

Quote of the Month:

For an hour he slept thus, and was awakened by the roar of a tremendous clap of thunder. A flash of lightning that seemed to open the heavens to the very throne of God, illuminated all around, and by its light he saw about a quarter of a mile away, between the Isle of Lemaire and Cap Croisille, a small fishing boat borne along by the wind, and riding like a phantom on the top of a wave only to disappear in the abyss below. A second later it appeared on the creast of another wave advancing with terrifying rapidity. By the light of another flash, he saw four men clinging to the masts and rigging; a fifth was clinging to the broken rudder. Then he heard a terrific crash followed by agonizing cries. As he clung to his rock like a limpet, another flash revealed to him the little boat smashed to pieces and, amongst the wreckage, heads with despairing faces, and arms stretched heavenward. Then all was dark again. There was nothing left but tempest.

Alexandre Dumas in Count of Monte Cristo

1. Meeting began at 11:30 am and adjourned at 1:30 pm.
 2. Members present: Breed, Cherington, Collier, Foley, Hodge, Keen, Kithil, Larson, Simmons, Yarnell.
 3. Introductions: Ann Beck, Volunteer Service; George Rossie, psychologist; Bill Scanlon, Rocky Mountain News.
 4. I shared an issue of University of California at Berkeley Wellness Letter (Nov 1994) that discussed: Electrophobia - overcoming fears of EMFs. The article indicates that the "anxiety caused by the debate about EMFs" has been more hazardous to public health than EMFs of any level can have been. Michael Foley stated that this is a hot subject in the engineering community. Many have pointed out that background activity is greater than that due to most exposure to transmission lines. Both Michael and Ron Larson stated that they would assume a position of "prudent avoidance."
- I also suggested that the question of our changing our name be tabled for the time being. Our current name, LDC, has the virtue of longevity. The members agreed.
5. Ron Larson reported that he was in Zimbabwe from January until this month. He stated that there are many lightning deaths in that country. While he was there, 12 people were killed by lightning while in their homes. These structures are grass huts and have no lightning protection. On another matter, Ron speculated that El Nino will be shown to have an effect on thunderstorm activity.

- 6. I introduced Ann Beck, Volunteer Service. Ann reminded the group that Mother's Day was approaching. She suggested that members might stop by the Hospital Gift Shop to make their purchases.
- 7. I introduced Bill Scanlon of the Rocky Mountain News. Bill recalled a lightning event in his home when he was a high school student. Lightning struck the line connecting his sister 'walkie-talkie' with that of a neighboring friend. Damage was done to some of the contents of his home.
- 8. Richard Keen reminded the group to send their CV's and chapter summaries to him.
- 9. George Hodge reported on a recent storm in the Highlands Ranch vicinity where there were 3 houses on a hill. The house on the east side was the target and suffered damage. The middle house which did have lightning rod protection also suffered damage. It was suggested current may have entered the middle house via power lines or plumbing. George also present pieces of wood which he exposed via nails to 15,000 V. The wood was covered with a damp saline solution. Each piece of wood was marked by a fern or feathering effect reminiscent of the Lichtenberg effect on the skin of lightning victims.
- 10. Dan Breed reported that he will shortly begin the sail plane (glider) experiments to study electrification of clouds. He and his associates at NCAR plan to study and correlate electric fields with radar data. They will also send out EM pulses to detect what kind of particles are present in the clouds. They will measure the initial phase of charge separation in cumulus clouds. Dan mentioned that the sail plane has been struck on several occasions by lightning but with no serious damage.
- 11. Warren Simmons reported that at a recent tournament at the Longmont Golf Course, there was a lightning delay of 45 minutes. People left the course for shelters. Warren is soon to depart for Peru for an International Golf Meeting.
- 12. Rich Collier reports that he will soon depart to Ft. McClelland, Alabama to continue with triggered lightning experiments. The "target" building at the military base is probably the only building that was built with the purpose of being a repeated lightning target. Rich will bring data to the next meeting.
- 13. Michael Foley reported that on his request the law firm of Holland & Hart are doing preliminary pro bono work to develop the structure of a non-profit corporation. I suggested that Jim Barber or other hospital administrator be advised and of these efforts. Michael and Rich Kithil attended the Lightning Verification Meeting last month.
- 14. Rich Kithil brought much material for the members to review. Rich was good

to present his information and summary of his materials on the attached two pages.

- 15. Phil Yarnell discussed the symptoms often reported in lightning victims. These symptoms were reviewed by G. Engelstatter at the Lightning Strike Victims Support Group. Phil pointed out the similarity between these symptoms and those reported by chronic whiplash patients. George Rossie commented that the behavioral responses of car accident patients are similar to those of 'natural' accident patients.
- 16. Next meeting: Friday, June 9, 1995 at 11:30 am in Conference Room B at St. Anthony Hospital Central.

Respectfully submitted,

M.C.

Michael Cherington, MD
Chairman, LDC

R. Kithil Commentary for LDC Meeting, May 12, 1995

1. New Contacts were made and LDC information passed to:

- a. Dave Butler, Director of the Boulder CO Natural Hazards Center.
- b. Dana Larkin, Red Cross, Virginia.
- c. Jeff Sellon, Knott Laboratories (Engrg firm), Denver.
- d. Rich Bielan, NFPA, Boston. They will soon publish a new ESE air terminal study conducted for them by NIST. Report ordered.
- e. Brian Olson, NPS, Denver. He reports NPS had had 13 lightning fatalities recorded in 11 years 1984-1994.
- f. John Prescott MD, UWVA, Morgantown WVA. He has treated more than 150 patients for L. injuries, incl 40 ROTC cadets.
- g. Prof. Henry Hightower, U Brit Col., Vancouver BC. He is the Dir., Disaster Preparedness Resource Centre. Offered to exchange newsletter.
- h. Dr. Ralph Markson PhD MIT works with Earle Williams. He is off to Darwin to conduct L. research w/ balloons. He is sending new type L. detectors to RK & Rich Keen for data gathering. His CV is on file.
- i. Joe Lanzoni of LEC (Boulder) invited to next LDC meeting.

2. Lightning information gleaned from the Net was collected on these subjects:

- a. Ball Lightning. New info. Commentary & bibliography.
- b. Meteorological Resources & Data FAQ. Ilana Stern, NCAR
- c. Physics of sound of thunder.
- d. How does a t'storm form at night?
- e. 7.5 inch hailstones/Kansas.
- f. Various World Wide Web sites for Met. subjects.
- g. Charging fees for Met. data. Ilana Stern, NCAR. Ralph Markson, MIT
- h. USA State climatologists, Ilana Stern, NCAR.
- i. Claim of hail suppression by sound waves/France.
- j. Can it rain w/out clouds?

3. Denver Post on El Nino possible origin in underwater volcanos/seismic energy.

4. Handbook of Electrical Hazards & Accidents, Geddes, CRC Press, 1995. Book ordered. Many chapters on response of low frequency and high frequency AC passing thru body. Several chapters of electrical properties of living tissues. ISBN 0-8493-9431-7.

5. Book "Extremely Low Frequency Electromagnetic Fields: The Question of Cancer", Wilson, et. al., Battelle Press, 1990. A comprehensive biological examination of EMF effects. ISBN 0-935470-48-4.

- 6. RK new memos :
 - a) Summary of Lightning Detection Monitoring Equipment.
 - b) Lightning Risk Perception.
 - c) Computer Factory Outlets
 - d) Rainfall quantity from a single thunderstorm.

RK Lightning Safety Seminars, three hours each, scheduled for Columbia SC (June 6), Charleston SC (June 7), Myrtle Beach SC (June 8), and Atlanta GA (June 13).

7. LDC organization issues:

- a) On file for reference are legal formation documents from Weather Modification Assn. and LPI. These could be cloned for future use by LDC.
- b) Jim Barber has carried our request for sponsorship/funding to Provident
- c) The Boulder-based Ntural Hazards Center is an excellent model for future development of LDC. Their library is first rate.
- d) Book Getting Grants (Smith, 1980) has goof info for LDC financial appeals.

8. Meeting on "Lightning Verification" conducted by *Dick Fisher* GDS and held at Knott Engrg. Attended by LDC members Foley, Hodge & Kithil. Many insurance people there. Old lightning location technology (70% reliable ?) but well packaged for insurance industry requirements. Jeff Sellon of Knott Engrg invited to LDC meeting.

9. LDC member David Aremu of Nigeria has been successful in his application to immigrate to the USA with his family. He will move to Denver in June. He will be VP & Director, African Sales for ALP.

10. State Farm Insur. booklet on lightning obtained. Written 1991.