

LIGHTNING DATA CENTER MINUTES
February 14, 2014
ST. ANTHONY HOSPITAL WEST, LAKEWOOD, CO
On the Web at: www.stanthonyhosp.org/ldc

Monthly Quote: “Don’t knock the weather; nine-tenths of the people couldn’t start a conversation if it didn’t change once in a while.” Kin Hubbard

1. Meeting began at 11:45 PM and adjourned at 1:05 PM. Members Present: Collier, Yarnell, Elder, Claus, Swanson, Nibbe, Gift, Cui-Gift, Grauning (Heather & Damon), Langford, Stewart, Wachtel and Clark. Clark moderated the meeting.
2. The next meeting of the International Conference on Lightning Protection (ICLP) will be held on October 13-17, 2014 in Shanghai, China. For more information, visit their website at: www.iclp2014.net.
3. Steve Clark briefly presented a few items.

A California electrician developed star-shaped cataracts in his eyes after his shoulder came into contact with 14,000 volts of electricity. A photograph of the cataracts is in the [New England Journal of Medicine](#) (see links below). Four weeks after the incident, his eyes were examined after the patient complained of vision problems. That is when the cataracts were discovered. He has had some surgeries done, which have resulted in modest improvements. He vision is still poor in both eyes, but he is able to see well enough to use public transportation and to take classes in a community college, with assistance.

After an earlier meeting, Karen Wells brought to Steve’s attention an article from National Geographic about lightning research and safety in South Africa. A large number of dead bodies are found each year in that country and researchers think lightning is the primary cause, but they do not have definitive proof. Research into lightning injuries and fatalities has been ongoing since the 1960s at University of the Witwatersrand, perhaps better known as Wits University, in Johannesburg. In an effort to further the understanding of injury, researchers are performing conductivity studies on 56 different tissue types found in the human body. So far, very preliminary results suggest drier tissues are less conductive than wetter tissues. In the arena of lightning safety, South African lightning safety advocates have some challenges to deal with. Superstitions run deep there, even amongst otherwise educated people, even at this day and age. For example, if someone is hit by lightning, the strike will be attributed to witchcraft. Safety experts also say the slogan used here in the U.S., “When thunder roars, go indoors”, is largely inappropriate to people in South Africa due to the lack of infrastructure. As a result, lightning safety guidelines need to be modified accordingly.

4. Greg Stewart mentioned a photo Karen Wells had sent to the group earlier. The photo shows lightning in the right-background, with a foreground and horizon of dead trees and milky green water, which won an Honorable Mention in National Geographic's 2013 Photography contest. The photo was taken at Menindee Lake, New South Wales, Australia. The caption stated the milky green color of the water was due to a natural phenomenon caused by the electromagnetic activity from the lightning striking the water. Members present generally agreed the lightning was most likely not the direct cause of the coloration. Members felt the coloration was due to either the mineral content of the area or biological processes. Other photos of Menindee Lake viewable on Google Earth show the water looking quite normal. The contest photograph shows a lake that appears to be drying up, thus the coloration could simply be due to mineralization caused by low water levels. Indeed, much of Australia, including New South Wales, has experienced record-setting high temperatures, along with several wildfires, which indicates drought conditions. If there is any scientific evidence to support the statement made in the caption about the cause of the coloration, please let Steve Clark know at: sclarktoto@eml.cc.

5. Steve Clark received an e-mail from a lady that had been struck by lightning while on a military training exercise. We had a 40-minute phone conversation with her during the meeting. Here is some of what we learned. Several years ago, she and her colleagues were on training exercises, in groups of three people, during the fall season. Prior to the exercise, the only guidance provided with regard to inclement weather was if it started to storm, stop the exercise and run back to your vehicles. It is unknown if her superiors voiced this guidance before the exercises started. She and her two companions were in a wooded area when it began to rain hard – as she put it, “in buckets”. As instructed, the three started running back to their vehicle, in a line. She was at front with the two others behind her, at five and ten feet, respectively. She was the shortest of the three. The vehicles were parked along the edge of a clearing. To get into the woods, they had to go across the clearing first. The threesome had emerged into the clearing when she was struck. The second person in the line did “an Indian dance” in response to the current and reported no further effects from the strike. The third person reported no sensations from the strike. After the strike, she reported feeling “fuzzy” and “funny”. She said the lightning entered the right side of her head and exited through her right foot, which was blackened from the strike. She saw the blackened foot after removing her boots prior to taking a shower. She said sparks flew off her boot and a white deposit was on the boot. The boots had soles that were approximately ¾-inches thick. She sought medical attention the next day.

Some of the medical issues she has had or is presently dealing are presented below, in no particular order.

- About a year after the strike, she sprained her right ankle, which led to an onset of RSD, nowadays known as Complex Regional Pain Syndrome.
- She has fallen over while trying to hold a compass at mid-waist.
- Her toenails fell off.
- CPK levels are elevated and she has neurological deficits akin to a stroke.
- She has trouble with coordination between the left and right sides of her body.
- She reports having bowel and bladder problems.
- Over the last two years, she started developing tremors.
- She wears a neurostimulator on her right ankle.
- She is afraid to be out in public with her ailments, for a number of emotional reasons.
- Like many other strike survivors, she reports an enhanced sensitivity to thunderstorms. Her most reliable indicator is what she calls, “the pricklies” – tingling sensations, mostly in her arms.

Greg Stewart asked the lady if the medical community in addressing her symptoms provided adequate support. Her response was: “No.” As a result of this incident, she has lost her military career and her civilian job, due to her physical condition. She is working with the VA to gain additional benefits, but progress has been slow. She is also consulting with an acupuncturist for additional treatment. Carl Swanson recommended she contact the Lightning Strike Survivor’s List, via the following e-mail address:
lightningstrike@yahogroups.com.

6. Al Nibbe said Karen Wells performed a literature search in the medical literature for acupuncture as related to lightning strike patients. There were no hits. She did a similar search for electric shock patients and found one citation where acupuncture was used for treatment with some success, although the degree of success was not known.
7. Next meeting: Friday, March 14, 2014 at 11:45 AM at St. Anthony Hospital West. Conference Room TBA.

Respectfully Submitted,
Steven E. Clark, Consulting Meteorologist

In Case You Missed It...Lightning Links

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

“Man develops Star-Shaped Cataracts After Electrical Burn”

http://www.huffingtonpost.com/2014/01/23/star-shaped-cataract-electrical-burn_n_4651427.html?1390488194

Abstract Article: “Ocular Manifestation of Electrical Burn” N Eng J Med 2014, 370:e6, January 23, 2014

http://www.nejm.org/doi/full/10.1056/NEJMicm1213581?query=featured_home

“Fire Engine Burns After Ladder Touches Power Line”

http://www.columbiatribune.com/news/local/fire-engine-burns-after-ladder-touches-power-line/article_d2bdf140-86c2-11e3-b2ef-001a4bcf6878.html

Abstract: “Damage Due to Lightning When It Strikes the Face”

<http://www.ncbi.nlm.nih.gov/pubmed/23149317>

National Geographic Article: “Unraveling the Mysterious Impacts of Lightning on the Human Body”

<http://news.nationalgeographic.com/news/2013/12/131215-lightning-strikes-body-safety-south-africa-johannesburg-science/>

E-mail address for Lightning Strike Survivor’s List (LSSL): lightningstrike@yahogroups.com
