

LIGHTNING DATA CENTER MINUTES

December 9, 2016
ST. ANTHONY HOSPITAL WEST, LAKEWOOD, CO
www.lightningdatacenter.org

HAPPY HOLIDAYS TO YOU AND YOURS!

1. Members Present: Clark, Yarnell, Elder, Nibbe, Wells, Swanson, Olson, Paul, Moore, Wachtel, Glancy, Gift and Cui-Gift. Two survivors were also present. Meeting began at 11:45 AM and ended at 1:10 PM.
2. Carl Swanson said of 384 first responder entities in Colorado, 97 will be assisting in his effort to collect lightning strike data in 2017.
3. Bob Glancy announced he will retire from the National Weather Service after 36 years of service, effective January 3, 2017. Following his retirement, he will be teaching introductory meteorology classes at Metropolitan State University of Denver.
4. One of our members, Howard Paul, had a near-miss adventure with lightning over 20 years ago, while at Mt. Evans in Colorado. He is a volunteer with Alpine Rescue, an avid mountaineer, and a professional photographer. He was near the summit wanting to capture on camera a photogenic sunset. He recalled there was a “cap cloud”, which he later determined was 12 miles away. He was standing a few feet away from the benchmark of the summit. While he was standing there, all 10 toes went numb at once. He was wearing the old-fashioned tennis shoes with the metal eyelets. He could see arcing from the eyelets down to the ground. He squatted down. Another photographer was at the summit also. After a short discussion between the two, they made a dash down the trail to the parking lot, which is approximately 100 feet from the summit. About 30 seconds into the decent, lightning strike Mt. Spalding, which is roughly 0.5 miles from where they had been. Howard noted there were no other precursors of a lightning strike – no humming, no hair standing on end, no ozone – nothing. Carl Swanson asked if his feet were together side-by-side or apart while he was squatting. Howard did not know. Howard thought the lightning came from the cap cloud, but Bob Glancy, after hearing a description of the cloud from Howard, states the cloud was most likely a lenticular cloud. Bob said the lightning most likely did not come from that cloud, as lenticular clouds tend to be associated with stable weather conditions.

5. We had a male survivor who was recommended to us by Bob Glancy. This paragraph contains my incomplete notes of two lightning experiences he had – one in Colorado and the other in Wyoming.

In Wyoming, he was rock climbing with his family and some other people, acting as a guide. He saw the weather getting bad and heard first thunder. He got people down off the rocks and then went back up to retrieve some gear left behind. While making his descent, lightning struck, throwing him into the air. He came to and saw his kids were crying. The rock face he was next to had been blackened, apparently due to the lightning. He did not see a doctor immediately after the strike. Listed below are some of the sequelae from the strike, in no particular order:

- His body temperature regulation was not working right. Prior to the strike, he was always warm, but following the strike, he gets cold much more easily.
- Retinal burns in both eyes.
- His arm will occasionally go limp while climbing and he needs to shake it around to regain use of his arm.
- His leg sometimes will lose control and begin to shake.
- His feet sometimes feel “leaden”.
- Prior to the strike, his memory was photographic. Post-strike, his memory is more fragmented.
- Has trouble processing time.
- Prior to the strike, he had spinal stenosis. Following the strike, there has been additional damage to the spine.
- “Electric malaria” – Episodic occurrences of neuro-electrical issues.
- He is more relaxed out of lightning season.

In Colorado, he was at an outdoor concert. Storms had been forecast to be near the vicinity of the concert briefly and then move away. Instead, storms east of the concert venue began moving west towards the venue, while at the same time, other clouds were approaching the venue from the west. At the concert, he was standing up, taking in the show and watching the sky. Lightning struck about a mile away from the concert venue and he dropped to the ground. He stood back up and the same sequence happened again. Later, he stood up again, describing the motion as if a puppeteer was lifting him by the strings. Lightning struck again, only this time it was much closer. He collapsed and his vision went from a wide field of view down to tunnel vision. Fortunately, a woman saw what happened and started talking to him. He told her he had been hit by lightning. She told him that she had been hit by lightning in Wyoming. Ironically, the woman is the same person profiled in the October and November minutes in 2014. Following the third strike, he sought shelter in a concession booth and later sought medical attention.

6. In the meeting announcement, I said Dr. Phil Yarnell would present a case of delayed onset of apparent neurologic sequelae following a lightning strike. Due to my misallocation of time allotted to speakers at the meeting, Dr. Yarnell did not have the opportunity to present the case before the whole group. Instead, he convened a quick ad-hoc meeting outside of the meeting room comprised of the following individuals: Yarnell, Olson, Moore and Wachtel.

A psychiatrist who works primarily in brain injury rehabilitation sent the following e-mail to Dr. Yarnell, which I have partially redacted.

” There was an incident of a lightning strike in close proximity (50 meters) to a school building. The circumstances indicate that some of the buildings wiring and electrical circuits were damaged in the strike. The strike occurred during school hours.

Although the circumstances described indicate that the event was dramatic and frightening, initially all physically appeared well and no medical or emergency services were summoned. Subsequently four members of the teaching staff have indicated that have suffered longer term health and neurological consequences of the strike.

The circumstances of each individual are slightly different: the 1st was busy teaching and in the middle of a number of pupils and at the time was leaning over one of the pupils to assist them with their work. She has a full recollection of events and was able to escort children from class and arrange for their parents to collect them from school. From the description of others, she appeared emotionally distressed following the strike.

The second teacher was sitting at a desk in a full classroom. She also has a full recollection of events with no retrograde or anterograde amnesia. Subsequent to her initial documented account, there appears to be a change in her account where she now believes she may have been confused. She continued work as normal but some days following the event sought advice from her family doctor and was considered to exhibit ‘concussive’ symptoms. She has a complex medical history including pain and fibromyalgia Sx.

The third person was the principal who at the time took charge of the situation and organized teachers and pupils. She complained of an insidious onset of non-specific symptoms that emerged 6 weeks post event. At the time of the strike she was in her office.

A fourth person has come forward 16 months later and they attribute chronic respiratory complaints and a general drop in function to the lightning strike. Her first health contact occurred 3 months post-strike and were for unrelated medical complaints.

None of the persons involved were close to windows or in contact with wired appliances. Three were busy teaching in room full of pupils and none of the children were similarly affected. There were no immediate sequelae suggestive of electrocution or blast effects. All parties continued to evacuate children and thereafter assisted the children to go home. None of the parties sought any medical assistance for some days.

To my eye the clinical presentations appear to represent somatoform type presentations following a dramatic and stressful event. However, some of the teachers were referred to a concussion service who initially postulated that they sustained concussions following the jolt caused by lightning and later indicated that there may have been an unspecified electromagnetic mechanism of injury. In this context 2 persons were referred for neuropsychological testing which revealed a very non-specific pattern of mild slowness on processing and was attributed to lightning related sequelae.

The question revolves around the possibility of experiencing a delayed onset of persisting symptoms in the absence of any immediate neurological or other signs/symptoms of injury.

Your advice and comments would be appreciated.”

The following is the response from Dr. Yarnell, which I have slightly edited.

“In *Seminars in Neurology*, Vol 15, No. 3, September 1995, Dr. M. Primeau, [et.al.](#) wrote an article titled: "Behavioral Consequences of Lightning and Electrical Injury". They noted that many of the symptoms are those found post-concussion or as part of a PTSD syndrome. This has been my experience as well.

To the best of my recall, my patients each related a definite electrical event at the time of the initial incident, i.e. surge of electricity going through my body, feeling of an electric field, etc. I have not had a patient come to me in a much-delayed fashion who had not experienced some direct phenomena of the electromagnetic field unless they had lost consciousness.

The four people you described in your letter did not seem to volunteer any immediate sensation of the lightning strike, even retrospectively. I would wonder if their reactions might not be a PTSD-type reaction to this most frightening event. In this way, it would be related to the lightning strike more psychologically, than to any late organic injury.

However, there are many unexplained phenomena, sequelae in some long-term lightning strike survivors that makes it difficult to be entirely definitive here.”

Members with any ideas about this case are encouraged to correspond directly with Dr. Yarnell. His e-mail address is: pyarnell@gmail.com.

7. Questions, comments, notification of errors, and critiques of these minutes are welcome. Please forward those to Steve Clark at: sclarktoto@gmail.com. Please keep your communications professional and respectful. Communications will be forwarded to the appropriate author(s) of the minutes and addressed accordingly.
8. LDC Disclaimer: These minutes do not represent official positions of the LDC or its members. They simply reflect the comments made at the meeting. Furthermore, the LDC does not implicitly or explicitly recommend or endorse any product or service. Any product or service presented in these minutes is done so for purposes of discussion and analysis. The merit (or lack thereof) is open for the consideration and review by the entire membership.

9. Next meeting: Friday, January 13, 2017 at 11:45 AM at St. Anthony Hospital West. Room: Conference Rooms E & F.

Respectfully Submitted,
Steven E. Clark, Consulting Meteorologist

Lightning Links

This is a monthly listing of periodicals, websites, and videos about lightning and allied areas from a variety of sources. 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.

No links this month.
