

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

January 2019

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 continued to discuss appropriate educational materials related to RF safety. Dr. Siwiak noted that whenever he volunteers as a VE he makes a point of asking those being tested if they understand the statement that they signed on FCC Form 605 regarding having read and agreement to comply with the FCC radiofrequency radiation safety rules. He has always met with blank stares regarding this and he suggested that this stage of the licensing process be formalized to make sure that prospective hams understand it. He also suggested that a copy of OET Bulletin 65 be available at each VE testing site. Other than Bulletin 65, there is little else in print, or on the web, that would qualify as training on the subject.

2 Monitoring Scientific Studies

- 2.1 A paper was discussed from a Swiss research group, which claimed that 10 minutes per day of cell phone usage produces a decline in image processing ability among adolescents. A review of the paper by Committee members revealed many inconsistencies, including different conclusions stated at the beginning and end of the paper and no control of what the phone was being used for. The study was not prospective, but rather was based on comparisons of questionnaires that students filled out regarding their cell phone use and cognitive tests that they were given. At the end of the paper the authors admitted that their results did not indicate causal effect, yet the title of the paper was misleading to indicate that such an effect was actually found. The Committee's conclusion was that this is not a paper to be trusted.
- 2.2 The long running NIEHS NTP study of rat exposure was discussed again. As the results have been more widely disseminated the popular press picked some of the numbers up out of context and wrote some alarming articles. The Committee discussed how, as more information about the study was released, it has become clear that the exposure system was far from optimal. The exposure system was a better simulation of whole-body exposure from cell towers (or other remote antennas) than of handheld transmitters such as cell phones. However, the power was at the level of handheld transmitters, considerably higher than the exposure from remote antennas. Whole body exposure at the level of the localized

exposure from a handheld transmitter approaches lethal dose and far exceeds the existing safety standards.

- 2.3 The Committee reviewed the literature regarding claims that Cuba used microwaves to harm US consular officials in Havana. The hype, that referenced the “microwave hearing effect,” claimed that the Cubans had used that to surreptitiously harm the US officials. The “microwave hearing effect” has been known about since the 1960s and is a curiosity, in that it causes some people to hear very faint clicks when the microwaves are switched on and off. The faint click was never shown to cause any pain or other deleterious effects. Unfortunately, the press heard about it and speculated that the Cubans had weaponized it, though they did not learn enough about the effect to know that this type of speculation was absurd.
- 2.4 The Committee reviewed an article about the history of RF safety standards. It was a great reminder that scientific analysis of RF safety has been taking place for 70 years and when an alarmist claims that not enough is known about the effects of electromagnetic waves on humans they rarely are aware of the vast amount of study that has already taken place.

3 Participation in the Scientific RF Safety Community

- 3.1 Mr. Tell continues to serve as the chairman of the ICES (IEEE) TC-95 Subcommittee SC-2 RF Safety Standards Committee.
- 3.2 Mr. Hare continues to serve on the ICES (IEEE) SCC-28 RF Safety Standards Committee.
- 3.3 Mr. Tell continues to serve as the chairman of the IEEE Committee on Man and Radiation, COMAR.
- 3.4 Dr. Lapin continues to serve as a member of the IEEE Committee on Man and Radiation, COMAR.
- 3.5 Dr. Lapin has testified in zoning hearings to explain the exposure of the population to cellular telephone base stations and what science has shown about the potential for danger to human health.
- 3.6 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.

4 Administrative Issues

- 4.1 The Committee welcomes a new member, Richard (Ric) Tell, W5UJU. Ric has considerable experience in the RF safety arena, from 20 years as Chief of the Electromagnetics Branch of the Office of Radiation Programs at the U.S. Environmental Protection Agency to 31 years running a consulting firm specializing in electromagnetic field exposure assessment and particularly the investigation of potential radiofrequency hazards. He is an active volunteer with the IEEE in human exposure standard development and is a life fellow of IEEE.
- 4.2 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

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

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

Richard A. Tell, K5UJU
10037 Long Meadow Rd
Madison, AL 35756-4247

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
470 W Maple Way
Woodside, CA 94010-6918

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

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

Arthur Zygielbaum, K0AIZ
6601 Pinecrest Dr
Lincoln, NE 68516-3573

ARRL HQ Staff Liaison

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

ARRL HQ Administrative Liaison

Carla Pereira
ARRL Headquarters
225 Main St
Newington, CT 06111-1400