

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

July 2012

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 received a query from a ham who wanted to know what would be the RF Safety implications of building an HF KW tuner in an unshielded case. He was advised to shield the tuner, paying particular attention to the long edges where leakage is most likely.
- 1.2 Dr. Siwiak received emails from two hams who had read his Technical Correspondence article in QST regarding potential safety issues with loop antennas. The article warned of the high voltages that can be generated in a loop antenna. Both hams wanted to know if a loop antenna used with QRP radios posed the same dangers. Dr. Siwiak replied that even with 10W PEP the capacitor in the loop can generate peak voltages between 1200 and 1800 V. He suggested that even for very low powered radios, operators should stay at least an arm's length away from a loop antenna and visitors to the station should stay two arm's lengths away.

2 Monitoring Scientific Studies

- 2.1 The Committee reviewed an article in the magazine *Electronic Design* entitled "Does Wi-Fi Put Danger In Your Pocket?" The article attempted to provide a review two studies that purported to show deleterious health effects of exposure to electromagnetic energy. The author was clearly not expert in scientific examination, making erroneous statements such as saying that a list of ill effects has been "linked to prolonged exposure to electromagnetic exposure for some time." The term "linked" implies that there is statistically significant evidence, although confirmed studies have not shown this. The author reviewed one study that attempted to show that exposure to WiFi from a laptop computer adversely affects sperm. This Committee has discussed such studies in the past and found no convincing evidence that the studies corrected for the normal variation in sperm motility. The author then discussed electro-hypersensitivity, or EHS, which is another topic that the Committee has discussed in the past. There are a number of people who complain of EHS and the veracity of their claims varies widely. Article such a this are dangerous because they do not review the entire scientific record but rather single out studies that prove the author's point. There is no mention of attempted corroborating studies, particularly those that refute the original findings. The author also noted that the World Health Organization, or WHO, does not agree with the studies presented. This is notable since standards organizations such as WHO and IEEE make comprehensive reviews of the entire scientific record and draw conclusions from the entire weight of the evidence.
- 2.2 The Committee reviewed an online article entitled, "Warning: Why You Should Avoid Using Your Laptop as Recommended" found on the website of "Dr." Mercola. The good doctor is clearly no EMF expert, and mixed exposure to magnetic fields with electrical fields, all below

limits presented by several international exposure standards. The magnetic field issue was heavily discussed a decade earlier, with the general conclusion being that there was no evidence of any biological effects from this type exposure. This article is an example of the curse of the Internet. Warnings floating around email boxes and discussion groups never die. Once again, taking single studies and comments out of context with respect to the entirety of scientific study usually results in erroneous conclusions.

- 2.3 An article from the BBC summarized the current state of scientific study with respect to biological effects of exposure to electromagnetic energy. The UK's Health Protection Agency, or HPA, performed a review of recent scientific studies and concluded that in hundreds of studies there is no conclusive link to cancer risk, brain function or infertility. This type of review is far more reliable than those that were mentioned earlier in this report, since the HPA looked at all of the studies performed in recent years rather than singling out individual studies.
- 2.4 An online article reported that the Chairman of the FCC, Julius Genachowski, has proposed to his fellow commissioners that the exposure standards set by the FCC in 1996 be reviewed in light of more recent scientific evidence.

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. He generally shares the voting ballots for changes to the standards with the Committee prior to voting on them.
- 3.2 Dr. Lapin continues to testify about RF safety at zoning board hearings when cellular tower placement is being considered.
- 3.3 Dr. Lapin continues to serve as a member of the IEEE Committee on Man and Radiation, COMAR.

4 Administrative Issues

- 4.1 Members of the Committee continue to review articles submitted to QST, looking for potential RF safety issues that should be dealt with prior to publication.
- 4.2 Dr. Tribble announced a change of call sign from AF6ZE to N6SN.
- 4.3 The Committee was introduced to our new liaison to the ARRL Board of Directors: John Stratton, N5AUS.

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Chair, ARRL RF Safety Committee

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