located, it can provide evidence of where a dye trace could be conducted based on sinks that might be found in a rain storm. Furthermore, maybe prescription bottles can give a clue to the residents of the area and who might be using these bottles. Put all these little pieces together and this might be a good starting point to continue the search for where that water is coming from in the Dempster Lake resurgence. But, for now, the mystery will remain with Webster Cave as the cave did not want to give up those answers to us.

An alternative to the rising water theory is that the water is

Photographer: Christopher Anderson

Photographer: Justin Thompson

coming from the east bore passage which appears to be a bit higher in elevation than the main trunk which is higher than Dempster Lake. This might mean that a significant amount of water might come from the east bore sump and a collective of other smaller sumps that might render the high CF's of water evacuating from the spring entrance in high flow conditions. I am leaning more towards this theory than my previous theory as to where the water is coming from based on what I saw and it makes more sense if the east bore sump is a large emerald green pool of water and drains down into the trunk. The water course might have an easier way of finding its exit through the spring and relief down the mud slope and into the siphon of Dempster Lake. For now the WCCSG has some clues to pursue including dye traces and other ideas to entertain coming into 2015 which can help continue the evolution of the Webster Cave Project.

Overall I consider this trip to be a success as we were able to accomplish most of our objectives except for surveying new cave passage. I am willing to consider a return trip to Webster Cave to pursue the east bore sump as I find this to be rather interesting based on how it was described to me.

I want to thank The Webster Cave Complex Survey Group for allowing us to join them on this trip and for all of the preplanning that went into helping prepare the dive plan. I want to thank the local land owners that allowed us to visit Webster Cave and the other surrounding caves; your continued support will allow the WCCSG and other cavers to study your underground lands which can help identify and discover new places and understand karst geohydrology. I want to thank Cave Country Kayaks for sponsoring kayak rental so we could mobilize this expedition. I want to thank Gerald for staying top side and managing the base camp which played a critical role in ensuring our comfort and safety when we left the cave by having a fire going, food cooking, and having all the accommodations we could have imagined. Gerald was our medical connection in case we had an incident that needed medical attention so I want to recognize Gerald for being ready to help set up the medical procedure. I want to thank Jon Durall for bringing Webster Cave to my attention and for putting me in contact with Jeff Gillete. I want to thank Jeff for partnering up with me and organizing this operation and for taking me around Sinking Cove Valley so I could learn more about the region and visit some of the caves in the area including Penitentiary Cave with permission from the landowner. I want to thank Pat Mudd and Gary for joining our group and helping by hauling all of the gear. I want to thank Cody Miller, Laura Sangalia, Justin Thompson, Kevin Romanak, Ken Penguin, Gina Schaefer, Chris Parks, Steve Keene, and Brian Hunsaker for your dedication to make this trip a successful endeavor.

Photographer: Christopher Anderson

Skills, Tips & Techniques

By Georges Gawinowski

Don’t Rush Ties-Ins and Jumps

Have you ever tried to rush as you were putting in the primary tie-off before starting a cave dive? You were probably not too happy with the results, were you?

I believe that running line, tie-offs, primary tie-offs and jumps should be done neatly, keeping proper trim and balance and without disturbing any silt. We sometimes just need to get ready for these tasks; we reduce task loading by just taking our time and calling the dive if we detect poor line management.

Get Ready for Tasks

We sometimes witness poor line management and technique from certified cave divers. Have they forgotten the basics? How did they do during their training? Is it a lack of practice? I believe that in most cases, bad line placement or lines not correctly looped around boulders or rocks are caused by the diver not paying attention or not properly preparing for the job. In fact, attention deficiency is probably due to a lack of preparation and/or having a tendency to take the dive for granted.

We have dived this spot a hundred times, we know the cave pretty well and we are confident with our technique are all mind sets that can interfere with the best work we can do on a given day; today is today and tomorrow will be tomorrow. We all make mistakes but the idea is to get better as we progress.

We can use visualization to improve our technique. Relax, breathe and picture yourself with the best buoyancy thatthe day can give you. See yourself in your own mind choosing the best primary tie-off, secondary tie-off and line placement that the cave has to offer.

Rehearse the steps mentally; you are making a perfect tie-off while maintaining your buddy and cave awareness as well as seeing other divers or other lines already set up.

Reduce Task Loading

Discuss the dive plan with your buddies, and even if you have a better understanding of the cave system than your other team members, have them participate when you tie-in and/or make jumps.

- Team members should be familiar with the dive plan
- They can give you light as you tie or jump
- They can help with slack as you reel out
- They can be aware of other teams as you focus on placement or jumps

Sometimes we may have a tendency to put too much pressure on ourselves, especially if we dive with new buddies. This can increase task loading and you can make mistakes that you usually would not make.

Calling The Dive

We have all learned that anybody can call a dive for any reason. This is a great thing. We have the freedom to do it if we make mistakes at the beginning of the dive with our ties or other line work during the dive. If you do call the dive, surface, discuss and analyze the problems. This will help the team start again on the right foot.

Human beings make mistakes, but they can also correct them. A trained cave diver has the right tools to make a perfect dive; sometimes he/she just needs to relax and take the time before starting to run a line.

Breathe, relax, visualize; that is all it takes to do the job well. Take care of your buoyancy and trim. Remain aware of the cave, your team members and other teams going in or out of the cave. Then start using your primary reel or jump reel. The dive will be peacefully enjoyable and you will be happy with your technique!

BEYOND THE PANHANDLE

Article and Photography: Jennifer Idol

Roubidoux Spring Bounds Onward With OCDA Team Diving

The Ozark Cave Diving Alliance (OCDA) focuses on not just doing things right, but also on doing the right things. This is never more evident than in our extraordinary accomplishments in 2014, marked by significant exploration progress in Waynesville, Missouri at Roubidoux Spring.

As we gathered for our final dive briefing for 2014 on December 6, we were keenly aware of the possibilities in Roubidoux. This day would either build on the enormous achievements during the past three months, or it would be an opportunity to remove the safeties and end the team's exploration diving in Roubidoux for the season. The exploration divers, Dirk Bennett and Ben Perkins, were also keenly aware of the significance of this dive, whether successful for a push or an enormous clean up .

The OCDA has been regularly completing dives over 10 hours in duration during the past three years. Recently, dives have extended past 15 hours, with exploration divers reaching full saturation levels. Dirk and Ben now wore the seriousness of such lengthy dives on their faces as they briefed the team for the day's plan. Considerations such as emergency gear failures, oxygen toxicity, hypothermia, fatigue, and dehydration are amply covered in the briefing. A lean crew of nine divers was on site for the last day, so everyone's participation was essential to make the dives a success.

With a balmy 31º surface temperature at 6:30 a.m., we divided into two support shifts. The morning shift would dive until 3 p.m. and then trade with the afternoon shift for surface duties. As Surface Manager, Christa Henderson tracked Ben and Dirk's dive progress and coordinated timing for the support dives that set up initial preparation for the exploration dive and managed the decompression and extraction process. Although Ben Perkins, Dirk Bennett, Kevin Runkle, and Christa Henderson dove the previous day to verify conditions and to set more than 22 cylinders, additional equipment needed to be put in place. Eight safety cylinders had also been set earlier in the season throughout the system. Today, 6 diver propulsion vehicles, additional batteries for heating thermal underwear, food, water, snacks, timers, and a large slate for writing decompression time all needed to be set.

By 9 a.m., Ben and Dirk started in water safety checks and prepared to begin their dive. Twenty minutes later, they were powering through the cave on their first scooter and headed to the end of the line at approximately 10,080 feet, set only five weeks earlier.

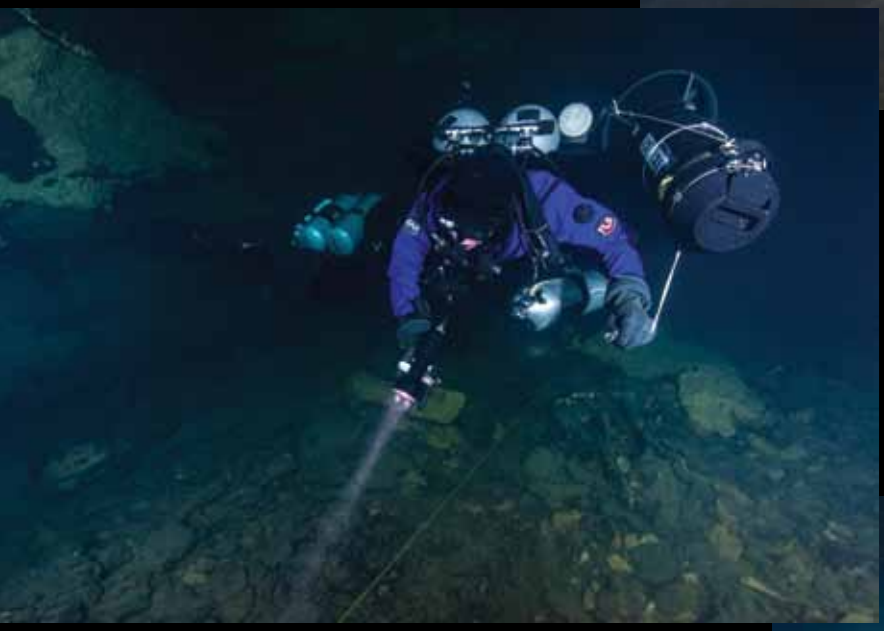
In August 2014, the end of the line was waiting for us at 8,300 feet. By December, our team reached over 10,080 feet and surveyed all the line. The achievements made from July to December in 2014 are extremely significant, considering that the OCDA last pushed the line in 2012 to 8,300 feet from its last end of line distance of 5,300 feet in 2002.

Team members spend enormous amounts of time and resources to achieve goals such as gathering scientific data, surveys, and samples that will be useful for years to come. Twentyfour team members coordinate regionally to help accomplish and document large and complicated dive projects. Steve Gridley, the Team Director leads with wisdom and insight reminding us that the diver is our most important piece of equipment from which all other equipment is managed. We build our skills throughout the year so that when the spring visibility and flow is manageable, we're ready to perform.

This last push dive in 2014 is no exception to the accumulation of team skill and operations. Conditions held at Roubidoux with 15-20 feet visibility and 55º water temperatures. Flow was increasing throughout the day due to Friday rain, but was manageable. This proved helpful for Ben and Dirk as they exited with the flow for what proved to be a 15 hour 8 minute dive.

Right: Chris Hill rechecks every cylinder to ensure it is ready for Dirk Bennett and Ben Perkins when they return.

Below: Bob Koch places the last scooter on the line before turning around to head out and inform Ben Perkins and Dirk Bennett that the dive preparations are complete.



As support divers, we plan and prepare for the arrival of our exploration divers, but do not know what they experience during their dive until they return to their first decompression stop. We knew that the dive was looking hopeful when they had not arrived by their first dive time at our initial meet and greet.

When Chris Hill met Ben and Dirk at the 100 foot decompression stop to check on them and to take excess gear, Ben promptly handed off an empty reel that had contained 1,200 feet of line, followed by a fist pump and cheering through the regulator. This was a sure sign that line had been laid.

Above: All equipment for the exploration dive is set in the spring pool beforehand. With high flow, the lead weights are needed to keep equipment from floating downstream before it is transported to its place in the cave.

Left: Ben Perkins picks up his scooters and bottles for his exploration dive.

After calculating some quick figures, we could guess where the end of the line lay, but upon Ben and Dirk reaching the habitat for out of water decompression, we learned that they also managed to survey the line on their exit. Navigating the cave on scooters at the end of a long dive while operating survey equipment is very challenging. Roubidoux Spring has line set and surveyed to an astounding distance of 11,256 feet with depths up to 270 feet.

Ben and Dirk emerged at 12:30 a.m. to an eager support team. By 1:30 a.m., we were sitting together at Denny's, tired, cold, and wet, but honored to be a part of the history of Roubidoux Spring.

Jennifer Idol, The Underwater Designer, is an underwater photographer and graphic designer and also a member of the OCDA.

Previous page top: Support diver equipment stands at the ready between dives. With at least 9 dives to be completed by support divers, little time remains between each dive.

Inset: On the surface, Bob Koch, Konstantin Chartkov, and Kevin Runkle discuss the next task and how to next proceed after Ben Perkins and Dirk Bennett headed off.

Bottom Right: Chris Hill sets scooters in place on the line with 5' between each of the three DPVs

Ben Perkins and Dirk Bennett continue picking up their stages and DPVs for their exploration dive.

This page below center left to right: Having exchanged travel gas for their bottom stages and set their DPVs, Ben Perkins and Dirk Bennett take off through Roubidoux for the end of the line.

Dirk Bennett zooms past as he heads toward the end of the line.

Dirk Bennett races forward on his exploration dive

Bottom: Chris Hill peers through a feature in the ceiling at Roubidoux

Christa Henderson stands by watching and recording times while Dirk Bennett, Bob Koch, and Chris Hill exchange information before the exploration dive takes off.

By: Shirley Kasser

Joseph J. Koshes, Jr. completed his 500th cave dive on August 23, 2014, at Little River in O'Brien, Florida. The dive was made at Little River because it's one of his favorite systems in that area to dive.

From Joseph:

> This was a solo dive. I ran my primary reel from the log at the entrance of the system along the left side of the cavern to the permanent line.
>
> Jumps were made on both sides of the Mud Tunnel with the main line being followed around the Merry-Go-Round side of the Merry-Go-Round.
>
> I followed the main line to the back of the Florida Room where the dive was turned on thirds. I exited on the Serpentine side of the Merry-Go-Round, picking up my jump reels from both ends of the Mud Tunnel. My primary reel was then retrieved.
>
> This was a no decompression dive with safety stops made at 30 feet for 5 mins breathing 30% Nitrox and again at 20 feet for 5 mins breathing 100% O2. A surface stop for 10 minutes was made following the dive.
>
> Visibility during the dive was 30-40 feet in the beginning of the system and 50-60 feet in the Florida Room.
>
> Receiving this award is important because, for me, it stands for longevity in a sport I so respect and care about. During the years I have been cave diving, I have been so fortunate to meet and become friends with some of the greatest people I have ever known.

Congratulations to Joseph and thank you for sharing your story!

What's your story? Email your milestone stories and photographs to me at abedavis@nsscds.org, or snail mail them to me at 665 County Road 625, Coffee Springs, AL 36318.

Shirley Kasser
NSS-CDS Awards Coordinator

Don't Take It for Granted

By: Nathan Spray

> *Peering down into the hole, seeing the log and feeling the flow push me upward was amazing.*

I want to challenge everyone to stop and think about their last dive. If you knew it was going to be your last dive would you have chosen another dive? Another dive buddy? I was lying in the hospital almost two months ago thinking about my last dive, the news I received at the time left me somewhat uncertain if I would ever dive again.

We have all spent countless dollars on gear, training and everything else that goes along with being a cave diver and often take for granted the amazing and extraordinary gift we have all been given. We do our dive, chat about it after, post on the forums about it and then just go on with our busy lives, logging it in our books to probably not ever look at again.

Life is short and we won't be able to slip into the cool clear water forever. Just the thought of not being able to slide into the water and a few kicks later enter the land of darkness and wet rock saddens me, a sad reality we will all eventually face.

I thought back to my first actual cave dive, a training dive in Ginnie Springs that had me spinning with every emotion and feeling that one could possibly have. Gearing up was filled with excitement and wonder of what was to come. Checking and double checking my regs on my double 85's, making sure everything was just perfect, every hose was routed just right, and my dive buddy/class buddy, Mike Ryon, was just as excited as I was.

All the class work, open water drills and land drills were about to pay off; we were actually going to go dive in a cave! Walking down the steps and feeling the water enter my wetsuit, my adrenaline started pumping. We ran through our S-drills, completed a few more open water drills and then followed our instructor to have our first look at Devil's Ear.

Peering down into the hole, seeing the log and feeling the flow push me upward was amazing. This was going to happen, I was going to dive in an underwater cave. I don't know if it was anticipation, adrenaline, fear or a mix of all those emotions, but I remember looking past the log and wondering just how I was going to fit in that hole, especially with the force of the water pushing me back. I felt like the cave was telling me NO! You shall not pass, I will stop you, I will spit you out!

My diving career had consisted of open water dives, wrecks and caverns. I was Trimix trained, had dove close to 300 feet and was diving a rebreather, I considered myself an experienced diver, well, right up to the point that I reached back to grab my reel. At that point I realized I was a newbie again. I had made many a tie-off in cavern and wreck diving, but the totality of the circumstances left me feeling out of my element.

I stopped, took a couple breaths and started my tie-off; since then I've tied off going into Devil's Eye countless

times, but I will never forget that first time. It's funny, we have a lot of "firsts" in our lives and one that sticks out to me is my first tie-off on my first cave dive.

I reached the gold line, tied into it, signaled my buddy "okay", looked up and then, it hit me. I knew the Gallery was big, I had seen pictures and heard the stories and descriptions, but seeing it with my own eyes for the first time was truly magical. I was in another world; I was diving in a cave!

Swimming down the Gallery in total amazement and awe at the size and the beauty, I was literally in sensory overload. I laugh now because I think I must have "Okayed" my buddy a half dozen times between the gold line tie-off and The Lips. The swim down the Gallery was pleasant and filled my head with wonder and amazement. This is what cave diving is I thought; big beautiful cave and cool water flowing over my face. Looking back I've come to know that it isn't always big cave with clear water; as I've progressed I don't mind tight and silty, it's just being in an underwater cave regardless of the conditions that brings the joy to my heart.

I have always felt at peace when underwater, but the addition of rock over my head instantly gave me a sense of comfort and peace I had never felt before. Strange, thinking that cave diving brings peace and comfort when I speculate most non-cave divers imagine fear. I knew at this point that cave diving was going to be my primary diving. I also laugh now because a few months before this dive I was sitting at a table looking at pictures of caves and made the comment out loud "I'm glad there are people who dive those caves and take pictures, because they are cool to look at, but you won't get me in one." All it took was that first glimpse and I was hooked!

Then, watching the gold line creep up the wall, I knew we were approaching The Lips. I had studied the maps, talked to my instructor and picked cave divers' brains about what was to come. The Lips… a moment in my life that I actually second guessed if this is really what I want to do. I went from pure euphoria to a tinge of fear because, at that moment, I completely forgot all my brain picking and education seeking about how to enter and pass The Lips Restriction. My heart and breathing rate were increasing as I pulled, kicked and scratched my way through, but I felt accomplished when I had finally negotiated The Lips!

Swimming along the line I saw the Keyhole and felt the increased flow trying to push me back. I looked at my gauge and was close to my turn pressure, so I helicopter kicked to face my buddy and gave him the thumb.

I knew the drills were to come, but my instructor could have thrown anything at me; I was on my way to becoming a cave diver and nothing was going to stop me now! After multiple drills through the Gallery, we exited. Sitting on the log, doing my safety stop, looking up at the blue sky overhead, I had, at that moment, completed a dream; a dream of diving in an underwater cave.

Thinking about it now, I look back and chuckle at how I must have looked to my instructor as I navigated The Lips. I don't even bat an eye now when going through there, it's just another part of the cave, but at that moment in time it was Mount Everest, the toughest dive I had attempted. So, yes, I guess I have taken it for granted as my experience has grown.

I have great memories diving with Mike, but sadly I believe he has hung up his cave diving fins. We had many a great dive together, trained together and came up through ranks, if you will, together. Decisions are made, life gets in the way, injuries happen and events beyond our control prevent us from our grand adventures in our underwater rock covered world.

Through my ramblings I thought I would share a glimpse of my first cave dive with everyone. I guess it's more for me that I put down on paper and express my feelings and love for the gift we have, but I'm making it a point to go back and think about all the past dives, all the moments I've shared with various dive buddies. I want to ingrain those memories even more into my head because you just never know when you are unable to make those new memories. Live in the moment above and below water, because you never know if it will be your last.

If you have been reading my previous articles, then you know about my last dive, a truly amazing dive shared with a great dive buddy. To answer my own question, "If that was my last dive, would I have chosen different?" Without hesitation the answer is "NO", I would not have chosen another dive or another buddy. I will from here on out treat each dive like it may be the last one I will ever complete.

By the way, my injury was non-dive related and I thank my God that I will dive again with no restrictions very soon. To not be able to enjoy our underwater world would be devastating. I've dedicated a large part of my life to this sport and it has become a part of me, just as I imagine it has become a part of a lot of you.

I guess my point is slow down, savor the moment, enjoy the dive; because you never know if it will be your last. Make memories and not just dives in a log book. Like always my cave diving brothers and sisters, forget the politics…..Just enjoy the dive!

Sidemount Wings

off to the side.....

By Rob Neto

Recently, I came across a thread in one of the Facebook groups in which the discussion had turned to choosing a wing for a sidemount harness. It was a bit entertaining to read the various responses in the thread. It also reminded me of a common question that came up on various internet forums years ago. The interesting thing is how different the responses were to what is essentially the same question.

The common question years ago that I refer to was "What is the best wing to use for both single cylinder diving and double cylinder diving?" Divers new to the technical side of diving and manifolded double cylinders found themselves upgrading and replacing gear. If they were fortunate enough to be using a back plate and wing with their single cylinder set up at least part of the system was already purchased. Rather than purchase a new wing for use with the manifolded doubles and keep the single cylinder wing, many divers, in the interest of saving money, tried to find a doubles wing that could also be used with a single cylinder so they could sell their smaller wing and decrease the financial burden.

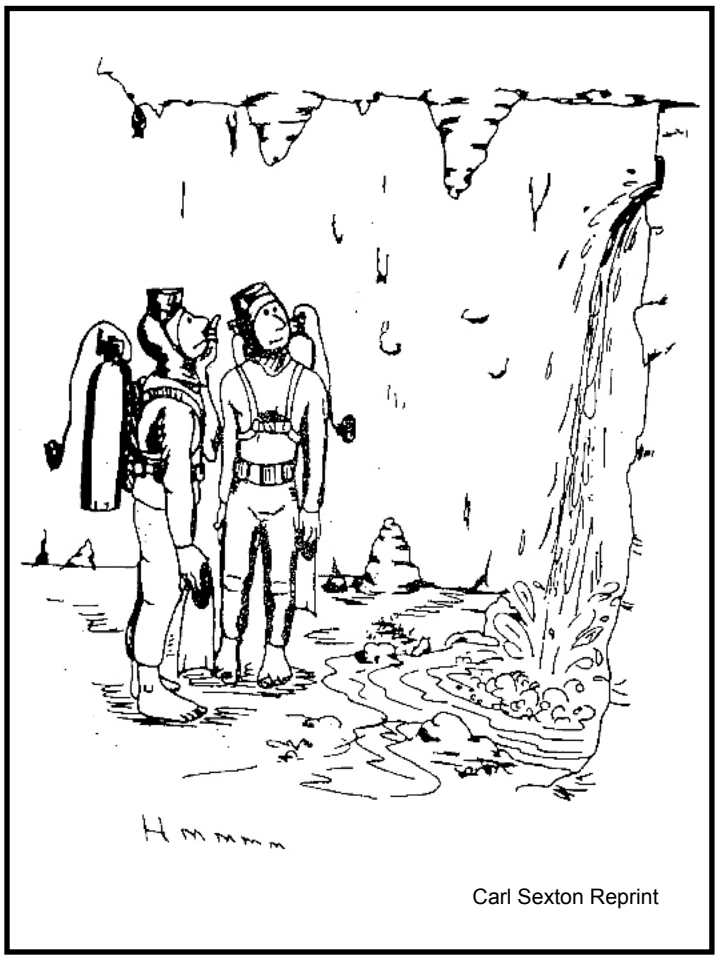
The most common response back then was while a couple of manufacturers did have wings being marketed for both single and double cylinder diving, those wings were suboptimal with both systems, and a wing made specifically for each type of diving should be used. This wasn't the answer these new divers were looking for but it made sense. Different lift capacities are needed for diving with an AL80 compared to diving with a set of steel LP104s. If the wing is streamlined enough for an AL80 then it doesn't have enough lift for the steel cylinders. And if the wing is large enough for the steel cylinders then it will swallow the AL80 like a taco shell.

A similar question is coming up these days regarding transitioning to sidemount. Divers new to sidemount are asking which system or wing will work best for both aluminum cylinders and steel cylinders. Based on similar responses from just a few years ago the expected answer would be that none of them do. However, what we're seeing is people trying to push some sidemount systems as suitable for both aluminum and steel cylinders. I don't know what has changed over the years to cause this difference in viewpoint but I don't agree with this response.

Aluminum cylinders are not very negative in the water. Even six AL80s will be less negative than a set of cave filled LP85s. (Luxfer cylinders are typically 1.8 lbs negative for a total of 10.8 lbs negative, Faber LP85s are 8.4 lbs negative at 2640 psi for a total of 16.8 lbs negative, add another 5.5 lbs for a cave fill and the total is 22.3 lbs negative – 11.5 lbs heavier than six AL80s!) So the required amount of lift for AL80s will be nowhere close to what is needed for steel cylinders. On the other side of the coin, a wing that has sufficient lift capacity for a set of steel cylinders will not be as streamlined as a smaller wing. While some of the larger capacity wings can be modified to have a lower profile when used with AL80s, this isn't an ideal situation.

Personally, I have three different sidemount rigs. I have one I use with lighter steel cylinders, one I use with heavier steel cylinders, and one I use with aluminum cylinders. They all have different lift capacities. The lighter steel cylinder wing has 33 pounds of lift. This is sufficient, when using a high density neoprene dry suit, to offset the weight of Faber LP120s and 5 AL80 stage cylinders. If I use my Worthington LP108s, slightly heavier cylinders, then I need to use the rig that has a 45 pound lift wing. Finally, when I travel to Mexico and am exclusively using AL80s I use a rig that has a 10 pound lift wing. With a 2.5mm shorty, 10 pounds is more than sufficient to use with four AL80s which will easily keep me in the water for over three hours. No, the 10 pounds of lift isn't enough to float me on the surface with four AL80s, but this is a cave diving journal and how often do cave divers have to float on the surface before or after a cave dive? Getting a smaller rig and wing also allowed me to get through restrictions I was not able to get through with my larger 33 pound lift rig, even with both cylinders off and out in front of me.

So while it may be desirable to save some money and find one sidemount rig that will work for all types of diving and cylinders, it's not all that practical, just like it wasn't several years ago when the same question was being posed about backmount wings. Purchase the right tool for the dive. If you only have enough cash for one rig then get the one that will be appropriate for the majority of your diving. Start saving for that second rig, you will be much happier in the long run.



Carl Sexton Reprint

From The Back Of The Cave...

Throw Back Thursday..... Name Those Dive Sites

Photographs by: Gene Page

Conservation Corner

By: Kelly Jessop

Constructive Mentoring

Let's say you are swimming along and enjoying a spectacular cave dive, but up ahead there is team and you notice one of the divers in that team digging their hands into the clay to pick up something. What is the best means to handle the situation that has presented itself?

In the last issue of Underwater Speleology, we looked at current cave conservation training using a survey. While the Cave Diving Section (CDS) has specific standards for cave conservation training, which includes in water post-dive education, we may not see the same level of training existing with other organizations. The survey told us that 44% of the respondents indicated 0 to 15 minutes of cave conservation training in their class, which may indicate there are some deficits. These people may be lacking in their understanding of cave conservation and need further education or mentoring from more veteran cave divers.

Referring back to the initial example, this team may not really know they are doing something wrong due to a lack of education, but we can't really afford to ignore this because repeated behavior can lead to cave damage.

How do we handle this situation?

We could flash our lights and indicate the "no" signal with side to side movement of our index finger. Flashing lights tend to grab rapid attention and, at that point, the individual should no longer be engaged in the offending behavior. But there will probably be more confusion than cave conservation education occurring.

We could stand at the top of the steps while this team is floating at the surface, speak loudly so everyone can hear and rebuke their actions. Or even go on one of the popular internet forums and use this as means of rebuking them. Using public embarrassment rarely has the desired effect. They will most likely continue to do what they were previously doing, but just make sure no one is around to see it.

Lastly, we can go up to that team after the dive, privately beside their vehicle, and discuss what occurred, using a constructive mentor like approach to educate them on cave conservation. The example used above was a real situation, and this is the means that was used to resolve the problem. Their response was gracious understanding.

Will we always get this response? No, some will be offended. But the message will still resonate that someone took the time to explain that they did something wrong.

We really have a responsibility as conservation minded cave divers to offer a response in order to protect the caves for the future. We are not the cave police, but using constructive mentoring will help fulfill one of the primary missions of the Cave Diving Section.

New NSS-CDS Instructors

On October 18 and 19, 2014 we added two new cavern/basic cave instructors to our ranks. Please welcome Renee Power of Florida and Olivier Pratts of Mexico. As with all of our instructors, Renee and Olivier underwent one of the most rigorous cave instructor internships in the industry.

Jim Wyatt and John Jones conducted this Instructor Evaluation Course (IEC) and Georgia Hausserman of Key Largo, Florida was observing and is one of our newest cavern/basic cave instructor interns. We are also lucky to have Pam Wooten, also of Key Largo, Florida interning with us to become a cavern/basic cave instructor.

Olivier and Renee did a minimum of three co-teaches each with three separate NSS-CDS instructors before they were approved by their sponsor to undergo an IEC. The IEC was two days long and evaluated the candidates on their ability to teach in the classroom, in the field with dry land line exercises and in the cave environment running drills such as lost line, lost buddy and out of air exercises.

We want to thank our cave instructor sponsors Lamar Hires and Bil Phillips for working with Renee and Olivier and guiding them through the process of becoming an instructor for the NSS-CDS.

Congratulations to Renee and Olivier!!

Pictured are Left to Right:
Georgia, Renee, John, Olivier and Jim

Current NSS-CDS Instructor Listing

Jim Wyatt, Training Director, trainingdirector@nsscds.org

Jon Bernot 378 Basic
High Springs, Florida, USA
jbernot@me.com

Emanuela Bertoni Cave
Quinta Roo, MX
pachacavediving.com
elabertoni@gmail.com

Brent Booth 241 Cave
High Springs, Florida, USA
Stage, Sidemount, DPV, Overhead Nitrox, Sponsor
bcb241@aol.com

Peter Butt 186 Cave
High Springs, Florida, USA
Stage
kes@atlantic.net

Juan Carlos Carrillo 342
Mexico DF, Mexico
Cave, Sidemount
undergrounddiving@gmail.com

Andrey Chivilev 377 Cave
Tyumen, Russia
Chivilev65@mail.ru

Mel Clark 373 Cave
Mill Creek, Washington USA
CCR Cave, DPV
scubagrunt@gmail.com

Bill Dunn 170 Cave
Conyers Georgia, USA
Stage, Sidemount, DPV, Training Committee
bill.dunn7@gmail.com

Van Fleming 296 Cave
Kernersville NC, USA
DPV
scubiedo@aol.com

Steve Forman 106 Cave
Winter Haven, Florida, USA
Stage, DPV, Training Committee
Scubaetc@AOL.com

Mark Fowler 379 Cave
Wicomico, Virginia, USA
CCR Cave
Dolfinmsdt1@aol.com
www.markfowlerscuba.com

Georges Gawinowski 369
Live Oak, Florida, USA
CCR Cave, Stage, Sponsor
Info@wdtdive.com
www.cavedivertraining.com

Carl Griffing 372 Cave
Houston, Texas, USA
www.caveandtechdiving.com
carl@caveandtechdiving.com

Harry Gust 337 Cave
Tek-Center MX
info@cave-diving-mexico.com
www.cave-diving-mexico.com

Jill Heinerth 340 Cave
High Springs, Florida, USA
CCR Cave, Survey, Stage, Sidemount, DPV
www.IntoThePlanet.com

Paul Heinerth 165 Cave
Hudson, Florida, USA
CCR Cave, Stage, Sidemount, DPV, Sponsor, TrainingCommittee
www.scubawest.net

Ken Hill 326 Cave
Lakeland, Florida, USA
kenhill@tampabay.rr.com

Lamar Hires 191 Cave
Lake City, Florida, USA
CCR Cave, Sidemount, Stage, Sponsor
Lamar@diverite.com
www.diverite.com

Falk Hoffman 313 Cave
Henstedt-Ulzburg, Germany
Deep Cave
info@specialdiver.de

Tom Illiffe 156 Cave
Galveston, Texas, USA
Sidemount
www.cavebiology.com

TJ Johnson 368 Cave
Orlando, Florida, USA
Survey, Stage, DPV, Deep Cave, Sidemount, Sponsor
www.dayo.com
TJ@dayo.com

John Jones 321 Cave
Lake City Florida, USA
Stage, DPV, Survey, Deep Cave, CCR Cave, Sponsor, Sidemount, Training Committee
www.jpjscuba.com

Brian Kakuk 366 Cave
Abaco Bahamas
Stage, Survey, Sidemount
www.bahamasunderground.com
bahamacave@aol.com

Elena Kryzhanovskaya 382 Cave
St. Petersburg, Russia
elena.spb@gmail.com

Adam Korytko 364 Cave
Tulum, Quintana Roo, MX
www.caveheaven.com
adam@caveheaven.com

Maxim Kuznetsov 352 Cave
Gainesville, Florida, USA
DPV, Stage, Sidemount, Sponsor
www.vodolaz.com
max@vodolaz.com

Jeff Loflin 360 Cave
Bonifay, Florida, USA
Sidemount, Stage, DPV, Overhead Nitrox, Deep Cave, Sponsor, Training Committee
www.JeffLoflin.com

Mal Maloney 374 Cave
Bermuda Dunes, CAL, USA
Sidemount
Mal@divetri.com

Bill McDermott 266 Cave
Nags Head, NC, USA
Stage, Sidemount, DPV, Survey, Cartography, Sponsor
www.obxdive.com

Jim McMichael 376 Basic
Brooksville, Florida, USA
jmcmichael67@gmail.com

Steve Mortell 356 Cave
Broomfield, CO, USA
Stage
Steve.Mortell@padi.com

Tom Mount 123 Cave
Lake City, Florida, USA
Stage, DPV, Deep, CCR, Sponsor, Sidemount, Survey
Tom@iantd.com

Robert Neto 370 Cave
Greenwood, Florida, USA Stage, Sidemount, DPV, Survey
www.chipoladivers.com
rob@chipoladivers.com

Michael O'Leary 335 Cave
Lake City, Florida, USA
Survey, Stage
www.cavediving.org

Bill Oestreich 253 Cave
Crystal River, Florida, USA
CCR Cave, DPV, Sidemount, Sponsor
www.birdsunderwater.com

Conrad Pfeifer 287 Cave
Mars, PA, USA
conrad2@zoominternet.net

Daniel Patterson 353 Cave
High Springs, Florida, USA Stage, DPV, Deep Cave,
Sponsor, Training Committee
www.danpattersondiving.com

Luis Augusto Pedro 318
Sao Paulo, Brasil
Cave CCR Cave
info@iantdbrasil.com.br

Mark Pergrem 319 Cave
Dallas, Georgia USA
www.atlantatechnicaldivers.com
mpergrem@comcast.net

Bil Phillips 315 Cave
Tulum, Quintana Roo, MX
Stage, Sidemount, DPV, Survey, Cartography, Sponsor
www.speleotech.com

Renee Power 383 Basic Cave
Altamonte Springs, FL
renee@divebydesign.com

Olivier Prats 384 Basic Cave
Q-Roo, Mexico
olivieroim@yahoo.com

Martin Robson 350 Cave
Somerset, UK
CCR Cave, Stage, DPV, Survey, Deep Cave, Overhead Nitrox, Sponsor, Sidemount
www.eau2.com
martin@eau2.com

Reggie Ross 286 Cave
Gainsville, Florida, USA
Stage, Sidemount, DPV, Sponsor, Training Committee
reggie@reggieross.com
www.ReggieRoss.com

Evgeny Runkov 371 Cave
Ekaterinburg, Russia
jekadiver@gmail.com

Phillip Short 365 Cave
Bournemouth, UK
CCR Cave
www.philshorttechnical.com

Edd Sorenson 375 Cave
Marianna, Florida, USA
Sidemount, DPV
caveadventurers@hotmail.com
www.caveadventurers.com

Terrance Tysall 264, Cave
Orlando, Florida, USA
Sponsor, DPV, Sidemount, Survey, Stage
tntysall@gmail.com

Jim Wyatt 355 Cave
High Springs, Florida, USA
Deep Cave, Stage, DPV, CCR Cave, Sponsor, Training Chairman
Cave Dive Florida.com
trainingchairman@nsscds.org

German Yanez Mendoza, Cave
Cozumel, Q-Roo Mexico
Cartography, Sidemount, Stage, Overhead Nitrox
www.germanyanez.com
german@germanyanez.com

Cristina Zenato 325 Cave
Freeport, Grand Bahama
czenato@gmail.com

Cave Diving Section of the
National Speleological Society, Inc.
295 NW Commons Loop Suite 115-317
Lake City, FL 32055

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