

Lightning Data Center
March 8, 2002
Minutes
St. Anthony Hospital

Quote of the Month;

"He had dust all over him, a fine pulverized powder from the shelling, dust in his hair and eyes and dust gritty in his teeth, and now he lifted his face to the rain and licked his lips and could taste the dirt on his face and knew that he would remember that too, the moment at Gettysburg, the taste of raw earth in the cold and blowing dark, the touch of cold rain, the blaze of lightning."

Michael Shaara in *The Killer Angels*, 1974

1. Meeting began at 11:30 am and adjourned at 1:20 pm.
2. Members present: Anderson, Barron, Bergschneider, Burrows, Cherington, Collier, Glancy, Keen, Langford, Larson, Lines, McDonough, Olsen, Rossie, Russon, Sedillo, Staelin, Stewart, Worfel, Yarnell
3. I brought the following articles from the literature (abstracted in part here):
 - a. Cooper MA. A fifth mechanism of lightning injury. *Acad Emerg Med* 2002;9:172- 4.

"A fifth mechanism, injury by a weak upward streamer that does not become part of a completed lightning channel, has long been postulated in the engineering literature by lightning researchers. This paper reports a case of death where injury from a weak upward streamer is strongly suspected following forensic investigation....High-voltage electrical injury typically shows evidence of burns or metallic sheen on the body or clothing, physical damage to the high-voltage equipment, and/or evidence of power interruption to down-stream installations. None of these were present in this case."

- b. Matthews MS, Fahey AL. Plastic surgical considerations in lightning injuries. *Ann Plast Surg* 1997;39:561-565.

"Lightning injury, although electrical, is very different from other more common electrical injuries. Burn injuries are seen, but are usually superficial and heal without surgery."

- c. Anders S, Matschke J, Tsokos M. Internal current mark in a case of suicide by electrocution. *Am J Foren Med Path* 2001;22:370-3.

"Fatalities caused by electrocution often lack specific morphologic evidence. The authors report a case of an electrician who committed suicide by electrocution...Autopsy revealed a blackish linear mark on the pleura parietalis of the inner side of the thoracic cavity, connecting the cutaneous current marks...To the author's knowledge, such a current-related phenomenon has not been reported to occur on an inner body surface before."

4. I read an announcement sent by Steve Marshburn regarding the 12th annual

Lightning Strike & Electric Shock Survivors International, Inc World Conference on April 26,27, 2002 at the Holiday Inn Resort in Pigeon Forge, TN. For further information, please contact Steve.

5. My son sent to me a brochure and photographs from Sandia National Laboratories. The subject of these materials: "The Z Machine." It is the "world's most powerful electrical device. It generates a...50 trillion watt electrical pulse that is used to study the physics involved in fusion reactions...The electrical pulse delivered by Z lasts 100 billionths of a second...A bolt of lightning lasts about 20,000 times as long."
- 6, Rich Collier read from the December 25, 2001 Grand Junction Daily Sentinel (article by A. Porter). In the autumn of 2001, lightning hit a communication antenna of the Delta City Hall. 19 computer monitors were damaged. Most surge protectors had to be replaced.
7. Bob Glancy announced the National Weather Service Lightning Awareness Week will run from April 28 to May 4, 2002. Information can be learned from the following website: www.lightningsafety.noaa.gov.

Bob also brought a question sent to him by a school teacher. When electrification of clouds is discussed, the charge separation is often attributed to movement of electrons. The question: Do protons move as well as electrons? Rick Russon's answer, not challenged by anyone present: Yes.

- 8, Gene Lines reported that NFPA 780 lightning protection system guidelines have been reaffirmed. Gene also brought a notice that a book by JV Cooray entitled Lightning Flash is scheduled to published this year. He will bring us an update about the book when more information is available.
9. Leland Anderson, who has written on the subject of ball lightning, became an eyewitness to aircraft-related ball lightning. He was on an airplane in January that was taking off from San Francisco. Shortly after the passengers heard a loud "bang," he saw a very bright red ball outside the window. The ball traveled a few feet per second. The pilot announced that the plane had been hit by lightning and that all was OK.
10. Phil Yarnell brought us an update on a patient that was struck by ball lightning while on a cordless phone. The patient had many of the symptoms that have reported by other lightning strike patients: difficulty at work where she makes many more mistakes while typing, daily headaches, blurred vision, stuttering speech, sleep disorder, memory loss (long and short term), facial hair, tremors, and joint pains. Phil and Gil McDonough suggested the patient may have suffered damage to the hypothalamus. Gil suggested that endocrine studies might be considered.
11. Rick Russon, Keith Worfel, and Ken Langford discussed what pilots might do to limit the danger of temporary blindness from a bright lightning flash. Among the suggestions were wearing sunglasses, closing one eye, utilizing auto-pilot.
12. Rich Keen announced that the next meeting of the Denver-Boulder Chapter of AMS will be held on March 20 (Wednesday). The speaker is William Gray of Colorado State University. The topic: Climate changes and global warming.

13. Our speaker today is Rick Russon. His topic: Atmospheric Electricity Hazards to Aircraft. Rick gave an outstanding, comprehensive presentation. Rick distributed handouts that closely paralleled his presentation. For those members who missed Rick's talk and would like to receive the handouts, please contact Sue Wiggins within a week's time via our email site: Lightningdatacenter@centura.org. The handouts will be sent out until they run out.
14. Rich Burrows brought photographs taken last month at our 10th Anniversary meeting.
15. These minutes do not represent official positions of LDC. They reflect the comments of members present.
16. Next meeting will be held at 11:30 am on the THIRD Friday of April - April 19, 2002 in the Main Auditorium of St. Anthony Central Hospital. Our guest speaker will be: Professor Gerard Berger of France.

Respectfully submitted,

Michael Cherington, MD