

LIGHTNING DATA CENTER MINUTES
NOVEMBER 12, 2010
ST. ANTHONY CENTRAL HOSPITAL, DENVER, CO
www.stanthonyldc.org

Monthly Quote: “Scientists know little about what happens when lightning hits water. The electrical current probably spreads in all directions, weakening as it spreads out. Since large numbers of dead fish aren't found after thunderstorms move across bodies of water, the current probably weakens in short distances.”

On the web at: <http://scuba-doc.com/lightdive.htm>

1. Meeting began at 11:50 AM and adjourned at 1:05 PM.
2. Members present: Clark, Langford, Wells, Yarnell, Collier, Wachtel, Elder, Hodge, Gift, Cui-Gift, and Cherington (Michael and Nancy). Clark moderated the meeting.
3. George Hodge said he's been busy doing technical diving in the Caribbean Sea and also in the Pacific Ocean. Thunderstorms are almost a daily occurrence in these areas and thus there is a concern for lightning safety. Technical diving is done with metal cables for communication. In addition, divers will have metal air cylinders strapped on their backs, one of which contains a 50% oxygen mix and the other contains 100% oxygen. The problem occurs when divers need to surface. They cannot come up to the water's surface all at once, or they will decompression sickness (the bends), which can be fatal. Instead, they must surface in depth/time increments, with the longer times being closer to the water's surface. There are times when there are storms in the area during surfacing. Hodge says he has seen lightning while submerged, and describes it as bright flashes of light, with some flashes more diffuse than others. He reported feeling lightning currents at depths of 0 to 15 feet, best described as a surge or a pulse through the body. He has seen lightning strike the water's surface and reported no visible physical effects (splashing, vaporization) at the point of contact. He has not witnessed any fish kills due to lightning and there have not been any problems with electronic equipment during these storms. A lively discussion followed as to whether or not divers should surface when thunderstorms are present. Some of the group thought it would be better to have divers remain submerged while lightning threatens; however, that conflicts with the decompression timetable and potentially the available air in the tanks. Nobody knows exactly what the effects of direct strike would be, but most felt the presence of metal communications lines would mediate any injury. Gift suggested using fiber-optic communication lines instead of wire. Clark suggested Hodge get with Collier to model the lightning strike environment so that a more informed decision could be made about safety. Hodge expressed concerns about the safety of the divers onboard the boats with their metal tanks and wires, as they are apt to be the most conductive objects on the boats since the boats tend to be fiberglass-hulled boats.

4. Phil advised that Dr. Cherington, one of the LDC's founders, would receive recognition for 50 years as a physician at the Denver Medical Society's 140th Annual Meeting, which was held on November 12th. The announcement can be seen here:
<http://www.denvermedsociety.org/newsletters/DENVER%20MEDICAL%20BULLETIN%202010%2011.pdf>
5. Cherington told us the physicians at Skyridge Hospital have requested a lightning presentation for sometime next spring and has requested the members' help with that. Ken Langford has offered to participate if the timing is right.
6. Cherington presented a paper written by a Russian scientist titled: "Radiation Hazard of Ball Lightning: Observational Data and Their Theoretical Explanation". This paper explores some of the possible mechanisms for burn injuries caused by ball lightning and allied phenomena. Cherington said he is not aware of any fatalities caused by ball lightning. The discussion then shifted to the more general issue of radiation exposure. Yarnell mentioned a group of people visiting an area near the now defunct Chernobyl nuclear power plant. Dosimeters were attached to each person. That highest dosage of radiation was not from the areas nearest the plant, as one might think. Instead, the highest dosage was recorded during the airplane flights to and from. Peruvian miners living and working at high elevations have been known to get pulmonary edema ("Lima Edema") when descending to sea-level locales, such as Lima.
7. These minutes do not represent official positions of LDC or its members. They simply reflect the comments made at the meeting.
8. Next meeting: Friday, September 10, 2010 at 11:45 AM in Main Auditorium at St. Anthony Central Hospital. December Meeting Subject: "You Have A Magnetic Personality" by Howard Wachtel.

Respectfully Submitted,

Steven E. Clark, Consulting Meteorologist

In Case You Missed It...Lightning in the News

This is a monthly listing of news and videos about lightning and allied areas as reported in the media. A headline is listed, followed by a link to the article. Please note that some of the links are perishable, which means you'll need to go to the source for the article. Enjoy!

Images of the eruption of Mount Merapis in Indonesia. One of the images has lightning in it.

http://www.boston.com/bigpicture/2010/11/mount_merapis_eruptions.html

Electrical stimulation in brain may aid learning

http://www.denverpost.com/search/ci_16527648