

# LIGHTNING DATA CENTER MINUTES

January 12, 2018  
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[www.lightningdatacenter.org](http://www.lightningdatacenter.org)

Quote of the Month: “The truth is the odds may be in our favor. But we have a better chance of being struck by lightning than winning the lottery. So while the odds aren’t high, the gambler in all of us should be wary.” Editorial, Northwest Florida Daily News, July 13, 2017. Link: <http://www.nwfdailynews.com/news/20170713/editorial-lightning-does-strike-here>

1. Members Present: Clark, Swanson, Stewart, Terry, Wachtel, Yarnell, Elder and Claus. Meeting began at 11:55 AM and ended at 1:05 PM. Clark moderated.
2. The LDC welcomes our newest member, Bruce Beckmann, who is a member of Colorado’s Alpine Rescue Team.
3. Right on the heels of the December meeting, two items were brought to Steve Clark’s attention, which are presented below.

Carl Swanson mentioned a video produced by NBC News, which discusses lightning survivors and some of the issues they face. We viewed the video and the link follows these minutes.

Shirley Terry sent a link to an article from Golf Digest, about a fatality resulting from a lightning strike in Turkey. A British couple was playing golf while vacationing in Turkey. The weather was clear for about an hour after they had teed off, but then storms approached and rain was falling. They sought shelter under some umbrellas when the wife was struck. She was ultimately airlifted to a hospital in the UK, where she died 12 days later. Links from Golf Digest and the Daily Mail can be found following these minutes.

4. Carl Swanson reported the final statistics for his data collection project in Colorado. There were 2 fatalities and 3 injuries during the year. Carl commented the casualty rate was relatively low, due in part to greater awareness and people heeding safety advice. Steve Clark said part of the decrease is due to a fairly quiet thunderstorm season in most areas of the state.

According to an article in USA Today, for the year 2017 in the United States, lightning fatalities were at a record low count, with 16 fatalities recorded, which is the lowest number since accurate records first started being collected in 1940. In stark contrast, in 1943, 432 people were killed by lightning.

In the UK, Derek Elsom and Jonathan Webb did a 30-year analysis of the factors contributing to lightning deaths in the UK, from 1987 to 2016. The average fatality count during that time period was two people per year. They found 15% were killed performing work-related activities, 13% were killed during daily routines and 72% were killed during outdoor leisure, sports and recreational activities.

5. Greg Stewart shared some comments and three videos.

Regarding yearly statistics, Greg agreed that urbanization, electrical codes, so-called protection technologies, education, number of storms and plain luck are responsible for the decline in fatalities for 2017, but the trend can fluctuate. For example, according to the Insurance Information Institute, the National Weather Service reported 26 deaths each in 2014 and 2015, followed by an increase to 38 deaths in 2016. This was reflected in claims and losses, which jumped 4.5% from 2015-2016. We hope the general trend remains on the decline!

The Institute provided additional statistics for 2007-2011. Local US fire departments responded to an average of 22,600 fires per year started by lightning according to the NFPA. Other data were presented including a pie chart showing the percentage of fires started by lightning by type of structure, a bar chart showing lightning incidents by month and the average annual damage from lightning fires in residential vs. non-residential properties. For non-residential properties, the top three property types in average annual damage were: #1 - storage facilities at \$28 million, #2 - houses of worship and restaurants at \$22 million and #3 - non-home residential properties like hotels and motels at \$19 million. Link: <https://www.iii.org/fact-statistic/facts-statistics-lightning>

The tragedy of international increases, like in Bangladesh for 2016, can likely be traced to lack of awareness, unenforced or non-existent building codes and likely storm frequency and severity. As an aside, 3 elephants were presumed killed by lightning in a forest reserve that year. Source: Lightning India, a Blog maintained by the Lightning Awareness and Research Centre (a division of CISSA). Detailed accounts of incidents are documented per the link below: <https://lightningindia.wordpress.com/category/lightning-incidents/>

Greg also recounted a recent lightning strike incident in Australia. A young man was hiking Kings Canyon, Northern Territory, Australia. The sky was "...littered with lightning". It was thought that the long, metal tripod he strapped to his back may have been a factor in the fatal strike. Family members were thrown to the ground. The young man could not be revived by CPR efforts. They were less than 500 meters from the carpark.

6. Dr. Phil Yarnell presented three cases for discussion.

Case 1: A patient had undergone surgery where electrocauterization was performed. Patient awoke from surgery, with people taking photos of the legs. Patient's head was held steady with a metal cap on it. An electric current was used to ground the patient. There were three burns on the legs and single burns on the forehead. Howard Wachtel suggested if one of the probes used in the electro-cauterization was not properly connected, the current from the live probe would attempt to seek an alternate path to ground, possibly leading to burns.

Case #2: During the early 2000s, a subject was hit by lightning three times, but continued to work until a fall approximately 3 years ago. Coworkers wondered about the subject's mental status. Subject did not like being asked questions. Symptoms would come and go. Subject's mental status fluctuates with time.

Case #3: An individual has hit by lightning in the late 1990s. Some 20 years later, migraine headaches and other anomalies became “insane”. Short term memory went right away and has never come back. Subject is afraid of early onset dementia. Subject read Dr. Mary Ann Cooper’s overview, wanting a better idea of what lightning and electric shock can do. Subject is worried about the future.

7. After last month’s meeting, Karen Wells referred us to an article and some abstracts discussing electric shock and headaches, in response to Phil’s case presentation in last month’s meeting. Links can be found below following these minutes.
8. Questions, comments, notification of errors, and critiques of these minutes are welcome. Please forward those to Steve Clark at: [sclarktoto@gmail.com](mailto: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.
9. 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.
10. Next meeting: Friday, February 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.**

Lightning strike in Turkey – two links.

Hennessey, S., 2017: Golfer Dies After Being Struck by Lightning on the Golf Course. *Golf Digest*, Dec. 10, 2017. Link: [https://www.golfdigest.com/story/golfer-dies-after-being-struck-by-lightning-on-the-golf-course?mbid=nl\\_121017\\_daily\\_hitlist&CNDID=38026557&spMailingID=12535303&spUserID=MTMyNjM4ODg5NDc3S0&spJobID=1300951241&spReportId=MTMwMDk1MTI0MQS2](https://www.golfdigest.com/story/golfer-dies-after-being-struck-by-lightning-on-the-golf-course?mbid=nl_121017_daily_hitlist&CNDID=38026557&spMailingID=12535303&spUserID=MTMyNjM4ODg5NDc3S0&spJobID=1300951241&spReportId=MTMwMDk1MTI0MQS2)

Malm, S., 2017: British Woman Dies After Being Struck by Lightning While Playing Golf With Her Husband on Holiday in Turkey. *Daily Mail*. December 8, 2017.  
Link: <http://www.dailymail.co.uk/news/article-5159425/British-woman-dies-struck-lightning.html>

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Lightning Survivor Video

NBC News, 2017: What's It Feels Like to be Struck by Lightning? (Video). December 12, 2017  
Link: <https://www.nbcnews.com/leftfield/video/life-after-lightning-why-survivors-made-their-own-support-group-1115216963628>

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Two lightning fatality articles

Rice, D., 2018: Lightning Deaths at All-Time Record Low in 2017. *USA Today*. January 2, 2018.  
Link: <https://www.usatoday.com/story/weather/2018/01/02/lightning-deaths-all-time-record-low-2017/996949001/>

Elsom, D.M. & J. Webb, 2017: Lightning deaths in the UK: a 30-year analysis of the factors contributing to people being struck and killed. *International Journal of Meteorology*. 42. 8-26. (No link found online).

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Links addressing electrical injury and headaches

Jain, K. 2006: Electrical Injuries: Neurologic Consequences. *Neurology Medlink*. Link: [http://www.medlink.com/scripts/mpdf/print\\_friendly.php?title=electrical\\_injuries\\_neurologic\\_complications&action=print&channel=public\\_content&entryid=19299](http://www.medlink.com/scripts/mpdf/print_friendly.php?title=electrical_injuries_neurologic_complications&action=print&channel=public_content&entryid=19299)

Czuczman, A. and R. Zane, 2009: Electrical Injuries: A Review for the Emergency Clinician. *Emergency Medicine Practice*. Link: <http://scghed.com/wp-content/uploads/2015/02/EBM-Electrical-Injuries-a-review-for-the-emergency-physician.pdf>

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Lightning Videos links from Greg Stewart

“Transient” Lightning Video by Dustin Farrell, Chad Cowan  
<https://vimeo.com/245581179>

“Red Sprites over the Channel”, an example of upper atmospheric lightning by Stephane Vetter  
<https://vimeo.com/221240479>

More sprite footage in a western Oklahoma storm captured at variable speeds  
<https://vimeo.com/99060196>

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Australian Lightning Fatality

Wolfe, N., 2018: Adelaide man Killed by Lightning Strike at Kings Canyon in the Northern Territory. *News Limited*. January 3, 2018. Link: <http://www.news.com.au/travel/travel-updates/incidents/adelaide-man-killed-by-lightning-strike-at-kings-canyon-in-the-northern-territory/news-story/7e37c19cfb3c6e4688ddd0921f516637>