

REPORT OF THE RF SAFETY COMMITTEE

TO THE

ARRL BOARD OF DIRECTORS

July 2000

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

1. RF Safety Committee Activities (NCI Epidemiology Study, International RF Safety, Question Pools).
2. Monitoring recent scientific studies regarding RF (FCC RF Safety Document).
3. Participation in the scientific RF Safety community (IEEE Standards Committee, Presentations).
4. Administrative issues (Committee membership, Email reflector, Web Pages).
5. Future Plans (Rewriting RF Safety text, Public RF Safety Web Page).

1. RF Safety Committee Activities

1. Drs. Lapin, Gold and Siwiak, Mr Hare, Rick Lindquist N1RL, and Dave Sumner, K1ZZ, met with Dr. Kenneth Cantor, of the National Cancer Institute, regarding ARRL participation in an NCI epidemiological study of cancer in radio amateurs. The study is underway and Dr. Cantor has requested help from ARRL to determine the status of some of the members of his cohort group of hams that he cannot find evidence of. Dr. Cantor usually uses California Motor Vehicle records to determine that a person in his study was alive at a given date. For those that could not be found, the assumption is either that they moved from California, but there is no practical way to tell if they are still alive in another state. The ARRL has been able to help by looking at membership records to see if they have been renewed. Mr. Hare has been working with people from NCI on this endeavor.
2. Dr. Lapin has initiated communication with the people concerned with RF Safety from the various national amateur radio societies around the world. With the help of Mr. Stafford, contact has been attempted with representatives from Canada, Great Britain, and Australia. It is hoped that cross-fertilization within this group of people will help to strengthen the Amateur Radio globally against the threats posed by electrophobia.
3. Dr. Lapin met with Peter Kirby, G0TWW, General Manager and Society Secretary of RSGB, while at the Dayton Hamvention. They discussed ARRL and RSGB activities in the RF Safety field. In brief, the RSGB currently has a policy of keeping a low public profile with regard to RF Safety, in the hope that they will not be dragged into the hotly debated cellular telephone issue in Great Britain.
4. The restructuring of the amateur radio exams led to changes in the question pools. Bart Jahnke, W9JJ, sent the committee a list of all RF Safety-related questions. Questions were reviewed for correctness and some changes were requested.

2. Monitoring Scientific Studies

1. The FCC published an RF Safety document directed at public entities that have to deal with siting cellular and PCS towers. Amateur radio was mentioned twice (once in a table of exclusions that was taken from FCC Bulletin 65 and once in a figure that described spectrum usage) but there was no attempt to expound on amateur radio issues with regard to RF Safety. Following correspondence with Dr. Cleveland at FCC OET, it was clear that this document, which has been in preparation for 2 years, was developed solely to address the problems of getting cellular and PCS towers sited around the country. The committee does not believe that this omission will affect amateurs adversely.
2. The ABC 20-20 story on cellular telephones, which originally aired in the fall of 1999, was rerun in May 2000. There was additional response similar to what was said the first time that it aired. The largest response was based on measurements that ABC contracted with a German laboratory to show that many of the popular cellular telephones did not meet the FCC's MPE (Maximum Permissible Exposure) guidelines when held in different positions. Except for some comments by Ross Adey, the veracity and applicability of the MPE limits were not challenged.
3. Perhaps in response to the ABC 20-20 story, Dr. Cleveland at FCC OET embarked on a study of how cellular telephones are usually held. The goal of the study was to improve the testing guidelines for compliance of these devices with MPE limits. The results were presented at the annual conference of the Bioelectromagnetics Society in Germany in June 2000. The potential affect of this on Amateur Radio is that it raises the question of the reliability of testing and measurements that we use for our Environmental Assessments.
4. An expert panel in Great Britain made the recommendation that children not be permitted to use cellular telephones. The basis of this statement was that even though nothing has been found to implicate RF energy in the promotion of disease at cellular telephone power densities, an effect could be discovered in the future. Since children are still developing, the recommendation was made "just in case."
3. Participation in the Scientific RF Safety Community.
 1. In February, Dr. Lapin started writing a monthly column about RF Safety for the ARRL Members Only Web Page.
 2. Dr. Lapin presented a forum at the 2000 Dayton Hamvention, entitled "Why Should We Be Concerned with RF Safety?"
 3. Dr. Lapin presented an RF Safety lecture, also entitled "Why Should We Be Concerned with RF Safety?" at the Metro Amateur Radio Club (MAC) in Lincolnwood, IL on June 7, 2000.
 4. Dr. Lapin continues to review scientific papers for IEEE Standard C95.1, which is being revised during the next year.
 5. Dr. Lapin serves on the IEEE Committee on Man and Radiation, which develops informational text about various issues regarding the effects of nonionizing radiation on humans and medical devices. COMAR also publishes position papers about the dangers, or lack thereof, of various technologies with respect to nonionizing radiation.

6. Mr. Hare and Dr. Guy continue to serve on the IEEE Standards Coordinating Committee 28 on Non-Ionizing Radiation, which develops the standards for human exposure to RF energy.
 7. Dr. Guy participated in responding to questions on maximum RF current and current density limits in IEEE SCC28 Safety Standards Interpretation Committee.
 8. Dr. Guy participated in writing new guidelines for computation and measurement of 1gram average SAR values in human models exposed to RF fields in IEEE SCC 34 SC2 Subcommittee on Cellular Phone Certification.
 9. Dr. Guy attended and presented a paper entitled "FDTD Studies in Biological Cells Exposed to 837 and 1900 MHz in a TEM Cell" at Computational Bio-Electromagnetics session of The Applied Computational Electromagnetics (ACES) 16th Annual Review of Progress in Applied Computational Electromagnetics, Naval Postgraduate School, Monterey, CA, March 21, 2000.
 10. Dr. Siwiak continues to serve on the Motorola Electromagnetic Exposure Committee.
 11. Dr. Siwiak was named "Dan Noble Fellow" by Motorola for "leadership in communications technology."
 12. Dr. Gold has worked with local amateurs to help them understand and comply with the FCC RF Safety guidelines.
 13. Mr. Myers continues to serve on the American Conference of Governmental Industrial Hygienists Physical Agents TLV Committee.
4. Administrative Issues
1. The RF Safety Committee welcomed its new Board Liaison, Howard Huntington, K9KM, this year. Mr. Huntington has already taken an active role in facilitating some of the committee's activities, including helping with the arrangements for the meeting with Dr. Cantor of NCI at ARRL HQ.
 2. Dr. Griffin resigned from the committee in May 2000, noting other time commitments. His service to the committee, and his voice of reason, will be missed. Dr. Griffin will continue to monitor the RFSC Email Reflector, and has indicated that he will comment on various topics as warranted.
 3. Mr. Haynie has appointed James Ross, M.D., M.P.H., W4GHL, to be a new member of the RF Safety Committee. Dr. Ross is an ARRL member with a background in epidemiology, a field in which the committee is taking an increasing role, and will also serve to maintain the balance of scientists and medical doctors on the committee.
 4. Mr. Hare continues to administer the RF Safety committee email reflector, which handles correspondence between committee members. Other ARRL staff members and some former committee members monitor traffic over the reflector and we occasionally receive helpful comments from them.
5. Future Plans
1. The committee continues to consider restructuring of the RF Safety text that appears in all ARRL publications.
 2. Mr. Hare, with the help of the committee, is developing a pair of RF Safety Committee web pages. One page, to be made available to the public, will display information about the RF Safety Committee and discuss RF Safety issues that apply to Amateur Radio. Another page, which will be available only to RF Safety

Committee members and ARRL staff, will contain draft publications and a collection of PowerPoint slides that committee members use in their RF Safety presentations.

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., WB0KIZ

9197 N. Clydesdale Road

Castle Rock, CO 80104-9102

Arthur W. (Bill) Guy, Ph.D., W7PO

18122 60th Place NE

Seattle, WA 98155-4608

Gary E. Myers, M.S., C.I.H., K9CZB

28W 135 Hillview Drive

Naperville, IL 60564

William Raskoff, M.D., K6SQL

1769 Escalante Way

Burlingame, CA 94010-5807

James W. Ross, M.D., M.P.H., W4GHL

9472 Ruffin Ridge Rd.

Mechanicsville, VA 23116-6670

Kai Siwiak, P.E., Ph.D., KE4PT

10988 NW 14th St

Coral Springs, FL 33071-8222

Liaison to the ARRL Board of Directors

Howard Huntington, K9KM

25350 N. Marilyn Lane
Hawthorn Woods, IL 60047

ARRL HQ Staff Liaison

Ed Hare, W1RFI

ARRL Headquarters

225 Main Street

Newington, CT 06111

ARRL HQ Administrative Liaison

Lisa Kustosik, KA1UFZ

ARRL Headquarters

225 Main Street

Newington, CT 06111