

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

July 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 further discussed the manuscript submitted to QST, entitled, “Maximum Permissible Exposure Limit versus Near Field Radiation from a 2-Meter Mobile Antenna.” The ease of misinterpreting the MPE limits that are published in the FCC regulations became evident; MPEs are not actual measures of safe limits recommended by the safety standards but rather are for convenience to allow relatively simple modeling or measurement to estimate the actual exposure to a person. True exposure is measured as Specific Absorption Rate, SAR, and if the E- and/or H-field measurements do not meet the stated guidelines in the standards then they are not meaningful. Those guidelines include that the exposure be over the whole body and that it be in the far field. Cellular telephone manufacturers have had to deal with the more difficult measurement of actual SAR because their devices do not meet either of these conditions. The Committee is entertaining the idea that hams would benefit from additional training so that they understand all of the nuances of the RF safety standards.

2 Monitoring Scientific Studies

- 2.1 The Centers for Disease Control, CDC, issued new guidelines in which they “recommend caution in cellphone use.” This was very strong language that did not have a scientific basis and was a deviation from what other agencies, such as FCC and FDA, were saying about the topic. When the new CDC guidelines were released they led to an uproar that caused them to be reviewed by others in the agency and eventually led to a rewording. The apparent change in policy was based on the bias of the CDC director of the National Center for Environmental Health, who also sits on the International Agency for Research on Cancer, IARC, which shares the same type of bias. The European agencies generally promote the “precautionary” approach, in which they admit that there is no scientific basis for the belief that RF signals cause disease but they are preparing for the possibility that a new danger will be discovered in the future.
- 2.2 The FDA recently extended the indications of the Optune device for treatment of Glioblastoma Multiformae, a particularly lethal form of brain tumor. The Optune device uses LF energy to treat the tumors. When tuned to 200 kHz it has been shown to lead to a

statistically significant increase in survival, as reported by a peer-reviewed study recently published in the Journal of the American Medical Association.

- 2.3 Investigators at the National Institutes of Health, NIH, concluded a 2-year-long study on rats exposed to radio frequency signals and reported an increased incidence of cancer. The study was in the process of being peer-reviewed within the NIH when reports of the results appeared in the press. What was particularly disturbing was that a highly regarded scientific body would allow such preliminary results to be leaked to the press. However, it was heartening that a number of articles appeared on Internet that recognized the weaknesses of the study and questioned the usual fear-mongering of the rest of the press. The Committee discussed the parts of the study that were made public and immediately recognized many scientific weaknesses. One such confounding result was that in one population of rats the exposed animals lived longer than the unexposed ones. The Committee had to resist the temptation to treat this as a valid result.

### 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. 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.
- 3.4 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 welcomes its new Board liaison, Tom Delaney, W8WTD.
- 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**

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