



UNDERCURRENTS

Newsletter of the Bluegrass Dive Club / www.bluegrassdiveclub.com

June 2007

Volume 37, Number 6

June Club Meeting

Date: Tuesday, June 12th
Time: 7:30-PM (business)
 Social at 7
Location: The Racquet Club
 3900 Crosby Rd.
Program: DVD on Wakatobi Resort

President's Message

By Dan Miller



Message from the Deep

Last month we saw great Maldives footage shot by Noel Hall (edited by George Fleischmann) from their April live-aboard trip. This month the program will comprise 3 separate events. The headliner event is a swap meet. Bring any dive related "stuff" you want to trade, sell or just give away. This could include gear, clothing, accessories, dive magazines, etc. Who knows, you may pick up some good buys from your fellow divers. What better way to clear out your gear closet? Secondly, we'll distribute a brief dive trip survey for everyone in attendance to fill out, it'll only take 5 minutes to complete but will help us in trip planning for 2008/09. Finally, we'll show a DVD on Wakatobi resort.

Thanks go out to the McCann's for once again hosting the club's Derby Party last month. I counted 32 folks in attendance before I lost count and much fun was had by all. I was impressed by the home renovations they'd recently undertaken. Thanks also to John & Lynn Thomson for organizing the wager boards for us. 🚩

Dan

The Editor's Notes

By John Geddes



This month the pics are from the Derby Party. Show me the money... 🚩



Vice President's Report

By Rebecca Singer



This month it is my pleasure to introduce two new members to the Bluegrass Dive Club: Lisa Madden and Larry Wells. Please take a moment to introduce yourselves to these new members at this month's meeting.

Once again, I will bring the dive photo journals to the upcoming meeting. These books can be used as dive logs, but also have room for journal entries and photos. The company describes these books as providing the "recreational diver and underwater photographer a personalized photo album, diary, dive log, and portfolio all in one." Please take a look at them during this month's meeting and if you are interested at that time in purchasing one, please write a check in the amount of \$8.15 made out to Outdoor Classics. 🚩

Dale Hollow Weekend

By Corrine Wells Mulberry



Back by popular demand is the Dale Hollow dive trip the weekend of July 14 & 15. We have a 30 foot (double-decker) pontoon boat complete with slide and CD player reserved for the BGDC. The majority of folks will be camping and we have started making reservations on the "M" Loop. Three sites are reserved and more are available on this loop. The minimum stay is 2 nights at \$20.00 a night. For discounts see the site. Go to <http://parks.ky.gov/reservations/> to reserve your campsite. For non-campers, I'm sorry to say that Dale Hollow State Park Lodge is full, but check for openings. According to their website, cottages are available to rent nearby. As with previous years, we'll probably have a pot-luck type dinner Saturday night. Good eats and good company!

I need everyone to fill out the BGDC reservation form on the web so that we know how many to expect. In order to offset the pontoon rental cost, there is a \$10.00 per person, per day charge. You can bring your payment to the BGDC meeting or send a check made out to the Bluegrass Dive Club, % George Fleischmann.

Mark your calendar, fill out the BGDC reservation form, and reserve your campsite now for this fun filled weekend trip.

If you have any questions about this upcoming summer trip, feel free to email me at Corrine.mulberry@ky.gov and eccky@netzero.net.

Please send your email to both email accounts so that I see it and respond in a timely manner. 🚩



Divemaster's Report

By Doug Geddes



GRAND TURK 2007

While you are reading this newsletter, seven of your fellow club members are diving at one of the best dive locations in the world. Keep us all in your prayers as we travel to and from this great place. We should have some pictures and videos for you to see at a future meeting. Wish you were here....



UTILA 2008

If you haven't signed up for this great trip in March of 2008, then you need to consider doing so. We only have around 8 spots left out of 40 places. We also have been getting a few emails from the resort asking if we are still going to take all the spots. They are starting to get a few calls about availability. If they call before we have bought them, then we will have to give them back. Check out our web site for pricing and more details. I have gotten a quote on the air and it is \$835.00 using Delta out of Lexington. Then we have a shuttle plane to Utila from Roatan that is \$200.00. If you are signed up for club air, then this will most likely be what we will be doing. The other airlines are more expensive. We have 26 spots on hold with 21 of those spoken for. Get your reservation in and reserve your spot. Don't get left out on this one waiting around for tomorrow.

Divemaster's Report Cont.

DALE HOLLOW 2007

If you are planning on going on this lake trip, please go to the web site and fill out a reservation form. This is only so we can tell how persons are going to be there. Several persons have rented a campsite in section M at the state campground for the weekend. We will have a pot luck dinner following the Saturday activities on the lake. I believe we will have several boats and Jet Ski along with our pontoon boat. This should be another fun filled weekend. What a great way to get to know a person better, when you get to spend a weekend with them and see what they look like out of the water. We will have the final details in the next newsletter or group email.

GALAPAGOS 2008

Just a word or two, we are still overbooked on this trip with 3 persons waiting in line. If you still have an interest, you might want to put your name on the list. You never know when someone could drop off and open up a spot or two??

FT. LAUDERDALE 2007

What are you guys waiting for?? A week of diving in the warm clear water, airfare, car rental and room for under \$800.00 and you still haven't signed up?? I don't know what we have to do to get you diving. I know the dates are a little off, but you can't afford to pass this one up. Check it out on the web site. We have around 6 persons that are going so far, but I figured we would be fighting for these spaces?? The diving in this area is fantastic. 🚩



From the Treasurer

By George Fleischmann



2007 Membership Dues

Student	
(High School or College ID).....	\$ 10.00
Single & Family (1 diver).....	30.00
Family (2 or more divers).....	40.00

Renewal: Please send payment to the address listed below. And please make sure there is a correct indication of your mailing address & phone number. And it is very important to indicate an email address.

Contact or Mail to: Bluegrass Dive Club
% George Fleischmann
9048 Clifton Road
Versailles, KY 40383 -9077

New Members: Fill out & mail a membership form from the web site. . 🚩



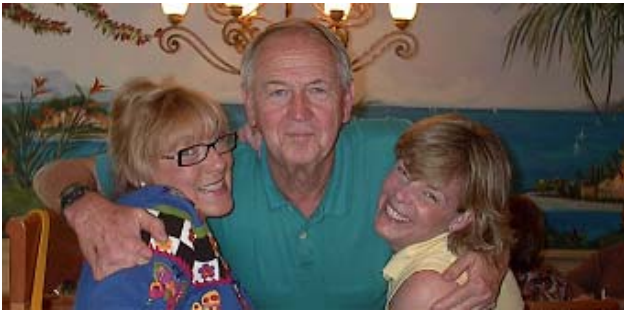
From The Secretary

By Maryanna O'Conna



General Meeting Minutes 5/8/07

The 7:30 meeting was attended by 26 members. The program was delivered by Noel Hall and George Fleischman on the Maldives trip they experienced. There were no new members. Upcoming trips discussed were: Dale Hollow Lake, Utila, Ft. Lauderdale, and Galapagos. A trip survey is currently being completed by the members.



EC Meeting 5/29/07

The 7:30pm meeting was attended by Dan, Mike, Rebecca, George, Rick, John, Doug and Maryanne. Dan called the meeting to order. George presented the treasurer's report. The Derby expenses are still being turned into the treasurer. A down payment was made to Utila Lodge on 4/08. Four people paid dues this month. The report was approved.

Rick is now known as the Safety Information Director. He will present an article on "How deep is too deep".

Mike reported that details of the Dale Hollow trip are on the website. A new section will be added to the website for club policies.

Doug reported that 29 people are signed up for Utila (April '08) with 11 spots left. A definite airfare price will be decided soon. The Grand Turk is set to go. The pontoon boat has been rented for the Dale

Hollow trip (July '07), so reservations are needed by the members.

John set the deadline for the Newsletter articles due Thursday night.

Rebecca reported that there are 3 new members. She has suggested that the trip survey be handed out at the next meeting to insure that members fill it out.

George presented a draft of the club's by-laws based on the model of the Ski Club's by-laws. Much discussion followed regarding the details of the articles and sections. The EC (Dive Club Board) will discuss the changes made by George at the next meeting. ▀

Safety Corner

By Rick Stephan



Note: First of all, let me assure you that this article is not pointed at anyone in particular. Heck, it was written for DAN, and they don't even know you. But, if you feel just a little bit self-conscious, you may want to really read this article.

Diving is one of the most fun things we're allowed to do legally. We get a fantastic opportunity to see parts of God's nature that most other folks can't even dream of experiencing. For some of our trips, we see beautiful lands as well, and interact with some wonderful cultures and people. Why then, would someone risk ruining that opportunity (not to mention his life, and that of his family and friends) by diving to depths outside the normal dive limits?

Think safety while you're still on the surface, because at 200 feet you probably won't be able to. Plan to dive within your own safety zone, and dive to that plan. We'd like to see you on our next trip! Remember, safe diving is fun!!!



Remember, safe diving is fun!

Safety Corner Cont.

How Deep is Too Deep?

By John Lippmann, Executive Director

DAN S.E. Asia-Pacific

During diver training, dive students are normally drilled to avoid diving beyond 130 feet / 39 meters. However this depth limit recommended by most of the training agencies is not forged in stone. Historically, it appears that it probably emerged from the U.S. Navy, possibly as a result of equipment limitations at that time, and the work restrictions imposed by the relatively short no-stop times available at greater depths.

An increasing number of divers dive beyond the 130-foot limit, some routinely and others occasionally. The advent of dive computers has negated much of the decompression penalty and dive restrictions previously associated with deep diving, and has no doubt encouraged the current trend. In addition, the increased availability of a variety of gas mixtures has enabled more divers to venture deeper and deeper.

Deep diving demands vast amounts of knowledge, experience and discipline, as well as appropriate preparation and equipment, since deep diving is fraught with potential hazards.

There appear to be some inescapable realities of deep diving. These include:

- the increased potential for certain problems to occur;
- if a problem does occur, the consequences are often more serious; and
- the fact that the physiological effects of deep diving are still largely unknown.

An old friend of mine used to teach diving at a tropical resort. The instructors routinely dived on air to depths approaching 300 ft (90m) and beyond on their days off. During such a dive, one instructor became unconscious at about 200 ft (60m) without obvious warning. He fell away and out of reach of the others before anyone could get it together to do anything. His body was never recovered.

Elsewhere, another diver diving at just over 165 ft (50m) on air on a wreck was seen to become unconscious and to convulse. Luckily his buddies managed to rescue and resuscitate him.

These are not isolated stories, and there are many similar reports involving deep air dives and mixed gas dives.

Unconsciousness underwater is often associated with deep diving accident reports. It usually results in drowning. A number of conditions can cause a diver to lose consciousness underwater. Such conditions include, but are not confined to:

- high blood carbon dioxide levels
- (hypercapnia);
- oxygen toxicity;
- nitrogen narcosis; and
- decompression illness;

All of which are exacerbated by depth. Blackout underwater may not be due to a single cause, but may result from a combination of physiological or physical factors.



Nitrogen narcosis can become a very serious adversary on deep air dives. Although we can acclimatize ourselves to the affects of narcosis to some extent by regular exposure to depth, it can still sneak up and very quickly overcome us when we don't expect it. Although conventional wisdom states that the narcosis appears on arrival at a particular depth and usually does not worsen with continued exposure at that particular depth, many divers are aware that it can quickly be precipitated by exertion or stress at depth, without further descent.

Safety Corner Cont.

Divers who have had to quickly deal with a problem at 200 ft (60m) on air realize the extreme difficulty of reacting rapidly and appropriately. Sometimes the mind-numbing effects of narcosis can strike suddenly and make appropriate reactions almost impossible. Extremely high levels of stress can be precipitated instantaneously and, unless controlled, panic and injury are likely results. Narcosis may be the direct cause of unconsciousness in a diver at depths somewhere in excess of 200 ft. Narcosis can be reduced by using certain gas mixtures. However, this involves the appropriate equipment, preparation, training and care since new potential hazards are introduced.

Carbon dioxide acts as a respiratory stimulant and can cause depression of the central nervous system (CNS). The effect depends on the level of carbon dioxide in the blood. Deep diving produces elevated blood carbon dioxide levels for several reasons, which include:

- the resistance to breathing caused by breathing denser gas through a regulator and against a higher ambient pressure;
- reduced ventilation efficiency due to the denser breathing gas; and
- reduced transport, and, hence, elimination of carbon dioxide.

Hypercapnia increases narcosis and the likelihood of CNS oxygen toxicity. In addition, it may increase heat loss, alter heart rhythm and predispose to decompression illness. If the carbon dioxide level gets too high, and it can on deep scuba dives -- especially if a diver is very anxious and / or exerting him/herself -- the diver may go unconscious without warning. Certain divers are more susceptible to severe hypercapnia for a variety of reasons and are therefore more at risk.

When divers breathe oxygen at partial pressures greater than about 1.5 atmospheres (ata), it may rapidly exert a toxic effect on the brain. A diver breathing air at a depth of around 200 ft is exposed to an oxygen partial pressure of 1.5 ata. CNS toxicity is a limiting factor and a very real danger in deep diving since it can cause a diver to convulse and/or become unconscious with little or no warning. The likelihood of CNS oxygen toxicity increases with exposure time, cold, exertion and hypercapnia, and

the depth and time of onset can vary greatly between individuals and from dive to dive.

The high nitrogen load accumulated by the "fast" and "medium" body tissues during a deep air dive can cause substantial bubble formation during or after ascent unless the decompression is properly controlled and conducted. Some of these bubbles may form in or enter the arterial circulation and cause neurological problems. This mechanism may be responsible for some underwater blackouts during ascents from deep dives.

Various data indicate that deeper diving is associated with a substantially increased risk of decompression illness. This risk appears to increase at depths beyond about 80 ft (24m). In addition, using a dive computer to guide decompression from deep air dives appears to increase the risk further due to the greater dive times allowed and the increased unreliability of the algorithms at depth. More and more divers have adopted the use of various gas mixtures in the belief that it will reduce the risk of decompression illness. However, recompression centers still treat a significant number of these divers.

Certain studies suggest that micro bubbles are often present after dives, particularly deep dives, especially if ascent has not been appropriately executed but even after what is generally considered to be a safe ascent. Some hyperbaric specialists fear that microbubbles, although asymptomatic, may cause cumulative neurological damage in divers. However, to date, the evidence does not appear to be consistent.

Unless adequately prepared for, deep diving carries a higher likelihood of an air supply emergency. Increased ambient pressure means increased air consumption. In addition, narcosis may hinder a diver's ability to properly monitor and manage the air supply. Despite the improvements and superior performance of much of the modern diving equipment, malfunctions do occur. The deep divers who value their hides ensure that they have adequate backups of various essential pieces of equipment, including an independent and adequate air supply.

Buoyancy compensation can sometimes become a critical factor on deep dives, especially in cold water where greater insulation is required. Unless compression of the exposure suit is adequately

Safety Corner Cont.

compensated for by BC or dry suit inflation, a diver may become very negatively buoyant at depth. Wreck divers may sometimes prefer to be negatively buoyant, but problems can develop if the air supply is low and the diver needs to ascend fairly quickly.

Various experiments have demonstrated that, at low cylinder pressures, it is sometimes impossible to inflate a BC (or dry suit) at depths approaching 130 ft, especially while breathing simultaneously from the regulator. This problem would be magnified at greater depths. At times, a negatively buoyant diver who is low on air may find it difficult, or even impossible, to ascend without ditching their weight belt. If the weight belt is ditched, it is unlikely the diver will make it to the decompression line to get some extra air and perform any necessary stops.

Some divers routinely dive to depths in excess of 165 feet/50 meters on air, although over recent years gas mixtures such as heliox and trimix have become far more commonly used for very deep diving as they are less narcotic. These divers are often, but not always, conversant with the substantial risks and demands of these dives and choose to push the limits for their own reasons. Such divers are usually well equipped and well prepared for the dives. Most usually manage to get away with diving to these depths with no apparent problems, others do not. Some of the unfortunate ones are left with permanent disability; others die.



On the other hand, there is the “occasional” deep diver. These divers are generally less experienced than regular deep divers, are on a dive trip with a group, and are drawn into diving deeper than they normally do because of the more relaxed holiday atmosphere and because “everyone’s doing it.” Such divers are often not sufficiently trained, mentally prepared and appropriately equipped to deal with a problem should it occur on a deep dive.

It becomes obvious that there is no safe depth limit that applies to all divers all of the time. A diver’s



ability to cope with depth depends on a number of highly variable factors. The depth of the onset of the

effects of the exotic cocktail of elevated pressures of nitrogen, carbon dioxide and oxygen, coupled with the sensory deprivation and stress associated with diving, are not always predictable. A dive to 80 feet in cold, dirty water can be far more hazardous than a dive to twice the depth in warm, clear waters. Factors such as visibility, water temperature and diver experience and preparedness greatly affect a diver’s comfort and safety, rather than depth alone.

Divers in remote locations must also be aware of the complications associated with medical evacuation. These can include significant delays in retrieval due to lack of current availability of an aircraft and and/or medical team, the distances involved, as well as the accessibility of some airstrips in darkness or adverse weather conditions. Such delays can impact the amount and the effectiveness of the subsequent recompression treatment, and the likelihood of residual injury.

In addition, once a diver has been evacuated and/or treated for DCI, they will be advised to avoid air travel or driving to altitude for between three days and six weeks post treatment to avoid recurrence of symptoms. This can certainly impinge upon the diver’s travel and work commitments.

As with many things in life, one must balance the risks against the benefits and make a decision. However, it is essential to have a real understanding and appreciation of the risks. 🚩

Presidential Potpourri

3 Free Dive records set in April

April was a record-breaking month in the free dive community. On April 2nd, American Deron Verbeck set a new breath hold record for men of 7:28 in the "static apnea" discipline. It occurred in the pool at Jack's Diving Locker in Kona, HI. On April 11, William Trubridge of Hawkes Bay, New Zealand set the men's record of 263 ft in the "constant weight without fins" category. The record was set in Dean's Blue hole off Long Island, Bahamas. On April 29th, Mandy-Rae Cruickshank, a 32 year old native of Vancouver, Canada set the women's record of 289 ft in the field of "constant ballast free-diving" off Grand Cayman. To learn more, go to www.aida-international.org or www.usfreediving.org.

New Dive Shop opens in Richmond, KY

Support your local dive shops such as *New Horizons Diving Center* as much as possible. *Moore's Scuba* has recently opened 2 locations in Richmond, one on Main Street and the other on 2nd Street. Check them out at www.moorescuba.com. Think about it. If we don't support our local dive shops what other local enterprise will support us in diving?

How many "Active" divers are there?

DEMA defines an active diver as one having logged 5 dives per annum. They estimate there are more than 1.2 million divers in the USA. Now that's a lot of potential dive buddies so let's go diving!

New Peter Hughes boat/destination announced

Peter Hughes is building a new boat that will soon be christened as the *Paradise Dancer*. It will sail the North Sulawesi and Lembeh Strait areas. Its maiden voyage is slated for April 2008

Shark Movie soon to be released

Fall 2007 will see the release of *Shark Water*. It's a documentary based on the real-life events of one man's struggle to save sharks from extinction due to finning. Review trailer at www.sharkwater.com. 🚩

2007 BGDC Officer's & Staff

Dan Miller, President	948-5133
Rebecca Singer, Vice President	552-0880
Maryanna O'Canna, Secretary	277-2634
George Fleischmann, Treasurer	873-9539
Doug Geddes, Divemaster	224-3197
Rick Stephan, Safety Information Dir.	223-3719
Mike McCann, Webmaster	255-3937
John Geddes, Undercurrents Editor	223-7926



Bluegrass Dive Club 2007 Calendar

June

9-16, Saturday Grand Truk Dive
12, Tuesday Dive Club Meeting
26, Tuesday E.C. Meeting

July

10, Tuesday Dive Club Meeting
14-15, Saturday Dale Hollow Dive
31, Tuesday E.C. Meeting

August

7, Tuesday Dive Club Meeting
18, Saturday Club Pig Roast
28, Tuesday E.C. Meeting

September

11, Tuesday Dive Club Meeting
21, Friday Ft Lauderdale and Keys
25, Tuesday E.C. Meeting

