

LIGHTNING DATA CENTER
October 15, 2004
Minutes
St. Anthony Central Hospital
www.stanthonyldc.org

Quote of the Month:

“I didn’t see the lightning bolt. You see lightning bolts, the jagged kind from a distance. When it comes down nearly on top of you, all you see is a quick, general flash, like a stroke popping up in your face. But I do remember seeing Bobby’s club light up first, just for an instant, before everything disappeared in the general glare.”

Bob Cullen, A Mulligan for Boby Jobe 2001, Harper-Collins

1. Meeting began at 11:30 am and adjourned at 1:20 pm.
2. Members present: Bergschneider, Burrows, M Cherington, N Cherington, Clark, Flanders, Foley, Gift, Glancy, E Holle, R Holle, Keen, Lines, London, McDonough, Mullen, Nitky, Richardson, Russon, Stewart, Tonge, Wachtel, Wells, Yarnell.
3. I brought the following articles from the literature (abstracted in part here):
 - a. Shmatov ML. Ball lightning with energies of the order of 10^9 J. Proceedings 8th International Symposium on Ball Lightning. 3-6 August 2004. National Central University, Chung-LI Taiwan, pp 51-56.

“The main assumption of the model proposed is that ball lightning has a core consisting of clouds of electrons and totally ionized ions which oscillate with respect to each other. The model considered above corresponds to the very high danger of some ball lightning for human beings and some objects, for example, airplanes.”
 - b. Lang TJ, Miller LL, Weisman M. et al. The severe thunderstorm electrification and precipitation study. Bull Am Meteorol Soc 2004; 85: 1107-1125.

“In its most pristine state, a supercell is a unicellular thunderstorm comprised of a single, long-lived, rotating updraft, and it frequently produces large hail, high winds, prolific lightning, and occasionally tornadoes. During May-July 2000, the Severe Thunderstorm Electrification and Precipitation Study (STEPS) took place near the Colorado-Kansas border in order to achieve a better understanding of the interactions between kinematics, precipitation production, and electrification in severe thunderstorms.”

- c. Henson R. Putting lightning on the map. *Weatherwise* 2004;57:28-33.

“In the late 1980s, the pace center brought its 3-D, Lightning Detection and Ranging (LDAR) system on-line...Now, a new generation of 3-D mapping systems is spreading rapidly in both research and real-world settings. Storms don't have to be mammoth to spit out CGs in unorthodox places 'bolts from the blue'. These renegade CGs emerge from the heart of a thunderstorm and can strike the ground 10 or more miles from where rain is falling.”

- d. Halldorsson A, Couch MH. Pneumomediastinum caused by a lightning strike. *J Trauma* 2004;57:196-197.

“The injuries seen in survivors are most commonly caused by the electrical impulse, i.e., neurologic, cardiac arrhythmia, vasospasms, and burns. Solid organ injuries are rare and felt to be caused by incidental blunt trauma or blast effect. Injuries to the lungs and mediastinum after a lightning strike rarely have been described, and this is the first description of pneumomediastinum caused by this mechanism of injury. A 28-year old man was struck by lightning his only complaint was mild, substernal chest pain and dysphagia. CT scan of the chest showed significant free air throughout the mediastinum. The patient became asymptomatic and was observed for 48 hours. He was seen 2 weeks later and continued to do well.”

- e. Nield LS, Kamat D. Long-term sequelae of lightning strike in a child: a case report and review. *Clin Ped* 2004;43:563-567.

“In this report, we present a child in whom intense limb pain developed for a month, along with cardiac damage. Thirty-six hours after being discharged from a 4-day hospital stay, a 10-year-old girl presented with severe pain in both forearms. The strike occurred when the child was at softball practice in a field with 10 other children when a thunderstorm ensued. An echocardiogram revealed global left ventricular dysfunction with moderate mitral and aortic regurgitation. At 1-month follow-up, her physical examination was normal and she was free of pain. The cardiac damage eventually resolved, and an echocardiogram obtained 6 weeks after the incident revealed trace aortic valve regurgitation and a mildly dilated left ventricle.”

4. Rich Keen reported that US Postage stamps of Clouds are now or soon will be available. Some of these photographs were taken by Rich. Rich announced that the Cloud Stamps Celebration will be shown at NCAR Mesa Laboratory in Boulder on October 17, 2004.

Rich brought his book, *Skywatch West: The Complete Weather Guide*, Revised Edition published by Fulcrum Publishing. He will bring copies to the next meeting for anyone interested in making a purchase.

5. We (LDC) were fortunate to have Ron Holle, meteorologist from Tucson to speak to us today. Ron has a distinguished career. He has written on many subjects, including lightning safety and demographics. In the past, he was associated with NOAA. The title of his talk: "Behavior factors during recreation deaths & injuries from lightning."

Ron presented much of the information at the 18th International Lightning Detection Conference in Helsinki in June 2004. It is available online: (www.lightningstorm.com). Click on ILDC 2004 Papers.

Ron mentioned that bolt from the blue lightning injuries are common. Ron's son, Eric Holle reported on his mountaineering experiences in Vail. He stressed that the danger of being struck in the mountains is considerable after 11:00 in the morning. Eric showed a picture of a Memorial Plaque on Mt. Princeton where a mountain climber was struck and killed in 1995. Eric said during thunderstorms in Vail, the operators do not allow people to ride the gondolas.

Many thanks to Ron and Eric for their presentations.

6. These minutes do not represent official positions of LDC or its members. They simply reflect the comments made at the meeting.

Next meeting: Friday, November 12, 2004 at 11:30 am in the Main Auditorium of St. Anthony Central Hospital.

Scheduled speakers: Rich Kithil and Kenneth Langford.

Respectfully submitted,

Michael Cherington, MD