

**REPORT OF THE RF SAFETY COMMITTEE  
TO THE  
ARRL BOARD OF DIRECTORS**

January 2016

The RF Safety Committee participated in the following areas over the past six months:

1. RF Safety Committee Activities.
2. Monitoring recent scientific studies regarding RF Safety.
3. Participation in the scientific RF Safety community.
4. Administrative issues.

1 RF Safety Committee Activities

- 1.1 The Committee discussed an online newsletter, published by the “Whole Health Insider” and entitled “The Invisible Danger of Electromagnetic Fields.” The publication summarizes most of the fears of EM energy that have been mentioned over the past few decades. It is interesting because it shows that despite the continually increasing evidence that these fears have no basis, groups such as this maintain their stance that we are all being harmed. They make the classic mistake, common to non-scientific groups, of lumping all forms of EM energy together. Thus, they fear power line ELF fields as well as microwave UHF fields. They use terms such as “Dirty Electricity” and urge people to install filters in their homes. Much of the article was based on pronouncements from Samuel Milham, who formerly tried to warn of the dangers of Amateur Radio and has now moved to electricity. As one of our Committee members commented, “It takes some hard work to be that misinformed.”
- 1.2 The Committee discussed an article about a letter sent to FCC Chairman Wheeler from U.S. Senator Blumenthal from Connecticut and U.S. Representative Eshoo from California about their concern for the health of “250,000 people who work in close proximity to cell antennas.” The Committee felt that existing FCC regulations are sufficient to protect people from overexposure and, just as radio amateurs are responsible to insure that the public is not exposed to the signals from their antennas in excess of safety limits, cellular telephone providers have that same responsibility.
- 1.3 The Berkeley, California ordinance that requires cell phone retailers to warn customers about the danger of overexposure from a cellular telephone held next to the body has been discussed by the Committee over the past few years. Recently, a federal judge upheld the right of a locality to create such an ordinance. The judge stated that as long as the ordinance agrees with FCC statements the locality has a legitimate government interest in consumer awareness and public safety.
- 1.4 The Committee discussed a Massachusetts public school system that developed a policy designed to reduce exposure of school children to Wi-Fi signals. While they have not

removed Wi-Fi from the school, they have posted the Best Practices document in every classroom. These include: turn off electronic devices when not in use, keep all electronic devices on a solid surface, turn on Wi-Fi only when it is needed, viewing distance should be a minimum of 12 inches from the screen, and staff members are to remind and instruct students to use these practices.” The Committee felt that this concern is unnecessary and the practices will have no effect on the health of the students.

- 1.5 The Committee reviewed a manuscript submitted to QST or QEX, entitled, “Maximum Permissible Exposure Limit versus Near Field Radiation from a 2-Meter Mobile Antenna.” This article proposed a new modeling method to show that exposure inside a car to a 2-meter antenna mounted on the roof are much higher than previously thought. Statements in the article about “health hazards” and “areas of concern” were considered by the Committee to be inappropriate. There were also questions about the model’s accuracy. It does not agree with a paper published by Robert Cleveland of the FCC and Ed Mantiply of the EPA in 1996, in which measurements were made inside a car with a 2-meter antenna mounted on the roof. The measurements were all significantly below the field strengths predicted by the submitted model. The Committee recommended that this manuscript not be published in QST or QEX in its present form.

## 2 Monitoring Scientific Studies

- 2.1 A review article published in Electromagnetic Biology and Medicine posed the possibility that exposure to low level RF signals can cause reactive oxygen stress in cells, which has the capability of causing cancer. The authors claimed that this mechanism “explains a range of biological/health effects of low-intensity RFR, which include both cancer and non-cancer pathologies.” However, they do not indicate what these health effects are. The Committee felt that, while the subcellular effects may be interesting, there is no evidence to show any adverse health effects, particularly considering the vast increase in the number of people exposed to cellular telephones, yet no similar increase in health effects of any kind has occurred.

## 3 Participation in the Scientific RF Safety Community

- 3.1 Mr. Hare continues to serve on the ICES (IEEE) SCC-28 RF Safety Standards Committee.
- 3.2 Dr. Lapin continues to serve as a member of the IEEE Committee on Man and Radiation, COMAR.
- 3.3 Dr. Lapin is currently serving as a consultant in a cell tower siting question.
- 3.4 Dr. Siwiak serves as a consultant to the Q-Track Corporation on matters of RF exposure related to body mounted small MF and HF transmitting loops.
- 3.5 Dr. Siwiak developed the accredited continuing education course, “Cell Phone and RF Exposure Awareness,” which is offered online by SunCam Corporation.

## 4 Administrative Issues

- 4.1 The Committee is working on updating the RFSC Webpage on the ARRL website.

- 4.2 The Committee thanks Director Tom Frenaye, K1KI, for forwarding RF-safety related articles to the committee.
- 4.3 Dr. Siwiak is a contributing editor for QST and Editor of QEX, and he shares any submitted RF Safety-related articles with the Committee.

Gregory Lapin, Ph.D., P.E., N9GL  
Chair, ARRL RF Safety Committee

**The ARRL RF Safety Committee**

Chair

Gregory D. Lapin, Ph.D., P.E., N9GL  
1206 Somerset Ave  
Deerfield, IL 60015-2819

Committee Members

Robert E. Gold, M.D., W0KIZ  
9197 N. Clydesdale Rd  
Castle Rock, CO 80104-9102

Kai Siwiak, P.E., Ph.D., KE4PT  
10988 NW 14th St  
Coral Springs, FL 33071-8222

William Kaune, Ph.D., W7IEQ  
160 Cedarview Dr  
Port Townsend, WA 98368-9527

Bruce Small, M.D., KM2L  
10540 Stoneway  
Clarence, NY 14031-2100

James W. Ross, M.D., M.P.H., W4GHL  
4599 Black Rail Ct  
Providence Forge, VA 23140-3733

Guy L. (Bud) Tribble, M.D., Ph.D., N6SN  
101 Fallen Leaf Dr  
Hillsborough, CA 94010-6918

Emeritus Committee Members

Gerald Griffin, M.D., K6MD  
123 Forest Ave  
Pacific Grove, CA 93950-2619

William Raskoff, M.D., K6SQL  
1769 Escalante Way  
Burlingame, CA 94010-5807

Liaison to the ARRL Board of Directors

Kent Olson, KA0LDG  
148 Ironwood Dr  
Horace, ND 58047-4002

ARRL HQ Staff Liaison

Ed Hare, W1RFI  
ARRL Headquarters  
225 Main St  
Newington, CT 06111-1400

ARRL HQ Administrative Liaison

Lisa Kustosik, KA1UFZ  
ARRL Headquarters  
225 Main St  
Newington, CT 06111-1400