

LIGHTNING DATA CENTER MINUTES

February 9, 2018
ST. ANTHONY HOSPITAL WEST, LAKEWOOD, CO
www.lightningdatacenter.org

Quote of the Month: ““Ever wonder what goes into an amulet to protect you from bad spirits? “Herbs and lightning teeth,” said Juan Ponce, a sorcerer on the tranquil Philippine island of Siquijor. His daughter, Tata, showed us a lightning tooth – a cuspid-shaped chunk of basalt. “These lightning teeth mysteriously appear at the base of the tree where lightning has struck,” she explained.” Source: *The New York Times*, May 10, 2001. Link: <http://www.nytimes.com/2001/05/10/opinion/to-ward-off-evil-spirits-try-some-lightning-teeth.html>

1. Members Present: Clark, Langford, Terry, Wachtel, Beckmann, Yarnell, Elder (Alan & Katie), and Wells. Meeting began at 11:55 AM and ended at 1:00 PM. Clark moderated.
2. Steve Clark said the LDC will present a panel discussion on lightning, lightning safety and the field treatment of the lightning patient at the National EMS Safety Summit, which will be held August 29-31, 2018 at the Embassy Suites Hotel in downtown Denver. Presenting LDC members will be Steve Clark, Carl Swanson, Sheryl Olson, Larry Moore, Marty Coniglio and Barb Stemple. The LDC presentation will start on August 30 sometime between 10:15 AM and 10:30 AM and last about 1 hour. The event is free to attend.

Steve presented a video of a lightning strike in Japan filmed in slow motion. Ken Langford noted an upward streamer in the video.

Steve recalled a 2004 lightning strike to a father and son on a driving range. See the LDC Minutes for July and August 2004. The father was killed and the son survived. Recently, a local news station reported the son grew up to be a firefighter, inspired by the rescue performed by first responders after the strike in 2004.

3. Ken Langford presented a video recorded in Canggu, Bali, Indonesia, showing what the person recording the video thinks was a lightning strike to a pool. Members present agreed lightning did not directly strike the pool. There was lightning in the background and the pool was in the foreground, with foliage lining the side of the pool opposite the camera. Ken said the lightning did not hit the pool because the stone decking around the pool was not evenly illuminated at the time the lightning flashed in the background, which is what one might expect had the pool been directly hit. The decking on the side of the pool opposite the camera was more darkly shaded, due to the foliage partially blocking the light from the flash. He also estimated the flash was approximately 0.2 miles away from the videographer, based on flash-to-bang. Following the flash, there was a visual artifact which appeared to lead from the sky to the pool on the right half of the video frame. Upon review, we believe the artifact was a vertical column of water pouring into the pool, either by design or chance. Finally, the column of water and the corresponding splatters were illuminated from behind, which further suggests lightning did not hit the pool directly.

4. Bruce Beckmann, with Alpine Rescue Team told us he will be giving two talks on back country hazards and how to avoid and survive them. Part of his talks will include lightning. In his career, he has spoken to some 3600 people about safety. His speaking engagements began when the Denver Botanical Gardens expressed concerns about lightning safety at a high-altitude station they maintain on Mt. Evans.
5. Dr. Phil Yarnell presented some cases referred to him by Dr. Mary Ann Cooper. Here follow my incomplete notes from his presentation.

Case #1: An attorney had a client that was shocked by overhead powerlines. Phil wanted to know the voltages in the powerlines. Howard Wachtel said depending on the type of powerline, the voltage could be from a few thousand volts up to 100,000 volts.

Case #2: A parent wrote she and her son had contacted current from a big-screen TV. She said her son has bellyaches and throat pain. She complained of pins and needles in her feet. Phil was asked what the voltages are in modern HDTVs.

Case #3: A man who has survived three lightning strikes is looking for answers. He was struck twice in the early 2000s and again a few years ago. He is a geologist and was an Olympic-caliber athlete while in college. Following each strike, he has had little to no care. He presents well, but he suffers from stress, fatigue, emotional outbursts, and an inability to keep things straight. He has driven through a stop sign. The strikes have affected his ability to bar tend due to the noise and too much input. He has had dementia-like symptoms and a year of depression. He does stand up comedy. He doesn't want to address his deficits. He said his life has gone downhill in the past few years. After the second strike, his mom said he was not himself. Following the third strike, he complained of numbness. His general practitioner did not know what to do. While he was employed, his coworkers said he is sometimes slow and has come out of work and was unintelligible. He has lost his motivation and ambition and has not looked for work in over a year. He has appeared on local media to warn of the dangers of lightning.

When he was struck the first time, he was working. On the second time, he was fishing. On the third occasion, he was standing on the bumper of his truck.

Ken asked when a person goes to a rehabilitation hospital, e.g. Craig Hospital here in Denver, what do they do for brain injury? Phil said if the patient can afford it, they will have life skill trainers. These people basically navigate the patient through life's daily activities, with the hope the repetition will help the patient become less reliant on others as time passes.

We then discussed whether lightning, concussion and TBI can be related and if not, how might we tell the difference.

Case #4: A man was electrically shocked a few years ago while inspecting a house they were looking to buy. During the inspection, his head came into contact with exposed electrical wiring on the ceiling. Sometime after the shock, his dentist said his implanted tooth had to be removed because the screw had shifted. The question before the group was: Did the electrical shock cause the screw to shift? Nobody knew the answer. Ken asked if he had fallen down after the shock, thinking an impact to the head could loosen the implant. We discussed the durability of implants, which initially would last up to around 10 years and more recently tend to last around 20 years.

6. 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.
7. 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.
8. Next meeting: Friday, March 9, 2018, from 11:45 AM to 1:00 PM at St. Anthony Hospital West. Room: Conference Rooms E & F. Meeting Format: TBA.

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.

2001: Sochaczewski, P. and International Herald Tribune. To Ward Off Evil Spirits, Try Some Lightning Teeth. *The New York Times*. May 10, 2001.

2018: Viralhog. Lightning Strikes Pool During Storm. *YouTube* Video. January 25, 2018.
Link: https://www.youtube.com/watch?v=4GAq_T2yCq4

2017: Central Research Institute of Electric Power Industry, Japan. Lightning Strikes Tokyo Skytree (Aug. 2016). *YouTube* Video. November 16, 2017. Link: <https://www.youtube.com/watch?v=wL04leulpIY>

2018: Rose, C., Survivor of Lightning Strike That Took His Father's Life Becomes Firefighter. *9News.com*. February 1, 2018. Link: <http://www.9news.com/article/news/local/morning-show/survivor-of-lightning-strike-that-took-his-fathers-life-becomes-firefighter/73-513153743>
